APPENDIX AQ

Air Quality & GHG Assumptions and Calculations

Air Quality & GHG Assumptions and Calculations

Topock
Assumptions

These assumptions are for the Topock Compressor Station Final Groundwater Remediation Project at PG&E Topock Compressor Station. The analysis is based on four phases of construction and 2 phases of operational activities. The four construciton phases are: Pre-Construction/Mobilization; Phase 1 Construction; Phase 2 Construction; Decomissioning and Removal of IM3. Operation of Phase 1 will being concurrent to the construction of Phase 2, has a 12 month start-up and a 30 year operational life span. Operation of Phase 2 will begin after construction for Phase 2 finishes, has a 12 month start-up cycle and an operational lifespan of 30 years. Decomissioning and Removal of IM3 can occur at the same time as construction and operation of Phase 2 and Operation of Phase 1, so there is the potential for Operation of Phase 1, Construction/Operation of Phase 2, and Decomissioning to all be active at the same time. The analysis provides a worst case emissions estimate for the amount of equipment used during a given day and therefore the estimates are anticiapted to be conservative.

CalEEMod Inputs that are not modeling defaults:

Project Location:	San Bernardino	
	San Bernardino - Mojave Desert	
Climate Zone:	10	
Operational Year:	2019 Phase 1	
	2021 Phase 2	
Utility Company:	City of Needles Electrical Department	(SoCalL used in modeling as City of Needles is not in CalEEMod)

Land Use Type:

Office	10,500 sq ft	
	10.5 ksf	
	755.6 acres	(total site)
	62 acres	(activity areas)
	23,900	sqft = (100 sqft/well)
	7,005	sqft = water conditioning system
	2,646	sqft = Contingent freshwater treathemnt system
	1,016,000	sqft - Conveyance Piping Network
	113,984	sqft - Non-Well Infrastructure
	14,486	sqft = building/other structures
	146,520	sqft = roadway improvements
	1,324,541	sqft Total
	30	Acres
	31	acres = staging areas

CONSTRUCTION INFORMATION

Phase	Starte Date	End Date	# Days[1]	Days/week
Pre-Construction/Mobilization	1/1/2017	4/21/2017	80	5
Phase 1	5/1/2017	10/12/2018	380	5
Phase 2	12/1/2018	11/1/2019	240	5
IM3 Decomissioning	12/1/2019	12/25/2020	300	5

[1] Construction phaseing (number of days) is consistent with construction phasing set forth in the project traffic study. Construction trip rates are consistent with daily construction trips anticipated for the project by the Project Traffic Study.

Topock
Assumptions

Pre-Construction/Mobilization (uses Grading Phase)

How much soil imported: 23,800 cubic yards

Equipment piece	#/day	Hrs	HP	LF	
Generators	1	8	Default	Default	Generator Set
Backhoe, Medium	1	8	Default	Default	T/L/B
Concrete Pump Trailer-Mounted	1	8	Default	Default	pumps
Crane, 40-ton, Truck Mounted, All-Terrain	1	8	Default	Default	Crane
Excavator, Medium	1	8	Default	Default	Excavator
Fork Lift, Long Reach	1	8	Default	Default	Fork lift
Loader, with 4-Yard Bucket	1	8	Default	Default	T/L/B
Man/Boom Lift	1	8	Default	Default	Aerial Lift
Soil Compactor - 54"	1	8	Default	Default	roller
2,000 Gal Water Truck	1	6	Default	Default	Offhighway Truck
Concrete Ready-Mix Truck	1	1	Default	Default	Offhighway Truck
Dump Truck	1	6	Default	Default	Offhighway Truck

Phase 1 (uses Grading Phase)

Equipment piece	#/day	Hrs	HP	LF	
Generators	2	8	Default	Default	Generator Set
Backhoe, Medium	1	8	Default	Default	T/L/B
Backhoe, Small	2	8	Default	Default	T/L/B
Concrete Pump Trailer-Mounted	1	8	Default	Default	Pump
Crane, 40-ton, Truck Mounted, All-Terrain	1	8	Default	Default	Crane
D4 Dozer	1	8	Default	Default	Dozer
Drill Rig, Rotary	1	8	Default	Default	Drill Rig
Drill Rig, Rotosonic	1	8	Default	Default	Drill Rig
Drilling Development/Testing Rig	1	8	Default	Default	Other Construction equip
Excavator, Medium	2	8	Default	Default	Excavator
Excavator, Small/Mini	1	8	60	Default	Excavator (60 hp)
Fork Lift, Long Reach	1	8	Default	Default	Rough Forklift
Loader, with 4-Yard Bucket	2	8	Default	Default	T/L/B
Man/Boom Lift	1	8	Default	Default	Aerial Lift
Plate Vibratory Compactor	2	8	Default	Default	Plate Compactor
Scraper	1	8	Default	Default	scrapper
Soil Compactor - 24" Walk Behind	1	8	Default	Default	Plate Compactor
Soil Compactor - 54"	2	8	Default	Default	Roller
2,000 Gal Water Truck	4	6	Default	Default	Offhighway Truck
Concrete Ready-Mix Truck	3	1	Default	Default	Offhighway Truck
Drill Rig Support (pipe truck/tender)	1	6	Default	Default	Offhighway Truck
Dump Truck	1	6	Default	Default	Offhighway Truck

Topock
Assumptions

Phase 2 (uses Grading Phase)

Equipment piece	#/day	Hrs	HP	LF	
Generators	2	8	Default	Default	Generator Set
Backhoe, Medium	1	8	Default	Default	T/L/B
Backhoe, Small	2	8	Default	Default	T/L/B
Concrete Pump Trailer-Mounted	1	8	Default	Default	Pump
Crane, 40-ton, Truck Mounted, All-Terrain	1	8	Default	Default	Crane
Drill Rig, Rotary	1	8	Default	Default	Drill Rig
Drill Rig, Rotosonic	1	8	Default	Default	Drill Rig
Drilling Development/Testing Rig	1	8	Default	Default	Other Construction equip
Excavator, Medium	2	8	Default	Default	Excavator
Excavator, Small/Mini	1	8	60	Default	Excavator (60 hp)
Fork Lift, Long Reach	1	8	Default	Default	Rough Forklift
Loader, with 4-Yard Bucket	2	8	Default	Default	T/L/B
Man/Boom Lift	1	8	Default	Default	Aerial Lift
Plate Vibratory Compactor	2	8	Default	Default	Plate Compactor
Soil Compactor - 24" Walk Behind	2	8	Default	Default	Plate Compactor
Soil Compactor - 54"	1	8	Default	Default	Roller
2,000 Gal Water Truck	4	6	Default	Default	Offhighway Truck
Concrete Ready-Mix Truck	1	1	Default	Default	Offhighway Truck
Drill Rig Support (pipe truck/tender)	1	6	Default	Default	Offhighway Truck
Dump Truck	1	6	Default	Default	Offhighway Truck

Decomissioning (uses Grading Phase)

Equipment piece	#/day	Hrs	HP	LF	
Generators	1	8	Default	Default	Generator Set
Backhoe, Small	1	8	Default	Default	T/L/B
Crane, 40-ton, Truck Mounted, All-Terrain	1	8	Default	Default	crane
Excavator, Large with Demolition Hammer	1	8	Default	Default	Excavator
Excavator, Large with Pulverizer	1	8	Default	Default	Excavator
Excavator, Large with Shear	1	8	Default	Default	Excavator
Fork Lift, Long Reach	1	8	Default	Default	Rough forklift
Loader, with 4-Yard Bucket	1	8	Default	Default	T/L/B
Mobile Concrete Crusher	1	8	Default	Default	Concrete crusher
2,000 Gal Water Truck	1	6	Default	Default	Offhighway Truck
Dump Truck	1	6	Default	Default	Offhighway Truck

Topock
Assumptions

Trips and VMT

	Worker		Vendor/Haul	
Phase	# Trips	Miles	# Trips	Miles
Pre-Construction/Mobilization	160	31.95833333	12	51.62082
Phase 1	112	31.95833333	23	51.62082
Phase 2	121	31.95833333	21	51.62082
IM3 Decomissioning	25	31.95833333	5	51.62082

Miles	Onsite Paved	Onsite Dirt	Offsite Paved	% Paved	% Unpaved
Worker	1.74	0.22	30	99.32%	0.68%
Vendor/Haul	1.59	0.03	50	99.94%	0.06%

Topock
Assumptions

PROJECT OPERATIONAL INFORMATION

Operational Mobile Sources

Trip Rate:

	Phase 1	Phase 2		% type		Miles
Workers	58	58	daily trips	61.54%	C-C %	32
Delivery	40	40	daily trips	38.46%	C-W%	52
Start-up	6	6	daily trips			
	104	104				

Trip rate 9.904762 per ksf

Energy Use:

Electricity

7,820,000	kWh annually
15,200.00	Annual Solar Offset
7,804,800	Net kWh annual consumption
743.31	kWh/sqft annual usage
371.66	kWh/sqft annual usage per phase

Natural Gas

282.5	scfh (kBTU)/ hr TEGs
2,474,700	kBTU/yr (24 hrs/day & 365 days/yr)
255	scfh (kBTU)/ hr Generator
734,400	kBTU/yr (24 hrs/day & 120 days/yr)
3,209,100	Total kBTU/yr
306	kBTU/yr/unit

Water use: Drinking water to be brought in. Assumes default for water to septic.

Solid waste: Default left for General Office

Well Maintenance

Equipment piece	#/day	Hrs	HP	LF	
Crane, 40-ton, Truck Mounted, All-Terrain	1	8	Default	Default	Crane
Drill Rig, Rotary	1	8	Default	Default	Drill Rig
Drilling Development/Testing Rig	1	8	Default	Default	Other Construction equip
Fork Lift, Long Reach	1	8	Default	Default	Rough Forklift
Man/Boom Lift	1	8	Default	Default	Aerial Lift
Drill Rig Support (pipe truck/tender)	1	6	Default	Default	Offhighway Truck

Future Activity Allowance

Equipment piece	#/day	Hrs	HP	LF	
Crane, 40-ton, Truck Mounted, All-Terrain	1	8	Default	Default	Crane
Drill Rig, Rotary	1	8	Default	Default	Drill Rig
Drilling Development/Testing Rig	1	8	Default	Default	Other Construction equip
Fork Lift, Long Reach	1	8	Default	Default	Rough Forklift
Man/Boom Lift	1	8	Default	Default	Aerial Lift
Drill Rig Support (pipe truck/tender)	1	6	Default	Default	Offhighway Truck
Backhoe, Small	1	8	Default	Default	T/L/B
Excavator, Medium	1	8	Default	Default	Excavator
Soil Compactor - 54"	1	8	Default	Default	Roller
Concrete Pump Trailer-Mounted	1	8	Default	Default	Pump
Concrete Ready-Mix Truck	1	1	Default	Default	Offhighway Truck
2,000 Gal Water Truck	1	6	Default	Default	Offhighway Truck
Dump Truck	1	6	Default	Default	Offhighway Truck

Topock
Assumptions

Notes: Future Activity Allowance

- Modeled in separate CalEEMod Run as "construction" although assumed to occur during operation.
- Assumes 1 acre total disturbance per well (including roads/infrastructure construction)
- Assumes activites occur over 250 days per year with 5 days per week activities.

EQUIPMENT USED DURING FINAL GROUNDWATER REMEDY PROJECT

Type of Equipment Used	Number at Peak Week			
	Pre-Construction	Remedy Construction		IM-3 Decommissioning
		Phase 1	Phase 2	
2,000 Gal Water Truck	1	20	17	2
Backhoe, Medium	1	1	1	
Backhoe, Small		5	6	1
Concrete Pump Trailer-Mounted	1	1	1	
Concrete Ready-Mix Truck	1	11	3	
Crane, 40-ton, Truck Mounted, All-Terrain	1	1	1	1
D4 Dozer		2		
Drill Rig, Rotary		2	2	
Drill Rig, Rotosonic		2	2	
Drill Rig Support (pipe truck/tender)		4	4	
Drilling Development/Testing Rig		2	2	
Dump Truck	1	1	1	2
Excavator, Large with Demolition Hammer				1
Excavator, Large with Pulverizer				1
Excavator, Large with Shear				1
Excavator, Medium	1	6	7	
Excavator, Small/Mini		2	3	
Fork Lift, Long Reach	1	5	5	1
Loader, with 4-Yard Bucket	1	7	7	2
Man/Boom Lift	1	1	1	
Mobile Concrete Crusher				1
Plate Vibratory Compactor		8	9	
Scraper		3		
Soil Compactor - 24" Walk Behind		5	7	
Soil Compactor - 54"	1	5	4	
Notes:		2.5 years	2 years	

Equipment estimate is provided for the peak week of construction activity for the periods provided above.

Peak week and construction activity during that week based on 100% CRAWP schedule and 100% Design cost estimate. Detailed construction scheduling not yet performed.

All equipment above is diesel-powered.

Small/Medium/Large classifications based on general construction industry convention.

Topock
Summary Tables

Table 4.2-8 Peak Daily Construction Emissions						
Phase	**Lbs/day**					
	ROG	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Pre-Construction	7.34	71.86	77.42	0.19	26.24	6.39
Phase 1 Construction	15.21	**159.57**	119.48	0.24	25.99	10.73
Phase 2 Construction	10.63	**107.28**	92.19	0.21	23.89	7.10
Decommissioning	3.99	38.42	35.07	0.07	5.57	2.28
MDAQMD Threshold	137	137	548	137	82	82
Significant?	No	Yes	No	No	No	No
Maximum Scenario						
Phase 2 Construction	10.63	107.28	92.19	0.21	23.89	7.10
Decommissioning	3.99	38.42	35.07	0.07	5.57	2.28
Phase 1 Operation	1.28	10.97	12.49	0.03	2.58	0.78
Total Max Scenario	15.90	**156.68**	139.75	0.32	32.03	10.16
MDAQMD Threshold	137	137	548	137	82	82
Significant?	No	Yes	No	No	No	No
Source: ESA 2016 Modeling						

Table 4.2-8 Mitigated Peak Daily Construction Emissions	
Phase	**Lbs/day**
	NOx
Pre-Construction	58.07
Phase 1 Construction	104.43
Phase 2 Construction	85.60
Decommissioning	30.90
MDAQMD Threshold	***137***
Significant?	**No**
Maximum Scenario	
Phase 2 Construction	85.60
Decommissioning	30.90
Phase 1 Operation	10.97
Total Max Scenario	127.47
MDAQMD Threshold	***137***
Significant?	**No**
Source: ESA 2016 Modeling	

Topock
Summary Tables

Table 4.2-10 Operational Emissions						
Phase	**Tons/year**					
	ROG	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Phase 1	0.53	4.54	5.19	0.01	0.59	0.28
Phase 2	0.17	0.70	2.54	0.01	0.42	0.12
Future Activities Allowance	0.57	5.74	4.76	0.01	1.56	0.38
Total Emissions	1.28	10.97	12.49	0.03	2.58	0.78
MDAQMD Threshold	25	25	100	25	15	15
Significant?	No	No	No	No	No	No
Source: ESA 2016 Modeling						

Table 4.2-11 Construction GHG Emissions	
Year	**CO**
2017	2,513
2018	2,341
2019	2,107
2020	2,513
Decommissioning	2,513
Total	10,285
Annual Construction[1]	343
[1] Amortized over 30 years	
Source: ESA 2016 Modeling	

Table 4.2-11 Operational GHG Emissions	
Year	**CO**
Phase 1	2,302
Phase 2	1,773
Future Activity Allowance	1,562
Sub Total	5,636.51
Amortized Construction[1]	343
Total	***5,979.34***
Threshold	90,719
Significant?	No
[1] Amortized over 30 years	
Source: ESA 2016 Modeling	

Topock
Construction Inputs from CalEEMod Construction

Unmitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
				lbs/day			
Pre-Construction	Onsite	4.78	48.89	31.60	0.06	3.86	2.56
	offsite	2.56	22.96	45.83	0.13	22.38	3.83
	Total	7.34	71.86	77.42	0.19	26.24	6.39
Phase 1 Construction	Onsite	13.88	148.90	92.55	0.17	11.24	8.36
	offsite	1.34	10.67	26.93	0.07	14.75	2.37
	Total	15.21	**159.57**	119.48	0.24	25.99	10.73
Phase 2 Construction	Onsite	9.46	98.41	67.11	0.15	7.28	4.66
	offsite	1.18	8.87	25.08	0.07	16.61	2.44
	Total	10.63	107.28	92.19	0.21	23.89	7.10
IM3 Decomissioning	Onsite	3.75	36.55	29.90	0.06	2.07	1.73
	offsite	0.24	1.87	5.17	0.02	3.50	0.55
	Total	3.99	38.42	35.07	0.07	5.57	2.28
SCAQMD Thresholds		137.00	137	548	137	82	82
	Significant	**No**	**Yes**	**No**	**No**	**No**	**No**

Max Scenario

Phase 2 Construction	Onsite	9.46	98.41	67.11	0.15	7.28	4.66
	offsite	1.18	8.87	25.08	0.07	16.61	2.44
	Total	10.63	107.28	92.19	0.21	23.89	7.10
IM3 Decomissioning	Onsite	3.75	36.55	29.90	0.06	2.07	1.73
	offsite	0.24	1.87	5.17	0.02	3.50	0.55
	Total	3.99	38.42	35.07	0.07	5.57	2.28
Phase 1 Operation	Total	1.28	10.97	12.49	0.03	2.58	0.78
Total Max Scenario		15.90	**156.68**	139.75	0.32	32.03	10.16
SCAQMD Thresholds		137.00	137	548	137	82	82
	Significant	**No**	**Yes**	**No**	**No**	**No**	**No**

Topock
Construction Inputs from CalEEMod Construction

Unmitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Winter					
Pre-Construction	Onsite	4.78	48.89	31.60	0.06	3.86	2.56
	offsite	2.48	22.96	40.94	0.13	22.38	3.83
	Total	7.26	71.86	72.54	0.19	26.24	6.39
Phase 1 Construction	Onsite	13.88	148.90	92.55	0.17	11.24	8.36
	offsite	1.25	10.67	22.85	0.06	14.75	2.37
	Total	15.13	159.57	115.41	0.24	25.99	10.73
Phase 2 Construction	Onsite	9.46	98.41	67.11	0.15	7.28	4.66
	offsite	1.09	8.87	21.06	0.06	16.61	2.44
	Total	10.55	107.28	88.17	0.21	23.89	7.10
IM3 Decomissioning	Onsite	3.75	36.55	29.90	0.06	2.07	1.73
	offsite	0.22	1.87	4.37	0.01	3.50	0.55
	Total	3.97	38.42	34.27	0.07	5.57	2.28

*Note: "Mitigated" emissions are used for "Unmitigated" PM10 and PM2.5 for fugitive and offfsite vehicles to account for the effect of watering as required by MDAQMD Rule 403 and the Remedy Design Plans.

Topock

Construction Inputs from CalEEMod Construction

		Winter					
		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		By Phase Only					
Pre-Construction	Fugitive					1.29	0.14
	Onsite	4.7804	48.8946	31.5977	5.94E-02	2.57	2.42
	Offiste	2.4821	22.9647	40.9401	1.26E-01	22.38	3.83
	Total	7.2625	71.8593	72.5378	0.1856	26.24	6.39
Phase 1 Construction	Fugitive					4.01	1.63
	Onsite	13.8766	148.9	92.5527	1.75E-01	7.23	6.73
	Offiste	1.2548	10.6738	22.8546	6.25E-02	14.75	2.37
	Total	15.1314	159.5738	115.4073	0.2374	25.99	10.73
Phase 2 Construction	Fugitive					2.59	0.28
	Onsite	9.4592	98.4098	67.1083	0.1475	4.69	4.38
	Offiste	1.0923	8.8736	21.0583	6.20E-02	16.61	2.44
	Total	10.5515	107.2834	88.1666	0.2095	23.89	7.10
IM3 Decomissioning	Fugitive					0.26	0.03
	Onsite	3.7463	36.5539	29.8998	0.0592	1.81	1.70
	Offiste	0.223	1.8662	4.3657	1.42E-02	3.50	0.55
	Total	3.9693	38.4201	34.2655	0.0734	5.57	2.28

Topock
Construction Inputs from CalEEMod Construction

Unmitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Summer					
Pre-Construction	Onsite	4.78	48.89	31.60	0.06	3.86	2.56
	offsite	2.56	21.94	45.83	0.13	22.38	3.83
	Total	7.34	70.83	77.42	0.19	26.24	6.39
Phase 1 Construction	Onsite	13.88	148.90	92.55	0.17	11.24	8.36
	offsite	1.34	10.18	26.93	0.07	14.75	2.37
	Total	15.21	159.08	119.48	0.24	25.99	10.73
Phase 2 Construction	Onsite	9.46	98.41	67.11	0.15	7.28	4.66
	offsite	1.18	8.47	25.08	0.07	15.60	2.44
	Total	10.63	106.88	92.19	0.21	22.89	7.10
IM3 Decomissioning	Onsite	3.75	36.55	29.90	0.06	2.07	1.73
	offsite	0.24	1.78	5.17	0.02	3.50	0.55
	Total	3.99	38.34	35.07	0.07	5.57	2.28

*Note: "Mitigated" emissions are used for "Unmitigated" PM10 and PM2.5 for fugitive and offfsite vehicles to account for the effect of watering as required by MDAQMD Rule 403 and the Remedy Design Plans.

Topock

Construction Inputs from CalEEMod Construction

		Summer					
		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		By Phase Only					
Pre-Construction	Fugitive					1.29	0.14
	Onsite	4.78E+00	4.89E+01	3.16E+01	5.94E-02	2.57	2.42
	Offiste	2.5567	21.9386	45.8257	1.32E-01	22.38	3.83
	Total	7.3371	70.8332	77.4234	0.1917	26.24	6.39
Phase 1 Construction	Fugitive					4.01	1.63
	Onsite	1.39E+01	1.49E+02	9.26E+01	1.75E-01	7.23	6.73
	Offiste	1.3355	10.183	26.9282	6.68E-02	14.75	2.37
	Total	15.2121	159.083	119.4809	0.2417	25.99	10.73
Phase 2 Construction	Fugitive					2.59	0.28
	Onsite	9.46E+00	9.84E+01	6.71E+01	1.48E-01	4.69	4.38
	Offiste	1.1754	8.4733	25.0812	6.66E-02	15.60	2.44
	Total	10.6346	106.8831	92.1895	0.2141	22.89	7.10
IM3 Decomissioning	Fugitive					0.26	0.03
	Onsite	3.75E+00	3.66E+01	2.99E+01	5.92E-02	1.81	1.70
	Offiste	0.2396	1.783	5.1741	1.53E-02	3.50	0.55
	Total	3.9859	38.3369	35.0739	0.0745	5.57	2.28

Topock
Construction Inputs from CalEEMod Construction

Mitigation: Tier 4i Equipment as available or equipment that meets Tier 4i emissions standards.

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Pre-Construction	Onsite	3.06	35.10	32.78	0.06	2.57	1.38
	offsite	2.56	22.96	45.83	0.13	22.38	3.83
	Total	5.62	58.07	78.60	0.19	24.95	5.21
Phase 1 Construction	Onsite	7.68	**93.76**	92.19	0.17	6.96	4.44
	offsite	1.34	10.67	26.93	0.07	14.75	2.37
	Total	9.01	104.43	119.12	0.24	21.71	6.81
Phase 2 Construction	Onsite	6.42	76.73	75.65	0.15	5.01	2.59
	offsite	1.18	8.87	25.08	0.07	16.61	2.44
	Total	7.60	85.60	100.73	0.21	21.62	5.03
IM3 Decomissioning	Onsite	2.55	29.03	32.39	0.06	1.20	0.94
	offsite	0.24	1.87	5.17	0.02	3.50	0.55
	Total	2.79	30.90	37.57	0.07	4.70	1.49
SCAQMD Thresholds		137.00	137	548	137	82	82
	Significant	**No**	**No**	**No**	**No**	**No**	**No**
	tons/year	**25**	**25**	**100**	**25**	**15**	**15**

Max Scenario

Phase 2 Construction	Onsite	6.42	76.73	75.65	0.15	5.01	2.59
	offsite	1.18	8.87	25.08	0.07	16.61	2.44
	Total	7.60	85.60	100.73	0.21	21.62	5.03
IM3 Decomissioning	Onsite	2.55	29.03	32.39	0.06	1.20	0.94
	offsite	0.24	1.87	5.17	0.02	3.50	0.55
	Total	2.79	30.90	37.57	0.07	4.70	1.49
Phase 1 Operation	Total	1.28	10.97	12.49	0.03	2.58	0.78
Total Max Scenario		11.66	**127.47**	150.79	0.32	28.89	7.29
SCAQMD Thresholds		137.00	137	548	137	82	82
	Significant	**No**	**No**	**No**	**No**	**No**	**No**

Topock
Construction Inputs from CalEEMod Construction

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Winter					
Pre-Construction	Onsite	3.06	35.10	32.78	0.06	2.57	1.38
	offsite	2.48	22.96	40.94	0.13	22.38	3.83
	Total	5.54	58.07	73.72	0.19	24.95	5.21
Phase 1 Construction	Onsite	7.68	93.76	92.19	0.17	6.96	4.44
	offsite	1.25	10.67	22.85	0.06	14.75	2.37
	Total	8.93	104.43	115.05	0.24	21.71	6.81
Phase 2 Construction	Onsite	6.42	76.73	75.65	0.15	5.01	2.59
	offsite	1.09	8.87	21.06	0.06	16.61	2.44
	Total	7.52	85.60	96.71	0.21	21.62	5.03
IM3 Decomissioning	Onsite	2.55	29.03	32.39	0.06	1.20	0.94
	offsite	0.22	1.87	4.37	0.01	3.50	0.55
	Total	2.77	30.90	36.76	0.07	4.70	1.49

Topock

Construction Inputs from CalEEMod Construction

		Winter					
		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		By Phase Only					
Pre-Construction	Fugitive					1.29	0.14
	Onsite	3.0603	35.1039	32.7768	5.94E-02	1.28	1.24
	Offiste	2.4821	22.9647	40.9401	1.26E-01	22.38	3.83
	Total	5.5424	58.0686	73.7169	0.1856	24.95	5.21
Phase 1 Construction	Fugitive					4.01	1.63
	Onsite	7.6776	93.7559	92.1919	1.75E-01	2.95	2.81
	Offiste	1.2548	10.6738	22.8546	6.24E-02	14.75	2.37
	Total	8.9324	104.4297	115.0465	0.2373	21.71	6.81
Phase 2 Construction	Fugitive					2.59	0.28
	Onsite	6.4234	76.7264	75.6514	0.1475	2.42	2.31
	Offiste	1.0923	8.8736	21.0583	6.20E-02	16.61	2.44
	Total	7.5157	85.6	96.7097	0.2095	21.62	5.03
IM3 Decomissioning	Fugitive					0.26	0.03
	Onsite	2.5501	29.0315	32.3948	0.0592	0.94	0.91
	Offiste	0.223	1.8662	4.3657	1.42E-02	3.50	0.55
	Total	2.7731	30.8977	36.7605	0.0734	4.70	1.49

Topock

Construction Inputs from CalEEMod Construction

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Summer					
Pre-Construction	Onsite	3.06	35.10	32.78	0.06	2.57	1.38
	offsite	2.56	21.94	45.83	0.13	22.38	3.83
	Total	5.62	57.04	78.60	0.19	24.95	5.21
Phase 1 Construction	Onsite	7.68	93.76	92.19	0.17	6.96	4.44
	offsite	1.34	10.18	26.93	0.07	14.75	2.37
	Total	9.01	103.94	119.12	0.24	21.71	6.81
Phase 2 Construction	Onsite	6.42	76.73	75.65	0.15	5.01	2.59
	offsite	1.18	8.47	25.08	0.07	15.60	2.44
	Total	7.60	85.20	100.73	0.21	20.62	5.03
IM3 Decomissioning	Onsite	2.55	29.03	32.39	0.06	1.20	0.94
	offsite	0.24	1.78	5.17	0.02	3.50	0.55
	Total	2.79	30.81	37.57	0.07	4.70	1.49

Topock

Construction Inputs from CalEEMod Construction

		Summer					
		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		By Phase Only					
Pre-Construction	Fugitive					1.29	0.14
	Onsite	3.0603	35.1039	32.7768	0.0594	1.28	1.24
	Offiste	2.5567	21.9386	45.8257	0.1323	22.38	3.83
	Total	5.617	57.0425	78.6025	0.1917	24.95	5.21
Phase 1 Construction	Fugitive					4.01	1.63
	Onsite	7.6776	93.7559	92.1919	0.1749	2.95	2.81
	Offiste	1.3355	10.183	26.9282	0.0668	14.75	2.37
	Total	9.0131	103.9389	119.1201	0.2417	21.71	6.81
Phase 2 Construction	Fugitive					2.59	0.28
	Onsite	6.4234	76.7264	75.6514	0.1475	2.42	2.31
	Offiste	1.1754	8.4733	25.0812	0.0666	15.60	2.44
	Total	7.5988	85.1997	100.7326	0.2141	20.62	5.03
IM3 Decomissioning	Fugitive					0.26	0.03
	Onsite	2.5501	29.0315	32.3948	0.0592	0.94	0.91
	Offiste	0.2396	1.783	5.1741	0.0153	3.50	0.55
	Total	2.7897	30.8145	37.5689	0.0745	4.70	1.49

Topock

Construction Inputs from CalEEMod Construction

Mitigation: Tier 4 Equipment as available or equipment that meets Tier 4 emissions standards. With a minimum of 11 pieces of equipment in phase 2 meeting Tier 4 final standards.

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day					
Pre-Construction	Onsite	2.91	27.15	32.31	0.06	2.57	1.38
	offsite	2.56	22.96	45.83	0.13	22.38	3.83
	Total	5.47	50.11	78.14	0.19	24.95	5.21
Phase 1 Construction	Onsite	7.44	**80.48**	91.72	0.17	6.92	4.39
	offsite	1.34	10.67	26.93	0.07	14.75	2.37
	Total	8.78	91.15	118.65	0.24	21.67	6.76
Phase 2 Construction	Onsite	6.18	63.15	75.19	0.15	4.97	2.55
	offsite	1.18	8.87	25.08	0.07	16.61	2.44
	Total	7.36	72.02	100.27	0.21	21.57	4.99
IM3 Decomissioning	Onsite	2.43	20.03	31.93	0.06	1.20	0.94
	offsite	0.24	1.87	5.17	0.02	3.50	0.55
	Total	2.67	21.90	37.11	0.07	4.70	1.49
SCAQMD Thresholds		137.00	137	548	137	82	82
	Significant	**No**	**No**	**No**	**No**	**No**	**No**
	tons/year	**25**	**25**	**100**	**25**	**15**	**15**

Max Scenario

Phase 2 Construction	Onsite	6.18	63.15	75.19	0.15	4.97	2.55
	offsite	1.18	8.87	25.08	0.07	16.61	2.44
	Total	7.36	72.02	100.27	0.21	21.57	4.99
IM3 Decomissioning	Onsite	2.43	20.03	31.93	0.06	1.20	0.94
	offsite	0.24	1.87	5.17	0.02	3.50	0.55
	Total	2.67	21.90	37.11	0.07	4.70	1.49
Phase 1 Operation	Total	1.28	10.97	12.49	0.03	2.58	0.78
Total Max Scenario		11.30	**104.89**	149.87	0.32	28.85	7.25
SCAQMD Thresholds		137.00	137	548	137	82	82
	Significant	**No**	**No**	**No**	**No**	**No**	**No**

Topock
Construction Inputs from CalEEMod Construction

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Winter					
Pre-Construction	Onsite	2.91	27.15	32.31	0.06	2.57	1.38
	offsite	2.48	22.96	40.94	0.13	22.38	3.83
	Total	5.39	50.11	73.25	0.19	24.95	5.21
Phase 1 Construction	Onsite	7.44	80.48	91.72	0.17	6.92	4.39
	offsite	1.25	10.67	22.85	0.06	14.75	2.37
	Total	8.70	91.15	114.58	0.24	21.67	6.76
Phase 2 Construction	Onsite	6.18	63.15	75.19	0.15	4.97	2.55
	offsite	1.09	8.87	21.06	0.06	16.61	2.44
	Total	7.27	72.02	96.25	0.21	21.57	4.99
IM3 Decomissioning	Onsite	2.43	20.03	31.93	0.06	1.20	0.94
	offsite	0.22	1.87	4.37	0.01	3.50	0.55
	Total	2.65	21.90	36.30	0.07	4.70	1.49

*Note: The analysis models excavators, roughterrain forklifts, rollers, tractors/loaders/backhoes, and cranes as Tier 4 Final equipment because these have low horse power and therefore would have lower emission reductions with respect to other equipment.

Topock

Construction Inputs from CalEEMod Construction

		Winter					
		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		By Phase Only					
Pre-Construction	Fugitive					1.29	0.14
	Onsite	2.9118	27.1469	32.3145	5.94E-02	1.28	1.24
	Offiste	2.4821	22.9647	40.9401	1.26E-01	22.38	3.83
	Total	5.3939	50.1116	73.2546	0.1856	24.95	5.21
Phase 1 Construction	Fugitive					4.01	1.63
	Onsite	7.441	80.4767	91.7208	1.75E-01	2.91	2.76
	Offiste	1.2548	10.6738	22.8546	6.24E-02	14.75	2.37
	Total	8.6958	91.1505	114.5754	0.2372	21.67	6.76
Phase 2 Construction	Fugitive					2.59	0.28
	Onsite	6.18	63.1473	75.189	0.1475	2.38	2.27
	Offiste	1.0923	8.8736	21.0583	6.20E-02	16.61	2.44
	Total	7.2723	72.0209	96.2473	0.2095	21.57	4.99
IM3 Decomissioning	Fugitive					0.26	0.03
	Onsite	2.4284	20.0304	31.9324	0.0592	0.94	0.91
	Offiste	0.223	1.8662	4.3657	1.42E-02	3.50	0.55
	Total	2.6514	21.8966	36.2981	0.0734	4.70	1.49

Topock
Construction Inputs from CalEEMod Construction

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Summer					
Pre-Construction	Onsite	2.91	27.15	32.31	0.06	2.57	1.38
	offsite	2.56	21.94	45.83	0.13	22.38	3.83
	Total	5.47	49.09	78.14	0.19	24.95	5.21
Phase 1 Construction	Onsite	7.44	80.48	91.72	0.17	6.92	4.39
	offsite	1.34	10.18	26.93	0.07	14.75	2.37
	Total	8.78	90.66	118.65	0.24	21.67	6.76
Phase 2 Construction	Onsite	6.18	63.15	75.19	0.15	4.97	2.55
	offsite	1.18	8.47	25.08	0.07	15.60	2.44
	Total	7.36	71.62	100.27	0.21	20.57	4.99
IM3 Decomissioning	Onsite	2.43	20.03	31.93	0.06	1.20	0.94
	offsite	0.24	1.78	5.17	0.02	3.50	0.55
	Total	2.67	21.81	37.11	0.07	4.70	1.49

Topock

Construction Inputs from CalEEMod Construction

		Summer					
		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		By Phase Only					
Pre-Construction	Fugitive					1.29	0.14
	Onsite	2.9118	27.1469	32.3145	0.0594	1.28	1.24
	Offiste	2.5567	21.9386	45.8257	0.1323	22.38	3.83
	Total	5.4685	49.0855	78.1402	0.1917	24.95	5.21
Phase 1 Construction	Fugitive					4.01	1.63
	Onsite	7.441	80.4767	91.7208	0.1748	2.91	2.76
	Offiste	1.3355	10.183	26.9282	0.0668	14.75	2.37
	Total	8.7765	90.6597	118.649	0.2416	21.67	6.76
Phase 2 Construction	Fugitive					2.59	0.28
	Onsite	6.18	63.1473	75.189	0.1475	2.38	2.27
	Offiste	1.1754	8.4733	25.0812	0.0666	15.60	2.44
	Total	7.3554	71.6206	100.2702	0.2141	20.57	4.99
IM3 Decomissioning	Fugitive					0.26	0.03
	Onsite	2.4284	20.0304	31.9324	0.0592	0.94	0.91
	Offiste	0.2396	1.783	5.1741	0.0153	3.50	0.55
	Total	2.668	21.8134	37.1065	0.0745	4.70	1.49

Topock
Construction Inputs from CalEEMod Construction

Mitigation: Tier 4 interim equipment except Crane, Drill rings

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day					
Pre-Construction	Onsite	2.91	41.30	32.31	0.06	2.57	1.38
	offsite	2.48	22.96	40.94	0.13	22.38	3.83
	Total	5.39	64.26	73.25	0.19	24.95	5.21
Phase 1 Construction	Onsite	7.44	**108.63**	91.72	0.17	6.92	4.39
	offsite	1.25	10.67	22.85	0.06	14.75	2.37
	Total	8.70	119.30	114.58	0.24	21.67	6.76
Phase 2 Construction	Onsite	6.18	88.33	75.19	0.15	4.97	2.55
	offsite	1.09	8.87	21.06	0.06	16.61	2.44
	Total	7.27	97.20	96.25	0.21	21.57	4.99
IM3 Decomissioning	Onsite	2.43	33.41	31.93	0.06	1.20	0.94
	offsite	0.22	1.87	4.37	0.01	3.50	0.55
	Total	2.65	35.28	36.30	0.07	4.70	1.49
SCAQMD Thresholds		137.00	137	548	137	82	82
	Significant	**No**	**No**	**No**	**No**	**No**	**No**
	tons/year	**25**	**25**	**100**	**25**	**15**	**15**

Max Scenario

Phase 2 Construction	Onsite	6.18	88.33	75.19	0.15	4.97	2.55
	offsite	1.09	8.87	21.06	0.06	16.61	2.44
	Total	7.27	97.20	96.25	0.21	21.57	4.99
IM3 Decomissioning	Onsite	2.43	33.41	31.93	0.06	1.20	0.94
	offsite	0.22	1.87	4.37	0.01	3.50	0.55
	Total	2.65	35.28	36.30	0.07	4.70	1.49
Phase 1 Operation	Total	0.24	1.87	5.17	0.02	3.50	0.55
Total Max Scenario		10.16	**134.35**	137.72	0.30	29.78	7.02
SCAQMD Thresholds		137.00	137	548	137	82	82
	Significant	**No**	**No**	**No**	**No**	**No**	**No**

Topock
Construction Inputs from CalEEMod Construction

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Winter					
Pre-Construction	Onsite	2.91	41.30	32.31	0.06	2.57	1.38
	offsite	2.48	22.96	40.94	0.13	22.38	3.83
	Total	5.39	64.26	73.25	0.19	24.95	5.21
Phase 1 Construction	Onsite	7.44	108.63	91.72	0.17	6.92	4.39
	offsite	1.25	10.67	22.85	0.06	14.75	2.37
	Total	8.70	119.30	114.58	0.24	21.67	6.76
Phase 2 Construction	Onsite	6.18	88.33	75.19	0.15	4.97	2.55
0	offsite	1.09	8.87	21.06	0.06	16.61	2.44
0	Total	7.27	97.20	96.25	0.21	21.57	4.99
IM3 Decomissioning	Onsite	2.43	33.41	31.93	0.06	1.20	0.94
	offsite	0.22	1.87	4.37	0.01	3.50	0.55
	Total	2.65	35.28	36.30	0.07	4.70	1.49

*Note: The analysis models excavators, roughterrain forklifts, rollers, tractors/loaders/backhoes, and cranes as Tier 4 Final equipment because these have low horse power and therefore would have lower emission reductions with respect to other equipment.

Topock

Construction Inputs from CalEEMod Construction

		Winter					
		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		Winter					
Pre-Construction	Fugitive					1.29	0.14
	Onsite	2.9118	41.2996	32.3145	5.94E-02	1.28	1.24
	Offiste	2.4821	22.9647	40.9401	1.26E-01	22.38	3.83
	Total	5.3939	64.2643	73.2546	0.1856	24.95	5.21
Phase 1 Construction	Fugitive					4.01	1.63
	Onsite	7.441	108.628	91.7208	1.75E-01	2.91	2.76
	Offiste	1.2548	10.6738	22.8546	6.24E-02	14.75	2.37
	Total	8.6958	119.3018	114.5754	0.2372	21.67	6.76
Phase 2 Construction	Fugitive					2.59	0.28
	Onsite	6.18	88.3286	75.189	0.1475	2.38	2.27
	Offiste	1.0923	8.8736	21.0583	6.20E-02	16.61	2.44
	Total	7.2723	97.2022	96.2473	0.2095	21.57	4.99
IM3 Decomissioning	Fugitive					0.26	0.03
	Onsite	2.4284	33.4137	31.9324	0.0592	0.94	0.91
	Offiste	0.223	1.8662	4.3657	1.42E-02	3.50	0.55
	Total	2.6514	35.2799	36.2981	0.0734	4.70	1.49

Topock
Construction Inputs from CalEEMod Construction

Mitigated Construction

		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		lbs/day Summer					
Pre-Construction	Onsite	2.91	41.30	32.31	0.06	2.57	1.38
	offsite	0.00	0.00	0.00	0.00	22.38	3.83
	Total	2.91	41.30	32.31	0.06	24.95	5.21
Phase 1 Construction	Onsite	7.44	108.63	91.72	0.17	6.92	4.39
	offsite	0.00	0.00	0.00	0.00	14.75	2.37
	Total	7.44	108.63	91.72	0.17	21.67	6.76
Phase 2 Construction	Onsite	6.18	88.33	75.19	0.15	4.97	2.55
	offsite	0.00	0.00	0.00	0.00	15.60	2.44
	Total	6.18	88.33	75.19	0.15	20.57	4.99
IM3 Decomissioning	Onsite	2.43	33.41	31.93	0.06	1.20	0.94
	offsite	0.00	0.00	0.00	0.00	3.50	0.55
	Total	2.43	33.41	31.93	0.06	4.70	1.49

Topock

Construction Inputs from CalEEMod Construction

		Summer					
		ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
		Summer					
Pre-Construction	Fugitive					1.29	0.14
	Onsite	2.9118	41.2996	32.3145	0.0594	1.28	1.24
	Offiste	0	0	0	0	22.38	3.83
	Total	2.9118	41.2996	32.3145	0.0594	24.95	5.21
Phase 1 Construction	Fugitive					4.01	1.63
	Onsite	7.441	108.628	91.7208	0.1748	2.91	2.76
	Offiste	0	0	0	0	14.75	2.37
	Total	7.441	108.628	91.7208	0.1748	21.67	6.76
Phase 2 Construction	Fugitive					2.59	0.28
	Onsite	6.18	88.3286	75.189	0.1475	2.38	2.27
	Offiste	0	0	0	0	15.60	2.44
	Total	6.18	88.3286	75.189	0.1475	20.57	4.99
IM3 Decomissioning	Fugitive					0.26	0.03
	Onsite	2.4284	33.4137	31.9324	0.0592	0.94	0.91
	Offiste	0	0	0	0	3.50	0.55
	Total	2.4284	33.4137	31.9324	0.0592	4.70	1.49

Topock
Operational Summary Emissions

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
			Tons/year			
Area	0.041	0.00E+00	1.00E-04	0.00E+00	0.00E+00	0.00E+00
Energy	0.0173	0.1573	0.1321	9.40E-04	0.012	0.012
Mobile	0.1321	0.696	2.5419	6.15E-03	0.4216	0.1219
Offroad	0.3389	3.6879	2.5167	5.89E-03	0.1595	0.1491
Phase 1 Sub Total	**0.5293**	**4.5412**	**5.1908**	**0.01298**	**0.5931**	**0.283**
Area	0.041	0	0.0001	0	0	0
Energy	0	0	0	0	0	0
Mobile	0.1321	0.696	2.5419	0.00615	0.4216	0.1219
Offroad	0	0	0	0	0	0
Phase 2 sub Total	**0.1731**	**0.696**	**2.542**	**0.00615**	**0.4216**	**0.1219**
FFA*	**0.5732**	**5.735**	**4.7579**	**0.0117**	**1.5604**	**0.3767**
Project Total	1.2756	10.9722	12.4907	0.03083	2.5751	0.7816
Threshold	**25**	**25**	**100**	**25**	**15**	**15**
	No	No	No	No	No	No

*Note Energy and Offroad are consistent for the entire project and not just one phase.

*FFA= Future Activities Allowance

Topock

GHG CalEEMod Results Compiled - SCAQMD Threshold

Unmitigated Construction

	CO_2	CH_4	CH_4 (CO_2e)	N_2O	N_2O (CO_2e)	CO_2e
			MT/year			
2017	2,500.89	0.474	11.85	0	0	2,513
2018	2328.024	0.516	12.9	0	0	2,341
2019	2096.233	4.49E-01	11.2325	0	0	2,107
2020	806.4594	1.81E-01	4.5175	0	0	811
Decommissioning	2,500.89	0.474	11.85	0	0	2,513
Total Project:						10,285
Amortized Construction:						342.83

Topock

GHG CalEEMod Results Compiled - SCAQMD Threshold

Unmitigated Operational

	CO_2	CH_4	CH_4 (CO_2e)	N_2O	N_2O (CO_2e)	CO_2e
	MT/year Annual Unmitigated					
	Proposed Project					
Area	1.90E-04	0.00E+00	0	0.00E+00	0	0.00
Energy	1,288.00	5.46E-02	1.365	1.38E-02	4.1124	1,293.47
Mobile	455.54	2.60E-02	0.65	0	0	456.19
Offroad	525.56	1.48E-01	3.6925	0	0	529.25
Waste	1.98	0.1172	2.93	0	0	4.91
Water	6.95	0.4242	10.605	1.50E-03	0.447	18.01
Phase 1 Subtotal						2,301.83
Area	1.90E-04	0.00E+00	0	0.00E+00	0	0.00
Energy	1,288.00	0.05	1.365	0.01	4.1124	1,293.47
Mobile	455.54	0.03	0.65	0.00	0	456.19
Offroad	0.00	0.00	0	0.00	0	0.00
Waste	1.98	0.12	2.93	0.00	0	4.91
Water	6.95	0.42	10.605	0.00	0.447	18.01
Phase 2 Subtotal						1,772.58
Energy	558.37	0.03	0.64125	0.01	1.5794	560.59
Offroad	907.23	0.28	7.12	0.00	0	914.35
Haul	0.08	0.00	0	0.00	0	0.08
Vendor	15.19	0.00	0.0015	0.00	0	15.19
Worker	71.79	0.00	0.1015	0.00	0	71.89
Future Activity Allowance						1,562.10
Total Project						5,636.51
Amoritized Construction						342.83
Operational Annual						5,636.51
Total Project Annual						5,979.34
Threshold						90,719
Exceed Threshold						No
Project total (30 years)						179,380

* Phase one and Phase 2 operational emissions would be the same with the exception of offroad equipment which would not increase during the combined operation of Phase 1 and Phase 2.

Future Activity Allowence (FAA)

Energy Emissions	KWh	kWh	CO2	CH4		N20	CO2e
Project	7.82	3.91E+00	1.12E+03	5.13E-02	1.2825	1.06E-02	3.1588	1,121.19
FAA	2.36833	2.368333	5.58E+02	2.57E-02	0.64125	5.30E-03	1.5794	560.59

CalEEMod Output Construction

Topock - Construction Only 9-2016

San Bernardino-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	10.50	1000sqft	62.00	10,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Office is used as a surrogate only. Construction is based on project specific information. Acerage is based on area of disturbance and not total site area

Construction Phase - Based on project specific infirmation

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information.

Trips and VMT - Based on Project specific Information

On-road Fugitive Dust - Based on the amount of on and offsite travel daily

Grading - based on project information and CalEEMod defaults

Vehicle Trips - No Operation

Construction Off-road Equipment Mitigation - Based on anticipated mitigation needed. Fugitive dust based on regulatory requirements

Table Name	Column Name	Default Value	New Value
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstructionPhase	PhaseEndDate	9/13/2019	11/1/2019
tblConstructionPhase	PhaseStartDate	4/22/2017	5/1/2017
tblConstructionPhase	PhaseStartDate	10/13/2018	12/1/2018
tblGrading	AcresOfGrading	0.00	212.50
tblGrading	AcresOfGrading	380.00	1,037.50
tblGrading	AcresOfGrading	0.00	1,302.50
tblGrading	AcresOfGrading	0.00	162.50
tblGrading	MaterialImported	0.00	23,800.00
tblLandUse	LotAcreage	0.24	62.00
tblOffRoadEquipment	HorsePower	162.00	60.00
tblOffRoadEquipment	HorsePower	162.00	60.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
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tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
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tblOffRoadEquipment	PhaseName		Decomissioning IM3
tblOnRoadDust	HaulingPercentPave	100.00	99.90
tblOnRoadDust	HaulingPercentPave	100.00	99.90
tblOnRoadDust	HaulingPercentPave	100.00	99.90
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tblOnRoadDust	VendorPercentPave	100.00	99.90
tblOnRoadDust	VendorPercentPave	100.00	99.90
tblOnRoadDust	VendorPercentPave	100.00	99.90
tblOnRoadDust	VendorPercentPave	100.00	99.90
tblOnRoadDust	WorkerPercentPave	100.00	99.30
tblOnRoadDust	WorkerPercentPave	100.00	99.30
tblOnRoadDust	WorkerPercentPave	100.00	99.30
tblOnRoadDust	WorkerPercentPave	100.00	99.30
tblProjectCharacteristics	OperationalYear	2014	2019
tblTripsAndVMT	HaulingTripLength	20.00	52.00
tblTripsAndVMT	HaulingTripLength	20.00	52.00
tblTripsAndVMT	HaulingTripLength	20.00	52.00
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tblTripsAndVMT	VendorTripLength	7.30	52.00

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tblTripsAndVMT	VendorTripNumber	0.00	21.00
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tblTripsAndVMT	WorkerTripLength	10.80	32.00
tblTripsAndVMT	WorkerTripLength	10.80	32.00
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tblTripsAndVMT	WorkerTripNumber	30.00	160.00
tblTripsAndVMT	WorkerTripNumber	83.00	112.00
tblTripsAndVMT	WorkerTripNumber	73.00	121.00
tblTripsAndVMT	WorkerTripNumber	25.00	27.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	15.1314	159.5738	115.4073	0.2374	65.4921	7.5386	68.7517	8.5053	7.0111	15.5163	0.0000	23,302.0228	23,302.0228	5.1454	0.0000	23,410.0753
2018	13.1907	137.3781	106.9310	0.2373	51.3827	6.3371	57.7198	8.5053	5.8966	14.4018	0.0000	22,900.8355	22,900.8355	5.1129	0.0000	23,008.2062
2019	9.5268	95.0643	84.7506	0.2092	51.1589	4.2986	55.4574	5.8159	4.0131	9.8290	0.0000	19,677.4367	19,677.4367	4.2244	0.0000	19,766.1500
2020	3.6413	34.4623	33.4082	0.0734	10.7445	1.6311	12.3756	1.2277	1.5356	2.7633	0.0000	6,874.6820	6,874.6820	1.5443	0.0000	6,907.1130

Total	**41.4902**	**426.4785**	**340.4971**	**0.7574**	**178.7781**	**19.8054**	**194.3045**	**24.0542**	**18.4563**	**42.5105**	**0.0000**	**72,754.9770**	**72,754.9770**	**16.0270**	**0.0000**	**73,091.5445**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	8.9324	104.4297	115.0465	0.2374	22.9773	3.2582	24.9478	3.7148	3.0909	6.8057	0.0000	23,302.0228	23,302.0228	5.1454	0.0000	23,410.0753
2018	8.0759	94.5502	110.1869	0.2373	18.4521	2.8168	21.2689	3.7148	2.6758	6.3906	0.0000	22,900.8355	22,900.8355	5.1129	0.0000	23,008.2062
2019	6.9166	78.4292	93.8179	0.2092	17.9287	2.3671	20.2958	2.4727	2.2508	4.7235	0.0000	19,677.4367	19,677.4367	4.2244	0.0000	19,766.1500
2020	2.5825	28.6785	36.1156	0.0734	3.7025	0.8778	4.5803	0.5221	0.8460	1.3681	0.0000	6,874.6820	6,874.6820	1.5443	0.0000	6,907.1130
Total	**26.5074**	**306.0876**	**355.1669**	**0.7574**	**63.0605**	**9.3199**	**71.0927**	**10.4244**	**8.8635**	**19.2879**	**0.0000**	**72,754.9770**	**72,754.9770**	**16.0270**	**0.0000**	**73,091.5445**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**36.11**	**28.23**	**-4.31**	**0.00**	**64.73**	**52.94**	**63.41**	**56.66**	**51.98**	**54.63**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Construction Only modeling

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Pre-Construction/Mobilization	Grading	1/1/2017	4/21/2017	5	80	
2	Phase 1 Construction	Grading	5/1/2017	10/12/2018	5	380	
3	Phase 2 Construction	Grading	12/1/2018	11/1/2019	5	240	
4	Decomissioning IM3	Grading	11/2/2019	12/25/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Pre-Construction/Mobilization	Aerial Lifts	1	8.00	62	0.31
Pre-Construction/Mobilization	Cranes	1	8.00	226	0.29
Pre-Construction/Mobilization	Excavators	1	8.00	162	0.38
Pre-Construction/Mobilization	Generator Sets	1	8.00	84	0.74
Pre-Construction/Mobilization	Graders	0	8.00	174	0.41
Pre-Construction/Mobilization	Off-Highway Trucks	2	6.00	400	0.38
Pre-Construction/Mobilization	Pumps	1	8.00	84	0.74
Pre-Construction/Mobilization	Rollers	1	8.00	80	0.38
Pre-Construction/Mobilization	Rough Terrain Forklifts	1	8.00	100	0.40
Pre-Construction/Mobilization	Rubber Tired Dozers	0	8.00	255	0.40
Pre-Construction/Mobilization	Scrapers	0	8.00	361	0.48
Pre-Construction/Mobilization	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 1 Construction	Aerial Lifts	1	8.00	62	0.31
Phase 1 Construction	Bore/Drill Rigs	2	8.00	205	0.50
Phase 1 Construction	Cranes	1	8.00	226	0.29
Phase 1 Construction	Excavators	2	8.00	162	0.38
Phase 1 Construction	Excavators	1	8.00	60	0.38
Phase 1 Construction	Forklifts	1	8.00	89	0.20
Phase 1 Construction	Generator Sets	2	8.00	84	0.74
Phase 1 Construction	Graders	0	8.00	174	0.41
Phase 1 Construction	Off-Highway Trucks	6	6.00	400	0.38
Phase 1 Construction	Other Construction Equipment	1	8.00	171	0.42
Phase 1 Construction	Plate Compactors	3	8.00	8	0.43

Phase 1 Construction	Pumps	1	8.00	84	0.74
Phase 1 Construction	Rollers	2	8.00	80	0.38
Phase 1 Construction	Rubber Tired Dozers	1	8.00	255	0.40
Phase 1 Construction	Scrapers	1	8.00	361	0.48
Phase 1 Construction	Tractors/Loaders/Backhoes	5	8.00	97	0.37
Phase 2 Construction	Aerial Lifts	1	8.00	62	0.31
Phase 2 Construction	Bore/Drill Rigs	2	8.00	205	0.50
Phase 2 Construction	Cranes	1	8.00	226	0.29
Phase 2 Construction	Excavators	2	8.00	162	0.38
Phase 2 Construction	Excavators	1	8.00	60	0.38
Phase 2 Construction	Generator Sets	2	8.00	84	0.74
Phase 2 Construction	Graders	0	8.00	174	0.41
Phase 2 Construction	Off-Highway Trucks	6	6.00	400	0.38
Phase 2 Construction	Other Construction Equipment	1	8.00	171	0.42
Phase 2 Construction	Plate Compactors	4	8.00	8	0.43
Phase 2 Construction	Pumps	1	8.00	84	0.74
Phase 2 Construction	Rollers	1	8.00	80	0.38
Phase 2 Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Phase 2 Construction	Rubber Tired Dozers	0	8.00	255	0.40
Phase 2 Construction	Scrapers	0	8.00	361	0.48
Phase 2 Construction	Tractors/Loaders/Backhoes	5	8.00	97	0.37
Decomissioning IM3	Cranes	1	8.00	226	0.29
Decomissioning IM3	Crushing/Proc. Equipment	1	8.00	85	0.78
Decomissioning IM3	Excavators	2	8.00	162	0.38
Decomissioning IM3	Generator Sets	1	8.00	84	0.74
Decomissioning IM3	Graders	0	8.00	174	0.41
Decomissioning IM3	Off-Highway Trucks	2	6.00	400	0.38
Decomissioning IM3	Rough Terrain Forklifts	1	8.00	100	0.40
Decomissioning IM3	Rubber Tired Dozers	0	8.00	255	0.40
Decomissioning IM3	Scrapers	0	8.00	361	0.48

Decomissioning IM3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pre-Construction/Mobilization	Off-Highway Trucks	1	1.00	400	0.38
Phase 1 Construction	Off-Highway Trucks	3	1.00	400	0.38
Phase 2 Construction	Off-Highway Trucks	1	1.00	400	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Pre-Construction/Mobilizatic	12	160.00	12.00	2,975.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Construction	33	112.00	23.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Construction	29	121.00	21.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Decomissioning IM3	10	27.00	5.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Pre-Construction/Mobilization - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8588	0.0000	2.8588	0.3105	0.0000	0.3105			0.0000			0.0000
Off-Road	4.7804	48.8946	31.5977	0.0594		2.5735	2.5735		2.4169	2.4169		5,975.6118	5,975.6118	1.5533		6,008.2305

Total	**4.7804**	**48.8946**	**31.5977**	**0.0594**	**2.8588**	**2.5735**	**5.4323**	**0.3105**	**2.4169**	**2.7274**		**5,975.6118**	**5,975.6118**	**1.5533**		**6,008.2305**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2228	15.7353	14.9258	0.0667	4.5385	0.5098	5.0483	0.7482	0.4690	1.2172		6,628.7475	6,628.7475	0.0312		6,629.4024
Vendor	0.3068	4.6136	3.8175	0.0172	1.4784	0.1527	1.6311	0.2504	0.1404	0.3909		1,703.1684	1,703.1684	7.6400e-003		1,703.3288
Worker	0.9526	2.6159	22.1968	0.0423	56.6165	0.0235	56.6400	6.2892	0.0216	6.3108		3,357.3107	3,357.3107	0.2148		3,361.8214
Total	**2.4821**	**22.9647**	**40.9401**	**0.1262**	**62.6334**	**0.6860**	**63.3194**	**7.2878**	**0.6310**	**7.9188**		**11,689.2266**	**11,689.2266**	**0.2536**		**11,694.5526**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2864	0.0000	1.2864	0.1397	0.0000	0.1397			0.0000			0.0000
Off-Road	3.0603	35.1039	32.7768	0.0594		1.2845	1.2845		1.2370	1.2370	0.0000	5,975.6118	5,975.6118	1.5533		6,008.2305
Total	**3.0603**	**35.1039**	**32.7768**	**0.0594**	**1.2864**	**1.2845**	**2.5709**	**0.1397**	**1.2370**	**1.3767**	**0.0000**	**5,975.6118**	**5,975.6118**	**1.5533**		**6,008.2305**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.2228	15.7353	14.9258	0.0667	2.4765	0.5098	2.9864	0.5423	0.4690	1.0113		6,628.7475	6,628.7475	0.0312		6,629.4024
Vendor	0.3068	4.6136	3.8175	0.0172	0.8130	0.1527	0.9657	0.1840	0.1404	0.3244		1,703.1684	1,703.1684	7.6400e-003		1,703.3288
Worker	0.9526	2.6159	22.1968	0.0423	18.4013	0.0235	18.4248	2.4741	0.0216	2.4957		3,357.3107	3,357.3107	0.2148		3,361.8214
Total	**2.4821**	**22.9647**	**40.9401**	**0.1262**	**21.6908**	**0.6860**	**22.3769**	**3.2004**	**0.6310**	**3.8314**		**11,689.2266**	**11,689.2266**	**0.2536**		**11,694.5526**

3.3 Phase 1 Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9175	0.0000	8.9175	3.6229	0.0000	3.6229			0.0000			0.0000
Off-Road	13.8766	148.9000	92.5527	0.1749		7.2295	7.2295		6.7268	6.7268		17,687.4993	17,687.4993	4.9804		17,792.0867
Total	**13.8766**	**148.9000**	**92.5527**	**0.1749**	**8.9175**	**7.2295**	**16.1471**	**3.6229**	**6.7268**	**10.3496**		**17,687.4993**	**17,687.4993**	**4.9804**		**17,792.0867**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5880	8.8427	7.3168	0.0330	2.8336	0.2926	3.1262	0.4800	0.2692	0.7492		3,264.4061	3,264.4061	0.0147		3,264.7136
Worker	0.6668	1.8311	15.5378	0.0296	39.6316	0.0165	39.6480	4.4025	0.0151	4.4176		2,350.1175	2,350.1175	0.1504		2,353.2750
Total	**1.2548**	**10.6738**	**22.8546**	**0.0625**	**42.4651**	**0.3091**	**42.7742**	**4.8824**	**0.2843**	**5.1667**		**5,614.5235**	**5,614.5235**	**0.1650**		**5,617.9886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0129	0.0000	4.0129	1.6303	0.0000	1.6303			0.0000			0.0000
Off-Road	7.6776	93.7559	92.1919	0.1749		2.9491	2.9491		2.8066	2.8066	0.0000	17,687.4993	17,687.4993	4.9804		17,792.0867
Total	**7.6776**	**93.7559**	**92.1919**	**0.1749**	**4.0129**	**2.9491**	**6.9620**	**1.6303**	**2.8066**	**4.4369**	**0.0000**	**17,687.4993**	**17,687.4993**	**4.9804**		**17,792.0867**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5880	8.8427	7.3168	0.0330	1.5583	0.2926	1.8509	0.3527	0.2692	0.6218		3,264.4061	3,264.4061	0.0147		3,264.7136
Worker	0.6668	1.8311	15.5378	0.0296	12.8809	0.0165	12.8973	1.7319	0.0151	1.7470		2,350.1175	2,350.1175	0.1504		2,353.2750

Total	**1.2548**	**10.6738**	**22.8546**	**0.0625**	**14.4392**	**0.3091**	**14.7483**	**2.0845**	**0.2843**	**2.3688**		**5,614.5235**	**5,614.5235**	**0.1650**		**5,617.9886**

3.3 Phase 1 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9175	0.0000	8.9175	3.6229	0.0000	3.6229			0.0000			0.0000
Off-Road	12.0963	127.9620	86.3963	0.1748		6.0483	6.0483		5.6308	5.6308		17,431.5459	17,431.5459	4.9604		17,535.7138
Total	**12.0963**	**127.9620**	**86.3963**	**0.1748**	**8.9175**	**6.0483**	**14.9659**	**3.6229**	**5.6308**	**9.2537**		**17,431.5459**	**17,431.5459**	**4.9604**		**17,535.7138**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5385	7.7653	6.7323	0.0329	2.8336	0.2729	3.1065	0.4800	0.2511	0.7311		3,208.0186	3,208.0186	0.0140		3,208.3123
Worker	0.5559	1.6509	13.8023	0.0296	39.6316	0.0158	39.6474	4.4025	0.0146	4.4171		2,261.2710	2,261.2710	0.1385		2,264.1801
Total	**1.0945**	**9.4161**	**20.5346**	**0.0625**	**42.4651**	**0.2888**	**42.7539**	**4.8824**	**0.2657**	**5.1481**		**5,469.2896**	**5,469.2896**	**0.1525**		**5,472.4924**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0129	0.0000	4.0129	1.6303	0.0000	1.6303			0.0000			0.0000
Off-Road	6.9814	85.1341	89.6523	0.1748		2.5281	2.5281		2.4101	2.4101	0.0000	17,431.5459	17,431.5459	4.9604		17,535.7138
Total	**6.9814**	**85.1341**	**89.6523**	**0.1748**	**4.0129**	**2.5281**	**6.5410**	**1.6303**	**2.4101**	**4.0404**	**0.0000**	**17,431.5459**	**17,431.5459**	**4.9604**		**17,535.7138**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5385	7.7653	6.7323	0.0329	1.5583	0.2729	1.8313	0.3527	0.2511	0.6038		3,208.0186	3,208.0186	0.0140		3,208.3123
Worker	0.5559	1.6509	13.8023	0.0296	12.8809	0.0158	12.8967	1.7319	0.0146	1.7465		2,261.2710	2,261.2710	0.1385		2,264.1801
Total	**1.0945**	**9.4161**	**20.5346**	**0.0625**	**14.4392**	**0.2888**	**14.7280**	**2.0845**	**0.2657**	**2.3502**		**5,469.2896**	**5,469.2896**	**0.1525**		**5,472.4924**

3.4 Phase 2 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					5.7554	0.0000	5.7554	0.6215	0.0000	0.6215			0.0000			0.0000
Off-Road	9.4592	98.4098	67.1083	0.1475		4.6904	4.6904		4.3824	4.3824		14,665.5461	14,665.5461	4.0921		14,751.4808
Total	**9.4592**	**98.4098**	**67.1083**	**0.1475**	**5.7554**	**4.6904**	**10.4459**	**0.6215**	**4.3824**	**5.0038**		**14,665.5461**	**14,665.5461**	**4.0921**		**14,751.4808**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4917	7.0900	6.1469	0.0301	2.5872	0.2492	2.8364	0.4382	0.2293	0.6675		2,929.0604	2,929.0604	0.0128		2,929.3286
Worker	0.6006	1.7835	14.9114	0.0319	42.8162	0.0171	42.8333	4.7562	0.0158	4.7720		2,442.9803	2,442.9803	0.1497		2,446.1232
Total	**1.0923**	**8.8736**	**21.0583**	**0.0620**	**45.4034**	**0.2663**	**45.6697**	**5.1945**	**0.2450**	**5.4395**		**5,372.0408**	**5,372.0408**	**0.1624**		**5,375.4518**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5899	0.0000	2.5899	0.2797	0.0000	0.2797			0.0000			0.0000
Off-Road	6.4234	76.7264	75.6514	0.1475		2.4217	2.4217		2.3098	2.3098	0.0000	14,665.5461	14,665.5461	4.0921		14,751.4808
Total	**6.4234**	**76.7264**	**75.6514**	**0.1475**	**2.5899**	**2.4217**	**5.0116**	**0.2797**	**2.3098**	**2.5895**	**0.0000**	**14,665.5461**	**14,665.5461**	**4.0921**		**14,751.4808**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4917	7.0900	6.1469	0.0301	1.4228	0.2492	1.6720	0.3220	0.2293	0.5513		2,929.0604	2,929.0604	0.0128		2,929.3286
Worker	0.6006	1.7835	14.9114	0.0319	13.9160	0.0171	13.9331	1.8710	0.0158	1.8868		2,442.9803	2,442.9803	0.1497		2,446.1232
Total	**1.0923**	**8.8736**	**21.0583**	**0.0620**	**15.3388**	**0.2663**	**15.6051**	**2.1930**	**0.2450**	**2.4381**		**5,372.0408**	**5,372.0408**	**0.1624**		**5,375.4518**

3.4 Phase 2 Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7554	0.0000	5.7554	0.6215	0.0000	0.6215			0.0000			0.0000
Off-Road	8.5575	87.1244	65.5687	0.1474		4.0473	4.0473		3.7818	3.7818		14,455.2719	14,455.2719	4.0734		14,540.8134
Total	**8.5575**	**87.1244**	**65.5687**	**0.1474**	**5.7554**	**4.0473**	**9.8027**	**0.6215**	**3.7818**	**4.4032**		**14,455.2719**	**14,455.2719**	**4.0734**		**14,540.8134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	lb/day											lb/day				
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4518	6.3190	5.7112	0.0300	2.5872	0.2347	2.8219	0.4383	0.2159	0.6541		2,877.1721	2,877.1721	0.0122		2,877.4272
Worker	0.5175	1.6210	13.4708	0.0318	42.8162	0.0167	42.8329	4.7562	0.0154	4.7717		2,344.9928	2,344.9928	0.1389		2,347.9094
Total	**0.9693**	**7.9400**	**19.1819**	**0.0618**	**45.4034**	**0.2513**	**45.6548**	**5.1945**	**0.2313**	**5.4258**		**5,222.1649**	**5,222.1649**	**0.1510**		**5,225.3366**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5899	0.0000	2.5899	0.2797	0.0000	0.2797			0.0000			0.0000
Off-Road	5.9474	70.4892	74.6360	0.1474		2.1158	2.1158		2.0195	2.0195	0.0000	14,455.2718	14,455.2718	4.0734		14,540.8134
Total	**5.9474**	**70.4892**	**74.6360**	**0.1474**	**2.5899**	**2.1158**	**4.7057**	**0.2797**	**2.0195**	**2.2992**	**0.0000**	**14,455.2718**	**14,455.2718**	**4.0734**		**14,540.8134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4518	6.3190	5.7112	0.0300	1.4228	0.2347	1.6575	0.3220	0.2159	0.5379		2,877.1721	2,877.1721	0.0122		2,877.4272

Worker	0.5175	1.6210	13.4708	0.0318	13.9160	0.0167	13.9326	1.8710	0.0154	1.8865		2,344.9928	2,344.9928	0.1389		2,347.9094
Total	**0.9693**	**7.9400**	**19.1819**	**0.0618**	**15.3388**	**0.2513**	**15.5901**	**2.1930**	**0.2313**	**2.4243**		**5,222.1649**	**5,222.1649**	**0.1510**		**5,225.3366**

3.5 Decomissioning IM3 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5744	0.0000	0.5744	0.0620	0.0000	0.0620			0.0000			0.0000
Off-Road	3.7463	36.5539	29.8998	0.0592		1.8067	1.8067		1.7028	1.7028		5,802.4297	5,802.4297	1.5217		5,834.3856
Total	**3.7463**	**36.5539**	**29.8998**	**0.0592**	**0.5744**	**1.8067**	**2.3812**	**0.0620**	**1.7028**	**1.7648**		**5,802.4297**	**5,802.4297**	**1.5217**		**5,834.3856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1076	1.5045	1.3598	7.1400e-003	0.6160	0.0559	0.6719	0.1043	0.0514	0.1557		685.0410	685.0410	2.8900e-003		685.1017
Worker	0.1155	0.3617	3.0059	7.1000e-003	9.5540	3.7200e-003	9.5578	1.0613	3.4400e-003	1.0648		523.2629	523.2629	0.0310		523.9137
Total	**0.2230**	**1.8662**	**4.3657**	**0.0142**	**10.1700**	**0.0596**	**10.2296**	**1.1656**	**0.0548**	**1.2205**		**1,208.3038**	**1,208.3038**	**0.0339**		**1,209.0154**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2585	0.0000	0.2585	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	2.5501	29.0315	32.3948	0.0592		0.9403	0.9403		0.9090	0.9090	0.0000	5,802.4296	5,802.4296	1.5217		5,834.3856
Total	**2.5501**	**29.0315**	**32.3948**	**0.0592**	**0.2585**	**0.9403**	**1.1988**	**0.0279**	**0.9090**	**0.9370**	**0.0000**	**5,802.4296**	**5,802.4296**	**1.5217**		**5,834.3856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1076	1.5045	1.3598	7.1400e-003	0.3388	0.0559	0.3946	0.0767	0.0514	0.1281		685.0410	685.0410	2.8900e-003		685.1017
Worker	0.1155	0.3617	3.0059	7.1000e-003	3.1052	3.7200e-003	3.1089	0.4175	3.4400e-003	0.4209		523.2629	523.2629	0.0310		523.9137
Total	**0.2230**	**1.8662**	**4.3657**	**0.0142**	**3.4440**	**0.0596**	**3.5036**	**0.4942**	**0.0548**	**0.5490**		**1,208.3038**	**1,208.3038**	**0.0339**		**1,209.0154**

3.5 Decomissioning IM3 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					0.5744	0.0000	0.5744	0.0620	0.0000	0.0620			0.0000			0.0000
Off-Road	3.4403	32.8772	29.3714	0.0592		1.5766	1.5766		1.4855	1.4855		5,703.4272	5,703.4272	1.5124		5,735.1870
Total	**3.4403**	**32.8772**	**29.3714**	**0.0592**	**0.5744**	**1.5766**	**2.1511**	**0.0620**	**1.4855**	**1.5475**		**5,703.4272**	**5,703.4272**	**1.5124**		**5,735.1870**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0972	1.2521	1.2661	7.1300e-003	0.6160	0.0508	0.6668	0.1043	0.0467	0.1511		669.3720	669.3720	2.6800e-003		669.4283
Worker	0.1039	0.3330	2.7707	7.1000e-003	9.5540	3.6800e-003	9.5577	1.0613	3.4100e-003	1.0647		501.8828	501.8828	0.0293		502.4976
Total	**0.2010**	**1.5851**	**4.0368**	**0.0142**	**10.1700**	**0.0545**	**10.2245**	**1.1656**	**0.0502**	**1.2158**		**1,171.2548**	**1,171.2548**	**0.0320**		**1,171.9260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2585	0.0000	0.2585	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	2.3815	27.0934	32.0788	0.0592		0.8233	0.8233		0.7958	0.7958	0.0000	5,703.4272	5,703.4272	1.5124		5,735.1870
Total	**2.3815**	**27.0934**	**32.0788**	**0.0592**	**0.2585**	**0.8233**	**1.0818**	**0.0279**	**0.7958**	**0.8237**	**0.0000**	**5,703.4272**	**5,703.4272**	**1.5124**		**5,735.1870**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0972	1.2521	1.2661	7.1300e-003	0.3388	0.0508	0.3896	0.0767	0.0467	0.1234		669.3720	669.3720	2.6800e-003		669.4283
Worker	0.1039	0.3330	2.7707	7.1000e-003	3.1052	3.6800e-003	3.1089	0.4175	3.4100e-003	0.4209		501.8828	501.8828	0.0293		502.4976
Total	**0.2010**	**1.5851**	**4.0368**	**0.0142**	**3.4440**	**0.0545**	**3.4985**	**0.4942**	**0.0502**	**0.5443**		**1,171.2548**	**1,171.2548**	**0.0320**		**1,171.9260**

4.0 Operational Detail - Mobile

Construction only modeling

Topock - Construction Only 9-2016

San Bernardino-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	10.50	1000sqft	62.00	10,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Office is used as a surrogate only. Construction is based on project specific information. Acerage is based on area of disturbance and not total site area

Construction Phase - Based on project specific infirmation

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information.

Trips and VMT - Based on Project specific Information

On-road Fugitive Dust - Based on the amount of on and offsite travel daily

Grading - based on project information and CalEEMod defaults

Vehicle Trips - No Operation

Construction Off-road Equipment Mitigation - Based on anticipated mitigation needed. Fugitive dust based on regulatory requirements

Table Name	Column Name	Default Value	New Value
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstructionPhase	PhaseEndDate	9/13/2019	11/1/2019
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tblOnRoadDust	VendorPercentPave	100.00	99.90
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tblTripsAndVMT	WorkerTripNumber	83.00	112.00
tblTripsAndVMT	WorkerTripNumber	73.00	121.00
tblTripsAndVMT	WorkerTripNumber	25.00	27.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	15.2121	159.0830	119.4810	0.2417	65.4921	7.5383	68.7512	8.5053	7.0108	15.5161	0.0000	23,635.9926	23,635.9926	5.1452	0.0000	23,744.0426
2018	13.2646	136.9511	110.5779	0.2415	51.3827	6.3368	57.7195	8.5053	5.8963	14.4016	0.0000	23,222.7357	23,222.7357	5.1128	0.0000	23,330.1039
2019	9.6022	94.7112	88.4042	0.2138	51.1589	4.2983	55.4572	5.8159	4.0129	9.8288	0.0000	20,011.1976	20,011.1976	4.2243	0.0000	20,099.9086
2020	3.6561	34.3927	34.1529	0.0745	10.7445	1.6311	12.3756	1.2277	1.5356	2.7633	0.0000	6,946.2977	6,946.2977	1.5443	0.0000	6,978.7281

Total	**41.7350**	**425.1380**	**352.6160**	**0.7715**	**178.7781**	**19.8046**	**194.3035**	**24.0542**	**18.4555**	**42.5097**	**0.0000**	**73,816.2235**	**73,816.2235**	**16.0266**	**0.0000**	**74,152.7832**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	9.0131	103.9389	119.1202	0.2417	22.9773	3.2578	24.9473	3.7148	3.0907	6.8055	0.0000	23,635.9926	23,635.9926	5.1452	0.0000	23,744.0426
2018	8.1497	94.1232	113.8338	0.2415	18.4521	2.8166	21.2686	3.7148	2.6756	6.3903	0.0000	23,222.7357	23,222.7357	5.1128	0.0000	23,330.1039
2019	6.9921	78.0760	97.4715	0.2138	17.9287	2.3668	20.2956	2.4727	2.2506	4.7233	0.0000	20,011.1975	20,011.1975	4.2243	0.0000	20,099.9086
2020	2.5973	28.6089	36.8603	0.0745	3.7025	0.8778	4.5802	0.5221	0.8459	1.3680	0.0000	6,946.2977	6,946.2977	1.5443	0.0000	6,978.7281
Total	**26.7522**	**304.7470**	**367.2858**	**0.7715**	**63.0605**	**9.3190**	**71.0917**	**10.4244**	**8.8627**	**19.2871**	**0.0000**	**73,816.2234**	**73,816.2234**	**16.0266**	**0.0000**	**74,152.7831**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**35.90**	**28.32**	**-4.16**	**0.00**	**64.73**	**52.95**	**63.41**	**56.66**	**51.98**	**54.63**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Construction only modeling

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Pre-Construction/Mobilization	Grading	1/1/2017	4/21/2017	5	80	
2	Phase 1 Construction	Grading	5/1/2017	10/12/2018	5	380	
3	Phase 2 Construction	Grading	12/1/2018	11/1/2019	5	240	
4	Decomissioning IM3	Grading	11/2/2019	12/25/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Pre-Construction/Mobilization	Aerial Lifts	1	8.00	62	0.31
Pre-Construction/Mobilization	Cranes	1	8.00	226	0.29
Pre-Construction/Mobilization	Excavators	1	8.00	162	0.38
Pre-Construction/Mobilization	Generator Sets	1	8.00	84	0.74
Pre-Construction/Mobilization	Graders	0	8.00	174	0.41
Pre-Construction/Mobilization	Off-Highway Trucks	2	6.00	400	0.38
Pre-Construction/Mobilization	Pumps	1	8.00	84	0.74
Pre-Construction/Mobilization	Rollers	1	8.00	80	0.38
Pre-Construction/Mobilization	Rough Terrain Forklifts	1	8.00	100	0.40
Pre-Construction/Mobilization	Rubber Tired Dozers	0	8.00	255	0.40
Pre-Construction/Mobilization	Scrapers	0	8.00	361	0.48
Pre-Construction/Mobilization	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 1 Construction	Aerial Lifts	1	8.00	62	0.31
Phase 1 Construction	Bore/Drill Rigs	2	8.00	205	0.50
Phase 1 Construction	Cranes	1	8.00	226	0.29
Phase 1 Construction	Excavators	2	8.00	162	0.38
Phase 1 Construction	Excavators	1	8.00	60	0.38
Phase 1 Construction	Forklifts	1	8.00	89	0.20
Phase 1 Construction	Generator Sets	2	8.00	84	0.74
Phase 1 Construction	Graders	0	8.00	174	0.41
Phase 1 Construction	Off-Highway Trucks	6	6.00	400	0.38
Phase 1 Construction	Other Construction Equipment	1	8.00	171	0.42
Phase 1 Construction	Plate Compactors	3	8.00	8	0.43

Phase 1 Construction	Pumps	1	8.00	84	0.74
Phase 1 Construction	Rollers	2	8.00	80	0.38
Phase 1 Construction	Rubber Tired Dozers	1	8.00	255	0.40
Phase 1 Construction	Scrapers	1	8.00	361	0.48
Phase 1 Construction	Tractors/Loaders/Backhoes	5	8.00	97	0.37
Phase 2 Construction	Aerial Lifts	1	8.00	62	0.31
Phase 2 Construction	Bore/Drill Rigs	2	8.00	205	0.50
Phase 2 Construction	Cranes	1	8.00	226	0.29
Phase 2 Construction	Excavators	2	8.00	162	0.38
Phase 2 Construction	Excavators	1	8.00	60	0.38
Phase 2 Construction	Generator Sets	2	8.00	84	0.74
Phase 2 Construction	Graders	0	8.00	174	0.41
Phase 2 Construction	Off-Highway Trucks	6	6.00	400	0.38
Phase 2 Construction	Other Construction Equipment	1	8.00	171	0.42
Phase 2 Construction	Plate Compactors	4	8.00	8	0.43
Phase 2 Construction	Pumps	1	8.00	84	0.74
Phase 2 Construction	Rollers	1	8.00	80	0.38
Phase 2 Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Phase 2 Construction	Rubber Tired Dozers	0	8.00	255	0.40
Phase 2 Construction	Scrapers	0	8.00	361	0.48
Phase 2 Construction	Tractors/Loaders/Backhoes	5	8.00	97	0.37
Decomissioning IM3	Cranes	1	8.00	226	0.29
Decomissioning IM3	Crushing/Proc. Equipment	1	8.00	85	0.78
Decomissioning IM3	Excavators	2	8.00	162	0.38
Decomissioning IM3	Generator Sets	1	8.00	84	0.74
Decomissioning IM3	Graders	0	8.00	174	0.41
Decomissioning IM3	Off-Highway Trucks	2	6.00	400	0.38
Decomissioning IM3	Rough Terrain Forklifts	1	8.00	100	0.40
Decomissioning IM3	Rubber Tired Dozers	0	8.00	255	0.40
Decomissioning IM3	Scrapers	0	8.00	361	0.48

Decomissioning IM3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pre-Construction/Mobilization	Off-Highway Trucks	1	1.00	400	0.38
Phase 1 Construction	Off-Highway Trucks	3	1.00	400	0.38
Phase 2 Construction	Off-Highway Trucks	1	1.00	400	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Pre-Construction/Mobilizati	12	160.00	12.00	2,975.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Construction	33	112.00	23.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Construction	29	121.00	21.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Decomissioning IM3	10	27.00	5.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Pre-Construction/Mobilization - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8588	0.0000	2.8588	0.3105	0.0000	0.3105			0.0000			0.0000
Off-Road	4.7804	48.8946	31.5977	0.0594		2.5735	2.5735		2.4169	2.4169		5,975.6118	5,975.6118	1.5533		6,008.2305

Total	**4.7804**	**48.8946**	**31.5977**	**0.0594**	**2.8588**	**2.5735**	**5.4323**	**0.3105**	**2.4169**	**2.7274**		**5,975.6118**	**5,975.6118**	**1.5533**		**6,008.2305**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1618	15.0307	13.5538	0.0668	4.5385	0.5095	5.0480	0.7482	0.4687	1.2169		6,635.2184	6,635.2184	0.0309		6,635.8672
Vendor	0.2951	4.3951	3.5654	0.0172	1.4784	0.1525	1.6309	0.2504	0.1403	0.3907		1,705.3296	1,705.3296	7.5800e-003		1,705.4888
Worker	1.0999	2.5128	28.7064	0.0483	56.6165	0.0235	56.6400	6.2892	0.0216	6.3108		3,828.4926	3,828.4926	0.2148		3,833.0034
Total	**2.5567**	**21.9386**	**45.8257**	**0.1323**	**62.6334**	**0.6856**	**63.3189**	**7.2878**	**0.6306**	**7.9184**		**12,169.0407**	**12,169.0407**	**0.2533**		**12,174.3594**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2864	0.0000	1.2864	0.1397	0.0000	0.1397			0.0000			0.0000
Off-Road	3.0603	35.1039	32.7768	0.0594		1.2845	1.2845		1.2370	1.2370	0.0000	5,975.6118	5,975.6118	1.5533		6,008.2305
Total	**3.0603**	**35.1039**	**32.7768**	**0.0594**	**1.2864**	**1.2845**	**2.5709**	**0.1397**	**1.2370**	**1.3767**	**0.0000**	**5,975.6118**	**5,975.6118**	**1.5533**		**6,008.2305**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.1618	15.0307	13.5538	0.0668	2.4765	0.5095	2.9861	0.5423	0.4687	1.0110		6,635.2184	6,635.2184	0.0309		6,635.8672
Vendor	0.2951	4.3951	3.5654	0.0172	0.8130	0.1525	0.9655	0.1840	0.1403	0.3243		1,705.3296	1,705.3296	7.5800e-003		1,705.4888
Worker	1.0999	2.5128	28.7064	0.0483	18.4013	0.0235	18.4248	2.4741	0.0216	2.4957		3,828.4926	3,828.4926	0.2148		3,833.0034
Total	**2.5567**	**21.9386**	**45.8257**	**0.1323**	**21.6908**	**0.6856**	**22.3764**	**3.2004**	**0.6306**	**3.8310**		**12,169.0407**	**12,169.0407**	**0.2533**		**12,174.3594**

3.3 Phase 1 Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9175	0.0000	8.9175	3.6229	0.0000	3.6229			0.0000			0.0000
Off-Road	13.8766	148.9000	92.5527	0.1749		7.2295	7.2295		6.7268	6.7268		17,687.4993	17,687.4993	4.9804		17,792.0867
Total	**13.8766**	**148.9000**	**92.5527**	**0.1749**	**8.9175**	**7.2295**	**16.1471**	**3.6229**	**6.7268**	**10.3496**		**17,687.4993**	**17,687.4993**	**4.9804**		**17,792.0867**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5656	8.4240	6.8338	0.0330	2.8336	0.2923	3.1259	0.4800	0.2689	0.7489		3,268.5484	3,268.5484	0.0145		3,268.8536
Worker	0.7699	1.7590	20.0945	0.0338	39.6316	0.0165	39.6480	4.4025	0.0151	4.4176		2,679.9448	2,679.9448	0.1504		2,683.1024
Total	**1.3355**	**10.1830**	**26.9282**	**0.0668**	**42.4651**	**0.3088**	**42.7739**	**4.8824**	**0.2840**	**5.1664**		**5,948.4933**	**5,948.4933**	**0.1649**		**5,951.9559**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0129	0.0000	4.0129	1.6303	0.0000	1.6303			0.0000			0.0000
Off-Road	7.6776	93.7559	92.1919	0.1749		2.9491	2.9491		2.8066	2.8066	0.0000	17,687.4993	17,687.4993	4.9804		17,792.0867
Total	**7.6776**	**93.7559**	**92.1919**	**0.1749**	**4.0129**	**2.9491**	**6.9620**	**1.6303**	**2.8066**	**4.4369**	**0.0000**	**17,687.4993**	**17,687.4993**	**4.9804**		**17,792.0867**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5656	8.4240	6.8338	0.0330	1.5583	0.2923	1.8506	0.3527	0.2689	0.6216		3,268.5484	3,268.5484	0.0145		3,268.8536
Worker	0.7699	1.7590	20.0945	0.0338	12.8809	0.0165	12.8973	1.7319	0.0151	1.7470		2,679.9448	2,679.9448	0.1504		2,683.1024

Total	**1.3355**	**10.1830**	**26.9282**	**0.0668**	**14.4392**	**0.3088**	**14.7480**	**2.0845**	**0.2840**	**2.3685**		**5,948.4933**	**5,948.4933**	**0.1649**		**5,951.9559**

3.3 Phase 1 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.9175	0.0000	8.9175	3.6229	0.0000	3.6229			0.0000			0.0000
Off-Road	12.0963	127.9620	86.3963	0.1748		6.0483	6.0483		5.6308	5.6308		17,431.5459	17,431.5459	4.9604		17,535.7138
Total	**12.0963**	**127.9620**	**86.3963**	**0.1748**	**8.9175**	**6.0483**	**14.9659**	**3.6229**	**5.6308**	**9.2537**		**17,431.5459**	**17,431.5459**	**4.9604**		**17,535.7138**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5185	7.4000	6.2367	0.0330	2.8336	0.2727	3.1062	0.4800	0.2508	0.7308		3,212.1004	3,212.1004	0.0139		3,212.3916
Worker	0.6498	1.5891	17.9449	0.0338	39.6316	0.0158	39.6474	4.4025	0.0146	4.4171		2,579.0894	2,579.0894	0.1385		2,581.9985
Total	**1.1683**	**8.9891**	**24.1816**	**0.0667**	**42.4651**	**0.2885**	**42.7536**	**4.8824**	**0.2655**	**5.1479**		**5,791.1898**	**5,791.1898**	**0.1524**		**5,794.3901**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0129	0.0000	4.0129	1.6303	0.0000	1.6303			0.0000			0.0000
Off-Road	6.9814	85.1341	89.6523	0.1748		2.5281	2.5281		2.4101	2.4101	0.0000	17,431.5459	17,431.5459	4.9604		17,535.7138
Total	**6.9814**	**85.1341**	**89.6523**	**0.1748**	**4.0129**	**2.5281**	**6.5410**	**1.6303**	**2.4101**	**4.0404**	**0.0000**	**17,431.5459**	**17,431.5459**	**4.9604**		**17,535.7138**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5185	7.4000	6.2367	0.0330	1.5583	0.2727	1.8310	0.3527	0.2508	0.6035		3,212.1004	3,212.1004	0.0139		3,212.3916
Worker	0.6498	1.5891	17.9449	0.0338	12.8809	0.0158	12.8967	1.7319	0.0146	1.7465		2,579.0894	2,579.0894	0.1385		2,581.9985
Total	**1.1683**	**8.9891**	**24.1816**	**0.0667**	**14.4392**	**0.2885**	**14.7277**	**2.0845**	**0.2655**	**2.3500**		**5,791.1898**	**5,791.1898**	**0.1524**		**5,794.3901**

3.4 Phase 2 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Fugitive Dust					5.7554	0.0000	5.7554	0.6215	0.0000	0.6215			0.0000			0.0000
Off-Road	9.4592	98.4098	67.1083	0.1475		4.6904	4.6904		4.3824	4.3824		14,665.5461	14,665.5461	4.0921		14,751.4808
Total	**9.4592**	**98.4098**	**67.1083**	**0.1475**	**5.7554**	**4.6904**	**10.4459**	**0.6215**	**4.3824**	**5.0038**		**14,665.5461**	**14,665.5461**	**4.0921**		**14,751.4808**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4734	6.7565	5.6943	0.0301	2.5872	0.2490	2.8361	0.4382	0.2290	0.6673		2,932.7873	2,932.7873	0.0127		2,933.0532
Worker	0.7020	1.7168	19.3869	0.0365	42.8162	0.0171	42.8333	4.7562	0.0158	4.7720		2,786.3377	2,786.3377	0.1497		2,789.4805
Total	**1.1754**	**8.4733**	**25.0812**	**0.0666**	**45.4034**	**0.2661**	**45.6695**	**5.1945**	**0.2448**	**5.4393**		**5,719.1249**	**5,719.1249**	**0.1623**		**5,722.5337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5899	0.0000	2.5899	0.2797	0.0000	0.2797			0.0000			0.0000
Off-Road	6.4234	76.7264	75.6514	0.1475		2.4217	2.4217		2.3098	2.3098	0.0000	14,665.5461	14,665.5461	4.0921		14,751.4808
Total	**6.4234**	**76.7264**	**75.6514**	**0.1475**	**2.5899**	**2.4217**	**5.0116**	**0.2797**	**2.3098**	**2.5895**	**0.0000**	**14,665.5461**	**14,665.5461**	**4.0921**		**14,751.4808**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4734	6.7565	5.6943	0.0301	1.4228	0.2490	1.6718	0.3220	0.2290	0.5510		2,932.7873	2,932.7873	0.0127		2,933.0532
Worker	0.7020	1.7168	19.3869	0.0365	13.9160	0.0171	13.9331	1.8710	0.0158	1.8868		2,786.3377	2,786.3377	0.1497		2,789.4805
Total	**1.1754**	**8.4733**	**25.0812**	**0.0666**	**15.3388**	**0.2661**	**15.6048**	**2.1930**	**0.2448**	**2.4378**		**5,719.1249**	**5,719.1249**	**0.1623**		**5,722.5337**

3.4 Phase 2 Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7554	0.0000	5.7554	0.6215	0.0000	0.6215			0.0000			0.0000
Off-Road	8.5575	87.1244	65.5687	0.1474		4.0473	4.0473		3.7818	3.7818		14,455.2719	14,455.2719	4.0734		14,540.8134
Total	**8.5575**	**87.1244**	**65.5687**	**0.1474**	**5.7554**	**4.0473**	**9.8027**	**0.6215**	**3.7818**	**4.4032**		**14,455.2719**	**14,455.2719**	**4.0734**		**14,540.8134**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4352	6.0240	5.2524	0.0300	2.5872	0.2344	2.8216	0.4383	0.2157	0.6539		2,880.8434	2,880.8434	0.0120		2,881.0963
Worker	0.6095	1.5628	17.5831	0.0364	42.8162	0.0167	42.8329	4.7562	0.0154	4.7717		2,675.0823	2,675.0823	0.1389		2,677.9989
Total	**1.0447**	**7.5868**	**22.8355**	**0.0664**	**45.4034**	**0.2511**	**45.6545**	**5.1945**	**0.2311**	**5.4256**		**5,555.9257**	**5,555.9257**	**0.1509**		**5,559.0952**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5899	0.0000	2.5899	0.2797	0.0000	0.2797			0.0000			0.0000
Off-Road	5.9474	70.4892	74.6360	0.1474		2.1158	2.1158		2.0195	2.0195	0.0000	14,455.2718	14,455.2718	4.0734		14,540.8134
Total	**5.9474**	**70.4892**	**74.6360**	**0.1474**	**2.5899**	**2.1158**	**4.7057**	**0.2797**	**2.0195**	**2.2992**	**0.0000**	**14,455.2718**	**14,455.2718**	**4.0734**		**14,540.8134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Vendor	0.4352	6.0240	5.2524	0.0300	1.4228	0.2344	1.6573	0.3220	0.2157	0.5377		2,880.8434	2,880.8434	0.0120		2,881.0963
Worker	0.6095	1.5628	17.5831	0.0364	13.9160	0.0167	13.9326	1.8710	0.0154	1.8865		2,675.0823	2,675.0823	0.1389		2,677.9989
Total	**1.0447**	**7.5868**	**22.8355**	**0.0664**	**15.3388**	**0.2511**	**15.5899**	**2.1930**	**0.2311**	**2.4241**		**5,555.9257**	**5,555.9257**	**0.1509**		**5,559.0952**

3.5 Decomissioning IM3 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5744	0.0000	0.5744	0.0620	0.0000	0.0620			0.0000			0.0000
Off-Road	3.7463	36.5539	29.8998	0.0592		1.8067	1.8067		1.7028	1.7028		5,802.4297	5,802.4297	1.5217		5,834.3856
Total	**3.7463**	**36.5539**	**29.8998**	**0.0592**	**0.5744**	**1.8067**	**2.3812**	**0.0620**	**1.7028**	**1.7648**		**5,802.4297**	**5,802.4297**	**1.5217**		**5,834.3856**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1036	1.4343	1.2506	7.1500e-003	0.6160	0.0558	0.6718	0.1043	0.0514	0.1557		685.9151	685.9151	2.8700e-003		685.9753
Worker	0.1360	0.3487	3.9235	8.1100e-003	9.5540	3.7200e-003	9.5578	1.0613	3.4400e-003	1.0648		596.9192	596.9192	0.0310		597.5700
Total	**0.2396**	**1.7830**	**5.1741**	**0.0153**	**10.1700**	**0.0595**	**10.2296**	**1.1656**	**0.0548**	**1.2204**		**1,282.8343**	**1,282.8343**	**0.0339**		**1,283.5453**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2585	0.0000	0.2585	0.0279	0.0000	0.0279			0.0000			0.0000
Off-Road	2.5501	29.0315	32.3948	0.0592		0.9403	0.9403		0.9090	0.9090	0.0000	5,802.4296	5,802.4296	1.5217		5,834.3856
Total	**2.5501**	**29.0315**	**32.3948**	**0.0592**	**0.2585**	**0.9403**	**1.1988**	**0.0279**	**0.9090**	**0.9370**	**0.0000**	**5,802.4296**	**5,802.4296**	**1.5217**		**5,834.3856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1036	1.4343	1.2506	7.1500e-003	0.3388	0.0558	0.3946	0.0767	0.0514	0.1280		685.9151	685.9151	2.8700e-003		685.9753
Worker	0.1360	0.3487	3.9235	8.1100e-003	3.1052	3.7200e-003	3.1089	0.4175	3.4400e-003	0.4209		596.9192	596.9192	0.0310		597.5700
Total	**0.2396**	**1.7830**	**5.1741**	**0.0153**	**3.4440**	**0.0595**	**3.5035**	**0.4942**	**0.0548**	**0.5490**		**1,282.8343**	**1,282.8343**	**0.0339**		**1,283.5453**

3.5 Decomissioning IM3 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5744	0.0000	0.5744	0.0620	0.0000	0.0620			0.0000			0.0000
Off-Road	3.4403	32.8772	29.3714	0.0592		1.5766	1.5766		1.4855	1.4855		5,703.4272	5,703.4272	1.5124		5,735.1870
Total	**3.4403**	**32.8772**	**29.3714**	**0.0592**	**0.5744**	**1.5766**	**2.1511**	**0.0620**	**1.4855**	**1.5475**		**5,703.4272**	**5,703.4272**	**1.5124**		**5,735.1870**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0936	1.1940	1.1551	7.1400e-003	0.6160	0.0508	0.6668	0.1043	0.0467	0.1510		670.2294	670.2294	2.6500e-003		670.2851
Worker	0.1222	0.3216	3.6264	8.1100e-003	9.5540	3.6800e-003	9.5577	1.0613	3.4100e-003	1.0647		572.6411	572.6411	0.0293		573.2560
Total	**0.2158**	**1.5155**	**4.7815**	**0.0153**	**10.1700**	**0.0544**	**10.2245**	**1.1656**	**0.0501**	**1.2158**		**1,242.8705**	**1,242.8705**	**0.0319**		**1,243.5411**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2585	0.0000	0.2585	0.0279	0.0000	0.0279			0.0000			0.0000

Off-Road	2.3815	27.0934	32.0788	0.0592		0.8233	0.8233		0.7958	0.7958	0.0000	5,703.4272	5,703.4272	1.5124		5,735.1870
Total	**2.3815**	**27.0934**	**32.0788**	**0.0592**	**0.2585**	**0.8233**	**1.0818**	**0.0279**	**0.7958**	**0.8237**	**0.0000**	**5,703.4272**	**5,703.4272**	**1.5124**		**5,735.1870**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0936	1.1940	1.1551	7.1400e-003	0.3388	0.0508	0.3895	0.0767	0.0467	0.1234		670.2294	670.2294	2.6500e-003		670.2851
Worker	0.1222	0.3216	3.6264	8.1100e-003	3.1052	3.6800e-003	3.1089	0.4175	3.4100e-003	0.4209		572.6411	572.6411	0.0293		573.2560
Total	**0.2158**	**1.5155**	**4.7815**	**0.0153**	**3.4440**	**0.0544**	**3.4984**	**0.4942**	**0.0501**	**0.5443**		**1,242.8705**	**1,242.8705**	**0.0319**		**1,243.5411**

4.0 Operational Detail - Mobile

Construction only modeling

Topock - Construction Only 9-2016

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	10.50	1000sqft	62.00	10,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Office is used as a surrogate only. Construction is based on project specific information. Acerage is based on area of disturbance and not total site area

Construction Phase - Based on project specific infirmation

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information

Off-road Equipment - Based on project specific information.

Trips and VMT - Based on Project specific Information

On-road Fugitive Dust - Based on the amount of on and offsite travel daily

Grading - based on project information and CalEEMod defaults

Vehicle Trips - No Operation

Construction Off-road Equipment Mitigation - Based on anticipated mitigation needed. Fugitive dust based on regulatory requirements

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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tblConstructionPhase	NumDays	110.00	380.00
tblConstructionPhase	NumDays	110.00	240.00
tblConstructionPhase	NumDays	110.00	300.00
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tblConstructionPhase	PhaseEndDate	9/13/2019	11/1/2019
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tblGrading	AcresOfGrading	0.00	162.50
tblGrading	MaterialImported	0.00	23,800.00
tblLandUse	LotAcreage	0.24	62.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

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tblOnRoadDust	VendorPercentPave	100.00	99.90
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tblTripsAndVMT	WorkerTripNumber	30.00	160.00
tblTripsAndVMT	WorkerTripNumber	83.00	112.00
tblTripsAndVMT	WorkerTripNumber	73.00	121.00
tblTripsAndVMT	WorkerTripNumber	25.00	27.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	1.6181	16.8836	13.2724	0.0283	7.5243	0.7900	8.3143	1.3675	0.7354	2.1029	0.0000	2,500.8886	2,500.8886	0.4740	0.0000	2,510.8423
2018	1.4645	15.2371	12.0548	0.0266	6.8208	0.7016	7.5223	1.2775	0.6530	1.9305	0.0000	2,328.0236	2,328.0236	0.5160	0.0000	2,338.8586
2019	1.1277	11.2429	10.1590	0.0246	5.5384	0.5099	6.0483	0.6337	0.4763	1.1100	0.0000	2,096.2327	2,096.2327	0.4493	0.0000	2,105.6674
2020	0.4700	4.4517	4.3472	9.5000e-003	1.2910	0.2104	1.5014	0.1487	0.1981	0.3468	0.0000	806.4594	806.4594	0.1807	0.0000	810.2546

Total	**4.6802**	**47.8153**	**39.8334**	**0.0891**	**21.1745**	**2.2119**	**23.3863**	**3.4274**	**2.0628**	**5.4902**	**0.0000**	**7,731.6043**	**7,731.6043**	**1.6199**	**0.0000**	**7,765.6229**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	1.0069	11.5068	13.2880	0.0283	2.7982	0.3639	3.1620	0.6096	0.3452	0.9548	0.0000	2,500.8867	2,500.8867	0.4740	0.0000	2,510.8404
2018	0.9083	10.6195	12.4782	0.0266	2.6002	0.3169	2.9171	0.5675	0.3011	0.8686	0.0000	2,328.0215	2,328.0215	0.5160	0.0000	2,338.8565
2019	0.8168	9.2634	11.2043	0.0246	1.9788	0.2802	2.2590	0.2749	0.2667	0.5415	0.0000	2,096.2309	2,096.2309	0.4493	0.0000	2,105.6656
2020	0.3334	3.7056	4.6965	9.5000e-003	0.4520	0.1132	0.5653	0.0645	0.1091	0.1737	0.0000	806.4586	806.4586	0.1807	0.0000	810.2538
Total	**3.0653**	**35.0953**	**41.6669**	**0.0891**	**7.8292**	**1.0742**	**8.9034**	**1.5165**	**1.0221**	**2.5385**	**0.0000**	**7,731.5977**	**7,731.5977**	**1.6199**	**0.0000**	**7,765.6163**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**34.50**	**26.60**	**-4.60**	**0.00**	**63.03**	**51.43**	**61.93**	**55.75**	**50.45**	**53.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Construction only modeling

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Pre-Construction/Mobilization	Grading	1/1/2017	4/21/2017	5	80	
2	Phase 1 Construction	Grading	5/1/2017	10/12/2018	5	380	
3	Phase 2 Construction	Grading	12/1/2018	11/1/2019	5	240	

4	Decomissioning IM3	Grading	11/2/2019	12/25/2020	5	300	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Pre-Construction/Mobilization	Aerial Lifts	1	8.00	62	0.31
Pre-Construction/Mobilization	Cranes	1	8.00	226	0.29
Pre-Construction/Mobilization	Excavators	1	8.00	162	0.38
Pre-Construction/Mobilization	Generator Sets	1	8.00	84	0.74
Pre-Construction/Mobilization	Graders	0	8.00	174	0.41
Pre-Construction/Mobilization	Off-Highway Trucks	2	6.00	400	0.38
Pre-Construction/Mobilization	Pumps	1	8.00	84	0.74
Pre-Construction/Mobilization	Rollers	1	8.00	80	0.38
Pre-Construction/Mobilization	Rough Terrain Forklifts	1	8.00	100	0.40
Pre-Construction/Mobilization	Rubber Tired Dozers	0	8.00	255	0.40
Pre-Construction/Mobilization	Scrapers	0	8.00	361	0.48
Pre-Construction/Mobilization	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Phase 1 Construction	Aerial Lifts	1	8.00	62	0.31
Phase 1 Construction	Bore/Drill Rigs	2	8.00	205	0.50
Phase 1 Construction	Cranes	1	8.00	226	0.29
Phase 1 Construction	Excavators	2	8.00	162	0.38
Phase 1 Construction	Excavators	1	8.00	60	0.38
Phase 1 Construction	Forklifts	1	8.00	89	0.20
Phase 1 Construction	Generator Sets	2	8.00	84	0.74
Phase 1 Construction	Graders	0	8.00	174	0.41
Phase 1 Construction	Off-Highway Trucks	6	6.00	400	0.38

Phase 1 Construction	Other Construction Equipment	1	8.00	171	0.42
Phase 1 Construction	Plate Compactors	3	8.00	8	0.43
Phase 1 Construction	Pumps	1	8.00	84	0.74
Phase 1 Construction	Rollers	2	8.00	80	0.38
Phase 1 Construction	Rubber Tired Dozers	1	8.00	255	0.40
Phase 1 Construction	Scrapers	1	8.00	361	0.48
Phase 1 Construction	Tractors/Loaders/Backhoes	5	8.00	97	0.37
Phase 2 Construction	Aerial Lifts	1	8.00	62	0.31
Phase 2 Construction	Bore/Drill Rigs	2	8.00	205	0.50
Phase 2 Construction	Cranes	1	8.00	226	0.29
Phase 2 Construction	Excavators	2	8.00	162	0.38
Phase 2 Construction	Excavators	1	8.00	60	0.38
Phase 2 Construction	Generator Sets	2	8.00	84	0.74
Phase 2 Construction	Graders	0	8.00	174	0.41
Phase 2 Construction	Off-Highway Trucks	6	6.00	400	0.38
Phase 2 Construction	Other Construction Equipment	1	8.00	171	0.42
Phase 2 Construction	Plate Compactors	4	8.00	8	0.43
Phase 2 Construction	Pumps	1	8.00	84	0.74
Phase 2 Construction	Rollers	1	8.00	80	0.38
Phase 2 Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Phase 2 Construction	Rubber Tired Dozers	0	8.00	255	0.40
Phase 2 Construction	Scrapers	0	8.00	361	0.48
Phase 2 Construction	Tractors/Loaders/Backhoes	5	8.00	97	0.37
Decomissioning IM3	Cranes	1	8.00	226	0.29
Decomissioning IM3	Crushing/Proc. Equipment	1	8.00	85	0.78
Decomissioning IM3	Excavators	2	8.00	162	0.38
Decomissioning IM3	Generator Sets	1	8.00	84	0.74
Decomissioning IM3	Graders	0	8.00	174	0.41
Decomissioning IM3	Off-Highway Trucks	2	6.00	400	0.38
Decomissioning IM3	Rough Terrain Forklifts	1	8.00	100	0.40

Decomissioning IM3	Rubber Tired Dozers	0	8.00	255	0.40
Decomissioning IM3	Scrapers	0	8.00	361	0.48
Decomissioning IM3	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Pre-Construction/Mobilization	Off-Highway Trucks	1	1.00	400	0.38
Phase 1 Construction	Off-Highway Trucks	3	1.00	400	0.38
Phase 2 Construction	Off-Highway Trucks	1	1.00	400	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Pre-Construction/Mobilizati	12	160.00	12.00	2,975.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Phase 1 Construction	33	112.00	23.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Phase 2 Construction	29	121.00	21.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT
Decomissioning IM3	10	27.00	5.00	0.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Pre-Construction/Mobilization - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.1144	0.0000	0.1144	0.0124	0.0000	0.0124	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1912	1.9558	1.2639	2.3800e-003		0.1029	0.1029		0.0967	0.0967	0.0000	216.8394	216.8394	0.0564	0.0000	218.0230
Total	**0.1912**	**1.9558**	**1.2639**	**2.3800e-003**	**0.1144**	**0.1029**	**0.2173**	**0.0124**	**0.0967**	**0.1091**	**0.0000**	**216.8394**	**216.8394**	**0.0564**	**0.0000**	**218.0230**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0501	0.6397	0.6417	2.6700e-003	0.1704	0.0204	0.1908	0.0287	0.0188	0.0474	0.0000	240.6761	240.6761	1.1300e-003	0.0000	240.6998
Vendor	0.0125	0.1879	0.1613	6.9000e-004	0.0556	6.1000e-003	0.0617	9.6100e-003	5.6100e-003	0.0152	0.0000	61.8490	61.8490	2.8000e-004	0.0000	61.8548
Worker	0.0386	0.1120	0.9603	1.7400e-003	2.0767	9.4000e-004	2.0777	0.2324	8.6000e-004	0.2333	0.0000	125.7083	125.7083	7.7900e-003	0.0000	125.8720
Total	**0.1012**	**0.9396**	**1.7633**	**5.1000e-003**	**2.3027**	**0.0274**	**2.3302**	**0.2707**	**0.0252**	**0.2959**	**0.0000**	**428.2334**	**428.2334**	**9.2000e-003**	**0.0000**	**428.4266**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0515	0.0000	0.0515	5.5900e-003	0.0000	5.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1224	1.4042	1.3111	2.3800e-003		0.0514	0.0514		0.0495	0.0495	0.0000	216.8391	216.8391	0.0564	0.0000	218.0227
Total	**0.1224**	**1.4042**	**1.3111**	**2.3800e-003**	**0.0515**	**0.0514**	**0.1028**	**5.5900e-003**	**0.0495**	**0.0551**	**0.0000**	**216.8391**	**216.8391**	**0.0564**	**0.0000**	**218.0227**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0501	0.6397	0.6417	2.6700e-003	0.0952	0.0204	0.1156	0.0211	0.0188	0.0399	0.0000	240.6761	240.6761	1.1300e-003	0.0000	240.6998
Vendor	0.0125	0.1879	0.1613	6.9000e-004	0.0313	6.1000e-003	0.0374	7.1800e-003	5.6100e-003	0.0128	0.0000	61.8490	61.8490	2.8000e-004	0.0000	61.8548
Worker	0.0386	0.1120	0.9603	1.7400e-003	0.6821	9.4000e-004	0.6831	0.0932	8.6000e-004	0.0940	0.0000	125.7083	125.7083	7.7900e-003	0.0000	125.8720
Total	**0.1012**	**0.9396**	**1.7633**	**5.1000e-003**	**0.8086**	**0.0274**	**0.8360**	**0.1215**	**0.0252**	**0.1467**	**0.0000**	**428.2334**	**428.2334**	**9.2000e-003**	**0.0000**	**428.4266**

3.3 Phase 1 Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6943	0.0000	1.6943	0.6883	0.0000	0.6883	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2142	13.0288	8.0984	0.0153		0.6326	0.6326		0.5886	0.5886	0.0000	1,404.0101	1,404.0101	0.3953	0.0000	1,412.3121
Total	**1.2142**	**13.0288**	**8.0984**	**0.0153**	**1.6943**	**0.6326**	**2.3269**	**0.6883**	**0.5886**	**1.2769**	**0.0000**	**1,404.0101**	**1,404.0101**	**0.3953**	**0.0000**	**1,412.3121**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0524	0.7879	0.6764	2.8900e-003	0.2329	0.0256	0.2585	0.0403	0.0235	0.0638	0.0000	259.3149	259.3149	1.1600e-003	0.0000	259.3392
Worker	0.0591	0.1716	1.4704	2.6700e-003	3.1800	1.4400e-003	3.1814	0.3558	1.3200e-003	0.3572	0.0000	192.4908	192.4908	0.0119	0.0000	192.7415
Total	**0.1115**	**0.9594**	**2.1468**	**5.5600e-003**	**3.4129**	**0.0270**	**3.4400**	**0.3961**	**0.0249**	**0.4210**	**0.0000**	**451.8057**	**451.8057**	**0.0131**	**0.0000**	**452.0807**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7625	0.0000	0.7625	0.3098	0.0000	0.3098	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6718	8.2036	8.0668	0.0153		0.2580	0.2580		0.2456	0.2456	0.0000	1,404.0084	1,404.0084	0.3953	0.0000	1,412.3104
Total	**0.6718**	**8.2036**	**8.0668**	**0.0153**	**0.7625**	**0.2580**	**1.0205**	**0.3098**	**0.2456**	**0.5553**	**0.0000**	**1,404.0084**	**1,404.0084**	**0.3953**	**0.0000**	**1,412.3104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0524	0.7879	0.6764	2.8900e-003	0.1311	0.0256	0.1567	0.0301	0.0235	0.0537	0.0000	259.3149	259.3149	1.1600e-003	0.0000	259.3392
Worker	0.0591	0.1716	1.4704	2.6700e-003	1.0445	1.4400e-003	1.0460	0.1427	1.3200e-003	0.1440	0.0000	192.4908	192.4908	0.0119	0.0000	192.7415
Total	**0.1115**	**0.9594**	**2.1468**	**5.5600e-003**	**1.1756**	**0.0270**	**1.2027**	**0.1728**	**0.0249**	**0.1976**	**0.0000**	**451.8057**	**451.8057**	**0.0131**	**0.0000**	**452.0807**

3.3 Phase 1 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.6943	0.0000	1.6943	0.6883	0.0000	0.6883	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2399	13.1161	8.8556	0.0179		0.6200	0.6200		0.5772	0.5772	0.0000	1,620.8973	1,620.8973	0.4613	0.0000	1,630.5835
Total	**1.2399**	**13.1161**	**8.8556**	**0.0179**	**1.6943**	**0.6200**	**2.3143**	**0.6883**	**0.5772**	**1.2655**	**0.0000**	**1,620.8973**	**1,620.8973**	**0.4613**	**0.0000**	**1,630.5835**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0561	0.8105	0.7285	3.3800e-003	0.2729	0.0280	0.3008	0.0472	0.0257	0.0729	0.0000	298.5224	298.5224	1.2900e-003	0.0000	298.5495
Worker	0.0576	0.1813	1.5287	3.1300e-003	3.7251	1.6200e-003	3.7268	0.4169	1.5000e-003	0.4183	0.0000	216.9743	216.9743	0.0129	0.0000	217.2448
Total	**0.1137**	**0.9918**	**2.2572**	**6.5100e-003**	**3.9980**	**0.0296**	**4.0276**	**0.4640**	**0.0272**	**0.4913**	**0.0000**	**515.4967**	**515.4967**	**0.0142**	**0.0000**	**515.7943**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.7625	0.0000	0.7625	0.3098	0.0000	0.3098	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7156	8.7262	9.1894	0.0179		0.2591	0.2591		0.2470	0.2470	0.0000	1,620.8954	1,620.8954	0.4613	0.0000	1,630.5816
Total	**0.7156**	**8.7262**	**9.1894**	**0.0179**	**0.7625**	**0.2591**	**1.0216**	**0.3098**	**0.2470**	**0.5568**	**0.0000**	**1,620.8954**	**1,620.8954**	**0.4613**	**0.0000**	**1,630.5816**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0561	0.8105	0.7285	3.3800e-003	0.1536	0.0280	0.1816	0.0353	0.0257	0.0610	0.0000	298.5224	298.5224	1.2900e-003	0.0000	298.5495
Worker	0.0576	0.1813	1.5287	3.1300e-003	1.2236	1.6200e-003	1.2252	0.1671	1.5000e-003	0.1686	0.0000	216.9743	216.9743	0.0129	0.0000	217.2448
Total	**0.1137**	**0.9918**	**2.2572**	**6.5100e-003**	**1.3772**	**0.0296**	**1.4068**	**0.2024**	**0.0272**	**0.2296**	**0.0000**	**515.4967**	**515.4967**	**0.0142**	**0.0000**	**515.7943**

3.4 Phase 2 Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6907	0.0000	0.6907	0.0746	0.0000	0.0746	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0993	1.0333	0.7046	1.5500e-003		0.0493	0.0493		0.0460	0.0460	0.0000	139.6958	139.6958	0.0390	0.0000	140.5143
Total	**0.0993**	**1.0333**	**0.7046**	**1.5500e-003**	**0.6907**	**0.0493**	**0.7399**	**0.0746**	**0.0460**	**0.1206**	**0.0000**	**139.6958**	**139.6958**	**0.0390**	**0.0000**	**140.5143**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2500e-003	0.0758	0.0681	3.2000e-004	0.0255	2.6200e-003	0.0281	4.4100e-003	2.4100e-003	6.8200e-003	0.0000	27.9212	27.9212	1.2000e-004	0.0000	27.9237
Worker	6.3700e-003	0.0201	0.1692	3.5000e-004	0.4123	1.8000e-004	0.4124	0.0461	1.7000e-004	0.0463	0.0000	24.0127	24.0127	1.4300e-003	0.0000	24.0426
Total	**0.0116**	**0.0959**	**0.2373**	**6.7000e-004**	**0.4378**	**2.8000e-003**	**0.4406**	**0.0505**	**2.5800e-003**	**0.0531**	**0.0000**	**51.9339**	**51.9339**	**1.5500e-003**	**0.0000**	**51.9664**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3108	0.0000	0.3108	0.0336	0.0000	0.0336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0675	0.8056	0.7943	1.5500e-003		0.0254	0.0254		0.0243	0.0243	0.0000	139.6956	139.6956	0.0390	0.0000	140.5142
Total	**0.0675**	**0.8056**	**0.7943**	**1.5500e-003**	**0.3108**	**0.0254**	**0.3362**	**0.0336**	**0.0243**	**0.0578**	**0.0000**	**139.6956**	**139.6956**	**0.0390**	**0.0000**	**140.5142**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2500e-003	0.0758	0.0681	3.2000e-004	0.0144	2.6200e-003	0.0170	3.3000e-003	2.4100e-003	5.7100e-003	0.0000	27.9212	27.9212	1.2000e-004	0.0000	27.9237
Worker	6.3700e-003	0.0201	0.1692	3.5000e-004	0.1354	1.8000e-004	0.1356	0.0185	1.7000e-004	0.0187	0.0000	24.0127	24.0127	1.4300e-003	0.0000	24.0426
Total	**0.0116**	**0.0959**	**0.2373**	**6.7000e-004**	**0.1498**	**2.8000e-003**	**0.1526**	**0.0218**	**2.5800e-003**	**0.0244**	**0.0000**	**51.9339**	**51.9339**	**1.5500e-003**	**0.0000**	**51.9664**

3.4 Phase 2 Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6907	0.0000	0.6907	0.0746	0.0000	0.0746	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.9371	9.5401	7.1798	0.0161		0.4432	0.4432		0.4141	0.4141	0.0000	1,435.9394	1,435.9394	0.4046	0.0000	1,444.4368
Total	**0.9371**	**9.5401**	**7.1798**	**0.0161**	**0.6907**	**0.4432**	**1.1338**	**0.0746**	**0.4141**	**0.4887**	**0.0000**	**1,435.9394**	**1,435.9394**	**0.4046**	**0.0000**	**1,444.4368**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0502	0.7046	0.6600	3.2900e-003	0.2661	0.0257	0.2918	0.0460	0.0236	0.0697	0.0000	286.0204	286.0204	1.2000e-003	0.0000	286.0456
Worker	0.0571	0.1902	1.5930	3.6000e-003	4.2993	1.8200e-003	4.3012	0.4811	1.6900e-003	0.4828	0.0000	240.3842	240.3842	0.0138	0.0000	240.6740
Total	**0.1073**	**0.8949**	**2.2530**	**6.8900e-003**	**4.5655**	**0.0275**	**4.5930**	**0.5271**	**0.0253**	**0.5524**	**0.0000**	**526.4046**	**526.4046**	**0.0150**	**0.0000**	**526.7196**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.3108	0.0000	0.3108	0.0336	0.0000	0.0336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6512	7.7186	8.1726	0.0161		0.2317	0.2317		0.2211	0.2211	0.0000	1,435.9377	1,435.9377	0.4046	0.0000	1,444.4351
Total	**0.6512**	**7.7186**	**8.1726**	**0.0161**	**0.3108**	**0.2317**	**0.5425**	**0.0336**	**0.2211**	**0.2547**	**0.0000**	**1,435.9377**	**1,435.9377**	**0.4046**	**0.0000**	**1,444.4351**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0502	0.7046	0.6600	3.2900e-003	0.1498	0.0257	0.1755	0.0344	0.0236	0.0580	0.0000	286.0204	286.0204	1.2000e-003	0.0000	286.0456
Worker	0.0571	0.1902	1.5930	3.6000e-003	1.4122	1.8200e-003	1.4140	0.1929	1.6900e-003	0.1946	0.0000	240.3842	240.3842	0.0138	0.0000	240.6740
Total	**0.1073**	**0.8949**	**2.2530**	**6.8900e-003**	**1.5620**	**0.0275**	**1.5895**	**0.2273**	**0.0253**	**0.2526**	**0.0000**	**526.4046**	**526.4046**	**0.0150**	**0.0000**	**526.7196**

3.5 Decomissioning IM3 - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0862	0.0000	0.0862	9.3000e-003	0.0000	9.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0787	0.7676	0.6279	1.2400e-003		0.0379	0.0379		0.0358	0.0358	0.0000	110.5414	110.5414	0.0290	0.0000	111.1502
Total	**0.0787**	**0.7676**	**0.6279**	**1.2400e-003**	**0.0862**	**0.0379**	**0.1241**	**9.3000e-003**	**0.0358**	**0.0451**	**0.0000**	**110.5414**	**110.5414**	**0.0290**	**0.0000**	**111.1502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2900e-003	0.0322	0.0301	1.5000e-004	0.0122	1.1700e-003	0.0133	2.1000e-003	1.0800e-003	3.1800e-003	0.0000	13.0603	13.0603	5.0000e-005	0.0000	13.0614

Worker	2.4400e-003	8.1400e-003	0.0682	1.5000e-004	0.1840	8.0000e-005	0.1841	0.0206	7.0000e-005	0.0207	0.0000	10.2870	10.2870	5.9000e-004	0.0000	10.2994
Total	**4.7300e-003**	**0.0403**	**0.0983**	**3.0000e-004**	**0.1961**	**1.2500e-003**	**0.1974**	**0.0227**	**1.1500e-003**	**0.0238**	**0.0000**	**23.3473**	**23.3473**	**6.4000e-004**	**0.0000**	**23.3609**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0388	0.0000	0.0388	4.1900e-003	0.0000	4.1900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0536	0.6097	0.6803	1.2400e-003		0.0198	0.0198		0.0191	0.0191	0.0000	110.5413	110.5413	0.0290	0.0000	111.1500
Total	**0.0536**	**0.6097**	**0.6803**	**1.2400e-003**	**0.0388**	**0.0198**	**0.0585**	**4.1900e-003**	**0.0191**	**0.0233**	**0.0000**	**110.5413**	**110.5413**	**0.0290**	**0.0000**	**111.1500**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2900e-003	0.0322	0.0301	1.5000e-004	6.8400e-003	1.1700e-003	8.0100e-003	1.5700e-003	1.0800e-003	2.6500e-003	0.0000	13.0603	13.0603	5.0000e-005	0.0000	13.0614
Worker	2.4400e-003	8.1400e-003	0.0682	1.5000e-004	0.0604	8.0000e-005	0.0605	8.2500e-003	7.0000e-005	8.3300e-003	0.0000	10.2870	10.2870	5.9000e-004	0.0000	10.2994
Total	**4.7300e-003**	**0.0403**	**0.0983**	**3.0000e-004**	**0.0673**	**1.2500e-003**	**0.0685**	**9.8200e-003**	**1.1500e-003**	**0.0110**	**0.0000**	**23.3473**	**23.3473**	**6.4000e-004**	**0.0000**	**23.3609**

3.5 Decomissioning IM3 - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0862	0.0000	0.0862	9.3000e-003	0.0000	9.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4438	4.2412	3.7889	7.6400e-003		0.2034	0.2034		0.1916	0.1916	0.0000	667.4540	667.4540	0.1770	0.0000	671.1708
Total	**0.4438**	**4.2412**	**3.7889**	**7.6400e-003**	**0.0862**	**0.2034**	**0.2896**	**9.3000e-003**	**0.1916**	**0.2009**	**0.0000**	**667.4540**	**667.4540**	**0.1770**	**0.0000**	**671.1708**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0127	0.1645	0.1723	9.2000e-004	0.0747	6.5500e-003	0.0812	0.0129	6.0300e-003	0.0189	0.0000	78.3927	78.3927	3.1000e-004	0.0000	78.3992
Worker	0.0134	0.0461	0.3860	9.5000e-004	1.1302	4.7000e-004	1.1307	0.1265	4.4000e-004	0.1269	0.0000	60.6127	60.6127	3.4300e-003	0.0000	60.6847
Total	**0.0262**	**0.2106**	**0.5583**	**1.8700e-003**	**1.2049**	**7.0200e-003**	**1.2119**	**0.1394**	**6.4700e-003**	**0.1459**	**0.0000**	**139.0054**	**139.0054**	**3.7400e-003**	**0.0000**	**139.0839**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.0388	0.0000	0.0388	4.1900e-003	0.0000	4.1900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3072	3.4951	4.1382	7.6400e-003		0.1062	0.1062		0.1027	0.1027	0.0000	667.4532	667.4532	0.1770	0.0000	671.1700
Total	**0.3072**	**3.4951**	**4.1382**	**7.6400e-003**	**0.0388**	**0.1062**	**0.1450**	**4.1900e-003**	**0.1027**	**0.1069**	**0.0000**	**667.4532**	**667.4532**	**0.1770**	**0.0000**	**671.1700**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0127	0.1645	0.1723	9.2000e-004	0.0420	6.5500e-003	0.0486	9.6500e-003	6.0300e-003	0.0157	0.0000	78.3927	78.3927	3.1000e-004	0.0000	78.3992
Worker	0.0134	0.0461	0.3860	9.5000e-004	0.3712	4.7000e-004	0.3717	0.0507	4.4000e-004	0.0511	0.0000	60.6127	60.6127	3.4300e-003	0.0000	60.6847
Total	**0.0262**	**0.2106**	**0.5583**	**1.8700e-003**	**0.4133**	**7.0200e-003**	**0.4203**	**0.0604**	**6.4700e-003**	**0.0668**	**0.0000**	**139.0054**	**139.0054**	**3.7400e-003**	**0.0000**	**139.0839**

4.0 Operational Detail - Mobile

Construction only modeling

CalEEMod Output Operation

Topock - O&M Phase 1

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	10.50	1000sqft	62.00	10,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operational activities only

Land Use - General Office used as surrogate. Operational inputs are project specific.

Construction Phase - No construction

Off-road Equipment -

Vehicle Trips - Based on project specific information and location of the site.

Area Coating - no painting required

Landscape Equipment - no landscaping

Energy Use - Based on project specific information

Water And Wastewater - Water brought.

Construction Off-road Equipment Mitigation -

Operational Off-Road Equipment - based on 15 wells per year maintenance

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	75.00	1.00
tblEnergyUse	LightingElect	4.15	0.00
tblEnergyUse	NT24E	2.79	0.00
tblEnergyUse	T24E	3.75	371.66
tblEnergyUse	T24NG	3.65	305.63
tblLandUse	LotAcreage	0.24	62.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2019
tblVehicleTrips	CC_TL	7.30	32.00
tblVehicleTrips	CC_TTP	48.00	61.54
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	52.00
tblVehicleTrips	CW_TTP	33.00	38.46
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	ST_TR	2.37	0.00
tblVehicleTrips	SU_TR	0.98	0.00
tblVehicleTrips	WD_TR	11.01	9.90
tblWater	AerobicPercent	87.46	0.00

tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	OutdoorWaterUseRate	1,143,802.67	0.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

2.1 Overall Construction

Construction modeled separately

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0410	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Energy	0.0173	0.1573	0.1321	9.4000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	1,287.9963	1,287.9963	0.0546	0.0138	1,293.4089
Mobile	0.1320	0.6960	2.5416	6.1500e-003	0.4075	0.0140	0.4215	0.1090	0.0129	0.1219	0.0000	455.4894	455.4894	0.0160	0.0000	455.8253
Offroad	0.3389	3.6879	2.5167	5.8900e-003		0.1595	0.1595		0.1491	0.1491	0.0000	525.5585	525.5585	0.1477	0.0000	528.6600
Waste						0.0000	0.0000		0.0000	0.0000	1.9832	0.0000	1.9832	0.1172	0.0000	4.4445
Water						0.0000	0.0000		0.0000	0.0000	0.0000	6.9538	6.9538	0.4242	1.5000e-003	16.3272
Total	**0.5293**	**4.5412**	**5.1906**	**0.0130**	**0.4075**	**0.1855**	**0.5930**	**0.1090**	**0.1739**	**0.2829**	**1.9832**	**2,275.9982**	**2,277.9814**	**0.7597**	**0.0153**	**2,298.6661**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0410	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Energy	0.0173	0.1573	0.1321	9.4000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	1,287.9963	1,287.9963	0.0546	0.0138	1,293.4089
Mobile	0.1320	0.6960	2.5416	6.1500e-003	0.4075	0.0140	0.4215	0.1090	0.0129	0.1219	0.0000	455.4894	455.4894	0.0160	0.0000	455.8253
Offroad	0.3389	3.6879	2.5167	5.8900e-003		0.1595	0.1595		0.1491	0.1491	0.0000	525.5585	525.5585	0.1477	0.0000	528.6600
Waste						0.0000	0.0000		0.0000	0.0000	1.9832	0.0000	1.9832	0.1172	0.0000	4.4445
Water						0.0000	0.0000		0.0000	0.0000	0.0000	6.9538	6.9538	0.4242	1.5000e-003	16.3272
Total	**0.5293**	**4.5412**	**5.1906**	**0.0130**	**0.4075**	**0.1855**	**0.5930**	**0.1090**	**0.1739**	**0.2829**	**1.9832**	**2,275.9982**	**2,277.9814**	**0.7597**	**0.0153**	**2,298.6661**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**64.03**	**81.21**	**48.49**	**45.38**	**0.00**	**86.00**	**26.90**	**0.00**	**85.71**	**52.70**	**0.00**	**23.09**	**23.07**	**19.44**	**0.00**	**23.00**

3.0 Construction Detail

Construction modeled separately

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Unmitigated	0.1320	0.6960	2.5416	6.1500e-003	0.4075	0.0140	0.4215	0.1090	0.0129	0.1219	0.0000	455.4894	455.4894	0.0160	0.0000	455.8253
Mitigated	0.1320	0.6960	2.5416	6.1500e-003	0.4075	0.0140	0.4215	0.1090	0.0129	0.1219	0.0000	455.4894	455.4894	0.0160	0.0000	455.8253

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	103.95	0.00	0.00	1,072,756	1,072,756
Total	103.95	0.00	0.00	1,072,756	1,072,756

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	52.00	32.00	0.00	38.46	61.54	0.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.432494	0.068575	0.183624	0.160239	0.046129	0.007778	0.006784	0.077842	0.000817	0.001136	0.010310	0.000579	0.003693

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

NaturalGas Unmitigated	0.0173	0.1573	0.1321	9.4000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	171.2500	171.2500	3.2800e-003	3.1400e-003	172.2922
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,116.7463	1,116.7463	0.0513	0.0106	1,121.1167
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,116.7463	1,116.7463	0.0513	0.0106	1,121.1167
NaturalGas Mitigated	0.0173	0.1573	0.1321	9.4000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	171.2500	171.2500	3.2800e-003	3.1400e-003	172.2922

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	3.2091e+006	0.0173	0.1573	0.1321	9.4000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	171.2500	171.2500	3.2800e-003	3.1400e-003	172.2922
Total		**0.0173**	**0.1573**	**0.1321**	**9.4000e-004**		**0.0120**	**0.0120**		**0.0120**	**0.0120**	**0.0000**	**171.2500**	**171.2500**	**3.2800e-003**	**3.1400e-003**	**172.2922**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	3.2091e+006	0.0173	0.1573	0.1321	9.4000e-004		0.0120	0.0120		0.0120	0.0120	0.0000	171.2500	171.2500	3.2800e-003	3.1400e-003	172.2922
Total		**0.0173**	**0.1573**	**0.1321**	**9.4000e-004**		**0.0120**	**0.0120**		**0.0120**	**0.0120**	**0.0000**	**171.2500**	**171.2500**	**3.2800e-003**	**3.1400e-003**	**172.2922**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	3.90243e+006	1,116.7463	0.0513	0.0106	1,121.1167
Total		**1,116.7463**	**0.0513**	**0.0106**	**1,121.1167**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	3.90243e+006	1,116.7463	0.0513	0.0106	1,121.1167
Total		**1,116.7463**	**0.0513**	**0.0106**	**1,121.1167**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	0.0410	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Mitigated	0.0410	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0410					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Total	**0.0410**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.0000**	**2.0000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	0.0410					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.9000e-004	1.9000e-004	0.0000	0.0000	2.0000e-004
Total	**0.0410**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.9000e-004**	**1.9000e-004**	**0.0000**	**0.0000**	**2.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	6.9538	0.4242	1.5000e-003	16.3272
Mitigated	6.9538	0.4242	1.5000e-003	16.3272

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	1.8662 / 0	6.9538	0.4242	1.5000e-003	16.3272
Total		**6.9538**	**0.4242**	**1.5000e-003**	**16.3272**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	1.8662 / 0	6.9538	0.4242	1.5000e-003	16.3272
Total		**6.9538**	**0.4242**	**1.5000e-003**	**16.3272**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.9832	0.1172	0.0000	4.4445
Unmitigated	1.9832	0.1172	0.0000	4.4445

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	9.77	1.9832	0.1172	0.0000	4.4445
Total		**1.9832**	**0.1172**	**0.0000**	**4.4445**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	9.77	1.9832	0.1172	0.0000	4.4445
Total		**1.9832**	**0.1172**	**0.0000**	**4.4445**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Aerial Lifts	1	8.00	260	62	0.31	Diesel
Bore/Drill Rigs	1	8.00	260	205	0.50	Diesel
Cranes	1	8.00	260	226	0.29	Diesel
Generator Sets	1	8.00	260	84	0.74	Diesel
Off-Highway Trucks	1	8.00	260	400	0.38	Diesel
Other Construction Equipment	1	8.00	260	171	0.42	Diesel
Rough Terrain Forklifts	1	8.00	260	100	0.40	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Bore/Drill Rigs	0.0337	0.4452	0.2493	1.1300e-003		0.0126	0.0126		0.0116	0.0116	0.0000	101.4384	101.4384	0.0321	0.0000	102.1123
Cranes	0.0641	0.7640	0.2916	7.3000e-004		0.0324	0.0324		0.0298	0.0298	0.0000	65.9070	65.9070	0.0209	0.0000	66.3449
Generator Sets	0.0577	0.4911	0.4840	8.6000e-004		0.0294	0.0294		0.0294	0.0294	0.0000	73.4770	73.4770	4.6500e-003	0.0000	73.5747
Off-Highway Trucks	0.0918	0.9300	0.5170	1.7100e-003		0.0338	0.0338		0.0311	0.0311	0.0000	153.4587	153.4587	0.0486	0.0000	154.4783
Other Construction Equipment	0.0679	0.7300	0.5362	8.0000e-004		0.0384	0.0384		0.0354	0.0354	0.0000	71.7726	71.7726	0.0227	0.0000	72.2494
Rough Terrain Forklifts	0.0185	0.2405	0.2988	4.5000e-004		0.0107	0.0107		9.8600e-003	9.8600e-003	0.0000	40.2114	40.2114	0.0127	0.0000	40.4786
Aerial Lifts	5.2100e-003	0.0871	0.1398	2.2000e-004		2.1400e-003	2.1400e-003		1.9700e-003	1.9700e-003	0.0000	19.2934	19.2934	6.1000e-003	0.0000	19.4216
Total	**0.3389**	**3.6879**	**2.5167**	**5.9000e-003**		**0.1595**	**0.1595**		**0.1491**	**0.1491**	**0.0000**	**525.5585**	**525.5585**	**0.1477**	**0.0000**	**528.6600**

10.0 Vegetation

CalEEMod Output Future Activity Allowance

Topock - Future Activity Allowance in operational phase

San Bernardino-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - While these emissions are anticipated to occur during the operational phase, it is modeled under construction becasue the equipment is construction related and is better modeled as construction.

Land Use - Assumes one acre for area of roads and trenching.

Construction Phase - Assumes full year of operation

Off-road Equipment - Based on equipment assumed for the development of one well and associated infrastructure.

Trips and VMT - Assumes default worker trips and one vendor trip and haul trip per day

On-road Fugitive Dust - Based on site size/design

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	250.00
tblGrading	AcresOfGrading	0.00	0.75

tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOnRoadDust	HaulingPercentPave	100.00	99.94
tblOnRoadDust	VendorPercentPave	100.00	99.94
tblOnRoadDust	WorkerPercentPave	100.00	99.32
tblProjectCharacteristics	OperationalYear	2014	2021
tblTripsAndVMT	HaulingTripLength	20.00	52.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripLength	7.30	52.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripLength	10.80	32.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5732	5.7350	4.7579	0.0117	1.3145	0.2458	1.5604	0.1485	0.2283	0.3767	0.0000	994.2840	994.2840	0.2789	0.0000	1,000.1412
Total	**0.5732**	**5.7350**	**4.7579**	**0.0117**	**1.3145**	**0.2458**	**1.5604**	**0.1485**	**0.2283**	**0.3767**	**0.0000**	**994.2840**	**994.2840**	**0.2789**	**0.0000**	**1,000.1412**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5732	5.7350	4.7579	0.0117	0.1040	0.2458	0.3498	0.0277	0.2283	0.2559	0.0000	994.2829	994.2829	0.2789	0.0000	1,000.1401
Total	**0.5732**	**5.7350**	**4.7579**	**0.0117**	**0.1040**	**0.2458**	**0.3498**	**0.0277**	**0.2283**	**0.2559**	**0.0000**	**994.2829**	**994.2829**	**0.2789**	**0.0000**	**1,000.1401**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**92.09**	**0.00**	**77.58**	**81.36**	**0.00**	**32.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

No "Operational Phase" modeled

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/17/2020	12/31/2020	5	250	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	226	0.29
Grading	Bore/Drill Rigs	1	8.00	205	0.50
Grading	Other Construction Equipment	1	8.00	171	0.42
Grading	Rough Terrain Forklifts	1	8.00	100	0.40
Grading	Aerial Lifts	1	8.00	62	0.31
Grading	Off-Highway Trucks	4	6.00	400	0.38
Grading	Excavators	1	8.00	162	0.38
Grading	Rollers	1	8.00	80	0.38
Grading	Pumps	1	8.00	84	0.74
Grading	Rubber Tired Dozers	0	6.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	0	6.00	174	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	13	33.00	1.00	1.00	32.00	52.00	52.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5548	5.6484	4.2672	0.0104		0.2440	0.2440		0.2266	0.2266	0.0000	907.2303	907.2303	0.2748	0.0000	913.0009
Total	**0.5548**	**5.6484**	**4.2672**	**0.0104**	**4.0000e-004**	**0.2440**	**0.2444**	**4.0000e-005**	**0.2266**	**0.2266**	**0.0000**	**907.2303**	**907.2303**	**0.2748**	**0.0000**	**913.0009**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.5000e-004	1.9000e-004	0.0000	4.0000e-005	1.0000e-005	5.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.0763	0.0763	0.0000	0.0000	0.0763
Vendor	2.4600e-003	0.0319	0.0334	1.8000e-004	0.0110	1.2700e-003	0.0123	2.1500e-003	1.1700e-003	3.3200e-003	0.0000	15.1924	15.1924	6.0000e-005	0.0000	15.1937
Worker	0.0159	0.0546	0.4572	1.1200e-003	1.3031	5.6000e-004	1.3037	0.1463	5.2000e-004	0.1468	0.0000	71.7851	71.7851	4.0600e-003	0.0000	71.8703

Total	**0.0184**	**0.0866**	**0.4907**	**1.3000e-003**	**1.3141**	**1.8400e-003**	**1.3160**	**0.1484**	**1.7000e-003**	**0.1501**	**0.0000**	**87.0537**	**87.0537**	**4.1200e-003**	**0.0000**	**87.1402**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5548	5.6484	4.2672	0.0104		0.2440	0.2440		0.2266	0.2266	0.0000	907.2292	907.2292	0.2748	0.0000	912.9999
Total	**0.5548**	**5.6484**	**4.2672**	**0.0104**	**4.0000e-004**	**0.2440**	**0.2444**	**4.0000e-005**	**0.2266**	**0.2266**	**0.0000**	**907.2292**	**907.2292**	**0.2748**	**0.0000**	**912.9999**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	1.5000e-004	1.9000e-004	0.0000	2.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.0763	0.0763	0.0000	0.0000	0.0763
Vendor	2.4600e-003	0.0319	0.0334	1.8000e-004	5.7400e-003	1.2700e-003	7.0100e-003	1.6300e-003	1.1700e-003	2.8000e-003	0.0000	15.1924	15.1924	6.0000e-005	0.0000	15.1937
Worker	0.0159	0.0546	0.4572	1.1200e-003	0.0978	5.6000e-004	0.0984	0.0260	5.2000e-004	0.0265	0.0000	71.7851	71.7851	4.0600e-003	0.0000	71.8703
Total	**0.0184**	**0.0866**	**0.4907**	**1.3000e-003**	**0.1036**	**1.8400e-003**	**0.1054**	**0.0276**	**1.7000e-003**	**0.0293**	**0.0000**	**87.0537**	**87.0537**	**4.1200e-003**	**0.0000**	**87.1402**

4.0 Operational Detail - Mobile

No "Operational Phase" modeled

APPENDIX BOD

Basis of Design Report/Pre-Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California

(available online at the following link: http://dtsc-topock.com/documents/other-and-environmental-impact-review/groundwater/ceqa-eir/subsequent-eir)

APPENDIX COM

PG&E Topock Tribal Communications Summary Table

PG&E Topock Tribal Communications Summary Table, 12/13/17

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
This is a partial list of communications primarily between DTSC and interested Tribal Governments regarding the PG&E Topock project. See end of table for color coding key.				
6/2/1998	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Discussed upcoming meeting agenda with Chemehuevi tribe.
6/4/1998	DTSC & PG&E	Chemehuevi Indian Tribe		Meeting with Chemehuevi Indian Tribe concerning site investigation and tribal participation process.
6/9/1998	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Discussed additional site visits to other Colorado River Indian tribes with council member.
6/30/1998	Martin Prisco, DTSC	Colorado River Indian Tribes		Contacted to set up briefing time.
7/6/1998	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Phone call to discuss briefings.
7/8/1998	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Briefed tribe on project status and discussed issues.
7/13/1998	Martin Prisco, DTSC	FMIT and CRITs		Discussed future briefings.
7/15/1998	Martin Prisco, DTSC	FMIT and CRITs		Discussed August briefing with CRITs and FMIT.
8/3/1998	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Held discussion with Chemehuevi.
8/10/1998	Martin Prisco, DTSC	Chemehuevi, CRITs, FMIT		Called tribes to verify meeting appointments for briefings.
8/13/1998	Martin Prisco, DTSC	Fort Mojave Indian Tribe		Held briefing with tribe.
8/14/1998	Martin Prisco, DTSC	FMIT and CRITs		Held briefing with FMIT and CRITs.
9/28/1998	DTSC & PG&E	FMIT, Chemehuevi and CRIT		Meeting with tribes and the City of Parker, AZ
10/1/1998	DTSC & PG&E	FMIT, Chemehuevi and CRIT		Meeting with tribes to discuss latest testing results at the Topock site.
1998	DTSC			Five information repositories established to provide convenient local access to Public Participation Plan, various reports, fact sheets, and other significant project documents generated during the investigation and remediation phases of the project. Repositories established at Needles Library, Chemehuevi Indian Reservation, Golden Shores/Topock Library, Mojave County Library.
6/1/1999	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Contacted tribe concerning upcoming briefing on Topock site.
6/2/1999	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Discussion with tribe's environmental coordinator concerning upcoming briefing at the reservation.
6/8/1999	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Met with Chemehuevi tribe for briefing.
8/1/1999	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Meeting and briefing for Chemehuevi tribe concerning results of investigation at the Topock Compressor Station.
9/8/1999	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Meeting with Chemehuevi Tribe representatives to brief them on site investigation results at Topock.
9/15/1999	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Discussion with former Chemehuevi reservation environmental director concerning Topock site investigation.
2/16/2000	DTSC	Chemehuevi Indian Tribe; DTSC: Fred Zanoria, Charles Miller, Tayseer Mahmoud		Meeting to provide update on investigation findings and listen to community concerns
4/18/2000	Martin Prisco, DTSC	Chemehuevi Indian Tribe		Returned phone call to reservation confirming that DTSC staff would be at briefing for Tribal Health Board on 4/20/00.
4/20/2000	DTSC	Chemehuevi Indian Tribal Council and Heath Department; DTSC: Fred Zanoria, Charles Miller		Meeting with Chemehuevi Indian Tribal Council and Health Board to discuss project activities.
7/13/2000	DTSC	DTSC: Karen Baker, Fred Zanoria, Tayseer Mahmoud, Charles Miller, Robert Senga, Laszlo Saska; Chemehuevi: David Chavez, David Todd; CFG; DOI; BOR, FWS, BIA, BLM		Meeting in Needles to discuss comments on the Draft RFI Report

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/30/2000	DTSC	Melvin Wong, PG&E	cc: Tito Smith, Chairman, Chemehuevi; DOI, BIA, CFG, FWS, BLM, MWD	Transmitted comments on Draft RFI Report from DTSC and other stakeholders.
9/7/2000	DTSC	DTSC: Karen Baker, Fred Zanoria, Tayseer Mahmoud, Charles Miller, Robert Senga, Laszlo Saska; Chemehuevi: David Chavez, David Todd; DOI; BLM; FWS; BOR; RWQCB; PG&E		Meeting in Palm Springs to discuss comments on the RFI Report and plans for an interim measure for ground water with PG&E.
1/4/2000	DTSC	Melvin Wong, PG&E	cc: Tito Smith, Chairman, Chemehuevi; DOI, BIA, CFG, FWS, BLM, MWD, RWQCB	Transmitted comments on Work Plan for Additional Soil Sampling
1/28/2002	DTSC	Chemehuevi: David Todd; DTSC: Fred Zanoria, Luke Peters, Derrick Alatorre		Meeting with David Todd, environmental coordinator of Chemehuevi Indian Reservation to provide project update.
4/11/2002	Derrick Alatorre, DTSC	Fort Mojave Indian Tribe		Call to confirm upcoming meeting on 4/15/02
12/30/2002	DTSC/PG&E	Chemehuevi: Chairman Edward Smith; PG&E: Kendal Smeeth (Smeethco)		Coordinate interview for Public Participation Plan.
4/15/2002	DTSC	Fort Mojave Indian Tribe: Gary Goforth; DTSC: Derrick Alatorre, Luke Peters		Meeting with FMIT representative Gary Goforth to provide project update
1/6/2003	DTSC	Fort Mojave: Chairperson Nora (Helton) McDowell; DTSC: Derrick Alatorre; PG&E: Kendal Smeeth (Smeethco)		One-on-one meetings (interviews) with key community and tribal leaders to get understanding of concerns and feedback to be used in updating the Public Participation Plan.
1/7/2003	DTSC	Chemehuevi: David Todd; DTSC: Derrick Alatorre; PG&E: Kendal Smeeth (Smeethco)		One-on-one meetings (interviews) with key community and tribal leaders to get understanding of concerns and feedback to be used in updating the Public Participation Plan.
1/8/2003	David Todd, Chemehuevi	Luke Peters, DTSC		Fax of water sampling results for Cr6.
1/8/2003	DTSC: Derrick Alatorre, Luke Peters	David Todd, Chemehuevi		Call to discuss hexavalent chromium sampling and results.
1/9/2003	DTSC: Luke Peters	David Todd, Chemehuevi		Another call to discuss chromium sampling results
1/13/2003	DTSC: Derrick Alatorre, Luke Peters	David Todd, Chemehuevi		Additional conversation with David Todd on PG&E Topock
1/13/2003	DTSC	CRITs: Elena Etcitty; DTSC: Derrick Alatorre; PG&E: Kendal Smeeth (Smeethco)		One-on-one meetings (interviews) with key community and tribal leaders to get understanding of concerns and feedback to be used in updating the Public Participation Plan.
2/27/2003	DTSC	Inter-Tribal Water Protection association: DTSC: Derrick Alatorre, Fred Zanoria; PG&E: Ralph Lambert, E&E and Kendal Smeeth, SmeethCO; Chemehuevi, Fort Mojave and CRIT had representatives and other Tribes. Attendees unknown		Meeting at the Kumeyaay Reservation in San Diego to provide presentation regarding groundwater issues at the Topock site.
March 2003	DTSC	Colorado River Indian Tribes		Two additional information repositories established at the CRIT and Parker Libraries and provide update on project.
3/20/2003	DTSC: Derrick Alatorre	Chemehuevi Indian Tribe		Meeting to provide update on investigation

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/17/03	DTSC & PG&E	Fort Mojave: EPA staff Wally Antone; Llewellyn Barackman; Bruce Williams; Chemehuevi: Vice Chairman Shirley Smith; EPA Director David Todd; Brian McDonald; CRIT: Chairman Daniel Eddy, Jr.; Gary Hansen; EPA Staff Water Technician Dillon Esquerra; DTSC: Fred Zanoria, Luke Peters, Derrick Alatorre		Site tour of Topock Compressor Station and corrective action history at site. Discussion of site history, Bat Cave Wash, and tour of station facility operations.
10/14/03	DTSC: Aaron Yue, Fred Zanoria, Derrick Alatorre & PG&E	Fort Mojave: EPA Director Wally Antone and staff Africa Dorame; Chemehuevi: Chairman Tito Smith & Vice Chair Shirley Smith; Councilmember Gilbert Para; EPA Director David Todd; Bill Cox		Meeting held at the Chemehuevi Indian Reservation to brief Chemehuevi and Fort Mojave Indian Tribes regarding status of project and plans for a pilot study for groundwater.
10/27/2003	Derrick Alatorre, DTSC	M. Martinez, FMIT		Spoke with M. Martinez regarding his concerns about the site
11/20/03	DTSC & PG&E	Fort Mojave: EPA staff Africa Dorame; Chemehuevi: Chairman Tito Smith; EPA Director David Todd		Briefing and site tour at the PG&E Topock Compressor Station with DTSC, Indian Tribes, and the CWG including State Water Resources Control Board, RWQCB, BOR, BLM, DOI, HNWR, U.S.G.S,MWD, and consulting companies CH2M HILL, Ecology and Environment and Geopentech. Discussed options for the proposed Pilot Study and toured potential locations for pumping wells.
1/26/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Call to Africa to discuss DTSC providing presentation to FMIT on groundwater developments in floodplain and plans for interim measure.
1/27/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Spoke with Africa to confirm meeting for tomorrow
1/27/2004	Derrick Alatorre, DTSC	David Todd, Chemehuevi		Call to David to discuss location of meeting with Chemehuevi regarding December 2003 groundwater sampling results in floodplain well and plans for Pilot Study/Interim Measure.
1/29/2004	Derrick Alatorre, DTSC	David Todd, Chemehuevi		Call to David to discuss presentation and who will be attending
1/28/04	Derrick Alatorre, DTSC	Fort Mojave: EPA director Wally Antone, EPA staff Africa Dorame; Shan Lewis?; an additional councilmember		Meeting to provide update on December 2003 groundwater sampling results in floodplain well and plans for Interim Measures at Fort Mojave Indian Tribe reservation.
1/30/04	DTSC	Chemehuevi: Chairman Tito Smith; Councilmember Gilbert Para; Vice-Chair Shirley Smith; Councilmember Ron Escobar; Secretary/Treasurer Jachie Jordan; Water Technician Bob Woltman; Bill Cox (Planning); Irene Anthony (Planning); Loretta Fixel; Sierra Shaw (Realty Secretary); Bill Miller (Miller Engineering); D. Ma; Les Marsen (Tribal Attorney); DTSC: Karen Baker, Norman Shopay, Fred Zanoria, Derrick Alatorre		Meeting at the Chemehuevi Indian Council Office to provide project update regarding December 2003 groundwater sampling results in floodplain well and plans for Pilot Study/Interim Measure.
2/6/2004	Derrick Alatorre, DTSC	Elena Etcitty, CRIT		Spoke with Elena about providing presentation to CRIT and other Tribes regarding groundwater developments on the floodplain and plans for interim measure No.2.
2/19/04	Derrick Alatorre, DTSC	Chemehuevi: Chairman Tito Smith; EPA Director David Todd; Water technician Bob Woltman		Meeting regarding Interim Measures No. 2 with Chemehuevi Indian Tribe
2/19/2004	Norman Shopay, DTSC	Chairman Tito Smith, Chemehuevi	cc: David Todd, Chemehuevi	Letter formally inviting Chemehuevi to join the Topock Consultative Work Group (CWG).

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2/20/2004	Derrick Alatorre, DTSC	CRIT: EPA Director Elena Etcitty; Water technicians Dillon Esquerra, Elroy Robinson, Duncan Fisher; CRIT Fish and Game staff Charlie Land and David Martinez		Meeting to discuss project update regarding December 2003 groundwater sampling results in floodplain well and plans for interim measure No.2.
2/20/2004	Norman Shopay, DTSC	Chairman Daniel Eddy, Jr, CRIT	cc: Elena Etcitty, CRIT	Letter formally inviting CRITs to join the Topock Consultative Work Group (CWG).
2/20/04	DTSC	Chairperson Nora McDowell, FMIT	cc: Africa Dorame, FMIT	Letter formally inviting FMIT to join the Topock Consultative Work Group (CWG).
4/13/2004	Derrick Alatorre, DTSC	Elena Eticitty, CRIT		Spoke with Elena regarding upcoming site tour and future site tours.
4/16/2004	DTSC & PG&E	FMIT EPA: Africa Dorame; Chemehuevi: Tito Smith, David Todd		Briefing and site tour of Interim Measures No. 2 at Topock Compressor Station (including USEPA staff, Sen. John McCain staff, Mohave County Supervisors, Lake Havasu City Mayor and staff, and Chemehuevi and Fort Mojave Indian Tribes).
4/20/2004	Derrick Alatorre, DTSC	David Todd, Chemehuevi		Spoke with David to see how he would like project fact sheets delivered to Tribe.
4/21/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Spoke with Africa regarding feedback about the site tour
5/10/2004	Derrick Alatorre, DTSC	FMIT, CRIT, Chemehuevi		Deliver latest project fact sheet to Tribes
5/13/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Spoke with Africa regarding next weeks site tour
5/14/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Contacted Africa regarding changing date of the groundwater sampling observation
5/20/2004	DTSC & PG&E	Fort Mojave(FMIT): EPA staff Africa Dorame; Councilmembers Colleen Garcia, Nichole Garcia; (elder and cultural staff) Felton Bricker, Sr., Fort Mojave Utility Authority Board members Rudy Bryan, Bob Lange, and Chief of Mojave Valley Fire Dept. Mel Sorensen; Chemehuevi: Chairman Tito Smith, David Todd		Briefing and site tour of Interim Measures No. 2 at Topock Compressor Station (including Assemblyman Bill Maze)
5/24/2004	Derrick Alatorre, DTSC	David Todd, Chemehuevi		Spoke with David to reschedule Tribal observation of groundwater sampling
5/24/2004	Derrick Alatorre, DTSC	Elena Eticitty, CRIT		Spoke with Elena to reschedule Tribal observation of groundwater sampling
5/26/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Spoke with Africa to reschedule Tribal observation of groundwater sampling and meeting to be held at the FMIT hotel the Avi.
6/2/2004	Norman Shopay, Derrick Alatorre, DTSC & PG&E	Fort Mojave: EPA staff Africa Dorame; Chemehuevi: Chairman Tito Smith, EPA Director David Todd; Water Technician Bob Woltman		Tribal visit to observe groundwater sampling of well MW-34-80, Chemehuevi Indian Tribe Chairman, EPA Director and Water Technician attended, as did the Fort Mojave EPA Environmental Coordinator and a Fort Mojave Council Member. The CRIT staff were scheduled but unable to attend.
6/22/2004	Norman Shopay, Derrick Alatorre, Aaron Yue, DTSC	CRIT		Meeting to discuss PG&E proposed Interim Measures 3 to increase groundwater pumping and DTSC CEQA Notice of Exemption for IM3 facility construction.
6/22/04	Norman Shopay, Derrick Alatorre, DTSC & PG&E	Fort Mojave: EPA staff Africa Dorame; Chemehuevi: Chairman Tito Smith, Vice-chair Shirley Smith; Secretary/Treasures EPA Director David Todd		Meeting to discuss PG&E proposed Interim Measures 3 to increase groundwater pumping and DTSC CEQA Notice of Exemption for IM3 facility construction.
6/30/2004	Karen Baker, DTSC	Yvonne Meeks, PG&E	cc: CWG members (included CRIT)	Letter "Approval with Conditions, Interim Measures No. 3, dated June 21, 2004, PG&E Topock Compressor Station".
7/1/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Spoke with Africa regarding archeological issues.

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7/1/2004	DTSC & PG&E	Fort Mojave: EPA staff Africa Dorame; Aha Makav Cultural Society staff Felton Bricker, Sr. (also a tribal elder); Angie Alvarado (also Tribal Secretary); Chemehuevi: Chairman Tito Smith and Councilmember Ron Escobar; EPA Director David Todd; CRIT: EPA Director Elena Etcitty; Water Technician Dillon Esquerra; Phillip Smith (informal cultural rep.); Native American Archaeologist associated with 2nd (non-administration recognized) Ft. Mojave Cultural Preservation Society: Chad Smith		Briefing and site tour of the proposed Interim Measures No. 3 including treatment plant location at the PG&E Topock Compressor Station (included Cal/EPA Secretary Terry Taminen, DTSC Deputy Director B.B. Blevins, PG&E and MWD Senior Management and Fort Mojave, Chemehuevi and CRIT Tribes).
7/2/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Spoke with Africa regarding meeting to discuss cultural resources evaluation and visit to the MWD property where IM3 treatment plant to be located.
7/2/2004	Derrick Alatorre, DTSC	David Todd, Chemehuevi		Spoke with David regarding meeting to discuss cultural resources evaluation and visit to the MWD property where IM3 treatment plant to be located.
7/8/2004	Norman Shopay, Derrick Alatorre, DTSC & PG&E	Fort Mojave: EPA staff Africa Dorame; Aha Makav Cultural Society Director Linda Otero; 2nd Cultural Society President Llewellyn Barackman and archaeologist Chad Smith; Chemehuevi: Chairman Tito Smith; Councilmembers Ron Escobar and Gilbert Para; CRIT: Phillip Smith (informal cultural specialist)		Meeting and site walk at the PG&E Topock Compressor Station regarding archaeology / cultural resources with Fort Mojave and Chemehuevi Indian Tribes. Chemehuevi participated in afternoon site walk while FMIT declined. Tribes suggest DTSC and PG&E contact all five Colorado River Tribes and possibly the five "dryland" Tribes. Llewellyn Barackman indicated that a meeting should be presented to the Colorado River Water Users Association.
7/9/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Call with Africa regarding reservation for CWG meeting at Avi.
7/12/2004	Derrick Alatorre, DTSC	Cocopah		Called Cocopah Tribe to schedule project update meeting
7/12/2004	Derrick Alatorre, DTSC	V. Smith, Quechan		Called V. Smith to schedule project update meeting with Tribe
7/12/2004	Derrick Alatorre, DTSC	Elena Eticitty, CRIT		Called Elena regarding MWD property
7/13/04	BLM	Fort Mojave: Cultural Society Director Linda Otero		BLM meets with Fort Mojave Cultural Director to discuss CERCLA section 106 process for IM3 proposed construction.
7/15/04	BLM	Chad Smith (representing Chemehuevi)		Tribal representatives attend CWG meeting held at Fort Mojave Indian Reservation's Avi Resort. BLM archaeologist has phone and in-person conversations with Chad Smith (representing Chemehuevi). Chad Smith indicates to CWG that he has contacted Native American Heritage Coalition in Sacramento to inform them about the project. BLM discusses section 106 process and information with Chad Smith.
7/19/2004	Derrick Alatorre, DTSC	Quechan		Contacted Quechan to get the names of people attending upcoming meeting.
7/19/2004	Derrick Alatorre, DTSC	Lisa Wanstall., Cocopah		Called Lisa regarding upcoming meeting and sent her past project presentations.
7/20/2004	Derrick Alatorre, DTSC	Quechan		Called to confirm next weeks meeting
7/20/2004	Derrick Alatorre, DTSC	Lisa Wanstall, Cocopah Tribe		Called to confirm next weeks meeting
7/21/2004	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Called Africa to discuss archeological/cultural issues

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7/26/04	Norman Shopay, Derrick Alatorre, DTSC	**Quechan**: EPA Director Arlene Kingery and staff William Hirt, Steve (?), Eddie Williams; **Cocopah**: Tribal Administrator Rick McKinney; Cultural Museum Director Lisa Wanstall and staff Billy White; Councilmember and Planner Paul Soto; Envir. Director Willadena Thomas		Meetings to brief Cocopah and Quechan Indian Tribes about the project and Interim Measures No. 3 (two separate meetings).
8/5/04	Derrick Alatorre, DTSC	David Todd, Chemehuevi		Had conversation regarding meeting to take place the following week.
08/05/04	BLM	FMIT, Chemehuevi, Hualapai, Yavapai, Quechan and CRITs		BLM sends letters to Fort Mojave, Chemehuevi, Hualapai, Yavapai, Quechan and Colorado River Indian Tribes requesting formal consultation for a CERCLA Section 106 permit for IM3
8/6/04	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Derrick spoke with Africa regarding upcoming meeting.
8/9/04	Derrick Alatorre, DTSC	Gary Hansen, CRITs		Derrick spoke with Gary Hansen regarding upcoming meeting.
8/12/04	Derrick Alatorre, DTSC	David Todd, Chemehuevi		Derrick spoke with David Todd regarding agenda for 8/13/04 meeting
8/13/04	DTSC, PG&E, BLM	Fort Mojave**:** Vice-Chair Shan Lewis; Cultural Director Linda Otero; EPA staff Africa Dorame; also Llewellyn Barackman; Bruce Williams; Chemehuevi: Chairman Tito Smith; EPA Director David Todd; CRIT: CWRUA chair Gary Hansen; water technician Dillon Esquerra; Quechan: President Jackson; Cocopah: Paul Soto; DTSC: Karen Baker, Norman Shopay, Derrick Alatorre		Briefing to the Colorado River Native Nations Alliance meeting in Laughlin, NV. DTSC gave a presentation regarding project history, Interim Measures No. 2, and Interim Measures No. 3.
8/5 - 9/8/04	BLM	Tribes consulted include: Fort Mojave, Chemehuevi, CRIT, Quechan, Cocopah, Havasupai, Hualapai and Yavasupai-Prescott Indian Tribes.		BLM conducts government-to-government consultation regarding cultural resources for review of a Section 106 permit application for Interim Measures No. 3.
8/27/2004	DTSC	7 Tribes: Chairpersons and Environmental Directors of Fort Mojave, Chemehuevi, CRIT, Quechan, Cocopah, Torres-Martinez Desert Cahuilla Indian Tribes and Twenty-Nine Palms Band of Mission Indians.		First monthly mailing of project documents to Tribes on compact disc.
8/31/04	DTSC	Chemehuevi and Fort Mojave Indian Tribes		DTSC held meeting with Chemehuevi and Fort Mojave Indian Tribes.
9/1/2004	BLM	29 Palms Band of Mission Indians added as 9th Tribe. **9 Tribes:** BLM sends packages to Chairpersons and cultural staff. (Twenty-Nine)		BLM sends follow-up letter with copies of Cultural Resources Report, SHPO letter, computer simulations of IM3 facility, information on discharge applications up for review by RWQCB and notice of upcoming RWQCB hearing
Sept. 2004	BLM			August and May 2004 fact sheets sent to additional Tribes on behalf of BLM (Havasupai, Hualapai, Yavapai-Prescott, and Torres-Martinez Desert Cahuilla Indian Tribes and Twenty-Nine Palms Band of Mission Indians).
9/23/04	Patricia Taylor, BLM	Nora McDowell, Chairperson, FMIT	Linda Otero, FMIT	Letter stating that BLM would like to continue gov-to-gov consultation; attached MOA, Cultural Resources Management Plan and Transportation Plan for review and comment.
10/04/04	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Derrick spoke with Africa regarding what the cultural issues are from Fort Mojave's perspective.

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10/07/04	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Derrick spoke with Africa regarding her thoughts about the individual meetings with tribes.
10/08/04	Derrick Alatorre, DTSC	CRITs		Derrick contacted the CRITs regarding the upcoming CWG location.
10/08/04	Derrick Alatorre, DTSC	David Todd, Chemehuevi		Spoke with David Todd regarding cultural issues.
10/12/04	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Contacted Africa regarding upcoming EPA conference and her concerns about IM No. 3.
10/14/04	Africa Dorame, FMIT	Derrick Alatorre, DTSC		Africa called to discuss the construction at the site.
10/15/04	Fort Yuma-Quechan President Michael Jackson	PG&E		Invitation and request that PG&E and DTSC attend a meeting with the Tribes to discuss the IM3 and other aspects of the Topock project. Meeting to be attended by five Tribes and hosted by the CRIT in Parker, AZ.
10/20/04	BLM, DTSC, PG&E	**Fort Mojave:** Aha Makav Cultural Society Director Linda Otero, staff Felton Bricker, Sr.; **Quechan:** archaeologist Lorey Cachora; **DTSC**: Karen Baker, Norman Shopay, Derrick Alatorre		Cultural Resources meeting related to IM3 construction at Topock Compressor Station hosted by BLM, DTSC and PG&E. Included attendance by archaeology consultant and Fort Mojave and Quechan Indian Tribe members.
10/22/04	DTSC & PG&E	**Fort Mojave:** Chairperson Nora McDowell; Cultural Society staff Angie Alvarado, Felton Bricker, Sr. (also a tribal elder); John Algots; Bruce Williams; **Chemehuevi:** Chairman Tito Smith; Councilmember Ron Escobar; EPA Director David Todd; Water Technician Bob Woltman; **CRIT:** Chairman Daniel Eddy, Jr.; Sylvia Homer; Eldred Enas; **Quechan:** President Michael Jackson; cultural staff Willa Scott; Pauline Jose; **Cocopah:** Councilmembers Edmund Domingues and Paul Soto; **DTSC**: Karen Baker, Norman Shopay, Derrick Alatorre		DTSC and PG&E meet with Five Tribes Coalition at Riverside Resort & Casino in Laughlin, NV. Five Tribes members present include Vice Chairman of Cocopah Indian Tribe, President of Quechan Indian Tribe and Chairpersons of Fort Mojave, Chemehuevi and Colorado River Indian Tribes.
10/28/04	PG&E	Chairperson Nora McDowell, FMIT		PG&E letter to Fort Mojave as a thank you and follow-up to the October 22, 2004 meeting with the Five Tribes Coalition.
11/8/04	DTSC	**Fort Mojave:** Vice-Chair Shan Lewis; EPA staff Africa Dorame; Bruce Williams; **Chemehuevi:** Chairman Tito Smith		DTSC meets with Fort Mojave representatives and Chemehuevi (separate meetings). Discussion of IM3 construction and schedule; current status and activity.
11/10/04	Derrick Alatorre, DTSC	Africa Dorame, FMIT		E-mailed letters to Africa that were mailed to tribes inviting them to join the CWG.
11/16/04	DTSC & PG&E	**Fort Mojave:** Chairperson Nora McDowell, Vice-Chair Shan Lewis, EPA staff Africa Dorame, Cultural Director Linda Otero; **Chemehuevi:** Chairman Tito Smith, Secretary/Treasurer Ron Escobar; **DTSC**: Norman Shopay, Derrick Alatorre		DTSC and PG&E meet with Chemehuevi Indian Tribe and Fort Mojave Indian Tribe. Informal meetings to discuss how to communicate with the Tribe, hear tribal concerns and answer questions. (Two separate meetings).
11/22/04	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Spoke with Africa regarding the meeting that took place last week.
11/29/04	DTSC Director BB Blevins	Chemehuevi: Edward "Tito" Smith, Chairman		Thank you for allowing DTSC staff to meet with members of the Five Tribes Lower River Coalition (Fort Mojave, Chemehuevi, CRIT, Quechan, Cocopah) and inviting feedback on improving communications.
11/29/04	DTSC Director BB Blevins	CRIT: Daniel Eddy, Jr, Chairman		Thank you for allowing DTSC staff to meet with members of the Five Tribes Lower River Coalition (Fort Mojave, Chemehuevi, CRIT, Quechan, Cocopah) and inviting feedback on improving communications.

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11/29/04	DTSC Director BB Blevins	Fort Yuma-Quechan: Mike Jackson, Sr., President		Thank you for allowing DTSC staff to meet with members of the Five Tribes Lower River Coalition (Fort Mojave, Chemehuevi, CRIT, Quechan, Cocopah) and inviting feedback on improving communications.
11/29/04	DTSC Director BB Blevins	Cocopah: Sherry Cordova, Chairwoman		Thank you for allowing DTSC staff to meet with members of the Five Tribes Lower River Coalition (Fort Mojave, Chemehuevi, CRIT, Quechan, Cocopah) and inviting feedback on improving communications.
11/29/04	DTSC Director BB Blevins	FMIT: Nora McDowell, Chairwoman		Thank you for allowing DTSC staff to meet with members of the Five Tribes Lower River Coalition (Fort Mojave, Chemehuevi, CRIT, Quechan, Cocopah) and inviting feedback on improving communications.
12/1/04	Derrick Alatorre, DTSC	Nora McDowell, FMIT		Conference call regarding Director BB Blevin's invitation to meet with them.
12/2/04	Derrick Alatorre, DTSC	All Tribes		Began contacting the tribes to determine when the next best day is for Director BB Blevins to meet with them.
12/3/04	Derrick Alatorre, DTSC	Africa Dorame, FMIT		Spoke with Africa regarding the tour taking place the next week.
12/14/04	DTSC & PG&E	**Fort Mojave:** Chairperson Nora McDowell; Vice-Chair Shan Lewis; EPA staff Africa Dorame; Cultural Director Linda Otero; **Chemehuevi:** Chairman Tito Smith; Sec./Treasurer Ron Escobar; **Quechan:** archaeologist Lorey Cachora; **Hualapai:** Cultural Director Loretta Jackson; Aaron Mapatis		Site tour of Interim Measures No. 3 with Fort Mojave and Chemehuevi Indian Tribes Chairpersons and staff.
12/29/04	Derrick Alatorre, DTSC	Tribes		Sent tribes website information for their review and input.
1/14/05	Karen Baker, DTSC	Steven McDonald, FMIT		Phone call regarding meeting with tribes next week.
1/19/05	DTSC	**Fort Mojave:** Chairperson Nora McDowell; Aha Macav Cultural Society Director Linda Otero; **Chemehuevi:** Councilmember Ron Escobar; DTSC: Director BB Blevins, Karen Baker		DTSC Director B.B. Blevins meets with Five Tribe Lower River Coalition. Tribes express concern about a lack of notice regarding IM3 construction and indicate they were not aware construction was in progress. Tribes request an immediate stop-of-work and that a full EIR be conducted.
1/20/05	DTSC	Attendees: Fort Mojave: Linda Otero, Cocopah: Paul Soto, Edmund Domingues, Fort Yuma-Quechan: Eddie Williams; DTSC, USEPA, RWQCB, SWRCB, PG&E, CH2M Hill, Lucas Advocates, USGS, USDOI, BLM, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
1/26/05	Steven McDonald, FMIT	B.B. Blevins, DTSC	Edward Smith, Chemehuevi, Sherry Cordova, Cocopah, Daniel Eddy, Jr., CRITs, Nora McDowell, FMIT, Mike Jackson, Sr., Quechan, Courtney Coyle, FMIT, Karen Baker, DTSC	PG&E Topock Compressor Station/Groundwater Remediation/Sacred Place Destruction
1/28/05	DTSC	**Fort Mojave:** Chairperson Nora McDowell; Linda Otero; other participants unconfirmed may include Africa Dorame; Shan Lewis; Felton Bricker		DTSC Director B.B. Blevins holds conference call with Fort Mojave informing them that DTSC will not order a stop-of-work on IM3 construction.
2/1/05	Karen Baker, DTSC	Steven McDonald, FMIT		E-mailed response to Steve McDonald's request for information regarding the project.
2/3/05	Karen Baker, DTSC	Steven McDonald, FMIT, BB Blevins, DTSC, PG&E, CH2M Hill		E-mails regarding responding to requests from tribal representatives for information.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/7/05	Karen Baker, DTSC	Steven McDonald, FMIT, BB Blevins, DTSC		Sent information requested such as land disturbance map, project schedule, IM #3 photos.
2/10/05	Karen Baker, DTSC	Steven McDonald, FMIT		Call to Steve McDonald regarding the Government to Government plan.
2/11/05	Steve McDonald, FMIT	BB Blevins, DTSC	Fort Mojave Chairperson Nora McDowell; Chemehuevi Chairman Tito Smith; CRIT Chairman Daniel Eddy, Jr.; Cocopah Chairperson Sherri Cordova; Fort-Yuma Quechan President Michael Jackson; and Courtney Coyle, .esq.	Five River Tribes Coalition express their disappointment with DTSC's decision not to stop work on the IM3 facility. Tribes express concern regarding a lack of notice and consultation. Tribes state their opinion that an emergency beyond the initial period should require a new CEQA review or exemption.. Tribes accept the offer of a face-to-face meeting with the Director Blevins and the "highest executive officers of PG&E" to be held in the next 10 days at the Fort Mojave Tribal Headquarters and assert that a meeting at this level is necessary to ensure that the leadership of PG&E understands the depth and scope of impact on the Fort Mojave, other river Tribes and places sacred to them.
2/16/05	Karen Baker, DTSC	Steven McDonald, FMIT		Call with Steven McDonald regarding Government to Government plan, IM #3, and MW-27 and MW-34 results and provide him with information requested.
2/18/05	Karen Baker, DTSC	Steven McDonald, FMIT		E-mailed information requested to Steven McDonald.
2/22/05	Derrick Alatorre, DTSC	Chairman Tito Smith, Chemehuevi		Spoke with Tito and forwarded him a letter.
2/23/2005	Kate Burger, DTSC	Geo/Hydro, Tribe Tech. Cons.		Draft Insitu Floodplain Pilot Study Work Plan
3/4/2005	Courtney Coyle, FMIT	Derrick Alatorre, DTSC	B.B. Blevins, DTSC, Robert M. Henderson, BLM, Edward Smith, Chemehuevi, Sherry Cordova, Cocopah, Daniel Eddy, Jr., CRITs, Nora McDowell, FMIT, Mike Jackson, Sr., Quechan, Senator Denise Ducheny, Steven McDonald, FMIT	Fort Mojave Indian Tribe Comments on Draft Public Participation Plan PG&E Topock Compressor Station, January 2005
3/4/2005	Derrick Alatorre, DTSC	Courtney Coyle, FMIT		Responded to Courtney's e-mail.
3/7/2005	Derrick Alatorre, DTSC	Courtney Coyle, FMIT		Spoke with Courtney regarding her comments.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/8/2005	B.B. Blevins, DTSC	Chairperson Nora McDowell, FMIT	Chemehuevi, CRIT, Cocopah, Fort Yuma-Quechan Indian Tribe Chairpersons/President, Fort Mojave attorney at Luce, Forward, Hamilton and Scripps, LLP, and PG&E.	Formalizes response to the Fort Mojave's request for a stop-of-work on IM3 treatment facility construction delivered verbally by conference call on 1/28/05 in which he states he can not halt construction of the IM3 treatment facility (for any length of time).□ Outlines the three factors he examined to make the decision not to stop work on the project:1) whether or not the emergency had passed; 2) whether or not there were any deficiencies in the DTSC process which may have prevented tribal concerns from being fully expressed and considered; and 3) whether an action to stop the project would be legally defensible.□ Asserts that the urgency of the emergency (preventing impact to the Colorado River) still exists and that the IM3 facility needs to be operating as soon as possible to extract, treat and manage higher groundwater flows needed to maintain hydraulic control of the Topock chromium plume. □ Asserts no legal deficiencies in DTSC's process pursuant to CEQA or in the public participation process that prevented the Tribes from expressing viewpoints prior to construction of the IM3 treatment facility. □ Asserts that DTSC can not find legally defensible reason to stay construction of the IM3 treatment facility.
3/11/2005	Nora McDowell, FMIT	BB Blevins, DTSC	Chemehuevi, CRIT, Cocopah, Fort Yuma-Quechan Indian Tribe Chairpersons/President, Fort Mojave attorney Courtney Coyle, esq..	Response to Director Blevins letter of March 8, 2005
3/15/2005	DTSC & PG&E	Fort Mojave: Chairperson Nora McDowell; Cultural Society Director Linda Otero; Felton Bricker; Llewellyn Barackman; additional attendees names unknown; Chemehuevi: Chairman Edward "Tito" Smith; EPA Director David Todd; CRIT: Chairman Daniel Eddy, Jr.; Cocopah: Vice Chairman Eddie Dominguez; Councilmember Paul Soto; Fort Yuma-Quechan: EPA Water Staff Eddie Williams; DTSC: Director BB Blevins, Karen Baker, Nancy Long; PG&E: Tom King, Dan Richards, Bob Doss, Barbara Benson, David Hayes		Five Tribe Coalition meeting with DTSC and PG&E. Tribes shared information on the history of the place and their perspective on the desecration caused by Interim Measures 3 by PG&E . Tribes made fifteen requests of PG&E & DTSC.
3/16/2005	Karen Baker, DTSC	Steven McDonald, FMIT		Call with Steven McDonald regarding yesterday's meeting with the Five Tribe Coalition.
3/18/2005	Nora McDowell, FMIT	PG&E	Chemehuevi, CRIT, Cocopah, Fort Yuma-Quechan Indian Tribe Chairpersons/President, Fort Mojave attorneys Courtney Coyle and Steven McDonald, Mr. Daniel Richard, and DTSC Director B.B. Blevins.	Five Tribes Coalition letter to PG&E Vice President Thomas King to follow-up on the March 15, 2005 meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/18/2005	PG&E	One full CD copy of the report to ten Tribal Chairpersons: Chemehuevi, Cocopah, CRIT, Fort Mojave, Fort Yuma-Quechan, Havasupai, Hualapai, Torres-Martinez Desert Cahuilla, Twenty-Nine Palms, and Yavapai-Prescott Indian Tribes. One full hard copy of the report (three, 3-ring binders) to Chairpersons of six Tribes: Chemehuevi, Cocopah, CRIT, Fort Mojave, Fort Yuma-Quechan and Hualapai Indian Tribes.		PG&E distributes Draft RCRA Facility Investigation Report to ten Tribes at DTSC request.
3/28/2005	PG&E	One full hard copy of the report (three, 3-ring binders) to Chairpersons of four Tribes: Havasupai, Torres-Martinez Desert Cahuilla, Twenty-Nine Palms, and Yavapai-Prescott Indian Tribes.		PG&E follows-up with hard copies of the Draft RCRA Facility Investigation Report to four Tribes.
3/28/2005	Thomas King, PG&E	Five Tribe Coalition c/o Nora McDowell, FMIT		PG&E letter from Vice President Thomas King to Five Tribes River Coalition care of Fort Mojave Chairperson Nora McDowell. PG&E Vice President Thomas King follows-up to requests made by the Tribes at the March 15, 2005 meeting and asserts:
3/31/2005	Norman Shopay, DTSC	FMIT: Linda Otero; BLM: Sarah Murray, Mark Howell; DTSC: Norman Shopay, Susan Stratton (DGS); PG&E: Glenn Caruso, Bruce Gothar, Ray Romero		Site visit to assess potential damage to cultural and biological resources. Visit was prompted by incident involving Needles Power and Light Company on March 19, 2005.
4/7/2005	DTSC	Attendees: Hargis & Associates (on behalf of FMIT), DTSC, PG&E, CH2M Hill, USFWS, DOI, MWD		RFI Workshop meeting
4/12/2005	Norman Shopay, DTSC	Yvonne Meeks, PG&E	cc: CWG members, FMIT, Office of Historic Preservation	Letter to PG&E "Potential Impacts to Cultural and Biological Resources" in response to Needles Power incident on March 19, 2005. Required measures to document potential damage, prevent future damage to sensitive cultural and biological resources along with notification procedures and requirement for sensitivity training of project personnel and contractors.
4/15/2005	Norman Shopay, DTSC	Geo/Hydro, Indian Tribe Reps, CWG		E-mail forwarding letter to PG&E re: needed revisions to Insitu Floodplain Pilot Study Work Plan
4/19/058	Karen Baker, DTSC	Steven McDonald, FMIT		Call regarding ideas for improvement of DTSC's PG&E Website.
4/20/2005	Steven McDonald, FMIT	DTSC	Karen Baker, DTSC, Courtney Coyle, FMIT	Public Records Act Request
4/21/2005	DTSC	Attendees: Fort Mojave: Nora McDowell-Antone, Linda Otero, Courtney Coyle (by phone), Steven McDonald (by phone); Chemehuevi: Chairman Smith, David Todd, Ron Escobar, Gilbert Parra, Bob Woltman; Fort Yuma-Quechan: Eddie Williams; DTSC, PG&E, CH2M Hill, Lucas Advocates, RWQCB, DOI, USFWS, BLM, MWD		Face-to-face Consultative Work Group Meeting
4/21/2005	Norman Shopay, DTSC	Fort Mojave Indian Tribe		Summary of Geo/Hydro Review Items & schedule of Insitu Floodplain Pilot Study Work Plan Review

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/25/2005	Nora McDowell, FMIT	B.B. Blevins, DTSC	Edward Smith, Chemehuevi, Sherry Cordova, Cocopah, Daniel Eddy, Jr., CRITs, Mike Jackson, Sr., Quechan, Courtney Coyle, FMIT, Thomas B. King, PG&E, bcc: Linda Otero, FMIT	Topock Compressor Station Remediation/Request to Stay Operation of Interim Treatment Plant
4/27/2005	Norman Shopay, DTSC	Legal Counsel representing FMIT		Summary of Geo/Hydro Review Items & schedule of Insitu Floodplain Pilot Study Work Plan Review
5/23/2005	Kate Burger, DTSC	Geo/Hydro. Inc. Tribe Tech. Consult.		E-mail containing revised floodplain insitu workplans
5/23/2005	DTSC	Technical Work Group		Revised Pilot Study Work Plan submitted to DTSC on 5/16/05
5/25/2005	Courtney Coyle, FMIT	Norman Shopay, DTSC	B.B. Blevins, DTSC, Tim Smith, BLM, Tom King, PG&E, Edward Smith, Chemehuevi, Sherry Cordova, Cocopah, Daniel Eddy, Jr., CRITs, Nora McDowell, FMIT, Mike Jackson, Sr., Quechan, Senator Denise Ducheny, Wayne Donaldson, State OHP, Larry Myers, Native American Heritage Commission, Steven McDonald, FMIT	RE: Fort Mojave Indian Tribe Comments on Draft Sensitivity Training Plan Cultural and Biological Resources Topock Remediation Project
6/15/2005	DTSC	Attendees: FMIT, DTSC, DGS, PG&E, BLM		Interim Measure #3 Staging Area Restoration meeting
6/16/2005	DTSC	Attendees: Fort Mojave: Linda Otero, Rachel Patterson; Fort Yuma-Quechan Tribe: Eddie Williams; DTSC, DGS, CRWQCB, PG&E, CH2M Hill, Lucas Advocates, MWH, BLM, SAIC, BOR, USGS, USDOI, USFWS, MWD, Toxics Assessment Group		Face-to-face Consultative Work Group Meeting
6/17/2005	DTSC	CWG, Tribe Reps., TWG		Meeting to discuss In-Situ Pilot in Laughland, Nevada
8/4/2005	DTSC	DTSC, DGS, Ethnographic Inquiry, BLM, PG&E, CRIT & FMIT		Meeting regarding the Ethnographic Study
8/11/2005	Norman Shopay, DTSC	Fort Mojave Indian Tribe		Summary of TWG Review Items and Work Plan Review Schedule
8/11/2005	Karen Baker, DTSC	CWG Members		Sent request for input on the Pore Water and Seepage study to CWG members.
8/17/2005	DTSC	Attendees: Fort Mojave: Linda Otero, Rachel Patterson, Courtney Coyle (by phone), Leo Leonhart (by phone); Cocopah: Lisa Wanstall; Fort Yuma-Quechan: Eddie Williams; DTSC, DGS, USEPA, CRWQCB, PG&E, USGS, USDOI, USFWS, USBLM, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
8/24/2005	DTSC	Attendees: Hargis & Associates (on behalf of FMIT), DTSC, PG&E, CH2M Hill, CRWQCB, USEPA, USGS (on behalf of DOI)		Technical Work Group Phone Meeting
8/24/2005	BLM	Fort Mojave Indian Tribe		Revised Insitu Floodplain Pilot Study Work Plan w/ 30-day Formal Section 106 consultation process w/ tribes
8/24/2005	BLM	Indian Tribes		BLM provided the Work Plan to the Tribes for review - Upland Insitu Pilot Study

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/7/2005	FMIT Representatives	RWQCB		FMIT reps sent two letters to RWQCB providing comments on the Draft WDR for the Pilot Study Test.
9/12/2005	Norman Shopay, DTSC	FMIT Tech. Consultant		Response re: GW Flow Model & In-Situ Pilot Studies
9/12/2005	Kate Burger, DTSC	Leo Leonhart, FMIT		Response on a few points in Hargis & Associates RFI and In situ Pilot Study Comments (on behalf of FMIT)
9/15/2005	DTSC	Fort Mojave: Courtney Coyle, Bill Golightly, Phil Rosenberg; DTSC, USEPA, PG&E, USFWS, USBOR, MWD, ADEQ		Consultative Work Group Telephone Meeting
9/27/2005	Aaron Yue, DTSC	CWG, Indian Tribe Reps.		E-mail explaining DTSC's CEQA approach for PE-1, TW-3D, Insitu Pilot Test
9/27/2005	Derrick Alatorre, DTSC	Tribes		Made calls with Aaron Yue and Susan Stratton (DGS) to tribes regarding recent decisions.
10/5/2005	Derrick Alatorre, Norman Shopay, DTSC	Diane DeLeon, CRITs		Held conference call with Diane, new EPA Director at CRITs.
10/18/2005	DTSC	Hargis & Associates (on behalf of FMIT), DTSC, PG&E, USGS, BOR, BLM, CRWQCB, ADEQ		Geo/Hydro Technical Work Group Meeting
10/19/2005	DTSC	Fort Mohave: Courtney Coyle (by phone), DTSC, USEPA, CRWQCB, PG&E, USGS, USDOI, BLM, BOR, MWD, ADEQ, MCDPH		Face-to-face Consultative Work Group Meeting
10/19/2005	Norman Shopay, DTSC	CWG, Indian Tribe Reps., newspapers		Begin public comment period on Initial Study and Proposed Negative Declaration for In-Situ Hexavalent Chromium Reduction Pilot Test in the floodplain. Provided documents for public comment.
10/28/2005	Steven McDonald, FMIT	Norman Shopay, DTSC	Nora McDowell, FMIT, Linda Otero, FMIT, Tim Smith, BLM, Scott Morgan, Gov. Office of Planning & Research, Shankar Prasad, CA EPA, Carol Gaubetz, NAHC, M. Wayne Donaldson, CA SHPO	Comments of Fort Mojave Indian Tribe re PE-1 Extraction Well Project
10/28/2005	Steven McDonald, FMIT	Norman Shopay, DTSC	Nora McDowell, FMIT, Linda Otero, FMIT, Tim Smith, BLM, Scott Morgan, Gov. Office of Planning & Research, Shankar Prasad, CA EPA, Carol Gaubetz, NAHC, M. Wayne Donaldson, CA SHPO	Comments of Fort Mojave Indian Tribe re Needles Power Incident
10/28/2005	Steven McDonald, FMIT	Norman Shopay, DTSC	Nora McDowell, FMIT, Linda Otero, FMIT, Tim Smith, BLM, Scott Morgan, Gov. Office of Planning & Research, Shankar Prasad, CA EPA, Carol Gaubetz, Native American Heritage Commission, M. Wayne Donaldson, CA SHPO	Comments of Fort Mojave Indian Tribe re TW-3D Extraction Well

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11/8/2005	DTSC	Attendees: Fort Mohave: Leo Leonhart, DTSC, CRWQCB, PG&E, USGS, USFWS, USBLM, MWD, ADEQ		Consultative Work Group Telephone Meeting
11/8/2005	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the month of October 2005.
11/14/2005	Norman Shopay, DTSC	Debi Livesay, Torres-Martinez		E-mail w/ pdf containing Workplan and related documents
11/14/2005	Steven McDonald, FMIT	Norman Shopay, DTSC	Nora McDowell, FMIT, Linda Otero, FMIT, Tim Smith, BLM, Scott Morgan, Gov. Office of Planning & Research, Shankar Prasad, CA EPA, Carol Gaubetz, NAHC, M. Wayne Donaldson, CA SHPO, Paul Thayer, CA State Lands Commission	Comments of Fort Mojave Indian Tribe re Pore Water and Seepage Study Work Plan
11/14/2005	Steven McDonald, FMIT	Norman Shopay, DTSC	Nora McDowell, FMIT, Linda Otero, FMIT, Tim Smith, BLM, Scott Morgan, Gov. Office of Planning & Research, Shankar Prasad, CA EPA, Carol Gaubetz, NAHC, M. Wayne Donaldson, CA SHPO	Comments of Fort Mojave Indian Tribe re IM-3 Closing Plan - Baseline Soil Sampling Work Plan
11/15/2005	Steven McDonald, FMIT	Norman Shopay, DTSC	Nora McDowell, FMIT, Linda Otero, FMIT, Tim Smith, BLM, Scott Morgan, Gov. Office of Planning & Research, Shankar Prasad, CA EPA, Carol Gaubetz, NAHC, M. Wayne Donaldson, CA SHPO	Consultation with the Fort Mojave Tribe regarding the Pore Water and Seepage Study Work Plan
11/16/2005	DTSC's Acting Director, BB Blevins	FMIT Chair		Meeting to provide information on proposed pilot study
11/17/2005	DTSC	Attendees: Fort Mojave: Courtney Coyle, Leo Leonhart; DTSC, USEPA, CRWQCB, PG&E, USGS, USDOI, USFWS, BLM, MWD		Consultative Work Group Telephone Meeting
11/18/2005	Steven McDonald, LFHS, for FMIT	Norman Shopay, DTSC, Cathy Wolff-White, BLM	Nora McDowell, FMIT, Linda Otero, FMIT, Tim Smith, BLM, Scott Morgan, Gov. Office of Planning & Research, Shankar Prasad, CA EPA, Carol Gaubetz, NAHC, M. Wayne Donaldson, CA SHPO	Sent letter regarding mitigated neg dec for floodplain insitu and work plans for the insitu well tests (both floodplain & upland tests)
11/22/2005	Steven McDonald, LFHS, for FMIT	DTSC and BLM		Sent letter regarding the Upland Insitu Work Plan

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/22/2005	Karen Baker, DTSC	Courtney Coyle, FMIT		Sent response on use and restoration of IM #3 staging area.
12/1/2005	DTSC	DTSC, PG&E, BLM, SHPO/OHP, USDOI, Chemehuevi, Cocopah, CRIT, FMIT, Hualapai & Yavapai-Prescott Indian Tribe		Meeting regarding SHPO
12/1/2005	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the month of November 2005.
12/2/2005	DTSC	Fort Mojave: Courtney Coyle, Leo Leonhart; DTSC, PG&E, USGS, MWD, Mojave County DPH		Telephone meeting to discuss "Well Installation Workplan for IM Performance Monitoring Program"
12/2/2005	Leo Leonhart, Hargis & Assoc. (for FMIT)	Kate Burger, DTSC	C. Coyle, S. McDonald, L. Otero, FMIT	Fort Mojave Tribe Technical Comments on October 28, 2005 document titled *Work Plan for Installation of Shallow Groundwater Compliance Monitoring Wells, Waste Discharge Requirements R7-2004-0103, PG&E Topock Compressor Station, Needles, CA*
12/8/2005	DTSC	CWG, Indian Tribe Reps., Geo/Hydro		Technical Addendum to Floodplain Insitu Work Plan
12/9/2005	Leo Leonhart, Hargis & Assoc. (for FMIT)	Kate Burger, DTSC	C. Coyle, S. McDonald, L. Otero, FMIT	Fort Mojave Tribe Technical Comments on November 30, 2005 document titled *Well Installation Work Plan for Interim Measures Performance Monitoring Program, PG&E Topock Compressor Station, Needles, CA*
12/14/2005	DTSC	Attendees: Fort Mojave: Luke Johnson, Linda Otero, Leo Leonhart (by phone), Bill Golightly; DTSC, CRWQCB, SWRCB, PG&E, BLM, BOR, USDOI, USEPA, USGS, USFWS, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
12/14/2005	Norman Shopay, DTSC	CWG, Indian Tribe Reps., Geo/Hydro		NOD for Floodplain In-Situ Pilot Study Workplan
12/19/2005	Norman Shopay, DTSC	Geo/Hydro, Indian Tribe Reps., CWG		E-mail - DTSC's conditional approval of Insitu Floodplain Pilot Study Work Plan
12/23/2005	Norman Shopay, DTSC	Geo/Hydro, Indian Tribe Reps., CWG		E-mail - DTSC Response to comments on CEQA Initial Study and Neg Dec
12/23/2005	Norman Shopay, DTSC	Geo/Hydro, Indian Tribe Reps., CWG		Kate Burgers Comments re: Well Installation WP for Insitu Floodplain Pilot Study Work Plan
12/23/2005	Norman Shopay, DTSC	Geo/Hydro, Indian Tribe Reps., CWG		Response to MWDs request that DTSC clarify Pilot Study: Insitu Floodplain Pilot Study Work Plan
1/6/2006	DTSC	CWG, Geo/Hydro, Indian tribes		DTSC's conditional approval to PG&E related to the Draft Well Installation Work Plan
1/13/2006	DTSC	CWG, Geo/Hydro, Indian tribes		Letter requesting PG&E proceed with the Chromium Isotope Study
1/17/2006	Norman Shopay, DTSC	Indian tribes, BLM, DTSC		Draft IM No. 3 Staging Area Restoration Plan for tribal review prior to office review process: Work Plan for Hydraulic Testing of Bedrock Wells
1/18/2006	DTSC	Fort Mojave: Linda Otero, Courtney Coyle; DTSC, CRWQCB, PG&E, BLM, DOI, USEPA, USFWS, USGS, MWD, ADEQ		Geo/Hydro Technical Work Group Meeting
1/27/2006	Norman Shopay, DTSC	Indian Tribe Reps.		On-Site Pre-Construction Kick-Off meeting for IM performance Monitoring Program Work Plan Implementation
1/27/2006	Norman Shopay, DTSC	CWG, Geo/Hydro, Indian tribes		Technical Addendum #1 to Well Installation Work Plan for IM Performance Monitoring
1/28/2006	Norman Shopay, DTSC	Indian Tribe Representatives		Invitation to on-site pre-construction kick-off meeting for IM Performance Monitoring Program Work Plan implementation

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/1/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the months of December 2005 and January 2006.
2/7/2006	Karen Baker, DTSC	Steven McDonald, FMIT		Call to discuss Fort Mojave meeting agenda proposal.
2/8/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian tribes		Conditional approval of Technical Addendum #1 to Well Installation Work Plan for IM Performance Monitoring dated 1/27/06
2/8/2006	Kate Burger, DTSC	Geo/Hydro, CWG and Tribe reps.		Work Plan for collecting additional anaerobic core samples
2/9/2006	DTSC/FMIT	Fort Mojave: Chairwoman Nora McDowell, Linda Otero, Luke Johnson, Courtney Coyle, Steve McDonald, Leo Leonhart; DTSC: Watson Gin, Barbara Coler, Karen Baker		Meeting to discuss status of settlement agreement, overview of project and schedule, tribal input into remedial process
2/9/2006	Kate Burger, DTSC	MWD and Leo Leonhart, FMIT		Information for Site C screen decision call on 2/10/06
2/14/2006	DTSC	Attendees: Hargis & Associates (on behalf of FMIT), DTSC, PG&E, USGS, ADEQ		Geo/Hydro Technical Work Group Meeting
2/15/2006	DTSC	Attendees: Fort Mojave: Linda Otero, Luke Johnson, Courtney Coyle (by phone), Leo Leonhart; Fort Yuma Quechan: Eddie Williams; DTSC, CRWQCB, SWRCB, PG&E, USBLM, BOR, USEPA, USFWS, USGS, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
2/15/2006	Karen Baker, DTSC	Steven McDonald, FMIT		Provided revisions to draft action item table from the Fort Mojave provided by Steven McDonald, then called him to discuss revisions.
2/16/2006	DTSC	DTSC, PG&E, BLM, DGS, Indian Tribe Reps.		Meeting to introduce tribes to the Ethnographic Study near the Topock Maze
2/22/2006	Leo Leonhart, FMIT	Norman Shopay, DTSC		FMIT Comments on document titled "Technical Addendum 1 Well Installation Work Plan for Interim Measure Performance Monitoring Program"
2/24/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian tribe reps		Well Disposition evaluation for inactive supply well PGE-7
2/24/2006	DTSC	DTSC: Norman Shopay, Jeanne Matsumoto, Susan Stratton (DGS); CRIT: Michael Tsosie		Meeting to communicate with CRIT and give an update
2/27/2006	Karen Baker, DTSC	Steven McDonald, FMIT		Email to Steve McDonald on action items from 2/9/06 meeting - Tribal Consultation Chart.
3/1/2006	Steven McDonald, LFHS, for FMIT	Watson Gin, Barbara Coler, Karen Baker (DTSC)	Nora McDowell-Antone, Linda Otero, Luke Johnson, Leo Leonhart, Courtney Coyle (FMIT)	Topock Draft Discussion Protocol for Consultation between DTSC and the Fort Mojave
3/1/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian tribe reps		Technical memorandum - PGE-6 Decommissioning Evaluation and Decommissioning Work Plan for comment
3/2/2006	Steven McDonald, LFHS, for FMIT	Watson Gin, Barbara Coler, Karen Baker (DTSC), Nora McDowell-Antone, Linda Otero, Luke Johnson, Leo Leonhart, Courtney Coyle (FMIT)		Topock DTSC-Tribe Action Items from February 9, 2006 Meeting
3/2/2006	Norman Shopay, DTSC	CWG, Geo/Hydro, Indian tribes		Comments received by DTSC, USGS, ADEQ and FMIT on Technical Addendum 2 to the Interim Measure Performance Monitoring Plan

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/2/2006	Norman Shopay, DTSC	Indian Tribe Reps.	BLM, DGS	Request for tribal review of revised Draft Sensitivity Plan
3/2/2006	Norman Shopay, DTSC	Geo/Hydro, CWG and Tribe reps.		DOI comments on CMS workplan
3/2/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the month of February 2006.
3/6/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian tribes		Chromium Isotope Study Work Plan for review and comment
3/7/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian tribes		CWG Focused Technical Discussion on Chromium Isotope Study Work Plan on 3/14/06
3/8/2006	Courtney Coyle, FMIT	Norman Shopay, DTSC		E-mail asking Norman about deadline for comments to Draft Sensitivity Plan
3/9/2006	Barbara Coler, DTSC	Nora McDowell, Luke Johnson, Courtney Coyle, Leo Leonhart, Linda Otero, Steve McDonald (FMIT)	Aaron Yue, Karen Baker, Nancy Long, Watson Gin (DTSC)	Topock Draft Action Items from DTSC/Tribe 2/9/06 meeting.
3/15/2006	DTSC	Attendees: Fort Mojave: Linda Otero, Courtney Coyle, Leo Leonhart; DTSC, CRWQCB, SWRCB, PG&E, BLM, DOI, USFWS, USGS, MWD, ADEQ		Consultative Work Group Telephone Meeting
3/17/2006	Leo Leonhart, FMIT	Kate Burger, DTSC		Fort Mojave Tribe Technical Comments on 3/3/06 document titled "Chromium Isotope Study Work Plan"
3/17/2006	Norman Shopay, DTSC	PG&E, CWG, Geo/Hydro, Indian Tribes		Approval of supplement to Technical Addendum #1 - Well Installation Work Plan for IM PM
3/17/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian Tribe Reps.		Pore Water and Seepage Study report submitted by PG&E and posted on FTP site
3/17/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian tribe reps		Technical memorandum - Review of groundwater conditions in bedrock formations
3/17/2006	Norman Shopay, DTSC	Geo/Hydro, CWG and Tribe reps.		Request for PG&E to prepare a Data Quality Assessment by 5/15/06
3/20/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian tribes		Comments received on the Chromium Isotope Study Workplan from ADEQ and FMIT
3/22/2006	Norman Shopay, DTSC	CWG, Geo/Hydro, Indian tribes		DTSC conditional approval to the Chromium Isotope Study Workplan dated 3/3/06
3/24/2006	Mary Adelzadeh, BLM	Norman Shopay, DTSC & Yvonne Meeks, PG&E		Draft letter requesting tribal consultation on the CRMP and IM3 MOA
3/27/2006	DTSC	CRIT: Michael Tsosie, Diana De Leon; DTSC: Norman Shopay, Mona Arteaga, Jeanne Matsumoto, Susan Stratton (DGS)		Meeting with the Colorado River Tribe in the Topock area.
3/28/2006	Leo Leonhart, FMIT	Kate Burger, DTSC		Tribe Technical comments on 2/23/06 technical memorandum "Well Disposition Evaluation for Inactive Supply Well PGE-7"
3/28/2006	Norman Shopay, DTSC	Indian Tribe Reps.	BLM, DGS, PG&E, DTSC	Upland InSitu Planning meeting - request for guidance of whether to invite BLM and/or additional tribe reps.
3/31/2006	Leo Leonhart, FMIT	Kate Burger, DTSC		Tribe Technical comments on 2/28/06 Technical Memorandum titled "Well PGE-6 Decommissioning Evaluation, PGE-6 Decommissioning Workplan"

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/2/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the month of March 2006.
4/3/2006	Norman Shopay, DTSC	Indian Tribe Reps.	BLM, DGS, PG&E, DTSC	Follow-up on invitation to tribes to participate in a planning meeting to evaluate alternate locations for the Upland Insitu Pilot Study
4/11/2006	Kate Burger, DTSC	CWG, Geo/Hydro, Indian tribes		Revised work plan for performing a Chromium Isotope Study
4/18/2006	Maureen Gorsen, DTSC	Nora McDowell, Chairperson, FMIT	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	Maureen Gorsen, DTSC	Raymond Torres, Chairman, Torres-Martinez Desert Cahuilla Indian Tribe	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	Maureen Gorsen, DTSC	Dean Mike, Chairman, Twenty-nine Palms	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	Maureen Gorsen, DTSC	Charles Wood, Chairman, Chemehuevi Indian Tribe	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	Maureen Gorsen, DTSC	Daniel Eddy, Jr., Chairman, CRIT	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	Maureen Gorsen, DTSC	Rex Tilousi, Chairman, Havasupai Indian Tribe	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	Maureen Gorsen, DTSC	Ernest Jones, Chairman, Yavapai-Prescott Tribe	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	Maureen Gorsen, DTSC	Mike Jackson, President, Fort Yuma-Quechan Tribe	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	Maureen Gorsen, DTSC	Charles Vaughn, Chairman, Hualapai Indian Tribe	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/18/2006	Maureen Gorsen, DTSC	Sherry Cordova, Chairperson, Cocopah Indian Tribe	DTSC: Watson Gin, Barbara Coler, Nancy Long, Guenther Moskat, Karen Baker, Aaron Yue, Norman Shopay	Request for input and participation in the CEQA evaluation we are undertaking
4/18/2006	DTSC	Chemehuevi: David Todd, Ron Escobar, Dennis Fagundes; FMIT: Linda Otero, Felton Bricker, Courtney Coyle, Leo Leonhart; Yavapai-Prescott: Greg Glassco; DTSC: Karen Baker, Mona Arteaga, Jeanne Matsumoto, Norman Shopay, Kate Burger, Ken Tipon, Jamie Cleland (EDAW); BLM: Mary Adelzadeh, James Priest; PG&E: Yvonne Meeks, Bob Doss, David Gilbert, Curt Russell, Barbara Benson, Glenn Caruso, Kevin Sullivan, Neill Morgan-Butcher		A planning meeting and field visit to evaluate alternative locations for the Proposed Upland In-Situ Pilot Study held at Topock Compressor Satiation
4/18/2006	DTSC	Fort Mojave: Linda Otero, Felton Bricker, Sr., Courtney Coyle, Leo Leonhart; Chemehuevi: Ron Escobar, Dennis Fagundes, David Todd; Yavapai-Prescott: Greg Glassco; DTSC, EDAW, PG&E, Arcadis, BLM		DTSC held a meeting with tribes to evaluate alternative locations for the Proposed Upland In-Situ Pilot Study
4/19/2006	DTSC	Attendees: Fort Mojave: Linda Otero, Nora McDowell, Courtney Coyle (by phone), Leo Leonhart; DTSC, CRWQCB, SWRCB, PG&E, BLM, USDOI, USEPA, USFWS, USGS, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
4/20/2006	Courtney Coyle, FMIT	Norman Shopay, DTSC		Request for extension to review bedrock technical memo until 4/24/06
4/24/2006	Leo Leonhart, FMIT	Norman Shopay, DTSC and FMIT Reps.		Request for extension to review bedrock technical memo until 4/28/06
4/26/2006	Norman Shopay, DTSC	Karen Baker, DTSC		CRIT request that Norman Shopay attend Section 106 meeting & concern of delay in reaching final remedy due to FMIT causing delays
4/27/2006	Norman Shopay, DTSC	Karen Baker, DTSC		CRIT concerns update
4/28/2006	Leo Leonhart, FMIT	Norman Shopay, DTSC	M. Adelzadeh, K. Burger, C. Coyle, L. Johnson, Y. Meeks, S. McDonald, N. McDowell, L. Otero	FMIT comments on 3/15/06 document "Review of Bedrock Groundwater Conditions Technical Memorandum"
5/1/2006	Leo Leonhart, Hargis & Associates for FMIT	Norman Shopay, DTSC		Preliminary comments on possible upland in-situ pilot test work plan preparation
5/1/2006	Karen Baker, DTSC	Leo Leonhart, FMIT	FMIT: Nora McDowell, Linda Otero, Courtney Coyle, Steven McDonald; DTSC: Barbara Coler, Norman Shopay, Kate Burger	Response to Hargis & Associates letter dated March 17, 2006 providing comments on Chromium Isotope Study Workplan, on Behalf of Fort Mojave Indian Tribe, PG&E Topock Compressor Station
5/2/2006	Norman Shopay, DTSC	Geo/Hydro, Indian Tribe Reps., CWG		Submission of Addendum #2 to Work Plan dated 4/14/06: Insitu Floodplain Pilot Study Work Plan

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/2/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the month of April 2006.
5/3/2006	Norman Shopay, DTSC	Geo/Hydro, Indian Tribe Reps., CWG		DTSC approval to Addendum #2 to WP dated 4/14/06:
5/3/2006	Norman Shopay, DTSC	CWG, Geo/Hydro, Indian tribe reps		DTSC Approval of Technical Addendum No. 2 - Approach for Hydraulic Testing of Wells at Locations 1, 2 & 4
5/8/2006	DTSC	Attendees: Hargis & Associates on behalf of FMIT; DTSC, CRWQCB, USGS		Technical Work Group Phone Meeting
5/10/2006	Norman Shopay, DTSC	CWG, Geo/Hydro, TWG		USGS comments regarding the Floodplain InSitu Pilot Study
5/10/2006	Norman Shopay, DTSC	CWG, Geo/Hydro, Indian tribe reps		Comments received from ADEQ on the PG&E Bedrock Report
5/10/2006	Norman Shopay, DTSC	CWG, Geo/Hydro, TWG		FMIT comments on PG&E's consideration of an upland insitu pilot test
5/10/2006	Norman Shopay, DTSC	CWG, Geo/Hydro, TWG		USGS comments regarding the Upland InSitu Pilot Study
5/19/2006	Karen Baker, DTSC	CWG, Indian Tribe Reps, Geo/Hydro		Draft EIR Fact Sheet for Review
5/26/2006	DTSC	DTSC, Cocopah, CRIT, FMIT, Fort Yuma-Quechan, Hualapai and Yavapai-Prescott Indian tribes		Tribal Scoping Meeting on IM No. 3 MOA and Cultural Resource Management Plan
6/5/2006	Kate Burger, DTSC	Geo/Hydro (Include FMIT representatives Leo Leonhart, Courtney Coyle)		Anaerobic core testing workplan submittal
6/9/2006	Courtney Coyle, FMIT	Response to e-mail dated 5/23/06 regarding proposed Tribal-DTSC Cultural Communications Outline		Tribal Scoping Meeting on IM No. 3 MOA and Cultural Resource Management Plan
6/9/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the month of May 2006.
6/20/2006	DTSC	Colorado River Indian Tribe: Michael Tsosie; DTSC: Watson Gin, Karen Baker, Norman Shopay		Discussion of EIR status and cultural resources information, communication strategy between DTSC and CRIT, project update including upland in-situ pilot test.
6/21/2006	DTSC	Attendees: Fort Mojave: Linda Otero, Colleen Garcia, Isadora Evanston, Courtney Coyle (by phone), Leo Leonhart; CRIT: Michael Tsosie, Ginger Swick-Scott; Fort Yuma-Quechan: Eddie Williams, Vernon Smith; DTSC, CRWQCB, PG&E, USBLM, USDOI, USEPA, USFWS, USGS, MWD, ADEQ, Mojave Co DPA		Face-to-face Consultative Work Group Meeting
6/23/2006	Karen Baker, DTSC	Michael Tsosie, CRIT		Provided CalEPA contact information to him.
6/27/2006	Norman Shopay, DTSC	Courtney Coyle & Linda Otero, FMIT		FMIT acceptance of DTSC offer to meet regarding Topock DEIR Scoping
6/30/2006	Karen Baker, Chris Guerre, Mona Arteaga, DTSC	Michael Tsosie, CRIT		Attempted planned conference call with Michael Tsosie to discuss the draft Communication Plan. Reached him and he was unavailable for the call.
7/3/2006	Jeanne Matsumoto, DTSC	CRITs		Called to reschedule meeting.
7/6/2006	Steven McDonald, on behalf of FMIT	Jeanne Matsumoto, DTSC	Linda Otero, FMIT	Comments of the FMIT on the June 2006 Revised Draft Public Participation Plan

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
7/6/2006	Jeanne Matsumoto, DTSC	Michael Tsosie, CRIT		Phone conversation regarding rescheduling of meeting with Topock Team.
7/6/2006	Jeanne Matsumoto, DTSC	FMIT		Reminder e-mail to FMIT regarding comments to the Public Participation Plan.
7/10/2006	DTSC	CRIT: Ginger; DTSC: Karen Baker, Mona Arteaga, Jeanne Matsumoto, Chris Guerre		Call with CRIT to discuss proposed communication plan. Michael Tsosie unavailable and Ginger was not familiar with the draft plan so rescheduled meeting.
7/10/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the month of June 2006.
7/12/2006	Maureen Gorsen, DTSC	Courtney Coyle, cc: Linda Otero, Nora McDowell, Steven McDonald		Potential dates to get together to discuss Topock project-specific training.
7/13/2006	Karen Baker, DTSC	CWG, Geo/Hydro, Indian Tribe reps		DTSC response to comments related to the Site History portion of the RFI dated February 2005
7/18/2006	DTSC	Leo Leonhart, Hargis & Associates, on behalf of FMIT	Nora McDowell, Linda Otero, Luke Johnson, Courtney Coyle, Steven McDonald (FMIT); Yvonne Meeks (PG&E); Cathy Wolff-White, Mary Adelzadeh (BLM), Tom Vandenberg (SWRCB); Barbara Coler, Nancy Long, Aaron Yue, Chris Guerre, Kate Burger (DTSC)	Response to FMIT Preliminary Comments on Possible Upland In-Situ Pilot Test Work Plan Preparation
7/24/2006	Karen Baker, DTSC	Leo Leonhart and Linda Otero, FMIT		e-mail providing electronic copy of letter dated 7/18/06 from DTSC regarding Response to FMIT Preliminary Comments on Possible Upland In Situ Pilot Test Work Plan Preparation
7/25/2006	Steven McDonald, Luce, FMIT	Maureen Gorsen, DTSC		August 15 would be the best date for Topock project-specific training.
7/25/2006	Leo Leonhart, Hargis & Associates for FMIT	Yvonne Meeks, PG&E	Karen Baker, Chris Guerre, DTSC	FMIT comments on draft PG&E 7/7/06 document titled "In Situ Hexavalent Chromium Reduction Pilot Test Work Plan - Upland Plume Treatment"
7/26/2006	Karen Baker, DTSC	Ginger of the CRIT museum, on behalf of Michael Tsosie, CRIT		Call to coordinate regarding the draft communication plan.
7/27/2006	Jeanne Matsumoto, DTSC	Ginger of the CRIT museum, on behalf of Michael Tsosie, CRIT		Faxed revised addendum doc to CRIT.
8/8/2006	Watson Gin, DTSC	Linda Otero, FMIT		Draft communication protocol for consideration and review
8/14/2006	Mona Arteaga, DTSC	Courtney Coyle, FMIT		Confirmation of meeting to take place on 8/15/06
8/15/2006	DTSC/FMIT	Fort Mojave: Chairwoman Nora McDowell, Linda Otero, Colleen Garcia, Luke Johnson, Isadora Evanston, Courtney Coyle, Sharma Hamilton, Steve McDonald, Leo Leonhart; DTSC: Watson Gin, Karen Baker, Nancy Long, Mona Arteaga		Discussed Cultural Sensitivity Training

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8/16/2006	DTSC	Fort Mojave: Nora McDowell, Linda Otero, Courtney Coyle, Sharma Hammond, Leo Leonhart (by phone); CRIT: Michael Tsosie; Fort Yuma-Quechan: Eddie Williams; DTSC, SWRCB, PG&E, USBLM, USBOR, USDOI, USFWS, USGS, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
8/25/2006	Karen Baker, DTSC	Linda Otero, FMIT		Proposed dates for next meeting
8/25/2006	Karen Baker, DTSC	Linda Otero, FMIT		Follow-up on proposed FMIT meeting in 9/06 regarding Upland In-Situ Pilot Test and sampling under the Colorado River
8/29/2006	Jeanne Martinez, Legal Rep,Torres-Martinez Tribe	Aaron Yue, DTSC		Phone discussion of current project status, proposed final remedy date (2009), and timing of initial CEQA EIR meetings (pre-Scoping)
8/29/2006	Watson Gin, DTSC	Charles Wood, Chairman, Chemehuevi Indian Tribe; Karen Baker (DTSC)		Request to meet with him and members of the tribe on 9/13/06 at the Chemehuevi Reservation
8/29/2006	Karen Baker, DTSC	Courtney Coyle, FMIT		Follow-up on proposed FMIT meeting in 9/06 regarding Upland In-Situ Pilot Test and sampling under the Colorado River
8/30/2006	Karen Baker, DTSC	FMIT		Coordinate with FMIT regarding proposed September 12 or 14 meeting date.
8/31/2006	Steven McDonald, FMIT	Liann Chavez, RWQCB	Karen Baker, DTSC	Comments of FMIT to the CRWQCBs initial study and proposed negative declaration for renewal of WDRs
8/31/2006	Karen Baker, DTSC	Courtney Coyle and Linda Otero, FMIT		Electronic copy of Revised draft of Sensitivity Training Plan for PG&E staff and contractors as requested on 8/15/06
9/1/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the months of July and August 2006.
9/8/2006	Karen Baker, DTSC	Linda Otero, Steven McDonald, Courtney Coyle, FMIT		Proposed agenda for 9/14/06 meeting regarding Upland In-Situ Pilot Test and sampling under the Colorado River
9/8/2006	Leo Leonhart, Hargis & Associates for FMIT	Yvonne Meeks, PG&E		Comments on Pre-Draft Upland In Situ Pilot Study
9/12/2006	DTSC	CRIT: Josh Goodwin (museum curator) and Mona Duran (Tribal EPA) and DTSC: Karen Baker, Mona Arteaga, Jeanne Matsumoto		Meeting with CRIT at PG&E to discuss Communication Strategy and project update
9/12/2006	Steven McDonald, Luce, FMIT	Karen Baker, DTSC		Revised proposed meeting agenda for 9/14/06 DTSC/FMIT meeting
9/12/2006	DTSC	Fort Mojave: Phil Rosenberg, Leo Leonhart (by phone); DTSC, PG&E, RWQCB, BOR, USGS, ADEQ, USEPA		Geo/Hydro Technical Work Group Meeting
9/13/2006	DTSC	Chemehuevi Indian tribe		Meeting with Chemehuevi Indian Tribe (Communication and Update)
9/14/2006	DTSC/FMIT	Fort Mojave: Chairwoman Nora McDowell, Linda Otero, Luke Johnson, Courtney Coyle, Steve McDonald, Phil Rosenberg, Leo Lemkee; DTSC: Watson Gin, Barbara Coler, Karen Baker, Nancy Long, Mona Arteaga, Chris Guerre, Fred Zanoria, Jeanne Matsumoto		Discussion included Communication Process, upland in-situ pilot test, groundwater investigation under the river, and scope of proposed soil sampling

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9/18/2006	Curt Russell, PG&E	Linda Otero, FMIT		Called Linda but unidentified male answered the phone and said she'd be off until Wed. Glen described Thursday's meeting and invitation to Linda & other tribe reps. to join us.
9/18/2006	Curt Russell, PG&E	Mona Duran, CRIT		Left message on Mona's voice mail inviting her and other tribe reps. to attend the Thursday site walk and left his number if she had any questions.
9/18/2006	Curt Russell, PG&E	Linda Otero, FMIT		Called Linda again and left message on her voice mail inviting her and other tribe reps. to attend the Thursday site walk and left his number is she had any questions.
9/18/2006	Jeanne Matsumoto, DTSC	David Todd, Chemehuevi		E-mail regarding last weeks meeting.
9/19/2006	Curt Russell, PG&E	Linda Otero, FMIT, and Mona Dura, CRIT		E-mailed map and agenda. Did not receive any phone call, message or e-mail message in response.
9/19/2006	Karen Baker, DTSC	FMIT		Sent potential angle boring and final state of work for the EIR contract with EDAW as follow-up to 9/14/06 meeting
9/26/2006	Karen Baker, DTSC	Steven McDonald, FMIT		Provided action Item table from meetings with FMIT on 8/15/06 and 9/14/06
10/2/2006	Aaron Yue, DTSC	CWG, Geo/Hydro, TWG, Indian Tribe Reps.		Shift of DTSC personnel on the Topock project due to departure of Norman Shopay and Kate Burger from the project. Revised contact list attached.
10/3/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the months of September 2006.
10/3/2006	Leo Leonhart, FMIT	Aaron Yue, DTSC		Asked that we provide a date on the contact list so can be assured using the most recent version.
10/3/2006	Lori Hare for Aaron Yue, DTSC	David Todd, Director of Environmental Protection, Chemehuevi Indian Tribe		Mailing of two cds containing 9/13/06 presentation by DTSC to Chemehuevi tribe entitled "PG&E Topock Chromium Investigation & Cleanup: A Project Update"
10/6/2006	Aaron Yue, DTSC	CWG, Geo/Hydro, TWG, Indian Tribe Reps.		Upland InSitu Pilot Study workplan for review
10/12/2006	Lori Hare for Chris Guerre, DTSC	Nora McDowell-Antone, Linda Otero, Courtney Coyle, Steven McDonald, FMIT		Mailing of cd containing pics of the site
10/18/2006	DTSC	Fort Mojave: Nora McDowell-Antone, Luke Johnson, Courtney Coyle, Leo Leonhart (by phone); Chemehuevi: David Todd; CRIT: Lisa Swick; DTSC, CRWQCB, SWRCB, PG&E, BLM, BOR, DOI, USFWS, USGS, MWD		Face-to-face Consultative Work Group Meeting
10/19/2006	DTSC	Chemehuevi Indian Tribe: Chairman Tito Smith, David Todd, W. Cox, Dennis. DTSC: Fred Zanoria, Mona Arteaga, Jeanne Matsumoto		Meeting with Presentation "PG&E Topock Investigation: Use of Chromium Isotopes
10/20/2006	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribes, CWG		Sampling Frequency Change for Groundwater Monitoring Program: PG&E's proposal and Kate Burger's recommendations (for info. only - not comments)
10/21/2006	Francis T. Millet, PO Box 136, Topock, AZ 86436-0136	Jeanne Matsumoto (reply to Fact Sheet		My residence is 7mi E of Topock, 1 mi N of Rail Road, My well 300ft, 90 ft. to surface water, 330' to Artisan

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/23/2006	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribes, CWG		Slant Drilling Work Plan for Investigation Under the Colorado River (for info. only - not comments)
10/24/2006	Jeanne Matsumoto, DTSC	Indian Tribe Reps, CWG, Ramona Duran		Revised DTSC Organization Chart for the PG&E Topock Project
10/24/2006	Alfredo Zanoria, DTSC	David Todd, Director of Environmental Protection, Chemehuevi Indian Tribe		CD containing PowerPoint presentation "PG&E Topock Investigation: Use of Chromium Isotopes"
10/26/2006	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG		DTSC Comments on PGE-6 Decommissioning Tech Memo and Work Plan
11/3/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the months of October 2006.
11/3/2006	Aaron Yue, DTSC	Michael Tsosie, CRIT		Phone discussion regarding proposed meeting with DTSC on project direction, reaching final remedy and EIR process
11/8/2006	Aaron Yue, DTSC	Courtney Coyle, Mary Adelzadeh, BLM		Courtney Coyle's Request to craft the language on Action Item #6/21/06.3
11/8/2006	Stephen McDonald, Luce Forward for FMIT	Aaron Yue, DTSC	Cathy Wolff-White, BLM, Yvonne Meeks, PG&E	FMIT Comments on Upland In-Situ Pilot Study Work Plan dated 9/29/06
11/15/2006	Aaron Yue, DTSC	Courtney Coyle, Nora McDowell, FMIT		Request for meeting date to discussed soil sampling locations associated with investigation of SWMUs identified in the RFI Report
11/15/2006	Aaron Yue, DTSC	Leo Leonhart, FMIT		Response to inquiry with PG&E regarding the soil sampling site walk
11/17/2006	Aaron Yue, DTSC	Geo/Hydro, CWG, Indian Tribe Reps.		Work Plan for Hydraulic Testing of Bedrock Wells
11/17/2006	Aaron Yue, DTSC	Michael Tsosie, CRIT		Phone discussion regarding proposed agenda for proposed 12/12 meeting
11/21/2006	Aaron Yue, DTSC	Cathy Wolff-White, Indian Tribe Reps., Joanna Citron, Leo Leonhart		Invitation for a site walk to identify proposed soil sampling locations as part of the RFI Investigation.
11/27/2006	Watson Gin, DTSC	Nora McDowell, Chairperson, FMIT		Confirmation of meeting on 12/04/06 to discuss slant drilling to determine the edge of the plume beneath the river & CEQA docs
11/28/2006	Mona Arteaga, DTSC	Chairman Charles Vaughn, Hualapai Tribe		Called to schedule a meeting with him
11/30/2006	Karen Baker, DTSC	Nora McDowell, Chairperson, FMIT		Call in number for anyone needing to participate but unable to join at Needles for meeting
12/4/2006	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Africa Dorame, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the months of November 2006.
12/4/2006	DTSC	Fort Mojave: Fort Mojave: Chairwoman Nora McDowell, Linda Otero, Courtney Coyle, Steve McDonald, Phil Rosenberg; DTSC: Watson Gin, Karen Baker, Nancy Long, Aaron Yue		DTSC held meeting with FMIT to discuss Slant Drilling and Well Installation under the Colorado River
12/4/2006	Aaron Yue, DTSC	Michael Tsosie, CRIT		Attempted to confirm meeting of 12/12 to discuss project. Left message with Ginger in Museum

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12/5/2006	Leo Leonhart, Hargis & Associates (on behalf of FMIT)	Aaron Yue, DTSC, Timothy Z. Smith, BLM	FMIT: L. Otero, C. Coyle, S. McDonald; PG&E: Yvonne Meeks	Fort Mojave Tribe Comments on Pacific Gas & Electric Company (PG&E) plan for construction of multilevel monitor wells beneath the Colorado River
12/5/2006	Jeanne Matsumoto, DTSC	Charles Vaughn, Hualapai		Telephone conversation regarding schedule for meeting.
12/6/2006	Leo Leonhart, Hargis & Associates (on behalf of FMIT)	Aaron Yue, DTSC		Received FMIT comments regarding slant drilling and well installation
12/6/2006	Jeanne Matsumoto, DTSC	Tommy Siyuja, Havasupai Indian Tribe		Called and gave him potential dates (for site walks)in January. Will call again next week
12/6/2006	Jeanne Matsumoto, DTSC	Loretta Kelly, Hualapai		Called to schedule meeting with Tribal representative on January 16, 17, 18, 19 (as per Karen Baker) and to invite them on the site walk.
12/6/2006	Jeanne Matsumoto, DTSC	Mike Jackson Sr., Fort Yuma-Quechan Tribe (left message with Melanie)		Called to schedule meeting with Tribal representative on January 16, 17, 18, 19 (as per Karen Baker) and to invite them on the site walk.
12/6/2006	Jeanne Matsumoto, DTSC	Sherry Cordova, Cocopah Indian Tribe (left a message)		Called to schedule meeting with Tribal representative on January 16, 17, 18, 19 (as per Karen Baker) and to invite them on the site walk.
12/6/2006	Jeanne Matsumoto, DTSC	Raymond Torres, Torres-Martinez Tribe (left a message)		Called to schedule meeting with Tribal representative on January 16, 17, 18, 19 (as per Karen Baker) and to invite them on the site walk.
12/6/2006	Jeanne Matsumoto, DTSC	Mike Dean, Twenty-Nine Palms (left message with Ruth)		Called to schedule meeting with Tribal representative on January 16, 17, 18, 19 (as per Karen Baker) and to invite them on the site walk.
12/7/2006	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai Indian Tribe		E-mailed maps and directions for site walk on 12/11/06
12/7/2006	Aaron Yue, DTSC	Michael Tsosie, CRIT		Attempted to confirm meeting to discuss project. Left message with Ginger in CRIT Museum
12/7/2006	Dawn Hubbs, Hualapai	Jeanne Matsumoto, DTSC		Called Jeanne Matsumoto to confirm she will attend site walk on 12/11/06
12/8/2006	Karen Baker, DTSC	Nora McDowell, FMIT	FMIT: Leo Leonhart, Linda Otero; BLM: Mary Adelzadeh, Timothy Z. Smith; DTSC: Aaron Yue, Christopher Guerre, Watson Gin, Nancy Long, Barbara Coler; PG&E: Robert Doss, Yvonne Meeks	Response to Fort Mojave Indian Tribe Comments on Multilevel Monitoring Well Installation Beneath the Colorado River at the PG&E Topock Compressor Station, Needles, CA
12/8/2006	Aaron Yue, DTSC	Cathy Wolff-White, Indian Tribe Reps., Joanna Citron, Leo Leonhart		Final confirmation and directions to site walk on Monday, December 11, 2006
12/8/2006	Aaron Yue, DTSC	Leo Leonhart, Linda Otero, Nora McDowell, Steve McDonald (FMIT)		Response to FMIT comments received on 12/5/06 regarding slant drilling and well installation
12/8/2006	Aaron Yue, DTSC	CWG, TWG, Indian Reps.		Final confirmation and directions to site walk on 12/11/06
12/11/2006	DTSC	Fort Mojave: Nora McDowell, Linda Otero, Steven McDonald, Leo Leonhart, Phil Rosenberg; Hualapai: Dawn Hubbs; DTSC: Watson Gin, Karen Baker, Aaron Yue, Chris Guerre, Greg Neal; PG&E		Soil Sampling meeting and site walk for Tribes held at the Compressor Station. After site walk review proposed soil sampling location maps handed out today vs maps presented in the draft workplan.
12/12/2006	DTSC	Fort Mojave: Leo Leonhart , Phil Rosenberg (on behalf of FMIT), DTSC, PG&E, BOR, USGS, BLM, SWRCB, ADEQ		Geo/Hydro Technical Work Group Meeting

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/13/2006	DTSC	Fort Mojave: Linda Otero, Leo Leonhart, Phil Rosenberg, Courtney Coyle (by phone); CRIT: Michael Tsosie, Lisa Swick, Josh Goodman; Hualapai: Dawn Hubbs; DTSC, SWRCB, PG&E, BLM, BOR, USEPA, USFWS, USGS, MWD, Mohave County Environmental Health		Face-to-face Consultative Work Group Meeting
12/18/2006	Aaron Yue, DTSC	CWG		Response to FMIT comments received on 12/5/06 regarding slant drilling and well installation
12/19/2006	Aaron Yue, DTSC	Geo/Hydro, CWG, Indian Tribe Reps.		Addendum to Work Plan - request to notify if more time needed to review: Work Plan for Hydraulic Testing of Bedrock Wells
12/19/2006	Aaron Yue, DTSC	EIR, Geo/Hydro, CWG, Indian Tribe Reps.		Forwarded addendum to the Hydraulic Testing Work Plan for review and comment by 12/22/06
12/20/2006	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG		RFI Volume III - Soil Sampling Work Plan for SWMUs
1/2/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the months of December 2006.
1/4/2007	Hargis & Assoc. for FMIT	Aaron Yue		Comments on Addendum #3 to the Floodplain Insitu Hex Chrome Reduction Pilot Test Work Plan
1/5/2007	Aaron Yue, DTSC	CWG, TWG, Indian Reps.		Invitation to Site tour on Wednesday, 2/22/07
1/8/2007	Glen Russell, Dawn Arnold, Tom Vandenberg, Dawn Duncan-Hubbs, Luke Johnson, Robert Lucas	Lori Hare, DTSC		Various stakeholders called Lori Hare to let DTSC know they were interested in attending site-walk
1/12/2007	Aaron Yue, DTSC	Chairperson Nora McDowell, FMIT		Response to comments received on 1/4/07 from Hargis & Associates on behalf of FMIT: Insitu Floodplain Pilot Study Work Plan
1/16/2007	Jeanne Matsumoto, DTSC	Chairman Tommy Siyuja, Havasupai		Re: Potential meeting dates. Left message with Jahmillian
1/16/2007	Jeanne Matsumoto, DTSC	Mike Jackson Sr., Fort Yuma-Quechan Tribe		Re: Potential meeting dates. Left voice mail message.
1/16/2007	Jeanne Matsumoto, DTSC	Sherry Cordova, Cocopah Indian Tribe		Re: Potential meeting dates. Left voice mail message.
1/16/2007	Jeanne Matsumoto, DTSC	Raymond Torres, Torres-Martinez Tribe		Re: Potential meeting dates. Left voice mail message.
1/16/2007	Jeanne Matsumoto, DTSC	Dean Mike, Twenty-nine Palms		Re: Potential meeting dates. Spoke with Ruth. Chairman referred to Tribal EPA @760-398-6767. Jeanne spoke with Bill Anderson and gave potential meeting dates. His mgmt. out until 1/24/07. Jeanne will f/u on 1/25/07
1/18/2007	Courtney Coyle, FMIT	Aaron Yue, DTSC		Request for cd version of RFI Volume III Soil Sampling Work Plan
1/18/2007	Linda Otero, FMIT	Aaron Yue, DTSC		Request for cd version of RFI Volume III Soil Sampling Work Plan
1/25/2007	Watson Gin, DTSC	Charles Vaughn, Chairman, Hualapai Indian Tribe		Follow-up to Charles Vaughn as a follow-up to his request for a meeting. Charles asked that the meeting be coordinated with Loretta Jackson at 928-769-2234
1/25/2007	Jeanne Matsumoto, DTSC	Loretta Jackson, Hualapai Indian Tribe		Left a message with Marcie requesting a meeting possibly for Wed., February 21.
1/25/2007	Mona Arteaga, DTSC	Scott Kwiatkowski, Yavapai-Prescott Tribe		Contacted their tribe to solicit their interest in a meeting with DTSC for a briefing on the Topock project

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/26/2007	Mona Arteaga, DTSC	Dawn Hubbs, Hualapai Indian Tribe		Follow-up to call from Watson Gin to tribal chair regarding tentative date to meet with tribe on 2/20/07. She will call Mona back to confirm.
1/29/2007	Dawn Hubbs, Hualapai	Mona Arteaga, DTSC		Called Mona in response to her call regarding tentative tribal meeting on 2/20/07.
1/29/2007	Aaron Yue, Chris Guerre, DTSC	Leo Leonhart, FMIT		Call regarding contingency plans for the slant drilling.
1/30/2007	Aaron Yue, DTSC	Geo/Hydro, CWG, Indian Tribe Reps.		Report w/ Calculations of GW background numbers
2/1/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose		Compact disc containing Consultative Work Group electronic correspondence during the months of January 2007.
2/2/2007	Amelia Flores, Crit	Jeanne Matsumoto, DTSC		Jeanne received a voice mail message from Amelia Flores, CRIT
2/5/2007	Jeanne Matsumoto, DTSC	Amelia Flores, CRIT		Returned call to Amelia Flores, CRIT. She works in the library and had questions about the repository.
2/5/2007	Dawn Hubbs, Hualapai	Aaron Yue, DTSC		Request for meeting notice for the TWG and CWG on 2/21-22 so she can make travel arrangements
2/5/2007	Mona Arteaga, DTSC	Dawn Hubbs, Hualapai Indian Tribe		Dawn left voice mail message. Mona returned call of where DTSC staying at in Boulder City
2/6/2007	Mona Arteaga, DTSC	Isadora Evanston, FMIT		E-mailed information and regarding the next CWG meeting and hotel locations per her request.
2/8/2007	Aaron Yue, DTSC	Dawn Hubbs, Hualapai		E-mail invitation to next TWG and CWG Meetings for use in making travel arrangements
2/8/2007	Mona Arteaga, DTSC	Scott Kwiatkowski, Yavapai-Prescott Tribe		e-mailed and left a phone message regarding the 2/20/07 tribe meeting and encouraged the Yavapai tribe attendance
2/8/2007	Aaron Yue, DTSC	Geo/Hydro, CWG, Indian Tribe Reps.		Public Notice for the Upland Projects
2/9/2007	Leo Leonhart, Hargis & Assoc. (for FMIT)	Aaron Yue, DTSC, Tim Smith, BLM	C. Coyle, L. Johnson, L. Otero, S. McDonald, N. McDowell (PG&E), Y. Meeks (PG&E)	Fort Mojave Indian Tribe Preliminary Comments on the PG&E November 2006 Draft Document Titled *RCRA Facility Investigation/Remedial Investigation Soil Investigation Work Plan, Part A* and December 11, 2006 Site Walk
2/12/2007	DTSC	Geo/Hydro, CWG, Indian Tribe Reps.		Informational notice in preparation of site work to install monitoring wells beneath the Colorado River to begin 2/14/07
2/13/2007	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai Indian Tribe		Jeanne spoke to Dawn Hubbs regarding conference call 2/14/07 for dry run of presentation.
2/15/2007	Scott Kwiatkowski, Yavapai Tribe	Mona Arteaga, DTSC		Response to invitation to 2/20/07 that they have a scheduling conflict and no one for their Tribe can attend
2/16/2007	Courtney Coyle FMIT	Aaron Yue, DTSC		Requested that Ms. Linda Lewis from her firm receive all communications associated with upcoming February CWG meeting.
2/20/2007	DTSC	Hualapai Tribal Council and DTSC (Baker, Yue, Arteaga, Matsumoto)		Provided overview of regulatory process for site remediation and update on site investigation and upcoming work
2/21/2007	DTSC	Fort Mojave: Phil Rosenberg, Luke Johnson; Hualapai: Dawn Hubbs; DTSC, PG&E, USEPA, BLM, USGS, RWQCB, SWRCB		Geo/Hydro Technical Work Group Meeting

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/22/2007	DTSC	Fort Mojave: Luke Johnson, Linda Otero, Phil Rosenberg, Leo Leonhart (by phone), Linda Lewis; CRIT: Michael Tsosie, Lisa Swick; Hualapai: Dawn Hubbs; DTSC, RWQCB, SWRCB, PG&E, BLM, BOR, DOI, USEPA, USFWS, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
2/26/2007	Jeanne Matsumoto, DTSC	Lori Hare, DTSC		Informed Lori that Dawn Hubbs, Hualapai, requested that all documents sent out as e-mail also be mailed as hard copy.
2/26/2007	Dawn Hubbs, Hualapai	Jeanne Matsumoto, DTSC		Requested that all documents sent out as email also be mailed as hard copy. Computer system used by Hualapai is old and can not accommodate the docs DTSC sends out.
2/28/2007	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		E-mailed comments file regarding 2/20/07 DTSC visit.
3/1/2007	DTSC	FMIT: Philip Rosenberg; DTSC, PG&E, USGS		Technical Workgroup Call regarding placement of screen in newly drilled MW-52.
3/2/2007	Leo Leonhart, Hargis & Assoc. (for FMIT)	Aaron Yue, DTSC & Tim Smith, BLM		FMIT preliminary comments on "Groundwater Background Study, Steps 3 & 4 Results"
3/2/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the months of February 2007.
3/2/2007	Karen Baker, DTSC	Bill Hurt, Quechan Tribe		Call regarding California health effects of hexavalent chromium in response to an article he read.
3/20/2007	Karen Baker, DTSC	Nora McDowell, FMIT	FMIT: Leo Leonhart, Linda Otero, Steven McDonald; BLM: Mary Adelzadeh, Timothy Z. Smith; SWRCB: Tom Vandenberg; CRWQCB: Robert Perdue; DTSC: Aaron Yue, Chris Guerre, Watson Gin, Nancy Long, Barbara Coler; PG&E: Robert Doss, Yvonne Meeks	Response to Fort Mojave Indian Tribe Comments on Upland Project Associated with the PG&E Topock Compressor Station
3/20/2007	Aaron Yue, DTSC	Mr. Dave Singleton, Program Analyst, Native American Heritage Commission, 915 Capital Mall, Room 364, Sacramento, CA 95814		Response to comments received on 2/22/07 on neg dec for Upland Insitu, Aquifer Testing, GW Well Maintenance and well decommissioning project
3/20/2007	Aaron Yue, DTSC	Mr. Singleton, Native American Heritage Commission		Response to comments dated 2/22/07on proposed negative declaration for Upland In-Situ Pilot Test
3/20/2007	Aaron Yue, DTSC	Mr. Singleton, Native American Heritage Commission		Response to comments dated 2/22/07on proposed negative declaration for Upland In-Situ Pilot Test

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/20/2007	Aaron Yue, DTSC	Nora McDowell, FMIT	Leo Leonhart, Hargis & Assoc.; Linda Otero, FMIT, Mary Adelzadeh, BLM, Aaron Yue, DTSC, Steven McDonald, Luce, Forward, Hamilton & Scripps, Tom Vandenberg, SWRCB; Robert Perdue, CRWQCB; Chris Guerre, DTSC, Watson Gin, DTSC, Nancy Long, DTSC, Barbara Coler, DTSC; Robert Doss PG&E; Yvonne Meeks, DTSC; Tim Smith, BLM	Response to FMIT Comments to: 1) DTSC's Initial Study and Proposed Neg Dec re: Analysis of Potential Impacts to a Proposed In-Situ Hex Chrom. Reduction Pilot Test, Proposed Aquifer Testing & Maintenance at 3 GW wells, & the decommissioning of a 4th well near the PG&E Topock Comp. station dated 3/8/07; 2) Hydraulic Workplan dated 12/22/06; 3) Remaining Concerns on doc "In Situ Hex Chrom. Reduction Pilot Test WP Upland Plume Treatment dated 12/15/06.
3/20/2007	Karen Baker, DTSC	Steven McDonald, Courtney Coyle, Leo Leonhart, FMIT		Call with Fit representatives regarding responses to their comments.
3/20/2007	Aaron Yue, DTSC	Peter Martin, USGS	CWG, Geo/Hydro, Indian tribes	Response to comments on Upland In-Situ Pilot Study Work Plan dated 9/29/06
3/26/2007	DTSC	Fort Mojave: Leo Leonhart , Phil Rosenberg (on behalf of FMIT), DTSC, PG&E, USGS		MW-53 Well Screen Call
3/27/2007	Jeanne Matsumoto, DTSC	Michael Tsosie, CRIT		Telephone conversation regarding schedule for meeting.
3/28/2007	Aaron Yue, DTSC	Yvonne Meeks, PG&E	EIR, Geo/Hydro, CWG, Indian Tribe Reps.	Conditional Approval of Well PGE-6 Revised Decommissioning Work Plan
4/2/2007	Aaron Yue, DTSC	Yvonne Meeks, PG&E	EIR, Geo/Hydro, CWG, Indian Tribe Reps.	Conditional Approval of Work Plan for Hydraulic Testing in Bedrock Wells
4/2/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the months of March 2007.
4/11/2007	Jeanne Matsumoto, DTSC	Michael Tsosie, CRIT		Call regarding meeting arrangements for 4/17/07.
4/12/2007	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		Follow-up on request to receive hard copies of project documents and if hard copies/cd's is suitable to her needs.
4/12/2007	Jeanne Matsumoto, DTSC	Jill McCormick, Cocopah Indian Tribe		Requested to be changed to Secondary contact on the list. Jeanne inquired about interest in a meeting/update. Jill responded that probably not interested at this time. Invited to 4/18 CWG.
4/13/2007	Chris Guerre, DTSC	CWG, Geo/Hydro, Indian tribes		Phase II Chromium Isotope Study for Review/Comment
4/17/2007	DTSC	CRIT: Michael Tsosie and Charles Land; DTSC: Karen Baker, Mona Arteaga, Jeanne Matsumoto		Topics of discussion included Tribal resolution related to PG&E Topock project, schedule and process for EIR and cultural resource concerns for EIR, and CRIT concerns regarding BLM Cultural Resources Management Plan for IM3.
4/18/2007	DTSC	Fort Mojave: Linda Otero, Leo Leonhart, Leo Lemarky (by phone); CRIT: Michael Tsosie, Lisa Swick, Gary Hansen; Hualapai: Dawn Hubbs; DTSC, PG&E, CRWQCB, BLM, USEPA, USFWS, MWD, Mojave County		Face-to-face Consultative Work Group Meeting

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/25/2007	Michael Tsosie, CRIT	Watson Gin, Aaron Yue, Karen Baker, DTSC		Provided a copy of the recent CRIT Tribal Council Resolution related to PG&E Topock project.
4/25/2007	Howard Magill, CRIT	Jeanne Matsumoto, DTSC		Received call requesting fax of CWG membership.
4/25/2007	Jeanne Matsumoto, DTSC	Howard Magill, CRIT		Faxed copy of CWG membership list.
5/2/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the months of April 2007.
5/8/2007	Watson Gin, DTSC	Hualapai Chairman Charles Vaughn		Thank you letter and follow-up to meeting with the Hualapai Tribal Council in February 2007.
5/9/2007	Aaron Yue, DTSC	Yvonne Meeks and Julie Eakins, PG&E	EIR, Geo/Hydro, CWG, Indian Tribe Reps.	DTSC comments from Greg Neal to the September 2006 RFI Report, Volume 1
5/14/2007	Yvonne Meeks, PG&E	Linda Otero, FMIT	PG&E & Karen Baker, DTSC)	Plans to revise drilling method at MW-24 bench
5/15/2007	Leo Leonhart, Hargis & Associates for FMIT	Yvonne Meeks, PG&E		Request for information/explanations on plans to revise drilling method at MW-24 Bench
5/18/2007	Yvonne Meeks, PG&E	Leo Leonhart, Hargis & Associates, FMIT	Courtney Coyle, FMIT; Juan Jayo, Dave Gilbert, PG&E	Answers to questions regarding Upland Pilot Drilling rig change
5/18/2007	Aaron Yue, DTSC	Geo/Hydro, CWG and Tribe reps.		ADEQ comments to PG&E on revised Arizona Well Work Plan
5/25/2007	Aaron Yue, DTSC	Indian Tribes, CH2M Hill, DOI, DTSC		DTSC and DOI comments on the Part A Soil Sampling Work Plan
5/30/2007	Aaron Yue, DTSC	PG&E, CH2M Hill	Geo/Hydro, EIR Group, CWG, Indian Tribes	DTSC concurrence with change in drilling method from Rotosonic to Mud-Rotory
5/30/2007	Karen Baker, DTSC	Hosted by BLM, attended by DTSC (Karen Baker, Watson Gin), PG&E and several tribes		Attended meeting regarding revisions to the Cultural Resources Management Plan for IM No. 3.
5/31/2007	DTSC	Fort Mojave: Chairwoman Nora McDowell, Linda Otero, Steve McDonald, Courtney Coyle, Leo Leonhart; DTSC: Watson Gin, Karen Baker		Meeting between DTSC and FMIT to discuss issues related to Interim Measures #3, upland in-situ pilot test, slant drilling in Arizona, and CEQA.
6/4/2007	Karen Baker, DTSC	Nora McDowell, FMIT		Copy of PG&E's Programmatic Project Proposal (Response to action item from 12/4/06 meeting)
6/4/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the months of May 2007.
6/4/2007	Karen Baker, DTSC	FMIT	Watson Gin, DTSC	PDF of MWD Board Notes (link no longer worked)
6/8/2007	Karen Baker, DTSC	FMIT: Linda Otero, Leo Leonhart; DTSC: Aaron Yue, Watson Gin		DTSC response to FMIT comments on RFI/RI Soil Sampling Work Plan Part A
6/11/2007	DTSC	Philip Rosenberg (on behalf of FMIT); DTSC, PG&E, USGS, USBOR, MWD		Geo/Hydro Technical Work Group Meeting
6/11/2007	Aaron Yue, DTSC	CWG, Geo/Hydro, Indian Tribe reps		DTSC response to FMIT comments on RFI/RI Soil Sampling Work Plan Part A

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/13/2007	Steven McDonald, Luce Forward & Hamilton (for FMIT)	John Earle, USFWS		Response to John Earle's e-mail of 6/6/07 regarding Topock Wastewater Release on 5/24/07
6/13/2007	Dennis Longknife, Jr., CRIT	Jeanne Matsumoto, DTSC		In response to his call, Jeanne e-mailed him CWG agenda
6/14/2007	Dennis Longknife, Jr., CRIT	DTSC		Received request to join the CWG
6/14/2007	Jeanne Matsumoto, DTSC	Tricia - CRIT Museum		Jeanne faxed Tricia CWG agenda in response to Call from M. Tsosie to M. Arteaga
6/20/2007	Aaron Yue, DTSC	CWG, Geo/Hydro, Indian Tribe reps		Request to review project schedule and submit comments to him by 7/27/07
6/20/2007	DTSC	Fort Mojave: Timothy Williams, Linda Otero, Luke Johnson, Michael Sullivan, Leo Leonhart, Courtney Coyle, Steven McDonald; Chemehuevi: Dennis Fagundes (by phone); CRIT: Michael Tsosie, Lisa Swick; DTSC, SWRCB, CRB, SDCWA, CVWD, PG&E, BLM, BOR, DOI, USEPA, USFWS, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
6/21/2007	Karen Baker, DTSC	DOI, FMIT Legal, BLM, DTSC		DTSC Position on Arizona Drilling
6/25/2007	Karen Baker, DTSC	FMIT	PG&E, DTSC	Copy of the EIR Contract between PG&E and EDAW as follow-up to 5/31/07 meeting
6/26/2007	Aaron Yue, DTSC	Chairman Eddy and Michael Tsosie, CRIT		Inquiry as to whether Mr. Dennis Longknife, Jr. should be added as member of CWG.
6/29/2007	Michael Sullivan for FMIT	Aaron Yue, DTSC and Michele Easley, BLM	FMIT: Timothy Williams, Linda Otero, Luke Johnson, Courtney Coyle, Steve McDonald, Leo Leonhart; PG&E: Yvonne Meeks; BLM: Mary Long	Comments on RFI/RI Workplan: Soils Site Workplan Part A
7/2/2007	Aaron Yue, DTSC	Geo/Hydro, EIR Group, CWG, Indian Tribes		Provided Revised CMS/FS for 30-Day Review
7/2/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Nora McDowell, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the months of June 2007.
7/9/2007	Maureen Gorsen (DTSC)	Tommy Siyuja (Havasupai), Dean Mike (Twenty-Nine Palms), Ernest Jones, Sr. (Yavapai-Prescott), Mike Jackson (Fort Yuma-Quechan), Raymond Torres (Torres-Martinez Desert Cahuilla), Sherry Cordova (Cocopah)	Jeanne Matsumoto, Watson Gin, Karen Baker (DTSC)	Letters following up on calls from DTSC outreach specialists regarding tentative meetings to provide an update on the status of the PG&E Topock environmental investigation
7/9/2007	Maureen Gorsen, DTSC	Chairs of Twenty-Nine Palms, Yavapai-Prescott, Havasupai, Cocopah, Torres-Martinez, Desert Cahuilla, Fort Yuma-Quechan Indian Tribes		Invitation to call Jeanne Matsumoto to schedule a meeting with the DTSC PG&E team
7/19/2007	Darrel Mike, Chairman, 29 Palms IT	Jeanne Matsumoto, DTSC		Darrel Mike called Jeanne Matsumoto. He stated that Jeanne should contact the Tribe's EPA Director, Marshall Cheung to arrange for the Council to meeting with DTSC and to explain to Mr. Cheung "How does this pertain to us"
7/23/2007	Courtney Coyle, FMIT	Aaron Yue, DTSC	S. McDonald, L Otero, L. Leonhart (FMIT)	Comments on Topock Remediation Schedules
8/1/2007	Jeanne Matsumoto, DTSC	Michael Tsosie, CRIT		Faxed e-mail regarding CWG including confirmation that will fax agenda when available.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/2/2007	DTSC	Mojave: Leo Leonhart (on behalf of FMIT); DTSC, PG&E, BOR, USGS, DOI, MWD		Geo/Hydro Technical Work Group Meeting
8/2/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the months of July 2007.
8/15/2007	DTSC	Mojave: Linda Otero, Steven McDonald (by phone); CRIT: Michael Tsosie, Lisa Swick; Hualapai: Dawn Hubbs; DTSC, RWQCB, SWRCB, CRB, SDCWA, PG&E, BLM, BOR, DOI, USFWS, MWD, ADEQ, Mojave Co.		Face-to-face Consultative Work Group Meeting
8/15/2007	Steve McDonald, FMIT	Aaron Yue, DTSC		Additional comments to Action Item table presented at the CWG meeting today, 8/15.
8/17/2007	Aaron Yue, DTSC	Yvonne Meeks, Julie Eakins, PG&E	Geo/Hydro, EIR Group, CWG, Indian Tribes	Formal Revised RFI Volume 1 Acceptance Letter
8/20/2007	Steve McDonald, FMIT	Aaron Yue, DTSC		Comments to Action Item Table from June 2007 CWG Meeting
8/21/2007	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		Trying to find date for communication protocol meeting with Hualapai
8/21/2007	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		e-mailed draft communication protocol
8/24/2007	Dawn Hubbs, Hualapai	Jeanne Matsumoto, DTSC		Response that she will run a potential meeting date by Loretta Jackson when she returns
8/31/2007	Aaron Yue, DTSC	PGE, EIR, Geo/Hydro, Indian Tribe Reps, CWG		Joint formal comments from DTSC and DOI on the May 30, 2006 Soil and Sediment Data Usability Assessment Technical Memorandum.
9/3/2007	Aaron Yue, DTSC	PG&E, EIR, Geo/Hydro, CWG, Indian Tribe Reps.		DTSC review of June 2007 Revised CMS/FS Work Plan. DTSC comments and stakeholder comments sent for PG&E review. DTSC requests PG&E to provide responses to the work plan comments by 9/24/07. Stakeholders who provided comments: MWD, DOI, Hargis & Assoc. for FMIT, SDCWA.
9/4/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the months of August 2007.
9/17/2007	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		Follow-up on call to Travis and e-mail that she will call at 10:00 AM on 9/17 to try and schedule meeting date
10/1/2007	Jeanne Matsumoto, DTSC	Dr. M. Cheung, 29 Palms Indian Tribe		Offered to schedule a meeting/project update. Ann Chung took message and will relay to Dr. Cheung
10/1/2007	Aaron Yue, DTSC	Ann Cheung, 29 Palms Indian Tribe		Scheduled tentative meeting for 10/22/07

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/2/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of September 2007.
10/2/2007	Nancy Long, DTSC	Steven McDonald, FMIT	Aaron Yue, Karen Baker, Watson Gin	Response to 8/15/07 e-mail to Aaron Yue commenting on action item table that was presented at the Aug. 2007 CWG meeting.
10/5/2007	Aaron Yue, DTSC	Geo/Hydro, EIR Group, CWG, Indian Tribes		Response to CWG action item 4/19/06.3 where Courtney Coyle, FMIT, asked for final remedy dates anticipated in the past. Table was submitted.
10/9/2007	Jeanne Matsumoto, DTSC	Michael Tsosie, CRIT		Faxed CWG Agenda
10/16/2007	DTSC	Mojave: Leo Leonhart (on behalf of FMIT); DTSC, PG&E, BOR, USGS, DOI, MWD, BLM		Geo/Hydro Technical Work Group Meeting
10/17/2007	DTSC	Mojave: Leo Leonhart, Courtney Coyle; CRIT: Gregg de Bie, Nancy Shopay; DTSC, CRB, RWQCB, SDCWA, BLM, BOR, USEPA, USFWS, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
10/18/2007	Dave Singleton, NAHC	Jamie Cleland, EDAW		Comments to Proposed EIR
10/18/2007	Jeanne Matsumoto, DTSC	Ann Cheung, 29 Palms Indian Tribe		Telephone call to receive directions for 10/22/07 meeting
10/22/2007	DTSC: Karen Baker, Aaron Yue, Jeanne Matsumoto	29 Palms Band of Mission Indian representatives		Meeting to discuss status of project and hear tribal concerns regarding the project.
10/24/2007	Aaron Yue, DTSC	Dr. Cheung and Mr. Anderson, 29 Palms		Forwarded most recent quarter and annual monitoring reports and informed added to e-mail distribution to receive future reports. Also, will discuss mater of additional tribal drinking water monitoring for hex chrome with PG&E and Federal agencies.
10/29/2007	Aaron Yue, DTSC	Leo Leonhart and Linda Otero, FMIT		Heads up that DTSC issuing request to PG&E to prepare a work plan to investigate groundwater near the East Ravine
11/2/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of October 2007.
11/20/2007	Nancy Shopay, CRITs	Aaron Yue, DTSC		Nancy Shopay representing CRIT scheduled a file review for 11/27/07. Aaron followed-up to see if she was still coming and offered to send cd of CWG correspondence from January 2007 - present. She postponed the file review to January. CD was given to her at the December CWG.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/5/2007	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of November 2007.
12/6/2007	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai; Michael Tsosie, CRIT		Faxed and e-mailed copies of CWG meeting agenda.
12/12/2007	DTSC	Mojave: Luke Johnson, Christine Medley, Leo Lemarky, Courtney Coyle (by phone); CRIT: Michael Tsosie, Lisa Swick, Nancy Shopay; Hualapai: Dawn Hubbs; DTSC, RWQCB, CRB, PG&E, BLM, BOR, DOI, MWD, ADEQ		Face-to-face Consultative Work Group Meeting
12/13/2007	Chris Guerre, DTSC	Geo/Hydro, EIR Group, CWG, Indian Tribes		East Ravine Groundwater Investigation Work Plan for review and comment.
12/13/2007	Chris Guerre, DTSC	Geo/Hydro, EIR Group, CWG, Indian Tribes		Informed that East Ravine Groundwater Investigation Work Plan is on the ftp site with link to it for members unable to open the large document
12/17/2007	Chris Guerre, DTSC	Geo/Hydro, EIR Group, CWG, Indian Tribes		RFI/RI Soil Investigation Work Plan Part B
12/19/2007	Chris Guerre, DTSC	Nancy Shopay, Envirometrix, CRIT		Sent all TWG handouts from 12/11/07.
12/21/2007	Karen Baker, DTSC	Courtney Coyle, FMIT		Karen's response to Courtney's inquiry regarding inclusion of the barrier wall technology on the December TWG agenda
12/28/2007	Leo Leonhart, Hargis & Assoc. (for FMIT)	Aaron Yue, DTSC, Steve Politsch, BOM	C. Coyle, W. Donaldson, J. Earle, M. Gorsen, L. Johnson, S. McDonald, L. Otero, M. Sullivan, T. Williams	Fort Mojave Indian Tribe Comment on PG&E, December 11, 2007 document titled *Work Plan for East Ravine Groundwater Investigation PG&E Compressor Station, Needles, CA*
12/28/2007	Gregg de Bie, Michael Tsosie, CRITs	Aaron Yue, DTSC	CRITs Tribal Council, Envirometrix	Comments on East Ravine Study for Topock
1/7/2008	Jeanne Matsumoto, DTSC	Lisa Swick, CRIT		Requested that Jeanne give her dates and locations of CWG meetings from January 2007 to present. Jeanne confirmed the info with Lori and faxed to Lisa Swick.
1/7/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of December 2007.
1/11/2008	Lori Hare, DTSC	Michael Tsosie, CRIT		Called Michael Tsosie to ask if he has an alternate e-mail address - emails coming back as undeliverable. Neola from the CRIT museum returned my called and gave me a new e-mail address to use.
1/11/2008	Maureen Gorsen, DTSC	Ernest Jones (Yavapai-Prescott), Raymond Torres (Torres-Martinez), Dean Mike (Twenty-Nine Palms), Sherry Cordova (Cocopah)Tommy Siyuja (Havasupai), Timothy Williams (FMIT), Mike Jackson (Fort Yuma-Quechan), Charles Wood (Chemehuevi), Daniel Eddy, Jr. (CRIT), Charles Vaughn (Hualapai)	Terry Taminen, Jerry Mariani, Watson Gin	Invitation to "Topock Breakthrough Summit" on 2/27-2/28/08. Mini Summit on 1/25/08.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/15/2008	Maureen Gorsen, DTSC	William Morrow, Dave Gilbert (PG&E), Elaine Zielinski (BLM), Benjamin N. Tuggle, Steve Spangle, Denise Baker, John Earle (USFWS), Lorri Gray, Michael Biever (BOR), Kris Doebbler (BLM), Willie Taylor (DOI), Jeffrey Kightlinger, Eddie Rigdon (MWD), Steve Owens (ADEQ), Wayne Nastri, Jean Gamache (USEPA), Gerald Zimmerman, Robert Perdue, Abbas Amirteymoori (CRB), Helen Hankins (AZ BLM), Michael Fulton, Jerry Smit (ADEQ), Tom Vandenberg (CRWQCB)	Casey Padgett (DOI), Arlene Kabei, Jeff Scott (USEPA), Bart Koch (MWD), Bob Howard (PG&E)	Invitation to 2/27 and 2/28/08 mini-summits. Invitation to mini summit on process improvement and technical cleanup for government representatives and PG&E on 2/8/08.
1/18/2008	Leo Leonhart, FMIT	Chris Guerre, DTSC	FMIT: Courtney Coyle, Linda Otero, Steven McDonald; DTSC: Aaron Yue	Request to delay comment period for RFI/RI Work Plan, Part B for a week.
1/18/2008	Aaron Yue, DTSC	Leo Leonhart, FMIT	FMIT: Courtney Coyle, Linda Otero, Steven McDonald; DTSC: Chris Guerre	Do you need another full week? Is it possible to submit comments by Wednesday?
1/18/2008	Leo Leonhart, FMIT	Aaron Yue, DTSC		Yes, will finish this week then run it by the tribe.
1/18/2008	Gregg de Bie, CRITs	Aaron Yue, DTSC	Michael Tsosie, CRITs, Karen Baker, DTSC, Chris Guerre, DTSC	Comments on RCRA Facility Investigation/ Remedial Investigation Work Plan, Part B, PG&E Topock Compressor Station, Needles, CA
1/22/2008	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		Left message regarding protocol for tribal titles.
1/23/2008	Leo Leonhart, FMIT	Aaron Yue, DTSC, Steve Politsch, BOM	C. Coyle, W. Donaldson, J. Earle, M. Gorsen, L. Johnson, S. McDonald, L. Otero, M. Sullivan, T. Williams	Fort Mojave Indian Tribe Comments on PG&E December 2007 document titled "RCRA Facility Investigation Soil Investigation Work Plan, Part B…"
1/25/2008	Maureen Gorsen, DTSC	Greg Glassco (Yavapai-Prescott); Timothy Williams, Linda Otero (FMIT); Ron Escobar, Gilbert Parra (Chemehuevi); Lisa Swick, Nancy Shopay (CRITs); Dawn Hubbs (Hualapai)		Tribal Mini-Summit to prepare for upcoming Topock Breakthrough Summit on February 27-28, 2008
2/1/2008	Maureen Gorsen, DTSC	Tim Williams, Linda Otero (FMIT), Lisa Swick, Nancy Shopay (CRIT), Ron Escobar, Gilbert Parra (Chemehuevi), Greg Glassco (Yavapai-Prescott), Dawn Hubbs (Hualapai)	Terry Taminen, Jerry Mariani, Watson Gin, Roberta Reyes Codero, J.D.	Thank you for attending Topock Mini Summit on 1/25/08
2/1/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of January 2008.
2/6/2008	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		Discussed draft communication protocol between DTSC and Hualapai tribe and e-mail summary of discussion. Charles Vaughn and Sherry Counts to receive Gov to Gov communications; Loretta Jackson-Kelly/Dawn Hubbs day to day coordination of project related activities with DTSC.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/8/2008	Maureen Gorsen, DTSC	Arlene Kabei, Jean Gamache (USEPA); Bob Howard, Dave Gilbert (PG&E); Michael Fulton, Jerry Smit (ADEQ); Bart Koch, Eddie Rigdon (MWD), Helen Hankins (AZ BLM); Joe Liebhauser (BOR); John Earle, Denise Baker, (USFWS); Helen Hankins (BLM); Abbas Amirteymoori (CRB); Tom Vandenberg, Robert Perdue (CRWQCB); Casey Padgett, Kris Doebbler (DOI), Watson Gin, Karen Baker (DTSC)		Government Mini-Summit to prepare for upcoming Topock Breakthrough Summit on February 27-28, 2008
2/14/2008	Karen Baker, DTSC	Chemehuevi: David Todd, Charles Wood, Shirley Smith; Cocopah: Paul Soto, Jill McCormick, Lisa Wanstall, Willadena Thomas, Sherry Cordova; CRITs: Eric Shepard, Gary B. Hansen, Greg de Bie, Michael Tsosie, Diane DeLeon, Ramone Duran, Daniel Eddy, Jr.; FMIT: Timothy Williams, Courtney Coyle, Linda Otero, Nora McDowell-Antone, Luke Johnson, Shan Lewis; Fort Yuma-Quechan: Eddie Williams, Arlene Kingery, Pauline Jose, Mike Jackson, Sr.; Havasupai: Rowland Manakaja, Don E. Watahomigie, Matthew Tutesoy; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Charles Vaughn, Sherry J. Counts; Morongo Band of Mission Indians: Britt W. Wilson; San Manuel Band of Mission Indians: Henry Duro, Ann Brierty; Serrano Nation of Indians: Goldie Walker; Torres-Martinez Desert Cahuilla: Debi Livesay, Raymond Torres; Twenty-Nine Palms Indian Tribe: Marshall Cheung, Darrell Mike; Yavapai-Prescott: Scott Kwiatkowski, Ernest Jones		Letter to request for tribal input on EIR and Native American Communication Response Form with Gene Vicinity Map and Project Location map attached.
2/19/2008	Maureen Gorsen, DTSC	Jean Gamache, Arlene Kabei (USEPA), Robert Perdue (CRWQCB), John Earle (USFWS), Dave Gilbert (PG&E), Helen Hankins (AZ BLM), Joe Liebhauser (BOR), Abbas Amirteymoori (CRB), Casey Padgett (DOI), Kris Doebbler (BLM), Bart Koch (MWD), Michael Fulton (ADEQ), Bob Howard (PG&E), Denise Baker (USFWS), Jerry Smit (ADEQ), Tom Vandenberg (CRWQCB)	Terry Taminen, Jerry Mariani, Watson Gin, Roberta Reyes Codero, J.D.	Thank you for attending Topock Mini Summit on 2/8/08 in Los Angeles
2/20/2008	Chairman Charles Wood, Chemehuevi	Jeanne Matsumoto, DTSC		Returned Native American Communication Response Form indicating that he would like to participate in the Native American communication process.
2/20/2008	Charles Wood, Chemehuevi Tribe	Jeanne Matsumoto, DTSC		Returned Native American Communication Response Form indicate that he would like to participate in the Native American communication process and be called to discuss the project further
2/20/2008	EDAW	Michael Tsosie, CRIT		Follow-up concerning list of questions for ethnographic assessment.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/21/2008	Maureen Gorsen, DTSC	Arlene Kabei, Wayne Nastri, Jean Gamache (USEPA), Bob Howard, Dave Gilbert, William Morrow (PG&E), Michael Fulton, Jerry Smit, Steve Owens (ADEQ), Bart Koch, Jeffrey Kightlinger, Eddie Rigdon (MWD), Helen Hankins (AZ BLM), Lorri Gray, Michael Biever (BOR), John Earle, Denise Baker, Benjamin Tuggle, Steve Spangle (USFWS), Chris Doebbler, Elaine Zielinski (BLM), Abbas Amirteymoori (CRB), Tom Vandenberg, Robert Perdue (CRWQCB), Casey Padgett, Willie Taylor (DOI)	Terry Taminen, Jerry Mariani, Watson Gin, Roberta Reyes Codero, J.D.	Invitation to Topock Breakthrough Summit in Bullhead City, Arizona on February 27-28, 2008
2/21/2008	DTSC	Mojave: Leo Leonhart; CRIT: Nancy Shopay; DTSC, PG&E, BOR, USGS, DOI, MWD, ADEQ, RWQCB		Geo/Hydro Technical Work Group Meeting
2/25/2008	Dr. Marshall Cheung, Twenty-Nine Palms	Jeanne Matsumoto, DTSC		Returned Native American Communication Response Form indicating that he does not have any comments at this time.
2/27/2008 and 2/28/08	DTSC	Ernest Jones, Sr., Janet Jones (Yavapai-Prescott); Linda Otero, Nora McDowell-Antone, Steven McDonald (FMIT); Charles Wood, Ron Escobar (Chemehuevi), Richard Armstrong, Michael Tsosie, Nancy Shopay (CRIT); Charles Vaughn, Loretta Jackson-Kelly, Dawn Hubbs (Hualapai); Arlene Kabei(USEPA); Bob Howard, Dave Gilbert, Juan Jayo (PG&E); Michael Fulton (ADEQ); Bart Koch, Eddie Rigdon (MWD), Helen Hankins (AZ BLM); Joe Liebhauser (BOR); John Earle, Denise Baker, (USFWS); Helen Hankins (BLM); Abbas Amirteymoori (CRB); Tom Vandenberg, Robert Perdue (CRWQCB); Casey Padgett (DOI), Maureen Gorsen, Watson Gin, Nancy Long, Karen Baker, Tim Ogburn, David Miller (DTSC); Facilitators: Terry Tamminen, Jerry Mairani, Roberta Reyes Cordero		DTSC Director Maureen Gorsen held the Topock Breakthrough Summit with Tribal and Government leaders with the goal to improve communications and relationships among all stakeholders and to protect the Colorado River by reaching a timely decision on the cleanup remedy.
2/28/2008	Jeanne Matsumoto, DTSC	Jill McCormick, Cocopah		Follow-up call. Jill will meet with the Tribal Chair during the week of 3/3/08 and discuss the communication needs of the tribe.
2/28/2008	Jeanne Matsumoto, DTSC	Lisa Wanstall, Cocopah Tribe	Terry Taminen, Jerry Mariani, Watson Gin	Tribal outreach follow-up call. She will meet with the Tribal Chair during the week of 3/3/08 and discuss the communication needs of the tribe. Jeanne will call again on Monday.
2/28/2008	Jeanne Matsumoto, DTSC	Jill McCormick, Cocopah		Tribal outreach follow-up call. She will meet with the Tribal Chair during the week of 3/3/08 and discuss the communication needs of the tribe.
2/29/2008	Karen Baker, DTSC	Steven McDonald, FMIT		E-mail regarding EIR Scoping meeting.
3/5/2008	Jeanne Matsumoto, DTSC	Lisa Wanstall, Cocopah Tribe		Tribal outreach follow-up call. Lisa will meet with the Tribal Chair during the week of 3/3/08 and discuss the communication needs of the tribe.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/5/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of February 2008.
3/6/2008	Gregg de Bie, CRITs	Jeanne Matsumoto, DTSC		Returned Native American Communication Response Form indicating that he would like to participate in the Native American communication process.
3/11/2008	Gregg de Bie, CRIT	Aaron Yue, DTSC		Envirometrix comments to the Groundwater and Surface Water Monitoring Report, Third Quality 2007
3/12/2008	Karen Baker, DTSC	Diane DeLeon, Mike Tsosie (CRIT)		Request to set up an EIR NOP Scoping meeting with the CRIT.
3/12/2008	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Request to set up an EIR NOP Scoping meeting with the CRIT.
3/13/2008	Jeanne Matsumoto, DTSC	David Todd, Chemehuevi		David Todd has retired and Gilbert Para is now the Environmental Director. Mr. Para is out in training all week - Jeanne left a message.
3/13/2008	Jeanne Matsumoto, DTSC	Pauline Jose, Quechan		Pauline recommended Jeanne speak with Ed Williams or Bridget Nash, Preservation Office. Jeanne left a message on Bill Hirt's voicemail.
3/13/2008	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		Jeanne tried to call but there was no answer.
3/13/2008	Jeanne Matsumoto, DTSC	Debi Livesay, Torres-Martinez		Jeanne left a voice mail message
3/13/2008	Jeanne Matsumoto, DTSC	Scott Kwiatkowski, Yavapai-Prescott		Stated that the Tribe is supportive of FMIT on this project. They understand that the land is very sacred to the FMIT. The tribe prefers to attend meetings with the FMIT and cultural information about the area will come from FMIT. He will check with the chairman and e-mail a response to Jeanne as to what type and where of if they would like a meeting.
3/13/2008	Jeanne Matsumoto, DTSC	David Todd, Chemehuevi		Jeanne was informed that David Todd has retired. Gilbert Para is now the Environmental Director (same telephone number). Mr. Para is out all week in training. Jeanne will call again next week.
3/13/2008	Jeanne Matsumoto, DTSC	Pauline Jose, Quechan		Pauline recommended Jeanne speak with Ed Williams or Bridget Nash, Preservation Officer. Dialed Eddie William's number and was connected to Bill Hirt's voicemail. Left a message. Will call again on Monday.
3/13/2008	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		No answer - will try again this afternoon.
3/13/2008	Jeanne Matsumoto, DTSC	Debi Livesay, Torres-Martinez		Left a voice message - will call again on Monday.
3/13/2008	Jeanne Matsumoto, DTSC	Scott Kwiatkowski, Yavapai-Prescott		Scott stated that the Tribe is supportive of FMIT on this project. They understand that the land is very sacred to the FMIT. The tribe typically prefers to attend meetings with the FMIT and cultural information about the area will come from FMIT. He will check with the Chairman and email a response to Jeanne as to what type and where or if they would like a meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/13/2008	Maureen Gorsen, DTSC	Charles Vaughn, Dawn Hubbs, Loretta Jackson-Kelly (Hualapai), Charles Wood, Ron Escobar (Chemehuevi), Linda Otero, Steven McDonald, Nora McDowell-Antone (FMIT), Michael Tsosie, Nancy Shopay, Richard Armstrong (CRIT), Ernest Jones, Janet Jones (Yavapai-Prescott)		Thank you letter sent for participation at Topock Breakthrough Summit on 2/27-28/08
3/24/2008	Debi Livesay, Torres-Martinez	Jeanne Matsumoto, DTSC		Returned Native American Communication Response Form
3/24/2008	Jeanne Matsumoto, DTSC	Gilbert Para, Chemehuevi		Spoke to Mr. Para and he stated that he will ask Chairman Wood if he would like an update meeting or scoping meeting. Gilbert will e-mail Jeanne with an answer or she can call him again.
3/24/2008	Jeanne Matsumoto, DTSC	Jill McCormick, Cocopah		Jill met with the Tribal Chair during the week of 3/3/08 but has not received an answer back. She will meet with the council again next week. Jill also stated that Edmund Dominguez was interested in the project. Jill requested a copy of the AZ fact sheet.
3/24/2008	Jeanne Matsumoto, DTSC	Gilbert Para, Chemehuevi Tribe		Jeanne spoke to Mr. Para and he stated that he will ask Chairman Wood if he would like an update meeting or scoping meeting. Gilbert will email Jeanne with an answer or Jeanne will call him again.
3/24/2008	Jeanne Matsumoto, DTSC	Jill McCormick, Cocopah Tribe		Jill McCormick met with the Tribal Chair during the week of 3/3/08 but has not received an answer back. She will meet with the council again next week. Jill also stated that Edmund Dominguez was interested in the project. Jill requested a copy of the AZ fact sheet.
3/25/2008	Lori Hare, DTSC	Primary/Secondary contacts of CWG, TWG and Tribal Reps.		Sent requests for contact list review and update
3/25/2008	Jeanne Matsumoto, DTSC	Scott Kwiatkowski, Yavapai-Prescott		He did ask the council but has not heard back. He will meet with the council again next week.
3/25/2008	Jeanne Matsumoto, DTSC	Jill McCormick, Cocopah		Has not heard back from the council yet. As per her request, e-mailed a copy of the AZ slant drilling fact sheet/work notice. She did state that Edmund Dominguez was interested in the project.
3/25/2008	Jeanne Matsumoto, DTSC	Scott Kwiatkowski, Yavapai-Prescott		He did ask the council but has not heard back. He will meet with the council again next week.
3/25/2008	Jeanne Matsumoto, DTSC	Jill McCormick, Cocopah Tribe		Jeanne email a copy of the AZ slant drill fact sheet/work notice. Stated that Edmund Domingues is interested in the project.
3/25/2008	Leo Leonhart, FMIT	Robert Perdue, CRWACB	Aaron Yue, DTSC, S. Politsch, BL M, N. McDowell, FMIT, L. otter, FMIT, Y. Meeks, PG&E, C. Coyle, FMIT, S. McDonald, FMIT	FMIT review of final report for Board Order R7-2006-008 and R7-2007-0014, PG&E Floodplain Reductive Zone In Situ Pilot Test, Final Completion Report
3/26/2008	Aaron Yue, DTSC	Yvonne Meeks, Julie Eakins, PG&E	Geo/Hydro, EIR Group, CWG, Indian Tribes	Comments from DTSC, DOI, CRIT and FMIT on the December 2007 RFI/RI Soil Investigation Work Plan - Part B

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/28/2008	Maureen Gorsen, DTSC	Bob Howard, Dave Gilbert, Juan Jayo (PG&E), Helen Hankins (AZ BLM), Denise Baker, John Earle (USFWS), Joe Liebhauser (BOR), Casey Padgett (DOI), Bart Koch, Eddie Rigdon, (MWD), Michael Fulton (ADEQ), Robert Perdue, Tom Vandenberg (CRWQCB), Arlene Kabei (USEPA), Abbas Amirteymoori (CRB)		Thank you letter and notes sent for participation at Topock Breakthrough Summit on 2/27-28/08
4/2/2008	DTSC	Mojave: Luke Johnson, Nora McDowell-Antone, Leo Leonhart, Courtney Coyle (by phone); CRIT: Nancy Shopay; Hualapai: Dawn Hubbs; DTSC; SWRCB, SDCWA, PG&E, BLM, BOR, DOI, USEPA, USFWS, USGS, MWD, ADEQ, Mohave Co. DPH		Face-to-face Consultative Work Group Meeting
4/3/2008	Jeanne Matsumoto, DTSC	Gregg de Bie, CRIT		Jeanne left a voice mail message
4/3/2008	Karen Baker, DTSC	Diane DeLeon, Mike Tsosie, Nancy Shopay (CRIT)		Sent an e-mail to follow-up on items from the CWG meeting and try to set up an EIR Scoping Meeting with them.
4/3/2008	Jeanne Matsumoto, DTSC	Gregg de Bie, CRIT		Jeanne left a message.
4/7/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Willadena Thomas, Lisa Wanstall; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of March 2008.
4/8/2008	Jeanne Matsumoto, DTSC	Gilbert Para, Chemehuevi Tribe		Spoke to Mr. Para and he stated that he spoke with Chairman Wood - Chairman said May 1 is okay. Jeanne proposed the week of 4/21. Gilbert said he would check on 4/28.
4/8/2008	Nancy Shopay, CRIT	Jeanne Matsumoto, DTSC		Called Jeanne and suggested shuttle, refreshments & room reservation for CRIT June NOP Meeting
4/8/2008	Watson Gin, DTSC	Charles Vaughn, Dawn Hubbs, Loretta Jackson-Kelly (Hualapai), Charles Wood, Ron Escobar (Chemehuevi), Linda Otero, Steven McDonald, Nora McDowell-Antone (FMIT), Michael Tsosie, Nancy Shopay, Richard Armstrong (CRIT), Ernest Jones, Janet Jones (Yavapai-Prescott)		Letter with graphic recording from Topock Breakthrough Summit
4/8/2008	Watson Gin, DTSC	Bob Howard, Dave Gilbert, Juan Jayo (PG&E), Helen Hankins (AZ BLM), Denise Baker, John Earle (USFWS), Joe Liebhauser (BOR), Casey Padgett (DOI), Bart Koch, Eddie Rigdon, (MWD), Michael Fulton (ADEQ), Robert Perdue, Tom Vandenberg (CRWQCB), Arlene Kabei (USEPA), Abbas Amirteymoori (CRB)		Letter with graphic recording from Topock Breakthrough Summit
4/10/2008	Aaron Yue, DTSC	Debbie Livesay, Torres-Martinez Desert Cahuilla Indian Tribe		Left voice mail message that calling in response to her inquiry regarding the Topock clean-up project and the Native American communication process. Hoping she will return call.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/10/2008	Debi Livesay, Torres-Martinez	Aaron Yue, DTSC		Returned call. Discussed sampling of sediments in river, bedrock caverns and channels, and planning of public workshops for the project. Will take up NOP meeting on 5/2 and get back to Aaron. Aaron also referred her to the DTSC-Topock website for background info.
4/10/2008	Jeanne Matsumoto, DTSC	Dawn Hubbs, Hualapai		E-mailed and left voice mail message to ask for assistance in setting up a NOP scoping meeting in Peach Springs
4/10/2008	Dawn Hubbs, Hualapai	Jeanne Matsumoto, DTSC		No answer. Jeanne left a message and will follow-up with an e-mail
4/10/2008	Aaron Yue, DTSC	Debi Livesay, Torres-Martinez		She is familiar with the Topock project, she wanted to know if other tribes had contacted us about this project. Aaron told her he that we have been actively work with the river tribes and that they are engaged on this project. She also wanted to know if the sediments of the river had been sampled and if we are concerned with chromium getting into "bedrock caverns and channels." and if we are planning and public workshop for the project. I told her that we are currently planning to public notice the NOP, and that the Scoping Meeting does not lend itself to much question and answers. She says she is very familiar with the CEQA process. I did tell her the reason for the outreach is to communication and provide any info necessary to interested parties prior to the NOP on May 2nd. She says she will take it up with the tribe and get back to Aaron if they want a meeting.
4/11/2008	Watson Gin, DTSC	Bob Howard, Dave Gilbert (PG&E), Casey Padgett, Kris Doebbler (DOI), Bart Koch, Eddie Rigdon (MWD), Arlene Kabei (USEPA), Jerry Mariani (Sacramento Quality), Karen Baker, Nancy Long (DTSC), Nora McDowell-Antone (FMIT), Charles Vaughn, Dawn Hubbs (Hualapai), Nancy Shopay (CRIT)	Maureen Gorsen, DTSC, Terry Tamminen	Invitation to Post-Summit Task Force Meeting on April 30, 2008 at PG&E Topock Compressor Station
4/30/2008	Watson Gin, DTSC	Linda Otero, Steven McDonald, Nora McDowell-Antone, Courtney Coyle (FMIT); Charles Wood (Chemehuevi); Charles Vaughn, Dawn Hubbs (Hualapai); Lisa Swick, Nancy Shopay (CRIT), Nancy Shopay (CRIT), Bob Howard, Dave Gilbert, Juan Jayo (PG&E); Denise Baker, John Earle (USFWS); Casey Padgett, Kris Doebbler (DOI); Bart Koch (MWD), Arlene Kabei (USEPA); Watson Gin, Karen Baker, Nancy Long, Jerry Mariani (DTSC)		Follow-up Leadership meeting to the February 2008 Topock Leadership Partnership meeting to begin discussion of action items agreed to at the summit: Consultation Process, Clearinghouse, Decision Making and CWG, One Stop Permitting
5/1/2008	Karen Baker, DTSC	Courtney Coyle, Nora McDowell, FMIT		Follow-up about setting up a meeting prior to the formal EIR NOP scoping meeting - trying to find May date they are available: 5/12, 5/16, 5/20, 5/23?
5/1/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of April 2008.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/2/2008	DTSC	Charles Wood, Gilbert Parra, Ron Escobar, Cara McDonald, Shirley Smith, Dennis Fagundes, David Todd (Chemehuevi Indian Tribe); Sherry Cordova, Jill McCormick, Willadena Thomas, Paul Soto, Edmund Domingues (Cocopah); Daniel Eddy, Jr., Michael Tsosie, Diana F. De Leon, Eric Shepard, Sylvia Homer, Eldred Enas, Gary B. Hansen, Herman TJ Latfoor, Greg de Bie, Ramona Duran (CRITs); Timothy Williams, Nora McDowell-Antone, Linda Otero, Luke Johnson, Shan Lewis, Felton Bricker, Sr., Angie Alvarado, John Algots, Christine Medley, Steven McDonald (Legal), Courtney Coyle (Attorney), Leo Leonhart (Consultant), Michael Sullivan (FMIT); Mike Jackson, Sr., Arlene Kingery, Eddie Williams, William Hirt, Pauline Jose, William Scott, Lorey Cachora (Fort Yuma-Quechan Tribe); Don E. Watahomigie, Mathew Tutesoy, Rowland Manakaja (Havasupai Indian Tribe); Charles Vaughn, Loretta Jackson, Jack Ehrhardt, Dawn Hubbs, Sherry Cordova (Hualapai); Raymond Torres, Debi Livesay (Torres-Martinez Desert Cahuilla Indian Tribe); Britt W. Wilson (Morongo Band of Mission Indians); Goldie Waker (Serrano Nation of Indians); Darrell Mike, Marshall Cheung (Twenty-Nine Palms Indian Tribe); Ernest Jones, Sr., Scott Kwiatkowski (Yavapai-Prescott Tribe);		DTSC issued Notice of Preparation (NOP) of Environmental Impact Report for 30-day public review and comment
5/2/2008	Karen Baker, DTSC	Courtney Coyle, Nora McDowell, FMIT		Reply to Nora McDowell's e-mail asking who should be in attendance at the meeting.
5/2/2008	Karen Baker, DTSC	Nora McDowell, FMIT	Aaron Yue & Watson Gin, DTSC; Courtney Coyle (on behalf of FMIT)	Proposed discussion items for Pre-NOP meeting
5/6/2008	Watson Gin, DTSC	Courtney Coyle (FMIT), Linda Otero (FMIT), Steven McDonald (FMIT), Nora McDowell-Antone (FMIT), Charles Wood (Chemehuevi), Charles Vaughn (Hualapai), Dawn Hubbs (Hualapai), Lisa Swick (CRIT), Nancy Shopay (CRIT), Bob Howard (PG&E), Dave Gilbert (PG&E), Denis Baker (USFWS), John Earle (USFWS), Casey Padgett (DOI), Kris Doebbler (DOI), Bart Koch (MWD), Arlene Kabei (USEPA), Juan Jayo (PG&E)	Maureen Gorsen, DTSC, Terry Tamminen, Jerry Mariani	Thank you letter for participating in 4/30/08 Topock Summit meeting
5/6/2008	Watson Gin, DTSC	Bob Howard, Dave Gilbert, Juan Jayo (PG&E), Denise Baker, John Earle (USFWS), Casey Padgett, Kris Doebbler (USDOI), Bart Koch (MWD), Arlene Kabei (USEPA)	Maureen Gorsen, DTSC, Terry Tamminen, Jerry Mariani	Thank you letter for participating in 4/30/08 meeting
5/6/2008	Karen Baker, Watson Gin, DTSC	Dawn Hubbs, Hualapai		Coordinate regarding Tribal Council meeting in May.
5/7/2008	Franklin A. Dancy, Morongo Band of Mission Indians	Aaron Yue, DTSC		Comments to Notice of Preparation for a Draft EIR
5/8/2008	Karen Baker, DTSC	Courtney Coyle, Nora McDowell, FMIT		Call in number for May 12, 2008 meeting
5/8/2008	Jill McCormick, Cocopah Tribe	Jeanne Matsumoto, DTSC		Cocopah tribe would like a meeting on overview of project and wants possible date to take back to the council.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/12/2008	Aaron Yue, DTSC	Courtney Coyle, FMIT, Heather Halsey (EDAW)		Power point presentation "Topock CEQA Status and Schedule" for use at meeting.
5/12/2008	Jill McCormick, Cocopah Tribe	Jeanne Matsumoto, DTSC		Jill e-mail a request for potential meeting dates to bring to Tribal Council.
5/13/2008	Jill McCormick, Cocopah Tribe	Jeanne Matsumoto, DTSC		Jeanne e-mail potential dates.
5/14/2008	DTSC	Nancy Shopay, Lisa Swick, Michael Tsosie (CRIT), Dawn Hubbs (Hualapai), Bart Koch (MWD), Kris Doebbler (DOI), Nora McDowell (FMIT), Dave Gilbert, Yvonne Meeks (PG&E), Ben Chandler (Haley & Aldrich), Lisa Micheletti Cope (Arcadis), Christina Hong (CH2), Jerry Mariani (Sacramento Quality)		Topock Information Clearinghouse Meeting. Primary topic of discussion was purpose of the clearinghouse task force and information and process improvements.
5/14/2008	Courtney Coyle, FMIT	Nancy Long, DTSC		Per Nancy's request, Courtney sent resources, links and citations regarding confidentiality of sensitive cultural information under California law.
5/16/2008	Dave Singleton, Native American Heritage Commission	Aaron Yue, DTSC	State Clearinghouse	Instruction on NOP/EIR and List of Native American Contacts
5/17/2008	Michael Sullivan (FMIT)	Aaron Yue, Rebecca Heick (BLM)	Nora McDowell, Luke Johnson, Linda Otero, Courtney Coyle, Steve McDonald, Yvonne Meeks, Leo Leonhart	Updated comments on Human Health and Ecological Risk Assessment Work Plan
5/19/2008	Gregg de Bie, CRIT	Karen Baker, DTSC	Aaron Yue	CRITS suggestions for CWG agenda items
5/22/2008	Michael Sullivan (FMIT)	Aaron Yue, Rebecca Heick (BLM)	Nora McDowell, Luke Johnson, Linda Otero, Courtney Coyle, Steve McDonald, Yvonne Meeks, Leo Leonhart	Updated comments on Human Health and Ecological Risk Assessment Work Plan
5/23/2008	Watson Gin, DTSC	Linda Otero, Steven McDonald, Nora McDowell, Courtney Coyle (FMIT); Charles Wood, Ron Escobar (Chemehuevi); Charles Vaughn, Dawn Hubbs, Loretta Jackson-Kelly (Hualapai); Michael Tsosie, Lisa Swick, Nancy Shopay, Richard Armstrong (CRIT); Ernest Jones, Sr. (Yavapai-Prescott); Bob Howard, Dave Gilbert, Juan Jayo (PG&E); Denise Baker, John Earle (USFWS); Casey Padgett, Kris Doebbler (DOI); Bart Koch, Eddie Rigdon (MWD); Arlene Kabei (USEPA); Jerry Mariani (Sac Quality); Nancy Long, Karen Baker (DTSC)	Maureen Gorsen, DTSC, Terry Taminen	Invitation to Post-Summit Task Force Meeting on June 10, 2008. Objectives of meeting will be to establish a committee to enhance communications and develop a charter for that committee. Draft agenda and template for Advisory or Steering committee enclosed.
5/23/2008	Intertribal Leaders Meeting	Havasupai Tribe, Hualapai Tribe, Cocopah Tribe, Chemehuevi Tribe, Yavapai-Prescott Tribe, CRITs and the FMIT, DTSC: Watson Gin; PG&E: Bob Howard		Tribes reserve their individual rights as tribal governments but choose to engage in this process under 8 guiding principles.
5/27/2008	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		E-mail to Nora regarding planning for 106 Consultation presentation.
5/29/2008	Timothy Williams, FMIT	Aaron Yue, DTSC		FMIT Comments to Environmental Impact Report/ Public Scoping Meeting
5/30/2008	Karen Baker, DTSC	Nora McDowell, FMIT		Told Nora to go ahead and invite Dr. King to the June CWG meeting

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/2/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of May 2008.
6/6/2008	Jeanne Matsumoto	Amber Vanfleet, CRIT		Thank you for updated information and glad she could attend yesterday's meeting.
6/10/2008	DTSC	Task Force and Summit Participants: Timothy Williams, Linda Otero, Steven McDonald, Nora McDowell-Antone, Courtney Coyle (FMIT); Charles Wood (Chemehuevi); Charles Vaughn, Dawn Hubbs (Hualapai); Michael Tsosie, Nancy Shopay (CRIT), Nancy Shopay (CRIT); Dave Gilbert, Juan Jayo, Lisa Cope (PG&E); John Earle (USFWS); Casey Padgett, Kris Doebbler (DOI); Rebecca Heick (BLM); Bart Koch, Eddie Rigdon (MWD); Watson Gin, Nancy Long, Jerry Mariani, Jeanette Sartain (DTSC)		Post Topock Summit Decision Making Task Force Meeting. Discussion included Advisory Steering Committee and Charter, sharing from May 23, 2008 Intertribal Council meeting.
6/13/2008	Aaron Yue, DTSC	Yvonne Meeks, Julie Eakins, PG&E	EIR Group, Geo/Hydro, Indian Tribe Reps., CWG	CMS Work Plan Approval Letter
6/13/2008	Greg deBie, CRIT	Aaron Yue	Michael Tsosie, Nancy Shopay, CRIT	Comments on Notice of Preparation for a Draft Environmental Impact Report
6/13/2008	Leo Leonhart, FMIT	Aaron Yue, DTSC	C. Coyle, B. Heicht, L. Johnson, S. McDonald, N. McDowell-Antone, Y. Meeks, L. Otero, T. Williams	FMIT Comments on PG&E document title *Phase II Anaerobic Core Testing Summary Report*
6/13/2008	Aaron Yue, DTSC	Leo Leonhart, FMIT	C. Coyle, B. Heicht, L. Johnson, S. McDonald, N. McDowell-Antone, Y. Meeks, L. Otero, T. Williams	We will review you comments in conjunction with PG&E's report. PG&E is not requesting even DTSCs concurrence or approval on this document. DTSC has allotted time to discuss this during the TWG meeting.
6/13/2008	Aaron Yue, DTSC	Yvonne Meeks, Julie Eakins	EIR Group, Geo/Hydro TWG; Indian Tribe Reps., CWG	Review of responses to Soil and Sediment Data Usability Assessment Tech Memo Comments
6/13/2008	Ann Carberry for Watson Gin	Task Force and Summit Participants: Timothy Williams, Linda Otero, Steven McDonald, Nora McDowell-Antone, Courtney Coyle (FMIT); Charles Wood (Chemehuevi); Charles Vaughn, Dawn Hubbs (Hualapai); Michael Tsosie, Nancy Shopay (CRIT), Nancy Shopay (CRIT); Dave Gilbert, Juan Jayo, Lisa Cope (PG&E); John Earle (USFWS); Casey Padgett, Kris Doebbler (DOI); Rebecca Heick (BLM); Bart Koch, Eddie Rigdon (MWD); Watson Gin, Karen Baker, Nancy Long, Jerry Mariani, Jeanette Sartain (DTSC)	Loretta Jackson-Kelly (Hualapai); Arlene Kabei (USEPA); Denise Baker (USFWS); Abbas Amirteymoori (CRB);ronetribe@yahoo.com; Robert Perdue (RWQCB); Joe Liebhauser (BOR); Helen Hankins (BLM); Maureen Gorsen (DTSC)	Notes from June 10, 2008 Topock Summit Decision Making Task Force meeting, sample thank you letter
6/16/2008	Jeanne Matsumoto, DTSC	Lisa Swick, CRIT		Jeanne faxed CWG agenda to Michael Tsosie

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/16/2008	Steve McDonald, FMIT	Aaron Yue, DTSC	Dr. King, Courtney Coyle, Linda Otero (FMIT)	Handouts for Dr. King's presentation at the CWG
6/16/2008	Ann Carberry, DTSC	Dawn Hubbs, Hualapai	Task for and Summit Participants	Clarification on letter sent out 6/13/08
6/17/2008	DTSC	Attendees: Fort Mojave: Nora McDowell-Antone; CRIT: Nancy Shopay, Lisa Swick; Hualapai: Dawn Hubbs; MWD, DTSC, DOI, PG&E, Arcadis, CH2M Hill, Sacramento Quality		Clearinghouse Task Force meeting. Primary topic of discussion was tools/approaches to improve communication with Leadership of Tribes and other stakeholders.
6/18/2008	DTSC	Mojave: Nora McDowell-Antone, Linda Otero, Michael Sullivan (by phone), Leo Leonhart, Steven McDonald, Rachel Zellner; CRIT: Lisa Swick, Nancy Shopay, Gregg de Bie (by phone); Cocopah: Dale Phillips; Hualapai: Dawn Hubbs; DTSC, PG&E, CRB, SWRCB, BLM, DOI, USEPA, USFWS, MWD, ADEQ, Mohave Co. DPH		Face-to-face Consultative Work Group Meeting
6/19/2008	Steven McDonald, FMIT	Aaron Yue, DTSC		Request for all documents relating to any request from the CRIT to DTSC regarding the agenda items for any meetings associated with or pertaining to the PG&E Topock Compressor Station Cleanup.
6/23/2008	Mike Jackson	Jeanne Matsumoto, DTSC		Jeanne sent e-mail confirm receipt of contact information from the topock Website and will add him to the project mailing list.
6/23/2008	Karen Baker, DTSC	Clearinghouse Task Force: Nora McDowell-Antone (FMIT); Dawn Hubbs (Hualapai); Michael Tsosie, Nancy Shopay (CRITs); Bart Koch (MWD); Kris Doebbler (DOI); PG&E; DTSC		E-mail draft Communication Survey template for stakeholder feedback on improving communications on project.
6/24/2008	Dawn Hubbs, Hualapai	Karen Baker, DTSC		Responded to request for feedback on draft Communication Survey.
6/24/2008	Karen Baker, DTSC	Dawn Hubbs, Hualapai		Response to Dawn Hubb's response on draft communication survey.
6/25/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC	gdebie@critdoj.com	CRIT availability on 7/1/08 for conference call regarding the proposed agenda.
6/26/2008	Aaron Yue, DTSC	Nancy Shopay, CRIT		Informed Nancy that he will be on vacation on 7/1/08 but is trying to arrange for others to take his place.
6/26/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC		Suggested to wait until Aaron returns to hold conference call since Michael Tsosie is also out of office.
6/26/2008	Nancy Long, DTSC	Steven McDonald, FMIT	Courtney Coyle, FMIT, gdebie@critdoj.com, Aaron Yue, Karen Baker, Watson Gin, DTSC, Linda Otero, Nora McDowell, FMIT	Sent document responsive to his request on 6/19/08 pursuant to the Public Records Act for all documents relating to any request from the CRITs associated with the PG&E Topock Cleanup
6/26/2008	Steven McDonald, FMIT	Nancy Long, DTSC	Courtney Coyle, FMIT, gdebie@critdoj.com, Aaron Yue, Karen Baker, Watson Gin DTSC, Linda Otero, Nora McDowell, FMIT	Informed Nancy Long that there was no attachment to her e-mail. Asked if she wants to be copied on future requests of this sort.
6/27/2008	Aaron Yue, DTSC	Nancy Shopay, CRIT		Informed Nancy that he will return on 7/8 and suggested holding the conference call during that week. Needs to conform Nancy Long and Karen Baker's availability too.
6/27/2008	Ann Carberry, DTSC	Nancy Shopay, CRIT; Nora McDowell-Antone, FMIT; Dawn Hubbs, Hualapai	Jeanette Sartain, Karen Baker, Watson Gin, DTSC	Request to review draft invitation letters for the Proposed Topock Leadership Advisory Board
6/27/2008	Dawn Hubbs, Hualapai	Ann Carberry, DTSC, Nancy Shopay, CRIT, Nora McDowell-Antone, FMIT,	Jeanette Sartain, Karen Baker, Watson Gin, DTSC	Her edits to the draft invitation letters for the Proposed Leadership Advisory Board

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6/29/2008	Nora McDowell-Antone, FMIT	Ann Carberry, DTSC, Nancy Shopay, CRIT, Dawn Hubbs, Hualapai	Jeanette Sartain, Karen Baker, Watson Gin, DTSC	The draft invitations letters for the Proposed Topock Leadership Advisory Board incorporate her concerns and have her support to send out.
early July 2008	Kathie Schlievelbein	Chemehuevi, Cocopah, CRIT, FMIT, Fort Yuma Quechan, Havasupai, Hualapai, Morongo Band of Missions, San Manuel Band of Missions, Serrano Nation of Indians, Torres Martinez Desert Cahuilla, Twenty-Nine Palms, Yavapai-Prescott		Per Kathie Schievelbein's 10/17/08 letter to Charles Wood, Chemehuevi, tribes were contacted by phone at the close of the NOP comment period regarding the EIR phase of the cultural resources investigation
7/1/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of June 2008.
7/1/2008	Stephen McDonald, FMIT	Aaron Yue, DTSC	Lynn Scarlett, DOI, Denise Cucheny, CA State Senator, Maureen Gorsen, Rebecca Heick, BLM, John Earle, NWS, Wayne Donaldson, CA SHPO, James Carrison, AZ SHPO, Larry Myers, NAHC, John Nau III, OHP, Tribal CWG Members	FMIT Comments on Notice of Preparation (NOP) for DEIR
7/2/2008	Maureen Gorsen	Wilfred Watanome, Richard Walema, Hualapai		Congratulations on election and request to meet with Hualapai to discuss status of the investigation
7/7/2008	Karen Baker, DTSC	Clearinghouse Task Force: Aaron Yue (DTSC); Bart Koch (MWD); Dave Gilbert (PG&E), Dawn Hubbs (Hualapai); Kris Doebbler (BLM); Michael Tsosie, Nancy Shopay (CRIT); Nora McDowell (FMIT)	Christina Hong, Lisa Kellogg, Lisa Micheletti Cope (on behalf of PG&E), Bob Howard, Watson Gin (DTSC), Yvonne Meeks (PG&E)	Draft Decision Matrix/Timeline for remaining decisions on the project for your review. Next meeting is 7/22/08.
7/7/2008	Chris Guerre, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG		RFI/RI Volume 2 for Review and Comments
7/8/2008	Steven McDonald, FMIT	Aaron Yue, DTSC	Chris Guerre	Request to update his contact information
7/8/2008	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC	Courtney Coyle, Maureen Gorsen, Watson Gin, Linda Otero, Shan Lewis, Timothy Williams, Leo Leonhart, Steve McDonald, Rachel Zellner	Request to extend deadline to receive comments on the Notice of Preparation (NOP) until 7/28/08
7/8/2008	Nancy Shopay, Envirometrix (for CRIT)	Aaron Yue, DTSC	Casey Padgett, Chris Guerre, gdebie@crit, Julie Eakins, CH2, Kris Doebbler, BLM	Questions regarding public participation process related to the RFI
7/9/2008	Nancy Shopay, Envirometrix (for CRIT)	Aaron Yue, DTSC	Karen Baker, Nancy Long, DTSC	Still waiting for some dates from Michael Tsosie and Gregg de Bie to hold CRIT Conference Call with DTSC.
7/11/2008	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	Courtney Coyle, Linda Otero, FMIT; Maureen Gorsen, Watson Gin, DTSC	E-mail regarding Extension for Comments on NOP for DEIR
7/16/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC		Best dates for CRIT Conference Call

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7/18/2008	Ann Carberry, DTSC	Task Force Members: Nora McDowell, Linda Otero, Courtney Coyle, Steve McDonald (FMIT); Charles Wood (Chemehuevi); Michael Tsosie, Nancy Shopay (CRITs); Dawn Hubbs (Hualapai); DOI, BLM, MWD	Maureen Gorsen, Watson Gin, Nancy Long, Karen Baker, Jeanette Sartain (DTSC)	Topock Leadership Advisory Charter Review period extended one week to COB on 7/25/08. Inform her and task force members if more time is needed
7/18/2008	Nora McDowell-Antone, FMIT	Ann Carberry, DTSC		One week extension for review of TLAB Charter is fine with FMIT
7/18/2008	Gregg de Bie, CRIT	Ann Carberry, DTSC	Nancy Shopay, Mike Tsosie	CRIT Comments on Advisory Board and Charter
7/20/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC		File review request
7/21/2008	EDAW	Nora McDowell-Antone, FMIT		Initial contact discussing possible alternatives. Discussion of internal scoping meeting at FMIT to discuss Topock Maze Cultural Landscape.
7/21/2008	Aaron Yue, DTSC	Nancy Shopay, CRIT	Gregg de Bie, Julie Johnson, Mike Tsosie, Nancy Long	We will prepare files and contact you when they are ready
7/23/2008	Karen Baker, DTSC	Clearinghouse Task Force: Nora McDowell (FMIT); Michael Tsosie, Nancy Shopay (CRIT); Dawn Hubbs (Hualapai)Kris Doebbler (BLM); Aaron Yue, Watson Gin (DTSC); Bart Koch (MWD); Dave Gilbert, Yvonne Meeks (PG&E); Quality@sacquality.com;	Lisa Kellogg, Lisa Micheletti Cope, Christina Hong (on behalf of PG&E); Watson Gin (DTSC); Robert Doss, Robert Howard (PG&E)	Attached copy of draft Stakeholder Survey discussed yesterday for your review. Please comment by 7/31/08 if possible.
7/23/2008	EDAW	Goldie Walker, Serrano		Project is outside traditional area, but Goldie Walker did request final archaeological reports and/or ethnographic reports created for the EIR.
7/23/2008	Nora McDowell-Antone, FMIT	Ann Carberry, DTSC		Suggested changes to the Draft Advisory Board Charter on behalf of FMIT
7/23/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC		Inquired if time for conference call had been found.
7/24/2008	Aaron Yue, DTSC	PG&E	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG	Conditional Approval of Revised East Ravine Work Plan
7/24/2008	Jamie Cleland, EDAW	Nora McDowell-Antone, FMIT	Linda Otero, Courtney Coyle, Stephen Weidlich	Follow-up to telephone conversation on 7/21/08 and possible dates for a meeting between FMIT cultural resource representatives and the cultural resources team for the Topock EIR
7/24/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC		Thank you for e-mail, Friday at 1:00 for CRIT Call is fine.
7/25/2008	CRIT	CRIT: Greg DeBie, Nancy Shopay, Norman Shopay; DTSC: Watson Gin, Karen Baker, Aaron Yue		Discussion included items CRIT would like to see on the Consultative Workgroup meeting agenda and EIR Notice of Preparation
7/25/2008	Karen Baker, DTSC	Nancy Shopay, CRIT	Aaron Yue	Talley of survey results regarding CWG meeting frequency and location per her request
7/25/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC		Items they would like to discuss during CRIT Call
7/28/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC		Thank you for setting up meeting with Gregg, Norman and her.
7/29/2008	EDAW	Mike Contreras, Morongo		Not interested in meeting further, especially since FMIT and CRIT are actively involved.
7/30/2008	Karen Baker, DTSC	CRITs		Responded to Records Review request from CRITs.
8/1/2008	Nora McDowell-Antone, FMIT	Jamie Cleland, EDAW	Linda Otero, Courtney Coyle (FMIT), Stephen Weidlich (EDAW)	Acceptance of 8/14/08 meeting date and request for specific qualifications of Susan Wilcox and Jeannette Sartain, list of what research EDAW has done on this project, and copies of transcripts from scoping meetings
8/4/2008	Jamie Cleland, EDAW	Nora McDowell-Antone, FMIT		FMIT requested a list of resources used by EIR team. Additional communication regarding time to have meeting.
8/4/2008	Leo Leonhart (for FMIT)	Aaron Yue, Chris Guerre, DTSC		Questions regarding venue of TWG and whether or not Face to Face meeting

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8/4/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of July 2008.
8/4/2008	Jamie Cleland, EDAW	Nora McDowell-Antone, FMIT	Linda Otero, Courtney Coyle (FMIT), Stephen Weidlich (EDAW)	Confirmation of meeting on 8/14 and referral of Nora's questions to Stephen Weidlich during Jamie's vacation
8/5/2008	EDAW	Ann Brierty, San Manuel		Not within the traditional area for the San Manuel, but interested to hear about any archaeological materials that are affected - especially human remains.
8/5/2008	EDAW	Greg Glassco, Yavapai-Prescott		A special face-to-face meeting isn't necessary, but it there's a meeting for all involved tribes, the Yavapai-Prescott Tribe would like to be invited.
8/7/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC	Karen Baker, Watson Gin, DTSC	Follow-up to email and call regarding 8/11/08 meeting - who will be there. Also, follow-up on questions from 7/16/08 meeting
8/11/2008	EDAW	Michael Tsosie; Norm Shopay, CRIT		Meeting to discuss project, existing conditions, and possible project impacts.
8/11/2008	DTSC	CRIT		Follow-up meeting to discuss the EIR and cultural resources investigation
8/12/2008	EDAW	Nora McDowell-Antone, FMIT		Communication concerning the best way to get cultural resources reports.
8/12/2008	Stephen Weidlich, EDAW	Nora McDowell-Antone, FMIT	Linda Otero, Courtney Coyle, Jamie Cleland, Susan Wilcox	Confirmation of meeting on 8/14 and answers to Nora's questions on 8/1/08
8/12/2008	Nora McDowell-Antone, FMIT	Stephen Weidlich, EDAW	Linda Otero, Courtney Coyle, Jamie Cleland, Susan Wilcox	Request for reports on EDAW's research and question why transcripts cannot be released.
8/12/2008	Stephen Weidlich, EDAW	Nora McDowell-Antone, FMIT	Linda Otero, Courtney Coyle, Jamie Cleland, Susan Wilcox	Instructed Nora to contact Aaron Yue regarding lists/documents no available on the web-site
8/13/2008	Jeanne Matsumoto, DTSC	Aaron Yue, Chris Guerre, Karen Baker, Watson Gin, DTSC	Lori Hare	Received phone confirmation with Jill McCormick, Cocopah, to meet with Tribal Council on 9/9/08 and request to send confirmation letter with a list of DTSC staff who will attend.
8/13/2008	EDAW	Nora McDowell-Antone, FMIT		Communication concerning the best way to get cultural resources reports.
8/13/2008	Nancy Shopay, CRIT	Aaron Yue, DTSC	Watson Gin, Karen Baker, Chris Guerre	Why is MNA on TWG agenda? CRIT requested all final remedy options be presented equally.
8/13/2008	Nora McDowell-Antone, FMIT	Aaron Yue, Watson Gin, DTSC		Request for transcripts of the Notice of Preparation for the EIR meeting
8/13/2008	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	Courtney Coyle, FMIT, Nancy Long, DTSC, Watson Gin, DTSC, Linda Otero, FMIT, Steve McDonald, FMIT	Reply that transcripts are considered in a deliberative stage and will be released with the draft EIR
8/13/2008	Nancy Shopay for CRIT	Aaron Yue, DTSC	Gregg de Bie, Karen Baker	Follow up on items discussed at 7/16/08 conference call - Nancy Long contacting Greg de Bie regarding settlement agreement concerns and Watson finding out if comments will be prepared to CRITs Notice of Preparation (NOP) comments

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/14/2008	EDAW	Aha Makav Cultural Committee, FMIT		Meeting to discuss project, existing conditions, and possible project impacts for DEIR.
8/14/2008	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	Courtney Coyle, Watson Gin, Linda Otero, Steve McDonald	Replied to Nora's request to receive transcripts of NOP public scoping meetings - will be posted on Topock web-site or contact CEQA
8/14/2008	DTSC	FMIT		Follow-up meeting to discuss the EIR and cultural resources information
8/15/2008	EDAW	Nora McDowell-Antone, FMIT		Communication concerning transcripts of NOP meetings.
8/15/2008	EDAW	Nora McDowell-Antone, FMIT		Communication concerning transcripts of NOP meetings.
8/15/2008	Nora McDowell-Antone, FMIT	EDAW Group, Aaron Yue	Courtney Coyle, Watson Gin, Linda Otero, Steve McDonald	Request for transcripts of the Notice of Preparation (NOP) for the EIR meeting
8/15/2008	Susan Wilcox	Nancy Shopay, Mike Tsosie (CRIT)	EDAW Group, Aaron Yue	Announcement that transcripts from Draft EIR NOP scoping meetings are now available on Topock web-site
8/19/2008	DTSC	Mojave: Nora McDowell-Antone (by phone), Courtney Coyle (by phone), Leo Lenske (by phone), Leo Leonhart; CRIT: Michael Tsosie, Nancy Shopay; DTSC, RWQCB, PG&E, BLM, BOR, DOI, USGS, MWD, USFWS, ADEQ		Face-to-face Consultative Work Group Meeting
8/20/2008	Bill Beckman, DTSC	Nora McDowell, FMIT	Guenther Moskat, Kathie Schievelbein, Susan Wilcox	Provided name and address of Lake Havasu meeting contact
8/27/2008	Leo Leonhart (for FMIT)	Aaron Yue, DTSC and Kris Doebbler, BLM	C. Coyle, L. Johnson, S. McDonald, N. McDowell-Antone, Y. Meeks, L. Otero, T. Williams, R. Zellner	FMIT Comments on RFI/RI Vol. 2 Report
8/27/2008	Aaron Yue, DTSC	Leo Leonhart, FMIT	Courtney Coyle, Linda Otero, Luke Johnson, Nora McDowell, Timothy Williams, Leo Lehmicke, (FMIT), Yvonne Meeks Rachel Zellner, Steven McDonald	Confirmed receipt of FMIT RFI/RI V. 2 comments and if the comments represent all of FMITs comments or will there be more from others. Leo Leonhart confirmed that they are consensus comments
8/29/2008	EDAW	Bridget Nash-Chrabascz, Quechan		Meeting to discuss project, existing conditions, and possible project impacts.
8/29/2008	Aaron Yue, DTSC	Nancy Shopay, CRIT	Chris Guerre, Yvonne Meeks, Kris Doebbler	Follow-up e-mail to voice mail message left regarding file, CRITs concerns about bridge footing, notification that final risk assessment work plan has been received
8/29/2008	DTSC	Fort Yuma-Quechan; DTSC: Susan Wilcox, Jeanette Sartain		Follow-up meeting to discuss the EIR and cultural resources investigation
9/2/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Diane F. De Leon, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of August 2008.

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/2/2008	Maureen Gorsen, DTSC	Sherry Cordova (Cocopah), Daniel Eddy, Jr. (CRIT), Darrell Mike (29 Palms), Raymond Torres (Torres-Martinez Desert Cahuilla), Don E. Watahomigie (Havasupai), Wilfred Whatonome (Hualapai), Timothy Williams (FMIT), Charles Wood (Chemehuevi), Mike Jackson, Sr. (Fort Yuma-Quechan), Ernest Jones, Sr. (Yavapai-Prescott)	Richard Armstrong, Nancy Shopay, Lisa Swick, Michael Tsosie (CRIT), Courtney Coyle, Steven McDonald, Nora McDowell, Linda Otero (FMIT), Edmund Domingues, Dale Phillips (Cocopah), Ron Escobar (Chemehuevi), Greg Glassco (Yavapai-Prescott), Dawn Hubbs, Loretta Jackson-Kelly (Hualapai)	Invitation to represent tribe as a member of new Topock Leadership Advisory Board on 10/29/08.
9/2/2008	Maureen Gorsen, DTSC	Lorri Gray (BOR), Bob Howard (PG&E), Jeffrey Kightlinger (MWD), Wayne Nastri (USEPA), Steve Owens (ADEQ), Robert Perdue (CRWQCB), Willie Taylor (DOI), Benjamin Tuggle (USFWS), Elaine Zielinski (BLM), Gerald Zimmerman (CRB)	Abbas Amirteymoori (CRB), Denise Baker, John Earle (USFWS), Kris Doebbler (DOI), Michael Fulton (ADEQ). Dave Gilbert, Juan Jayo (PG&E), Helen Hankins (AZ BLM), Rebecca Heick (BLM), Arlene Kabei (USEPA), Bart Koch, Eddie Rigdon (MWD), Joe Liebhauser (BOR), Casey Padgett (DOI), Tom Vandenberg (CRWQCB)	Invitation to represent government agency as a member of new Topock Leadership Advisory Board on 10/29/08
9/2/2008	Yvonne Meeks, PG&E	Clearinghouse Task Force: Nora McDowell (FMIT); Michael Tsosie, Nancy Shopay (CRIT); Dawn Hubbs (Hualapai)Kris Doebbler (BLM); Karen Baker, Aaron Yue, Watson Gin (DTSC); Bart Koch (MWD); Dave Gilbert (PG&E); Quality@sacquality.com	Lisa Kellogg, Lisa Micheletti Cope, Christina Hong (on behalf of PG&E); Watson Gin (DTSC); Robert Doss, Robert Howard (PG&E)	Save the date 9/15/08 for next Topock Clearinghouse Taskforce Meeting
9/2/2008	Nora McDowell-Antone, FMIT	Clearinghouse Task Force: Michael Tsosie, Nancy Shopay (CRIT); Dawn Hubbs (Hualapai)Kris Doebbler (BLM); Karen Baker, Aaron Yue, Watson Gin (DTSC); Bart Koch (MWD); Yvonne Meeks, Dave Gilbert (PG&E); Quality@sacquality.com		Nora replied that she is available for the 9/15/08 CTF meeting.
9/4/2008	EDAW	Dawn Hubbs, Hualapai		Discussion of possible meeting times and arrangements.
9/4/2008	Gregg de Bie, CRIT	Nancy Shopay, Envirometrix	Michael Tsosie, CRIT	CRIT comments on RFI/RI dated 7/2/08
9/4/2008	Jeanne Matsumoto, DTSC	Jill McCormick, Cocopah		List of DTSC staff attending meeting on 9/9/08.
9/5/2008	EDAW	Dale Phillips, Cocopah		Transmission of comments for EIR.
9/5/2008	Dale Philips, Co-Chairman, Cocopah Indian Tribe	Jeanne Matsumoto, DTSC	Stev Weidlich, EDAW	Comments on the Cultural Resources Section - EIR for the Topock Maze
9/8/2008	Janie Apodaca	Jeanne Matsumoto, DTSC	Aaron Yue, Lori Hare, DTSC	Called to request that Diane DeLeon of CRIT be removed from mailing of monthly correspondence cd's
9/9/2008	DTSC	Attendees: DTSC: Watson Gin, Aaron Yue, Jeanette Sartain, Jeanne Matsumoto; Cocopah Tribal Council		Provide project update at request of tribes and summary of Topock Breakthrough Summit earlier this year.
9/10/2008	EDAW	Jill McCormick, Cocopah Tribe		A face-to-face meeting is not necessary and all input will be submitted by letter to DTSC directly.

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9/10/2008	EDAW	Dawn Hubbs, Hualapai		Discussion of possible meeting times and arrangements.
9/14/2008	Nancy Shopay, CRIT	Yvonne Meeks, PG&E, Aaron Yue, DTSC		Request to schedule meeting in Parker, AZ to discuss the Ethnographic study process with PG&E, DTSC EIR contractor
9/15/2008	Aaron Yue, DTSC	Nancy Shopay, CRIT		Informed Nancy Shopay that he is forwarding her request of 9/14/08 to Kathie Schievelbein and Leslie Redford
9/15/2008	Kathie Schievelbein, DTSC	Nancy Shopay, Kris Doebbler, Aaron Yue, Yvonne Meeks	Mike Tsosie, Gdebie, Guenther Moskat, Karen Baker, Nancy Long, Susan Wilcox, Watson Gin, Jamie Cleland, Leslie Redford, Stephen Weidlich	Replied to Nancy Shopay's request of 9/15/08 that information is being provided to Michael Tsosie
9/15/2008	Nancy Shopay, CRIT	Kathie Schievelbein, Aaron Yue (DTSC), Kris Doebbler (DOI), Yvonne Meeks (PG&E)	Mike Tsosie, Gdebie, Guenther Moskat, Karen Baker, Nancy Long, Susan Wilcox, Watson Gin, Jamie Cleland, Leslie Redford, Stephen Weidlich	Reply to Kathie Schievelbein's reply to Nancy asking for further clarification on the desired meeting and ethnographic study
9/16/2008	EDAW	Nancy Shopay, CRIT		Communication concerning possible times and tasks regarding a CRIT ethnographic study.
9/16/2008	EDAW	Michael Tsosie, CRIT		Transmission of possible questions for a CRIT ethnographic study.
9/17/2008	EDAW	Gregg de Bie, CRIT		Response to information from DTSC concerning historic bridge footings.
9/17/2008	EDAW	Dawn Hubbs, Hualapai		A date of October 28 was decided for a face-to-face meeting.
9/19/2008	Jeanette Sartain, DTSC	FMIT: Nora McDowell-Antone; CRIT: Michael Tsosie		Put in call to Mike Tsosie re: 10 min. on agenda for prayer. Left msg. for Nora McDowell-Antone re 10 min. on agenda for Birdsingers for TLAB meeting.
9/24/2008	EDAW	Bridget Nash-Chrabascz, Hualapai		Transmission of meeting notes for review.
9/25/2008	Jeanette Sartain, DTSC	Havasupai		Contacted Havasupai to confirm mail delivery address and Chairman name
9/29/2008	Aaron Yue, DTSC	CRITs & PG&E		Conference call regarding EIR.
9/30/2008	Jeanette Sartain, DTSC	Made calls to all tribes except FMIT, CRIT, Hual, & Chem		Calls regarding attending upcoming Topock Leadership Advisory Board meeting
9/30/2008	Aaron Yue, DTSC	Lisa Kellogg, Yvonne Meeks, PG&E	EIR, CWG, Geo/Hydro, Indian Tribe Reps	DTSC Comments on the August 2008 Human Health & Eco Risk Assessment WP
10/1/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of September 2008.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/3/2008	Maureen Gorsen, DTSC	Charles Wood (Chemehuevi), Loretta Jackson, Dawn Hubbs, Wilfred Whatonome (Hualapai), Michael Tsosie (CRIT), Sherry Cordova (Cocopah), Darrel Mike (29 Palms), Raymond Torres (Torres-Martinez), Don E. Watahomigie (Havasupai), Timothy Williams (FMIT), Mike Jackson, Sr. (Fort Yuma-Quechan), Ernest Jones, Sr. (Yavapai Prescott)	Richard Armstrong, Nancy Shopay, Lisa Swick, Michael Tsosie (CRIT), Courtney Coyle, Steven McDonald, Nora McDowell, Linda Otero (FMIT), Edmund Domingues, Dale Phillips (Cocopah), Ron Escobar (Chemehuevi), Greg Glassco (Yavapai-Prescott), Dawn Hubbs, Loretta Jackson	Letter, agenda and materials for 10/29/08 Topock Leadership Advisory Board (TLAB) Meeting
10/3/2008	Maureen Gorsen, DTSC	Bob Howard (PG&E), Jeffrey Kightlinger, Eddie Rigdon (MWD), William Lodder, Jr. (DOI), Robert Perdue (CRWQCB), Michael Fulton ADEQ), Lorrie Gray (BOR), Wayne Nastri (USEPA), Benjamin Tuggle (USFWS), Elaine Zielinski (BLM), Gerald Zimmerman (CRB)	Abbas Amirteymoori (CRB), Denise Baker, John Earle (USFWS), Kris Doebbler, Casey Padgett (DOI), Dave Gilbert, Juan Jayo (PG&E), Helen Hankins (AZ BLM), Rebecca Heick (BLM), Arlene Kabei (USEPA), Bart Koch (MWD), Joe Liebhauser (BOR), Tom Vandenbert (CRWQCB)	Letter, agenda and materials for 10/29/08 Topock Leadership Advisory Board (TLAB) Meeting
10/7/2008	EDAW	Michael Tsosie; et al., CRIT		Meeting to discuss project, existing conditions, and possible project impacts.
10/8/2008	David Jaynes, DOI, BLM	Daniel Eddy, Jr., CRIT		Response to CRIT Proposal to perform ethnographic study
10/10/2008	Gregg de Bie, CRIT	Aaron Yue, DTSC	Casey Padgett, Pam Innis (DOI), Nancy Shopay (CRIT)	Forward letter responding to DTSC's letter dated September 17, 2008, regarding CRITs concerns over Bridge Footings
10/14/2008	EDAW	Michael Tsosie, CRIT		Discussion regarding progress of EIR and status of ethnographic assessment.
10/14/2008	EDAW	Nora McDowell-Antone, FMIT		Follow-up communication regarding action items from meeting and data requests related to the DEIR.
10/14/2008	EDAW	Bridget Nash-Chrabascz, Quechan		Follow-up to discuss if further comments to the EIR team were necessary.
10/14/2008	Aaron Yue, DTSC	Nora McDowell-Antone, DTSC	FMIT: Courtney Coyle, Linda Otero, Leo Leonhart; DOI: Pam Innis; BOR: Jeff Smith; BLM: Craig Johnson, George Shannon; PG&E: Curt Russell, Juan Jayo, Yvonne Meeks, Jennifer Low; DTSC: Ann Carberry, Chris Guerre, Jeanette Sartain, Karen Baker Watson Gin	Clarification on investigation at the UA-1 area and anomalies outside of the boundaries that were drawn for consultation.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/14/2008	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC	FMIT: Courtney Coyle, Linda Otero, Leo Leonhart; DOI: Pam Innis; BOR: Jeff Smith; BLM: Craig Johnson, George Shannon; PG&E: Curt Russell, Juan Jayo, Yvonne Meeks, Jennifer Low; DTSC: Ann Carberry, Chris Guerre, Jeanette Sartain, Karen Baker Watson Gin	Angry reply to Aaron Yue's e-mail of 10/14/08
10/15/2008	Leo Leonhart (for FMIT)	Aaron Yue, DTSC, Pam Innis, DOI	C. Coyle, L. Johnson, S. McDonald, N. McDowell-Antone, Y. Meeks, L. Otero, T. Williams	Fort Mojave Comment Letter on Part B Soils Phase I
10/17/2008	Kathie Schievelbein, DTSC	Chairman Wood, Chemehuevi, Jill McCormick, Cocopah, Linda Otero, FMIT, Nora McDowell, FMIT, Pauline Jose, Fort Yuma-Quechan, Bridget Nash-Chrabascz, Quechan Tribe, Edmund Tolusi, Havasupai, Dawn Hubbs, Hualapai, Mike Contreras, Morongo Band of Mission, Ann Brierty, San Manuel Band of Mission, Goldie Walker, Serrano Nation, Raymond Torres, Torres-Martinez, Darrell Mike, 29 Palms, Scott Kwiatkowski, Yavapai-Prescott,		Update regarding the cultural resources assessment of the Environmental Investigation and Cleanup project and extension of deadline to accept cultural resource information until May 1, 2009.
10/17/2008	Aaron Yue, DTSC	Yvonne Meeks, PG&E	CWG, Geo/Hydro, EIR, Indian Tribe Reps	Concurrence to proceed with Groundwater Risk Assessment
10/17/2008	Pamela Innis, DOI	PG&E	DTSC	DOI comments on RFI/RI, Volume 2
10/18/2008	David Gilbert, PGE	Michael Tsosie, CRIT	Glenn Caruso, Nancy Shopay	E-mail responding to Crit Proposal to perform ethnographic study
10/20/2008	Daniel Eddy, Jr., Chairman, CRIT	Maureen Gorsen, DTSC	Gregg DeBie, Michael Tsosie, Norman Shopay, David Jaynes	Ethnographic Study Work Plan submitted by CRIT
10/21/2008	Aaron Yue, DTSC	Yvonne Meeks, PG&E	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG	Package of comments from DTSC and stakeholders (FMIT, CRIT, RWQCB, MWD) on the 7/08 RFI/RI, Volume 2
10/23/2008	Jeanne Matsumoto, DTSC	Dawn Duncan Hubbs, Hualapai	Aaron Yue, Karen Baker	Attached final version of the document describing the communication process between the Hualapai and DTSC
10/24/2008	Dawn Duncan Hubbs, Hualapai	Jeanne Matsumoto, DTSC		Acknowledged receipt of Attached final version of the document describing the communication process between the Hualapai and DTSC
10/24/2008	Maureen Gorsen, DTSC	Daniel Eddy, Jr., CRITs	Gregg DeBie, Michael Tsosie, Norman Shopay, David Jaynes	Reply to letter of October 20, 2008 regarding the EIR
10/27/2008	Daniel Eddy, Jr., Chairman	David Janynes, DOI, BLM	Gregg Debie, Michal Tsosie, Nancy Shopay, Maureen Gorsen, Elaine Zielinski, Casey Padgett, Pamela Innis	Response to October 8th letter regarding CRITS EIR Ethnographic Study

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/27/2008	Daniel Eddy, Jr., Chairman	Dave Gilbert, PGE	Gregg Debie, Michal Tsosie, Nancy Shopay, Maureen Gorsen, Robert Howard, Pamela Innis, Casey Padgett	Response to October 8th letter regarding CRITS EIR Ethnographic Study
10/27/2008	Aaron Yue, DTSC	Christina Hong, Yvonne Meeks, PG&E	EIR, Geo/Hydro, Indian Tribes, CWG	Conditional concurrence letter from DTSC on the Final Data Usability Assessment Technical Memo
10/28/2008	EDAW	Hualapai Tribal Council and DTSC (Watson Gin, Nancy Long, Karen Baker, Jeanette Sartain, Susan Wilcox and EDAW Jamie Cleland) and PG&E (Bob Howard, Dave Gilbert)		Participate in briefing for Hualapai Tribal Council in Peach Springs and discuss cleanup and CEQA process and opportunities for Tribal input. also meeting with Hualapai Cultural Resources staff followed by visit to Hualapai lands and Colorado River with Dawn Hubbs.
10/28/2008	Nancy Shopay, CRITs	Aaron Yue, Watson Gin, DTSC		Forwarded correspondence between CRIT and PGE/BLM regarding Ethnographic Study
10/28/2008	DTSC	Hualapai Indian Tribe		Follow-up meeting to discuss the EIR and cultural resources investigation
10/28/2008	Nora McDowell-Antone, FMIT	Pam Innis (DOI), Cathy Wolf-White (BLM), Curt Russell (PG&E), Leo Leonhart, Linda Otero (FMIT)		Inquiring as to the status of UA-1 and what discussions have taken place on this area of concerns to the FMIT.
10/29/2008	DTSC	Attendees: Chemehuevi: Chairman Wood, Ron Escobar; FMIT: Shan Lewis, Nora McDowell-Antone, Steven McDonald; CRITs: Daphne Hill-Poolaw, Michael Tsosie, Nancy Shopay, Lisa Swick; Cocopah: Dale Philips; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Maureen Gorsen, Watson Gin, Karen Baker, Nancy Long, Ann Carberry, Jeanette Sartain, Mercedes Azar, Jay Cross, Jeanne Garcia, Susan Wilcox, Tim Ogburn, Deborah Goodwin (consultant); USDOI: William Lodder, Jr., Pamela Innis, Casey Padgett; PG&E: Bob Howard, David Gilbert, Juan Jayo, CRWQCB, ADEQ, MWD, USFWS: John Earle, BLM: David Jaynes		Topock Leadership Advisory Board Meeting held in Laughlin, Nevada.
10/30/2008	EDAW	Michael Tsosie, CRIT		Communication confirming a Nov. 12 2008 meeting at DTSC.
10/31/2008	Karen Baker, DTSC	Steve McDonald, FMIT	Nora McDowell, FMIT	Sent copy of presentation at TLAB and made offer to do a similar presentation for them if the FMIT would like
10/31/2008	Pamela Innis, DOI	Nora McDowell-Antone (FMIT)	DTSC: Aaron Yue; BLM: Cathy Wolff-White, Craig Johnson, George Shannon; BOR: Mark Slaughter, Jeff Smith; FMIT: Linda Otero	Reply to Nora's 10/28/08 e-mail: DOI has specific that work is to stop at UA-1 until the issue regarding the intrusive work and their concerns are resolved.
10/31/2008	Nora McDowell-Antone, FMIT	Pam Innis, DOI	DTSC: Aaron Yue; BLM: Cathy Wolff-White, Craig Johnson, George Shannon; BOR: Mark Slaughter, Jeff Smith; FMIT: Linda Otero	Thank you for update and please include Leo Leonhart in discussions with DTSC and PG&E
10/31/2008	Leo Leonhart (for FMIT)	Pam Innis, DOI, Aaron Yue, DTSC	C. Coyle, L. Johnson, T. King, Y. Meeks, S. McDonald, N. McDowell-Antone, L. Otero, T. Williams, R. Zellner	Fort Mojave Indian Tribe Participation on Discussion of Planning for Further Site UA-A Characterization at the Topock Compressor Station, Needles, CA

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11/3/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of October 2008.
11/4/2008	Karen Baker, DTSC	Chairmen Charles Wood, Chemehuevi Tribe		Coordinate with Chairman Woodon date for presentation to Chemehuevi Tribal Council meeting in December
11/4/2008	EDAW	Lisa Swick, CRIT		Communication regarding status of EIR.
11/6/2008	Karen Baker, DTSC	Yvonne Meeks, PG&E	CWG, TWG, Tribal Reps	Clarification of Direction on Preparation of the CMS/FS
11/6/2008	EDAW	Nora McDowell-Antone, FMIT		Follow-up regarding the transmission of internal FMIT scoping comments to EIR team.
11/6/2008	EDAW	Loretta Jackson; Dawn Hubbs, Hualapai		Transmission of meeting notes for review.
11/7/2008	Aaron Yue, DTSC	CWG, TWG, Tribal Reps		Letter DTSC issued to PG&E with respect to one aspect of upcoming CMS/FS evaluation for info.
11/7/2008	Aaron Yue, DTSC	CWG, TWG, Tribes		PG&E issued a technical memo in response to DTSC and DOI's request for additional info associated with bridge footings and concerns raised by CRIT
11/10/2008	Watson Gin, DTSC	Hualapai Chairman Wilfred Whatoname, Sr.		Thank you letter and follow-up to meeting with the Hualapai Tribal Council on October 28, 2008.
11/10/2008	EDAW	Michael Tsosie, CRIT		Request that meeting be reschedule to a conference call on Nov. 12, 2008.
11/10/2008	EDAW	Nora McDowell-Antone, FMIT		Note saying that FMIT internal scoping comments are forthcoming.
11/11/2008	EDAW	Charles Wood, Chemehuevi		Meeting to discuss cultural resources concerns is not necessary.
11/11/2008	Yvonne Meeks, PG&E	Aaron Yue, DTSC, Pam Innis, DOI	Chris Guerre, DTSC, Bart Koch, MWD, Leo Leonhart, FMIT, Nancy Shopay, CRIT, Tom Vandenberg, SWRCB	Response to Comments on the July 2008 Final RFI/RI Volume 2
11/12/2008	EDAW	Michael Tsosie, CRIT		Meeting to discuss project, existing conditions, and possible project impacts.
11/13/2008	Nancy Shopay, CRITs	Watson Gin, DTSC, Pam Innis, DOI	DTSC: Maureen Gorsen, Aaron Yue, Karen Baker; DOI: Casey Padgett	Forwarded letter sent from PG&E to Chairman Daniel Eddy, Jr., CRITs responding to Chairman Eddy's letter to Dave Gilbert, PG&E dated 10/27/08 regarding concerns about PG&E's inability to fund an ethnographic study.
11/13/2008	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG		PG&E's response to comments package on July 2008 Final RFI/RI Volume 2
11/17/2008	EDAW	Lisa Swick, CRIT		Communication regarding status of EIR.
11/18/2008	DTSC	Mojave: Leo Leonhart (H&A); DTSC, DOI, BLM, BOR, USGS, PG&E, MWD		Geo/Hydro Technical Work Group Meeting
11/18/2008	Ann Carberry, DTSC	Charter Workgroup		Invitation to participate in 12/16/08 meeting to review/revise charter
11/19/2008	EDAW	Lisa Swick, CRIT		Communication regarding status of EIR.
11/19/2008	EDAW	Nora McDowell-Antone, FMIT		Request for FMIT internal scoping comments.
11/19/2008	DTSC	Mojave: Nora McDowell-Antone, Leo Leonhart (H&A), Steven McDonald, Courtney Coyle (by phone), Leo Lenske (H&A) (by phone); CRIT: Lisa Swick, Nancy Shopay; DTSC, CRB, PG&EBLM, BOR, DOI, USEPA, USFWS, USGS, MWD, ADEQ		Face-to-face Consultative Work Group Meeting

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/20/2008	Maureen Gorsen, DTSC	Chairman Wood, Ron Escobar (Chemehuevi), Michael Tsosie, Lisa Swick, Nancy Shopay (CRITs), Nora McDowell-Antone (FMIT), Dawn Duncan Hubbs (Hualapai), Amanda Stone (ADEQ), Pamela Innis, Casey Padgett (DOI), Watson Gin, Karen Baker, Nancy Long, Ann Carberry, Jeanette Sartain, Jerry Mariani (DTSC), Eddie Rigdon, Bart Koch (MWD), Bob Howard, Dave Gilbert, Juan Jayo, Lisa Cope (PG&E)		Letter from Maureen thanking for participation in the 10/29/08 meeting, meeting notes and flip chart notes
11/21/2008	Steven McDonald, FMIT	Karen Baker, DTSC	Maureen Gorsen, Nancy Long, Watson Gin, Pamela Innis, Casey Padgett, Juan Jayo, Jamie Cleland, Timothy Williams, Linda Otero, Nora McDowell-Antone, Courtney Coyle	Response to DTSC letter to PG&E dated 11/6/08 regarding clarification of the DTSC direction concerning the CMS/FS PG&E is currently preparing
11/21/2008	Aaron Yue, DTSC	ADEQ, CWG, TWG, Tribal Reps		Conference call to go over specific RFI/RI comments
11/24/2008	Ann Carberry, DTSC	Casey Padgett, Dave Gilbert, David Jaynes, M. Tsosie, JMJ8@PGE, John Earle, Nancy Shopay, Nora McDowell-Antone, Pamela Innis, Ron Escobar, Steven McDonald	Aamir, CRB, Linda Otero, FMIT, Watson Gin, DTSC	Letter from Maureen thanking for participation in the 10/29/08 meeting, meeting notes and flip chart notes
12/2/2008	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of November 2008.
12/2/2008	Anthony Madrigal, 29 Palms	DTSC		No comments on project, but may have comments in the future.
12/2/2008	Leo Leonhart, FMIT	Aaron Yue, DTSC	FMIT	Nora and Leo will be on the call tomorrow. Primary things they would like to discuss are Section 1.1.3, Section 3.6.2, Section 7.2.1.1.
12/4/2008	Ann Carberry, DTSC	Charter Workgroup		Draft agenda for 12/16/08 meeting to review/revise Topock Leadership Advisory Board (TLAB) Charter
12/5/2008	Karen Baker, DTSC	Yvonne Meeks, PG&E	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG	Additional direction on preparation of the CMS/FS study
12/5/2008	EDAW	Rowland Ferrer, Torres-Martinez		Request for project map.
12/5/2008	Karen Baker, DTSC	Chairman Wood, Chemehuevi		Attempt to confirm meeting with Chemehuevi Tribal Council on 12/20/08 to give a presentation regarding cleanup options
12/8/2008	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG		2008 CWG Meeting Frequency Tally
12/8/2008	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG		Link to the FTP site to review the RFI/RI Volume 2 Addendum Report
12/8/2008	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG		Change in schedule for review of soil background tech memo
12/9/2008	Leo Leonhart (for FMIT)	Aaron Yue, DTSC, Pamela Innis, DOI	Yvonne Meeks, David Gilbert, Juan Jayo, Karen Baker, Timothy Williams, Linda Otero, Nora McDowell Antone, Luke Johnson, Courtney Coyle, Steven McDonald, Tribal CWG Reps.	FMIT Comments on RFI/RI Vol. 2 Response Summary
12/10/2008	EDAW	Rowland Ferrer, Torres-Martinez		Project is outside traditional area.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/10/2008	Nancy Shopay, Envirometrix (for CRIT)	Aaron Yue, DTSC, Pam Innis, Casey Padgett (DOI)	Mike Tsosie, Greg de Bie, Karen Baker	Reply to Response to Comments on RFI/RI
12/11/2008	Nancy Shopay, Envirometrix (for CRIT)	Maureen Gorsen, DTSC	Gregg de Bie, CRITs, Michael Tsosie, CRITs, Watson Gin, DTSC	Follow-up on CRITs previous request to schedule a meeting to discuss issues and concerns regarding the Ethnographic Study.
12/12/2008	EDAW	Lisa Swick, CRIT		Communication regarding status of EIR.
12/15/2008	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps, CWG		Soil Background Technical Memo for review and comment
12/16/2008	DTSC	FMIT: Nora McDowell-Antone; CRIT: Nancy Shopay, Norman Shopay; Hualapai: Dawn Hubbs; DTSC: Watson Gin, Nancy Long; PG&E: Bob Howard, Dave Gilbert, Juan Jayo; ADEQ: Amanda Stone; DOI: William Lodder, Casey Padgett, Pam Innis; MWD: Bart Koch		Topock Leadership Meeting - Primary topic of discussion was development of the Topock Leadership Council Mission Statement/Charter.
12/20/2008	DTSC	Chemehuevi Tribal Council including Chairman Charles Wood; DTSC: Watson Gin, Karen Baker: PG&E: Dave Gilbert		Invited by Chairman wood to provide briefing on project to the Chemehuevi Tribal Council meeting.
12/24/2008	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	Timothy Williams, Leo Leonhart, Yvonne Meeks, Pamela Innis, CWG, Geo/Hydro TWG, Tribal Reps on contact list	DTSC's response to additional thoughts received on 12/9/08 on RFI Volume 2 Response summary
12/24/2008	Aaron Yue, DTSC	Nancy Shopay, CRITs	Michael Tsosie, Gregg de Bie, Yvonne Meeks, Pamela Innis, CWG, Geo/Hydro TWG, Tribal Reps on contact list	DTSC's response to additional thoughts received on 12/9/08 on RFI Volume 2 Response summary
12/30/2008	Nancy Shopay, CRITs	Aaron Yue, DTSC	Michal Tsosie, Eric Shepard, Chris Guerre	Re: Groundwater Background. Request for hard and electronic copies of docs related to established background concentrations for Cr+6 and copy of July revised Groundwater background study report.
1/2/2009	Erin Miller for Watson Gin, DTSC	Nora McDowell- Antone (FMIT), Dawn Hubbs (Hualapai), Nancy Shopay (CRIT), William Lodder, Pam Innis, Casey Padgett (DOI), Amanda Stone (ADEQ), Bob Howard, Dave Gilbert, Juan Jayo (PG&E), Karen Baker, Nancy Long (DTSC)	TLAB Members	Each member was sent hard copy in mail and e-mailed letter recapping the 12/16/08 meeting with meeting minutes attached
1/2/2009	Watson Gin, DTSC	Chairman Wood, Ron Escobar (Chemehuevi), Dawn Duncan-Hubbs (Hualapai), Nora McDowell-Antone (FMIT), Michael Tsosie, Nancy Shopay, Lisa Swick (CRIT), Bob Howard, Dave Gilbert, Lisa Micheletti-Cope (PG&E), William Lodder, Jr., Casey Padgett, Pamela Innis (DOI), Eddie Rigdon, Bart Koch (MWD), Juan Jayo (PG&E), Amanda Stone (ADEQ)		Letter with minutes from 12/16/08 Topock Leadership Working Group and next meeting 1/29/09 in San Francisco
1/5/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of December 2008.

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/7/2009	Jeanne Matsumoto, DTSC	Mailing list		Sent out community surveys
1/7/2009	Jeanne Matsumoto, DTSC			Spoke with Gail of the Torres Martinez Indian Tribe who gave Jeanne names of new tribal leaders as of 1/1/09
1/7/2009	Jeanne Matsumoto, DTSC	Nora McDowell-Antone, FMIT		Nora McDowell inquired if community survey sent out. Jeanne responded that they are being mailed out and she sent e-mail as advanced notice
1/7/2009	Jeanne Matsumoto, DTSC	Gail, Torres Martinez Indian Tribe		Jeanne spoke with Gail who informed her of the new chair and vice-chair of their tribe effective 1/1/09
1/9/2009	Nancy Shopay (CRIT)	Aaron Yue, DTSC, Pamela Innis (DOI)	Watson Gin, Casey Padgett (DOI), Michael Tsosie, Eric Shepard (CRIT)	Comments on the December 15, 2008 CMS/FS Report for Chromium in Groundwater
1/12/2009	Aaron Yue, DTSC	Nancy Shopay (CRIT), Yvonne Meeks (PG&E)	Watson Gin, DTSC	Forwarded CRIT's comments dated 1/9/09 to PG&E since DTSC is not the coordinator of the discussion draft CMS/FS
1/13/2009	Watson Gin, DTSC	PG&E, ADEQ, DOI, MWD, Arcadis, DTSC, Nora McDowell (FMIT), Charles Wood, Ron Escobar (Chemehuevi), Dawn Hubbs (Hualapai), Michael Tsosie, Lisa Swick, Nancy Shopay (CRIT)		Location of Topock Leadership Working Group meeting on January 29, 2009. Proposed objectives are to complete discussions on the draft mission statement and when to hold the next leadership meeting.
1/15/2009	Nora McDowell-Antone, FMIT	Watson Gin		Fort Mojave Indian Tribe redline comments to the draft DOI TLC mission statement
1/21/2009	EDAW	Michael Tsosie, CRIT		Communication regarding status of EIR, ethnographic assessment, and release of CMS/FS.
1/21/2009	Michael Sullivan, FMIT	Aaron Yue, DTSC	James Eichelberger, Karen Baker, Shukla Roy-Semmen, Yvonne Meeks	Inquired if there has been DTSC approval of the updated risk assessment work plan
1/22/2009	EDAW	Bridget Nash-Chrabascz, Quechan		Follow-up concerning comments on meeting notes.
1/22/2009	DTSC	Mojave: Nora McDowell-Antone, Luke Johnson, Leo Leonhart (H&A); CRIT: Nancy Shopay; DTSC, PG&E, DOI, USGS, BOR, MWD		TWG Groundwater Model Meeting
1/28/2009	Aaron Yue, DTSC	CWG, TWG, Tribal Reps, EIR Group		Provided PG&E's draft CMS/FS for stakeholder 30-Day Review
1/28/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Response to Nora's e-mail regarding CMS issues.
1/29/2009	DTSC	Mojave: FMIT: Nora McDowell-Antone, Steve McDonald; Hualapai: Loretta Jackson; CRIT: Nancy Shopay, Norman Shopay; DTSC: Watson Gin, Nancy Long; PG&E: Bob Howard, Dave Gilbert, Juan Jayo; MWD: Bart Koch; DOI: Pam Innis, Casey Padgett; ADEQ: Amanda Stone. Facilitator: Jeannette Sartain (DTSC)		Topock Leadership Working Group Meeting. Discussed the mission statement which identifies the purpose and objective of the Topock Leadership Council (TLC). Group agreed to renamed the leadership group the Topock Leadership Partnership.
1/30/2009	Aaron Yue, DTSC	Nora McDowell-Antone, Leo Leonhart (FMIT)	Karen Baker, Watson Gin, Yvonne Meeks (PG&E)	Language for Section 6.6 in RFI/RI Volume 2
2/2/2009	Steven McDonald (FMIT)	Aaron Yue, Chris Guerre, DTSC		Request for copy of CRITs comment letter dated 1/9/09
2/2/2009	Aaron Yue, DTSC	Steven McDonald (FMIT)	Chris Guerre, Nancy Shopay (CRIT), Watson Gin	Response to request for copy of CRIT's comment letter dated 1/9/09
2/4/2009	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC		What dates for sure is the next CWG?
2/4/2009	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT		Aaron replied and sent Nora e-mail and agenda that was sent on 1/21/09.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/4/2009	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC		Nora asked for e-mail address for her on our contact list. Having trouble receiving e-mails and want to see if problem on her side or ours.
2/4/2009	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT		Aaron replied with e-mail address we have for her on contact list and asked if should be changed to the one she's using today.
2/4/2009	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC		Nora replied that yes, try using the e-mail address she's using today and see if more consistent.
2/4/2009	Aaron Yue, DTSC	Christina Hong, Serena Lee, Yvonne Meeks (PG&E)	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG	DTSC conditional acceptance of Revised Final RFI/RI, Volume 2 Report
2/4/2009	Aaron Yue, DTSC	Christina Hong, Serena Lee, Yvonne Meeks (PG&E)	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG	DTSC, ADEQ, Envirometrix for CRIT, MWD, RWQCB comments on the RFI/RI Volume 2 Addendum
2/5/2009	EDAW	Anthony Madrigal, 29 Palms		Request for project feedback for DEIR.
2/5/2009	Pamela Innis, DOI	Yvonne Meeks, Christina Hong, Serena Lee (PG&E)	Courtney Coyle, Arlene Kingery, Aaron Yue	Final approval letter for the Revised Human Health and Ecological Risk Assessment Work Plan (RAWP) and Revised RAWP Addendum
2/9/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of January 2009.
2/10/2009	Nancy Shopay, Envirometrix (for CRIT)	Watson Gin, DTSC	DTSC: Maureen Gorsen, Aaron Yue, Karen Baker; CRIT: Michael Tsosie, Eric Shepard	CRIT will not be attending meeting on 2/17 due to certification of special election taking place on that day which further supports that CRIT was not considered in preparations for the upcoming meeting. Asked that e-mail be forwarded to Bob Howard and Dave Gilbert of PG&E.
2/10/2009	Maureen Gorsen, DTSC	Sherry Cordova, Dale Phillips (Cocopah), Daphne Hill-Poolaw, Michael Tsosie (CRIT), Darrell Mike (29 Palms), Raymond Torres (Torres-Martinez), Don E. Watahomigie (Havasupai), Wilfred Whatonome, Loretta Jackson-Kelly (Hualapai), Timothy Williams, Shan Lewis, Nora McDowell-Antone (FMIT), Charles Wood (Chemehuevi), Mike Jackson, Sr. (Fort Yuma-Quechan), Ernest Jones, Sr. (Yavapai-Prescott)	Richard Armstrong, Nancy Shopay, Lisa Swick (CRIT), Courtney Coyle, Steven McDonald, Linda Otero (FMIT), Edmund Domingues (Cocopah), Ron Escobar (Chemehuevi), Greg Glassco (Yavapai-Prescott)	Thank you for leadership at 10/29/08 meeting and invitation to attend the Topock Leadership Meeting on 3/12/09 meeting in Palm Springs: Attachments: 1) Draft Agenda; 2) Draft Mission Statement; 3) Notes for Topock Draft Chart Discussion on 1/29/09; Distribution list of DTSC's March 12, 2009 invitation letter

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/10/2009	Maureen Gorsen, DTSC	Amanda E. Stone (ADEQ), William Lodder, Jr. (DOI), Bob Howard (PG&E), Eddie Rigdon (MWD), Robert Perdue (CRWQCB), Gerald R. Zimmerman (CRB)	Denise Baker, John Earle, Benjamin Tuggle (USFWS), Lorri Gray, Joe Liebhauser (BOR), Rebecca Heick, Elaine Zielinski (BLM), Pamela S. Innis, Casey Padgett (DOI), Abbas Amirteymoori (CRB), Dave Gilbert, Juan Jayo, Lisa Micheletti-Cope (PG&E), Helen Hankins (ADEQ), Arlene Kabei (USEPA), Bart Koch (MWD), Tom Vandenberg (CRWQCB)	Thank you for leadership at 10/29/08 meeting and invitation to attend the Topock Leadership Meeting on 3/12/09 meeting in Palm Springs: Attachments: 1) Draft Agenda; 2) Draft Mission Statement; 3) Notes for Topock Draft Chart Discussion on 1/29/09; Distribution list of DTSC's March 12, 2009 invitation letter
2/10-11/2009	DTSC	Mojave: Nora McDowell-Antone (by phone); Felton Bricker, Sr., Linda Otero, Diane Montoya, Paul Jackson, Leo Leonhart (H&A), Courtney Coyle (by phone), Leo Lenske (H&A by phone); CRIT: Lisa Swick, Michael Tsosie, Nancy Shopay (by phone); DTSC, RWQCB, SWRCB, SDCWA, PG&E, BLM, BOR, DOI, USEPA, USFWS, USGS, MWD, ADEQ		Focused Consultative Work Group Meeting
2/11/2009	Nancy Shopay (Envirometrix for CRITs)	Aaron Yue, Pamela Innis (DOI)	DTSC and DOI	Request for meeting regarding Michael Tsosie's concerns regarding significant elevated levels of Dioxin in soil at AOC 4.
2/12/2009	Watson Gin, DTSC and Pam Innis, DOI	Michael Tsosie, CRITs		Had meeting.
2/13/2009	Rachael (Steve McDonald's Office)	Aaron Yue, DTSC		Left message inquiring if there is an extension of the CMS/FS review period from 30 to 45 days. Aaron Replied on 2/17/09 that there is no formal request from any entity for an extension.
2/16/2009	EDAW	Michael Tsosie, CRIT		Transmission of question list to be used for ethnographic assessment.
2/16/2009	EDAW	Nora McDowell-Antone, FMIT		Follow-up concerning FMIT internal scoping meeting and CMS comments.
2/19/2009	Aaron Yue, DTSC	CWG, TWG, Tribal Reps, EIR Group		Breakdown of wells anticipated at the flood plain and upland area by remedy alternatives: Fulfillment of action item request from Courtney Coyle during 2/11/09 CWG
2/19/2009	DTSC: Maureen Gorsen, Watson Gin, Karen Baker, Nancy Long, Yelland, Jeanette Sartain	FMIT: Nora McDowell, Linda Otero, Courtney Coyle, Steven McDonald		Meeting to discuss issues related to the project including CMS.
2/19/2009	Aaron Yue, DTSC	CWG, TWG, Tribal Reps., EIR Group		Forwarded table from PG&E showing breakdown of wells anticipated at the floodplain and upland area by remedy alternatives. This was requested by Courtney Coyle, FMIT, as an action item of 2/11/09 CWG.
2/20/2009	Nancy Shopay, CRIT	Aaron Yue, DTSC		Request for number of well location areas rather than actual number of wells provided on 2/19/09
2/23/2009	EDAW	Anthony Madrigal, 29 Palms		Request for project feedback.
2/23/2009	Nancy Shopay (CRIT)	Watson Gin, DTSC	Pamela Innis, Casey Padgett (DOI), Aaron Yue	Request for status on draft mission statement and proposed meeting schedule

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/23/2009	Watson Gin, DTSC	Nancy Shopay (CRIT), Erin Miller (DTSC)	Pamela Innis, Casey Padgett (DOI), Aaron Yue	Replied that he will have Erin Miller send her invite letter to March 12th TLP meeting which has draft mission statement attached
2/26/2009	Nancy Shopay (CRIT)	Aaron Yue, Pamela Innis (DOI)	Eric Shepard (CRIT), Casey Padgett (DOI)	CRIT Comments on Draft CMS/FS dated 2/26/09
2/26/2009	Leo Leonhart (FMIT)	Aaron Yue, Pamela Innis (DOI)	K. Baker, C. Coyle, W. Gin, M. Gorsen, L. Johnson, N. Long, S. McDonald, N. McDowell-Antone, Y. Meeks, L. Otero, Hon. T. Williams	FMIT Comments on Draft CMS/FS
2/27/2009	CRIT	CRIT: Michael Tsosie, Nancy Shopay; DTSC Director Maureen Gorsen, Karen Baker, Nancy Long, Mona Arteaga, Jeanette Sartain		Meeting with CRIT to discuss issues related to cultural resource information for the EIR, proposed remedial options for groundwater, and dioxins.
3/3/2009	Maureen Gorsen, DTSC	Sherry Cordova, Dale Phillips (Cocopah), Darrell Mike (29 Palms), Mary Maxine Resvaloso (Torres-Martinez Desert Cahuilla), Don E. Watahomigie (Havasupai), Wilfred Whatonome, Loretta Jackson (Hualapai), Timothy Williams, Shan Lewis, Nora McDowell-Antone (FMIT), Charles Wood (Chemehuevi), Daphne Hill-Poolaw, Michael Tsosie (CRIT), Mike Jackson, Sr. (Fort Yuma-Quechan), Ernest Jones, Sr. (Yavapai-Prescott)	Richard Armstrong, Nancy Shopay, Lisa Swick (CRIT), Courtney Coyle, Steven McDonald, Linda Otero (FMIT), Edmund Domingues (Cocopah), Ron Escobar (Chemehuevi), Greg Glassco (Yavapai-Prescott)	Invitation letter with agenda and handouts for 3/12/09 Topock Leadership Partnership (TLP) (formerly TLAB) meeting
3/3/2009	Maureen Gorsen, DTSC	Amanda E. Stone (ADEQ), William Lodder, Jr. (DOI), Bob Howard (PG&E), Eddie Rigdon (MWD), Robert Perdue (CRWQCB), Gerald R. Zimmerman (CRB)	Denise Baker, John Earle, Benjamin Tuggle (USFWS), Lorri Gray, Joe Liebhauser (BOR), Rebecca Heick, Elaine Zielinski, Helen Hankins (BLM), Pamela S. Innis, Casey Padgett (DOI), Abbas Amirteymoori (CRB), Dave Gilbert, Juan Jayo, Lisa Micheletti-Cope (PG&E), Arlene Kabei (USEPA), Bart Koch (MWD), Tom Vandenberg (CRWQCB)	Invitation letter with agenda and handouts for 3/12/09 Topock Leadership Partnership (TLP) (formerly TLAB) meeting
3/3/2009	DTSC	Mojave: Linda Otero, Felton Bricker, Sr.; CRIT: Nancy Shopay; Hualapai: Loretta Jackson-Kelly; DTSC, PG&E, BLM, DOI, USFWS		Area of Concern 4 Site Discussion
3/5/2009	Courtney Coyle, FMIT	Aaron Yue, DTSC		Request to send her office copies of all comments received on draft CMS/FS document
3/5/2009	Aaron Yue, DTSC	Courtney Coyle, FMIT	Karen Baker, Nancy Shopay, Nora McDowell, Pam Innis	Forwarded comments received to date, however, DTSC/DOI still working on comments. DTSC will provide formal transmittal in the days ahead
3/5/2009	EDAW	Nora McDowell-Antone, FMIT		Follow-up concerning FMIT comments on CMS.
3/6/2009	EDAW	Nora McDowell-Antone, FMIT		Transmission of CMS comments from FMIT to EIR team.

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/12/2009	DTSC	Attendees: Chemehuevi: Chairman Wood; Hualapai: Loretta Jackson-Kelly; CRITs: Michael Tsosie, Nancy Shopay, Norman Shopay; FMIT: Nora McDowell-Antone, Linda Otero, Courtney Coyle, Steven McDonald; Aqua Caliente Tribe: Clifford Batten; ADEQ: Amanda Stone; PG&E: Bob Howard, Dave Gilbert, Juan Jayo; MWD: Bart Koch, Eddie Rigdon; CRWQCB: Robert Perdue; US DOI: Pamela Innis, Casey Padgett; BLM: Rebecca Heick; CRB: Abbas Amirteymoori; DTSC: Maureen Gorsen, Maziar Movassaghi, Karen Baker, Nancy Long, Susan Wilcox, Jeanne Garcia, Tom Cota, Amy Hinchee, Ann Carberry, Christina Fu. Facilitators: Mona Arteaga, Jeanette Sartain		Meeting of the Topock Leadership Partnership in Palm Springs for discussion of proposed alternatives for cleanup of groundwater
3/17/2009	Michael Sullivan, FMIT	Aaron Yue, DTSC and Pamela Innis, DOI	Nora McDowell, Luke Johnson, Linda Otero, Timothy Williams, Courtney Coyle, Steven McDonald, Leo Leonhart (FMIT); Yvonne Meeks (PG&E)	Fort Mojave Indian Tribe's comments on the Draft Groundwater Risk Assessment
3/20/2009	Nancy Shopay (CRIT)			CRIT Comments on Draft CMS/FS dated 2/26/09
3/20/2009	Nancy Shopay (for CRIT)	Aaron Yue, DTSC and Pamela Innis, DOI	Eric Shepard, Michael Tsosie (CRIT); Casey Padgett (DOI); Karen Baker, Aaron Yue (DTSC)	Comments on the February 2009 Draft Groundwater Human Health and Ecological Risk Assessment
3/25/2009	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC		Inquiry if DTSC had commented on Draft CMS/FS and request for copy of comments.
3/25/2009	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	Karen Baker, Pam Innis, Yvonne Meeks	Reply to Nora's e-mail - still compiling comments, should be issued tomorrow
3/26/2009	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC		Reply to Aaron and discussion about FMIT comments - CWG versus Section 106
3/26/2009	Aaron Yue, DTSC	Christina Hong, CH2M Hill, Yvonne Meeks, PG&E	EIR, Geo/Hydro, Indian Tribe Reps., CWG	DTSC CMS/FS comments in MS Word
3/30/2009	Maziar Movassaghi, DTSC	Charles Wood (Chemehuevi), Loretta Jackson (Hualapai), Michael Tsosie, Nancy Shopay, Norman Shopay (CRIT), Nora McDowell-Antone, Courtney Coyle, Steven McDonald, Linda Otero (FMIT)	Wilfred Whatoname (Hualapai), Timothy Williams (FMIT), Richard Armstrong, Lisa Swick (CRIT), Ron Escobar (Chemehuevi)	Thank you letter for participating in 3/12/09 Topock Leadership Partnership (TLP) meeting with enclosures. Next meeting Thursday, May 21, 2009.
3/30/2009	Maziar Movassaghi, DTSC	Amanda E. Stone (ADEQ), Bob Howard, Dave Gilbert, Lisa Micheletti-Cope (PG&E), Eddie Rigdon, Bart Koch (MWD), Robert Perdue (CRWQCB), Rebecca Heick, Pamela Innis, Casey Padgett (DOI), Abbas Amirteymoori (CRB)	Michael Fulton (ADEQ), Juan Jayo (PG&E), Jeffrey Kightlinger (MWD), William Lodder, Jr. (DOI), Tom Vandenberg (CRWQCB), Gerald Zimmerman (CRB)	Thank you letter for participating in 3/12/09 Topock Leadership Partnership (TLP) meeting with enclosures. Next meeting Thursday, May 21, 2009.

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4/1/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of March 2009.
4/2/2009	Chris Guerre, DTSC	Nancy Shopay (for CRIT)	Aaron Yue, Karen Baker	PG&E East Ravine Information
4/3/2009	Karen Baker, DTSC	Nancy Shopay (for CRIT)		Request for separate meeting between DTSC and CRIT regarding CMS, Debris Ravine, East Ravine.
4/8/2009	Karen Baker, DTSC	Nancy Shopay (for CRIT)		Phone call with Nancy regarding meeting with CRITs.
4/10/2009	Karen Baker, DTSC	Nancy Shopay (CRIT), Pamela Innis (DOI)	Aaron Yue	RE: Nora McDowell's request to be provided with a copy of CRIT's comments on the Draft CMS/FS submitted to DOI
4/10/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Called Nora McDowell to offer to meet with FMIT to hear their concerns on CMS/FS, HRA, Debris Ravine, and other issues at the site.
4/21/2009	Jeannete Sartain, DTSC	Charles Wood, Chemehuevi, Michael Tsosie, CRIT, Nora McDowell-Antone, FMIT, Loretta Jackson-Kelly, Hualapai		Jeanette left voice mail messages asking: 1) Meeting change to 5/21; 2) how many bringing; 3) is it ok to hold off on mission statement for now?
4/22/2009	Charles Wood, Chemehuevi Tribe	Jeanette Sartain, DTSC		They spoke. Chairman Wood said he knows it's the 21st, he is coming alone, okay with holding off on mission statement
4/22/2009	Nora McDowell-Antone, FMIT	Jeanette Sartain, DTSC		They spoke. Knows about 5/21. She will let us know who's coming; She's fine with waiting on mission statement disc, but also ok with a few min. at end of mtg. to discuss
4/22/2009	Loretta Jackson-Kelly, Hualapai	Jeanette Sartain, DTSC		They spoke. Knows about 5/21. One other person coming with her. She's fine with waiting on Mission Statement disc., but also okay with 20 min. at end of mtg to discuss.
4/23/2009	Jeannete Sartain, DTSC	Nora McDowell-Antone, FMIT, Dr. Michael Tsosie, CRIT, Loretta Jackson-Kelly, Hualapai, Charles Wood, Chemehuevi		Jeanette called to find out who should we be sending letters/cc's to?
4/23/2009	Nora McDowell Antone, FMIT			She says send individual letters to her, Chairman Timothy Williams, Vice-Chair Shan Lewis, and Linda Otero at Aha Makav
4/23/2009	Loretta Jackson-Kelly, Hualapai			Keep sending individual letters to Loretta and to Chair Whatoname. No cc's for now.
4/23/2009	Charles Wood, Chemehuevi Tribe			Continue sending all info. To Ch. Wood only. He will discuss with tribe.
4/24/2009	Aaron Yue, DTSC	Nancy Shopay and Michael Tsosie (CRIT)		Confirmation of meeting at BLM Office on May 4th
4/30/2009	Michael Tsosie, CRIT	Jeanette Sartain, DTSC		Faxed questions originally left on his voice mail.
4/30/2009	Maziar Movassaghi, DTSC	Eldred Enas, Daphne Hill-Poolaw, Michael Tsosie (CRIT), Wilfred Whatoname, Loretta Jackson-Kelly (Hualapai), Timothy Williams, Shan Lewis, Nora McDowell-Antone, Linda Otero (FMIT), Charles Wood (Chemehuevi),	Ron Escobar (Chemehuevi), Lisa Swick, Nancy Shopay, Norman Shopay (CRIT), Steven McDonald, Courtney Coyle (FMIT)	Invitation to attend the 5/21/09 Topock Leadership Partnership (TLP) Meeting in Palm Desert with agenda and handouts

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/30/2009	Maziar Movassaghi, DTSC	Amanda Stone (ADEQ), Bob Howard (PG&E), William Lodder, Jr., Pamela Innis, Casey Padgett (USDOI), Bart Koch, Eddie Rigdon (MWD), Robert Perdue (CRWQCB), Gerald Zimmerman (CRB)	Abbas Amirteymoori (CRB), Dave Gilbert, Lisa Micheletti-Cope, Juan Jayo (PG&E), Joe Liebhauser (BOR), John Earle (USFWS), Rebecca Heick (BLM), Tom Vandenberg (CRWQCB)	Invitation to attend the 5/21/09 Topock Leadership Partnership (TLP) Meeting in Palm Desert with agenda and handouts
5/4/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of April 2009.
5/4/2009	CRIT	CRIT: Michael Tsosie, Norman Shopay; DTSC: Karen Baker, Aaron Yue, Tom Cota		Meeting between DTSC and representatives of the Colorado River Indian Tribe (CRIT) to discuss issues related to Debris Ravine, East Ravine, CMS/FS
5/6/2009	Nancy Shopay, CRIT	Aaron Yue, DTSC		Thank for meeting with CRIT on Monday. Request to find out if the WB In Palm Springs has wireless internet service for the meeting in addition to call in capability
5/7/2009	Aaron Yue, DTSC	CWG, TWG, Tribal Reps, EIR Group		Cancellation of 5/20/09 CWG Meeting
5/11/2009	EDAW	Nancy Shopay, CRIT		Letter from Nancy Shopay describing tribal concerns
5/11/2009	Nancy Shopay, CRIT	Maziar Movassaghi, Acting Director DTSC	Eric Shepard, Michael Tsosie (CRIT), Karen Baker, Aaron Yue (DTSC), Rebecca Heick (BLM)	Information and Basis for CRIT Proportional Stakeholder Significance and Input and map of Topock Compressor Station in Proximity to Native American Lands
5/12/2009	Nancy Shopay (CRIT)	Maziar Movassaghi, Acting Director, DTSC	Eric Shepard, Michael Tsosie (CRIT), Karen Baker, Aaron Yue (DTSC), Rebecca Heick (BLM)	Questions and Concerns Related to Recent Issues (mainly Dioxin detection at AOC 4.
5/12/2009	EDAW	Nora McDowell-Antone, FMIT		Follow-up concerning FMIT comments on CMS and internal FMIT scoping meeting.
5/12/2009	DTSC	Mojave: Nora McDowell-Antone, Leo Leonhart (H&A); CRIT: Nancy Shopay; DTSC, PG&E, DOI, USGS, BOR, MWD		Geo/Hydro Technical Work Group Meeting
5/13/2009	Leo Leonhart (FMIT)	Pamela Innis (DOI)	T. Williams, S. Lewis, L. Otero, M. Calamia, C. Coyle, J. Earle, R. Heick, L. Johnson, J. Leibhauser, S. McDonald, N. McDowell-Antone, Y. Meeks, W. Taylor, A. Yue	Fort Mojave Indian Tribe Comments on the U.S. DOI draft memorandum on "Time-Critical Removal Action Number 4 at AOC 4 Debris Ravine."
5/13/2009	Nancy Shopay, CRIT	Aaron Yue, DTSC		Asked for representation of gw contamination that could be used in a presentation to the tribe, including new gw contamination in East Ravine
5/13/2009	Aaron Yue, DTSC	Nancy Shopay (for CRIT)		CH2Mill preparing a new figure for TLP meeting - DTSC does not have one that includes East Ravine. Also asked if Nancy would inquire about new Chairperson, Eldred Enas, from M. Tsosie
5/14/2009	Karen Baker, DTSC	Nancy Shopay (for CRIT)		Request for Nancy to contact Michael Tsosie to see if he's available for a call with Maziar prior to the 5/21 TLP meeting

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5/14/2009	Nora McDowell-Antone, FMIT	DTSC/AECOM		Sorry the CWG had to be cancelled but hope to see some of you at the TLP meeting in Palm Desert on the 21st of May.
5/15/2009	Kathie Schievelbein, DTSC	Tribal Leaders, All Stakeholders		Letter providing update regarding the cultural resources assessment for the PG&E Topock EIR and extending the time to submit cultural information from May 1, 2009 to June 2, 2009.
5/15/2009	Karen Baker, DTSC	Nancy Shopay, CRITs, Kim Smith, DTSC		Calls to coordinate meeting with Michael Tsosie, CRITs, and Maziar Movassaghi, DTSC.
5/18/2009	Karen Baker, DTSC	Nancy Shopay, CRITs, Kim Smith, DTSC		Calls to coordinate meeting with Michael Tsosie, CRITs, and Maziar Movassaghi, DTSC.
5/19/2009	Karen Baker, DTSC	Nancy Shopay, CRITs		Calls to coordinate meeting between Michael Tsosie, CRITs, and EIR Team.
5/20/2009	Nancy Shopay (CRIT)	Maziar Movassaghi, DTSC	Eric Shepard, Michael Tsosie, Karen Baker, Aaron Yue, Rebecca Heick, Casey Padgett, Pamela Innis	Comments on the proposed Topock Leadership Agenda and Meeting
5/21/2009	DTSC	Topock Leadership Partnership: Fort Mojave: Chairman Timothy Williams, Linda Otero, Nora McDowell-Antone, Courtney Coyle, Steve McDonald, Leo Leonhart ; CRIT: Amanda Leivas-Sharp, Michael Tsosie, Nancy Shopay, Norman Shopay; Chemehuevi: Chairman Charles Wood, Ron Escobar; Hualapai: Loretta Jackson-Kelly; Cocopah: Vice-Chairman Dale Phillips; MWD: Bart Koch, Eddie Ridgon; PG&E: Bob Howard, Dave Gilbert, Juan Jayo, Yvonne Meeks; RWQCB: Robert Perdue, Tom Vandenberg; CRBC: Abbas Amirteymoori; DOI: William Lodder, Pamela Innis, Casey Padgett; BLM: Rebecca Heick, Greg Noble; BOR: Jeffery Smith; DTSC: Maziar Movassaghi, Karen Baker, Nancy Long, Susan Wilcox, Tom Cota, Amy Hinchee, Ann Carberry, Christina Fu. Facilitators: Mona Arteaga, Jeanette Sartain		Topock Leadership partnership meeting in Palm Desert for discussion on groundwater cleanup alternatives and overview of process and schedule for Environmental Impact Report process and update on Debris Ravine.
5/26/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Called Nora McDowell to f/u up on Karen's April call regarding holding community meetings in July 2009.
6/1/2009	Christina Fu, DTSC	Charles Woods, Chemehuevi		Call to arrange to set up meeting date for Community meeting at their reservation.
6/1/2009	Christina Fu, DTSC	Called Lisa Swick, CRIT, left message with attendant		Call to arrange to set up meeting date for Community meeting at their reservation.
6/1/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of May 2009.
6/2/2009	CRIT	CRIT: Michael Tsosie, Norman Shopay, Nancy Shopay; DTSC Acting Director Maziar Movassaghi, Karen Baker		Conference call to discuss CRIT issues to Topock Leadership Partnership and cultural resources for the EIR.
6/2/2009	Christina Fu, DTSC	Called Lisa Swick, CRIT, left message with attendant		Call to arrange to set up meeting date for Community meeting at their reservation.

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6/2/2009	EDAW	Michael Tsosie, CRIT		Update on EIR process. Tsosie also asked for clarification as to how cultural information was included in the EIR.
6/2/2009	Nancy Shopay, for CRIT	Aaron Yue, DTSC	Karen Baker, Yvonne Meeks	Questions: will current IM pumping demonstrate a landward gradient away from river in area of East Ravine gw contamination? Will additional wells need to be added? What actions if PG&E not able to demonstrate landward gradient at East Ravine?
6/3/2009	Maziar Movassaghi, Acting Director	Michael Tsosie, CRIT	Nancy Shopay, Eric Shepard (CRIT), Pamela Innis (DOI), Rebecca Heick (BLM), Karen Baker, Aaron Yue (DTSC)	Response to CRIT's 5/11/09 letter - Significance of CRITs input with respect to PG&E
6/3/2009	Christina Fu, DTSC	Called Lisa Swick, CRIT, left message with attendant		Call to arrange to set up meeting date for Community meeting at their reservation.
6/3/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Emailed to follow up on calls made on April 10th and May 26th regarding holding community meetings in July at FMIT reservation
6/3/2009	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Replied to Karen's e-mail with questions about community meetings
6/3/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Answered Nora's questions about upcoming community meeting at the FMIT reservation
6/4/2009	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Gave date of 7/23/09 at 6:00 at FMIT Tribal Office for community meeting.
6/4/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Thank you - Christina Fu will contact you to begin organizing the 7/23/09 community meeting
6/10/2009	Aaron Yue, DTSC	CWG, TWG, Tribal Reps, EIR Group		Forwarded proposed response to comments on the Feb 2009 draft Groundwater Risk Assessment. To assist in maintaining the final remedy selection date, DTSC requests a more expedited review than the 30 day comment period, by June 29, 2009 if possible.
6/11/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Follow-up on meeting and date/time.
6/11/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Called to discuss other alternatives for meeting location.
6/11/2009	Christina Fu, DTSC	Charles Woods, Chemehuevi		Called and left message regarding meeting logistics.
6/11/2009	Christina Fu, DTSC	Nora McDowell-Antone, FMIT		Called to discuss meeting location and time.
6/11/2009	Christina Fu, DTSC	Nora McDowell-Antone, FMIT	Karen Baker, DTSC	E-mailed follow-up summary of phone call for reminder later as discussed.
6/12/2009	Nancy Shopay, Envirometrix (for CRIT)	Karen Baker, DTSC	Eric Shepard, Michael Tsosie (CRITs); Aaron Yue, Maziar Movassaghi (DTSC); Rebecca Heick (BLM); Casey Padgett, Pamela Innis (DOI)	Letter discussing concerns about EIR and DTSC/EDAW handling of ethnographic issues.
6/16/2009	Karen Baker, DTSC	Loretta Jackson-Kelly, Hualapai		Called regarding plan to hold community meetings in July and asked if Hualapai was interested in having a separate community meeting for their tribe to help them with the project and informed her of other tribal meetings scheduled. Loretta will check with tribe and let Karen know.
6/16/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Call to schedule and finalize community meeting details.
6/17/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Call on community time and change schedule.
6/24/2009	EDAW	Nora McDowell-Antone, FMIT		Call to set up meeting regarding EIR. Nora also inquired as to if a copy of Maze nomination could be sent.

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6/24/2009	EDAW	Goldie Walker, Serrano		Call to see if Goldie had any concerns about the CMS alternatives or project.
6/26/2009	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC, Michael Tsosie, CRITs	DTSC	Reply to Aaron's 6/10/09 e-mail asking for response to proposed comments to the Groundwater Risk Assessment by 6/29/09. FMIT cannot adhere to the shortened timeframe and asked for an additional two weeks to review and provide additional comments.
7/1/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, David Todd, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Michael Tsosie, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of May 2009.
7/3/2009	Christina Fu, DTSC	Charles Woods, Chemehuevi		Called and left message regarding meeting logistics.
7/4/2009	Nancy Shopay, for CRIT	Aaron Yue, DTSC		Request to resend response to her 6/2/09
7/5/2009	EDAW	Nora McDowell-Antone, FMIT		Call to set up meeting. FMIT also requested FMIT-related information from EIR.
7/6/2009	Aaron Yue, DTSC	Nancy Shopay, for CRIT	Karen Baker, Yvonne Meeks	Response to questions from 6/2/09
7/7/2009	EDAW	Lisa Swick, CRIT		Call to see if cultural resources meeting was necessary. Told that it was not.
7/7/2009	Christina Fu, DTSC	Chairman Woods, Chemehuevi		Christina called Chairman Woods to request for follow-up on meeting and set-up questions.
7/7/2009	Christina Fu, DTSC	Chairman Woods, Chemehuevi		Followed up phone call with e-mail requesting confirmation of meeting logistics and issues.
7/9/2009	Christina Fu, DTSC	Nora McDowell-Antone, FMIT		Christina called Nora to follow-up on meeting details and set-up confirmation.
7/9/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Christina called Lisa to follow-up on meeting details and set-up coordination.
7/9/2010	Christina Fu, DTSC	Charles Woods, Chemehuevi		Called and left message regarding meeting logistics.
7/10/2009	Michael Sullivan, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	Nora McDowell, Luke Johnson, Linda Otero, Courtney Coyle, Steve McDonald, Leo Leonhart (FMIT), Yvonne Meeks (PG&E)	Response to PG&E Response to Comments on Draft Groundwater Risk Assessment for Topock Compressor Station
7/10/2009	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	Courtney Coyle, Steve McDonald (FMIT)	A letter from the Chairman will be sent out to Maziar Movassaghi and Dr. Willie R. Taylor, DOI on Monday, July 13, 2009 on GWRA.
7/13/2009	EDAW	Timothy Williams, FMIT		Letter requesting clarification of land uses at Topock site.
7/13/2009	EDAW	Nora McDowell-Antone, FMIT		Emails coordinating meeting.
7/13/2009	Christina Fu, DTSC	Chairman Woods, Chemehuevi		Christina called Chairman Woods to request for follow-up on meeting and set-up questions. No answer, left message/

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7/13/2009	Timothy Williams, FMIT	Maziar Movassaghi, DTSC, Willie Taylor, DOI	Senator Barbara Boxer, Senator Dianne Feinstein, Jeff Smith, BOR, William Lodder, DOI, Pamela Innis, DOI, Becky Heick, BLM, James Kenna, BLM, Aaron Yue, DTSC, Yvonne Meeks, PG&E, Wayne Donaldson, CA SHPO, Carol Griffiths, AZ SHPO, Jamie Cleland, EDAW, Courtney Coyle, FMIT	Fort Mohave Indian Tribe Follow-up letter to March 20, 2009, comment letter on PG&E Co. draft Groundwater Risk Assessment for Topock Compressor Station
7/14/2009	EDAW	Nora McDowell-Antone, FMIT		Emails coordinating meeting regarding EIR.
7/14/2009	EDAW	Courtney Coyle, FMIT		Review of Sunrise Powerlink PA.
7/14/2009	Maziar Movassaghi, DTSC	FMIT: Timothy Williams, Nora McDowell-Antone, Linda Otero; CRITs: Michael Tsosie; Amanda Leivas-Sharpe; Chemehuevi: Charles Wood, Ron Escobar; Cocopah: Dale Phillips; Hualapai: Loretta Jackson-Kelly; Fort Yuma-Quechan: Mike Jackson, Sr.; Havasupai: Don E. Watahomigie; Torres-Martinez: Mary Maxine Resvaloso; Twenty-Nine Palms: Darrell Mike; Yavapai-Prescott Tribe: Ernest Jones, Sr.; AECOM, CRWQCB, MWD, PG&E, DOI, CRB,	Cocopah: Edmund Domingues; CRITs: Lisa Swick, Nancy Shopay, Norman Shopay; FMIT: Steven McDonald, Courtney Coyle, Leo Leonhart; Hualapai: Wilfred Whatoname; Yavapai-Prescott: Greg GlasscoBLM, BOR, PG&E, ARCADIS	Thank you letter for attendance/informational for non-attendees at 5/21/09 meeting with meeting notes attached.
7/14/2009	Nora McDowell-Antone, FMIT	DTSC/DOI		Forwarded letter "Fort Mojave Indian Tribe follow-up letter to March 20, 2009, comment letter on Pacific Gas and Electric company draft Groundwater Risk Assessment for Topock Compressor Station, Needles, California" dated 7/13/09.
7/15/2009	EDAW	Peter Bungart, Hualapai		Talk and review of project @ CWG meeting.
7/15/2009	DTSC	Mojave: Luke Johnson, Michael Sullivan, Steven McDonald, Courtney Coyle (by phone), Leo Leonhart (H&A); CRIT: Nancy Shopay, Norman Shopay (by phone); Hualapai: Peter Bungart (Circa Cons.); DTSC, RWQCB, SDCWA, PG&E, BLM, BOR, DOI, USEPA, USFWS, MWD		Face-to-face Consultative Work Group Meeting
7/17/2009	EDAW	Nora McDowell-Antone, FMIT		Email discussing legal review of FMIT-related information in EIR.
7/20/2009	EDAW	Nora McDowell-Antone, FMIT		Transmittal of FMIT-related information of EIR to FMIT.
7/21/2009	EDAW	Peter Bungart, Hualapai		Follow-up letter to Peter to see if additional meetings with Hualapai were necessary.
7/21/2009	Christina Fu, DTSC	Charles Woods, Chemehuevi		Called and left message regarding meeting logistics.
7/21/2009	Christina Fu, DTSC	Shirley, Chemehuevi		Received message on incorrect flyer date. Christina phoned back and apologized that it was a typo and a new flyer was being produced and sent out to them.
7/21/2009	Christina Fu, DTSC	Leeann, Chemehuevi		Received message on flyer date. Christina phoned back and apologized that it was a typo and a new flyer was being produced and will email her directly for distribution via PDF and mailed flyers on the way..

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7/21/2009	Eldred Enas, CRITs	Maziar Movassaghi, Karen Baker, Aaron Yue, DTSC	Amanda Leivas-Sharp, Envirometrix, Eric Shepard, Michael Tsosie, Cheyenne Garcia, Gary Hanson, Charlie Land	Tribal Council has appointed Amanda Leivas-Sharpe as its lead on the Topock remediation project.
7/22/2009	EDAW	Nora McDowell-Antone, FMIT		Transmittal of meeting agenda.
7/22/2009	Christina Fu, DTSC	Nora McDowell, FMIT		Christina left message for Nora to confirm all meeting logistics and to look forward seeing them tomorrow at meeting.
7/22/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Christina called Lisa and explained about new flyers being sent and to finalize meeting details for next week.
7/22/2009	Christina Fu, DTSC	Chairman Woods, Chemehuevi		Christina left message for Chairman Woods to request for finalize meeting logistics and time for meeting up to set-up.
7/23/2009	DTSC	Mojave: Nora McDowell-Antone, Linda Otero, Leo Leonhart (H&A), Sandra Woods Bricker, Felton Bricker, Sr., Marla Jenkins, Jeannette Otero, Mary Hole, Betty DeOcampe, Maryjo Jim, Tessie Soto, Suzanne Malson, Angie Alvarado, Paul J., 2 sigs not legible		DTSC Community Workshop held at the FMIT reservation in Needles to inform FMIT about clean up process and summary of environmental investigations.
7/23/2009	EDAW	Linda Otero, FMIT		Discussion during community meeting between Stev and Linda regarding EIR
7/24/2009	EDAW	FMIT: Nora McDowell-Antone, Linda Otero; DTSC/AECOM: C. Yee, S. Weidlich, J. Cleland		Conference call to continue revising notes on cultural resources language/text within DEIR
7/24/2009	EDAW	Bridget Nash-Chrabascz, Quechan		Call to say that no tribal input on CMS alternatives.
7/27/2009	Karen Baker, DTSC	Nancy Shopay, Envirometrix for CRIT	Michael Tsosie, Eric Shepard (CRIT), Pam Innis (DOI), Rebecca Heick (BLM), Aaron Yue, Jose Marcos, Susan Wilcox (DTSC)	Recent Request for Information Regarding the Environmental Impact Report
7/27/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Christina called Lisa confirmed all meeting logistics for tomorrow.
7/27/2009	Christina Fu, DTSC	Chairman Woods, Chemehuevi		Christina left message for Chairman Woods to request for finalize meeting logistics and time for meeting up to set-up. Also sent email to confirm logistics and request response.
7/27/2009	Christina Fu, DTSC	Chairman Woods, Chemehuevi		Christina received phone call back from Chairman Woods and was able to finalize all details for the community meeting.
7/28/2009	DTSC	CRITs: Gary Hansen, Amanda Leivas-Sharpe, Charley Land; BOR: Brian Farmer, Evan Smith, Jeff Smith, Ramone McCoy, Duncan Fisher; DOI: Pam Innis; BLM: Becky Heick, Mark Calamia; CH2M Hill: Christina Hong; ADEQ: Tom DiDorizio; Joan Travis, Pkr. Pioneer; Sandy Pierce, BOS		DTSC Community Workshop organized by CRIT held at Parker Community Center/Senior Center to inform community about clean up process and summary of environmental investigations.
7/29/2009	DTSC	Chemehuevi: Tito Smith, Dennis Fagundes, Charles Woods, Shirley Smith; Sierra Shaw, Raymond Rob les; Housing Dept.; BLM: Becky Heich, Mark Calamia; June Leivas, Bradley Escobar, Resident		DTSC Community Workshop held at the Chemehuevi reservation to inform Chemehuevi about clean up process and summary of environmental investigations.

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7/30/2010 11:00 AM - 2:00 PM	DTSC	CRITs: Charley Land; PG&E: Curt Russell; CH2M Hill, Christina Hong; BOR: Jesse Smith, Evan Smith, Jeff Smith; BLM: Ramone McCoy, Mark Calamia; Residents: Paul Maxwell, Becky Bramlett, Patricia Colloran, Brill Trotter, Imogene Wright, Mike Moer		DTSC Community Workshop at Golden Shores regarding clean up process and summary of environmental investigations
7/30/2010 4:00 - 7:00 PM	DTSC	CRITs: Amanda Leivas-Sharpe, Charoes Land; USBOR: Jeffery Smith, Jesse Smith, Evan Smith; PG&E: Curt Russell; CA Dept. of Fish & Game: Stefan Awender; Residents: Delores Purinton, Ron Wilson, Juanita Barcus, Rose Wian		DTSC Community Workshop at Golden Shores regarding clean up process and summary of environmental investigations
7/30/2009	Karen Baker, DTSC	Timothy Williams, FMIT	Barbara Boxer, U.S. Senator, Dianne Feinstein, U.S. Senator, Courtney Coyle, FMIT, Yvonne Meeks, PG&E, Jamie Cleland, EDAW, William Lodder, Pamela Innis (DOI), Rebecca Heick, BLM, Jeff Smith, BOR, Wayne Donaldson, CA Dept. of Parks & Rec., Carol Griffiths, AZ State Parks	Reply to FMIT concerns regarding land use assumptions in the vicinity of the Topock Compressor Station in the draft Groundwater Human Health and Risk Assessment for the PG&E Site. Letter entitled "Comments on Draft Groundwater Risk Assessment"
7/31/2009	Willie Taylor, USDOI	Timothy Williams, FMIT	Linda Otero, Nora McDowell, Luke Johnson, Steven McDonald, Leo Leonhart, Michael Sullivan (FMIT), Maziar Movassaghi (DTSC), Casey Padgett, Pam Innis (DOI), Ramone McCoy (BLM)	Response to letter dated July 13, 2009 regarding views of the FMIT with regard to appropriate land uses for the area surrounding PG&E Topock.
8/2/2009	EDAW	Nora McDowell-Antone, FMIT		Thank-you for meeting 7/24/09.
8/3/2009	Karen Baker, DTSC	Amanda Leivas-Sharp (CRITs)		E-mailed four recent letters from Nancy Shopay on behalf of the CRIT and DTSC responded to those letters.
8/3/2009	Norman Shopay, Envirometrix for CRIT	Aaron Yue, DTSC		Forwarded letter sent from PG&E to Eric Shepard regarding 90 days notice of termination of Memorandum of Understanding
8/5/2009	Christina Fu, DTSC	Amanda Leivas-Sharpe, CRIT		Christina called Amanda, left message for setting up council briefing and tribal community meeting. Follow-up with e-mail request.
8/6/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of July 2009.

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8/10/2009	Charley Land, CRIT	Greg Neal, DTSC		Spoke on the phone - Mr. Land has questions about the groundwater plume map presented at outreach event and the concentration represented by outer bound and wants to confirm depth of the plume below the river. Greg suggested Chris Guerre would be the appropriate staff to answer his questions.
8/10/2009	Christina Fu, DTSC	Amanda Leivas-Sharpe, CRIT		Amanda called back and was able to set up a few dates for the meeting consideration.
8/11/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Christina called Lisa for address for Thank you letters.
8/11/2009	Chris Guerre, DTSC	Charley Land, CRIT	Aaron Yue, Greg Neal, Jose Marcos, Karen Baker	Responded to questions from Charley Land regarding groundwater for the summary he is preparing for the tribal administration. Jose Marcos and Chris Guerre responded to his requests for soil data information.
8/11/2009	Chris Guerre, DTSC	Charley Land, CRIT	Aaron Yue, Karen Baker	Sent him three maps of the chromium groundwater plume from the Feb. 2009 RFI Volume 2
8/18/2009	Karen Baker, DTSC	Amanda Leivas-Sharpe, CRIT		Sent Clearinghouse Task Force Charter. Also inquired about primary contact for CRIT instead of Nancy Shopay.
8/18/2009	EDAW	Lisa Swick, CRIT		Call to discuss EIR progress and upcoming public meetings.
8/18/2009	EDAW	Nora McDowell-Antone, FMIT		Email to see when a cutoff for input was and when more EIR information would be sent.
8/18/2009	Christina Fu, DTSC	Amanda Leivas-Sharpe, CRIT		Christina called Amanda to discuss final accepted date for the council briefing and meeting. She explained that Tuesday was already set for council meeting so that was the proposed date 9/1/09.
8/18/2009	Nora McDowell-Antone, FMIT	Maziar Movassaghi, Aaron Yue		E-mailed FMITs response to 7/20/09 letter from Mr. James Kenna, State Director, Arizona State Office
8/20/2009	EDAW	Nora McDowell-Antone, FMIT		Response to 8/18 questions.
8/25/2009	Christina Fu, DTSC	Amanda Leivas-Sharpe, CRIT		Phone call regarding CRIT meeting questions and logistics.
8/26/2009	Christina Fu, DTSC	Amanda Leivas-Sharpe, CRIT		Discussed map and needed corrections to it. Followed-up phone discussion with e-mail.
8/27/2009	Christina Fu, DTSC	Amanda Leivas-Sharpe, CRIT		Called and left message about flyer review and her question on making her own revisions.
8/27/2009	Christina Fu, DTSC	Jona, CRITs		Called to inform that revised map will arrive on Friday and apologized for incorrect map.
9/1/2009	DTSC	CRITs: Joyce P, Stewart Eddy, Dennis L., Doug Bonamici, Dale Howard, Fred Nelson, Geneva Sathwake, Daphne Hill-Poolaw, Theo Deha Roso, Charley Land, Julie Deysie		DTSC briefing for CRIT Tribal Council and Community Workshop for CRIT
9/2/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of August 2009.
9/16/2009	EDAW	Nora McDowell-Antone, FMIT		Email explaining delay in getting EIR information to FMIT.
9/16/2009	EDAW	Meeting, FMIT		Information from archaeological monitoring effort, primarily from FMIT members.
9/17/2009	Aaron Yue, DTSC	Ron Escobar, Chemehuevi	Christina Fu, James Eichelberger, Karen Baker, Mona Arteaga	Response to question raised at July community workshop regarding cover used to contain dioxin contamination in soils - does it pose a risk to animals/plants who ingest it?

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9/17/2009	Aaron Yue, DTSC	Mrs. Bricker	Christina Fu, James Eichelberger, Karen Baker, Mona Arteaga	Response to question raised at July community workshop regarding cover used to contain dioxin contamination in soils - does it pose a risk to animals/plants who ingest it?
9/17/2009	Aaron Yue, DTSC	Mr. Parra, Chemehuevi	Christina Fu, James Eichelberger, Karen Baker, Mona Arteaga	Response to question raised at July community workshop regarding cover used to contain dioxin contamination in soils - does the HRA evaluate update of chemicals into plants used for cultural purposes?
9/18/2009	EDAW	Charles Wood, Chemehuevi		Chemehuevi supports the FMIT concerns about the Topock Maze, although cleaning up the plume is of utmost concern.
9/18/2009	EDAW	Edmund Tolusi, Havasupai		No comments on project, but may have comments in the future.
9/21/2009	DTSC	Attendees: FMIT: Nora McDowell-Antone; DTSC, USDOI, MWD, PG&E, Arcadis, CH2M Hill		Clearinghouse Task Force meeting to plan Leadership site tour/meeting and upcoming leadership newsletter
9/21/2009	Karen Baker, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Revision of CMS/FS Section 2.2.6 (Cultural Resources)
9/25/2009	Chris Guerre, DTSC	Leo Leonhart, FMIT		Clarification of agenda topics and start time of 9/28/09 TWG meeting.
9/28/2009	DTSC	Mojave: Michael Sullivan, Nora McDowell-Antone (by phone), Courtney Coyle, Leo Leonhart (H&A); CRIT: Lisa Swick, Gary Hansen, Charlie Land (by phone); DTSC, RWQCB, PG&E, BOR, DOI, USGS, USFWS, MWD		Geo/Hydro Technical Work Group Meeting
9/29/2009	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Request for fatal flaw comments on PG&E's proposed revised alternative E
9/29/2009	Christina Fu, DTSC	Lisa Swick, CRIT		Phone call on CWG dates, TLP tour and letter.
10/1/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of September 2009.
10/5/2009	Linda Otero, FMIT	Ramone McCoy, BLM	BLM, BIA Washington DC, AZ SHPO, CA SHPO, DOI, ACHP, CA Dept. of Parks and Recreation, CA NAHC, USFWS, BOR, DTSC, PG&E, EDAW, Tribal Governments, Cultural Department Reps, consultants and attorneys	FMIT's rejection of programmatic agreement drafted by BLM in its entirety.
10/5/2009	Jose Marcos, DTSC	Yvonne Meeks, PG&E	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG	DTSC's response letter regarding the Part B soil investigation
10/5/2009	Karen Baker, DTSC	Amanda Leivas-Sharpe, CRITs		Request for agenda or invitation letter to River Tribe Gathering for travel request to Arizona
10/6/2009	EDAW	Nora McDowell-Antone, FMIT		Transmittal of meeting notes from 7/24/09 and expanded EIR information.
10/6/2009	Amanda Levias-Sharpe, CRITs	Karen Baker, DTSC		agenda forth coming and request for physical address. Set aside a room for one on one meetings per Karen's request
10/6/2009	Karen Baker, DTSC	Amanda Leivas-Sharpe, CRITs		Gave Amanda physical address to mail agenda
10/8/2009	Steve McDonald, FMIT	Maziar Movassaghi, Acting Director	Karen Baker, Aaron Yue	Tribal concerns regarding cultural resources will most likely come up at the River Tribes Conference

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/8/2009	Maziar Movassaghi, Director, DTSC	FMIT: Timothy Williams, Nora McDowell-Antone, Linda Otero; CRITs: Michael Tsosie; Amanda Leivas-Sharpe; Chemehuevi: Charles Wood, Ron Escobar; Cocopah: Dale Phillips; Hualapai: Loretta Jackson-Kelly; Fort Yuma-Quechan: Mike Jackson, Sr.; Havasupai: Don E. Watahomigie; Torres-Martinez: Mary Maxine Resvaloso; Twenty-Nine Palms: Darrell Mike; Yavapai-Prescott Tribe: Ernest Jones, Sr.; AECOM, CRWQCB, MWD, PG&E, DOI, CRB,	Cocopah: Edmund Domingues; CRITs: Lisa Swick, Nancy Shopay, Norman Shopay; FMIT: Steven McDonald, Courtney Coyle, Leo Leonhart; Hualapai: Wilfred Whatoname; Yavapai-Prescott: Greg GlasscoBLM, BOR, PG&E, ARCADIS	Letter providing update regarding Statement of Basis and Draft EIR for groundwater remedy along with anticipated milestones for public notice of the documents. Also provided Topock Review Newsletter Issue 3 - October 2009
10/12/2009	Nora McDowell-Antone, FMIT	Karen Baker, DTSC	Laura Yoshii, USEPA, Cynthia Gomez, Cal EPA, Pam Innis, DOI, Native American Tribal Contacts for the PG&E Topock project via e-mail	Comments on Revision of Topock CMS/FS Section 2.2.6 (Cultural Resources)
10/13/2009	Lori Hare, DTSC	cc's of leaders of TLP		E-mailed template of letter mailed 10/8/09 (update regarding Topock project) and attachment October 2009 Issue 3 newsletter
10/27/2009	Doug Bonamici, CRIT	Aaron Yue, DTSC		E-mailed question: How does EIR fit into the decision making process for a final choice of remedy?
10/26-27/2009	River Tribes, hosted by CRIT	Maziar Movassaghi, Karen Baker, Aaron Yue, Chris Guerre, Jose Marcos, Shukla Roy-Semmen, Mona Arteaga Bontty, Stev Weidlich (AECOM)		Tribal River Gathering attended by DTSC. DTSC provided presentation regarding process for providing input into the groundwater remedy and EIR and held an all day workshop to provide information on the project and cleanup alternatives for groundwater.
10/29/2009	Aaron Yue, DTSC	Doug Bonamici, CRIT		Replied to e-mail question: DTSC's EIR contractor confirmed that EIR will evaluate the alternatives that meet the project needs along with discussion and comparison with the agency proposed remedy.
10/30/2009	Christina Fu, DTSC	Amanda Leivas-Sharpe, CRIT		E-mailed for follow-up on concerns and contact information from River Tribe meeting.
11/4/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Daniel Eddy, Jr., Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of October 2009.
11/5/2009	Karen Baker, DTSC	Amanda Leivas-Sharpe, CRIT		Left a message inviting her to give a brief update of the River Tribe gathering on 10/26-27, 2009 at the 11/18/09 CWG.
11/5/2009	Nora McDowell-Antone, FMIT	Mark Calamia, BLM	FMIT: Timothy Williams, Courtney Coyle, Tom King; Tribal Governments; BLM: Ramone McCoy, Becky Heick; AZ BLM: James Kenna; ACHP: Nancy Brown; CASHPO: Wayne Donaldson; AZSHPO: James Garrison; PG&E: Dave Gilbert	Letter regarding Mark Calamia's e-mail and attachment of October 16 requesting recommendations about a qualified ethnographer to conduct the ethnographic and ethnohistoric study described in attached scope of work. Nora forwarded also by e-mail on 11/9/09.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/9/2009	Amanda Leivas-Sharpe, CRIT	Karen Baker, DTSC		Returned Karen Baker's call from 11/5/09. She is unable to give the update and forwarded request to Richard Armstrong.
11/10/2009	Aaron Yue, DTSC	Amanda Leivas-Sharpe, CRIT		Aaron left message for Amanda. Amanda called back confirming that Doug Bonamicci can be added to contact lists.
11/10/2009	Christina Fu, DTSC	CRITs Law Clerk	DTSC Internal Team	Response to his e-mail requesting he be added to the CWG.
11/10/2009	Aaron Yue, DTSC	CWG Members/Tribal Representatives		Provided Cal EPA Tribal Policy to CWG and all interested tribes on 11/10/09
11/16/2009	Aaron Yue, DTSC	Pam Innis (DOI)	Dawn Hubbs (Hualapai), Karen Baker (DTSC)	Forwarded Dawn Hubbs' request to Karen Baker for an electronic copy of the AOC 4 Workplan to Pam Innis since this is currently under DOI jurisdiction.
11/16/2009	Leo Leonhart (FMIT)	Pam Innis, DOI	C. Coyle, W. Donaldson, J. Garrison, L. Johnson, R. McCoy, S. McDonald, N. McDowell-Antone, Y. Meeks, L. Otero, M. Sullivan, T. Williams, A. Yue	FMIT Comments on Draft AOC 4 Workplan
11/18/2009	Jill McCormick, Cocopah	Lori Hare, DTSC		Jill called Jeanne Matsumoto who called Lori and Lori called Jill. Jill requested CWG agenda and handouts be e-mailed to her. Requested her e-mail address be added to contact list.
11/18/2009	Aaron Yue, DTSC	CWG Members/Tribal Representatives		Provided and discussed Cal EPA Tribal Policy at CWG meeting. Several FMIT reps. were present at this meeting.
11/18/2009	DTSC	Mojave: Felton Bricker, Sr., Linda Otero, Steven McDonald, Chris Martin, Leo Leonhart, Shawn Sellers, Michael Sullivan; CRIT: Lisa Swick, Doug Bonamici; Hualapai: Dawn Hubbs; DTSC, SWRCB, CRB, PG&E, BLM, BOR, DOI, USEPA, USFWS, USGS, MWD		Face-to face Consultative Work Group meeting
11/19/2009	Karen Baker	PG&E Clearinghouse Task Force Members		Cancellation of 12/1 meeting and announcement of Jan. 2010 meeting.
11/19/2009	Glenn Caruso, PG&E	Aaron Yue, DTSC		Glen asked Aaron to add Win Wright, consultant for Hualapai tribe.
11/23/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Response to FMIT letter Revision of CMS/FS Section 2.2.6 (Cultural Resources)
11/23/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Karen called Nora and shared that she had just e-mailed a response to their letter of October 12, 2009 regarding the cultural resources section 2.2.6 of the CMS/FS.
11/23/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Karen called Nora to share that our EIR project manager, Susan Wilcox, retired and that her replacement is Laura Kaweski.
11/23/2009	Aaron Yue, DTSC	Win Wright (Hualapai), Glenn Caruso (PG&E)		Aaron explained protocol for adding members to contact list - must be requested by primary or secondary contact of the organization.
11/23/2009	Loretta Jackson-Kelly, Hualapai	Aaron Yue, DTSC		Loretta requested that Dawn Hubbs and Win Wright (Hualapai) be added to the contact lists.
12/2/2009	Steve McDonald, FMIT	CWG Members/Tribal Representatives		Notification that property known as IM3 Parcel has been transferred from PG&E to Fort Mojave.

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12/2/2009	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of November2009.
12/3/2009	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Request for FMIT to complete review and provide input by 12/11 instead of 12/14 since PG&E needs by 12/11 to complete on 12/18 (Cultural Resource Section of CMS/FS)
12/3/2009	BLM	Attendees: DTSC: Mona Arteaga; Cocopah, CRIT, FMIT, Hualapai, PG&E, BLM, CA SHPO, AZ SHPO, ACHP, BOR, FWS		BLM meeting on National Historic Preservation Act Section 106 Consulting Parties Meeting on proposed Programmatic Agreement for remediation
12/10/2009	Chris Guerre, DTSC	Win Wright (Hualapai)	Aaron Yue, DTSC	Provided Win with recent information on the East Ravine Groundwater investigation and on the Revised Alternative E GW Remedy.
12/14/2009	Karen Baker, DTSC	Amanda Leivas-Sharpe, CRITs		Sent Amanda information regarding history and purpose of the TLP (Mission Statement)
12/15/2009	Nora McDowell, FMIT	Maziar Movassaghi, DTSC	Karen Baker, DTSC	Revision of CMS/FS Section 2.2.6 (Cultural Resources)
12/29/2009	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Agenda for Clearinghouse Task Force (CTF) meeting on 1/6/10.
1/4/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Handouts for 1/6/10 CTF meeting.
1/4/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of December 2009.
1/6/2010	DTSC	Attendees: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; CRITs: Doug Bonamici (by Phone); DTSC: Karen Baker, Mona Bontty, Christina Fu; PG&E, MWD		Clearinghouse Task Force meeting to plan upcoming Topock Leadership Partnership meeting to be held March 2010.
1/7/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force, wwright@frontier.net		Thank you for attending Clearinghouse meeting and TLP tentatively set for 3/2/10.
1/8/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Sent e-mail that next TLP is definitely set for March 2, 2010.
1/19/2010	Maziar Movassaghi, DTSC	Tribal/Government Leaders and cc's with no e-mail address		Sent Invitation letter to 3/2/10 Topock Leadership Partnership (TLP) meeting with agenda, directions to Gene Pumping Plant, and Newsletter
1/19/2010	Christina Fu, DTSC	Charles Woods, Chemehuevi		E-mailed for Website allowance and ferry schedule.
1/20/2010	Lori Hare, DTSC	Tribal/Government/DTSC Invitees and cc's		E-mailed template of 1/19/10 invitation letter to 3/2/10 TLP with agenda and handouts
1/27-28/2010	BLM	Attendees: DTSC: Karen Baker; Cocopah, CRIT, FMIT, Hualapai, PG&E, BLM, CA SHPO, AZ SHPO, ACHP, BOR, FWS		BLM meeting to develop Programmatic Agreement for groundwater remedy
1/29/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Notes and action items from 1/6/10 Clearinghouse Task Force meeting
2/2/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Draft DTSC and DOI remedy decision flow charts prepared for upcoming 3/2/10 Topock Leadership Partnership (TLP) meeting for review and comment

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/2/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of January 2010.
2/10/2010	Christina Fu, DTSC	Bart Koch, MWD, Dawn Hubbs, Hualapai	Mona Arteaga	Trying to schedule their requests to review CMS Fact Sheet
2/11/2010	Dawn Hubbs, Hualapai	Christina Fu, DTSC		Response to Christina Fu's 2/10/10 request to schedule CMS Fact Sheet review.
2/11/2010	Maziar Movassaghi, DTSC	Charles Wood (Chemehuevi), Dale Phillips (Cocopah), Sherry Cordova (Cocopah), Eric Shepard (CRITs), Richard Armstrong (CRITs), Amanda Leivas Sharpe (CRITs), Eldred Enas (CRITs), Douglas Bonamici (CRITs), Timothy Williams (FMIT), Nora McDowell-Antone (FMIT), Linda Otero (FMIT), Steven McDonald (FMIT), Courtney Coyle (FMIT), Mike Jackson, Sr. (Fort Yuma-Quechan), Don Watahomigie (Havasupai), Wilfred Whatoname (Hualapai), Loretta Jackson-Kelly (Hualapai), Dawn Hubbs (Hualapai), Mary Maxine Resvaloso (Torres-Martinez Desert Cahuilla), Darrell Mike (29 Palms), Ernest Jones (Yavapai-Prescott)		Letter and binder containing meeting materials for the upcoming 3/2/10 Topock Leadership Partnership (TLP) meeting.
2/16-17/2010	BLM	Attendees: DTSC: Mona Arteaga; Chemehuevi, Cocopah, CRIT, FMIT, Hualapai, PG&E, BLM, CA SHPO, AZ SHPO, ACHP, BOR, FWS		BLM meeting to develop Programmatic Agreement for groundwater remedy
2/17/2010	Christina Fu, DTSC	Bart Koch, MWD, Dawn Hubbs, Hualapai	Aaron Yue, Karen Baker, Mona Arteaga	Confidential CMS/FS Factsheet V.2 for Review and Comment
2/18/2010	Leo Leonhart, FMIT	Chris Guerre, DTSC		Request for specifics on PG&E injecting dilute acid solutions as part of the pilot testing to alleviate potential problems with clogging and new "find" of white material on the side BCW.
2/18/2010	Chris Guerre, DTSC	FMIT	TWG	Response to FMIT's questions and request for PG&E to send him additional information regarding the injection of dilute acid solutions.
2/18/2010	Christina Fu, DTSC	Tribes		Called to find out about mailing contact info updates and copies of Fact Sheet.
2/26/2010	Nora McDowell-Antone, FMIT	Pam Innis, DOI and Aaron Yue, DTSC	Nancy Brown, ACHP, Wayne Donaldson, CASHPO, James Garrison, AZSHPO, Tribal Leaders, CWG	Letter in response to 2/24/10 letter regarding GW Characterization requirements for East Ravine and Compressor Station Areas
2/26/2010	Christina Fu, DTSC	Ellen, FMIT		Called regarding Fact Sheet copies and left voicemail message for her.
2/27/2010	DTSC	CRIT: Michael Tsosie, Nancy Shopay; DTSC: Maureen Gorsen, Karen Baker, Nancy Long, Mona Arteaga, Jeanette Sartain		Discussion of Cultural Resources information for the Draft Environmental Impact Report
3/2/2010	DTSC	FMIT: Timothy Williams; Nora McDowell-Antone, Linda Otero, Steven McDonald, Courtney Coyle, Leo Leonhart; Hualapai: Ruby Steele, Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; DTSC, CRWQCB, CRB, MWD, PG&E, USDOI, BLM, BOR		Topock Leadership Partnership discussion of proposed alternatives for cleanup of groundwater and agency process and schedule for the cleanup decision and opportunities for input including the Environmental Impact Report.

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3/3/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force: Nora McDowell (FMIT); Amanda Leivas-Sharpe, Doug Bonamici (CRIT); Loretta Jackson-Kelly, Dawn Hubbs (Hualapai); Bart Koch (MWD); Pam Innis (DOI); Dave Gilbert, Yvonne Meeks (PG&E); Mona Arteaga (DTSC)	Aaron Yue, Christina Fu (DTSC); Christina Hong, Lisa Kellogg, Lisa Cope (behalf of PG&E)	Request for agenda items for next Clearinghouse Task Force Meeting
3/4/2010	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Questions about item #4 of agenda items "Presentation by Tribes at next CWG meeting" and request to receive mission statement
3/4/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Clarifications to her questions regarding item #4 and mission statement
3/10/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Proposed agenda for 3/16 CTF meeting.
3/10/2010	Christina Fu, DTSC	Dawn Hubbs, Hualapai	Mona Arteaga, Aaron Yue, Karen Baker	Sent topock weblink to add a link to Hualapai website
3/11/2010	DTSC	FMIT: Linda Otero, Nora McDowell-Antone; DTSC/AECOM: C. Yee, J. Cleland		Meeting to discuss text they want revised and incorporated into DEIR/FEIR. Text supplied by Jamie Cleland sometime earlier.
3/14/2010	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Information regarding Soil Part A Data Quality Objectives (DQO) Steps 1-5
3/15/2010	Curt Russell, PG&E	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Topock Project Initiation Meeting - Topock East Ravine/TCS Investigation Addendum and MW-38 Repair - Field Work Phase.
3/17/2010	DTSC	Mojave: Nora McDowell-Antone, Steven McDonald, Leo Leonhart, Courtney Coyle, Isadora Evanston; CRIT: Lisa Swick, Doug Bonamici, Michael Tsosie; Hualapai: Dawn Hubbs, Win Wright; DTSC, SWRCB, CRB, SDCWA, PG&E, BLM, BOR, DOI, USFWS, USGS, MWD, ADEQ, Parker IHS		Face-to-face Consultative Work Group Meeting
3/18-19/2010	BLM	Attendees: DTSC: Karen Baker; Cocopah, CRIT, FMIT, Hualapai, PG&E, BLM, CA SHPO, AZ SHPO, ACHP, BOR, FWS		BLM meeting to develop Programmatic Agreement for groundwater remedy
3/22/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Sent CWG mission statement and charter for review/comments
3/23/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Followed up phone call with e-mail regarding call with FMIT regarding proposed remedy decision at Topock
3/23/2010	Karen Baker, DTSC	Doug Bonamici, CRIT		Plan for release of proposed Statement of Basis and Draft EIR and request to let Karen know if CRIT want a call during the week of 4/12.
3/23/2010	Karen Baker, DTSC	Chairman Wood, Chemehuevi		Plan for release of proposed Statement of Basis and Draft EIR and request to let Karen know if Chemehuevi want a call during the week of 4/12.
3/23/2010	Karen Baker, DTSC	Dawn Hubbs, Hualapai		Trying to schedule date/time for call with Hualapai (4/15?) regarding proposed cleanup decision for groundwater
3/24/2010	Nora McDowell, FMIT	Karen Baker, DTSC		Nora Faxed Karen a request to fax her info. about conference call meeting on April 13th
3/24/2010	Karen Baker, DTSC	Nora McDowell, FMIT		Karen faxed Nora acknowledgement that she received her faxed request for information about 4/13 meeting.
3/24/2010	Karen Baker, DTSC	Jill McCormick, Cocopah		Plan for release of proposed Statement of Basis and Draft EIR and request to let Karen know if Cocopah want a call during the week of 4/12.
3/25/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Sent draft meeting notes from 3/16/10 meeting for review.
3/25/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Faxed & emailed Nora e-mail with call in number for April 13th meeting.
3/25/2010	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Gave Karen names of participants in the 4/13 call.

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3/25/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Acknowledged receipt of names of participants in the 4/13 call.
3/26/2010	Karen Baker, DTSC	Boot Camp Committee Members		New volunteer for bootcamp committee, M. Tsosie of CRIT
3/26/2010	Leo Leonhart, FMIT	Karen Baker, DTSC		Thoughts/suggestions about Boot Camp and his involvement
3/26/2010	Maziar Movassaghi, DTSC	Tribal/Government (all on TLP list either addressed or cc'd)		Thank You for attending 3/2/10 and information regarding anticipated schedule and opportunity for input into DTSC GW clean decision. Minutes and Actions items from 3/2 TLP were attached.
3/29/2010	Karen Baker, DTSC	Boot Camp Committee Members		Response to Leo Leonhart's e-mail on 3/26/10 regarding proposed "bootcamp" committee
4/1/2010	Doug Bonamici, CRIT	Karen Baker, Mark Calamia, BLM		Questions on meeting times/locations for groundwater remedy
4/1/2010	Karen Baker, DTSC	Doug Bonamici, CRIT, Mark Calamia, BLM		Response to Doug Bonamici's questions on meeting times/locations groundwater remedy
4/1/2010	Karen Baker, DTSC	Dawn Hubbs, Hualapai & Loretta Jackson		Follow up of 4/15/10 @ 10:00 AM mtg. time slot for meeting with Hualapai regarding additional wells in the East Ravine
4/1/2010	Dawn Hubbs, Hualapai	Karen Baker, DTSC		4/15/10 @ 10:00 AM is fine for mtg.
4/5/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of March 2010.
4/5/2010	Karen Baker, DTSC	Dawn Hubbs, Hualapai	Loretta Jackson, Win Wright	Call in number for 4/15/10 meeting
4/5/2010	Carolyn Yee, DTSC	FMIT: Linda Otero, Nora McDowell-Antone; DTSC/AECOM: C. Yee, J. Cleland, S. Weidlich		Conference call to review/edit 7/24/09 culture resources EIR meeting notes and language/text for DEIR continued from 7/24/09 meeting.
4/12/2010	Karen Baker, DTSC	Nora McDowell, FMIT; Dawn Hubbs, Loretta Jackson, Hualapai; Bart Koch, MWD; Doug Bonamici & Amanda Leivas Sharpe, CRITs; Dave Gilbert, PG&E; Charles Wood, Chemehuevi Tribe; Jill McCormick, Cocopah; Robert Perdue, RWQCB; Abbas, CRB; Casey Padgett & Pam Innis, DOI;		Handout "PG&E Topock GW Remediation Project Update for Interested Tribes" for phone meetings. Provided TLP members advance preview of DTSC's proposed cleanup decision for groundwater
4/12/2010	Leo Leonhart, FMIT	Karen Baker (DTSC), Nora McDowell (FMIT)	Courtney Coyle (FMIT)	Additional questions for tomorrow's discussion on proposed groundwater remedy
4/13/2010	DTSC	Fort Mojave: Linda Otero, Nora McDowell-Antone, Courtney Coyle, Leo Leonhart; DTSC: Karen Baker, Aaron Yue, Nancy Long, Mona Arteaga Bontty, Christina Fu, Carolyn Yee, and from AECOM Steve Heipel, Stev Weidlich, Andee Leisy (RTMM)		Provided discussion and handout on advance preview of DTSC's proposed cleanup decision for groundwater
4/13/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Follow-up to call regarding Draft SOB and Draft EIR and request for time of 5/27 mtg. with FMIT.
4/15/2010	DTSC	Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; DTSC: Karen Baker, Aaron Yue, Chris Guerre, Nancy Long, Christina Fu, Carolyn Yee		Conference call to provided discussion and handout on advance preview of DTSC's proposed cleanup decision for groundwater

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/15/2010	Karen Baker, DTSC	Dawn Hubbs & Loretta Jackson, Hualapai		Resend of Handout "PG&E Topock GW Remediation Project Update for Interested Tribes" for phone meetings with tribes
4/17/2010	Nora McDowell-Antone, FMIT	Jamie Cleland, EDAW		Email: Submittal of notes on cultural section (ultimately becoming T2 in EIR)
4/23/2010	Carolyn Yee, DTSC	Nora McDowell-Antone, FMIT	DTSC, FMIT	DTSC response letter to FMITs request to incorporate additional information into the cultural section of the Final GW remedy Draft EIR
4/23/2010	Guenther Moskat, DTSC	Nora McDowell-Antone, FMIT	DTSC: Karen Baker, Nancy Long, Aaron Yue, Carolyn Yee	PG&E Topock Compressor Station - Fort Mojave Indian Tribe's Cultural Summary
4/26-27/2010	BLM	Attendees: DTSC: Karen Baker; Cocopah, CRIT, FMIT, Hualapai, PG&E, BLM, CA SHPO, AZ SHPO, ACHP, DOI, BOR, FWS		BLM meeting to develop Programmatic Agreement for groundwater remedy
4/27/2010	Karen Baker, DTSC	Recipients: Chemehuevi: Chairman Charles Wood, Ron Escobar; Cocopah: Chairwoman Sherry Cordova, Vice-Chairman Dale Phillips, Jill McCormick; CRIT: Chairman Eldred Enas, Amanda Levis-Sharpe, Douglas Bonamici; FMIT: Chairman Timothy Williams, Nora McDowell-Antone, Linda Otero, Courtney Coyle, Steven McDonald; Fort Yuma-Quechan: Chairman Mike Jackson, Sr.; Havasupai: Chairman Don Watahomigie; Hualapai: Chairman Wilfred Whatoname, Loretta Jackson-Kelly, Dawn Hubbs; Torres-Martinez: Chairwoman Mary Maxine Resvaloso; 29 Palms: Chairman Darrell Mike; Yavapai-Prescott: President Ernest Jones, Sr., Greg Glasscol.	Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Transmittal letter and advance copy of the Draft Environmental Impact Report. Informed recipients that the formal public comment period for both the Draft Statement of Basis and Draft Environmental Impact Report is for a period of 45 days, beginning on June 4 through July 19, 2010. Comments on the Draft Statement of Basis and Draft Environmental Impact Report can be made in writing to DTSC anytime up to July 19, 2010. Verbal and/or written comments can also be provided at the formal public hearings scheduled for the end of June 2010.
4/28/2010	Karen Baker, DTSC	PG&E Clearinghouse Task Force		Request for agenda items for 5/11/10 CTF with attachments: CWG mission statement, Charter, Designation of an Administering Agency for Topock
4/28/2010	Karen Baker, DTSC	Nora McDowell, FMIT		Checking to see if time and location set for 5/27/10 mtg. with FMIT regarding proposed remedy decision
4/29/2010	Karen Baker, DTSC	Dawn Hubbs & Loretta Jackson, Hualapai		Checking to see if specific time set for 5/28/10 mtg w/ CRIT regarding Remedy Decision and EIR and how much time allowed for presentation?
4/29/2010	Dawn Hubbs, Hualapai	Karen Baker, DTSC		Time not set yet; give 1-1/2 hr. for presentation and time for questions and answers.
5/3/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of April 2010.
5/11/2010	DTSC	Attendees: FMIT: Nora McDowell-Antone (via phone); Hualapai: Dawn Hubbs; DTSC, DOI, MWD, PG&E		Clearinghouse Task Force meeting. Continuation of efforts to improve communications for the project. Discussion included revising CWG Mission Statement and Charter

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5/19-20/2010	BLM	Attendees: DTSC: Karen Baker; Chemehuevi, Cocopah, FMIT, Hualapai, PG&E, BLM, CA SHPO, AZ SHPO, ACHP, DOI, BOR		BLM meeting to develop Programmatic Agreement for groundwater remedy
5/25/2010	Aaron Yue, DTSC	Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; FMIT: Nora McDowell-Antone	Carolyn Yee, Karen Baker, Mona Arteaga, Steve Heipel	Advanced preview of presentation to be shared at upcoming meeting.
5/26/2010	Karen Baker, DTSC	Loretta Jackson & Dawn Hubbs, Hualapai		Inquired if Hualapai will show video at CWG as discussed in CTF
5/26/2010	Dawn Hubbs, Hualapai	Karen Baker, DTSC	Loretta Jackson	Yes, will show video at CWG
5/26/2010	Steve McDonald, FMIT (on Nora McDowell-Antone's behalf)	Fort Mojave: Chairman Timothy Williams, Vice-Chair Shan Lewis, Linda Otero, Nora McDowell-Antone, Courtney Coyle, Leo Leonhart; DTSC: Karen Baker, Aaron Yue, Mona Bontty, Carolyn Yee, and from AECOM Steve Heipel, Stev Weidlich, Andee Leisy (RTMM)		Agenda for meeting with FMIT Tribal Council on 5/27/10.
5/27/2010	DTSC	Fort Mojave: Chairman Timothy Williams, Vice-Chair Shan Lewis, Linda Otero, Nora McDowell-Antone, Courtney Coyle, Leo Leonhart; DTSC: Karen Baker, Aaron Yue, Mona Bontty, Carolyn Yee, and from AECOM Steve Heipel, Stev Weidlich, Andee Leisy (RTMM)		Meeting with Tribal Council: Focus of meeting was to provide an overview of the Draft Statement of Basis and Draft Environmental Impact Report for the proposed groundwater remedy
5/28/2010	DTSC, DOI, BLM	Hualapai Tribal Council; DTSC: Karen Baker, Aaron Yue, Mona Bontty, Carolyn Yee and from AECOM Steve Heipel, Stev Weidlich, DOI, BLM		Meeting with Tribal Council: Focus of meeting was to provide an overview of the Draft Statement of Basis and Draft Environmental Impact Report for the proposed groundwater remedy
6/2/2010	Karen Baker, DTSC	Nora McDowell, FMIT		Will 7/6/10 work for f/u meeting they requested?
6/10/2010	Karen Baker, DTSC	Steve McDonald, FMIT		F/u to 6/2/10 message (phone/e-mail) to Nora - didn't receive response
6/14-15/2010	BLM	Attendees: DTSC: Karen Baker; Chemehuevi, Cocopah, CRIT, FMIT, Hualapai, PG&E, BLM, CA SHPO, AZ SHPO, ACHP, DOI, BOR, FWS		BLM meeting to develop Programmatic Agreement for groundwater remedy
6/14/2010	Win Wright, Hualapai	Chris Guerre, DTSC	Aaron Yue, Karen Baker	Requested link to slant well reports
6/14/2010	Chris Guerre, DTSC	Win Wright, Hualapai		Sent link to slant well reports
6/14/2010	Win Wright, Hualapai	Chris Guerre, DTSC		California report isn't complete
6/14/2010	Chris Guerre, DTSC	Win Wright, Hualapai		Would you like PG&E to send you complete file?
6/14/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Karen spoke with Nora and July 6th works for FMIT meeting on mitigation measures.
6/15/2010	Chris Guerre, DTSC	Win Wright, Hualapai		Response to groundwater age dating
6/16/2010	DTSC	Mojave: Isadora Evanston, Leo Leonhart (H&A), Nora McDowell-Antone (by phone); CRIT: Doug Bonamici; Hualapai: Dawn Hubbs, Win Wright; DTSC, SWRCB, CRB, PG&E, BLM, DOI, MWD		Face-to-face Consultative Work Group Meeting
6/22/2010	Karen Baker, DTSC	Doug Bonamici, CRIT		Called regarding Mohave speaker as interpreter for public meetings/hearings in Parker and Lake Havasu City
6/22/2010	Norman Shopay, on behalf of CRIT	Aaron Yue, DTSC		Spoke w/ Aaron Yue privately about remedy selection and efforts to delay until new governor elected. Requested 90-Day delay due to docs missing in repositories

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6/24/2010	Andee Leisy; Remy, Thomas, Moose and Manlley, LLP	Chairman Timothy Williams, FMIT	Shan Lewis, Linda Otero, Nora McDowell (FMIT), Karen Baker (DTSC), Courtney Coyle, Steve Heipel (AECOM), Nancy Long (DTSC), Steve McDonald, ESQ	Topock Groundwater Remediation Project and Draft EIR - Summary of May 27, 2010 Meeting at Fort Mojave Indian Tribal council (Needles, CA)
6/24/2010	Andee Leisy; Remy, Thomas, Moose and Manlley, LLP	Steve McDonald, Courtney Coyle, FMIT	Aaron Yue, Karen Baker, Nancy Long, DTSC, Steve Heipel, AECOM	Topock Groundwater Remediation Project and Draft EIR - Summary of May 27, 2010 Meeting at Fort Mojave Indian Tribal council (Needles, CA)
6/25/2010	Aaron Yue, DTSC	Norman Shopay, on behalf of CRIT		Courtesy response to request to restart comment period due to missing docs - repositories checked, not missing
6/28/2010	Christina Fu, DTSC	Gilbert Parra, Chemehuevi		Called to apologize for not sending the additional FS requested.
7/1/2010	Chris Guerre, DTSC	Win Wright, Hualapai	Aaron Yue, Karen Baker	Link to Appendices and Figures for the Well Installation Rpt for Slant Wells MW-52 and MW-53 that he didn't receive
7/5/2010	Courtney Coyle, FMIT	Andee Leisy, Remy, Thomas, Moose & Manley (legal for AECOM), Steven McDonald, for FMIT	AECOM: Steve Heipel; DTSC: Nancy Long, Aaron Yue, Karen Baker; FMIT: Nora McDowell-Antone, Linda Otero, Leo Leonhart	FMIT does not agree with Andee Leisy's summary of our May 27, 2010 meeting. As it is so close to Draft EIR comment deadline, tribe will summarize their concerns in its formal comment letter on the Draft EIR. Tribe intends to focus tomorrow's meeting on indentifying specific areas the Tribe feels pose significant impacts and discuss mitigation measures.
7/6/2010	DTSC	Fort Mojave: Chairman Timothy Williams, Nora McDowell-Antone, Linda Otero, Leo Leonhart, Courtney Coyle, Steve McDonald, Shan Lewis, Nicole Garcia, Norvin McGord, Colleen Garcia; DTSC: Karen Baker, Carolyn Yee, Andee Leisy, Steve Heipel, Stev Weidlich		Discussion of proposed mitigation measures for cultural impacts for the Environmental Impact Report
7/9/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of June 2010.
7/14/2010	Courtney Coyle, FMIT	Andee Leisy, Remy, Thomas, Moose & Manley (legal for AECOM), Steven McDonald, for FMIT	AECOM: Steve Heipel; DTSC: Nancy Long, Aaron Yue, Karen Baker; FMIT: Nora McDowell-Antone, Linda Otero, Leo Leonhart	Request for Word version of EIR mitigation summary chart.
7/14/2010	Andee Leisy, Remy, Thomas, Moose & Manley (AECOM legal)	Courtney Coyle, FMIT		Apologized to Courtney. Her father passed away so has been scattered. Will respond to Courtney's request right away.
7/14/2010	Andee Leisy, Remy, Thomas, Moose & Manley (AECOM legal)	Courtney Coyle, Steve McDonald (for FMIT)	AECOM: Steve Heipel; DTSC: Nancy Long, Aaron Yue, Karen Baker; FMIT: Nora McDowell-Antone, Linda Otero, Leo Leonhart	E-mailed Table 1-2 "Summary of Impacts and Mitigation" from the Draft EIR summary. Asked that she let her know if she needs anything else.
7/19/2010	Karen Baker, DTSC	Doug Bonamici, CRIT, Steve Armann & Arlene Kabei (USEPA)		Shared response to Daphne Hill-Poolaw, Chairperson CRIT for extension of the public comment period for the draft EIR

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7/19/2010	Karen Baker, DTSC	Daphne Hill-Poolaw, CRIT	Nancy Long, Pam Innis	Called Daphne Hill-Poolaw in response to her request on behalf of the Mohave Elders Committee of the CRIT to extend the public comment period for the draft EIR
7/19/2010	Daphne Hill-Poolaw, CRIT	Karen Baker, DTSC		Returned above call regarding request to extend the public comment period for the Draft EIR
7/19/2010	Karen Baker, DTSC	Daphne Hill-Poolaw, CRIT		E-mailed Karen's contact information
7/21/2010	Karen Baker, DTSC	Michael Tsosie, CRIT		Response to request for extension of comment period and shared letter sent to Daphne Hill Poolaw
7/21/2010	Karen Baker, DTSC	Jayde Johnson, CRIT		Response to request for extension of comment period and shared letter sent to Daphne Hill Poolaw
7/28/2010	Lori Hare, DTSC	Courtney Coyle, FMIT		E-mailed all comments received by DTSC on the Draft EIR and Statement of Basis for proposed groundwater cleanup decision.
7/30/2010	Karen Baker, DTSC	Courtney Coyle, FMIT & Bob Doss, PG&E		Emailed transcripts from public hearings regarding the Draft EIR and Statement of Basis
7/30/2010	Dawn Hubbs, Hualapai	Jose Marcos, DTSC		Request for small working group meeting to discuss summary report
7/30/2010	Jose Marcos, DTSC	Dawn Hubbs, Hualapai	DTSC, Hualapai	Response to request for small working group meeting to discuss summary report
8/2/2010	Loretta Jackson-Kelly, Hualapai Tribe	Aaron Yue, DTSC		Comment regarding technical memorandum "Implementation Plan for Repair of Monitoring Wells MW-38S and MW-38D" by CH2M Hill, July 19, 2010
8/3/2010	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Early notice of proposed CWG and TWG meeting on 10/6 & 10/7 to discuss Soils RFI
8/3/2010	Leo Leonhart, FMIT	Yvonne Meeks PG&E	DTSC, FMIT, PG&E	Request for meeting with PG&E prior to release of summary report of DEIR comments
8/3/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of July 2010.
8/4/2010	Karen Baker, DTSC	Courtney Coyle, FMIT		Hope you received Draft EIR comments sent via e-mail, transcript delay due to error in Lake Havasu City transcript
8/5/2010	Karen Baker, DTSC	Courtney Coyle, FMIT		Forwarded late comments on EIR from the Colorado River Board (CRB)
8/5/2010	Win Wright, Hualapai	Jose Marcos, DTSC		Called to talk about the status of the Part A soil investigations.
8/5/2010	Chris Guerre, DTSC	Dawn Hubbs, Hualapai	DTSC, Win Wright	Request for phone meeting to discuss their 8/2/10 letter regarding MW-38 Repair
8/5/2010	Leo Leonhart, FMIT	Aaron Yue, DTSC	Pam Innis, DOI, Karen Baker, DTSC	FMIT comment letter on PG&E's plan for replacement/repair of MW-38S and MW-38D.
8/5/2010	Chris Guerre, DTSC	Leo Leonhart, Nora McDowell-Antone (FMIT)	Aaron Yue, Karen Baker (DTSC); Courtney Coyle, Linda Otero (FMIT); TFKing; Yvonne Meeks (PG&E	Reviewed your letter dated 8/5/10 regarding repair of MW-38 and would like to discuss some of its content with you on 8/9, 8/10 or 8/12. Let us know if any of these times work for you.
8/5/2010	Leo Leonhart, FMIT	Chris Guerre, DTSC	Aaron Yue, Karen Baker (DTSC); Courtney Coyle, Linda Otero (FMIT); TFKing; Yvonne Meeks (PG&E	RE: 8/5/10 letter from FMIT - repair of MW-38. Will hold the 12th @ 10:30 open. Which parts of letter do you want to discuss?
8/6/2010	Jose Marcos, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Request for input by 7/30/10 to Soil Part A Phase 1 Data Summary Report

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8/6/2010	Win Wright, Hualapai	Karen Baker, Chris Guerre, Aaron Yue	Hualapai members	Hualapai's review of the Soil DQO report
8/10/2010	Aaron Yue, DTSC	Hualapai Members	Chris Guerre, DTSC	Follow-up to Chris Guerre's 8/5/10 e-mail request meeting to discussed MW-38 Repair
8/11/2010	Leo Leonhart, FMIT	Chris Guerre, DTSC		Is there a call in number for tomorrow's meeting?
8/11/2010	Chris Guerre, DTSC	Leo Leonhart		Asked how many people will call in. If more than two lines, will get a call in number.
8/11/2010	Leo Leonhart, FMIT	Chris Guerre, DTSC		Gave his and Nora McDowell's phone # for Chris to call tomorrow.
8/12/2010	Leo Leonhart, FMIT	Chris Guerre, DTSC	Aaron Yue, DTSC, Nora McDowell-Antone, FMIT	Transmittal of Model Well Standards Ordinance per California Water Code Section 13801
8/13/2010	Win Wright, Hualapai	Aaron Yue, DTSC		Request to change MW-38 well repair initiation meeting to later in the day. Request for drillers to show different sonic drilling techniques, bit types and bit diameters with a discussion on how different techniques can be used to decommission a monitoring well.
8/13/2010	Andee Leisy, Remy, Thomas, Moose & Manley (AECOM legal)	FMIT: Courtney Coyle, Nora McDowell-Antone, Linda Otero, Leo Leonhart; AECOM: Steve Heipel; DTSC: Nancy Long, Aaron Yue, Karen Baker		Attached is Word version of Table 1-2 (Summary of Impacts and Mitigation) of the Draft EIR. Does FMIT intend to submit redline comments/suggestions to mitigation measures?
8/16/2010	Aaron Yue, DTSC	Win Wright, Hualapai	PG&E, Karen Baker, Chris Guerre, Hualapai	Response to Win Wright's request dated 8/13/10. Forwarding his request to PG&E, informed that FMIT requested a cultural evaluation around the drill site in advance of the kick-off meeting, suggested to invite driller to CWG/TWG meeting to present info. to larger audience.
8/16/2010	Leo Leonhart, FMIT	Jose Marcos, DTSC		Letting Jose know that he had not received response from Bob Doss on his 8/3/10 request
8/16/2010	Jose Marcos, DTSC	Leo Leonhart, FMIT	DTSC, FMIT, PG&E	Response to Leo's 8/3/10 request for meeting
8/16/2010	Leo Leonhart, FMIT	Jose Marcos, DTSC	DTSC, FMIT, PG&E	Tribe looks forward to participation at working sessions. Need initial straw man of data gap analysis and of the plan for resolution of the data gaps. Want a pre-submittal meeting with PG&E.
8/18/2010	Aaron Yue, Karen Baker (DTSC)	Yvonne Meeks, PG&E		RE: Win Wright's requests for MW-38 kick-off meeting: How sonic drilling is conducted/how it works will be discussed at kick-off mtg. Can move the start time if plan early or moved to Wed..
8/18/2010	Leo Leonhart, FMIT	Jose Marcos, DTSC		Response to Jose Marcos' response of 8/16
8/19/2010	Leo Leonhart, FMIT	Jose Marcos, DTSC		Sent list of soils docs listed on the DTSC website. Asked Jose to focus him on which ones would be the most relevant for the forthcoming event.
8/20/2010	Aaron Yue, DTSC	Win Wright, Hualapai	Chris Guerre, Karen Baker (DTSC), Nora McDowell (FMIT); Loretta-Jackson, Dawn Hubbs (Hualapai); PG&E	Forwarded information from PG&E regarding Win Wright's requests for the MW-38 kick off meeting: Can accommodate his requests.
8/20/2010	Win Wright, Hualapai	Aaron Yue, DTSC	Yvonne Meeks, Robert Doss, Curt Russell (PG&E); Dawn Hubbs, Loretta Jackson-Kelly (Hualapai); Nora McDowell (FMIT); Karen Baker, Chris Guerre (DTSC)	Thank you Yvonne Meeks for scheduling time with the drill and rescheduling the MW-38 kick off meeting. Can we observe the drilling?

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8/20/2010	Yvonne Meeks, PG&E	Win Wright, Hualapai	Robert Doss, Curt Russell (PG&E); Dawn Hubbs, Loretta Jackson-Kelly (Hualapai); Nora McDowell (FMIT); Aaron Yue, Karen Baker, Chris Guerre (DTSC)	You're welcome Win. Curt Russell sending invite letter soon. Yes, you can observe the drilling by staying after the meeting.
8/23/2010	Stev Weidlich, EDAW	Steve McDonald, FMIT		Phone: Request for Glamis PA referenced in DEIR comments.
8/23/2010	Steve McDonald, FMIT	Stev Weidlich, EDAW		Email: Recommendation to contact Courtney Coyle for Glamis PA.
8/23/2010	Stev Weidlich, EDAW	Courtney Coyle, FMIT		Email: Request for Glamis PA referenced in Draft EIR comments.
8/24/2010	Courtney Coyle, FMIT	Stev Weidlich, EDAW		Fax: Sending of Glamis Draft PA.
8/24/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Called Nora regarding the EIR. Left message with receptionist asking Nora to return call. Also left message with receptionist for Nora to call on same topic on 7/30, but Nora has not called back.
8/25/2010	9	Chemehuevi: Ron Escobar; Havasupai: Matthew Putesoy; Fort Yuma-Quechan: Arlene Kingery; Yavapai: Ernest Jones; 29 Palms: Darrell Mike, William Anderson; Havasupai: Don E. Watahomigie; Hualapai: Loretta Jackson, Dawn Hubbs; Fort Yuma-Quechan: Eddie Williams, Arlene Kingery; FMIT: Nora McDowell, Linda Otero; CRIT: Doug Bonamici, Eric Shepard; Cocopah: Jill McCormick, Lisa Wanstall	Chemehuevi: Charles Wood	Forwarded copies of tribal notifications and BLM and FWS authorizations sent to tribes on 8/18/10
8/25/2010	Aaron Yue, DTSC	Karen Baker, DTSC	Bob Doss, PG&E, Courtney Coyle, FMIT	Revised transcript of the Lake Havasu Public Hearing with a corrected statement from one of the speakers for the record.
8/26/2010	Dawn Hubbs, Hualapai	Yvonne Meeks, PG&E	Robert Doss, Curt Russell (PG&E); Loretta Jackson-Kelly (Hualapai); Nora McDowell (FMIT); Aaron Yue, Karen Baker, Chris Guerre (DTSC)	Re: MW-38 Initiation meeting: Can the water consultant that Win Wright spoke about come to the kick-off meeting of the 8th/9th of September?
9/2/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of August 2010.
9/3/2010	Mark Calamia, BLM	Curt Russell, PG&E	Geo/Hydro, Indian Tribe Reps, CWG Members, EIR Group	There will not be a technical Project initiation meeting for the MW-38 repair that was schedule for 9/8/10, but the NHPA Sec 106 staff-to-staff consultation and field site visit with PG&E cultural resource specialists will still take place.
9/8/2010	Stev Weidlich, EDAW	Linda Otero, FMIT, Loretta Jackson-Kelly, Hualapai		Plant list and request about traditional plants for EIR mitigation measures.
9/8/2010	Stev Weidllich, EDAW	Nora McDowell-Antone, Linda Otero, FMIT		Request for meeting on 10/7 or 10/8 to discuss additional mitigation measures to be added to the Final Remedy EIR

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9/13/2010	Aaron Yue, DTSC	Geo/Hydro, Indian Tribe Reps, CWG Members, EIR Group		Addendum to East Ravine Workplan and Topock Compressor Station Investigation for review and comment by 10/6/10.
9/13/2010	Aaron Yue	Geo/Hydro, Indian Tribe Reps, CWG Members, EIR Group		Notification of change to upcoming October CWG and TWG meetings.
9/13/2010	Nora McDowell-Antone, FMIT	Stev Weidlich, EDAW		Not available 10/7 or 10/8, proposed conference call on 10/13 to discuss mitigation measures and thereafter a meeting on 10/18/10 with Fort Mojave Tribal Council for finalization of acceptable mitigation measures.
9/14/2010	Win Wright, Hualapai	Karen Baker, DTSC	Dawn Hubbs, Hualapai	Please include him on e-mails for the Clearinghouse Taskforce.
9/15/2010	Nora McDowell-Antone, FMIT	Stev Weidlich, EDAW		Email: Check-in to see if 10/13 and 10/18 dates were good for a meeting.
9/15/2010	Stev Weidlich, EDAW	Nora McDowell-Antone, FMIT		Email: Confirmation of meeting dates.
9/15/2010	Nora McDowell-Antone, FMIT	Stev Weidlich, EDAW		Email: Confirmation of meeting dates.
9/16/2010	Jose Marcos, DTSC	Geo/Hydro, Indian Tribe Reps, CWG Members		Draft Part A Data Gaps Evaluation Report/ October 6 & 7 TWG meeting
9/20/2010	Chris Guerre, DTSC	Geo/Hydro, Indian Tribe Reps, CWG Members		2nd Qt. 2010 IMPM and GW Monitoring Report
9/28/2010	Nora McDowell-Antone, FMIT	Karen Baker, DTSC, Pam Innis, DOI		Invite to tribal leader meeting on 10/4/10.
9/28/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT, Pam Innis, DOI		Thank you for invite. Karen will check with boss if can extend her travel.
9/28/2010	Steve Weidlich, AECOM	Nora McDowell-Antone, FMIT	Linda Otero (FMIT), Jamie Cleland (AECOM), Carolyn Yee (DTSC)	Since Karen Baker is not available for 10/18 meeting, offered 10/21, 10/25-10/29/10, 11/1 - 11/5/10.
9/28/2010	Aaron Yue, DTSC	Geo/Hydro, Indian Tribe Reps, CWG Members		Technical memorandum for repair of MW-38S and MW-38D, Old Well Reconnaissance for review and comment by 10/18/10
9/29/2010	Nora McDowell-Antone, FMIT	Karen Baker, DTSC, Pam Innis, DOI		Thanks for quick response - let her know if you'll attend tribal leader meeting on 10/4/10.
9/29/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT, Pam Innis, DOI		Cannot attend Tribal Leader meeting after all, have critical meeting that cannot change.
9/29/2010	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Asked Karen if someone else from DTSC can attend
9/29/2010	Nora McDowell-Antone, FMIT	Steve Weidlich, AECOM	Linda Otero (FMIT), Jamie Cleland (AECOM), Carolyn Yee (DTSC)	Preference for rescheduled meeting is 10/25, 27 or 28, but waiting for confirmation from Chairman's office. Will you set up call in number for 10/13 conference call or should she?
9/30/2010	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		DTSC unable to accept invitation to participate in 10/4 leadership mtg. Look forward to call with FMIT on 10/13.
10/1/2010	Nora McDowell-Antone, FMIT	Steve Weidlich, Jamie Cleland (AECOM), Linda Otero (FMIT), Carolyn Yee, Karen Baker (DTSC)		Monday, 10/25/10 from 10:00 AM-3:00 PM at the FMIT office is the date Chairman Williams confirmed meeting to discuss final mitigation measures with DTSC. Will you set up 10/13 call in number or do you want her to arrange it?
10/1/2010	Stev Weidlich, EDAW	Nora McDowell-Antone, FMIT		Confirmation of meeting dates for EIR mitigation measures meeting.
10/4/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of September 2010.
10/5/2010	Stev Weidlich, EDAW	Nora McDowell-Antone, FMIT		Email: Discussion of possible agenda for EIR mitigation measures meeting

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/5/2010	DTSC	Attendees: Fort Mojave: Nora McDowell-Antone, Leo Leonhart, Michael Sullivan (by phone), Isadora Evanston, Courtney Coyle (by phone); Hualapai: Dawn Hubbs, Win Wright; CRITs: Michael Tsosie (by phone); FWS Havasu, DTSC, AECOM, CRB, MWD, PG&E, Arcadis, Lucas Advocates, CH2M Hill, BLM,		Face-to-face Consultative Work Group Meeting
10/6/2010	DTSC	Attendees: Fort Mojave: Nora McDowell-Antone, Isadora Evanston, Leo Leonhart, Hualapai: Win Wright, Dawn Hubbs, Loretta Jackson-Kelly; DTSC, PG&E, Arcadis, CH2M Hill, Lucas Advocates, USFWS, BLM, DOI, MWD		Face-to-face Geo/Hydro Technical Work Group Meeting
10/7/2010	DTSC	Attendees: Fort Mojave: Leo Leonhart, Michael Sullivan, Isadora Evanston; Hualapai: Win Wright, Dawn Hubbs; CRITs: Howard Magiu; DTSC, PG&E, Arcadis, CH2M Hill, USFWS, DOI, MWD		Day two of face-to-face Geo/Hydro Technical Work Group Meeting
10/7/2010	Nora McDowell-Antone, FMIT	Stev Weidlich, EDAW		Email: Request for copy of mitigation measures.
10/8/2010	Nora McDowell-Antone, FMIT	Stev Weidlich, EDAW		Phone: Left message requesting to talk about meeting times and agenda
10/12/2010	Stev Weidlich, EDAW	FMIT: Nora McDowell-Antone, Courtney Coyle, Steven McDonald, Linda Otero, Tim Williams, Shan Lewis, Dolores Castillo, Terri Medrano	Karen Baker, Andee Leisy, Carolyn Yee, Jamie Cleland, Guenther Moskat, Aaron Yue, Nancy Long, Steve Heipel, Taryn Nance, Pete Choi, Anne Hoagland	Email transmission of agenda for a 10/13/10 conference call on cultural mitigation measures.
10/12/2010	Steve Weidlich, AECOM	Nora McDowell-Antone, FMIT		Phone call to discuss 10/13/10 conference call on cultural mitigation measures.
10/13/2010	Steve McDonald, FMIT	Karen Baker, DTSC		Call regarding Tribe concerns over cancellation of 10/13 meeting.
10/14/2010	Leo Leonhart, FMIT	Aaron Yue, DTSC		FMIT comments on PG&E's August 27, 2010 "Addendum to the Revised Work Plan for East Ravine Groundwater Investigation"
10/14/2010	Loretta Jackson-Kelly, Hualapai	Aaron Yue, DTSC		Hualapai comments regarding technical memorandum "Addendum to the Revised Work Plan for East Ravine Groundwater Investigation" dated 8/27/10
10/18/2010	Aaron Yue, DTSC	Stephen Weidlich, Courtney Coyle, Dolores Castillo, Linda Otero, Nora McDowell-Antone, Shan Lewis, Terri Medrano, T. Williams, Steve McDonald	Anne Hoagland, Jamie Cleland, Pete Choi, Steve Heipel, Taryn Nance, Carolyn Yee, Guenther Moskat, Karen Baker, Nancy Long, Andee Leisy	Expanded list on range of Mitigation Measures being considered to use as guide for 10/25 meeting.
10/18/2010	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC		Response to Aaron Yue's e-mail and request for estimate of time adjustment on overall schedule.
10/18/2010	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT		Response to Nora's response that working on aggressive commitment to PG&E and stakeholders to finish remedy decision ASAP.
10/19/2010	Leo Leonhart, FMIT	Jose Marcos, DTSC		Sent 1st draft of matrix listing sensitivities to AOC's, SWMUs & Uas asking if anything is missing.
10/19/2010	Jose Marcos, DTSC	Leo Leonhart, FMIT	Aaron Yue, Chris Guerre, Karen Baker	Response to Leo of needed additions to his matrix.
10/19/2010	Carol Reilly, DTSC	Nora McDowell-Antone, FMIT	Ann Carberry, Karen Baker, Maziar Movassaghi (DTSC)	Can set Topock meeting with Maziar in early or mid-December. Please advise.

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10/20/2010	Nora McDowell-Antone, FMIT	Carol Reilly, DTSC	Ann Carberry, Karen Baker, Maziar Movassaghi (DTSC)	Re: FMIT meeting with Maziar: Can't wait until December, need to talk to him within the next 2 weeks after the mitigation measures meeting with DTSC/AECOM on Monday, 10/25. Next suggestion is to have a conference call with Maziar.
10/20/2010	Carol Reilly, DTSC	Nora McDowell-Antone, FMIT	Ann Carberry, Karen Baker, Maziar Movassaghi (DTSC)	Offered 1 hr. time slots for FMIT to have conference call with Maziar on 10/28/10.
10/20/2010	Nora McDowell-Antone, FMIT	Carol Reilly, DTSC	Ann Carberry, Karen Baker, Maziar Movassaghi (DTSC)	Any of the 1 hr. time slots for conference call with Maziar and FMIT works. Inform her of the time and they will be prepared.
10/25/2010	DTSC	Fort Mojave: Chairman Timothy Williams, Nora McDowell-Antone, Courtney Coyle, Steve McDonald, Leo Leonhart; DTSC: Karen Baker, Nancy Long, Carolyn Yee, and from AECOM Stev Weidlich, Jamie Cleland, Andee Leisy (RTMM)		Discussion of proposed mitigation measures for cultural impacts for the Environmental Impact Report
10/27/2010	Timothy Williams, FMIT	Secretary Ken Salazar	Larry Ecohawk, Asst. Sec., BIA; BLM; OEPC; DOI; Karen Baker, DTSC; ACHP; CA SHPO; AZ SHPO; NAHC; Jodi Gillette; WH Associate Director of Office of Intergovernmental Affairs	Protest of actions of the BLM in its treatment of the tribe and others with regard to the Topock project, rejection of Programmatic Agreement from BLM for signature. Copy of 8/30/10 letter to Ramone McCoy, BLM and Tribal Consultation Protocol.
10/27/2010	Aaron Yue, DTSC	Doug Bonamici, CRITs	Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia (CRITs); Karen Baker (DTSC); Stev Weidlich, Taryn Nancy (AECOM)	Letter re: CRITs involvement in providing cultural resource information; matter will be closed with finalization of EIR.
10/28/2010	Stev Weidlich, AECOM	Nora McDowell-Antone, Linda Otero, FMIT	Carolyn Yee, Guenther Moskat, Aaron Yue, Karen Baker, Steve Heipel, Jamie Cleland, Taryn Nance, Anne Hoagland	Email transmission of request to provide EIR team with a list of traditionally used plants.
10/29/2010	Nora McDowell-Antone, FMIT	Director BLM, DOI: Willie Taylor, William Lodder, Pam Innis; DTSC: Maziar Movassaghi, Karen Baker; ACHP: Nancy Brown; Parks: MW Donalds, D Dutschke; AZ State parks: C Griffith, IM nahc; CRIT: David Harper; PG&E: David Gilbert	Chemehuevi: Charles Wood, Ron Escobar, Richard Armstrong, Doug Bonamici, Amanda Leivas-Sharpe, Symanthia Ameelyenah; Cocopah: Jill McCormick, Sherry Cordova; 29 Palms: William Anderson; Yavapai-Prescott: Greg Glassco, Ernest Jones; Hualapai: Loretta Jackson, Dawn Hubbs; valeriewt@hotmail.com	Forwarded letter to Secretary Ken Salazar from Chairman Timothy Williams, FMIT
10/29/2010	Chris Guerre, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Technical meeting regarding gw well decommissioning - input request (tribe request that alternative to cement grout to seal wells/boreholes during decommissioning)

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/1/2010	Aaron Yue, DTSC	Dawn Hubbs, Loretta Jackson-Kelly, Hualapai	Chris Guerre, Karen Baker, DTSC, Pam Innis, DOI, Yvonne Meeks, PG&E	Comments on Technical Memorandum for MW 38 well repairs and old abandon well location
11/1/2010	Jose Marcos, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Figures for AOC-1 Appendix of draft Part A Data Gaps Evaluation report have been updated and placed on ftp site.
11/2/2010	DTSC	Mojave: Nora McDowell-Antone, Leo Leonhart, Felton Bricker, Sr., Isadora Evanston; Hualapai: Dawn Hubbs, Win Wright; CRITs: Lisa Swick, Howard Magill; DTSC, Havasu NWR, DOI, USBR, Arcadis, PG&E, CH2M Hill, FWS		Geo/Hydro Technical Work Group Meeting
11/3/2010	DTSC	Mojave: Nora McDowell-Antone, Leo Leonhart, Marla Jenkins, Felton Bricker, Sr.; Hualapai: Dawn Hubbs, Win Wright; CRITs: Howard Magill; DTSC, BOR, PG&E, Arcadis, CH2M Hill, DOI, FWS		Geo/Hydro Technical Work Group Meeting
11/4/2010	Jose Marcos, DTSC	Win Wright, Hualapai		Sent sign in sheets from October and November TWG meetings per his request.
11/4/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of October 2010.
11/8/2010	DTSC/FMIT	Attendees: FMIT: Nora McDowell-Antone, Linda Otero; DTSC: Maziar Movassaghi, Stewart Black		Meeting between DTSC leadership and FMIT to discuss mitigation measures proposed for the Final EIR for groundwater remedy.
11/10/2010	Stewart Black, DTSC	Linda Otero, Nora McDowell-Antone, FMIT		Can Discussion Draft FMIT Mitigation Document that they left with Maziar be shared with AECOM?
11/12/2010	Nora McDowell-Antone, FMIT	Stewart Black, DTSC		You can use the Discussion Draft FMIT Mitigation Document or wait for final which has a little more detail.
11/15/2010	Steve McDonald, FMIT	Karen Baker, DTSC; Andee Leisy, RTMM	Stewart Black, Carolyn Yee, Timothy Williams, Linda Otero, Nora McDowell-Antone, Shan Lewis, Delores Castillo, Courtney Coyle, Terri Medrano, Tom King	e-mail providing document "FMIT Reaction to DTSC Proposed Mitigation Measure Items on Agenda for October 25,2010 Meeting on Groundwater DEIR.
11/16/2010	Karen Baker, DTSC	Steve McDonald, FMIT		e-mail thanking him for the proposed mitigation measures from the FMIT.
11/16/2010	Chris Guerre, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		Results for September through October, third Quarter 2010 Sampling
11/22/2010	Leo Leonhart (H&A) for FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Courtney Coyle, Linda Otero, Nora McDowell-Antone, Steven McDonald, Timothy Williams; DTSC: Chris Guerre, Jose Marcos; PG&E: Yvonne Meeks	FMIT Comments on Soils Data Gaps & DQO's. Standards of Performance - Cultural Resources (comments in regard to the overall soil investigation.
11/24/2010	Leo Leonhart, FMIT	Chris Guerre, DTSC		Response to Chris Guerre's request to check availability of the FMIT Council Chamber for well abandonment meeting on 1/12/11. It is available.
11/24/2010	Chris Guerre, DTSC	Leo Leonhart, FMIT	Nora McDowell-Antone, FMIT	Let's book the Council Chamber for well abandonment meeting on 1/12/11.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/24/2010	Nora McDowell-Antone, FMIT	Chris Guerre, DTSC, Leo Leonhart, FMIT		Will have admin. Pencil in Council Chamber for the 1/12/11 abandonment meeting. Requested timeframe of meeting.
11/24/2010	Chris Guerre, DTSC	Nora McDowell-Antone, Leo Leonhart (FMIT)	Aaron Yue, DTSC	Time frame mentioned previously should work (10 am - 3 PM AZ time) for 1/12/11 abandonment meeting.
11/29/2010	Nora McDowell-Antone, FMIT	Chris Guerre, DTSC, Leo Leonhart, FMIT		We are booked for the tribal chambers on 1/12/11. Let her know what equipment will be needed.
12/3/2010	Dawn Hubbs, Hualapai	Jose Marcos, Chris Guerre, Aaron Yue, Karen Baker, DTSC	Win Wright, Loretta Jackson-Kelly, Hualapai	Hualapai Tribal Historic Preservation Officer's comments regarding the Soil Investigation Part A Phase I Data Gaps Evaluation Report
12/3/2010	Aaron Yue, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		PG&E East Ravine and TCS Work Plan Addendum with comments from the FMIT and Hualapai and DTSC to PG&E for response.
12/6/2010	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of November 2010.
12/7/2010	Pam Innis, DOI	Chemehuevi: Ron Escobar; CRITs: Howard Magill; FMIT: Felton Bricker, Leo Leonhart; Hualapai: Dawn Hubbs, Win Wright. DTSC: Chris Guerre; DOI: Pam Innis, Rick Newill, Dennis Smith; BLM: Cathy Wolff-White, Mark Calamia; USFW: Carrie Marr.		Tribal Consultation in Needles for Topock Soils Remediation Coordination. Discuss: Sampling in lower portion of Bat Cave Wash; UA-1 path forward; and combining Soil Part A and B Workplans into one document. Agree to future meeting in January to discuss sampling locations.
12/8/2010	Jose Marcos, DTSC	Leo Leonhart (H&A), FMIT	DTSC: Aaron Yue, Chris Guerre, Karen Baker; FMIT: Linda Otero, Nora McDowell-Antone	Acknowledgement of receipt of FMIT Comments on Soils Data Gaps & DQO's dated 11/22/10. DTSC will review the comments and recommendations and take them into consideration.
12/8/2010	Jose Marcos, DTSC	Dawn Hubbs, Hualapai	Hualapai: Win Wright, Loretta Jackson-Kelly; DTSC: Chris Guerre, Aaron Yue, Karen Baker	Acknowledgement of receipt of Hualapai Comments on Soils Data Gaps & DQO's dated 12/3/10. DTSC will review the comments and recommendations and take them into consideration.
12/15/2010	Leo Leonhart, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	DTSC: Karen Baker, Chris Guerre, , Jose Marcos; FMIT: Courtney Coyle, Steve McDonald, Nora McDowell-Antone, Tim Williams; ACHP: N. Brown; CA SHPO: D. Dutschke, AZ SHPO: C. Griffith; PG&E: Yvonne Meeks	FMIT's response to the December 13, 2010 email from Jose Marcos regarding PG&E Topock undesignated Area 1 (UA-1) and UA-1 alternate.
12/20/2010	Chris Guerre, DTSC	Leo Leonhart, Nora McDowell-Antone (FMIT)		Equipment needed for 1/12/11 meeting at FMIT tribal chambers.
12/20/2010	Chris Guerre, DTSC	FMIT: Linda Otero, Leo Leonhart, Nora McDowell-Antone; Hualapai: Dawn Hubbs, Win Wright, Loretta Jackson; MWD, Geopentech, BOR, DOI, PG&E	Aaron Yue, Karen Baker, Jose Marcos, DTSC	Reminder of January 12 Groundwater Well Decommissioning Tech Meeting and draft agenda.
12/20/2010	Chris Guerre, DTSC	EIR Group, Geo/Hydro, Indian Tribe Reps; CWG		November 2010 chromium GW results and graphs for MW-34-100 and MW-46-175 and graphical data for MW-44-115 and MW-44-125.
12/22/2010	Isadora Evanston, FMIT	Aaron Yue, DTSC		Requested agenda of meetings June to present for CWG/PG&E meetings that she attended and sign-in sheets of the meetings.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/22/2010	Felton Bricker, FMIT	Chris Guerre/Aaron Yue, DTSC		Called Felton at Nora McDowell's request and notified him of upcoming well decommissioning meeting on January 12, 2011.
12/23/2010	Karen Baker, DTSC	Leo Leonhart, FMIT	DTSC: Chris Guerre, Jose Marcos, Aaron Yue; FMIT: Courtney Coyle, Steven McDonald, Nora McDowell-Antone, Linda Otero, Timothy Williams; ACHP: Nancy Brown; CA SHPO: Dwight Dutschke; AZ SHPO: Carol Griffith; DOI: Pam Innis	Response to the FMIT letter on PG&E Topock Undesignated Area 1 (UA-1) and UA-1 Alternate.
12/28/2010	Dawn Hubbs, Hualapai	Aaron Yue, DTSC		Well decommissioning outline suggested by Win Wright.
12/28/2010	Aaron Yue, DTSC	Dawn Hubbs, Hualapai		Thank you for sharing. Chris Guerre will review when he returns from vacation. Please bring up the key points of the letter at the January 12th meeting if DTSC does not.
1/3/2011	Juan Jayo, PG&E	Steven McDonald (FMIT)	FMIT: Timothy Williams, Nora McDowell-Antone, Linda Otero, Tom F. King, Andrea Leisy, Esq.; ACHP: Nancy Brown; CRITs; Hualapai Tribe; Cocopah Tribe; Yavapai-Prescott Tribe; Chemehuevi Tribe; Bill Quinn, Office of the Regional Solicitor, Southwest Region; DOI: Casey Padgett, Ken Salazar, Larry Echo Hawk, Pamela Innis, William Lodder, Dr. Willie Taylor; DTSC: Maziar Movassaghi, Karen Baker, Carolyn Yee, Aaron Yue; BLM: Bob Abbey; CA SHPO: Wayne Donaldson; AZ SHPO: James Garrison; White House, Office of Intergovernmental Affairs: Jodi Gillette; Latham & Watkins: Janice Schneider;	Response to PG&E's Letter of December 17, 2010 regarding Topock Programmatic Agreement and Consultation.
1/3/2011	Leo Leonhart, FMIT	Chris Guerre, DTSC		Request to indicate the locations of the two monitor wells adjacent to UA-1 on the attached pptx.
1/3/2011	Chris Guerre, DTSC	Leo Leonhart, FMIT	Aaron Yue, Jose Marcos	Added the two wells requested in figure.

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1/4/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of December 2010.
1/7/2011	Chris Guerre, DTSC	FMIT: Linda Otero, Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs, Win Wright, Loretta Jackson; DOI: Richard Newill, Pam Innis; PG&E: Yvonne Meeks, Curt Russell; MWD: Bart Koch; BOR: Jeff Smith	Aaron Yue, DTSC	Provided call in number for January 12 Groundwater Well Decommissioning Technical Meeting but recommended face-to-face attendance.
1/7/2011	Leo Leonhart, FMIT	Chris Guerre, DTSC		Clarified Item V on agenda for January 12 Well Decommissioning Technical Meeting and will yield some of his presentation so Win Wright, Hualapai can also give a presentation.
1/7/2011	Chris Guerre, DTSC	Dolores Castillo, Nora McDowell-Antone (FMIT)		Checking if time limitation on FMIT office being used for meeting on 1/12/11.
1/7/2011	Win Wright, Hualapai	Chris Guerre, Jose Marcos, DTSC		Request to give a PowerPoint presentation at the soil meeting. Would like to comment on soil natural background, SSLs and vadose zone modeling.
1/7/2011	Chris Guerre, DTSC	Jose Marcos, DTSC, Win Wright, Hualapai	Christine Hong, CH2M Hill, Dawn Hubbs, Hualapai, Pam Innis, DOI, Yvonne Meeks, PG&E	Forwarded Win Wright's request to give a PP presentation at the soil meeting to Yvonne Meeks who is setting up the agenda.
1/11/2011	Aaron Yue, DTSC	Isadora Evanston, FMIT		Sent Isadora agenda and sign-in sheet for 6/16/10 CWG and 10/5/10 agenda per her 12/22/10 request.
1/12/2011	Chris Guerre, DTSC	FMIT: Nora McDowell-Antone, Felton Bricker, Cecil Collier, Leo Leonhart; CRIT: Elliott George Ray, Lisa Swick; BLM: Cathy Wolff-White, George Shannon; DOI: Richard Newill, Pam Innis; DTSC: Chris Guerre; PG&E: Yvonne Meeks, Curt Russell, Tom Henderson, MWD: Bart Koch; BOR: Jeff Smith Win Wright of Hualapai was not able to attend due to bad weather affecting flights.		Meeting at FMIT Council Office regarding Groundwater Well Decommissioning Technical Meeting.
1/13/2011	DTSC/DOI	Chemehuevi: Ron Escobar; CRIT: Howard McGill, Elliott George Ray; FMIT: Nora McDowell-Antone, Paul Jackson, Leo Leonhart, Mike Sullivan; Hualapai; Arturo Montana, Jacob Taylor, Win Wright; BLM: Cathy Wolff-White; DOI: Richard Newill, Pam Innis; DTSC: Karen Baker, Chris Guerre, Jose Marcos; PG&E: Yvonne Meeks, Curt Russell, Jamie Eby, Christina Hong, Keith Sheets, Kim Walsh ; USFWS: Brad Guay.		Meeting at BLM Office in Needles regarding Soil Part A Data Gaps Comments Meeting
1/14/2011	Nora McDowell-Antone, FMIT	Karen Baker, Aaron Yue, DTSC		Wondering the status of mitigation measures and if intending on meeting with FMIT prior to finalization of the EIR Mitigation Measures.

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1/17/2011	Karen Baker, DTSC	Pamela Innis, US DOI	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Chairman Wilfred Whatoname, Hualapai	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Dave Gilbert, PG&E	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Bart Koch, MWD	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Chairman Eldred Enas, CRITs	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Nora McDowell-Antone, FMIT	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Yvonne Meeks, PG&E	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Cy Oggins, California State Lands Commission	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Dave Forgerson, SDCWA	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Chairman Timothy Williams, FMIT	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Daniel Kopulsky, CA DOT, District 8	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/17/2011	Karen Baker, DTSC	Gerald Zimmerman, CRB	DTSC: Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Provided copy of Final EIR for a 10 day review period (1/18-1/27/11).
1/18/2011	Aaron Yue, DTSC	Karen Baker, DTSC, Nora McDowell-Antone, FMIT		Response to Nora's 1/14/11 e-mail (forwarded Karen's response that didn't go through). Use info from previous meetings, what was submitted in writing to prepare the final mitigation measures for the EIR. Will receive copy of Final EIR for 10 day agency review today. Preparing letter to Chairman Williams why could not include some mitigation measures requested. Available to meet to discuss if FMIT would find that helpful.
1/19/2011	Chris Guerre, DTSC	FMIT: Linda Otero, Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs, Win Wright, Loretta Jackson; DOI: Richard Newill, Pam Innis; PG&E: Yvonne Meeks, Curt Russell; MWD: Bart Koch; BOR: Jeff Smith	Aaron Yue, DTSC	Provided presentations from the January 12 Groundwater Well Decommissioning Technical Meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/17/2011	Karen Baker, DTSC	Recipients: CRIT: Chairman Eldred Enas; FMIT: Chairman Timothy Williams, Nora McDowell-Antone; Hualapai: Chairman Wilfred Whatoname, Loretta Jackson-Kelly, Dawn Hubbs		Transmittal letter and copy of Final Environmental Impact Report (FEIR) for the PG&E Topock Compressor Station Groundwater Remediation Project for a 10 day review period (January 18 – 27, 2011). This review opportunity is being provided pursuant to California Public Resources Code, Division 13, Chapter 2.6, § 21092.5(a), and California Code of Regulations, Title 14, § 15089(b).
1/19/2011	Steven McDonald (FMIT)	Karen Baker, DTSC		He was told that Final EIR was released for comment and asked if it is available on a DTSC web or FTP site.
1/19/2011	Karen Baker, DTSC	Steven McDonald (FMIT)		Informed Steve that the Final EIR was released for the 10 day agency/tribal government review on 1/18/11 and will be available on the DTSC Topock website the day after it is certified. Hard copies will be mailed to those who commented on DEIR after it is certified.
1/19/2011	Steven McDonald (FMIT)	Karen Baker, DTSC		Thanked her for quick response regarding Final EIR and stated they will get a copy from the tribe if they don't receive a copy directly.
1/19/2011	Karen Baker, DTSC	Steven McDonald (FMIT)		Informed him that Final EIR copies were mailed to Chairman Williams and Nora McDowell and Courtney Coyle will receive one after certified.
1/19/2011	Steven McDonald (FMIT)	Karen Baker, DTSC		Expressed concerns that copy of Final EIR was not mailed to Courtney and that there is a 10-day instead of 30-day review period. Requested a copy be FedEx'd to Courtney and that tribes be given a 30 day comment period, or at least 10 days after Courtney receives the FEIR.
1/20/2011	Karen Baker, DTSC	Steven McDonald (FMIT)		CEQA requires written proposed responses to any comments received from a public agency on a Draft EIR at least 10 days prior to certifying the EIR. Tribal Council was provided a copy as a courtesy. If the EIR is certified, a copy of the NOD will be sent to him, Courtney and Tribal Council.
1/24/2011	Nora McDowell-Antone, FMIT	Leonard Robinson, Stewart Black, DTSC		Follow-up to their 1/21 request from Chairman Williams, Linda Otero and Nora regarding the FEIR requesting copies and additional time for their review.
1/24/2011	Stewart Black, DTSC	Nora McDowell-Antone, FMIT	FMIT: Timothy Williams, Linda Otero, Shan Lewis; DTSC: Leonard Robinson	Confirmation and clarification of their conversation below and her 1/24/11 e-mail. Himself and Acting Director Robinson feel that DTSC has provided them with a reasonable amount of time and support and will not extend the 10 day comment period. Clarified that CEQA requires that EIR be provided 10 days prior to certification to sister agencies, but gave copy to FMIT as a courtesy. There is no additional public comment period for a Final EIR.
1/25/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Invite to Discuss Plant Uptake Concerns on March 1, 2011 at the BLM Office.
1/25/2011	Leo Leonhart, FMIT	Jose Marcos, DTSC		Request for types of information that will be used in the Plant Update Study.
1/25/2011	Jose Marcos, DTSC	Leo Leonhart, Michael Sullivan, FMIT	Nora McDowell-Antone, FMIT, DOI, DTSC	DTSC will coordinate with DOI regarding types of information that will be used in the Plant Update Study.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/27/2011	Win Wright, Hualapai	Aaron Yue, DTSC		Called and requested a copy of the Responses to Comments and stated that Dawn Hubbs received the document several days ago and was afraid she only had 10 days to comment on the responses. He called to request a copy of the FEIR. Aaron clarified that the copy was a courtesy and not a 10 day comment period.
1/27/2011	Aaron Yue, DTSC	Dawn Hubbs, Hualapai		Called and explained his conversation with Win Wright regarding courtesy copy of FEIR and that there is no 10 day comment period.
1/29/2011	Kelly McDonald, Steve McDonald Law Office (for Courtney Coyle), FMIT	Karen Baker, DTSC	Governor Jerry Brown, CA AG General Harris, John Laird, Sec. of CA Resources Agency; DTSC: Leonard Robinson, Stewart Black, Aaron Yue; Cal EPA: Laura Yoshii, Ken Tipon; ACHP: Nancy Brown; DOI: Ken Salazar, Larry Echohawk, Pam Innis, William Lodder, Willie Taylor; BLM: Bob Abby, Ken WilsonAZ BLM: James Kenna; Andrea Leisy, Esq.; CA SHPO: Dwight Dutchske; AZ SHPO: Carol Griffiths; White House Office of Intergovernmental Affairs: Jodi Gillette; FMIT: Chairman Williams, Linda Otero, Nora McDowell-Antone; Hualapai, Chemehuevi, Quechan, CRITs, Cocopah and Yavapai-Prescott Tribes	Objections of Fort Mojave Indian Tribe to Final Environmental Impact Report for the Topock Compressor Station Groundwater Remediation Project - SCH #2008051003
1/31/2011	Karen Baker, DTSC	Courtney Coyle, FMIT	Timothy Williams, Linda Otero, Nora McDowell-Antone, Steve McDonald, FMIT	DTSC Response to FMIT Objections to the Final EIR for Topock Compressor Station Groundwater Remediation Project (e-mailed and hard copy mailed)
1/31/2011	Steve Heipel, AECOM	Aaron Yue; Carolyn Yee; Guenther Moskat; Karen Baker	Andee Leisy; Anne Hoagland; Nancy Long; Pete Choi; Stephen Weidlich; Taryn Nance	Confidential: Final Inventory Report for areas outside of APE
1/31/2011	Aaron Yue, DTSC	Christina Hong, CH2M Hill, Dave Gilbert, Bob Doss, Yvonne Meeks, PG&E	EIR Group, Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members	DTSC certified the Programmatic EIR. Adopted resolutions and project approval, Corrective Measure Decision letter with condition of project approval attached. PG&E has 90 days to submit the CMI WP. Certified FEIR and complete decision pack on DTSC-Topock website.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/31/2011	Karen Baker, DTSC	Recipients: Chemehuevi: Chairman Charles Wood, Ron Escobar; Cocopah: Chairwoman Sherry Cordova, Vice-Chairman Dale Phillips, Jill McCormick; CRIT: Chairman Eldred Enas, Amanda Levis-Sharpe, Douglas Bonamici; FMIT: Chairman Timothy Williams, Nora McDowell-Antone, Linda Otero, Courtney Coyle, Steven McDonald; Fort Yuma-Quechan: Chairman Mike Jackson, Sr.; Havasupai: Chairman Don Watahomigie; Hualapai: Chairman Wilfred Whatoname, Loretta Jackson-Kelly, Dawn Hubbs; Torres-Martinez: Chairwoman Mary Maxine Resvaloso; 29 Palms: Chairman Darrell Mike; Yavapai-Prescott: President Ernest Jones, Sr., Greg Glasscol.	Aaron Yue, Nancy Long, Guenther Moskat, Carolyn Yee	Transmittal letter and copy of Final Environmental Impact Report) for the PG&E Topock Compressor Station Groundwater Remediation Project.
2/1/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of January 2011.
2/1/2011	Pam Innis, DOI	Dave Gilbert, PG&E	Chemehuevi: Chairman Wood, Dennis Fagundes, Gilbert Parra, Shirley Smith; FMIT: Chairman Williams, Christine Medley, Luke Johnson, Nora McDowell-Antone, Michael Sullivan, Linda Otero, Shan Lewis, Leo Leonhart (H&A), Steven McDonald, Courtney Coyle; Cocopah: Edmund Dominguez, Sherry Cordova, Jill McCormick, Paul Soto; CRITS: Eric Shepard, Amanda Leivas-Sharpe, Charley Land, Gary Hansen, Douglas Bonamici, Richard Armstrong; Fort Yuma-Quechan: Arlene Kingery, Eddie Williams, William Hirt; Hualapai: Dawn Hubbs, Loretta Jackson, Win Wright, Jack Ehrhardt; Twenty-Nine Palms: Marshall Cheung, William Anderson; DTSC, ADEQ, PG&E, CH2M Hill, Arcadis, Lucas Advocates, USFWS, USDOI, CRB	Department of Interior Groundwater Record of Decision and Responsiveness Summary
2/2/2011	Jose Marcos, DTSC	Leo Leonhart, FMIT, Pam Innis, DOI	Aaron Yue, Chris Guerre, Karen Baker	Still working on getting the information regarding Plant Uptake. 3/1/11 meeting date is confirmed.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/2/2011	Leo Leonhart, FMIT	Jose Marcos, DTSC, Pam Innis, DOI	Michael Sullivan, Nora McDowell-Antone, FMIT, Win Wright, Hualapai	RE: Plant Uptake Study. Suggested questions to clear up during meeting with DOI on 2/3/11.
2/2/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Mona Bontty, Christina Fu		Soliciting dates to hold next CTF meeting to prepare for next TLP meeting. Requested members send their preferences.
2/3/2011	Jose Marcos, DTSC	Michael Sullivan, FMIT	Aaron Yue, Chris Guerre, DTSC	Follow-up if he will attend plant uptake meeting on 3/1 and if not can call in to meeting.
2/3/2011	Michael Sullivan, FMIT	Jose Marcos, DTSC		Teaches at CSUN on Tues-Wed so will participate in plant uptake meeting by phone.
2/3/2011	Jose Marcos, DTSC	Michael Sullivan, FMIT	Aaron Yue, Chris Guerre, DTSC; Leo Leonhart, FMIT	Will keep his teaching schedule in mind for future meetings. Will provide call in number with agenda in the following weeks.
2/4/2011	Jose Marcos, DTSC	Leo Leonhart, FMIT, Pam Innis, DOI	Aaron Yue, Chris Guerre, Karen Baker, DTSC, Michael Sullivan, FMIT	Will try to get him a plant list by 2/15. Explained that objectives of the initial meeting is to better define and understand the tribe's concerns.
2/4/2011	Jose Marcos, DTSC	Leo Leonhart, FMIT		Had phone conversation and reiterated that the intent of the meeting is to better define and understand the tribe's concerns and that plant list will be sent out by DOI on 2/15.
2/8/2011	Aaron Yue, DTSC	Agenda Only, EIR Group, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Advance notice to save 3/16/11 for the 1st CWG meeting of 2011.
2/8/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC		His client wants some information from PG&E on what the situation is at Hinkley so far as the remedy performance.
2/8/2011	Aaron Yue, DTSC	Leo Leonhart, FMIT		Responded to Leo's e-mail regarding situation at Hinkley.
2/8/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC		Thanked Aaron for info. regarding Hinkley and asked that the info. be given to CWG.
2/9/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC		What will be the next document that we will see for the groundwater remedy (and when is it expected)?
2/10/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Mona Bontty, Christina Fu		None of the potential dates for CTF work. Let her know if 3/3/11 works for everyone.
2/14/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Mona Bontty, Christina Fu		Next CTF meeting scheduled for Thursday, March 3, 2011 at the CH2M Hill office in Henderson, NV.
2/14/2011	Jose Marcos, DTSC	Dawn Hubbs, Win Wright, Hualapai		Follow-up to see if they will give a presentation during the March 1, 2011 Plant Uptake meeting.
2/14/2011	Dawn Hubbs, Hualapai	Jose Marcos, Win Wright		Thank you for the opportunity to give a presentation during the 3/1/11 Plant Uptake meeting. Not sure if will give a presentation, but please leave room on the agenda.
2/14/2011	Jose Marcos, DTSC	Leo Leonhart, Michael Sullivan, Nora McDowell-Antone, FMIT	Chris Guerre	Follow-up to see if they will give a presentation during the March 1, 2011 Plant Uptake meeting.
2/15/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Agenda for the March 1, 2011 plant update scoping meeting at the BLM Needles office.
2/17/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC		Following up on e-mail from 2/9/11.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/17/2011	Aaron Yue, DTSC	Leo Leonhart	Karen Baker, Nora McDowell-Antone, Pam Innis, Yvonne Meeks	Apologies, was out of office. Response regarding next documents to come out regarding groundwater remedy.
2/18/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Mona Bontty, Christina Fu		Clearinghouse Task Force meeting on 3/3/11 agenda and handouts.
2/24/2011	Aaron Yue, DTSC	Yvonne Meeks, PG&E	CWG, TWG, Indian Tribe Reps.	Approval of ERGI/TCS Investigation Addendum and Implementation Plan for Repair of MW-38 with old well reconnaissance
2/24/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC		Was Mr. Delay interviewed in regard to UA-1 pipe aerials, and if so, did anything new come out of those discussions?
2/24/2011	Aaron Yue, DTSC	Leo Leonhart	FMIT: Courtney Coyle, Linda Otero, Nora McDowell-Antone, Steven McDonald, Timothy Williams; DTSC: Chris Guerre, Jose Marcos, Karen Baker	Chris Guerre is preparing notes from the interview with Mr. Delay to check accuracy with him. Will inquire on the status of his notes when he returns to the office next week.
2/28/2011	Leo Leonhart, FMIT	Chris Guerre, DTSC		Leo sent presentation that FMIT will present at 3/1/ meeting in Needles. Also attached a bibliography on ethno botany and a spreadsheet that can be used to assemble data on various indigenous flora in the Topock/Mojave Desert area.
3/1/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Leivas-Sharpe, Cheyene Garcia; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of February 2011.
3/1/2011	DTSC and DOI	Attendees: FMIT: Linda Otero, Leo Leonhart, Nora McDowell-Antone, Felton Bricker, Sr., Sandra Woods Bricker ; Hualapai: Dawn Hubbs, Win Wright, Carrie Calisay Cannon, Auturo Montana; DTSC: Baker, Yue, Guerre, Roy-Semmen, Garza; DOI: Pam Innis, Dennis Smith; USFWS: Carrie Marr, John Nystad; PG&E: Yvonne Meeks, Glenn Caruso, Lisa Kellogg, Adrienne LaPierre, Kim Walsh. Invited: All Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Plant Uptake of Contaminants Meeting - The purpose of the meeting was to discuss methods of evaluating uptake of contaminants of concern at the site into plants of traditional cultural use to the Tribes and any associated risk.
3/2/2011	Fort Mojave Indian Tribe	DTSC and PG&E		On March 2, 2011, the Fort Mojave Indian Tribe filed a Petition for Writs of Mandate and Complaint for declaratory and injunctive relief naming DTSC as a respondent and defendant and naming PG&E as a real party in interest for DTSC's EIR for the groundwater remedy.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/3/2011	DTSC	Attendees: DTSC: Karen Baker, Yolanda Garza, Mona Bontty; DOI: Pam Innis; Hualapai: Dawn Hubbs; MWD: Bart Koch, Eddie Rigdon; PG&E: Yvonne Meeks, Dave Gilbert, Glenn Caruso, Lisa Cope, Christina Hong. Invited but not in attendance: Nora McDowell-Antone (FMIT), Doug Bonamici (CRIT); Loretta Jackson-Kelly and Win Wright (Hualapai).		Clearinghouse Task Force Meeting - Discussion items included purpose/goals of the Topock Leadership Partnership meetings, how to energize the tribal leaders to participate, and planning for the next meeting to be held in May 2011.
3/3/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		December 2010 chromium gw results and graphs for MW-34-100, MW-46-175. Data for wells MW-44-115 and MW-44-125.
3/3/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		January 2011 chromium gw results and graphs for MW-34-100, MW-46-175. Data for wells MW-44-115 and MW-44-125.
3/3/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		Semi-Annual GWMR, 2nd Half 2010 for IMCMP.
3/3/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		3Q 2010 IMPM and Site-Wide GW and SW Mon. Report
3/8/2011	Chris Guerre, DTSC	Geo/Hydro Technical Work Group		Soliciting members that would like to participate in future discussions regarding selection of well screen locations for the East Ravine/ Topock Compressor Station groundwater wells. Let him know by 3/14/11
3/9/2011	Aaron Yue, DTSC	Agenda Only, EIR Group, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		CWG Agenda for 3/16/11 CWG meeting at Bullhead City Chamber of Commerce.
3/11/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC		Asked if well abandonment and plant update activities will be discussed at CWG. Also suggested including TWG report in the agenda.
3/11/2011	Leonard Robinson, Acting Director	Sherry Cordova, Cocopah; Eldred Enas, CRITs; Timothy Williams, FMIT; Wilfred Whatoname, Hualapai; Charles Wood, Chemehuevi; Mike Jackson, Sr., Fort Yuma-Quechan	Karen Baker, DTSC; Jill McCormick, Cocopah; Amanda Leivas-Sharpe, CRITs; Nora McDowell-Antone, FMIT; Loretta Jackson-Kelly, Hualapai; Dawn Hubbs, Hualapai; Ron Escobar, Chemehuevi	Letter informing the next TLP meeting will be May 18-19, 2011 and requesting the opportunity to meet with their tribal council to provide a status update on the PG&E Topock project. DTSC will be contacting each tribe.
3/15/2011	PG&E	Attendees: FMIT: Nora McDowell-Antone, Felton Bricker, Leo Leonhart, Sr. ; Hualapai: Dawn Hubbs, Win Wright ; DTSC: Baker, Yue, Guerre, Garza, Bontty; DOI: Pam Innis, Dennis Smith; BLM: Cathy Wolf-White, George Shannon; USFWS: Brad Guay; PG&E: Yvonne Meeks, Glenn Caruso, numerous PG&E contactors performing work at site		Project Initiation Meeting - Field Work Phase, Topock East Ravine/TCS Investigation Addendum. Meeting included overview of work to be performed, project and site requirements, protection of cultural and biological resources, Tribal Representatives Nora McDowell-Antone and Dawn Hubbs speaking on tribal sensitivity.
3/16/2011	DTSC	Attendees: Fort Mojave: Nora McDowell-Antone, Leo Leonhart, Angie Alvarado, Paul Jackson, Sadie Mapatis, Courtney Coyle (by phone), Steve McDonald (phone); Hualapai: Dawn Hubbs, Win Wright; CRITs: Doug Bonamici (by phone), Howard McGill (phone); DOI, BLM, BOR, FWS Havasu, DTSC, AECOM, CRB, MWD, CRB of CA, State Water Board, PG&E, Arcadis, Lucas Advocates, CH2M Hill		Face-to-Face Consultative Workgroup Meeting held in Bullhead City, NV.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/16/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC		Provided presentation that Nora McDowell-Antone, FMIT, will give at the 3/16/11 CWG meeting.
3/17/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DOI: Pam Innis; DTSC: Mona Bontty, Christina Fu	Arcadis, CH2M Hill, DTSC	Sent appointment for CTF meetings on 4/5/11, 5/3/11, 6/7/11, 7/5/11, 8/2/11, 9/6/11
3/17/2011	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Please explain what the dates for TLP represent. Are they suggested dates to choose from or actual meeting dates.
3/17/2011	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Explained to Nora that decided in last TLP to have monthly meetings divided up between MWD office in Laverne and Henderson. Call in # available if can't attend in person.
3/18/2011		FMIT: Leo Leonhart; Hualapai: Win Wright; PG&E, CH2M Hill; DOI, DTSC, MWD		Conference call to discuss the field data collected during drilling of the initial borehole at Site 5 and the requirements for well design above the bedrock.
3/21/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Mona Bontty, Christina Fu		Change of location for 4/5 CTF and request for agenda items.
3/21/2011	Chris Guerre, DTSC	Geo/Hydro TWG and Indian Tribe reps.		List of those that have responded so far wishing to participate in future discussions regarding selection of well screen locations for the East Ravine/Topock Compressor Station groundwater wells. Asked that if want to be included, to respond ASAP.
3/21/2011	Yolanda Garza, Mona Bontty, DTSC	Chemehuevi office (left message)		Call made to request face-to-face meeting with DTSC/PG&E/DOI as a follow-up to 3/11/11 letter requesting tribal input for the project and as part of the TLP.
3/21/2011	Yolanda Garza, Mona Bontty, DTSC	Cocopah office (left message)		Call made to request face-to-face meeting with DTSC/PG&E/DOI as a follow-up to 3/11/11 letter requesting tribal input for the project and as part of the TLP.
3/21/2011	Yolanda Garza, Mona Bontty, DTSC	Amanda Leivas Sharpe, CRITs		Call made to request face-to-face meeting with DTSC/PG&E/DOI as a follow-up to 3/11/11 letter requesting tribal input for the project and as part of the TLP.
3/21/2011	Yolanda Garza, Mona Bontty, DTSC	Quechan Tribe (office contact)		Call made to request face-to-face meeting with DTSC/PG&E/DOI as a follow-up to 3/11/11 letter requesting tribal input for the project and as part of the TLP.
3/21/2011	Yolanda Garza, Mona Bontty, DTSC	Loretta Jackson-Kelly, Dawn Hubbs, Hualapai Tribe		Call made to request face-to-face meeting with DTSC/PG&E/DOI as a follow-up to 3/11/11 letter requesting tribal input for the project and as part of the TLP.
3/21/2011	Yolanda Garza, Mona Bontty, DTSC	Nora McDowell-Antone, FMIT		Sent e-mail to request face-to-face meeting with DTSC/PG&E/DOI as a follow-up to 3/11/11 letter requesting tribal input for the project and as part of the TLP.
3/22/2011	Yolanda Garza, Mona Bontty, DTSC	Chairman Wood, Chemehuevi		Phone call scheduling a briefing on the Topock project.
3/22/2011	Yolanda Garza, Mona Bontty, DTSC	Cocopah office (left message for Jill)		Trying to schedule a briefing on the Topock project.
3/23/2011	Yolanda Garza, DTSC	Symanthia Ameelyenal, CRITs	Eldred Enas, CRITs	E-mail following phone call regarding request for tribal council meeting regarding Topock project.

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3/23/2011	Yolanda Garza, DTSC	Chairman Charles Woods, Chemehuevi Tribe		Phone discussion confirming meeting date for the Tribal engagement with DTSC/PGE/DOI regarding Topock project update. Followed up with e-mail regarding discussion and a copy of 3/11/11 "Tribal Engagement" letter
3/23/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Spoke with office worker. Called Jill's cell phone and left voicemail regarding scheduling of Tribal council meeting re: Topock project.
3/23/2011	Yolanda Garza, DTSC	Samanthia Aneelyenal, Executive Secretary, CRITs		Spoke regarding setting up a meeting to discuss with PG&E/DTSC/DOI the Topock project and gain input from the Council. Also spoke to front office to confirm names of two new tribal members. Followed up with e-mail with confirmation and copy of March 11, 2011 "Tribal Engagement" DTSC letter.
3/23/2011	Yolanda Garza, DTSC	Loretta Jackson-Kelly, Hualapai Tribe	Dawn Hubbs, Hualapai	E-mail to follow up phone conversation regarding 4/15/11 meeting with the Hualapai Tribal council and confirmation of that date.
3/23/2011	Yolanda Garza, DTSC	Fort Yuma-Quechan Tribe		Spoke with front office regarding confirmation of contact information.
3/24/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		E-mail following up to phone conversation regarding request for tribal council meeting regarding Topock project.
3/28/2011	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC	Loretta Jackson-Kelly, Hualapai, Mona Bontty, DTSC	Can't do 4/15 meeting but trying to confirm 4/12 in Hualapai Council Chambers.
3/28/2011	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC	Mona Bontty, DTSC	Working on seeing what dates the Chairman and council available for meeting and if they want to have a meeting.
3/28/2011	Symanthia Ameelyenah, CRITs	Yolanda Garza, DTSC		Have prepared agenda for 4/8 with DTSC at 11:00 AM.
3/28/2011	Yolanda Garza, DTSC	Symanthia Ameelyenal, CRITs		Confirmed meeting on 4/8 @ 11:00 AM and asked for the location and room.
3/28/2011	Symanthia Ameelyenah, CRITs	Yolanda Garza, DTSC		Change of meeting time to 1:30 PM.
3/28/2011	Yolanda Garza, DTSC	Symanthia Ameelyenal, CRITs		Change of meeting time fine, please send address and room location.
3/28/2011	DTSC/PG&E	Interested Geo/Hydro TWG Members: BOR: Jeff Smith; DTSC: Chris Guerre; DOI: Rick Newill; FMIT: Leo Leonhart; Hualapai: Win Wright; MWD: Eric Fordham; PG&E: Yvonne Meeks, Curt Russell, Martin Barackman, Mike Cavaliere, Christina Hong, Steven Lanter, Eli Ludwig; USFW: Brad Guay.		Well Screen call for discussion of well design at Site 5 located on the west side of the Topock Compressor Station.
3/29/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Response to Yolanda's 3/24/11 e-mail requesting a meeting with Tribal Council.
3/29/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Thank you for proposed dates to meet with Cocopah tribal council. Will consult with DOI, DTSC and PG&E availability.
4/4/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Follow-up if Cocopah proposed dates for meeting work with DOI, DTSC & PG&E>
4/4/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Mona Bontty, Christina Fu		Preliminary draft of Topock May newsletter for review and comment by 4/8/11.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/5/2011	DTSC	Attendees: DTSC: Karen Baker, Yolanda Garza, Mona Bontty, Christina Fu; DOI: Pam Innis; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici, Howard McGill; Hualapai: Dawn Hubbs MWD: Eddie Rigdon; PG&E: Yvonne Meeks, Dave Gilbert, Glenn Caruso, Lisa Cope, Christina Hong. Invited but not in attendance: Loretta Jackson-Kelly, Win Wright, Bart Koch		Clearinghouse Task Force Meeting - Discussion included efforts to plan Pre-TLP Tribal Outreach meetings; Focus of the meeting was continued planning of the agenda for the May 18-19, 2011 Topock Leadership Partnership meeting.
4/7/2011	Doug Bonamici, CRIT	Karen Baker, DTSC		Requested USEPA Region 9 contacts that EPO Director can talk to regarding the Topock Remediation Project.
4/7/2011	Karen Baker, DTSC	Doug Bonamici, CRITs		Replied with contacts to USEPA and informed him about meeting with the CRIT council on 4/14.
4/7/2011	Doug Bonamici, CRIT	Karen Baker, DTSC		Gave suggestions for meeting with the CRIT council and shared a link to a crit newsletter which includes names of current tribal council members.
4/8/2011	Yolanda Garza, DTSC	Chairman Charles Woods, Chemehuevi Tribe		Asked for confirmation on location and time of 4/14 meeting with the Chemehuevi Executive Council.
4/11/2011	Chairman Charles Woods, Chemehuevi Tribe	Yolanda Garza, DTSC		4/14 meeting will be at 1:00 PM at the Realty Office.
4/11/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DOI: Pam Innis; DTSC: Mona Bontty, Christina Fu		CTF meeting will be kept at 5/3/11 in the CH2M Hill Office in Henderson as originally planned. Request to respond if June CTF being moved to June 14th in Henderson is okay or if prefer leaving it on 6/7 in LaVerne.
4/12/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DOI: Pam Innis; DTSC: Mona Bontty, Christina Fu		Based on feedback, June CTF is moved to 6/14/11 in the Henderson CH2M Hill office.
4/12/2011	Karen Baker, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DOI: Pam Innis; DTSC: Mona Bontty, Christina Fu		Draft notes from 4/5/11 CTF meeting.
4/13/2011	Doug Bonamici, CRIT	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DOI: Pam Innis; DTSC: Karen Baker, Mona Bontty, Christina Fu		Requested changes to TLP agenda and CTF meeting notes.
4/14/2011	DTSC	CRIT: All Colorado River Indian Tribal Council lead by Chairman Eldred Enas, Doug Bonamici, David Harper, Howard McGill, Lisa Swick; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; PG&E: Yvonne Meeks		Special CRIT Council Meeting. DTSC, DOI, and PG&E provided an update on the project and invited the Tribal Council to attend the upcoming May 18-19 Topock Leadership Partnership meeting.
4/14/2011	DTSC	Chemehuevi Chairman Charles Wood, Secretary/Treasurer Ron Escobar, Rita Schoeneman (Administrator); DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; PG&E: Yvonne Meeks		DTSC, DOI, and PG&E provided an update on the project and invited the Tribal Council to attend the upcoming May 18-19 Topock Leadership Partnership meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/14/2011	Doug Bonamici, CRIT	Karen Baker, Pam Innis, Yvonne Meeks, Yolanda Garza and Lisa Swick		Thank you for meeting with CRITs position regarding Topock Compressor Station Ground Water Remediation project attached.
4/17/2011	Chris Guerre, DTSC	Geo/Hydro TWG; Indian Tribe Reps.; CWG Members		Results for Feb. 2011 Monthly Sampling
4/18/2011	Stewart Black, DTSC	Chemehuevi: Charles Wood, Ron Escobar; Cocopah: Dale Philips, Edmund Dominguez, Sherry Cordova, Jill McCormick; CRITs: Eric Shepard, Gary Hansen, Michael Tsosie, Cheyenne Garcia, Richard Armstrong, Amanda Leivas Sharpe, Eldred Enas, Sylvia Homer, Lisa Swick, Mervin Scott, Dennis Welsh, Jr., Valerie Welsh-Tahbo, Herman Lafoon. Johnny Hill, Jr., Edward Yava, Doug Bonamici; FMIT: Timothy Williams, Nora McDowell-Antone, Linda Otero, Shan Lewis, Steven McDonald, Courtney Coyle, Leo Leonhart; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate; Havasupai: Bernadine Jones, Dimolene Kaska; Hualapai: Wilfred Whatoname, Loretta Jackson, Dawn Hubbs, Win Wright; Torres-Martinez: Mary Resvaloso; Twenty-Nine Palms: Darrell Mike; Yavapai-Prescott: Greg Glassco, Ernest Jones; BOR; USEPA; USFWS; Havasu NWR; ADEQ; CRWQCB; CRB; MWD; PG&E; DOI; BLM; AZ BLM		Invitation to attend the Topock Leadership Partnership meeting on May 18-19, 2011. Draft agenda, Topock newsletter and map of Gene Pumping plant attached.
4/18/2011	DTSC/PG&E	Interested Geo/Hydro TWG Members: DTSC: Chris Guerre, Jose Marcos; DOI: Pam Innis, Rick Newill; Hualapai: Win Wright; PG&E: Yvonne Meeks, Martin Barackman, Steven Lanter, Eli Ludwig; USFWS: Brad Guay. FMIT and MWD invited, but not able to attend.		Well Screen call for discussion of well design at Site 6 located on the west side of the Topock Compressor Station.
4/19/2011	Dawn Hubbs, Hualapai	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Mona Bontty, Christina Fu		Revisions to notes from CTF meeting.
4/19/2011	Karen Baker, DTSC	Nora McDowell, FMIT; Dawn Hubbs, Hualapai; Doug Bonamici (CRITs)		Acknowledgement of their comments on the notes from the CTF.
4/20/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Request to hold meeting with Cocopah in May or June and information about TLP meeting.
4/20/2011	Karen Baker, DTSC	Dawn Hubbs, Hualapai		Response to Dawn's 4/19/11 email giving date of next TWG after 7/18 to focus on Soil Investigation Workplan comments.
4/21/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Will go back to council and ask if available in May or June for meeting and regarding cultural hour for TLP. Upset that proposed meeting dates sent on 3/29/11 were ignored.
4/21/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Apology/explanation - problem with emails not being delivered. DOI was unable to travel in April.
4/22/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Questions regarding TLP and face-to-face meeting with Cocopah.
4/22/2011	Yolanda Garza, DTSC	Chairman Wood, Chemehuevi		Thank you for meeting and invitation to 5/18-19/11 TLP.
4/22/2011	Yolanda Garza	Doug Bonamici, Symanthia Ameelyneh, CRITs		Thank you for meeting and invitation to 5/18-19/11 TLP.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/25/2011	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Follow-up on invitation to TLP, cultural hour, presentation, lodging.
4/25/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Cocopah Attendees at TLP and presentations. Follow-up on face-to-face meetings with Cocopah tribal council.
4/25/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Thank you for reply. Face-to-face meeting better post-TLP unless important to council to have it pre-TLP.
4/26/2011	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC		Response to Yolanda's 4/25/11 regarding TLP information.
4/26/2011	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Confirmation of room reservations and table top reservation.
4/26/2011	Steven McDonald (FMIT)	Yolanda Garza, DTSC		Request for room reservation for TLP.
4/26/2011	Yolanda Garza, DTSC	Steven McDonald (FMIT)		Confirmation of room reservation and preference of receiving binder in advance or at meeting.
4/26/2011	Steven McDonald (FMIT)	Yolanda Garza, DTSC		Would like binder in advance, electronically is fine.
4/26/2011	Courtney Coyle, FMIT	Yolanda Garza, DTSC		Please mail Courtney hard copy of binder in advance.
4/27/2011	Yolanda Garza, DTSC	Courtney Coyle, FMIT		Confirmation of binder request.
4/26/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Responses to Yolanda's e-mail of 4/25/11.
4/26/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Confirmation of Jill McCormick's responses to 4/25/11 e-mail.
4/26/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Request for confirmation for TLP participation
4/27/2011	Yolanda Garza	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Karen Baker, Mona Bontty	Christina Fu, Christina Hong, Lisa Cope, Lisa Kellogg	Agenda for upcoming CTF meeting on 5/3/11.
4/27/2011	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		Loretta Jackson-Kelly does not need a room reservation after all.
4/27/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Confirmation of receipt of change to room reservation list.
4/28/2011	DTSC and DOI	DTSC: Aaron Yue, Jose Marcos, Yolanda Garza, Mike Eichelberger, Shukla Roy-Semmen, Chris Guerre; DOI: Pam Innis, Dennis Smith; BLM: Cathy Wolf-White, Ramone McCoy; FWS: Carrie Marr; BOR: Jeff Smith; FMIT: Nora McDowell-Antone, Leo Leonhart, Michael Sullivan; Hualapai: Dawn Hubbs, Carrie Cannon, Win Wright; CRIT: Howard Magill; PG&E: Yvonne Meeks, Glenn Caruso, Curt Russell, Bridgette DeShields, Lisa Kellogg, Winnie Curley, Adrienne LaPierre		Topock Plant Uptake Follow-Up Meeting. Follow-up to March 1, 2011Plant Uptake of Contaminants Meeting - The purpose of the meeting was to continue discussion of methods of evaluating uptake of contaminants of concern at the site into plants of traditional cultural use to the Tribes and any associated risk.
4/29/2011	DOI	DTSC: Aaron Yue, Jose Marcos, Chris Guerre; DOI: Pam Innis, Dennis Smith; BLM: Cathy Wolf-White; FMIT: Nora McDowell-Antone, Leo Leonhart; Delbert Holmes, Felton Bricker; CRIT: Howard Magill, Doug Bonamici; PG&E: Yvonne Meeks, Glenn Caruso, Curt Russell, Chris Smith; Arcadis: Hans Johannes, Lisa Kellogg; CH2MHill: Jay Piper, Keith Sheets; NES: Rich Bohrer.		Topock AOC-4 Time Critical Removal Action - Lessons Learned Meeting. The purpose of the meeting was to discuss the lessons learned from the recently concluded AOC-4 removal action. Emphasis was given to actions that were performed well and actions that can be improved upon for future similar site activities.
5/2/2011	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Changed working (PA to Tribal Consultation) on Rainbow Schedule

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/2/2011	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Last project contact list for review and update.
5/3/2011	Yolanda Garza, DTSC	CTF Members: Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Mona Bontty, Christina Fu		Provided new passcode, CTF agenda, 4/5/11 meeting notes, TLP draft agenda
5/3/2011	DTSC	Attendees: DTSC: Karen Baker, Yolanda Garza, Mona Bontty; DOI: Pam Innis; FMIT: Nora McDowell-Antone; MWD: Eddie Rigdon; PG&E: Yvonne Meeks, Dave Gilbert, Glenn Caruso, Lisa Cope, Christina Hong, Lisa Kellogg. Invited but not in attendance: Loretta Jackson-Kelly, Win Wright, Bart Koch; Doug Bonamici, Dawn Hubbs		Clearinghouse Task Force Meeting - Discussion included report of recent Pre-TLP Tribal Outreach meetings with CRIT and Chemehuevi; Focus of the meeting was continued planning of the agenda for the May 18-19, 2011 Topock Leadership Partnership meeting.
5/4/2011	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Draft CMI/RD Work Plan for review and comment. Comments due COB 6/3/11.
5/4/2011	DTSC/PG&E	Interested Geo/Hydro TWG Members: DTSC: Karen Baker, Yolanda Garza, Chris Guerre; DOI: Pam Innis, Dennis Smith; FMIT: Nora McDowell-Antone; MWD: Eric Fordham; PG&E: Yvonne Meeks, Martin Barackman, Christina Hong, Steven Lanter, Eli Ludwig; USFW: Brad Guay. Hualapai (Win Wright) invited, but not able to attend.		Well Screen call for discussion of well design at Site 2 located on the northwest side of the Topock Compressor Station.
5/5/2011	Yolanda Garza	Nora McDowell-Antone, FMIT		Confirmation of FMIT registrations for TLP meeting.
5/5/2011	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Request for RSVPs from CRITs for TLP meeting.
5/5/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Request for information on attendance of council members to the TLP meeting on 5/18-19/11.
5/6/2011	Doug Bonamici, CRIT	Yolanda Garza, DTSC		He will be attending the TLP and has contacted Amanda Barrera to see if a council member can offer the opening prayer.
5/6/2011	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Let her know if other CRITs attending and if crit will participate in cultural display or table top information.
5/6/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Will have more specific information about possible meeting dates and name of the council member who will attend the TLP.
5/6/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Shared information about table tops, cultural hour and presentation of cultural information.
5/6/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Will ask the council if they want to provide anything for the cultural hour. Will get back to you on Tuesday with names of attendees.
5/9/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		DTSC, DOI and PG&E representatives are available to meet on 6/6, 6/7 or 6/8 face to face if Cocopah Council wants.
5/9/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		1st Quarter 2011 IM Performance Monitoring and Groundwater Monitoring Report.
5/10/2011	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Confirmation of room allocation for workgroup prior to the start of the TLP event that was requested.
5/10/2011	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC		Thank you for the confirmation of the meeting accommodations. Will ask attendees from CRITs, Hualapai and Cocopah to send list of their tribal attendees.
5/10/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Submittal of the Draft Soil RFI/RI Work Plan. Comment due date is 6/22/11.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/11/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		All members of council were not present so unable to confirm date of meeting. Told Jill to participate in cultural hour and bring brochures and poster and short video. Confirmed attendees of TLP meeting.
5/11/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Confirmation of receipt of Cocopah information.
5/11/2011	Yolanda Garza, DTSC	Angie Lara, Carolyn Lang, Ramone McCoy, Raymond Suazo (BLM); Bart Koch (MWD); Casey Padgett (DOI); Nora McDowell-Antone, Colleen Garcia, Courtney Coyle, Steven McDonald, Leo Leonhart, Linda Otero (FMIT); Jill McCormick (Cocopah); PG&E; Dawn Hubbs, Loretta Jackson-Kelly, Win Wright (Hualapai); Doug Bonamici (CRITs); Eddie Rigdon (MWD); Pam Innis (DOI); Sybil Smith (ADEQ); Valerie Thomas (BOR)		Confirmation of Topock Leadership Partnership Meeting and Lodging Request
5/12/2011	Dawn Hubbs, Hualapai	CTF Members: Hualapai: Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Karen Baker, Mona Bontty, Christina Fu		Follow up on agenda items for TLP regarding tribal perspectives being presented.
5/12/2011	Karen Baker, DTSC	Dawn Hubbs, Hualapai	CTF Members	Clarification that the agenda was modified to include "Cultural Sensitivity of the Topock Area"
5/12/2011	Karen Baker, DTSC (for Stewart Black)	Chemehuevi: Charles Wood, Ron Escobar; Cocopah: Dale Philips, Sherry Cordova, Jill McCormick; CRITs: Amanda Barrera, Eldred Enas, Sylvia Homer, Lisa Swick, Edward Yava, Doug Bonamici, Elliot George Ray, Ginger Scott, David Harper; (FMIT): Timothy Williams, Nora McDowell-Antone, Linda Otero, Steven McDonald, Courtney Coyle, Leo Leonhart; Fort Yuma-Quechan: Mike Jackson, Sr.; Havasupai: Bernadine Jones; Hualapai: Wilfred Whatoname, Loretta Jackson, Dawn Hubbs, Win Wright; Torres-Martinez: Mary Resvaloso; Twenty-Nine Palms: Darrell Mike; Yavapai-Prescott: Ernest Jones, Sr.; ADEQ; CRWQCB; CRB; MWD; PG&E; USDOI; BLM; AZ BLM; BOR; USEPA		Overnight mailed binders containing 5/18/11 TLP meeting materials with cover letter.
5/12/2011	Jared Blumenfeld, USEPA	Eldred Enas, CRITs		Will look for opportunities to meet with him and CRITs council per their request. Unable to attend TLP as requested.
5/12/2011	Doug Bonamici, CRIT	Yolanda Garza, DTSC		CRITs plans for TLP - list of attendees
5/13/2011	Yolanda Garza, DTSC	Doug Bonamici, CRIT		Confirmation of receipt of CRITs plans for TLP.
5/13/2011	Karen Baker, DTSC	Dawn Hubbs, Hualapai		Confirmation the 6/14 CTF will be held at CH2M Hill office in Henderson.
5/13/2011	Lori Hare, DTSC	Steven McDonald (FMIT); Ray Suazo, Ramone McCoy, Angie Lara (BLM); Jane Yura, Dave Gilbert (PG&E); Valerie Thomas (BOR); Casey Padgett, Pam Innis (DOI); Eddie Rigdon (MWD)		Sent TLP meeting material binder contents either per their request, or because I only had a PO Box and was unable to overnight mail.
5/16/2011	Yolanda Garza, DTSC	Dawn Hubbs (Hualapai); Nora McDowell-Antone (FMIT); Jill McCormick (Cocopah); Doug Bonamici (CRITs)		Request to confirm security list and lodging/ meal detail for 5/18 TLP meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/16/2011	Doug Bonamici, CRIT	Yolanda Garza, DTSC		Mamie Harper, Mohave Elder, will to opening prayer at TLP.
5/16/2011	Yolanda Garza, DTSC	Doug Bonamici, CRIT		Thank you for confirmation on opening prayer.
5/16/2011	DTSC/PG&E	Interested Geo/Hydro TWG Members: BOR: Jeff Smith; DTSC: Chris Guerre; DOI: Pam Innis; FMIT: Leo Leonhart; Hualapai: Win Wright; MWD: Eric Fordham; PG&E: Yvonne Meeks, Curt Russell, Martin Barackman, Mike Cavaliere, Christina Hong, Steven Lanter.		Well Screen call for discussion of well design at Site 2 located on the northwest side of the Topock Compressor Station.
5/17/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		4th Quarter 2010 and Annual IM Performance Monitoring and Groundwater Monitoring Report
5/18-5/19/11	DTSC	Tribal Attendees: Cocopah: Jill McCormick; CRITs: Amanda Barrera, David Harper, Doug Bonamici, Ed Yava, George Ray, Mamie Harper; FMIT: Chairman Timothy Williams, Linda Otero, Nora McDowell-Antone, Courtney Coyle, Steven McDonald, Leo Leonhart; Hualapai: Dawn Hubbs, Win Wright. Government Attendees: ADEQ: Sybil Smith, Raymond Suazo; BLM: Angie Lara; BOR: Valerie Thomas; DOI: Pam Innis, Casey Padgett; DTSC: Stewart Black, Karen Baker, Nancy Bothwell, Christina Fu; MWD: Bart Koch, Eddie Ridgdon; PG&E: Jane Yura, Dave Gilbert, Yvonne Meeks, Juan Jayo, Lisa Cope (note taker) ; Regional Waterboard: Jose Cortez. Facilitator: Yolanda Garza		Topock Leadership Partnership Meeting was held on May 19, 2011 at MWD Gene Pumping Plant. Agenda focused on updating participants regarding recent selected groundwater cleanup decision and soliciting interested Tribal Governments, agencies, and stakeholders for input on how we move forward on implementation of the remedy and associated mitigation measures.
5/19/2011	Steve McDonald, FMIT	Karen Baker, DTSC	Nancy Long, Lisa Micheletti-Cope, Courtney Coyle	Sent copy of statement read by Chairman Williams, FMIT, at the TLP meeting.
5/20/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai, Nora McDowell-Antone, FMIT		Request for clarification on what the CHPMP was asking her to follow-up on with the EIR communication with tribes.
5/24/2011	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Asked that she check with Colleen Garcia for MWD regarding borrowed projector cable not returned.
5/26/2011	Aaron Yue, DTSC	Attendees: FMIT: Leo Leonhart, DTSC, ADEQ, USEPA, Federal Agencies, MWD, PG&E		Meeting to facilitate review of comments on the CMI/RD Workplan
5/27/2011	Aaron Yue, DTSC	Geo Hydro Technical Workgroup, CWG, Indian Tribe Reps		Sent latest contact lists and asked members to contact him if changes are needed.
6/1/2011	Jose Marcos, DTSC	Geo Hydro Technical Workgroup, CWG, Indian Tribe Reps		Crosswalk Table for Part A Phase 2 Sample locations - comment period extended to July 21, 2011 and revised numbering of sampling locations.
6/2/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks; MWD: Bart Koch; DTSC: Karen Baker, Mona Bontty, Christina Fu		Cancellation of CTF meeting scheduled for 6/14/11 due to tribal request to review the intent of the TLP.
6/2/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	Karen Baker, Geo/Hydro Technical Workgroup, CWG Members, Indian Tribe Reps.	FMIT request to extend comment due date of Draft CMI/RD Workplan.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/2/2011	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC, Pam Innis, DOI, Leo Leonhart, FMIT		Confirming Leo Leonhart's request to extend comment due date of Draft CMI/RD Workplan due to May 30, 2011 was a holiday for tribal governments.
6/2/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera, David Harper; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the months of April & May 2011.
6/3/2011	Loretta Jackson-Kelly, Hualapai	Aaron Yue, DTSC		Can Hualapai also have extension of due date of Draft CMI/RD Workplan Comments.
6/6/2011	Aaron Yue, DTSC	Loretta Jackson-Kelly, Hualapai Tribe	Carrie Cannon, Dawn Hubbs, Win Wright, Hualapai	Same extension of due date of Draft CMI/RD Workplan comments approved for FMIT is given to all reviewers as a courtesy.
6/6/2011	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Requested Nora's opinion of inclusion of Chairman William's story regarding deaths in his family in the TLP meeting minutes.
6/6/2011	Loretta Jackson-Kelly, Hualapai	Aaron Yue, DTSC, Pam Innis, DOI		Comments on Draft CMI/RD Workplan entitled "Design of Groundwater Remedy - An Opportunity to Prevent Further Damages to Cultural Resources Near the PG&E Topock Compressor Station"
6/7/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC		Leo called Aaron to verbally ask for another extension until the end of the week for commenting on the Draft CMI/RD Workplan and also sent e-mail request.
6/7/2011	Aaron Yue, DTSC	Leo Leonhart, FMIT, Pam Innis, DOI	CWG, TWG, Indian Tribe Reps.	Confirmed agreement to provide additional time to the FMIT to compile comments on the CMI/RD Work Plan.
6/9/2011	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Responded to Karen's request to check if Chairman Williams statement should be removed from TLP meeting notes due to the personal nature of them. She will get back to her tomorrow.
6/13/2011	Aaron Yue, DTSC	Geo/Hydro TWG, Indian Tribe Reps.		PG&E minutes of May 26, 2011 TWG meeting on the Groundwater CMI/RD Work Plan.
6/13/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Follow-up on interest of council to have meeting and informed her that she will not participate in the CHPMP.
6/13/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Believes council is still interested in having a meeting but having trouble getting a date that will work for them.
6/13/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		If find some scheduled dates, let her know.
6/14/2011	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		Checking with Yolanda if she needs anything else for the subject of clarifying communications to tribes on the EIR.
6/14/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Please call her Jill. Will let Yolanda know when she gets dates from the Council.
6/15/2011	DTSC	Attendees: FMIT: Leo Leonhart, Steven McDonald (via telephone), Michael Sullivan (via telephone); CRITs: Doug Bonamici (via telephone), Howard Magill (via telephone);Hualapai Indian Tribe: Dawn Hubbs, Win Wright, Carrie Cannon; DTSC, SWRCB, PG&E and their consultants CH2M Hill, Lucas Advocates, & Arcadis, USBLM, USBOR, USDOI, HSG, USEPA, USFWS, MWD, ADEQ		Consultative Work Group meeting held in Henderson, Nevada.
6/16/2011	DTSC	Ron Escobar, Chemehuevi, DTSC, PG&E, HDR		Technical Review Committee Selection Meeting

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/17/2011	Aaron Yue, DTSC	Yvonne Meeks, PG&E	Geo/Hydro, Indian Tribe Reps, CWG Members	Comments on the May 2011 Groundwater CMI/RD Work Plan for SWMU 1/AOC 1 and AOC 10
6/20/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Letting her know that she will not follow-up on the CHPMP workgroup assignment.
6/21/2011	Aaron Yue, DTSC	Geo/Hydro TWG, Indian Tribe Reps., CWG Members		Carrie Canon's presentation on the Hualapai Tribe's Ethobotanical program for those who didn't receive.
6/21/2011	Karen Baker, DTSC	Nora McDowell-Antone, Steven McDonald, FMIT		Follow-up regarding 6/6/11 request to review Chairman Williams statement at TLP that are of a personal nature before making a public record.
6/21/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Cocopah council would like to schedule a meeting on 8/2, 8/9 or 8/16.
6/21/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Will check August dates for availability to meet with Cocopah Council and get back to her.
6/22/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glen Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Mona Bontty, Yolanda Garza; DOI: Pam Innis	Arcadis: Lisa Kellogg, Lisa Micheletti Cope; CH2M Hill: Christina Hong; DTSC: Aaron Yue, Christina Fu	Cancellation of CTF meeting scheduled for 7/5/11 due to holiday and change of August meeting to 8/2.
6/22/2011	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Requested to make 7/5/11 a conference call CTF rather than canceling to discuss the TLP.
6/22/2011	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Regarding 6/6/11 request to review Chairman Williams comments in TLP meeting notes, will get edited version to her by COB tomorrow.
6/23/2011	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Regarding 6/6/11 request to review Chairman Williams comments in TLP meeting notes, will get edited version to her by COB or tomorrow morning.
6/24/2011	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Any chance you can get the revised notes to her soon? Letters need to go out by 3:00 PM.
6/24/2011	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Will get the revisions to notes from CTF meeting to you by 4:00 PM today.
6/24/2011	Yolanda Garza, DTSC	Dawn Hubbs, Loretta Jackson-Kelly, Hualapai		Checking to see if Hualapai Tribal Council interested in meeting on the Topock project.
6/24/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Confirmed availability of PG&E, DTSC & DOI to meet with tribal council on 8/2.
6/24/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		August 2nd works for them at 11:00 AM in the Tribal Council Chambers.
6/24/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		How long do you expect the Council would like to meet?
6/24/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		The council will probably want to meet for at least an hour, probably more.
6/27/2011	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Last check to see if they can get revisions to notes from CTF meeting to her. It's been 5 wks. since the TLP meeting and need to mail notes out.
6/27/2011	Karen Baker, DTSC	Nora McDowell-Antone, FMIT	CTF Members	Thanks for perspective on TLP meeting, but prefers to hold CTF in person and not available until August.
6/27/2011	Win Wright, Hualapai	Jose Marcos, DTSC		Cannot attend BLM soils meeting on Tuesday, 6/28/11, in person.
6/28/2011	Jose Marcos, DTSC	Win Wright, Hualapai		Forwarded his request to Pam Innis, DOI, to give him call in information.
6/28/2011	Win Wright, Hualapai	Jose Marcos, DSTS		Re: Soil Data Gaps included as appendices: have reports changed or are they the same as the originals?
6/28/2011	Yolanda Garza, DTSC	Dawn Hubbs, Loretta Jackson-Kelly, Hualapai		Is Hualapai interested in meeting on the Topock project?
6/28/2011	Jose Marcos, DTSC	Win Wright, Hualapai		Part A data gap appendix is revised, and Part B data gap is a new document.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/28/2011	Stewart Black, DTSC	Chemehuevi: Charles Wood, Ron Escobar; Cocopah: Dale Philips, Edmund Dominguez, Sherry Cordova, Jill McCormick; CRITs: Eric Shepard, Gary Hansen, Michael Tsosie, Cheyenne Garcia, Richard Armstrong, Amanda Leivas Sharpe, Eldred Enas, Sylvia Homer, Lisa Swick, Mervin Scott, Dennis Welsh, Jr., Valerie Welsh-Tahbo, Herman Lafoon. Johnny Hill, Jr., Edward Yava, Doug Bonamici; FMIT: Timothy Williams, Nora McDowell-Antone, Linda Otero, Shan Lewis, Steven McDonald, Courtney Coyle, Leo Leonhart; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate; Havasupai: Bernadine Jones, Dimolene Kaska; Hualapai: Wilfred Whatoname, Loretta Jackson, Dawn Hubbs, Win Wright; Torres-Martinez: Mary Resvaloso; Twenty-Nine Palms: Darrell Mike; Yavapai-Prescott: Greg Glassco, Ernest Jones; BOR; USEPA; USFWS; Havasu NWR; ADEQ; CRWQCB; CRB; MWD; PG&E; DOI; BLM; AZ BLM		Topock Leadership Partnership - Notes of the May 19, 2011 meeting.
6/28/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Have informed the DOI, PG&E & DTSC team members of 8/2/11 meeting.
6/29/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		RE: 8/2/11 meeting: sent directions to the West Cocopah Reservation.
6/29/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Asked if Council interested in: 1) a general overview; 2)EIR-mitigation measures; 3) regulatory process; 4) tribal communications with the team; or 5) remedy and future design elements?
6/29/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Topics 2-5 would be of the most interest to the council for 8/2/11 meeting.
6/30/2011	Doug Bonamici, CRIT	Karen Baker, DTSC	Nora McDowell, FMIT, Dawn Hubbs, Hualapai	TLP draft notes are acceptable and looks forward to seeing the final draft.
7/6/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera, David Harper; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of June 2011.
7/6/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glen Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Mona Bontty, Yolanda Garza; DOI: Pam Innis		Rescheduling of August 2nd CTF to August 11th at either MWD LaVerne office or CH2M Hill office in Henderson. Request for feedback on preferred location.
7/7/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glen Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Mona Bontty, Yolanda Garza; DOI: Pam Innis		Based on feedback, 8/11/11 CTF will be held from 12:30-3:30 at the MWD Office in La Verne.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
7/7/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Questions regarding presentations for 8/2/11 meeting to make the meeting productive for the council.
7/7/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Suggested sharing info. from the TLP and overview of topics 2-5 then questions from the.
7/7/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Follow-up on reason they have not responded to her e-mails regarding Hualapai's request for a meeting.
7/8/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		How far is the airport at Yuma to the council chambers?
7/8/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Council chambers are approx. 15 miles from the airport.
7/11/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Re: directions for 8/2/11 meeting.
7/11/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Thank you. Will arrive the day before to make sure on time for the 8/2 meeting.
7/15/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Spoke to Dawn and confirmed potential meeting dates.
7/19/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		Proposed TWG meeting on 8/31 and 9/1/11.
7/20/2011	Michael Sullivan, FMIT	Jose Marcos, DTSC		Teaching schedule is Tues. and Wed. Can TWG meeting be on 8/1 & 8/2?
7/20/2011	Jose Marcos, DTSC	Michael Sullivan, FMIT		8/1 & 8/2 are not viable dates for DTSC to hold the TWG. 8/31 & 9/1 were the earliest dates possible.
7/20/2011	Nora McDowell-Antone, FMIT	Jose Marcos, DTSC	Aaron Yue, Chris Guerre, Karen Baker, Yolanda Garza	None of FMIT technical consultants or tribe are available 8/31 & 9/1 for TWG. Request to change to 9/1-2 or 9/8-9. Also requested an extension to comment on the Soils Workplan to 7/28/11.
7/21/2011	Jose Marcos, DTSC	Nora McDowell, FMIT	Aaron Yue, Chris Guerre, Karen Baker, Yolanda Garza	Will ask TWG/CWG to consider 9/1-2 for TWG meeting. Extended deadline to comment on the soil work plan to 7/28/11.
7/21/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		Soliciting input of 9/1-9/2 dates for TWG and request to respond by 7/26.
7/21/2011	Win Wright, Hualapai	Jose Marcos, DTSC		Cannot make the TWG on 9/1-2/11. Available on 9/7-9 or Dawn might be able to attend.
7/21/2011	Jose Marcos, DTSC	Dawn Hubbs, Win Wright, Hualapai		Asked if Win can attend TWG by telephone and Dawn attend in person or should we consider postponing until a later date?
7/21/2011	Nora McDowell-Antone, FMIT	Jose Marcos, DTSC	Courtney Coyle (FMIT)	They also suggested 9/8-9 for TWG. Thank you for extending soil work plan deadline.
7/25/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		9/9-10 works for everyone to meet with Hualapai council. 9/9 tribal sensitivity training and 9/10 for council meeting.
7/26/2011	Jose Marcos, DTSC	Yvonne Meeks, PG&E	Geo/Hydro, Indian Tribe Reps, CWG Members	DTSC comments on "Summary of Media-to-Plan Uptake Models and Their Application in the Topock Human and Ecological Risk Assessments" memorandum dated 6/3/11.
7/26/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		Results for April/May Second Quarter 2011 sampling of chromium groundwater
7/26/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		First half of 2011 report for the IMCMP
7/27/2011	Josephina Rivera, CRIT	Jose Marcos, DTSC		Called to request to be added to Topock contact lists so can receive notices for her Director, Mr. David Harper.
7/27/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		Tentatively mark your calendars for 9/1-9/2 TWG meeting.
7/27/2011	Yolanda Garza, DTSC	Dawn Hubbs, Loretta Jackson-Kelly, Hualapai	Karen Baker	Confirmation of tentative plans for DTSC, DOI and PG&E to meet with Hualapai Council on 9/9-9/10.
7/27/2011	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		PG&E contact list for review and update and informed that no longer has cell phone.
7/27/2011	Dawn Hubbs, Hualapai	Jose Marcos, DTSC		She will attend the 9/1-2 TWG as Win cannot make it.
7/28/2011	Leo Leonhart, FMIT	Chris Guerre, DTSC		RE: Results for April/May, 2nd Qt. 2011 Sampling. Questions regarding data trends and suggested discussing in TWG/CWG.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
7/28/2011	Leo Leonhart, FMIT	Pam Innis, DOI and Aaron Yue, DTSC	Jose Marcos, DTSC	FMIT's request for another extension of the comment period for the Soils RFI/RI Workplan through August 1, 2011. DTSC agreed on the provision that acceptable to DOI.
7/28/2011	Aaron Yue, DTSC	Leo Leonhart, FMIT	FMIT: Courtney Coyle, Linda Otero, Michael Sullivan, Nora McDowell-Antone, Steve McDondald; DTSC: Jose Marcos, Karen Baker	DTSC looks forward to receiving FMIT comments on Monday, 8/1. Although DTSC has agreed to the extension, cannot speak for the Federal agencies because of the differing purpose, considerations, and timing for the comments from you.
7/28/2011	Amanda Barrera, CRITs	Aaron Yue, DTSC		Sent names of current tribal council members for the Topock contact list.
7/28/2011	Aaron Yue, DTSC	Amanda Barrera, CRITs		Asked to select only members that should receive the large volume of emails that are sent to the contact list.
7/28/2011	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		9/9 will be sensitivity training class for DOI and 9/10 will be council meeting which DTSC, PG&E & DOI will present a status report to council.
7/29/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Assume that DTSC & PG&E can also attend 9/9 training. What are the times for training and council meeting. Yolanda would like to make a short presentation if feasible.
7/29/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Confirmation of Tribal Council meeting and request for number of copies needed of presentation handouts.
7/29/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Six copies of presentation handouts needed for Tribal Council meeting.
8/1/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso; MWD: Bart Koch, Eddie Rigdon; DOI: Pam Innis; DTSC: Karen Baker, Mona Bontty, Yolanda Garza	Christina Fu, Lisa Cope, Lisa Kellogg, Christina Hong	Provided Agenda and handouts for upcoming CTF meeting on 8/11/11.
8/1/2011	Leo Leonhart, FMIT	Aaron Yue, DTSC and Pam Innis, DOI	FMIT: Courtney Coyle, Steven McDonald, Nora McDowell-Antone, Linda Otero, Timothy Williams; CRITs: Doug Bonamici, George Ray; Chemehuevi: Ron Escobar; Yavapai: Greg Glassco; Hualapai: Dawn Hubbs, Loretta Jackson; Cocopah: Jill McCormick; BLM, DTSC	FMIT comments on May 2011 PG&E draft report titled Soil RCRA Facility Investigation/Remedial Investigation Work Plan
8/2/2011	Leo Leonhart, FMIT	Aaron Yue, Chris Guerre, Jose Marcos, DTSC		Request for clarification of agenda items for 9/1-2 TWG meeting.
8/2/2011	Jose Marcos, DTSC	Leo Leonhart, FMIT, Aaron Yue, Chris Guerre, DTSC		Gave clarification on tentative agenda items for 9/1-2. Hope to send out agenda soon.
8/3/2011	Jill McCormick on behalf of Cocopah Tribal Council	Cocopah: Chairwoman Sherry Cordova, Vice-Chairman Dale Phillips, Councilmen Carlos Pereyra, Irwin Twist and Neil White, and Jill McCormick; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; PG&E: Yvonne Meeks		At the request of the Cocopah Tribal Council, DTSC provided an overview of the PG&E Topock project including selection and implementation of the remedy selection for groundwater and the upcoming soils investigation. DTSC also highlighted opportunities for tribal input in the project.

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8/3/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah	Karen Baker, DTSC, Pam Innis, DOI, Yvonne Meeks, PG&E	Thank you for coordinating the tribal council meeting today. Asked that she identify attendees at the meeting to make sure she has the correct attendance list.
8/3/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso; MWD: Bart Koch, Eddie Rigdon; DOI - Pam Innis; DTSC: Karen Baker, Mona Bontty, Yolanda Garza	Christina Fu, Lisa Cope, Lisa Kellogg, Christina Hong	Correction to 8/11 CTF agenda. Lunch will not be served, only snacks.
8/4/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Questions regarding 9/1 sensitivity training and 9/2 council meeting from DOI and DTSC.
8/4/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup, Indian Tribes, CWG Members		Update on 9/1-2 meeting: preliminary schedule.
8/5/2011	Leo Leonhart, FMIT	Pam Innis, DOI	Aaron Yue, DTSC, Courtney Coyle, Linda Otero, Steven McDonald, Nora McDowell-Antone, FMIT; Yvonne Meeks, PG&E	RE: Soils Rfi/RI WP APP. B26 - wants explanation for note "Per DOI Request, responses to DOI are not provided."
8/9/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Gilbert Parra, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera, David Harper; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of July 2011.
8/10/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Request to give presentation she provided at TLP at CWG on 10/19/11.
8/10/2011	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Yes, thank you for the opportunity to present the information to the CWG group on 10/19/11.
8/11/2011	Win Wright, Hualapai	DTSC: Aaron Yue, Karen Baker, Chris Guerre, Jose Marcos; DOI: Pam Innis; PG&E: Yvonne Meeks	Dawn Hubbs, Loretta Jackson-Kelly, Hualapai	Hualapai comments regarding the Soil Work Plan
8/11/2011	Karen Baker, DTSC	Attendees: Hualapai: Dawn Hubbs; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Issacson, Lisa Kellogg, Lisa Cope, Christina Hong; MWD: Bart Koch; DOI: Pam Innis; DTSC: Karen Baker, Yolanda Garza		Clearinghouse Task Force Meeting at MWD office in LaVerne
8/12/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		List of CTF action items provided at the March 2011 CTF meeting.
8/12/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		Compilation of meeting notes that deal with the four follow-up areas identified at the Breakthrough Summit in February 2008: Decision Making/CWG; Clearinghouse for Information; One Stop Permitting/Legal; Consultation.

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8/15/2011	Dawn Hubbs, Hualapai	Jose Marcos, DTSC		She will attend the 9/1 & 9/2 TWG meeting in place of Win Wright and request for confirmation of location.
8/15/2011	Jose Marcos, DTSC	Dawn Hubbs, Hualapai	Karen Baker, DTSC, Loretta Jackson & Win Wright, Hualapai	TWG meeting will be held at the Topock Compressor station. Also, thank you for Hualapai workplan comments received on 8/11.
8/15/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Early notice of proposed CWG meeting on 10/19/11 at the Hilton Garden Inn in Yuma, AZ.
8/16/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai	Karen Baker, DTSC	Agenda draft for your consideration at Hualapai Tribal Council
8/18/2011	Jose Marcos, DTSC	Dawn Hubbs, Hualapai, Nora McDowell-Antone, FMIT	DTSC: Aaron Yue, Chris Guerre, Karen Baker; PG&E: Yvonne Meeks, Christina Hong; DOI: Pam Innis	Comments from Hualapai and FMIT that PG&E indicated need clarifying/discussion at the 9/1-2 TWG meeting.
8/18/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		Draft Action Items from 8/11/11 CTF meeting. Request to provide corrections/clarifications by 8/26/11. Next CTF is 9/15/11.
8/18/2011	PG&E	Attendees: FMIT: Felton Bricker, Sr., Delbert Holmes, Nora McDowell-Antone; CRITs: Howard Magill, Charley Land; Hualapai: Morris Samson, Bennett Jackson, Arturo Montana; PG&E: Curt Russell, Melanie Day; CH2M Hill: Jay Piper, Morgan King; Garcia & Associates: Kim Steiner; Applied Earthworks: Pat Moloney;		Vegetation Survey Orientation Meeting.
8/19/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		DTSC comments on the PG&E Topock draft Soil RFI/RI Workplan dated May 2011
8/19/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Agenda for 9/1-2 TWG meeting with comments received to the soil work plan for discussion.
8/23/2011	Karen Baker, DTSC	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC	Thank you for opportunity to come to Hualapai Cultural Sensitivity Training and DTSC staff who will attend.
8/23/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		CTF charter revised per input at 8/11/11 meeting. Comments due to Yolanda Garza by 8/26/11.
8/24/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., CWG Members		PG&E Topock 2nd Quarter 2011 IM Performance Monitoring and Groundwater Monitoring Report.
8/25/2011	Doug Bonamici, CRIT	FMIT: Nora McDowell; CRITs: Lisa Swick; DTSC: Karen Baker, Mona Bontty, Yolanda Garza; ; Hualapai: Win Wright, Loretta Jackson-Kelly, Dawn Hubbs; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Glenn Caruso, Yvonne Meeks; Stephanie Issacson; Tom Watson;	Arcadis: Lisa Kellogg, Lisa Micheletti-Cope; PG&E: Christina Hong; DTSC: Christina Fu	Edits/suggestions on draft CTF Mission Statement.

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8/29/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Issacson; MWD: Bart Koch, Eddie Rigdon; DOI: Pam Innis; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		Finalized action items from 8/11/11 CTF.
8/29/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso; MWD: Bart Koch, Eddie Rigdon; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		Corrected location of 9/15/11 CTF meeting.
8/30/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Groundwater Model presentation for the 9/1/11 TWG meeting.
8/30/2011	Leo Leonhart, FMIT	Chris Guerre, DTSC		RE: Groundwater Model Presentation at TWG: hope info. on basic model structure…layers shown in EX, boundaries, etc. will be presented. Are they going to tell us how the input params compared to the existing model? Also, would like to know something about the conceptual design of the IRZ & extraction wells. This request was forwarded to Yvonne Meeks, PG&E.
8/31/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		TWG Updated Agenda and soil presentation handout - 9/1-9/2 TWG
9/1/2011	DTSC	Attendees: FMIT: Leo Leonhart (H&A), Michael Long (H&A), Nora McDowell-Antone, Harley L. Booth, Michael Sullivan; Hualapai: Dawn Hubbs; Chemehuevi: Tom Pradetto, Ron Escobar; DTSC, ADEQ, USEPA, Arcadis, PG&E and their consultants CH2M Hill, Lucas Advocates; DOI; USFWS, USBLM, Geopentech (MWD)		Technical Workgroup Meeting - agenda items included groundwater model, Soil RFI/RI workplan comment clarification, plant uptake status, alternative well ecommissioning update.
9/2/2011	DTSC	Attendees: FMIT: Michael Sullivan, Leo Leonhart, Michael Long, Harley Booth; Hualapai: Dawn Hubbs; Chemehuevi: Tom Pradetto; DTSC; USEPA, ADEQ; PG&E & their consultants CH2M Hill, Arcadis; USDOI, USFWS, USBLM		Technical Workgroup Meeting - agenda items included groundwater model, Soil RFI/RI workplan comment clarification, plant uptake status, alternative well ecommissioning update.
9/2/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera, David Harper; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of August 2011.
9/6/2011	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Question regarding Hualapai council presentations on Saturday: how did the overview and briefing go on 8/30? Do you think we need more focus on a topoic or two? Is BLM taking up some of our presentation time?

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/6/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Issacson; MWD: Bart Koch, Eddie Rigdon; DOI: Pam Innis; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		Change to meeting time for 9/15/11 CTF meeting.
9/6/2011	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Coordinating soil investigation workplan meeting requested by FMIT. Should we cancel CTF meeting on 9/15 to have more time to meet with Fort Mojave? Dawn Hubbs would like to stall have the CTF in the morning of 9/15.
9/6/2011	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Coordinating soil investigation workplan meeting. Can start 9/15 CTF in the morning or cancel - your call.
9/6/2011	Karen Baker, DTSC	Nora McDowell-Antone, FMIT	Jose Marcos, DTSC	CTF will be 9-12 Noon, FMIT meeting at 1:00 PM, follow-up call if needed prior to 9/22 mtg. with PG&E, possibly on 9/19 to work around Michael Sullivan's schedule.
9/7/2011	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		CTF from 9-12 and FMIT meeting at 1:00 is fine with her.
9/7/2011	Karen Baker, DTSC	Dawn Hubbs, Hualapai		Change to attendees for Cultural Training: Christina Fu will replace Nancy Bothwell.
9/7/2011	Dawn Hubbs, Hualapai	Karen Baker, DTSC		Final agenda for Cultural Sensitivity Training.
9/10/2011	DTSC	Attendees: Hualapai Tribal Council, Hualapai Cultural Resources: Loretta Jackson-Kelly & Dawn Hubbs; DTSC, DOI, PG&E		Hualapai Council Meeting 9/10/11
9/12/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Issacson; MWD: Bart Koch, Eddie Rigdon; DOI: Pam Innis; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		CTF Meeting Agenda and handouts for 9/15/11.
9/14/2011	Christina Hong, CH2M Hill	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Issacson; MWD: Bart Koch, Eddie Rigdon; DOI: Pam Innis; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		On Karen Baker's behalf, draft Topock Q3 2011 newsletter for review (handout for 9/15/11 CTF meeting).
9/14/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		TWG meeting planned for 10/18/11.
9/15/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Issacson; MWD: Bart Koch, Eddie Rigdon; DOI: Pam Innis; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		Based on feedback received, we will proceed with CTF meeting on 9/15/11 from 9am to noon.

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9/15/2011	Karen Baker, DTSC	CTF Members: Hualapai: Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Issacson; MWD: Bart Koch, Eddie Rigdon; DOI: Pam Innis; DTSC: Karen Baker, Mona Bontty, Yolanda Garza		Meeting will be held at CH2M Hill office in Henderson, NV
9/16/2011	Jose Marcos, DTSC	Attendees: FMIT: Linda Otero, Nora McDowell-Antone, Leo Leonhart, Michael Sullivan, Harley Booth, Courtney Coyle (by phone); Hualapai: Dawn Hubbs; DTSC, BLM, DOI		Soils Workplan meeting 9/15/11 in Henderson, NV
9/20/2011	Deborah Raphael, DTSC	The Honorable Louise Benson, Chairwoman, Hualapai	Loretta Jackson-Kelly, Hualapai, Dawn Hubbs, Hualapai, Karen Baker, DTSC	Recognition and Appreciation for Tribal Sensitivity Training
9/28/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup	Harley Booth, FMIT	September 2011 TWG Action Items
9/28/2011	Yolanda Garza, DTSC	Ms. Lee, Hualapai		Topock attendees at council meeting on 9/10/11 for her records.
9/30/2011	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, Agenda Only		Date/location of 10/19/11 CWG meeting and draft significant issues and action items from 6/15/11 CWG for review and comment and contact list for review and update.
10/4/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera, David Harper; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Louise Benson, Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of September 2011.
10/6/2011	Karen Baker, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Draft agenda for 10/18/11 CTF meeting.
10/6/2011	Pam Innis, DOI	Nora McDowell-Antone, FMIT, Dawn Hubbs, Hualapai	TWG Workgroup	DOI/DTSC response to concerns raised by the FMIT regarding some of the comments provided by the agencies on the draft soil RFI/RI Workplan dated May 2011.
10/7/2011	Christopher Guerre, DTSC	Geo/Hydro Technical Workgroup		Information addressing Action Items 2, 3, 5 & 6.
10/7/2011	Christopher Guerre, DTSC	Geo/Hydro Technical Workgroup		Information addressing Action Items 4
10/11/2011	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, Agenda Only		PG&E 10/19/11 CWG Meeting Agenda

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/12/2011	Karen Baker, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Two templates for Topock Newsletter for CTF review.
10/13/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup		Agenda for 10/18/11 TWG meeting.
10/13/2011	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Revised CWG Charter that was circulated at June 2010 CWG meeting.
10/14/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup		Draft ideas regarding well decommissioning for review and feedback by 11/14/11.
10/14/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup		Modeling slides for TWG meeting.
10/17/2011	Karen Baker, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Provided corrected copy of the revised July 2010 CWG meeting charter. Hualapai tribe inadvertently left off of Attachment A.
10/18/2011	Karen Baker, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Change of CTF meeting time due to flight schedule into Yuma.
10/18/2011		Attendees: PG&E: Sheryl Bilbrey, Yvonne Meeks,Christina Hong (CH2M Hill), Glen Caruso, Lisa Cope (Arcadis), Lisa Kellogg (Arcadis), Stephanie Isaacson (via phone), Tom Wilson (via phone); Hualapai: Dawn Hubbs, Win Wright; DOI: Pam Innis; DTSC: Karen Baker, Yolanda Garza; MWD: Bart Koch, Eddie Rigdon; FMIT: Leo Leonhart, Cocopah: Jill McCormick		CTF Meeting in Yuma, AZ
10/18/2011		Attendees: FMIT: Leo Leonhart (H&A), Luke Johnson; Hualapai: Dawn Hubbs; TRC: Win Wright; DTSC, PG&E and their consultants Arcadis, CH2M Hill; USDO, USBLM, USBOR		Face-to-Face TWG Meeting: Agenda Items: Health and Safety Minutes' Model sensitivity analysis; Review the effect of variable ranges on the following specific parameters on model output: Well spacing, TOC load, Riverbank well flowrate, Manganese reactions, Arsenic reactions, Hexavalent chromium transport rate; Summarize latest model results applied in 30% design; Review model simulations of chromium treatment and by-product effects; Summary discussion of model predictability; Qualitative review of model comparison to available data sets for the following: Hydraulics, Chromium treatment, Geochemistry

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10/19/2011	DTSC	Attendees: DTSC: Karen Baker, Aaron Yue, Chris Guerre, Yolanda Garza, Nancy Bothwell (via telephone), Jose Marcos (via telephone), Lori Hare (via telephone); USEPA: Mitch Kaplan (via telephone); PG&E: Sheryl Bilbrey, Glenn Caruso, Yvonne Meeks, Dave Gilbert, Juan Jayo, Curt Russell; Arcadis on behalf of PG&E: Lisa Cope, Lisa Kellogg; CH2M Hill on behalf of PG&E: Brian Schroth, Christina Hong; Lisa Cope; ADEQ: Danielle Taber (via telephone); USDOI: Pam Innis; USBLM: George Shannon, Cathy Wolff-White; USBOR: SWRCB: Tom Vandenberg (via telephone); Jeff Smith; MWD: Bart Koch; FMIT: Nora McDowell-Antone, Luke Johnson, Courtney Coyle (Legal Rep.), Leo Leonhart (H&A); Cocopah: Jill McCormick, Dale Phillips; CRITs: Doug Bonamici (via telephone); Hualapai: Dawn Hubbs, Win Wright		Face-to-face Consultative Work Group Meeting
10/20/2011		DTSC: Aaron Yue; PG&E: Curt Russell, Yvonne Meeks, Glenn Caruso; CH2M Hill: Brian Schroth, Christina Hong; FMIT: Nora McDowell-Antone; Leo Leonhart; CRITs: Howard Magill; Hualapai: Win Wright, Dawn Hubbs; EN3: Charlie Schlinger; HDR: Sandy Flint, Eric Rosenblum; Egger Env.: Margaret Egger; THS: Bob Trucha; Iris Env: Adrienne LaPierre		TRC Kickoff Meeting.
10/21/2011	Christopher Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Request to email him to be included in the subgroup to work on finalizing a soils handling document.
10/21/2011	Christopher Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Shared list of people who have requested to be included as participants to consider alternative groundwater well decommissioning requirements. Requested to let him know if wish to be added or removed from this list.
10/24/2011	Karen Baker, DTSC	Dale Phillips, Cocopah		Appreciation for presence and presentation at the CWG on 10/19/11.
10/24/2011	Karen Baker, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Draft notes from 10/18/11 CTF. Request to provide comments/revisions by 11/3/11
10/25/2011	Yolanda Garza, DTSC	Ms. Lee, Hualapai		Request for contact information for Louise Benson, Chairwoman
10/27/2011	Yolanda Garza, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Revised CWG Charter for final review and request for response from interested members in participating in the Boot Camp Committee.

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10/27/2011	Aaron Yue, DTSC	Yvonne Meeks, Sheryl Bilbrey, PG&E, Christina Hong, CH2M Hill	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members	DTSC review of revised CMI/RD work plan for groundwter remediation
10/27/2011	Yolanda Garza, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		CWG survey results and October 2011 Newsletter
10/27/2011	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup		Groundwater modeling presentation from the 10/18/11 TWG
10/27/2011	Karen Baker, DTSC	Chemehuevi Tribe: Charles Wood; Ron Escobar; Cocopah: Dale Philips, Edmund Domingues, Sherry Cordova, Jill McCormick; CRITS: Eric Shepard, Grant Buma, Lisa Swick, Ginger Scott, David Harper, Amanda Barrera, Eldred Enas, Sylvia Homer, Mervin Scott, Jr., Dennis Welsh, Jr., Valerie Welsh Tahbo, Herman Laffoon, Johnny Hill, Jr., Edward Yava, Sr., Doug Bonamici; FMIT: Timothy Williams, Nora McDowell-Antone, Linda Otero, Shan Lewis, Colleen Garcia, Steven McDonald, Courtney Coyle, Leo Leonhart; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate; Havasupai: Bernadine Jones, Dimolene Kaska; Hualapai: Louise Benson, Richard Walema, Sr., Loretta Jackson-Kelly, Dawn Hubbs, Win Wright; Torres-Martinez: Mary Resvaloso; 29 Palms: Darrell Mike; Yavapai-Prescott: Greg Glassco, Ernest Jones, Sr.; Havasu NWR, USFWS, USEPA, USBOR, USBLM, AZ BLM, USDOI, PG&E, MWD, CRB, CRWQCB, ADEQ		Provided copy of Third Quarter Newsletter. Tribal Chairs/Agency Reps. received 12 copies for distribution.
10/31/2011	Loretta Jackson-Kelly, Hualapai	Aaron Yue, DTSC, Pamela Innis, DOI	Yvonne Meeks, PG&E	Hualapai tribe comments regarding the TWG groundwater modeling presentations of September 1 and October 11, 2011.
10/31/2011	Deborah Raphael, DTSC	Chemehuevi: Charles Wood; Cocopah: Sherry Cordova, cc: Jill McCormick, Dale Philips; CRITs: Eldred Enas, cc: Amanda Barrera, Doug Bonamici; FMIT: Timothy Williams, cc: Nora McDowell-Antone; Fort Yuma-Quechan: Mike Jackson, Sr.; Havasupai: Bernadine Jones; Torres-Martinez: Mary Resvaloso; Hualapai: Louise Benson, cc: Loretta Jackson-Kelly, Dawn Hubbs; 29 Palms: Darrell Mike; Yavapai-Prescott: Ernest Jones, Sr., cc: Greg Glassco, ADEQ, CRWQCB, CRB, MWD, PG&E, DOI, BLM, BOR, USEPA, USFWS, Havasu NWR	Stewart Black, Karen Baker, DTSC	Follow-up to May 19, 2011 Topock Leadership Partnership Meeting and Survey. Attachments: Tribal Statement for May 19 TLP Meeting, TLP Mission Statement
10/31/2011	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Early draft of 10/19/11 CWG meeting significant issues for review as a process improvement.
10/31/2011	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members		Request for specific items/proposed sample locations to include in the agenda for 12/15/11 Draft Soil Workplan Field Walk
11/1/2011	Josephina Rivera, CRIT	Jose Marcos, DTSC		Requested physical address of the Topock Compressor Station. Jose sent this information to her.
11/1/2011	Yolanda Garza, DTSC	Chase Choate, Fort Yuma-Quechan		Request for contact information

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11/3/2011	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Draft Agenda for 11/15/11 CTF meeting, CTF action items, CWG revised charter, revised TLP mission statement
11/3/2011	Aaron Yue, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps, Agenda Only		Revised contact list for review and update.
11/3/2011	Aaron Yue, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps,		Forwarded Yvonne Meeks, PG&E email to save the dates of 12/13 & 12/14 for the Hinkley site visit and the Topock groundwater remedy site discussion.
11/3/2011	Aaron Yue, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps,		Revised CMI/RD Work Plan was uploaded to CH2M Hill's Sharepoint site for this project.
11/3/2011	Karen Baker, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Shared letters sent by DTSC director as a follow up to the statement made by Chairman Williams at the last TLP meeting.
11/7/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera, David Harper; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Louise Benson, Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of October 2011.
11/15/2011	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Link to WebEx for November 15, 2011 Clearinghouse Taskforce Meeting
11/15/2011	Jose Marcos, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		PG&E Topock - Agenda December 15, 2011 Draft Soil Workplan Field Walk
11/15/2011	Karen Baker, DTSC	Attendees: DTSC: Karen Baker, Yolanda Garza; PG&E: Sheryl Bilbrey, Glenn Caruso, Stephanie Isaacson, Yvonne Meeks (via telephone); CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg; DOI: Pam Innis (via telephone); MWD: Eddie Rigdon; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; FMIT: Nora McDowell-Antone, CRIT: Howard McGill (via telephone)		PG&E Topock Clearinghouse Task Force Meeting, Henderson, NV, CH2M Hill Office

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11/18/2011	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Approved Mission Statement for the Clearinhouse Task Force
11/20/2011	Chris Guerre, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		PG&E Topock IM3 Third Quarter 2011 Monitoring Report
11/20/2011	Chris Guerre, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Topock: Results for September/October, Third Quarter 2011 Sampling
11/21/2011	Karen Baker, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Link to PG&E Topock: Submittal of Draft Basis of Design Report/Preliminary 30% Design for the Final Groundwater Remedy
11/22/2011	Eldred Enas, CRITs	Yvonne Meeks, PG&E	Aaron Yue, DTSC, Pam Innis, DOI, Glenn Caruso, PG&E, Sandra Flint, HDR, Dawn Hubbs, Hualapai	Affirming Winfield (Win) G. Wright Candidate for Open Position on the Topock Remediation Project's Technical Review Committee (TRC)54
11/23/2011	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		November CTF draft notes and attachments: 11/15/11 draft notes, CWG revised charter, HSC citations, Topock suggested readings.
11/26/2011	Louise Benson, Hualapai	Yvonne Meeks, PG&E	Aaron Yue, DTSC, Pam Innis, DOI, Glenn Caruso, PG&E, Sandra Flint, HDR,	Hualapai Tribe approval of Mr. Winfield Wright to the Topock Remediation Project's Technical Review Committee (TRC)
11/29/2011	Aaron Yue, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Notice of Public Meeting in Golden Shores on 12/12/11
12/5/2011	Jose Marcos, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Agenda for 12/15/11 Draft Soil Workplan Field Walk
12/7/2011	Timothy Williams, FMIT	Pamela Innis, US DOI	Karen Baker, DTSC, CRIT, Cocopah, Hualapai, Yavapai Prescott, Quechan, Chemehuevi, FMIT: Nora McDowell, Linda Otero, Courtney Coyle, Michael Sullivan, Leo Leonhart, Steve McDonald	Re: Development of a Tribal Land-Use Scenario and ACEC Management Plan. FMIT's response to DOI's 10/5/07 memorandum on future land use assumptions.
12/8/2011	Aaron Yue, DTSC	Chemehuevi: Charles Wood, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera, David Harper; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Arlene Kingery, Pauline Jose; Hualapai: Louise Benson, Dawn Hubbs		Compact disc containing Consultative Work Group electronic correspondence during the month of November 2011.
12/14/2011	Jose Marcos, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		PG&E Topock Draft Soil Workplan RTC Table version 12-13-11

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12/16/2011	Dawn Hubbs, Hualapai	Karen Baker, DTSC		Formal request that TRC team receive all information regarding the TWG and CWG and that they attend the TWG and CWG meetings.
12/16/2011	Karen Baker, DTSC	Hualapai: Dawn Hubbs, Loretta Jackson; Chemehuevi: Ron Escobar; CRIT: Doug Bonamici; Cocopah: Jill McCormick; FMIT: Nora McDowell-Antone; Yavapai: Greg Glassco, TRC: Margaret Eggers, Robert Prucha, Eric Rosenblum, Charlie Schlinger, Win Wright; Sandy Flint		TRC added to contact list to facilitate Dawn Hubb's 12/16/11 request.
12/16/2011	Dawn Hubbs, Hualapai	Chris Guerre, DTSC	Karen Baker, DTSC, TRC Members	Request that TRC team be on the well-decommissioning project.
12/21/2011	Jill McCormick, Cocopah	Karen Baker and Yolanda Garza, DTSC		Request for charter for CTF and CWG
12/21/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah	Karen Baker, DTSC	Sent CWG/CTF Charters
12/21/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah	Karen Baker, DTSC	CTF draft meeting notes, charter info.
12/21/2011	Yolanda Garza, DTSC	Jill McCormick, Cocopah	Karen Baker	Change in location of January meeting
12/27/2011	Aaron Yue, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps., Agenda Only, TRC		CWG and TWG meeting on 1/18 and 1/19/12
1/3/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Draft notes from 11/15/11 CTF meeting, CWG Charter, Topock Project Suggested Readings, and CTF action items.
1/3/2012	Win Wright, TRC	Chris Guerre, DTSC		The TRC would like to provide input to the Well Decommissioning process. What is the current schedule for the Well Decomm process?
1/4/2012	Chris Guerre, DTSC	Win Wright, Hualapai	Aaron Yue, Dawn Hubbs, TRC	No hard schedule has been set yet. Please provide comments as soon as you can. Suggest by 1/13 so can be discussed at 1/19 TWG.
1/4/2012	Karen Baker, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps., Agenda Only, TRC		Reminder of January 18, 2012 CWG meeting at BOR in Boulder City, NV.
1/4/2012	Aaron Yue, DTSC	Charles Wood, Thomas Pradetto, Ron Escobar (Chemehuevi), Sherry Cordova, Jill McCormick (Cocopah), Amanda Barrera, Eldred Enas, David Harper (CRITs), Timothy Williams, Linda Otero (FMIT), Mike Jackson, Sr., Chase Choate, Pauline Jose (Fort Yuma-Quechan), Louise Benson, Dawn Hubbs (Hualapai)		Mailed cd's containing December 2011 CWG emails and attachments.

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1/5/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Resending draft notes from 11/15/11 CTF meeting, CWG Charter, Topock Project Suggested Readings, and CTF action items. Some attachments didn't go through when sent previously.
1/5/2012	Greg Glassco, Yavapai-Prescott Tribe	Karen Baker, DTSC		There is a chance that their President may be able to attend and give a presentation at the 1/18/12 CWG if still interested.
1/5/2012	Karen Baker, DTSC	Greg Glassco, Yavapai-Prescott Tribe		Yes, would honored to have President Jones give a presentation at the CWG. Can ask PG&E to pay for a room for him or 4/18/12 meeting may be closer for him.
1/5/2012	Greg Glassco, Yavapai-Prescott Tribe	Karen Baker, DTSC		Will explain various options to President Jones for CWG presentation and get back with answer.
1/5/2012	Greg Glassco, Yavapai-Prescott Tribe	Karen Baker, DTSC		President Jones will give a presentation at the CWG on 1/18/12 and return to Prescott after lunch. Requested official invite letter to justify travel.
1/5/2012	Karen Baker	Greg Glassco, Yavapai-Prescott Tribe		DTSC will prepare an invite letter and Yolanda Garza will coordinate logistics with President Jones and his assistant.
1/6/2012	Chris Guerre, DTSC	Attendees: Danielle Taber (ADEQ); Edgard Castillo (Cocopah); Lindia Liu (CRB); Kara Ali, Michael Anderson, Pam Innis, Rick Newill, Toni Sekunda, Jeffery Smith (DOI / BOR); Karen Baker, Chris Guerre, Aaron Yue (DTSC); Margaret Eggers, Eric Rosenblum, Charlie Schlinger, Win Wright (TRC), Leo Leonhart, Steven McDonald, Nora McDowell-Antone, Michael Sullivan (FMIT); Eric Fordham, Maria Lopez (MWD); Glenn Caruso, Robert Doss, Linda Klein (Cox Castle), Yvonne Meeks, Mike Zischke (Cox Castle), Curt Russell (PG&E); Margaret Gentile, Jeff Gillow, Hans Johannes, Lisa Kellogg, Frank Lenzo, Jonathan Roller (Arcadis for PG&E); Martin Barackman, Mike Cavaliere, Jay Piper, John Porcella, Christina Hong, Brian Schroth (CH2M Hill for PG&E)		TWG Webex meeting. Agenda items: Follow-up Discussion from December 14 Site Walk: Influence of TDS on in-situ remediation, Potential location alternatives for injection wells, Effects of Remedial Action on natural reducing rind near the river, Others; Disturbed Soil Subgroup: Follow-up to 12/9 Meeting, Review materials developed since last meeting.
1/9/2012	Yolanda Garza, DTSC	President Ernest Jones, Ms. Weir, Mr. Glassco, Yavapai-Prescott Tribe	Karen Baker	Email of hard copy invitation/confirmation to attend 1/18/12 CWG and give a presentation at 10:00 AM. CWG agenda and Charter attached.
1/10/2012	Karen Baker, DTSC	TRC	Chris Guerre, Dawn Hubbs, Hualapai, Eric Chase, PG&E	Clarification that DTSC and PG&E are not to direct or request work of the TRC. Requests to have the TRC perform work needs to come directly from the Tribes.
1/10/2012	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup, Indian Tribe Reps., TRC		TWG meeting to held on 1/19/12 and current agenda topics.
1/10/2012	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		Comments on Fact Sheet.
1/10/2012	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Thank you for time and input on Fact Sheet. We are revising and taking your advise.
1/11/2012	Chris Guerre, DTSC	TWG, Indian Tribe Reps, TRC		1/19/12 TWG Agenda, directions, and live meeting setup

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/11/2012	Aaron Yue, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps., TRC		Stakeholder extention request for commenting on 30% design document granted until 1/27/12.
1/12/2012		CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg	Kim Liebhauser, BLM	CTF draft agenda for 1/17/12
1/13/2012	TWG, TRC, Indian Tribe Reps.			Handout 6 for the 1/19/12 TWG meeting "Groundwater Monitoring Network and Program Development"
1/15/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Angela Buchler, a Golden Shores community member requested Nora's contact info. Asked if Nora wants her phone number/e-mail address given or if Yolanda should get her phone number/e-mail for Nora to call her.
1/16/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Reminded of location and time of CTF meeting on 1/17/12 at CH2M Hill in Henderson, NV @ 10:00 AM
1/16/2012	Chris Guerre, DTSC	TWG, TRC and Well Decommissioning Sub-group		Materials to review for TWG Agenda Item 5 - Well Decommissioning Process
1/17/2012		Attendees: FMIT: Nora McDowell-Antone; Hualapai: Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza, Mona Bontty; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg, Lisa Micheletti-Cope; Keadjian: Ed Moser, Jason Keadjian		Clearinghouse Task Force Meeting
1/18/2012	Jose Marcos, DTSC	Courtney Coyle, FMIT, Nora McDowell-Antone, Karen Baker, Yolanda Garza, DTSC	Nancy Bothwell, DTSC	Re: CWG technical difficulties with the telephone. Informed Courtney that they will ask other attorneys in the meeting to move to another room if phone problems aren't resolved.
1/18/2012	DTSC	Attendees: Ron Escobar (Chemehuevi), Doug Bonamici, Ginger Scott (CRITs), Nora McDowell-Antone, Michael Sullivan, Leo Leonhart (H&A), Courtney Coyle (Legal - by phone) (FMIT), Dawn Hubbs, Bennett Jackson (Hualapai), Charlie Schlinger, Eric Ronsenblum, Margaret Eggers, Robert Prucha, Win Wright (TRC), DTSC, PG&E and their consultants CH2M Hill, Lucas Advocates & Arcadis, BLM, BOR, DOI, USEPA, USFWS, DFG, MWD, ADEQ		Consultative Work Group meeting. Phone system did not work properly and participants who joined via telephone were not able to hear most of the meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/19/2012	Chris Guerre, DTSC	Attendees: FMIT: Leo Leonhart, Nora McDowell-Antone, Steven McDonald; CRITs: Howard Magill (phone); Hualapai: Dawn Hubbs; TRC: Margaret Eggers, Charlie Schlinger, Bob Prucha, Eric Rosenblum, Win Wright; DTSC, PG&E and their consultants CH2M Hill, Arcadis, Lucas Advocates, Cox Castle; USDOI, USBOR, USBLM, MWD		Face-to-Face TWG meeting: Agenda items: Plans for IM3 Plant Shutdown During Remedy Implementation; Alternative Injection Well Location Update; January 9th Site Walk; Topock Well Decommissioning Process; Groundwater Monitoring Network & Program Development for the Remedy; Basis for Concentration of Carbon Source to Develop the Reducing Zone.
1/20/2012	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		DTSC director can meet with FMIT the afternoon of March 15, 2012. Asked that Nora let her know if this date will work for the tribe.
1/24/2012	Aaron Yue, DTSC	CWG, Geo/Hydro Technical Workgroup, Indian Tribe Reps.		Soliciting membership and availability for a March 2012 kick-off meeting of a new Toxicologic subgroup to discuss "tribal use" scenario for PG&E risk assessments
1/26/2012				TWG Webex meeting: Agenda items: Follow-up Discussion from December 14 Site Walk: Influence of TDS on in-situ remediation, Potential location alternatives for injection wells, Effects of Remedial Action on natural reducing rind near the river
1/31/2012	Karen Baker	President Ernest Jones,Sr., Yavapai-Prescott Tribe		Note of Appreciation - Topock Consultative Workgroup Meeting January 18, 2012 presentation
2/3/2012	Karen Baker	Nora McDowell-Antone, FMIT		Checking if she has feedback on whether 3/14 or 3/15 will work for FMIT to meet in Needles with Director Debbie Raphael.
2/3/2012	Aaron Yue, DTSC	Yvonne Meeks, PG&E, Christina Hong, CH2M Hill	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members	Stakeholder comments on 30% design.
2/10/2012	Aaron Yue, DTSC	Charles Wood, Thomas Pradetto, Ron Escobar (Chemehuevi), Sherry Cordova, Jill McCormick (Cocopah), Amanda Barrera, Eldred Enas, David Harper (CRITs), Timothy Williams, Linda Otero (FMIT), Mike Jackson, Sr., Chase Choate, Pauline Jose (Fort Yuma-Quechan), Louise Benson, Dawn Hubbs (Hualapai)		Mailed cd's containing January 2012 CWG emails and attachments.
2/10/2012	Aaron Yue, DTSC	Yvonne Meeks, PG&E, Christina Hong, CH2M Hill	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members	Additional comments from Hualapai Tribe regarding Appendix F
2/13/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg	Kim Liebhauser, BLM	Draft agenda for 2/21/12 CTF meeting
2/16/2012	Aaron Yue, DTSC	Christina Hong, CH2M Hill, Yvonne Meeks, PG&E	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members	DTSC comments on the draft Basis of Design Report/ Preliminary (30%) Design
2/17/2012	Aaron Yue, DTSC	Christina Hong, CH2M Hill, Yvonne Meeks, PG&E	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members	DTSC additional comments on 30% design

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/17/2012	Jeff Scott, USEPA	Timothy Williams, FMIT	Debbie Raphael, Pam Innis, Danielle Taber	Clarification of EPA's role addressing the cleanup of the PG&E Topock Compressor Station
2/21/2012		Attendees: FMIT: Nora McDowell-Antone; CRIT (via phone): Doug Bonamici, Rosanna Mitchell; PG&E: Sheryl Bilbrey, Yvonne Meeks,Christina Hong (CH2M Hill), Glen Caruso, Dave Gilbert, Lisa Cope (Arcadis), Lisa Kellogg (Arcadis), Stephanie Isaacson, Tom Wilson; DTSC: Karen Baker, Yolanda Garza, Mona Bontty; MWD: Eddie Rigdon; DOI: Pam Innis; Keadjian: Ed Moser		Clearinghouse Task Force Meeting at Henderson, Nevada
2/21/2012	Jose Marcos, DTSC	Topock Disturbed Soils Subgroup: FMIT: Leo Leonhart, Michael Sullivan; DTSC: Aaron Yue, Chris Guerre; DOI: Richard Newill, Pam Innis; Chris K Smith; ADEQ: Daniel R. Taber; PG&E: Curt Russell, Yvonne Meeks; CH2M Hill: Keith Sheets, Mike Cavaliere		Revised displaced material memo - draft for discussion.
2/21/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		During CTF meeting: having technical difficulties with phone system and using a personal cellphone temporarily. Send e-mails or text message if you would like to speak or reinforce a message.
2/24/2012	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Need to cancel Director's 3/15/12 meeting with FMIT due to Senate Confirmation Hearing.
2/27/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		4th Quarter 2011 Groundwater EIR Mitigation Measures Compliance Report
2/28/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg	Kim Liebhauser, BLM	February 21, 2012 CTF Notes and Updates
3/2/2012	Aaron Yue, DTSC	Yvonne Meeks, PG&E, Christina Hong, CH2M Hill	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members	Acceptance of Cultural Resource Consultant in accordance with CUL-1a-3a
3/5/2012	Leo Leonhart, FMIT	Jose Marcos, DTSC		FMIT's markup of the latest draft of "Management Protocol for Handling and Disposition of Displaced Site Material"
3/6/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		Response to two action items identified during the 1/18/12 CWG meeting by Tribal Reps.
3/6/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		Postponement of TWG meeting to discuss responses to comments on 30% Design due to large quantity of comments received.
3/12/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		CWG action item summary list.

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3/12/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Draft agenda for 3/20/12 CTF Meeting.
3/12/2012	Aaron Yue, DTSC	Charles Wood, Thomas Pradetto, Ron Escobar (Chemehuevi), Sherry Cordova, Jill McCormick (Cocopah), Amanda Barrera, Eldred Enas, David Harper (CRITs), Timothy Williams, Linda Otero (FMIT), Mike Jackson, Sr., Chase Choate, Pauline Jose (Fort Yuma-Quechan), Louise Benson, Dawn Hubbs (Hualapai)		Mailed cd's containing February 2012 CWG emails and attachments.
3/13/2012		Attendees:		RCRA Soil Workplan Part B AOCs meeting in Oakland, CA at CH2M Hill offices
3/14/2012	Mona Bontty, DTSC	Thomas Pradetto, Chemehuevi		Thank you for discussion regarding community survey and repository location. Provided community survey and requested he have a few tribal members complete and return by next Wednesday. Also asked if he could find tribal members interested in community interviews.
3/14/2012	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		December 2011 chromium gw results and graphs for wells MW-34-100, MW-44-115, MW-44-125 and MW-46-175
3/15/2012	Thomas Pradetto, Chemehuevi	Mona Bontty		Can schedule a meeting with the Executive Committee if she would like to talk to them. Just needs time and date.
3/15/2012	Mona Bontty, DTSC	Thomas Pradetto, Chemehuevi		Thank you - will be in touch after April to coordinate date & time. Need to know how much advance notice is needed.
3/19/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Draft Topock Remediation Review, First Quarter 2012 Newsletter for discussion and input.
3/20/2012		Attendees: FMIT: Nora McDowell-Antone; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; CRITs: Doug Bonamici (phone); DTSC: Karen Baker, Yolanda Garza, Mona Bontty; DOI: Pam Innis; PG&E: Dave Gilbert, Yvonne Meeks, Tom Wilson, Sheryl Bilbrey (phone), Glenn Caruso (phone), Stephanie Isaacson (phone); CH2M Hill: Christina Hong; MWD: Eddie Rigdon; ARCADIS: Lisa Michelleti-Cope; Keadjian: Ed Moser		CTF meeting in Henderson, NV at CH2M Hill office
3/23/2012	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Request for review and to submit an article for the Topock Remediation Review newsletter.

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3/23/2012	Doug Bonamici, CRIT	Yolanda Garza, DTSC		Will have CRIT portion for distribution by end of the day (Topock Remediation Review Newsletter).
3/23/2012	Yolanda Garza, DTSC	Dawn Hubbs, Loretta Jackson-Kelly, Hualapai		Request for submittal of an article for the Topock Remediation Review Newsletter.
3/23/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Request for submittal of an article for the Topock Remediation Review Newsletter.
3/23/2012	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Request for submittal of an article for the Topock Remediation Review Newsletter.
3/23/2012	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Looking forward to his article. Have sent requests to other tribal reps. as well.
3/26/2012	Michael Sullivan, FMIT	Aaron Yue, DTSC		Proposed agenda for 4/4 Tribal land use risk assessment meeting
3/26/2012	Leo Leonhart, FMIT	PG&E: Glen Caruso, Charlie Schlinger; FMIT: Courtney Coyle, Nora McDowell-Antone; CRIT: Doug Bonamici; Cocopah; Hualapai: Loretta Jackson-Kelly; Fort Yuma-Quechan: Chemehuevi: Ron Escobar; John Bathke; Margaret Eggers	DTSC: Jose Marcos; DOI: Pam Innis	Documentation of phone call with Jose Marcos following Topock monthly update call regarding status of the Disturbed Soils Subgroup.
3/27/2012	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Special request for tribal presentation at 4/18/12 CWG meeting.
3/27/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		CWG meeting calendar for review and comment.
3/27/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members; TRC		Project contact lists for reference and review and update as needed.
3/28/2012	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Request for proposed agenda for 4/5/12 FMIT/DTSC meeting and request for FMIT rep. to join DTSC staff at Grapevine Canyon on 4/4.
3/28/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Distribution of EPA letter on its role at Topock
3/29/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members; TRC		Agenda for TWG meeting on 4/19/12.
3/30/2012	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Another request for proposed agenda for 4/5/12 FMIT/DTSC meeting - required for our director to be able to attend.
4/2/2012	Jose Marcos, DTSC	Dawn Hubbs, Hualapai; Thomas Pradetto, Chemehuevi	Chris Guerre, Karen Baker, DTSC, Pam Innis, DOI	Follow-up to requests to be added to the disturbed soils subgroup and provided them with the most recent correspondence on this issue.
4/2/2012	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Follow up on note asking for CRIT involvement at the April CWG.
4/2/2012	Steve McDonald, FMIT	Karen Baker, DTSC	Sarah Morrison, Nancy Bothwell	Agenda for FMIT/DTSC meeting on 4/5/12 and apology for late submittal.

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4/2/2012	Aaron Yue, DTSC	Leo Leonhart, Michael Sullivan, Nora McDowell-Antone, FMIT	Carrie Marr, USFWS, Chris Guere, Jose Marcos, Karen Baker, Shukla Roy-Semmen, Yolanda Garza, DTSC, Dawn Hubbs, Hualapai, Pam Innis, DOI	Request for advanced copies of presentations for 4/4 Tribal Land Use Risk Assessment meeting.
4/2/2012	Linda Otero, FMIT	Karen Baker, DTSC	Nora McDowell, FMIT	Proposed agenda for 4/5/12 meeting between FMIT/DTSC.
4/2/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		3/20/12 draft CTF meeting notes and calendar for review and comment.
4/3/2012	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Chemehuevi tribe may be giving a presentation at the April 2012 CWG meeting, so may not need to follow-up on request for CRITs presentation.
4/3/2012	Aaron Yue, DTSC	Charles Wood, Thomas Pradetto, Ron Escobar (Chemehuevi), Sherry Cordova, Jill McCormick (Cocopah), Amanda Barrera, Eldred Enas, David Harper (CRITs), Timothy Williams, Linda Otero (FMIT), Mike Jackson, Sr., Chase Choate, Pauline Jose (Fort Yuma-Quechan), Louise Benson, Dawn Hubbs (Hualapai)		Mailed cd's containing March 2012 CWG emails and attachments.
4/3/2012	DTSC			Agencies and PG&E Site Walk, Topock - Needles, CA
4/4/2012	DTSC	Attendees: FMIT: Felton Bricker, Sr., Linda Otero, Nora McDowell-Antone, Delbert Holmes, Michael Sullivan, Leo Leonhart; Chemehuevi Tribe: Ron Escobar; Hualapai Tribes: Dawn Hubbs; TRC: Margaret Eggers, Eric Rosenblum; DTSC: Shukla Roy-Semmen, Aaron Yue, Chris Guerre, Jose Marcos, Yolanda Garza; DOI: Pam Innis, Dennis Smith, USFWS: Carrie Marr		Sub-Group Meeting on Tribal Land Use Risk Assessment
4/4/2012	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		4th Quarter 2011 and Annual IM Performance Monitoring and Groundwater Monitoring Report
4/4-5/2012	Karen Baker, DTSC	Attendees: DTSC: Debbie Raphael, Odette Madriago, Stewart Black, Nancy Bothwell, Reed Sato, Karen Baker FMIT: Nora McDowell-Antone; Linda Otero		April 4 visit to Grapevine Canyon near Spirit Mountain with represenatives of the Fort Mojave Indian Tribe (Councilwoman Linda Otero, Nora McDowell-Antone, Elder Felton Bricker). Also in attendence consultant to FMIT Leo Leohart and Technical Review Committee members Eric Rosenblum and Margaret Eggers. April 5 visit to other areas of the landscape lead by the FMIT.

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4/5/2012		Attendees: DTSC: Debbie Raphael, Odette Madriago, Stewart Black, Nancy Bothwell, Reed Sato, Karen Baker FMIT: Chairman Timothy Williams, Nora McDowell-Antone; Linda Otero, Steve McDonald, Courtney Coyle, David Wolff, Leo Leonhart		DTSC/FMIT Meeting. Discussion topics included Project History; Government-to-Government Relationship: Past, Present & Future; and Leadership-to-Leadership Discussion.
4/5/2012	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Requested dates of next CTF and CWG meeting.
4/5/2012	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Replied that next CWG is 4/18 and next CTF if 4/17.
4/6/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		Delay of issuance of 30% design response to comments package.
4/6/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Topock Remediation Review for comment by Tuesday, April 10th.
4/10/2012	Doug Bonamici, CRIT	Yolanda Garza, DTSC		Request for confirmation that no presentation from CRIT at April CWG meeting.
4/10/2012	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Didn't put CRITs on agenda. Would like Ginger to make a presentation at July CWG.
4/13/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg	Kim Liebhauser, BLM	CTF meeting Agenda and attachments
4/13/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members, TRC Members		TWG agenda for 4/19/12
4/13/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members, TRC Members		Responses to comments on the 30% Design.
4/13/2012	Karen Baker, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Shared Los Angeles Times article regarding Debbie Raphael's Confirmation

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/16/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Revised and draft final newsletter for the first quarter of the 2012 Tomock Remediation Review.
4/17/2012	DTSC	Attendees: FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici, Howard McGill (by phone), Ginger Scott (by phone); Hualapai: Dawn Hubbs; Chemehuevi: Steven Escobar, Tom Pradetto; DTSC, PG&E & their consultants CH2M Hill, Arcadis; MWD, DOI		Clearinghouse Task Force Meeting in Henderson, Nevada
4/18/2012	Yolanda Garza, DTSC	Howard Magill, CRITs		Sent handouts for CWG meeting and requested information to be added to contact list.
4/18/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		Forwarded RTCs short for the tribes that was sent by Christina Hong, CH2M Hill.
4/18/2012	DTSC	Attendees: CRITS: Doug Bonamici, Howard McGill; FMIT: Courtney Coyle (by phone), Leo Leonhart; Chemehuevi: Ron Escobar, Sierra Shaw, Tito Smith; Hualapai: Dawn Hubbs; TRC: Margaret Eggers, Christine Herndon, Robert Prucha, Eric Rosenblum, Charlie Schlinger, Win Wright; DTSC, USDOI, USEPA, PG&E & their consultants CH2M Hill, Arcadis, Keadjian Assoc.; CRB, MWD, USFWS, BLM, BOR, SWRCB		CWG Meeting in Henderson, Nevada
4/19/2012	DTSC	Attendees: FMIT: Leo Leonhart, Steven McDonald (phone); Chemehuevi: Steven Escobar, Tom Pradetto; CRITS: Howard Magill (phone); Hualapai: Dawn Hubbs; TRC: Bob Prucha, Margaret Eggers, Charlie Schlinger, Win Wright, Eric Rosenblum; DTSC, PG&E and their consultants CH2M Hill & Arcadis; USDOI, USBLM, USBOR, USFWS, MWD		Face-to-Face TWG meeting in Henderson, Nevada: Agenda items: Open forum to discuss responses to comments: Specific Comments requested by Stakeholders/Tribes/ Agencies/TRC for discussion; Possible Topics - Model Update (Responses to Appendix B) - Responses to TRC Comments - changes to design based on Agencies direction.
4/24/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Request for agenda items for 5/15 CTF meeting; updates to the CTF and CWG calendars; new sub-committee members and roles.
4/30/2012	Aaron Yue, DTSC	Daryl Magnuson, USFWS, Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC Members		Re: Review of fresh water tech memo and 30% Response to comments. Request to list comment numbers from the RTC they want discussed and provide any thoughts on tech memo by May 11th.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/1/2012	Mona Bontty, DTSC	Jill McCormick, Cocopah, Doug Bonamici, CRIT, Nora McDowell-Antone, FMIT, Dawn Hubbs, Hualapai, Thomas Pradetto, Chemehuevi, Ron Escobar, Chemehuevi		Tribal community interview questions for review and comment.
5/2/2012	Nora McDowell-Antone, FMIT	Mona Bontty, DTSC		When was last DTSC Topock Community Outreach plan and is it on the website? How will info. be used by DTSC? Request for copy of survey sending to other stakeholders. Reminder that Tribal Sovereign Governments are equal to the State and usually don't participate in such surveys.
5/2/2012	Aaron Yue, DTSC	Daryl Magnuson, USFWS, Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC Members		First Quarter 2012 EIR compliance report.
5/2/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Draft agenda and action items for 5/15/12 CTF meeting.
5/3/2012	Mona Bontty, DTSC	Nora McDowell-Antone, FMIT		Reply to Nora's questions: last outreach plan was 2003 which Nora was interviewed for; Last PP Plan is on website; Attached questions for general community members and stakeholders.
5/3/2012	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members		Per CWG action item, sent "Acceptance of Groundwater Background Study Step 3&4: Revised Final Report of Results for PG&E" dated 11/16/09.
5/4/2012	Aaron Yue, DTSC	Charles Wood, Thomas Pradetto, Ron Escobar (Chemehuevi), Sherry Cordova, Jill McCormick (Cocopah), Amanda Barrera, Eldred Enas, David Harper (CRITs), Timothy Williams, Linda Otero (FMIT), Mike Jackson, Sr., Chase Choate, Pauline Jose (Fort Yuma-Quechan), Louise Benson, Dawn Hubbs (Hualapai)		Mailed cd's containing April 2012 CWG emails and attachments.
5/7/2012	Win Wright, TRC	Jose Marcos, DTSC		TRC approved to work on Displaced Soils Workgroup. Request for status of the group and draft report for review and deadline.
5/8/2012	Karen Baker, DTSC	CTF Members: Cocopah: Jill McCormick; CRIT: Lisa Swick, Doug Bonamici; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Dave Gilbert, Yvonne Meeks, Glenn Caruso, Tom Wilson, Stephanie Isaacson, Sheryl Bilbrey, CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg		Draft letter to the TLP and proposed TLP agenda.
5/10/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members, TRC Members		Reminder that would like to compile a list of topics and comments for next week's TWG.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/14/2012	Mike Cavaliere, CH2M Hill	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker		Revised draft of the Management Protocol for Handling and Disposition of Displaced Site Material for review.
5/14/2012	Mona Bontty, DTSC	Dawn Hubbs, Hualapai		Request for community interviews with 5-6 Hualapai tribe members on June 7 or June 8.
5/14/2012	Jose Marcos, DTSC	Win Wright, TRC		Replied to Win's 5/7/12 email. Revised Disturbed Soils document incorporated FMIT and DOI comments will be emailed to the sub-group when received from PG&E, possibly next week. Webex meeting will likely follow have the sub-group has had time to review it. Awaiting draft Soil Work Plan RTCs table from PG&E.
5/14/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members; TRC		5/16/12 TWG agenda
5/15/2012	Steve McDonald, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Timothy Williams, Linda Otero, Nora McDowell-Antone, Courtney Coyle; BLM: Kim Liebhauser, George Shannon; PG&E: Michael Zischke, Juan Jayo	FMIT Comments on the 11/18/11 document titled, "Draft Basis of Design Report/ Preliminary 30% Desgin for the Final Groundwater Remedy".
5/15/2012	Jose Marcos, DTSC	Dawn Hubbs, Win Wright, Hualapai		Draft Disturbed Soils document. Will likely ask for comments and schedule a Webex soon.
5/15/2012	Jose Marcos, DTSC	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker	TRC	Request to review and provide comments by 5/30/12. Webex meeting proposed for 6/7/12 @ 2:00 PM to discuss any remaining comments.
5/15/2012	Jose Marcos, DTSC	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker	TRC	Webex meeting proposed for 6/8 instead of 6/7 due to schedule conflics.
5/15/2012	Win Wright, TRC	Jose Marcos, DTSC		Asked if a TWG Soils Webex is on 5/29/12.
5/15/2012	Jose Marcos, DTSC	Win Wright, TRC		5/29 is tentative date for TWG Soils Webex. Will let everyone know when we come up with a definite date.
5/15/2012	Aaron Yue, DTSC	Christina Hong, CH2M Hill, Yvonne Meeks, PG&E	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members	DTSC's comments on the April 27, 2012 Freshwater Source Evaluation Technical Memorandum.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/15/2012	Karen Baker, DTSC	Attendees: FMIT: Nora McDowell-Antone (by phone); Hualapai: Dawn Hubbs; CRIT: Doug Bonamici, Howaqrd Magill (by phone), Ginger Scott (by phone); Chemehuevi: Steven Escobar, Tom Pradetto; CH2M Hill: Christina Hong; DTSC: Karen Baker, Yolanda Garza, Mona Bontty; PG&E: Sheryl Bilbrey, Glenn Caruso, Yvonne Meeks (by phone), Stephanie Isaacson (by phone); MWD: Eddie Rigdon; Arcadis: Lisa Kellogg, Lisa Cope; Keadjiian: Ed Moser		Clearinghouse Task Force meeting
5/16/2012	Chris Guerre, DTSC	Webex/Telephone Access		TWG conference call. Agenda items: Discuss Tribes/TRC comments on 30% design RTCs and Fresh Water Source Evaluation Technical Memorandum 1) HNWR-1 well as a freshwater source – water rights, status of negotiation with the Refuge/ USFWS, contingency planning (drought, water quality changes/ potential for future water quality impacts, water supply interference, etc.), monitoring, compilation of info on nearby and upstream activities; 2) Water treatment facilities for alternative freshwater sources – locations, sizes, operational particulars; 3) Infrastructure for remedy produced water management; 4) ER-TCS groundwater investigation – direction to go deeper at Site K; 5) Model calibration taken into account of past history of PGE-1 and 2; Discuss select DOI's comments on Fresh Water Source Evaluation Technical Memorandum.
5/16/2012	Thomas Pradetto, Chemehuevi	Mona Bontty, DTSC		Provided Doyle Wilson's contact info. and the ferry boat schedule.
5/16/2012	Mona Bontty, DTSC	Thomas Pradetto, Chemehuevi	Aaron Yue	Will discuss time for interview with Aaron Yue and get back to you.
5/16/2012	Rosanna Mitchell, CRIT Museum	Yolanda Garza, DTSC		Requested changes to contact lists for CRITs.
5/16/2012	Yolanda Garza, DTSC	Rosanna Mitchell, CRIT Museum		Requested clarification on changes to contact lists.
5/16/2012	Rosanna Mitchell, CRIT Museum	Yolanda Garza, DTSC		Gave clarification on contact list changes for CRIT.
5/16/2012	Christopher Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members; TRC		Results for February First Quarter 2012 Sampling
5/17/2012	Christopher Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members; TRC		1st Quarter 2012 IM Performance Monitoring Report and GW Monitoring Report
5/21/2012	Thomas Pradetto, Chemehuevi	Mona Bontty, DTSC		Logistics and interviewees for tribal interviews.
5/21/2012	Mona Bontty, DTSC	Thomas Pradetto, Chemehuevi		Shared names of interviewers and their itinerary.
5/22/2012	Peter Bungart, Hualapai	Yolanda Garza, DTSC		Follow-up regarding tribal interviews with 6 Hualapai elders.
5/22/2012	Peter Bungart, Hualapai	Mona Bontty, DTSC		Follow-up regarding tribal interviews with 6 Hualapai elders.

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5/22/2012	Jose Marcos, DTSC	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker	TRC	DTSC's comments on the Displaced Material document to be discussed on 6/8/12.
5/22/2012	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members; TRC		Mark your calendars for telephone/webex meeting to discuss RTC's on Draft Soil RFI/RI Workplan
5/24/2012	Karen Baker, DTSC	CTF Members: Cocopah: Jill McCormick; Chemehuevi: Steven Escobar, Tom Pradetto; CRIT: Doug Bonamici, Howard Magill, Wilene Fisher-Holt; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza, Mona Bontty; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Sheryl Bilbrey, Glenn Caruso, Stephanie Isaacson, Yvonne Meeks; Arcadis: Lisa Kellogg, Lisa Micheletti-Cope; Keadjiian: Ed Moser; BLM: Kim Liebhauser		Draft meeting notes and action items from the 5/15 CTF for review and comment.
5/25/2012	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC		Request for CWG Topock calendar be sent to her.
5/25/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Sent latest CWG Topock calendar and asked that she review the summit notes.
5/29/2012	Pam Innis, DOI	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker	TRC	DOI comments on the revised Displaced Material document for consideration.
5/29/2012	Rosanna Mitchell, CRIT Museum	Yolanda Garza, DTSC		Request to add new Museum Director to contact lists.
5/29/2012	Mona Bontty, DTSC	Nora McDowell-Antone, FMIT		Sent Topock Tribal Community Interview questions and request to let her know if FMIT want to participate.
5/29/2012	Mona Bontty, DTSC	Peter Bungart, Hualapai		Asked if June 20th meeting can be arranged. Sent interview questions.
5/29/2012	Edward "Tito" Smith, Chemehuevi	Mona Bontty, DTSC		Gave his new email address.
5/29/2012	Mona Bontty, DTSC	Edward "Tito" Smith, Chemehuevi		Thank you for updated email address and for meeting with them to conduct the Tribal community interviews.
5/30/2012	Yolanda Garza, DTSC	Rosanna Mitchell, CRIT Museum		Requested confirmation that the contact list changes are correct.
5/30/2012	Rosanna Mitchell, CRIT Museum	Yolanda Garza, DTSC		Confirmed that the contact list changes are correct.
5/30/2012	Jose Marcos, DTSC	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker	TRC	Hualapai Tribe requested extension to comment on the displaced material until Monday, June 4 - extension applies to all subgroup members. Webex meeting to discuss comments moved to Monday, 6/11.

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5/30/2012	Win Wright, TRC	Jose Marcos, DTSC		Gave Jose dates available for phone/webex to discuss RTC's on displaced material document.
5/31/2012	Jose Marcos, DTSC	Leo Leonhart, FMIT		Afternoon of 6/15 not looking good for some, may have to loock at 6/14.
5/31/2012	Leo Leonhart, FMIT	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker	TRC	FMIT comments on displaced material document.
6/1/2012	Jose Marcos, DTSC	Win Wright, TRC		Meeting date will be 6/15 after RTC Webex.
6/1/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members; TRC		Revised contact lists in Access sorted by Organization name.
6/1/2012	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members	TRC	Draft Soil RFI/RI Workplan RTC Table and Webex meeting on 6/15/12
6/1/2012	Jose Marcos, DTSC	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker		Change of Webex meeting to discuss comments on the diplaced material document from 6/11 to 6/15.
6/1/2012	Yolanda Garza, DTSC	FMIT: Nora McDowell-Antone; Cocopah: Jill McCormick; CRITs: Howard Magill, Doug Bonamici		Request for input and advice on Training protocol and candidates.
6/4/2012	Aaron Yue, DTSC	Tito Smith, Thomas Pradetto, Ron Escobar (Chemehuevi), Sherry Cordova, Jill McCormick (Cocopah), Amanda Barrera, Eldred Enas, David Harper (CRITs), Timothy Williams, Linda Otero (FMIT), Mike Jackson, Sr., Chase Choate, Pauline Jose (Fort Yuma-Quechan), Louise Benson, Dawn Hubbs (Hualapai)		Mailed cd's containing May 2012 CWG emails and attachments.
6/4/2012	Eric Rosenblum	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker	TRC	TRC Comments on the 5/14/12 draft Displaced Materials Memo
6/5/2012	Jose Marcos, DTSC	Eric Rosenblum		Thank you for TRC comments. Will forward to subgroup for discussion on the 15th.
6/5/2012	Jose Marcos, DTSC	Disturbed Soils Subgroup Members: ADEQ: Danielle Taber; CH2M Hill: Keith Sheets, Mike Cavaliere; DOI: Rick Newill, Pam Innis; FMIT: Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Thomas Pradetto; PG&E: Curt Russell, Yvonne Meeks; DTSC: Jose Marcos, Aaron Yue, Chris Guerre, Karen Baker	TRC	Request for extension & meeting reschedule RE: Topock Displaced Soils Subgroup: Revised Displaced Material Document - Draft, For Discussion

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6/6/2012	Yolanda Garza, DTSC	FMIT: Nora McDowell-Antone; Hualapai: Dawn Hubbs		Confirmation, based on their recommendation, DTSC invited the two facilitators at the next CTF to get our TLP agenda together and coordination for Tribal involvement.
6/7/2012	Yolanda Garza, DTSC	CTF Members: Cocopah: Jill McCormick; Chemehuevi: Steven Escobar, Tom Pradetto; CRIT: Doug Bonamici, Howard Magill, Wilene Fisher-Holt; FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza, Mona Bontty; DOI: Pam Innis; MWD: Bart Koch, Eddie Rigdon; PG&E: Sheryl Bilbrey, Glenn Caruso, Stephanie Isaacson, Yvonne Meeks; Arcadis: Lisa Kellogg, Lisa Micheletti-Cope; Keadjiian: Ed Moser; BLM: Kim Liebhauser		Agenda for 6/19/12 CTF, action item list, CTF calendar.
6/7/2012	Yolanda Garza, DTSC	Wilene Fisher-Holt, CRIT		Special outreach to join the CTF meeting.
6/8/2012	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC		Email received from FMIT Nora regarding a letter from the Fort Mojave Indian Tribe regarding the Topock Modeling Sub-Committee and the designing of storyboards in support of a site model. The Tribes have had an opportunity to meet and discuss many items regarding the Topock project and this particular discussion raised some concerns from the tribal perspective, so FMIT felt it necessary to express our position and hope to have some resolution in the next discussion of the CTF. We appreciate the efforts to date that PGE/DTSC has taken to move this modeling concept to fruition as we have been talking about it for a long time but at the same time didn't want to lose the tribes intent of its original request.
6/11/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, CTF Members; TRC		Shared revised contact lists since the 6/1/12 revision and requested review for errors or omissions.
6/11/2012	Mona Bontty, DTSC	Doug Bonamici, CRITs		Provided community interview questions and asked if any day 6/26-6/28 will work for CRIT interviews.
6/11/2012	Mona Bontty, DTSC	Peter Bungart, Hualapai		Left voice mail message to confirm Tribal community interviews on 6/20 with the Hualapai tribe.
6/11/2012	Leo Leonhart, FMIT	Jose Marcos, DTSC		Requested call-in information for Topock call regarding displaced soil.
6/11/2012	Jose Marcos, DTSC	Leo Leonhart, FMIT		Provided call in information that had previously been sent out.
6/12/2012	Dawn Hubbs, Hualapai	Karen Baker, DTSC & Sheryl Bilbrey, PG&E		Provided Hualapai's Tribal Historic Preservation Officer letter of support for the development of a physical model for Topock.
6/12/2012	Karen Baker, DTSC	Dawn Hubbs, Hualapai		Thank you for providing letter of support for the development of a physical model for Topock. Responses will be discussed at the 6/19/12 CTF meeting.
6/12/2012	Peter Bungart, Hualapai	Mona Bontty, DTSC		Working on getting interviews arranged. Requested additional questions be directed to Dawn Hubbs since he will be on travel.
6/12/2012	Mona Montty, DTSC	Peter Bungart, Hualapai		Inquired when Dawn Hubbs will return to the office.
6/12/2012	Peter Bungart, Hualapai	Mona Bontty, DTSC		Informed Mona that Dawn Hubbs is back in the office.

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6/12/2012	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		Email and letter received from Dawn Hubbs of the Hualapai regarding a letter from the Hualapai regarding the Topock Modeling Sub-Committee and the designing of storyboards in support of a site model. The Tribes have had an opportunity to meet and discuss many items regarding the Topock project and this particular discussion raised some concerns from the tribal perspective, so Hualapai felt it necessary to express our position and hope to have some resolution in the next discussion of the CTF. We appreciate the efforts to date that PGE/DTSC has taken to move this modeling concept to fruition as we have been talking about it for a long time but at the same time didn't want to lose the tribes intent of its original request.
6/12/2012	Doug Bonamici, CRIT	Karen Baker, DTSC & Sheryl Bilbrey, PG&E		CRITs letter in support of the physical model in addition to the digital model now in development.
6/12/2012	Eldred Enas, CRITs	Karen Baker, DTSC; Sheryl Bilbrey, PG&E		Request to ask that modeling include a physical scale-model or models of the project site.
6/12/2012	Karen Baker, DTSC	Doug Bonamici, CRITs		Thank you for providing letter of support for the development of a physical model for Topock. Responses will be discussed at the 6/19/12 CTF meeting.
6/12/2012	Thomas Pradetto, Chemehuevi	Karen Baker, DTSC		Provided Chemehuevi letter concerning the physical model and informed her that Ron will represent the tribe at the meeting.
6/12/2012	Karen Baker, DTSC	Thomas Pradetto, Chemehuevi		Thanked Thomas for the letter and hopes to see him at the next TLP.
6/12/2012	Jill McCormick, Cocopah	Karen Baker, DTSC & Sheryl Bilbrey, PG&E	CTF Members	Provided Cocopah letter for the site model outline/storyboard
6/12/2012	Nora McDowell-Antone, FMIT	Karen Baker, DTSC & Sheryl Bilbrey, PG&E		Provided FMIT letter for the site model outline/storyboard
6/12/2012	Karen Baker, DTSC	Nora McDowell-Antone, FMIT & Jill McCormick, Cocopah	CTF Members	Acknowledged receipt of their letters for the site model outline/storyboard to be discussed at the 6/19/12 CTF meeting.
6/12/2012	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members	CTF Members	6/15/12 TWG agenda
6/12/2012	Aaron Yue, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC		Notified everyone of error in revised contact list sent out on Robert Prucha's email address.
6/12/2012	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Email received from Jill McCormick of Cocopah Tribe regarding a letter from the Fort Mojave Indian Tribe regarding the Topock Modeling Sub-Committee and the designing of storyboards in support of a site model. The Tribes have had an opportunity to meet and discuss many items regarding the Topock project and this particular discussion raised some concerns from the tribal perspective, so Cocopah felt it necessary to express our position and hope to have some resolution in the next discussion of the CTF. We appreciate the efforts to date that PGE/DTSC has taken to move this modeling concept to fruition as we have been talking about it for a long time but at the same time didn't want to lose the tribes intent of its original request.
6/12/2012	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Special outreach communication to Jill McCormick inviting her to the CTF meeting. Additional electronic discussion on new staff member from Cocopah and I provided myself as a resource for new staff member for project information.

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6/12/2012	Doug Bonamici, CRIT	Yolanda Garza, DTSC		Email received from Doug Bonamici of the CRIT Tribes regarding a letter from the Fort Mojave Indian Tribe regarding the Topock Modeling Sub-Committee and the designing of storyboards in support of a site model. The Tribes have had an opportunity to meet and discuss many items regarding the Topock project and this particular discussion raised some concerns from the tribal perspective, so CRIT felt it necessary to express our position and hope to have some resolution in the next discussion of the CTF. We appreciate the efforts to date that PGE/DTSC has taken to move this modeling concept to fruition as we have been talking about it for a long time but at the same time didn't want to lose the tribes intent of its original request.
6/12/2012	Yolanda Garza	Nora McDowell-Antone, FMIT		Email to Nora scheduling additional meeting to advise on coordination of Training Orientation for the project.
6/13/2012	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC		Received email from Nora regarding meeting scheduling for coordination of Training program.
6/13/2012	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC		Notification of revision to the agenda of the 6/15/12 TWG soil Webex Meeting to focus on tribal comments to the Soil Work Plan.
6/13/2012	Wilene Fisher-Holt, CRIT	Jose Marcos, DTSC		Request for update and overview of TWG goals and objectives.
6/13/2012	Jose Marcos, DTSC	Wilene Fisher-Holt, CRIT		Provided Wilene with update and overview of TWG goals and objectives.
6/13/2012	Michael Sullivan, FMIT	Jose Marcos, DTSC		Provided comment numbers that the FMIT would like to discuss at the 6/15/12 TWG Soil Webex meeting.
6/13/2012	Yolanda Garza, DTSC	Wilene Fisher-Holt, CRIT		Email discussions and information provided on information and background on stakeholder groups for active involvement such as TWG, CWG and other opportunities for input.
6/15/2012	Yolanda Garza, DTSC	CTF Members		6/19/12 meeting agenda, May meeting notes, CTF calendar, and CWG calendar.
6/15/2012	Jose Marcos, DTSC	Webex/Telephone Access		TWG conference call to PG&E Topock Draft Soil RFI/RI Workplan RTC Table
6/19/2012	Karen Baker	Attendees: DTSC: Karen Baker, Yolanda Garza, Mona Bontty; PG&E: Glenn Caruso, Stephanie Isaacson, Yvonne Meeks (by phone); CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg, Lisa Micheletti-Cope; Keadjian: Ed Moser; MWD: Eddie Rigdon; Hualapai: Dawn Hubbs; FMIT: Nora McDowell-Antone; CRIT: Ginger Scott, Wilene Fisher-Holt; ECR: JR Bluehouse		Clearinghouse Task Force meeting
6/20/2012	Jose Marcos, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC, Agenda Only		Cancellation of 7/18 & 7/19 CWG & TWG meetings.
6/21/2012	Aaron Yue, DTSC	Doug Bonamici & Wilene Fisher-Holt CRITs	Ameilia Flores, Cindy Homer (CRIT); DTSC	Cancellation of scheduled CRIT interviews due to requirement to apply for a permit with CRITs Ethics Review Board.
6/22/2012	Yolanda Garza, DTSC	Attendees: FMIT, CRIT and Cocopah		Meeting with tribal and other members on the Topock Subcommittee for Orientation and other training.
6/26/2012	Yolanda Garza, DTSC	CTF Members		Draft notes, action item table and CWG/CTF calendars from 6/19 CTF.
6/26/2012	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	Karen Baker, Yolanda Garza, DTSC	Follow-up on request to be added to CWG contact list and asked if FMIT has committed to a position on the CWG?

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6/26/2012	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC		Confirmed FMIT's membership on the CWG.
6/26/2012	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT		Thanked Nora for clarification.
6/28/2012	Mona Bontty, DTSC	Debi Livesay, Torres-Martinez		Thank you for willingness to participate in Community Outreach Plan interview and provided interview questions.
6/29/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Communication regarding colleague.
7/3/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Communication regarding colleague.
7/3/2012	Deborah Raphael, DTSC	TLP Tribes: FMIT, Cocopah, Fort Yuma-Quechan, Torres-Martinez Desert Cahuilla, Hualapai, Yavapai-Prescott Tribe; CRITs, Chemehuevi, Twenty-Nine Palms, Havasupai, BLM, USEPA, MWD, USFWS, CRB, PG&E, ADEQ, BOR, BLM, CRWQCB, DOI		Letter re: Concluding the evaulation to restore integrity and intent of the TLP w/ two enclosures: 1) TLP Response Summary, 2) TLP Mission Statement
7/5/2012	Aaron Yue, DTSC	Tito Smith, Thomas Pradetto, Ron Escobar (Chemehuevi), Sherry Cordova, Jill McCormick (Cocopah), Amanda Barrera, Eldred Enas, David Harper (CRITs), Timothy Williams, Linda Otero (FMIT), Mike Jackson, Sr., Chase Choate, Pauline Jose (Fort Yuma-Quechan), Louise Benson, Dawn Hubbs (Hualapai)		Mailed cd's containing June 2012 CWG emails and attachments.
7/9/2012	Mona Bontty, DTSC	Debi Livesay, Torres-Martinez	Jacqueline Martinez, DTSC	Checked availability for Community Outreach Plan interview. Interview on 7/10/12 @ 3:00 PM was confirmed.
7/9/2012	Mona Bontty, DTSC	Anthony Fletcher, Steven Escobar,Matt Levias, Glenn Lodge, Tom Pradetto, Charles Wood, Rose Adams, Joe Cavelo, Pat Colloran, George Connell, Cecilia Edrich, Anthony Fletcher, Charles Freteluco, Kevin Kellie, Robert Kimball, Roman & Jane Kujacznski, Chrissy Mazzeo, Joseph P. Mellette, Eloise Roche, Charles Sanders, Phyliss & Fred Schaupp, Jim Vann, Eva White, David G. Brownlee, Mr. Cassens, Pat Colloran, Diane Eckles, Julie Hoskin, Carrie Marr, Don McWhirter, Patty Mead, Edward Paget, Rachel Patterson, Danielle Taber, Cathy Wolff-White		Thank you for participation in the Community Outreach Plan interview.
7/10/2012	Mona Bontty, DTSC	Debi Livesay, Torres-Martinez		Thank you for talking today.
7/10/2012	Chris Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC		April/May 2012 Groundwater monitoring results
7/12/2012	Mona Bontty, DTSC	Roland Ferrer, Torres-Martinez	Jacqueline Martinez, DTSC	Thank you for Community Outreach Plan interview and request to review and update contact information for the tribe. Attached June 2010 and January 2012 Fact Sheets
7/17/2012	Yolanda Garza, DTSC	Attendees: FMIT: Nora McDowell-Antone; Hualapai Indian Tribe: Dawn Hubbs; CIT: Steven Escobar, Thomas Pradetto; CRITs: Doug Bonamici (via telephone); ECR: Caelan McGee, DTSC, PG&E,CH2M Hill, Arcadis, Keadjian, USDOI, MWD,		Convened a CTF meeting and communication and interaction.
7/19/2012	Yolanda Garza, DTSC	FMIT, Cocopah, Hualapai, and CRITs.		Communication on Orientation Committee and collaboration on Orientation Training Program elements.

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7/20/2012	Leo Leonhart, FMIT	Disturbed Soils Subgroup		Request to change date of meeting on 8/3.
7/23/2012	Jose Marcos, DTSC	Leo Leonhart, FMIT		Asked for specific date the week of 8/6 he's available that can be circulated to the group.
7/23/2012	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Timothy Williams, Leo Leonhart, Michael Sullivan, Counrtney Coyle; Hualapai: Loretta Jackson, Dawn Hubbs; Cocopah: Jill McCormick; CRITs: Doug Bonamici, Wilene Fisher-Holt; Yavapai-Prescott: Greg Glassco; Quechan: John Bathke; Chemehuevi: Thomas Pradetto, Ron Escobar; TRC	FMIT letter regarding issues with RTCs on the Soils Work Plan Process and request for clarification regarding land jurisdiction.
7/23/2012	Jose Marcos, DTSC	Topock Disturbed Soils Subgroup: FMIT: Leo Leonhart, Michael Sullivan; Hualapai: Dawn Hubbs; DTSC, DOI, BLM, ADEQ, PG&E, & CH2M Hill		Checking availability for a call/webex meeting on 8/2 @ 2:00 PM.
7/23/2012	Jose Marcos, DTSC	Topock Disturbed Soils Subgroup: FMIT: Leo Leonhart, Michael Sullivan; Hualapai: Dawn Hubbs; DTSC, DOI, BLM, ADEQ, PG&E, & CH2M Hill		Leo Leonhart not available on 8/2. Checking availability for a call/webex meeting on 8/6 @ 10:00 AM.
7/24/2012	Jose Marcos, DTSC	Topock Disturbed Soils Subgroup: FMIT: Leo Leonhart, Michael Sullivan; Hualapai: Dawn Hubbs; DTSC, DOI, BLM, ADEQ, PG&E, & CH2M Hill		Redline for discussion: Displaced material memo for discussion at 8/6 call/webex meeting.
7/31/2012	Yolanda Garza, DTSC	FMIT, Cocopah, Hualapai, and CRITs.		Communication on Orientation Committee and collaboration on Orientation Training Program elements.
8/1/2012	Yolanda Garza, DTSC	FMIT, Cocopah, Hualapai, and CRITs.		Communication on Orientation Committee and collaboration on Orientation Training Program elements.
8/3/2012	Aaron Yue, DTSC	Steven McDonald, FMIT	FMIT: Linda Otero, Timothy Williams, Nora McDowell-Antone; DTSC: Karen Baker, Nancy Bothwell; PG&E: Juan Jayo, Yvonne Meeks	DTSC's response to FMIT's letter dated 5/15/12 regarding 30% Groundwater Remedy Design RTC Comments.
8/3/2012	Yolanda Garza, DTSC	FMIT, Cocopah, Hualapai, and CRITs.		Communication on Orientation Committee and collaboration on Orientation Training Program elements.
8/9/2012	Yvonne Meeks, PG&E	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC		60% design package will be delayed by approximately three weeks so information regarding treatment of freshwater supply can be included in the document.
8/9/2012	Leo Leonhart, FMIT	Yvonne Meeks, PG&E	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC	Reply to Yvonne's email on 8/9/12 regarding delay to 60% design package asking if the date for the release of the Soils Work Plan will change.
8/9/2012	Margaret Eggers (TRC)	Yvonne Meeks, PG&E		Margaret asked if the soils work plan will be delayed due to the delay of the 60% design package. Yvonne responded that it has not changed.
8/13/2012	Christopher Guerre, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC		Shared letter regarding arsenic in the Arizona freshwater supply from DTSC to the RWQCB.

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8/13/2012	Jose Marcos, DTSC	Leo Leonhart, FMIT		Shared Yvonne's response to Margaret Eggers regarding the Soils Work Plan schedule.
8/15/2012	Yolanda Garza, DTSC	FMIT, Cocopah, Hualapai, and CRITs.		Communication on Orientation Committee and collaboration on Orientation Training Program elements.
8/16/2012	Yolanda Garza, DTSC	FMIT, Cocopah, Hualapai, and CRITs.		Communication on Orientation Committee and collaboration on Orientation Training Program elements.
8/16/2012	Karen Baker, DTSC	Geo/Hydro Technical Workgroup; Indian Tribe Reps; CWG Members, TRC		3 month extension to prepare and submit Groundwater Remedy 60% Design approved by DTSC and DOI. The extension will allow additional time to discuss arsenic treatment with DTSC and the RWQCB and to explore other fresh water sources. Proposed date for submittal is January 2, 2013.
8/17/2012	Yolanda Garza, DTSC	FMIT, Cocopah, Hualapai, and CRITs.		Communication on Orientation Committee and collaboration on Orientation Training Program elements.
8/20/2012	Yolanda Garza, DTSC	FMIT, Cocopah, Hualapai, and CRITs.		Communication on Orientation Committee and collaboration on Orientation Training Program elements.
8/21/2012	Yolanda Garza, DTSC	**Attendees:** CRITs: Doug Bonamici (via telephone); Hargis & Associates for FMIT (H&A): Leo Leonhart; Technical Review Committee (TRC): Margaret Eggers (via telephone) DTSC, PG&E, Arcadis, Keadjian, CH2M Hill, MWD, BLM, ECR		CTF meeting - communication forum face to face and information provided to tribal reps and all CTF.
8/22/2012	Yolanda Garza, DTSC	Tom Pradetto, Chemehuevi		Communication on the Clearinghouse Task Force.
8/23/2012	Yolanda Garza, DTSC	Steven Escobar, Chemehuevi		Communication via email on Clearinghouse Task Force information.
8/24-8/25/12	Yoanda Garza, DTSC	FMIT, Hualapai, CRITs, Chemehuevi, Cocopah		Topock Orientation development of program - sent tribal members updated information and request for input, advice, information and concurrence of program details and protocol.
8/26/2012	Yolanda Garza, DTSC	Tribal reps and CTF		Sent notes, action items and documents related to the CTF meeting this month.
8/28/2012	Mike Cavaliere, CH2M Hill	Disturbed Soils Subgroup Members: FMIT: Leo Leonhart, Michael Sullivan; Chemehuevi: Thomas Pradetto, Hualapai: Dawn Hubbs; DTSC, PG&E and their consultants CH2M Hill; ADEQ; BLM; TRC		Revised draft of the Management Protocol for Handling and Disposition of Displaced Site Material for review.
8/28/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC, Agenda Only		Revised contact lists for review and update
8/28/2012	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Draft Soil RFI/RI Work Plan - East Ravine Pore Water and Sediment Sampling Plan
8/29/2012	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC		Received Topock Lesson Plan outline and comments for Topock Orientation.
8/30 - 8/31/12	Yolanda Garza, DTSC	FMIT, Hualapai, Chemehuevi, CRITs, Cocopah		Invitation sent to tribal members for participation in Topock Orientation. Communications with various tribal reps. and updated them on the status of the program.

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8/31/2012	Pam Innis, DOI	Nora McDowell, Linda Otero, FMIT	FMIT: Timothy Williams, Leo Leonhart, Michael Sullivan, Courtney Coyle; Hualapai: Loretta Jackson, Dawn Hubbs; Cocopah: Jill McCormick; CRITs: Doug Bonamici, Wilene Fisher-Holt; Yavapai-Prescott: Greg Glassco; Quechan: John Bathke; Chemehuevi: Thomas Pradetto, Ron Escobar; TRCDTSC, DOI, PG&E	DOI and DTSC response to FMIT letter dated July 23, 2012 regarding issues with RTCs on Soils Work Plan Process and request for clarification regarding Land Jurisdiction.
9/4/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Email communications regarding Tribal input on Topock Orientation program.
9/4/2012	Yolanda Garza, DTSC	FMIT: Nora McDowell-Antone; Hualapai: Dawn Hubbs; CRITs: Doug Bonamici		Email and document draft provided regarding Topock Orientation documents.
9/7/2012	Leo Leonhart, FMIT	Jose Marcos, DTSC	DTSC: Karen Baker, A. Yue; Quechan: J. Bathke; CRITs: Doug Bonamici, W. Fisher-Holt; CH2M Hill: M. Cavaliere; FMIT: C. Coyle, S. McDonald, N. McDowell-Antone, L. Otero, T. Williams; TRC: M. Eggers, R. Prucha, E. Rosenblum, C. Schlinger, W. Wright; CSUN: M. Sullivan; Chemehuevi: R. Escobar; Hualapai: D. Hubbs, L. Jackson-Kelly; DOI: P. Innis; Cocopah: J. McCormick, K. Morton; PG&E: Y. Meeks;	FMIT Comments to the RTC for the Displaced Materials Protocol revision dated 8/28/12.
9/11 - 9/12/12	Yolanda Garza, DTSC	FMIT, Hualapai, CRITs		Email communications on the Topock Orientation program, program elements and Tribal components with FMIT, Hualapai and CRIT.
9/13/2012	Yolanda Garza, DTSC	Tribes & PG&E		Meeting with tribes and PG&E regarding the Topock Orientation program.
9/17/2012	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Sharepoint link access to the PG&E Topock Soil RFI/RI Workplan for your records.
9/17/2012	Yolanda Garza, DTSC	Tribal reps.		Collaboration on Training elements, attendance of the TRC based on Hualapai request. Email and discussion with tribal reps. on Orientation program.
9/18/2012	Yolanda Garza, DTSC	Attendees: FMIT: Nora McDowell-Antone; H&A: Leo Leonhart; CIT: Steven Escobar, Tom Pradetto; Hualapai: Dawn Hubbs; CRITs: Doug Bonamici, Howard Magill (via telephone), Jemake Welsh (via telephone); TRC: Margaret Eggers. DTSC, USDOI, MWD, PG&E, Arcadis, Keadjian, CH2M Hill, BLM, ECR		CTF meeting to discuss Topock project and measures to educate and inform stakeholders on the project. Provide information on project, schedules, plans and action items. Request input and feedback on appropriate communication and effective project management.

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9/18/2012	Jose Marcos, DTSC	Leo Leonhart, Nora McDowell-Antone (FMIT)	Disturbed Soils Subgroup Members: FMIT: Leo Leonhart, Michael Sullivan; Chemehuevi: Thomas Pradetto, Hualapai: Dawn Hubbs; DTSC, PG&E and their consultants CH2M Hill; ADEQ; BLM; TRC	DTSC's response letter to FMIT's letter regarding the Displaced Material Protocol and Response to Comments dated 9/7/12.
9/19/2012	Jose Marcos, DTSC	Leo Leonhart, FMIT		Jose emailed Leo to see if he had read DTSC's response letter to the FMIT on the displaced soil protocol. Leo left Jose voice mail message that maybe we can meet in Yuma in October's CWG to discuss the RTC process and how to document unresolved comments on the RTC
9/19/2012	Leo Leonhart, FMIT	Jose Marcos, DTSC		Asked if he has had any experience with Visual Sample Plan (VSP). Jose responded that he has attended some training/seminar on VSP. Also, asked if the responses and proposed changes to the displaced materials protocol are okay with him or if he wants to discuss further.
9/20/2012	Yolanda Garza, DTSC	FMIT, Crit, Hualapai		Email and meeting scheduling. Outreach on Tribal Sensitivity and input for the Orientation program.
9/20/2012	Jose Marcos, DTSC	Leo Leonhart, FMIT		Left message for Leo that we are happy to meet with FMIT and DOI at the Yuma CWG, maybe a sidebar meeting as he suggested to talk about the RTC process. Also to him that he will ask PG&E to start incorporating revisions to the displaced materials protocol based on the DTSC response letter to the FMIT and if he has any additional items he wants to discuss to please call him.
9/21/2012	Jose Marcos, DTSC	Nora McDowell-Antone, Leo Leonhart (FMIT)	Pam Innis, DOI, Karen Baker, Aaron Yue, Chris Guerre, DTSC	Meeting to discuss RTC process October 16, 2012
9/25/2012	Yolanda Garza, DTSC	CTF Tribal Reps. and Glen Caruso, PG&E		Outreach on Presentation to prepare for the Orientation Program.
9/26/2012	Yolanda Garza, DTSC	FMIT, Hualapai, Cocopah, Chemehuevi, CRITs, and all CTF		Sent information regarding the CTF meeting notes from 9/18. Provided additional documents, schedules and information for opportunities for involvement.
9/28/2012	Yolanda Garza, DTSC	Nora McDowell, FMIT		Outreach for Orientation Outline input and program development.
10/1/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC, Agenda Only		Reminder and confirmation of CWG meeting on 10/17/12.
10/1/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC, Agenda Only		Resend of reminder and confirmation of CWG meeting on 10/17/12 and updated contact lists for CWG, TWG, Tribal Reps., TRC, Agenda Only.
10/1/2012	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		2nd Quarter 2012 Interim Measures Performance Monitoring and Groundwater Monitoring Program & 2nd Qt. 2012 Status Update - Topock AZ wells
10/1/2012	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		CMP 1st Half 2012 GWMR for Interim Measures No. 3
10/1 - 10/5/12	Yolanda Garza, DTSC	FMIT, Crit, Hualapai		Collaboration on program elements with the Tribes involved for Topock Orientation.

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10/4/2012	Michael Sullivan, FMIT	Jose Marcos, DTSC		Checking if the June version of the Soil Work Plan Response To Comments (RTC) is final version as he's reviewing them. Jose replied that two version were sent out in June, but neither one is final. Latest RTC table is Appendix I of the Soil Work Plan.
10/4/2012	Jose Marcos, DTSC	Michael Sullivan, FMIT	Chris Guerre, Aaron Yue, DTSC	Latest version of the RTC table was submitted as part of the Soil Work Plan, Appendix I.
10/5/2012	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		PG&E Soil RFI/RI Investigation Workplan Figure 1-4 Proposed Sample Locations.
10/8/2012	Jose Marcos, DTSC	Leo Leonhart, Nora McDowell-Antone (FMIT)		Request to review the Displaced Material Protocol and RTC table which incorporates the items listed in DTSC's September 18, 2012 response letter to the FMIT.
10/8/2012	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		Revised map (Figure 2-2) from the Soil Workplan.
10/9/2012	Yolanda Garza, DTSC	Win Wright, TRC members, Dawn Hubbs, Hualapai and FMIT		Coordination of TRC attendees to the Topock Orientation. Email back and forth on program elements.
10/11/2012	Clearinghouse Task Force, Aaron Yue, Yolanda Garza, Chris Guerre, Jacqueline Martinez, DTSC	CWG members and others new to the PG&E Topock project. Tribal Presenters included: Dawn Hubbs and Bennet Jackson, Hualapai, Nora McDowell,FMIT and Wilene Fisher-Holt and Howard Magill,CRIT		Orientation to the PG&E Topock Project including site visit, history, cleanup overview, tribal perspective, stakeholder/community invovement. Presenters included representatives from DTSC, PG&E, Tribes, and DOI. Tribal members presented included Hualapai, FMIT and CRIT.
10/16/2012	Yolanda Garza, DTSC	Attendees: FMIT: Nora McDowell-Antone; H&A: Leo Leonhart; Hualapai: Dawn Hubbs; CIT: Tom Pradetto; CRITs: Doug Bonamici; TRC: Margaret Eggers; Cocopah: Kendra Morton; DTSC, DOI, BLM, PG&E, Arcadis, Keadjian, MWD		CTF meeting with tribal reps. and all CTF members. Communications and collaborations with tribal members on Topock project.
10/16/2012	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart; CRIT: Doug Bonamici; Hualapai: Dawn Hubbs; Cocopah: Kendra Morton; DTSC, DOI, USBR, BLM USFWS, TRC		RTC Process meeting in Yuma, Arizona
10/17/2012	DTSC	Attendees: Chemehuevi: Thomas Pradetto; Cocopah: Kendra Morton; CRITs: Doug Bonamici, Howard Magill; FMIT: Courtney Coyle, Leo Leonhart, Steven McDonald, Nora McDowell-Antone; Hualapai: Dawn Hubbs, Bennett Jackson; Quechan: John Bathke, Chase Choate, Daniel Golding, Preston Arrowweed; DTSC: Karen Baker, Aaron Yue, Yolanda Garza, Nancy Bothwell, Jose Marcos, Jacqueline Martinez, Chris Guerre (by phone), Lori Hare (by phone); PG&E, Arcadis, TRC, CH2M Hill, USDOI, MWD, USFWS, USBLM, USBOR, SWRCB, ESA, Keadjian		Face-to-face Consultative Work Group Meeting in Yuma, Arizona
10/18/2012	Jacqueline Martinez, DTSC	Nora McDowell, FMIT, Thomas Pradetto, Chemehuevi, Doug Bonamici, CRITs, Dawn Hubbs, Hualapai, Kendra Morton, Cocopah, Bennett Jackson, Hualapai	Yolanda Garza, DTSC	Tribal Community Outreach Plan sections for your review by Tuesday, 10/30.
10/19/2012	Karen Baker, DTSC	Preston Arrow-weed, Ah Mut Pipa Foundation	Chase Choate, John Bathke, Quechan	Thank you for presentation at the 10/17/12 CWG meeting.

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10/22/2012	Jose Marcos, DTSC	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs; CRITs: Doug Bonamici; Cocopah: Kendra Morton; DTSC, DOI, PG&E, CH2M Hill, USBOR, USDOI	PG&E Response to Comments process and sign-in sheet for RTC meeting on 10/16/12.
10/23/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Email communications to assist with Tribal Leadership meeting in November.
10/1 - 10/31/12	Yolanda Garza, DTSC	FMIT, Hualapai, CRITs, Chemehuevi, Cocopah		Received many tribal communications throughout the month for purposes of planning Orientation program, as well as Tribal Leadership program.
10/24/2012	Kendra Morton, Cocopah	Jacqueline Martinez, DTSC		Provided edits to the Cocopah segment of the Community Outreach Plan.
10/25/2012	Jacqueline Martinez, DTSC	Kendra Morton, Cocopah		Thanked her for her edits to the Community Outreach Plan and asked whether or not should include website link.
10/25/2012	Kendra Morton, Cocopah	Jacqueline Martinez, DTSC		Leaving the website link in is fine.
10/26/2012	Jacqueline Martinez, DTSC	Roland Ferrer, Torres-Martinez		Request for review of Nearby Tribal Communities and Tribal Section of Community Outreach Plan.
10/29/2012	Rolanda Ferrer, Torres-Martinez	Debi Livesay, Torres-Martinez		Forwarded Jacqueline's request for review of Community Outreach Plan to Debi Livesay.
10/29/2012	Doug Bonamici, CRIT	Jacqueline Martinez, DTSC	Merving Scott, Amanda Barrera, CRIT	Revisions to Nearby Tribal Communities section of the Community Outreach Plan document.
10/29/2012	Kendra Morton, Cocopah	Jacqueline Martinez, DTSC		Edits to Cocopah segment of the Community Outreach Plan document.
10/29/2012	Nora McDowell-Antone, FMIT, Doug Bonamici, CRITs	Jacqueline Martinez, DTSC	Doug Bonamici, Dawn Hubbs, Jill McCormick, Kendra Morton, envirodirector@gmail.com, Greg Glassco, John Bathke, Wilene Fisher-Holt, Howard Magill, Amanda Barrera, Nora McDowell-Antone	Recommended edits and comments on the Tribal Section of the Community Outreach Plan. Doug added his edits to Nora's draft.
10/29/2012	Nora McDowell-Antone, FMIT	Jacqueline Martinez, DTSC	Doug Bonamici, Dawn Hubbs, Jill McCormick, Kendra Morton, envirodirector@gmail.com, Greg Glassco	Suggested edits to the Nearby Tribal Communities section of the Community Outreach Plan document.
10/29/2012	Jill McCormick, Cocopah	Nora McDowell-Antone, FMIT, Jacqueline Martinez, DTSC		Likes Nora's edits to the Nearby Tribal Communities section of the Community Outreach Plan document. Incorporated their edits to the Cocopah section of Nora's document.
10/29/2012	Jose Marcos, DTSC	Doug Bonamici, CRITs, Dawn Hubbs, Hualapai, Nora McDowell-Antone, FMIT, Kendra Morton, Cocopah	CWG, Geo/Hydro TWG, Tribal Reps., TRC	Response to Comments Process with sign-in sheet from 10/16/12 meeting.
10/29/2012	Aaron Yue, DTSC	Agenda Only, CWG, Tribal Reps, ESA, TRC, Geo/Hydro TWG		Revised contact lists.
10/29/2012	Dawn Hubbs, Hualapai	Jacqueline Martinez, DTSC		Re: Tribal Section of the Community Outreach Plan FMIT edits. Hualapai concurs with all edits.
10/30/2012	Yolanda Garza, DTSC			Attend meeting with tribal representatives to develop Tribal Leadership conference Nov. 13-14, 2012. Email communications back and forth to gain input and provide information for the conference.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/31/2012	Debi Livesay, Torres-Martinez	Roland Ferrer, Torres-Martinez	Jacqueline Martinez, DTSC	Review of Tribal Sections for Communication Plan - Debi's comments
11/1/2012		Attendees: FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; Hualapai: Dawn Hubbs; Chemehuevi: Steve Escobar; Cocopah: Kendra Morton; DTSC: Karen Baker, Aaron Yue		Karen and Aaron attended a conference call with members of the tribes to responsed to questions on the email dated 10/31/12 to clarify Groundwater EIR mitigation measures CUL-1a-8j and SUL-1b/c-3.
11/1/2012	Doug Bonamici, CRIT	Jacqueline Martinez, DTSC		Submitted CRIT portion of "Nearby Tribal Communities" section of the Community Outreach Plan document.
11/1/2012	Aaron Yue, DTSC	Agenda Only, CWG, Tribal Reps, ESA, TRC, Geo/Hydro TWG		Revised CWG contact list.
11/1/2012	Aaron Yue, DTSC	Chemehuevi: Tito Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailed cd's containing emails and attachments provided to the CWG during September and October 2012.
11/1/2012	Yolanda Garza, DTSC	Tribal reps. Included FMIT, Cocopah, Chemehuevi, CRIT, Hualapai, Quechan, Twenty-Nine Palms, Torres-Martinez Indian Tribe and Yavapai-Prescott Tribes		Email invitation to Tribal reps to attend meeting and discuss Tribal Leadership conference. Provide input and assist in the development of the conference.
11/5/2012	JR Bluehouse	DTSC: Yolanda Garza, Karen Baker, Stewart Black	Nora McDowell (FMIT), Tina Urbina Gargus, Lisa Micheletti Cope (Arcadis)	Meeting presentation invitation - Tribal Leaders Meeting November 13-14, 2012 - Topock Remediation Project with meeting agenda
11/5/2012	Karen Baker, DTSC	JR Bluehouse		Thank you for invitation. She and Stewart Black will attend the Tribal Leaders Meeting on 11/13-11/14/12 on behalf of DTSC.
11/5/2012	Jacqueline Martinez, DTSC	Roland Ferrer, Debi Livesay, Torres-Martinez		Request for correct population # and changed website link.
11/5/2012	Rolanda Ferrer, Torres-Martinez	Jacqueline Martinez, DTSC, Debi Livesay, Torres-Martinez		Current population of tribal members is 858.
11/6/2012	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		Called to discuss DTSC concern regarding October CWG meeting and felt Ms. Courtney Coyle was threatening another lawsuit before we had begun work. Let Nora know that Director Raphael will be calling Chairman Williams to discuss this. Also, informed Nora that DTSC will be doing an EIR for the Soil Investigation Workplan and an Addendum to the Groundwater EIR for the freshwater source investigation PG&E is proposing.
11/6/2012	Yolanda Garza	Contacted by Phone: FMIT: Nora McDowell-Antone; CRIT: Doug Bonamici; Chemehuevi: Tom Pradetto; Hualapai: Dawn Hubbs (left voicemail); MWD: Bart Koch & Eddie Rigdon; Cocopah: Jill McCormick (left voicemail)		Yolanda called the key stakeholders as a courtesy to inform them of the CEQA NOP for Soils. They received the email and may have questions later. They were appreciative of the phone call.
11/6/2012	Aaron Yue, DTSC	CWG, Tribal Reps, ESA, TRC, Geo/Hydro TWG		DTSC decisions on CEQA path for upcoming Soil Work Plan and Freshwater Source investigation activities.
11/7/2012	Loretta Jackson-Kelly, Hualapai	Kim Liebhauser, BLM		Hualapai response to BLM invitation for consultation on October 29, 2012 regarding clays and the Topock Remediation Project.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/8/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		PG&E submittal of sound level measurements protocol technical memorandum for Topock Compressor Station.
11/9/2012	PG&E	Attendees: Nora McDowell-Antone, Leo Leonhart (Hargis), FMIT; Kendra Morgan, Cocopah; Tom Pradetto, Chemehuevi; Howard Magill, Doug Bonamici, CRIT; Margaret Eggars, TRC; Karen Baker, Aaron Yue, DTSC; Yvonne Meeks, Glenn Caruso, Christina Hong, Lisa Kellogg, PG&E and consultants		Tribal Monthly Update (TMU) Meeting. Agenda included: Project Update on Freshwater Source; DTSC Participation; Mitigaiton Measures and Monitoring Reporting (MMRP) Tracking; MMRP Discussion - CUL-1a-7, CUL-1a-8h, CUL-1a-8i, CUL-1b/c-3; Roundtable Discussion
11/13 and 11/14/12	Karen Baker and Stewart Black, DTSC	Representatives of FMIT (Williams, Otero, McDowell-Antone, Leonhart), Hualapai (Clark, Jackson-Kelley, Hubbs), CRIT (Bonamici, Magill, Fisher-Holt), Chemehuevi (Escobar, Pradetto), Cocopah (Phillips, Pereyra, McCormick, Morton)		At the Tribal Leaders Meeting held in Lake Havasu City, Karen Baker gave a presentation on the status of the groundwater and soils activities on the project as well as upcoming CEQA activities. Ms. Baker announced that DTSC would hold public Scoping meeting on the Soil Investigation EIR on December 11, 12, and 13. Ms. Baker also announced that DTSC would hold Scoping meetings with individual tribes during the scoping period if requested. During the meeting the Hualapai requested a tribal specific Scoping meeting.
11/16/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA		Informed everyone of the tragic passing of Norman Shopay.
11/19/2012	Charlie Schlinger, TRC	Karen Baker, Jose Marcos, DTSC	Win Wright, Eric Ronsenblum	RE: TRC participation in the Soil EIR Scoping. Will attend Dec. 11-13 meetings. Want to be kept informed of scoping meetings, particularly involving the tribes.
11/19/2012	Jose Marcos, DTSC	Charlie Schlinger, Win Wright, Eric Rosenblum, TRC	Yolanda Garza, Jacqueline Martinez, Karen Baker, Aaron Yue, DTSC	So far only Hualapai scheduled for January. Will keep them informed when get a more specific schedule
11/20/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA		Forwarded instructions to download a copy of the technical memorandum entitled "Addendum to the Summary of Findings Associated with the East Ravine Groundwater Investigation".
11/21/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA, Agenda Only		Save the dates in January 2013 for CWG and TWG Meetings - 1/6 & 1/17.
11/21/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA		Forwarded PG&E's "Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area" dated 11/20/12.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/26/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Yolanda spoke w/ Nora and learned that tribes are attempting a tribal only call to coordinate the scoping date. Yolanda had left several messages last week with FMIT & Hualapai. She also left word that DTSC was offering scoping meetings with the tribes (FMIT, Hualapai, CRITs, Chemehuevi & Cocopah), as well as Bart & Eddie to inform them of the Soils EIR and scoping plans.
11/28/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA		Submittal of NOP for a Soil Focused Impact Report to Office of Planning & Research, and announcement of 45 day public comment period.
11/30/2012	Leo Leonhart, FMIT	Aaron Yue, DTSC, Kim Liebhauser, BLM	Nora McDowell-Antone, Linda Otero, Michael Sullivan, FMIT; Yolanda Garza, DTSC; Pam Innis, DOI, Charlie Schlinger, Win Wright, TRC	Request for a Soils EIR Scoping meeting for FMIT on 12/12/12 in Needles
12/3/2012	Aaron Yue, DTSC	Leo Leonhart, Nora McDowell-Antone, Linda Otero (FMIT)	Yolanda Garza, Jose Marcos, Chris Guerre, DTSC; Eric Rosenblum, Charlie Schlinger, Win Wright, TRC; Michael Sullivan, FMIT; Pam Innis, DOI; Addie Farrell, Bobbette Biddulph, Joan Isaacson, ESA	Confirming attendance at requested Soil Investigation EIR scoping meeting with FMIT on 12/12/12.
12/3/2012	Yolanda Garza, DTSC	CRITs Librarian		Coordination on receiving Soil Investigation EIR Scoping Meeting information.
12/3/2012	Jose Marcos, DTSC	Charlie Schlinger, Win Wright, Eric Rosenblum, TRC	Yolanda Garza, Jacqueline Martinez, Karen Baker, Aaron Yue, DTSC	Informing them that FMIT requested a Soil Investigation EIR NOP Scoping Meeting for Dec. 12. Please coordinate with FMIT regarding details of participating.
12/4/2012	Aaron Yue, DTSC	Chemehuevi: Tito Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailed cd's containing emails and attachments provided to the CWG during November 2012.
12/4/2012	DTSC	Attendees: FMIT: Nora McDowell-Antone, Felton Bricker, Sr., Melvin Holmes; H&A: Leo Leonhart; Hualapai Indian Tribe: Dawn Hubbs (via telephone); CIT: Steven Escobar; DTSC: Karen Baker, Yolanda Garza; PG&E and their consultants CH2M Hill, Arcadis and Keadjian,USDOI, MWD, TRC		Clearinghouse Task Force Meeting - Karen Baker reminded attendees of the public notice period for the Soil Investigation EIR Notice of Preparation is Nov. 28, 2012 to Jan. 13, 2013 and public scoping meeting would be held in December. Discussed FMIT had requested a separate scoping meeting scheduled for Dec. 12. Dawn Hubbs asked for separate Hualapai scoping meeting. DTSC agreed to this and informed Dawn that it needed to take place before Jan. 13, 2013.
12/4/2012	PG&E	Attendees: Nora McDowell-Antone, Felton Bricker, Melvin, Leo Leonhart (Hargis), FMIT; Steven Escobar,Chemehuevi; Dawn Hubbs, Hualapai; Margaret Eggars, TRC; Karen Baker, Aaron Yue, DTSC; Yvonne Meeks, Glenn Caruso, Christina Hong, Lisa Cope, Lisa Kellogg, PG&E and consultants		Tribal Monthly Update (TMU) Meeting. Agenda included: TMU Schedule for 2013; Cultural and Historic Properties Management Plan (CHPMP) and Cultural Impacts Mitigation Program (CIMP); MMRP Discussion - CUL-1a-5, CUL-1a-8a, CUL-1a-8b, CUL-1a-8p; Roundtable Discussion

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12/4/2012	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA		PG&E's request for an additional 6 month extension for the intermediate (60%) groundwater remedy design.
12/5/2012	Leo Leonhart, FMIT	Aaron Yue, DTSC; Nora McDowell-Antone, Linda Otero, FMIT	Yolanda Garza, Jose Marcos, Chris Guerre, DTSC; Eric Rosenblum, Charlie Schlinger, Win Wright, TRC; Michael Sullivan, FMIT; Pam Innis, DOI; Addie Farrell, Bobbette Biddulph, Joan Isaacson, ESA	Coordinated on meeting regarding Soil Investigaiton EIR Notice of Preparation and Freshwater Source Implementation Plan. Will involve DTSC & FMIT primarily. Meeting with DOI/BLM will be in January. The tribe does not wish to have a court reporter at the meeting. Tribal members will likely be providing comments at one or more of the public meetings.
12/6/2012	Yolanda Garza, DTSC	Margaret Parks, Director of Planning & Natural Resources, Agua Caliente Band of Cahuilla Indians		Email regarding contact information.
12/6/2012	Yolanda Garza, DTSC	Roland Ferrer, Cahuilla Indian Tribe		Email to clarify contact information.
12/6/2012	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Email to coordinate EIR Scoping meeting.
12/6/2012	Aaron Yue, DTSC	Leo Leonhart, Nora McDowell-Antone, Linda Otero (FMIT)	Yolanda Garza, Jose Marcos, Chris Guerre, DTSC; Eric Rosenblum, Charlie Schlinger, Win Wright, TRC; Michael Sullivan, FMIT; Pam Innis, DOI; Addie Farrell, Bobbette Biddulph, Joan Isaacson, ESA	Thank you for voice mail confirm that FMIT has decided against use of voice, as well as court reporter. Meeting will be conducted informally, with no summary of discussion to take place. Comments on the EIR Notice of Preparation from FMIT will be either submitted in writing prior to the close of the comment period or verbally at the other three public scoping meetings where they will be recorded.
12/7/2012	Leo Leonhart, FMIT	Aaron Yue, Jose Marcos, DTSC		Please resend him memo on CEQA sent out around 11/6.
12/7/2012	Aaron Yue, DTSC	Leo Leonhart, FMIT, Jose Marcos, DTSC		Forwarded email from 11/6/12 "RE: PG&E: DTSC decision on CEQA path for upcoming activities. Leo confirmed that was what he was requesting.
12/10-11/12	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT		Emails regarding agenda for FMIT Soils EIR Notice of Preparation and Freshwater Source Implementation Plan scoping meeting.
12/11/2012	Aaron Yue, DTSC	Yvonne Meeks, Christina Hong, PG&E	CWG, Geo/Hydro, TWG, Tribal Reps., TRC, ESA	DTSC comments on the alternative freshwater source evaluation implementation plan.
12/11/2012		Attendees: FMIT: Nora McDowell-Antone and other tribal members; DTSC: Karen Baker, Aaron Yue, Jose Marcos, Yolanda Garza, & ESA Reps.		Soils EIR Scoping meeting in Golden Shores, AZ
12/12/2012		Attendees: FMIT: Steven McDonald, Michael Sullivan, Leo Leonhart; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; DTSC, ESA, TRC		Soils Investigation EIR Scoping and Freshwater Source Implementation Plan discussion with FMIT and Hualapai at FMIT Council Chambers
12/12/2012		Attendees: FMIT: Nora McDowell-Antone; Hualapai: Dawn Hubbs; DTSC; community members and DTSC & ESA		Soils EIR Scoping meeting with community at Needles, CA
12/13/2012	Jacqueline Martinez, DTSC	Nora McDowell-Antone, FMIT		Informed her that Mr. Russell Ray, FMIT, inquired if meeting was scheduled with FMIT/DTSC (took place yesterday). Gave him Nora's name and email for future reference.
12/13/2012	Nora McDowell-Antone, FMIT	Jacqueline Martinez, DTSC		Thanked Jacqueline for note regarding Russell Ray. Said will start review of information sent the other day and will get back to her soon.
12/13/2012	Amanda Barrera, CRITs	Yolanda Garza, Chris Guerre, Aaron Yue, DTSC		Discussion at Soils EIR Scoping Meeting in Yuma, AZ

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/13/2012	Pam Innis, DOI	Yvonne Meeks, Christina Hong, PG&E	CWG, Geo/Hydro, TWG, Tribal Reps., TRC, ESA	DOI comments on the implementation plan for evaluation of alternative freshwater sources.
12/17/2012	Aaron Yue, DTSC	CWG, Geo/Hydro, TWG, Tribal Reps., TRC, ESA		Forwarded comments to PG&E from DTSC, DOI, ADEQ, Win Wright, TRC, MWD, & FMIT on Freshwater Evaluation Tech Memo
12/21/2012	Chris Guerre, DTSC	TWG	Tribal Reps.	Reminder of January 17, 2013 TWG meeting.
12/21/2012	Chris Guerre, DTSC	CWG, Geo/Hydro, TWG, Tribal Reps., TRC, ESA		PG&E Topock 3rd Qt 2012 Interim Measures Performance Monitoring and Groundwater Monitoring Report.
12/26/2012	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT, Dawn Hubbs, Hualapai		Email regarding confidential notes taken at FMIT meeting to discuss Soil EIR and FIP.
12/28/2012	Jacqueline Martinez, DTSC	Nora McDowell-Antone, FMIT		Checking if she had any comments on the Draft Topock Community Outreach Plan (COP) as today is due date for stakeholder comments.
12/31/2012	Aaron Yue, DTSC	Yvonne Meeks, Christina Hong, PG&E	CWG, Geo/Hydro, TWG, Tribal Reps., TRC, ESA	DTSC response letter to PG&E's extension request for 60% Design.
1/2/2013	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Email on the new tribal council and appreciation for participation.
1/2/2013	Aaron Yue, DTSC	Chemehuevi: Tito Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITs: Eldred Enas, Amanda Barrera; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailed cd's containing emails and attachments provided to the CWG during December 2012.
1/3/2013	Yolanda Garza, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, CTF, ESA, TRC		Save the dates request for upcoming meetings in January 2013: CTF (1/15), CWG (1/16), & TWG (1/17).
1/3/2013	Yolanda Garza, DTSC	All tribal contacts		Email on travel logistics and upcoming meeting dates/locations.
1/3/2013	Yolanda Garza, DTSC	Doug Bonamici, CRITs, Dawn Hubbs, Hualapai		Email regarding travel logistics for upcoming meetings.
1/7/2013	Jose Marcos, DTSC	Nora McDowell-Antone, Michael Sullivan, FMIT	Geo/Hydro TWG	DTSC's and DOI's joint response to their letter from November 30, 2012 regarding the response to comments for the soils work plan.
1/7/2013	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Email regarding scheduling meeting with Hualapai council on Soil Investigation EIR.
1/7/2013	Yolanda Garza, DTSC	Doug Bonamici, CRITs		Emails regarding tribal council updates.
1/8/2013	Yolanda Garza, DTSC	Leo Leonhart, FMIT, Karen Baker, DTSC	Nora McDowell-Antone, FMIT; Aaron Yue, DTSC	In response to their request, sent them transcripts from the three Soil Investigation EIR Notice of Preparation (NOP) scoping meetings on 12/11, 12/12 & 12/13/12.
1/10/2013	Yolanda Garza, DTSC	Geo/Hydro TWG	CWG, Tribal Reps	Agenda for the 1/17/13 TWG meeting
1/11/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., ESA, TRC		Updated contact lists for review.
1/11/2013	Leo Leonhart, FMIT	Karen Baker, DTSC	DTSC: Aaron Yue, Jose Marcos, Yolanda Garza; FMIT: Nora McDowell-Antone, Linda Otero, Courtney Coyle, Steve McDonald; Hualapai: Dawn Hubbs	Formal request on behalf of FMIT to extend the comment period for review of the NOP for the Draft EIR on the Soils Investigation Project until January 18, 2013.
1/11/2013	Jacqueline Martinez, DTSC	Doug Bonamici, CRITs		Announcement of Topock Community Outreach Plan to be completed this month and asking if would like hard copy(ies). Will be providing via e-link.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/11/2013	Jacqueline Martinez, DTSC	Roland Ferrer, Torres-Martinez		Announcement of Topock Community Outreach Plan to be completed this month and asking if would like hard copy(ies). Will be providing via e-link.
1/11/2013	Jacqueline Martinez, DTSC	Kendra Morton, Cocopah		Announcement of Topock Community Outreach Plan to be completed this month and asking if would like hard copy(ies). Will be providing via e-link.
1/11/2013	Jacqueline Martinez, DTSC	Dawn Hubbs, Hualapai		Announcement of Topock Community Outreach Plan to be completed this month and asking if would like hard copy(ies). Will be providing via e-link.
1/11/2013	Jacqueline Martinez, DTSC	Nora McDowell-Antone, FMIT		Announcement of Topock Community Outreach Plan to be completed this month and asking if would like hard copy(ies). Will be providing via e-link.
1/11/2013	Jacqueline Martinez, DTSC	Thomas Pradetto, Chemehuevi		Announcement of Topock Community Outreach Plan to be completed this month and asking if would like hard copy(ies). Will be providing via e-link.
1/11/2013	Thomas Pradetto, Chemehuevi	Jacqueline Martinez, DTSC		Please send one hard copy of the Community Outreach Plan.
1/14/2013	Karen Baker, DTSC	Leo Leonhart, FMIT	DTSC: Aaron Yue, Jose Marcos, Yolanda Garza; FMIT: Nora McDowell-Antone, Linda Otero, Courtney Coyle, Steve McDonald; Hualapai: Dawn Hubbs	Approval of request for extension of comment period for review of the NOP for the Draft EIR on the Soils Investigation Project until January 18, 2013.
1/14/2013	Dawn Hubbs, Hualapai	Karen Baker, DTSC		Request for extension of comment period for review of the NOP for the Draft EIR on the Soils Investigation Project until January 18, 2013.
1/14/2013	Karen Baker	Dawn Hubbs, Hualapai	Hualapai: Loretta Jackson-Kelly, Peter Bungart, Dean Suagee; DTSC: Aaron Yue, Jose Marcos, Yolanda Garza	Approval of request for extension of comment period for review of the NOP for the Draft EIR on the Soils Investigation Project until January 18, 2013.
1/15/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart; CRIT: Doug Bonamici; Hualapai: Dawn Hubbs, Loretta Jackson (by phone); DTSC: Karen Baker, Yolanda Garza; PG&E, CH2M Hill, Arcadis, Keadjian, USDOI, TRC		Clearinghouse Task Force Meeting. Karen Baker announced today was end of the 45-day comment period for the Soil Investigation EIR Scoping. DTSC agreed to extend comment period until Jan. 18.
1/15/2013	PG&E			Tribal Monthly Update Meeting (TMU). Agenda items: Project Update; CIMP/CHPMP Comparison Table; CIMP/CHPMP Scheduling; MMRP Discussion CUL-1a-8e; Roundtable Discussion.
1/15/2013	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, Tribal Reps.	ESA, TRC	Link to file - Re: PG&E Topock Revised Soil RFI/RI Work Plan Errata (January 2013)
1/15/2013	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai, Doug Bonamici, CRITs		Email regarding JRBluehouse status of tribal aid.
1/16/2013	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, Tribal Reps.	ESA, TRC	Link to updated file - Re: PG&E Topock Revised Soil RFI/RI Work Plan Errata (January 2013)
1/16/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., ESA, TRC		PG&E Topock Final Revised Implementation Plan for Repair of Monitoring Wells (being recirculated as requested at CWG meeting today)

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/16/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Courtney Coyle, Leo Leonhart, Michael Sullivan; CRITs: Doug Bonamici, Howard Magill; Hualapai: Peter Bungart, Carrie Cannon, Dawn Hubbs, Loretta Jackson-Kelly, Dean Suagee; Chemehuevi: Ron Escobar; DTSC: Karen Baker, Aaron Yue, Yolanda Garza, Jacqueline Martinez, Nancy Bothwell (Phone), Jose Marcos (phone), Chris Guerre (phone), Lori Hare (phone); ESA, PG&E, Arcadis, CH2M Hill, Keadjian, TRC, USDOI, USEPA, CRB, MWD, Mojave Co DPH, BLM, BOR, ADEQ, DFW		PG&E Topock, Consultative Work Group, Face-to-Face Meeting. Agenda Items: Project Schedule; Clearinghouse Task Force Activities; Corrective Measure Implementation/Remedial Design; Update on EIR mitigation measures; Programmatic Agreementic Acitivies, CEQA Update on Soil EIR and Freshwater Source Evaluation EIR Addendum
1/17/2013	DTSC	Attendees: FMIT: Leo Leonhart, Michael Sullivan; Hualapai: Peter Bungart; Chemehuevi: Ron Escobar, CRITs: Howard Magill; DTSC: Karen Baker, Aaron Yue, Chris Guerre, Yolanda Garza, TRC, DOI, ADEQ, BOR, PG&E, Arcadis, CH2M Hill, MWD, DFW		Technical Work Group Face to Face Meeting. Agenda Items: Discuss key findings of the East Ravine-TCS GW Investigation (2009 Summary of Findings Report and 2011 Addendum); Overview of Changes from 30% to 60% Design for the GW Remedy: Key design updates as a result of RTC's on 30% design; New additions to the 60% Design.
1/18/2013	Courtney Coyle, FMIT	Aaron Yue, DTSC	FMIT: Timothy Williams, Nora McDowell-Antone, Linda Otero, Leo Leonhart, Michael Sullivan, Steven McDonald; Roland-Nawi, Carol@Parks; nahc@pacbell.net; achp@achp.gov; DTSC: Karen Baker, Jose Marcos; DOI: Pam Innis; ahoward@azstateparks.gov; BLM: Kim Liebhauser, R. Trost; EPA: Matthew Rodriguez	FMIT Comments on NOP for Soil Investigation EIR
1/22/2013	Dawn Hubbs, Hualapai	Aaron Yue, DTSC	Hualapai: Loretta Jackson-Kelly, Peter Bungart, Dean Suagee; FMIT: Nora McDowell-Antone; TRC: Margaret Eggers	Hualapai Comments on NOP for Soil Investigation EIR
1/22/2013	Chris Guerre, DTSC	Leo Leonhart, FMIT		Spoke regarding MW-38 plan. Told him our draft letter stated end of March (to begin implementation), but that could change. Appears Leo will be reporting this to FMIT.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/23/2013	Kelly McDonald, Steve McDonald Law Office (for Courtney Coyle), FMIT	Aaron Yue, DTSC	FMIT: Timothy Williams, Nora McDowell, Linda Otero, Leo Leonhart, Michael Sullivan, Courtney Coyle, Steve McDonald; DTSC: Karen Baker, Jose Marcos; Rolanda-NAWI, Carol @Parks, nahc@pacbell.net, achp@achp.gov, DOI: Pam Innis; ahoward @azstateparks.gov; BLM: Kim Liebhauser, R. Trost; EPA: Matthew Rodriguez	Comment letter from Courtney Coyle on behalf of FMIT regarding the Notice of Preparation for an EIR for the Soil Investigation.
1/23/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, ESA, TRC		Revised contact lists.
1/23/2013	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Email: Checking possible dates for the Hualapai meeting on the EIR Scoping for Soil.
1/23/2013	Yolanda Garza	CRITS Executive Office		Call and email to obtain contact information.
1/28/2013	Aaron Yue, DTSC	Yvonne Meeks	CWG, TWG, Tribal Reps., TRC	Repairing Wells in Accordance with California Well Standards at PG&E Topock Compressor Station
1/29/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, ESA, TRC		Technical memo on Scope of Risk Assessment Addendum II and Arrowweed Tech Memo for 30 day comment period. Comments due 2/28/13.
1/31/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, ESA, TRC		Results for November/December Fourth Quarter 2012 Sampling
1/31/2013	Leo Leonhart, FMIT	Aaron Yue, DTSC		Leo called Aaron: FMIT received the Paleontological Report from PG&E as part of CUL-3. Leo requested clarification on the statement of "This measure does not apply to the activities included as part of the East Ravine Addendum, Groundwater Investigation." It was explained to him that it is language in the Certified EIR to allow East Ravine activities prior to survey, not future investigation.
1/31/2013	Leo Leonhart, FMIT	Yolanda Garza	Nora McDowell-Antone, FMIT, Aaron Yue, Karen Baker, DTSC	RE: Quarterly Reports. Looking for reports from 2012. Asked that she verify that they are not posted on the website or help him to find them or give him copies of the 2012 reports. He also asked that she ensure the tribe is on the distribution list to received the reports quarterly.
1/31/2013	Aaron Yue, DTSC	Leo Leonhart, FMIT, Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT, Karen Baker, DTSC	Aaron directed Leo how to find the quarterly reports from 2012 on the DTSC-Topock website and informed him future reports will continue to be uploaded to the website.
2/1/2013	Chris Guerre, DTSC	TWG		Agenda for 2/20/13 TWG Meeting.
2/4/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, ESA, TRC		Shared PG&E's Revised Freshwater Implementation Plan for Groundwater Remedy which DOI/DTSC will independently evaluate and make a final decision.
2/4/2013	George Shannon, BLM	Tribal Chairs and Cultural Staff affiliated with PG&E Topock Remediation Project		Shared letter from Kim Liebhauser, BLM, requesting continuation of consultation of the revised Fresh Water Implementation Plan and the Updated Applied Earthworks (AE) Tech Memo on Fresh Water Sources. Any questions should be directed to George Shannon.

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/4/2013	Aaron Yue, DTSC	Yvonne Meeks, PG&E	Danielle Taber, ADEQ, Pam Innis, DOI, Karen Baker, Jose Marcos, Chris Guerre, DTSC	Request for Information on Potential Historic Offsite Disposal of Hazardous Substances From the PG&E Topock Compressor Station (CAT080011729).
2/5/2013	Chris Guerre, DTSC	TWG		Revised agenda for 2/20/13 TWG meeting.
2/6/2013	Michael Sullivan, FMIT	Adrienne LaPierre, Iris Environmental	Aaron Yue, DTSC, Leo Leonhart, FMIT	Request for table of human toxicological criterial used in the risk assessment to calculate soil screening levels.
2/6/2013	Michael Sullivan, FMIT	Adrienne LaPierre, Iris Environmental	Aaron Yue, DTSC, Leo Leonhart, FMIT	One other request: the table of soil screening concentrations (that are based on the requested tox data) that are used in the soil characteriation work plan data-gap analysis.
2/6/2013	Adrieen LaPierre, Iris Environmental	Michael Sullivan, FMIT		For clarification, asked "are you requesting the tox values that are inherent in the soil screening criteria that were used as part of the data gaps evaluation for the Soil Sampling WP?
2/6/2013	Michael Sullivan, FMIT	Adrienne LaPierre, Iris Environmental		Listed what he needs: 1) list of COPCs/COPECs that are in the risk assessment work plans; 2) the soil screening levels for the above list that were used in the soils work plan to justify sampling decisions, and 3) the toxicological criteria used in the calculation if above soil screening levels.
2/13/2013	Nora McDowell-Antone, FMIT	Kim Liebhauser, BLM	BLM: George Shannon, DOI: Pam Innis, DTSC: Karen Baker, Hualapai: Dawn Hubbs, Cocopah: Jill McCormick, CRIT: Doug Bonamici, Wilene Fisher-Holt Chemehuevi: Ron Escobar, Thomas Pradetto; FMIT: Linda Otero, Loretta Jackson-Kelly	Request to piggyback consultation outlined in letter to Chairman Williams dated 2/7/13 after the CHPMP meeting scheduled for 3/13/13. Asked for 30 day extension and consultation on revised document and updated Archaeological survey. Requested that DTSC be included in the meeting and she will invite interested tribes.
2/14/2013	Pam Innis, DOI	Karen Baker, DTSC	Yolanda Garza, Aaron Yue, DTSC	Will set up consultation requested by Nora McDowell-Antone FMIT and will have George Shannon, BLM, prepare an agenda.
2/15/2013	Nora McDowell-Antone, FMIT	Karen Baker, Aaron Yue, DTSC	Yolanda Garza, DTSC	Request for revisions to the October 2012 CWG Significant Issues regarding Mr. Arrowweed's presentation.
2/15/2013	Karen Baker, DTSC	Nora McDowell-Antone, FMIT, Aaron Yue, DTSC	Yolanda Garza, DTSC	Appreciate the input regarding revision to Oct. 2012 CWG significant issues.
2/15/2013	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	Timothy Williams, FMIT, Karen Baker, DTSC, Kim Liebhauser, BLM, Tribal Governments	Cover letter of comment letter from Michael Sullivan on the two RAWP Addenda dated 2/11/13 stating tribes excluded from the development on the two RAWP addenda, and request for an additional 30 days to review due to additions to the RAWP.
2/15/2013	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	Timothy Williams, Linda Otera, Tribal Governments, AZSHPO, CASHPO, Linda Miller, USFWS, Kim Liebhauser, BLM	FMIT concerns regarding Freshwater Source Archaeology/Hisorical Tech Memo

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2/19/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart (H&A); CRITs: Howard Magill; CIT: Tom Pradetto, Hualapai: Dawn Hubbs; TRC: Margaret Eggars; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; MWD: Eddie Rigdon; PG&E : Sheryl Bilbrey, Yvonne Meeks, Glenn Caruso and their consultants		Clearinghouse Task Force Meeting. Karen Baker announced DTSC would be sending a letter seeking Tribal input on the Soil Investigaiton EIR by April 12 so information could be incorporated into the Draft EIR. DTSC agreed to send copies of the cultural resources section from the Certified Groundwater FEIR as a starting point for discussions.
2/19/2013	PG&E	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart (H&A); CRITs: Howard Magill; CIT: Tom Pradetto, Hualapai: Dawn Hubbs; TRC: Margaret Eggars; DTSC: Karen Baker, Aaron Yue; PG&E: Yvonne Meeks, Glenn Caruso, Curt Russell, Valisa Nez and consultants Lisa Cope, Lisa Kellogg, Christina Hong		Tribal Monthly Update Meeting: Discussed Palentological Report and EIR Mitigation Measures CUL-1a-8d; CUL-1a-8h, CUL-1a-8k and CUL-1a-8l.
2/19/2013	Chris Guerre, DTSC	TWG		Two handouts for 2/20/13 TWG meeting.
2/19/2013	Chris Guerre, DTSC	TWG		Handout "Implementation Plan for Repair of MW-38S/D and Old Well Pipe Recon. Refresher" for 2/20/13 TWG meeting.
2/19/2013	Kelly McDonald (for Steve McDonald Law Office) FMIT	pubcomment-ees.enrd@usdoj.gov Assistant Attorney General, USDOJ - ENRD	FMIT: Nora McDowell, Courtney Coyle, Karen Baker, DTSC, Pam Innis, DOI	Comments on Remedial Design/Remedial Action Consent Decree (Topock Groundwater Remediation); United States v. PG&E, Civil Action No. EDCV13-00074-VAP (Opx) (USDC C.D. Cal.), D.J. Ref. No. 90-11-3-07240/4
2/20/2013	DTSC	**Attendees:** FMIT: Nora McDowell-Antone, Leo Leonhart (H&A); CRITs: Howard Magill; TRC: Margaret Eggers, Charlie Schlinger, Eric Rosenblum (via telephone), Win Wright; CIT: Tom Pradetto (via telephone), Steven Escobar; Hualapai: Dawn Hubbs; DTSC: Chris Guerre, Karen Baker; PG&E, Arcadis, CH2M Hill, DOI, DFW, ADEQ, CRB		TWG Meeting. Agenda items: GW Modeling Update: Review the update completed to address comments on the 30% design; Discuss how 60% groundwater remedy bais of design changes impact the remedy; Proposed Sampling and Monitoring Plan for the Remedy: Preview of the Sampling and Monitoring Plan (Volume 2 of the Draft O&M Manual); Implementation Plan for Repair of MW-38S and MW-38D and Old Well/Pipe Reconnaissance Refresher.
2/26/2013	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	Timothy Williams, FMIT, Pam Innis, DOI, CWG, Geo/Hydro TWG, Tribal Reps., TRC	Letter in response to FMIT's comment letter on Review of RAWP Addendum Scope and Update Tech Memo.
3/4/2013	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC		Confirmation that FMIT will host the FMIT 101 site visit and tour on 3/21/13 and logistics. Requested that Yolanda extend the invitation to the ESA/DTSC representatives.
3/5/2013	Karen Baker, DTSC	Nora McDowell-Antone, FMIT	Courtney Coyle, Steve McDonald, DTSC, ESA	Letter requesting participation and input of the FMIT as DTSC prepares a Draft EIR for soils investigation. Request input to Draft EIR by 4/19/13 (extended by 1 week). Also requested she contact Yolanda Garza or Monica Strauss to set up a meeting to assist us in preparation of the draft EIR.
3/5/2013	Karen Baker, DTSC	Loretta Jackson, Dawn Hubbs, Hualapai	ESA, DTSC	Letter requesting participation and input of the Hualapai as DTSC prepares a Draft EIR for soils investigation. Request input to Draft EIR by 4/19/13 (extended by 1 week). Also requested they contact Yolanda Garza or Monica Strauss to set up a meeting to assist us in preparation of the draft EIR.

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3/5/2013	Karen Baker, DTSC	Thomas Pradetto, Steven Escobar, Chemehuevi	ESA, DTSC	Letter requesting participation and input of the Chemehuevi as DTSC prepares a Draft EIR for soils investigation. Request input to Draft EIR by 4/19/13 (extended by 1 week). Also requested they contact Yolanda Garza or Monica Strauss to set up a meeting to assist us in preparation of the draft EIR.
3/5/2013	Karen Baker, DTSC	Doug Bonamici, Howard Magill, CRITs	ESA, DTSC	Letter requesting participation and input of the CRITs as DTSC prepares a Draft EIR for soils investigation. Request input to Draft EIR by 4/19/13 (extended by 1 week). Also requested they contact Yolanda Garza or Monica Strauss to set up a meeting to assist us in preparation of the draft EIR.
3/5/2013	Karen Baker, DTSC	Jill McCormick, Cocopah	ESA, DTSC	Letter requesting participation and input of the Cocopah as DTSC prepares a Draft EIR for soils investigation. Request input to Draft EIR by 4/19/13 (extended by 1 week). Also requested they contact Yolanda Garza or Monica Strauss to set up a meeting to assist us in preparation of the draft EIR.
3/6/2013	Karen Baker, DTSC	Doug Bonamici, CRITs		Request to review note from Nora McDowell-Antone, FMIT, regarding Mr. Arrowweed's presentation at the Oct. 2012 CWG and CRIT comments she is requesting be added to the significant issues.
3/6/2013	Doug Bonamici, CRIT	Karen Baker, DTSC		Response to her request of reviewing Nora's note regarding Oct. 2012 significant issues.
3/6/2013	Karen Baker, DTSC	Doug Bonamici, CRIT		Karen thanked Doug for his response and clarification and will think and see how to reflect on the Oct. 2012 significant issues.
3/6/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., ESA, TRC		Revised Oct. 2012 CWG significant issues as requested by Nora McDowell-Antone, FMIT
3/6/2013	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Josephine Rivera; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing February 2013 CWG emails and attachments.
3/8/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., ESA, TRC		Topock results for December 2012 Monthly Sampling
3/8/2013	George Shannon, BLM	CHPMP Work Group		Agenda for 3/13/13 Work Group Meeting, 3/13/13 Freshwater Implementation Plan Meeting, and 3/14/13 onsite visit at Topock.
3/12/2013		Attendees: Hualapai: Sherry J. Counts, Philbert Watahomigie, Sr., Rudy Clark, Hilda Cooney, Barney Imus, Jean Pagilawa, Ronald Quasula, Sr.; DTSC: Karen Baker, Yolanda Garza; PG&E: Sheryl Bilbrey, Yvonne Meeks, Glen Caruso; TRC: Margaret Eggers, Eric Rosenblum		Hualapai Tribal Council, Special Council Meeting. DTSC gave presentations to provide information on the investigation and cleanup (corrective action) at the PG&E Topock site near Needles, California. Tribal leaders were encouraged to participate in the development of the EIR for the soils investigation at Topock. DTSC is seeking input and insight into the cultural and historical significance of the impacted area.
3/13/2013	Jill McCormick, Cocopah	Karen Baker, DTSC		Thanked her for information on the Soil EIR. She will contact Yolanda Garza if they decide they need to meet with DTSC.
3/14/2013	Chris Guerre, DTSC	Geo/Hydro TWG, TRC		Agenda for TWG Mmeeting on 3/20/13.
3/15/2013	Jose Marcos, DTSC	Geo/Hydro TWG, TRC		Handouts for TWG Meeting: Topock Pipelines A-B, Soil Management Plan Baselines SAP, SMP Flow Charts
3/18/2013	Chris Guerre, DTSC	Geo/Hydro TWG, TRC		Webex link for 3/20/13 TWG for those who cannot attend in person.

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3/19/2013	Karen Baker, DTSC	Fort Yuma-Quechan: John P. Bathke, Chase Choate, William Hirt, Mike Jackson, Sr., William Scott; Havasupai: Bernadine Jones, Travis Hamidreek, Matthew Putesoy; Torres-Martinez Desert Cahuilla Indian Tribe: Raymond Torres, Mary Maxine Resvaloso, Debi Livesay, Matt Krystall, Rodney Bonner, Roland Ferrer; Ah-Mut-Pipa Foundation: Preston J. Arrow-Weed; 29 Palms Indian Tribe: Anthony Madrigal, Darrell Mike, Dr. Marshall Cheung; William Anderson; Yavapai Prescott Indian Tribe: Greg Glassco, Ernest Jones, Sr.; Las Vegas Paiute Tribe; San Manual Band of Mission Indians: Carla Rodriguez; Serrano Nation of Mission Indians: Goldie Walker;		Letters mailed: "Pacific Gas & Electric Topock Compressor Station - Soils Investigation Environmental Impact Report". In an effort to address any potential impacts to archaeological or Native American resources, seeking comments and information by April 19, 2013.
3/19/2013	PG&E	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart; CRITs: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Tom Pradetto, Steven Escobar; TRC: Margaret Eggers; DTSC: Karen Baker, Aaron Yue, Yolanda Garza; PG&E: Yvonne Meeks, Glenn Caruso, Curt Russell, and consultants Christina Hong, Lisa Cope		PG&E - Tribal Topock Project Monthly Update held at CH2M Offices in Henderson, NV. The topic of discussion was the MMRPs CUL-1a-8i, 8j, 8m & 8n. These will be included in the CIMP, developed in coordination with the tribes, which will be part of the final Remedial Design.
3/19/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart; CRIT: Doug Bonamici, Howard Magill; Chemehuevi: Steven Escobar, Tom Pradetto; Hualapai: Dawn Hubbs; DTSC: Yolanda Garza, Karen Baker; DOI: Pam Innis(phone); MWD: Eddie Rigdon; PG&E: Glen Caruso, Stephanie Isaacson, Sheryl Bilbrey, Yvonne Meeks (phone); Arcadis for PG&E: Lisa Kellogg, Lisa Cope; CH2M Hill for PG&E: Christina Hong; Keakjian for PG&E: Ed Moser (phone)		Clearinghouse Task Force Meeting. Karen Baker announced that on March 5 DTSC sent a letter to"Interested Tribes" asking them to meet with DTSC to discuss cultural resources and mitigation measures to be included in the Soil Investigation EIR. Letters will go to other Tribes on same topic soon. The cut off date to provide information to be included in the Draft EIR is April 19. Information can be provided later during the public review process for inclusion in the FEIR. DTSC will also be sending out a letter to six Interested Tribes inviting them to a meeting to discuss the Groundwater FEIR mitigiation measures.

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3/20/2013		Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi: Tom Pradetto, Steven Escobar; CRITs: Howard Magill; DTSC: Chris Guerre, Karen Baker, Aaron Yue, Yolanda Garza, Jose Marcos (phone); ESA: Candace Ehringer, Monica Strauss; PG&E: Glenn Caruso, Curt Russell, Yvonne Meeks (phone), Virginia Strohl (phone PM); Arcadis for PG&E: Lisa Kellogg, Frank Lenzo, Valisa Nez, Ben Wuerl (phone), Paul Tjoghs (PM), John Baxter (PM), John Porcella (PM) ; CH2M Hill: Christina Hong, Jamie Eby, Keith Sheets; TRC: Margaret Eggers, Bob Prucha, Eric Rosenblum, Win Wright, Charlie Schlinger; DOI: Pam Innis (phone), Mike Anderson; USBOR: Jeff Smith; CDFW: Victoria Chau; CRB: Lyndia Liu (phone); MWD: Maria Lopez (PM);		Technical Workgroup Meeting - Agenda items included Soil Management Plan (review of the Soil Management Plan (Volume 4 of the Draft O&M Manual) and Aboveground vs. Underground Piping (Review of changes from 30% to 60% design.
3/21/2013	FMIT: Shan Lewis, Nora McDowell-Antone, Linda Otero	Attendees: DTSC: Yolanda Garza, Aaron Yue, Jose Marcos, Karen Baker, Chris Guerre; ESA: Bobbette Biddulph, Candace Ehringer, Addie Farrell, Monica Strauss; Katz & Assoc.: Joan Isaacson		DTSC/ESA attended "FMIT 101" which included a site tour and sensitivity training from FMIT. Site tour included Grapevine Canyon, Inscription Rock, Mojave Twins and the Topock area.
3/22/2013	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Inquired regarding new project manager for Cocopah for inclusion in the contact list.
3/26/2013	Pam Innis, DOI	CWG, Tribal Reps.		DOI direction to PG&E regarding the Freshwater Source Implementation Plan
3/26/2013	Karen Baker, DTSC	Sherry Counts, Hualapai		Thank you letter for convening a special council meeting on 3/12/13 with DTSC and PG&E. A letter was sent on 3/5/13 inviting input and a meeting to discuss the development of the soil EIR. DTSC looks forward to continuing the dialogue and input with the Hualapai council and representatives.
3/27/2013	Karen Baker, DTSC	Doug Bonamicci, CRITs; Chase Choate, Fort Yuma-Quechan; Loretta Jackson-Kelly, Hualapai; Jill McCormick, Cocopah; Nora McDowell-Antone, FMIT; Thomas Pradetto, Chemehuevi	Howard Magill, CRITs; Dawn Hubbs, Hualapai; Courtney Coyle, Steven McDonald, FMIT; Steven Escobar, Chemehuevi; Aaron Yue & Yolanda Garza, DTSC; Addie Farrell and Monica Strauss, ESA	Letters sent seeking tribal input on scope and status of mitigation measures for the groundwater EIR during the remedy design development. Asked to contact DTSC or ESA for an opportunity to collaborate and discuss the scope and status of the Groundwater EIR mitigation measures.
3/28/2013	Chris Guerre, DTSC	TWG and TRC		Draft agenda for 4/18/13 TWG meeting at the compressor station.
3/28/2013	Karen Baker, DTSC	Shan Lewis, Nora McDowell-Antone, and Linda Otero, FMIT		Thank you letters from DTSC & ESA for 3/21/13 orientation and site tour.
3/28/2013	Chris Guerre, DTSC	TWG and TRC		Hold the Date of April 11, 2013 @ 2:00 for Webex discussion of Geophysical data for old well/pipe in Bat Cave Wash. If data are not ready, this meeting will be canceled and the information will be presented and discused at the 4/17-18 CWG or TWG.
3/28/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		4th Quarter 2012 and Annual Interim Measures (IM) Performance Monitoring and Groundwater Monitoring Report
3/28/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		PAR and CMP, Second Half 2012, Groundwater Monitoring Report for IM No. 3

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3/28/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Results for January 2013 monthly sampling
3/29/2013	Yolanda Garza, DTSC	CTF Members		Draft notes, action item matrix and Topock Orientation candidates list, and CTF calendar.
4/2/2013	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Josephine Rivera; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing March 2013 CWG emails and attachments.
4/3/2013	Yolanda Garza, DTSC	Doug Bonamici & Howard Magill, CRITs		Email regarding EIR input. Requested dates for CRIT Council meeting.
4/3/2013	Doug Bonamici, CRIT	Yolanda Garza, DTSC		Follow-up on meeting regarding EIR input.
4/3/2013	Yolanda Garza, DTSC	Nora McDowell-Antone, FMIT	Linda Otero, FMIT	Email - Tribal input on EIR for Groundwater and Soil Investigation Workplan. Potential dates and possibility of meeting with the FMIT Tribal Council regarding the Soil and Groundwater EIR.
4/3/2013	Yolanda Garza, DTSC	Tom Pradetto, Chemehuevi		Email regarding EIR input. Requested dates for CRIT Council meeting.
4/5/2013	Yolanda Garza, DTSC	CTF Members		Draft agenda for review and comment for 4/16/13 CTF meeting.
4/8/2013	Ron Escobar, Chemehuevi	Yolanda Garza, DTSC		Called and left message asking that Yolanda call.
4/8/2013	Yolanda Garza, DTSC	Ron Escobar, Chemehuevi		Called and asked for contact info. Provided April 26th for council meeting.
4/8/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Submittal of Basis of Design Report/ Intermediate (60%) Design for the Final Groundwater Remedy (link to FTP site). Comments in writing due by COB 6/16/13.
4/8/2013	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, Tribal Reps.	ESA, TRC	Draft Addendum to RFI/RI Report, Volume 1, March 2013 for review and comment. Extended review period due to multiple project documents. Comments due by July 5, 2013.
4/9/2013	Yolanda Garza, DTSC	Arlene Kinger, Fort Yuma-Quechan Tribe		Called to request contact list info.
4/9/2013	Thomas Pradetto, Chemehuevi	Yolanda Garza, DTSC		Setting up council meeting discussion for April 26, 2013.
4/9/2013	Yolanda Garza, DTSC	Ron Escobar, Chemehuevi		Email confirming council meeting discussion for April 26, 2013.
4/9/2013	Aaron Yue, DTSC	Arlene Kinger, Fort Yuma-Quechan Tribe		Welcomed Arlene to the project and provided her with the contacts lists and agenda for the 4/17/13 CWG meeting.
4/10/2013	Aaron Yue, DTSC	Michael Sullivan, FMIT and Dawn Hubbs, Hualapai	Nora McDowell-Antone, FMIT, Lisa Kellogg, Arcadis, Karen Baker and Yolanda Garza, DTSC	Follow-up on the status of the Risk Assessment Work Plan (RAWP) addendum scoping documents and the Arrowweed tech memo review since extension date passed (3/28). Important to let us know if you have additional comments.
4/10/2013	Chris Guerre, DTSC	Geo/Hydro TWG, TRC		April 11, 2013 Webex discussion of Geophysical Data for Old well/pipe in Bat Cave Wash to discuss recently collected geophysical data.
4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Arrow-Weed, Preston J., Ah-Mut-Pipa Foundation		Soils EIR Native American scoping call:: Mr. Arrow-weed expressed his concern about the project and said that he is against it, although it's outside of his area. However, he is related to the Mojave. The area is very cultural. He asked if we looked at the water first and if the Ft. Mojave agreed to splitting the groundwater from the soils. He requested that we continue to mail him information and said that he would contact Nora.

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4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Brierty, Ann, San Manuel Band of Mission Indians		Soils EIR Native American scoping call: Spoke with the receptionist who indicated that Ann Brierty is the primary point of contact. She connected us with Ms. Brierty and we left voicemail.
4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Cheung, Dr. Marshall, 29 Palms Indian Tribe		Soils EIR Native American scoping call: Mr. Cheung had no comment on the project, but wished to remain on the mailing list as contact for Twenty-Nine Palms.
4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Choate, Chase, Fort Yuma Quechan		Soils EIR Native American scoping call: left message
4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Cultural Resources Department, Las Vegas Paiute Tribe		Soils EIR Native American scoping call: Given a contact person and number to call by the office, but the number was busy. Kenny Anderson - 702-351-3834.
4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Ferrer, Roland, Torres-Martinez		Soils EIR Native American scoping call: Spoke with Roland Ferrer. He requested that we keep himself and Matt Krystall on the mailing list for Torres-Martinez. Mr. Ferrer also requested that a Native American cultural monitor be present for all ground-disturbing activites.
4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Kingery, Arlene, Fort Yuma-Quechan		Soils EIR Native American scoping call: left message
4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Putesoy, Matthew, Havasupai		Soils EIR Native American scoping call: Mr. Putesoy stated that we should include cultural and archaeological information and impacts in our analysis. Mr. Putesoy requested some additional information be emailed to him, and that he would bring up the project at the council meeting to be held on 4/12/2013 to see if there was any tribal interest. [Yolanda emailed initial letter on 4/11/2013]
4/11/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Walker, Goldie, Serrano Nation of Mission Indians		Soils EIR Native American scoping call: Ms. Walker requested that a copy of the final report for cultural resources be sent to her.
4/11/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC	ESA	Information of thresholds for different EIR documentatin under CEQA guidelines in fulfillment of an action item from the 1/16/13 CWG meeting.
4/11/2013	Chris Guerre, DTSC	Topock Well Decommissioning Subgroup	TRC	DTSC comments on the Draft Standard Operating Procedures (SOP) for Well and Borehole Decommissioning.
4/15/2013	Aaron Yue, DTSC	Doug Bonamici, CRIT; Thomas Pradetto, Chemehuevi; Jill McCormick, Cocopah; Nora McDowell-Antone, FMIT; Loretta Jackson-Kelly, Hualapai	Howard Magill, CRIT, Steven Escobar, Chemehuevi; Linda Otero, Courtney Coyle, Steven McDonald, FMIT; Dawn Hubbs, Hualapai; Addie Farrell & Monica Strauss, ESA	Emailed (& mailed hard copy) requesting tribal input on key viewpoint locations for the Soil EIR evaluation. Input requested by April 26, 2013.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/16/2013	DTSC	Attendees: Chemehuevi: Tom Pradetto; Cocopah: Edgar Castillo, Jill McCormick; CRITs: Doug Bonamici, Howard Magill; FMIT: Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; BLM: Amanda Dobson; MWD: Eddie Rigdon, Maria Lopez; PG&E: Glenn Caruso, Stephanie Isaacson; CH2M Hill: Christina Hong; Arcadis: Lisa Micheletti-Cope, Lisa Kellogg; Keadjian: Ed Moser; TRC: Margaret Eggers		Clearinghouse Task Force meeting in Laughlin, Nevada. Karen Baker announced DTSC sent out two letters to Tribes to discuss mitigation measures for the Soil Investigation EIR and for the Certified Groundwater FEIR. For the Soil EIR the deadline to incorporate comments into the draft is April 19. DTSC offered to meet individually with tribes if they would prefer. Also discussed upcoming April 25 meeting regarding arsenic with Water Board; 60% Groundwater Remedy Design and schedule; Status of freshwater alternatives and treatment; Sub-Committee Updates on Modeling and Newletter.
4/16/2013	PG&E	Attendees: Chemehuevi: Tom Pradetto; Cocopah: Edgar Castillo, Jill McCormick; CRITs: Doug Bonamici, Howard Magill; FMIT: Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs; TRC: Margaret Eggers; DTSC: Karen Baker; PG&E: Yvonne Meeks Glenn Caruso, consultants Christina Hong; Lisa Micheletti-Cope, Lisa Kellogg		Tribal Topock Project Monthly Update Meeting. Discussed Revegetation examples and Groundwater EIR mitigation measures CUL-1a-8g, CUL-1a-8b, CUL-1a-8o, CUL-1a-8p.
4/17/2013	DTSC	FMIT: Nora McDowell-Antone, Leo Leonhart (H&A), Courtney Coyle (by phone), Michael Sullivan (by phone); Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; Chemehuevi: Thomas Pradetto; Cocopah: Edgar Castillo, Jill McCormick; DTSC: Karen Baker, Aaron Yue, Yolanda Garza, Chris Guerre, Isabella Alastic, Jose Marcos (by phone), Lori Hare (by phone); ESA: Bobbette Biddulph, Candace Ehringer, Monica Strauss, Addie Farrell (by phone); PG&E and their consultants CH2M Hill, Arcadis, Keadjian; SWRCB, CRB, USBOR, USDOI and their consultants Herndon Solutions Group, Summit Technical Resources, Inc., USFWS, DFW, MWD, ADEQ, Mohave County, TRC		Consultative Work Group Face-To-Face meeting at Aquarius Casino Resort, Lauglin, NV. Agenda items: Project Highlights; Project Schedule Update; Corrective Measure Implementation/Remedial Design (CMI/RD); Update on EIR mitigation measures implementation; Presentation on Interactive/Physical Models; Well Decommissioning/Disturbed Soil Subgroup Activities Update; CEQA Update on Soil Investigation and Freshwater Source Evaluation; Old Well/Pipe Abandonment Geophysical Results.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/18/2013	Chris Guerre, DTSC			TWG Meeting before start of field walk: Agenda items: MW-38 Repair and Old Well/Pipe Recon: Review surface geophysical results and suggested prioritization of anomalies to be potentially excavated; Planned Piping Alignment/Aboveground Facilities and Structures in 60% Design: Brief review of design features and locations to be covered in today's visit. Site Walk: Old Well/Pipe Recon: View prposed locations for excavation and prioritization; view planned facilities in 60% Design. Field Stop #1: Locations of planned facilities in Bat Cave Wash/Lower Yard (Pipe alignment, FW-1 well, new MW S, Southern Aerial Crossing, TCS Injection wells); Field Stop #2 (approx. 20mins) – Locations of planned facilities in TCS (Remedy-produced water conditioning plant, Freshwater pre-injection treatment system, Influent and Effluent Storage, Reuse of existing TCS storage tanks); Field Stop #3 (approx. 20mins) – Locations of planned facilities at TW Bench (Pipeline Alignment, Carbon Amendment Dosing Building, Carbon Storage, Central Maintenance Building, Storage Building); Field Stop #4 (approx. 20mins) – Locations of planned facilities in East Ravine and along pipeline access road (Pipeline Alignment, East Ravine extraction wells, Freshwater piping); Field Stop #5 (approx. 40mins) - Location of planned facilities in floodplain and at MW-20 Bench (Pipeline alignment, Carbon Amendment Dosing Building, Carbon Storage, Reuse of Existing Frac Tanks); Field Stop #6 (approx. 45mins) - Location of planned facilities in the Upland (Pipeline Alignment, Wells, One Transformer); OPTIONAL Visit to Planned Facilities in Arizona (HNWR-1 well, Pipeline
4/19/2013	Chris Guerre, DTSC	**Attendees:** FMIT: Nora McDowell-Antone; H&A for FMIT: Leo Leonhart, Jim Schwall, Shayne Koppas; CSUN for FMIT: Michael Sullivan CIT: Steven Escobar; Cocopah: Jill McCormick, Edgar Castillo; CRITs: Howard Magill; Hualapai: Dawn Hubbs; TRC: Margaret Eggers, Win Wright, Charlie Schlinger, Eric Rosenblum; Bob Prucha; DTSC: Chris Guerre, Karen Baker, Aaron Yue, Yolanda Garza; ESA on behalf of DTSC: Candace Ehringer, Monica Strauss; CDFW, MWD, PG&E, Arcadis, CH2M Hill, DOI, Herndon		TWG Meeting Agenda Items: Open forum to discuss response to comments: Specific comments requested by Stakeholders/Tribes/Agencies/TRC for discussion; Model update; Responses to TRC Comments; Changes to design based on Agencies direction.
4/19/2013	Leo Leonhart, FMIT	Chris Guerre, DTSC	Geo/Hydro TWG	FMIT comments on the latest draft of the well and borehole decommissioning SOP.
4/19/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Submittal of Conceptual Visualizations of Aboveground Piping Concepts for Groundwater Remedy Design.
4/23/2013		Attendees: FMIT: Nora McDowell-Antone, Craig Gordon; CRITs: Howard Magill; Hualapai: Dawn Hubbs, TRC: Eric Rosenblum: ESA for DTSC: Candace Ehringer, Monica Strauss; BLM: George Shannon; PG&E: Glenn Caruso		ESA was present for this survey at the request of the Hualapai and FMIT. The goal of the survey, as explained by the tribes, was to ensure their satisfaction with the boundary of Maze A as currently recorded. ESA will capture in a spreadsheet the information provided or gathered by the Tribes.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/24/2013	Nora McDowell-Antone, FMIT	Karen Baker, DTSC, Pam Innis, DOI	CRIT: Doug Bonamici; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick; Chemhuevi: Tom Pradetto	Checking if Karen or Pam have received feedback from Robert Perdue or Tom Vandenburg as to whether or not tribes can join 4/25/13 meeting with the State Water Board.
4/24/2013	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC		Realized Karen is on vacation. Asked if conference call with the State Water Board still scheduled for 4/25/13.
4/24/2013	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	DTSC: Karen Baker, Stewart Black; DOI: Pam Innis; Waterboar: Tom Vandenberg	Explained and apologized that no one responded to her. State Board deferred decision to Director DebbieRaphael who is on vacation. Informed her that the meeting will be between agencies and PG&E and DTSC & DOI will provide a debrief and presentations to the tribes.
4/25/2013	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC	DTSC: Karen Baker, Stewart Black; DOI: Pam Innis; Waterboar: Tom Vandenberg	Tribe would appreciate a debrief of the meeting and any final actions that the State Water Board may take as a result of this important discussion. The tribe feels that this decision needs to be made sooner not later in the process and a final resolution as to the Injection Standards the SWB may make and require is critical as we assess the 60% design and its implications to the Sacred lands the tribe holds for the Topock project area as well as the 90% final design.
4/25/2013	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	DTSC: Karen Baker, Stewart Black, Yolanda Garza; DOI: Pam Innis; PG&E: Yvonne Meeks; WB: Tom Vandenberg	Aaron gave Nora a debrief of the Waterboard meeting with additions and edits added by Yvonne Meeks, PG&E, and Pam Innis, DOI.
4/25/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Results for February First Quarter 2013 Sampling
4/26/2013	Aaron Yue, DTSC and Yoland Garza, DTSC	Chemehuevi Tribal Council, Steven Escobar, Thomas Pradetto		Soil Investigation Project EIR information exchange meeting at the Chemehuevi Council Chamber.
4/30/2013	Aaron Yue, DTSC	Chemehuevi: Tito Smith, Ron Escobar, Shirley Smith, marston1@pacbell.net	Chemehuevi: Thomas Pradetto, Steven Escobar; ESA: Monica Strauss, Candace Ehringer	Provided two sources of information as requested at 4/26/13 Tribal Council meeting regarding the health effects of hexavalent chromium: an epa weblink and an OEHHA Fact Sheet.
4/30/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		1Q 2013 Topock GW Remedy EIR Mitigation Measures Compliance Report.
4/30/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		DTSC approval of one time extension for submittal of the combined GMP and IMPM report from April 15 to May 15, 2013.
5/1/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Provided updated due dates for document review and tribal input to fulfill an action item from the April CWG meeting.
5/1/2013	Christina Hong, CH2M Hill	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Provided a blank Response To Comments (RTC) table for use in providing comments on the 60% groundwater remedy design report.
5/2/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		PG&E's RTC's on the freshwater implementation plan for review. RTC resolution meeting will be held on 5/14 via webex.
5/2/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Provided a graphic of the revised Groundwater Remedy schedule to fulfill an action item from the April CWG meeting.
5/3/2013	Timothy Williams, FMIT	Deborah Raphael, DTSC Director	FMIT: Nora McDowell-Antone, DTSC: Karen Baker	Additional documentation in support of Tribe's request that the Tribal Land Use Scenario be considered as al alternative to the soil investigation as set forth in the workplan.
5/6/2013	Chris Guerre, DTSC	Geo/Hydro TWG, TRC		Request for agenda items for 5/22/13 CTF meeting in Henderson, NV.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/7/2013	Leo Leonhart, FMIT	Chris Guerre, DTSC	Geo/Hydro TWG	Suggested agenda item for 5/22/13 TWG mtg: further issues that develop in the course of the 60% Groundwater Remedy Design Review.
5/7/2013	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Josephine Rivera; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing April 2013 CWG emails and attachments.
5/8/2013	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, Leo Leonhart, FMIT, CocopahTPM@gmail.com	May 21, 2013 CTF meeting in Henderson, Nevada, draft agenda and handouts.
5/9/2013	Aaron Yue, DTSC	Pam Innis, DOI, DTSC: Stewart Black, Reed Sato, Isabella Alasti	DTSC: Karen Baker, Yolanda Garza, Chris Guerre	Aaron described a call he received from Nick Panchev of Toxic Torts Town. Mr. Panchev called to inform DTSC that they are planning to send a drill rig out to sample "all over" the area. Aaron explained the need to him of getting approval and permission from landowners and concerns that they may be intruding into Native American sacred areas. Mr. Panchev indicated that they have worked with the tribes. Aaron suggests a legal strategy be formulated in dealing with him and the group he is representing.
5/13/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Forwarded PG&E's proposal for exploratory borehole near HNWR-1 for information and consideration.
5/13/2013	Pam Innis, DOI	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC	Revision to the Groundwater Remedy Basis of Design submittal review schedule. Comments are now due to the agencies on or before June 24, 2013 to accommodate federal tribal consultation. Schedule for review of RFI/RI Volume I is revised with comments due to agencies on or before July 24, 2013.
5/13/2013	Aaron Yue, DTSC	Pam Innis, DOI, DTSC: Stewart Black, Reed Sato, Isabella Alasti	DTSC: Karen Baker, Yolanda Garza, Chris Guerre	Aaron received another call from Nick Panchev of Toxic Torts Town stating that he is no longer planning to sample in Tribal land or within right of ways and will only sample within clients' private properties.
5/13/2013	Pam Innis, DOI	Aaron Yue, DTSC	DOI: Casey Padgett, William Lodder; DTSC: Karen Baker, Yolanda Garza, Chris Guerre, Jose Marcos, Isabella Alasti, Reed Sato, Stewart Black; PG&E: Yvonne Meeks, Glenn Caruso, Curt Russell, Juan Jayo	Pam received the same call as Aaron from Nick Panchev of Toxic Torts Town. He added that they will be collecting water samples from private/domestic wells and that they "may be drilling in yards to collect soils samples". He state that he has informed the Tribal Chairmen and that several tribal members have asked his firm to test their wells. He reaffirmed that they will not be testing for Cr(VI) but will be testing for arsenic and maganese as well as other constituents "utilizing EPA protocol and chain of custody forms". When asked, he said that they were not planning on coming on to Federal property.

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5/13/2013	Yvonne Meeks, PG&E	Pam Innis, DOI, Aaron Yue, DTSC	DOI: Casey Padgett, William Lodder; DTSC: Karen Baker, Yolanda Garza, Chris Guerre, Jose Marcos, Isabella Alasti, Reed Sato, Stewart Black; PG&E: Glenn Caruso, Curt Russell, Juan Jayo	Yvonne asked if Pam knew if it is the FMIT or CRIT and suggested to pass on to tribes so they know what's going on.
5/13/2013	Yolanda Garza, DTSC	Pam Innis, DOI, Aaron Yue, DTSC, Yvonne Meeks, PG&E	DOI: Casey Padgett, William Lodder; DTSC: Karen Baker, Chris Guerre, Jose Marcos, Isabella Alasti, Reed Sato, Stewart Black; PG&E: Glenn Caruso, Curt Russell, Juan Jayo	Last week, Yolanda informed the MAQMD and asked that he speak to Mr. Panchev directly. MAQMD clarified information on the Topock site specific to soil and air as well. They spoke at length and Mr. Panchev is basing much of his information on Hinkley data and believes there to be a pattern. MAQMD's lengthy discussion may have been helpful to Mr. Panchev, possibly causing him to redirect his sampling efforts. Yolanda will update the tribes she spoke with: CRIT, FMIT & Hualapai.
5/14/2013	Chris Guerre, DTSC	Geo/Hydro TWG, TRC		Agenda for 5/22/13 TWG meeting in Henderson, NV.
5/15/2013	CRIT EPO Office	DTSC		Sent letter announcing new CRIT EPO Director, Mr. Wilfred Nabahe.
5/16/2013	Yolanda Garza, DTSC	CTF Members		Revised agenda for 5/21/13 CTF in Henderson.
5/16/2013	Yolanda Garza, DTSC	CTF Members		Correction to previous email, meeting after CTF is for the RTC on the Freshwater Evaluation Implementation Plan.
5/16/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Second part of Freshwater Evaluation Implementation Plan response to comment meeting on 5/21/13.
5/18/2013	Christina Hong, CH2M Hill	Geo/Hydro TWG, TRC		Handouts for May 22, 2013 TWG/Disturbed Soil Subgroup Meeting.
5/21/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		Call in number and passcode for 2nd part of Freshwater Evaluation Implementation Plan RTC meeting on 5/21.
5/21/2013	Christina Hong, CH2M Hill	CWG, Geo/Hydro TWG, Tribal Reps., TRC		Webex link for 2nd part of Freshwater Evaluation Implementation Plan RTC meeting on 5/21.
5/21/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone; Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo (via telephone); CRITs: Doug Bonamici, Howard Magill; TRC: Margaret Eggers; DOI: Pam Innis; BLM: Amanda Dodson; MWD: Eddie Rigdon; DTSC: Karen Baker, Yolanda Garza; PG&E: Yvonne Meeks, Stephanie Isaacson and consultants CH2M Hill, Arcadis, Keadjian		Clearinghouse Task Force Meeting. Agenda items included: Summary of April 25 meeting between DTSC, State Board, DOI and PG&E regarding injection of arsenic; Technical update from PG&E; Sub-Committee Updates on Newsletter and Models.
5/21/2013	PG&E	Attendees: FMIT: Nora McDowell-Antone; Hualapai: Dawn Hubbs; Cocopah: CRITs: Doug Bonamici, Howard Magill; TRC: Margaret Eggers; DTSC: Karen Baker, Aaron Yue, Yolanda Garza; PG&E: Yvonne Meeks, Curt Russell, Valisa Nez, Virginia Strohl, consultants Christina Hong, Lisa Cope, Lisa Kellogg		Tribal Topock Project Monthly Update Meeting. Discussed schdule for comments on mitigation measures and Groundwater EIR mitigation measures CUL-1a-8a, CUL-1a-8c, CUL-1a-8e, CUL-1a-5.

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5/22/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart (H&A); Hualapai: Dawn Hubbs; CRITs: Howard Magill; Cocopah: Edgar Castillo (phone); DTSC, PG&E and their consultants Arcadis, CH2M Hill, USBR, BLM, DOI and their consultant GRB, CDFW, TRC, CRB, SWRCB		Geo/Hydro TWG meeting in Henderson, NV. Agenda: Discuss Select 60% Design Topics 1. Evaluation of Relocating IRL-2 Closer to Road; 2. Alternative Pipe Routing to Well ER-6; 3. Walk through select portions of the 60% design documents; 4. OthersAction item from March TWG/Discussion on soil reuse and storage.
5/23/2013	Mike Cavaliere, CH2M Hill	CWG, Geo/Hydro TWG, Tribal Reps, TRC		Revised punchlist from 5/21 meeting for reference.
5/23/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Brierty, Ann, San Manuel Band of Mission Indians		Soils EIR Native American scoping call: left voicemail message.
5/23/2013	Yolanda Garza, DTSC/Candace Ehringer, ESA	Kingery, Arlene, Fort Yuma-Quechan		Soils EIR Native American scoping call: left message
5/28/2013	Timothy Williams, FMIT	Karen Baker, DTSC & Pam Innis, DOI		FMIT request for a 45 day extension for the review of the Basis of Design/Intermediate (60%) Design for the Final Groundwater Remedy to August 8, 2013.
5/29/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Request for agenda items for 6/19/13 TWG meeting in Henderson, NV
5/30/2013	Aaron Yue, DTSC	All Tribal Reps	ESA: Monica Strauss, Candace Ehringer, Addie Farrell; DTSC: Chris Guere	Request that tribes let him know if they are ready to discuss the proposed soil Key Observation Points (KOP's) at the June 5th site visit in addition to the freshwater evaluation. Letters were sent to tribes on 4/15/13 requesting comments on the proposed soil EIR KOP locations.
5/29/2013	Nora McDowell-Antone, FMIT	Karen Baker, DTSC, Pam Innis, DOI		Forwarded letter from Chairman Williams requesting a 45-day extension to review the 60% groundwater remedy design documents.
5/30/2013	Leo Leonhart, (H&A for FMIT)	Jose Marcos, DTSC	Aaron Yue, DTSC	Asked if there was a plan that went out in draft regarding the baselining of soils in regard to remedy construction.
5/31/2013	Jose Marcos, DTSC	Leo Leonhart, FMIT, Chris Guerre, DTSC	Aaron Yue, DTSC	Informed him that there is a baseline soil sampling plan in the 60% document - Appendix L (O&M) - Volume 4 Soil Management Plan - Appendix A Groundwater Remedy Implementation - Baseline Soil Sampling & Analysis Plan.
6/2/2013	Nora McDowell-Antone, FMIT	Karen Baker, Aaron Yue, DTSC	FMIT: Leo Leonhart, Courtney Coyle, Steve McDonald, Timothy Williams, Linda Otero; DOI: Pam Innis; BLM: Kim Liebhauser, George Shannon; Cocopah: Jill McCormick, Edgard Castillo; Hualapai: Dawn Hubbs, Loretta Jackson; Chemehuevi: Steven Escobar, Thomas Pradetto; CRIT: Doug Bonamici, Wilene Fisher-Holt; ESA	FMIT's preliminary response to the Key Observation Points (KOP's) that were referenced in Aaron's email of 5/30/13 and in response to letter dated 4/15/13. Asked that requested information be provided prior to the meeting on June 5, 2013
6/3/2013	Pam Innis, DOI	Mike Cavaliere, CH2M Hill	CWG, Geo/Hydro TWG, Tribal Reps., TRC	Response to questions raised regarding the DOI response to Comment #88 (FMIT Comment #28)

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6/3/2013	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Josephine Rivera; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing May 2013 CWG emails and attachments.
6/5/2013	Yolanda Garza, DTSC	CTF Members	Edgar Castillo, Cocopah; Leo Leonhart (H&A for FMIT); Eddie & Joan Rigdon, MWD, Aaron Yue, DTSC, Margaret Eggers, TRC, Kim Liebhauser, BLM	Draft CTF notes from 5/21/13, Draft CTF calendar, Revised action items, revised candidates for Topock Orientation
6/5/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone; Michael Sulllivan, Leo Leonhart (H&A), Russell Ray; Cocopah: Edgard Castillo; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; CRIT: Howard Magill; DTSC: Chris Guerre, Aaron Yue; ESA: Candace Ehringer; TRC: Eric Rosenblum; PG&E: Curt Russell, Glen Caruso; BOR: Mark Slaughter, Jeffery Smith; BLM: George Shannon; USFWS: Jennifer Portilla		Site visit/ meeting with Tribal represtatives to evaluate freshwater source Key Observation Points (KOP).
6/6/2013	Leo Leonhart, FMIT	Chris Guerre, DTSC & Geo/Hydro TWG		Two additional items they propose for discussion during the 6/19/13 TWG: impact(s) associated with the construction of new wells, and further details about the monitoring program, particularly during the start-up phase.
6/10/2013	Yolanda Garza, DTSC	CTF Members	Leo Leonhart, FMIT, Aaron Yue, DTSC, Edgar Castillo, Cocopah	Draft agenda for June 18, 2013 CTF meeting
6/17/2013	Ed Moser, Keadjian	CTF Members		Community newsletter that PG&E sent out to Needles and Golden Shores residents.
6/18/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Reminder about 6/19/13 TWG and agenda will come out tomorrow.
6/18/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Presentation for 6/19/13 TWG: Old Well Update
6/18/2013	Aaron Yue, DTSC	CTF Members		Follow-up to CTF action item providing the list of attendees at the meeting with the State Water Resources Board on 4/25/13.
6/18/2013	DTSC	**Attendees:** FMIT: Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs; CIT: Steven Escobar, Tom Pradetto; CRITs: Doug Bonamici (via telephone), Howard Magill; TRC: Margaret Eggers; DTSC: Karen Baker, Aaron Yue (via telephone); ; DOI, BLM, MWD, PG&E, CH2M Hill, Arcadis, Keadjian		Clearinghouse Task Force Meeting. As a follow up to their March 5, 201113 letter, DTSC still seeking input on any resource areas for the Soil EIR. Karen alsoannounced DTSC has not received any feedback on the letter rquesting a meeting regarding the Certified Groundwater EIR mitigation measures so will schedule a meeting to hear any concerns/issues. All Tribes are invited. Nora McDowell-Antone said FMIT would need longer to provide information on key views beyond June 28 and would need another tribal field meeting with DTSC. DTSC agreed to provide better maps to facilitiate the meeting

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6/18/2013	PG&E	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs; CIT: Steven Escobar, Tom Pradetto; CRITs: Howard Magill; TRC: Margaret Eggers; DTSC: Karen Baker, Aaron Yue (via telephone) PG&E: Yvonne Meeks, Curt Russell, Glenn Caruso, Valise Nez; CH2M Hill: Christina Hong; Arcadis: Lisa Cope, Lisa Kellogg		Tribal Topock Project Monthly Update Meeting. Discussed Groundwater EIR mitigation measures CUL-1a-3c, CUL-1a-7, CUL-1a-13, CUL-1b/c-3.
6/19/2013	Chris Guerre, DTSC	**Attendees:** FMIT: Nora McDowell-Antone; FMIT Consultant: Michael Sullivan; CIT: Steven Escobar, Tom Pradetto; CRITs: Howard Magill; Hualapai: Dawn Hubbs; TRC: Margaret Eggers, Charlie Schlinger, Bob Prucha; DTSC: Chris Guerre, Karen Baker, Aaron Yue (via telephone), Jose Marcos (via telephone); DOI, HSG, I, Arcadis		TWG meeting in Henderson, NV
6/19/2013	Pam Innis, DOI	CWG, Geo/Hydro TWG, Tribal Reps, TRC		DOI approval of FMIT's request to extend the time to review the BOD/Intermediate 60% Design for the Final GW Remedy. Deadline is now 8/8/13.
6/20/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Reminding members to provide any comments on the path forward for the old well investigation by July 3, 2013.
6/21/2013	Karen Baker, DTSC	FMIT: Nora McDowell-Antone, Timothy Williams	Aaron Yue, DTSC	DTSC approval of FMIT's request to extend the time to review the Basis of Design (BOD)/Intermediate 60% Design for the Final GW Remedy. Deadline is now 8/8/13.
6/24/2013	Aaron Yue	Tribal reps., DTSC, TRC	Pam Innis, DOI, Carrie Marr, USFWS	Shared PG&E response to comments on Scope of Risk Assessment Work Plan Addendum 2 and Chromium Uptake by Arrowweed tech memo and the need to schedule follow-up meeting with interested parties.
6/24/2013	Aaron Yue, DTSC	CTF Members		Provided the electronic version of the revised figure for key view discussion as requested by the CTF on 6/18/13.
6/24/2013	Aaron Yue	CWG, Geo/Hydro TWG, Tribal Reps., TRC, Agenda only, ESA		Provided revised project contact lists with request to review and inform him of needed changes.
6/25/2013	Candace Ehringer, ESA	Nora McDowell-Antone, FMIT, Dawn Hubbs, Hualapai; Robert Prucha, TRC	Addie Farrell, ESA, Aaron Yue & Karen Baker, DTSC	Provided key view shape files for the review of the Soil Investigation EIR.
6/28/2013	Timothy Williams, FMIT	Karen Baker, DTSC	FMIT: Nora McDowell-Antone, Linda Otero, Michael Sullivan, Leo Leonhart (H&A), Courtney Coyle, Steve McDonald, Cocopah, Hualapai, CRIT, Chemehuevi, DOI: Pam Innis, BLM: Kim Liebhauser, DTSC: Aaron Yue; ESA: Bobbette Biddulph, Monica Strauss, Candace Ehringer	Technical memorandum prepared by the tribe summarizing the Tribe's position on the approach to the "Key View Evaluation" and recommendation of an approach that they believe is superior in terms of achieving the Tribe's objectives relating to the evaluation of aesthetic impacts.
6/28/2013	Stewart Black, DTSC	Chairman Timothy Williams, FMIT	FMIT: Nora McDowell-Antone, Linda Otero; DOI: Pam Innis, DTSC: Karen Baker	Response to FMIT's letter regarding Tribal Use Scenario for PG&E Topock, Soils Project

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/28/2013	Karen Baker, DTSC	Nora McDowell, FMIT		Thomas Pradetto is unable to get a meeting room at the Chemehuevi for the 8/20/13 CTF meeting. You had mentioned at the last CTF meeting that you thought we could hold it at Fort Mojave. Is that possible?
6/28/2013	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Nora will check the availability of a room at Fort Mojave to hold the CTF on 8/20/13 and get back to Karen on Monday. Also asked for an extension until Monday to respond to DTSC's letter on key view points.
7/1/2013	Karen Baker, DTSC	Nora McDowell, FMIT		Thanked Nora for checking on room availability and for sending their response to DTSC's letter on key view points on Monday.
7/1/2013	Karen Baker, DTSC	Michael Sullivan, Nora McDowell-Antone, FMIT	Aaron Yue, DTSC	In response to a discussion they had in June, informed them that the decommissioning costs for the groundwater remedy can be found in Appendix H of the Design as Attachment E.
7/1/2013	Nora McDowell, FMIT	Karen Baker, DTSC	FMIT reps: Leo Leonhart, Courtney Coyle, Michael Sullivan, Linda Otero; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici, Wilene Fisher-Holt; Hualapai: Loretta Jackson-Kelly; Chemehuevi: Thomas Pradetto, Steven Escobar, Ron Escobar; Cocopah: Jill McCormick, Edgar Castillo; TRC: Eric Ronsenblum, Ron Prucha, Win Wright, Charlie Schlinger; DTSC, DOI, BLM	Fort Mojave's response to DTSC letter of April 15, 2013 regarding Soils Investigation Key View Points.
7/1/2013	Nora McDowell, FMIT	Karen Baker, DTSC	FMIT reps: Leo Leonhart, Courtney Coyle, Michael Sullivan, Linda Otero; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici, Wilene Fisher-Holt; Hualapai: Loretta Jackson-Kelly; Chemehuevi: Thomas Pradetto, Steven Escobar, Ron Escobar; Cocopah: Jill McCormick, Edgar Castillo; TRC: Eric Ronsenblum, Ron Prucha, Win Wright, Charlie Schlinger; DTSC, DOI, BLM	Recalled email sent regarding Fort Mojave's response to DTSC letter of April 15, 2013 regarding Soils Investigation Key View Points.
7/2/2013	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		We look forward to receiving Fort Mojave's final letter regarding Fort Mojave's response to DTSC letter of April 15, 2013 regarding Soils Investigation Key View Points.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
7/2/2013	Isabella Alasti, DTSC	Steven McDonald, FMIT	DTSC: Debbie Raphael, Stewart Black, Karen Baker; AG's Office: Sarah Morrison; FMIT: Timothy Williams, Nora McDowell-Antone, Linda Otero	Per settlement agreement between FMIT and DTSC, payment of $60,000 is overdue to DTSC for costs of preparing the administrative record.
7/2/2013	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Is meeting room needed on 8/20-8/21/13 needed for the CTF meeting or also for the TMU/TWG meetings?
7/2/2013	Karen Baker, DTSC	Nora McDowell-Antone		Room is definitely needed for the TMU meeting, but will get back to her about the TWG.
7/2/2013	Nora McDowell, FMIT	Karen Baker, DTSC	FMIT reps: Leo Leonhart, Courtney Coyle, Michael Sullivan, Linda Otero; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici, Wilene Fisher-Holt; Hualapai: Loretta Jackson-Kelly; Chemehuevi: Thomas Pradetto, Steven Escobar, Ron Escobar; Cocopah: Jill McCormick, Edgar Castillo; TRC: Eric Ronsenblum, Ron Prucha, Win Wright, Charlie Schlinger; DTSC, DOI, BLM	Resubmittal of Fort Mojave's response to DTSC letter of April 15, 2013 regarding Soils Investigation Key View Points.
7/2/2013	Karen Baker, DTSC	Nora McDowell-Antone, FMIT	Yolanda Garza, DTSC	May not have August TWG, but would like to try and hold a meeting to discuss the groundwater EIR Mitigation Measures on 8/21 after the CTF in Needles or Laughlin. Would Fort Mojave be able to host this meeting?
7/2/2013	Yolanda Garza, DTSC	CTF Members		Draft notes from 6/18/13 CTF, action item matrix and next meeting planned for 8/20/13.
7/3/2013	Karen Baker, DTSC	Nora McDowell-Antone, FMIT		PG&E plans to hold a CTF meeting after the CTF meeting on 8/20. Would Fort Mojave be able to host that meeting also?
7/5/2013	Steven McDonald (FMIT)	USDOJ - Assistant Attorney General	FMIT: Tribal Council, Nora McDowell-Antone, Courtney Coyle; DOI: Casey Padgett, Pam Innis; DTSC: Karen Baker	Revised Comment on Remedial Design/Remedial Action Consent Decree - Tribe's letter did not intend to assert any claim agains PG&E or the federal government for natural resources damage.
7/9/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Provided location of information regarding well rehabilitation and maintenance as requested at the 6/19/13 TWG meeting.
7/10/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Chris made the decision to cancel the TWG meeting on 7/18/13 due to lack of response for agenda items. Several emails (Margaret Eggers, TRC, Yvonne Meeks, PG&E, Dawn Hubbs, Hualapai) requesting the meeting not be canceled followed, and Chris decided not to cancel the meeting after all.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
7/10/2013	Sheryl Bilbrey, PG&E	Loretta Jackson-Kelly, Hualapai Tribe	FMIT: Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick; CRIT: Doug Bonamici, ; Chemehuevi: Tom Pradetto; PG&E: Yvonne Meeks; DTSC: Karen Baker; DOI: Pam Innis	Response to letter dated June 24, 2013 requesting more information on rights of way and easements associated with certain pipeline corridor segments that PG&E has proposed in our groundwater 60% Design documents.
7/11/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Agenda for 7/18/13 TWG meeting.
7/11/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		Topock sampling results the second quarter 2013.
7/15/2013	Karen Baker, DTSC	FMIT: Nora McDowell-Antone; Chemehuevi: Thomas Pradetto; Cocopah: Jill McCormick; Hualapai: Loretta Jackson-Kelly; Crit: Doug Bonamici; Fort Yuma-Quechan: Chase Choate;	FMIT: Courtney Coyle, Steven McDonald; Chemehuevi: Steven Escobar; Hualapai: Dawn Hubbs; CRIT: Howard Magill; DTSC: Aaron Yue, Yolanda Garza; ESA: Addie Farrell, Monica Strauss	Invitiation to August 21, 2013 meeting seeking tribal input on mitigation measures for the Certified Groundwater EIR.
7/16/2013		Attendees:FMIT: Nora McDowell-Antone, Leo Leonhart (phone); CRITs: Howaqrd Magill; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; Cocpah: Edgar Castillo (by phone); Chemehuevi: Steven Escobar; TRC: Margaret Eggers; DTSC: Karen Baker, Yolanda Garza, Aaron Yue; DOI: Pam Innis; BLM: Kim Liebhauser; PG&E: Yvonne Meeks; Sheryl Bilbrey, Glenn Caruso; and their consultants CH2M Hill, Arcadis & Keadjian		Clearinghouse Task Force Meeting. Karen Baker announced DTSC sent out a letter yesterday inviting Tribes to the Certified Groundwater FEIR mitigation measures meeting set for August 21, 2013 at the FMIT office. Other agenda items included: Technical Update of soil work, groundwater design and freshwater source plan; Physical and computer model update; Newsletter; PG&E Resource Team; Communications and Consultation Update
7/17/2013	DTSC	**Attendees:** FMIT: Nora McDowell-Antone (via telephone), Leo Leonhart (H&A), Courtney Coyle (Legal Rep) (via telephone), Michael Sulllivan (Toxicologist); Hualapai Indian Tribe: Dawn Hubbs; Technical Review Committee Members (TRC): Charlie Schlinger, Margaret Eggers, Win Wright, Robert Prucha; DTSC: Karen Baker, Aaron Yue, Yolanda Garza, Isabella Alasti, Chris Guerre. Jose Marcos (via telephone), Lori Hare (via telephone); Environmental Science Associates (ESA) on behalf of DTSC: Addie Farrell, Monica Strauss (via telephone); CDFW, CRB, PG&E and their consultants CH2M Hill, Arcadis, Blair, Church & Flynn Consulting Eng., Keadjian, USBLM, USBOR, USDOI, GRB for DOI, USFWS, MWD, Mojave County DPH		Face-to-Face Consultative Work Group Meeting. DTSC provided a Soil EIR Update
7/18/2013	Martin Barackman, CH2M Hill (on Chris Guerre's, DTSC, behalf)	Geo/Hydro TWG		Provided link to the Webex for today's TWG meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
7/18/2013	DTSC	Attendees: FMIT: Jim Schwall, Leo Leonhart (H&A); CRIT: Howard Magill; Chemehuevi: Steven Escobar; Hualapai: Dawn Hubbs; TRC: Win Wright; DTSC, BLM, PG&E, USBR, USDOI, MWD, CRB, PG&E & their consultants Arcadis, CH2M Hill;		Face-to Face TWG Meeting in Henderson, NV. Agenda: Follow-up on Response to Tribe's Request for Utilities Right of Way Information; Open Discussion – 60% Design Topics.
7/18/2013	Aaron Yue, DTSC	CTF Members		Provided screen capture of the alternate well I locations.
7/23/2013	Jose Marcos, DTSC	Michael Sullivin, FMIT	CWG, Tribal Reps, ESA, TRC	Provided Soil Investigation Workplan objectives as requested at the 7/17/13 CWG meeting.
7/23/2013	Nora McDowell-Antone, FMIT	Karen Baker, DTSC, Yolanda Garza, DTSC		Nora has a scheduling conflict on 8/20-8/21/13 and will not be in attendance at the CTF, TMU and consultation with DTSC.
7/23/2013	Karen Baker, DTSC	Nora McDowell-Antone, FMIT, Yolanda Garza, DTSC		Asked if it would still be possible to hold the meetings at the Fort Mojave office even though she wont be present since announcement letters were already sent out.
7/24/2013	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Nora confirmed that her assistant, Angie Alvarado will be present at the meetings on 8/20-8/21/13 in her absence and meetings can still be held at the Fort Mojave office.
8/5/2013	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing June & July 2013 CWG emails and attachments.
8/5/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, ESA, TRC		Link to the Final Freshwater Implementation Plan submitted by PG&E for informational purposes.
8/6/2013	Karen Baker, DTSC	FMIT: Nora McDowell-Antone; Cocopah: Hill McCormick; Hualapai: Loretta Jackson-Kelly; CRITs: Doug Bonamici; Fort Yuma-Quechan: Chase Choate; Chemehuevi: Thomas Pradetto	FMIT: Courtney Coyle, Steven McDonald; Hualapai: Dawn Hubbs; CRITs: Howard Magill, Wilfred Nabahe; Chemehuevi: Steven Escobar; All: DTSC: Aaron Yue, Yolanda Garza; ESA: Addie Farrell	Sent hard copy letter "Agenda for the August 21, 2013 Meeting on Groundwater Mitigation Measures to Mitigate Cultural Resource Impacts in the Final Environmental Impact Report for the Groundwater Remedy at PG&E Topock Compressor Station". Attachments: Draft Agenda, Exhibit 2 to Attachment B, Mitigation Momitoring and Reporting Program (MMRP)
8/7/2013	Christina Hong, CH2M Hill	CTF Members		Two examples of past Remediation Reviews for discussion during tomorrow's meeting.
8/8/2013	Nora McDowell-Antone, FMIT	Aaron Yue, DTSC and Pam Innis, DOI	Chemehuevi: Tito Smith, Ron Escobar, Thomas Pradetto, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick, Edgar Castillo; CRITs: Doug Bonamici, Wilene Fisher-Holt; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; DTSC, BLM,	Cover letter from Timothy Williams transmitting the Fort Mojave comments on the 60% Basis of Design.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/8/2013	Aaron Yue, DTSC		Chemehuevi: Tito Smith, Ron Escobar, Thomas Pradetto, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick, Edgar Castillo; CRITs: Doug Bonamici, Wilene Fisher-Holt; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; DTSC, BLM,	Confirmed receipt of Fort Mojave comments on the 60% BOD.
8/8/2013	Nora McDowell-Antone, FMIT	Aaron Yue	Chemehuevi: Tito Smith, Ron Escobar, Thomas Pradetto, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick, Edgar Castillo; CRITs: Doug Bonamici, Wilene Fisher-Holt; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; DTSC, BLM,	Nora asked what is the time frame for possible clarifications of comments? Asked a two week extension be considered.
8/8/2013	Doug Bonamici, CRIT	Aaron Yue, DTSC	Yvonne Meeks, Rebecca Loudbear, Wilene Fisher-Holt, Howard Magill	CRITs comments on the revised BOD - Intermediate 60% Design
8/8/2013	Thomas Pradetto, Chemehuevi	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT	Submitted comment letter concerning the 60% Design from Chemehuevi and the comment matrix from the TRC.
8/8/2013	Aaron Yue, DTSC	Thomas Pradetto, Chemehuevi		Confirmed receipt of Chemehuevi comments and TRC comment matrix on the 60% BOD.
8/8/2013	Edgar Castillo, Cocopah	Aaron Yue, DTSC	CRIT: Doug Bonamici; FMIT: Nora McDowell-Antone; TRC: Margaret Eggers; Chemehuevi: Thomas Pradetto; Hualapai: Dawn Hubbs	Cocopah comments on the 60% Design BOD
8/8/2013	Aaron Yue, DTSC	Edgar Castillo, Cocopah	CRIT: Doug Bonamici; FMIT: Nora McDowell-Antone; TRC: Margaret Eggers; Chemehuevi: Thomas Pradetto; Hualapai: Dawn Hubbs	Confirmed receipt of Cocopah comments on the 60% Design BOD
8/12/2013	Aaron Yue, DTSC	Doug Bonamici, CRIT	Yvonne Meeks, Rebecca Loudbear, Wilene Fisher-Holt, Howard Magill	Confirmed receipt of CRITs comments on the 60% BOD.
8/12/2013	Aaron Yue, DTSC	Nora McDowell-Antone, FMIT and Pam Innis, DOI	CWG, Geo/Hydro TWG, Tribal Reps, TRC	Per Fort Mojave's request, DTSC and DOI agreed to postpone final approval of the Freshwater Implementation Plan until after August 26, 2013.
8/15/2013	Chris Guerre, DTSC	Geo/Hydro TWG		September 2013 TWG meeting dates
8/15/2013	Leo Leonhart, FMIT	Chris Guerre, DTSC	Geo/Hydro TWG	Confused about TWG scheduled for 9/17, asked isn't the 17th supposed to be a CTF meeting?

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/15/2013	Aaron Yue, DTSC	Leo Leonhart, FMIT	Geo/Hydro TWG	Answered Leo's question that, yes, the TWG will start after the conclusion of the CTF. There isn't a face-to-face TMU after CTF.
8/16/2013	Yolanda Garza	FMIT: Nora McDowell-Antone, LInda Otero, Courtney Coyle, Steven McDonald; Chemehuevi: Thomas Pradetto, Steven Escobar; CRIT: Doug Bonamici, Howard Magill, Wilene Fisher-Holt; Cocopah: Edgar Castillo, Jill McCormick; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; Fort Yuma-Quechan: Chase Choate; TRC: Margaret Eggers; DTSC, PG&E,		Certified Groundwater EIR Mitigation Monitoring and Reporting Program (MMRP) meeting presentation and materials for the meeting on 8/21/13.
8/19/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC, ESA		1st Quarter 2013 IM Performance Monitoring Report and GW Monitoring Report
8/19/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC, ESA		2nd Quarter 2013 Interim Measures Performance Monitoring and Groundwater Monitoring Report
8/19/2013	Aaron Yue	CWG, Geo/Hydro TWG, Tribal Reps, TRC, ESA		Save the date of 9/5/13 from 1:30-3:30 to clarify comments made to the 60% design.
8/19/2013	Leo Leonhart, FMIT	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA	Leo asked Aaron to number the comments in advance if possible.
8/19/2013	Aaron Yue	Leo Leonhart, FMIT	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA	Agreed with Leo that numbering the comments would be helpful to all and will touch base with PG&E & DOI and will send out early if possible.
8/20/2013	Yolanda Garza, DTSC	CTF Members		Webex link to participate in today's CTF meeting.
8/20/2013	DTSC	Attendees: FMIT: Angie Alvarado, Russell Ray, Paul Jackson, Leo Leonhart (H&A); Cocopah: Edgar Castillo; Chemehuevi: Steven Escobar, Edward D. Smith; CRITs: Howard Magill; TRC: Margaret Eggers; DTSC: Karen Baker, Yolanda Garza; PG&E: Sheryl Bilbrey, Glenn Caruso; CH2M Hill: Christina Hong; Arcadis: Lisa Kellogg, Lisa Micheletti-Cope; Keadjian: Edward Moser; MWD: Eddie Rigdon, Maria Lopez (by phone); BLM: Kim Liebhauser		Clearinghouse Task Force (CTF) meeting. Agenda items included Technical Update on Soil and Groundwater; Sub-Committee Updates on Phyical and computer model and newsletter; Communications update and Topock.edu update
8/21/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Courtney Coyle, Angie Alvarado, Leo Leonhart, Steven McDonald, Linda Otero; Chemehuevi: Steven Escobar; CRIT: Howard Magill; Cocopah: Edgar Castillo; Hualapai: Dawn Hubbs; DTSC: Karen Baker, Aaron Yue, Isabella Alasti, Yolanda Garza; PG&E: Sheryl Bilbrey, Mike Zischke, Juan Jayo, Glenn Caruso;		Topock Groundwater Final EIR Mitigation Monitoring and Reporting Program (MMRP) Meeting held at the FMIT office. Discussion focused on mitgiation measurs related to cultural resources and other related impacts such as biological, aesthetics, and noise. Agenda items also included the Response to Comment process, Technical Review Committee, and the Project Boundary.
8/23/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		DTSC comments on the April 2013 BOD/Intermediate 60% Design and direction to PG&E to prepare their response to all comments received. Attached stakeholder comments except scanned version of Hualapai comments which is too large to send.
8/26/2013	Leo Leonhart, Haris & Assoc., Inc. on behalf of FMIT	Aaron Yue, DTSC and Pam Innis, DOI	FMIT: T. Williams, L. Otero, N. McDowell, S. McDonald, C. Coyle, CIT, Cocopah, CRITs, and Hualapai Indian Tribes, TRC, DTSC, PG&E, BLM	FMIT comments on August 2, 2013 document titled "Final Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area".

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/4/2013	Aaron Yue, DTSC	Yvonne Meeks, PG&E, Christina Hong, CH2M Hill	CWG, Geo/Hydro TWG, Tribal Reps., TRC	DTSC review and considered the 8/2/13 Final Implementation Plan for Evaluation of Alternative Freshwater Resources. DTSC conducted additional analysis of potential impacts in accordance with CEQA and prepared an Addendum to the January 2011 Certified EIR. Conditional approval letter for the implementation plan attached.
9/4/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		Informed everyone that they were cc'd on approval leeter to PG&E for the Aug. 2013 Final Freshwater Implementation Plan and that EIR addendum, NOD, and DTSC's resolutions for the adoption will be uploaded to www.dtsc-topock.com by tomorrow.
9/4/2013	Aaron Yue, DTSC	Yvonne Meeks, PG&E, Christina Hong, CH2M Hill	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA	DTSC Approval of Final Implementation Plan for Evaluation of Alternative Freshwater Sources for SWMU 1/ AOC 1 and AOC 10, GW Remedy.
9/4/2013	Pam Innis, DOI	Yvonne Meeks, Glenn Caruso, PG&E, Christina Hong, CH2M Hill, Karen Baker, Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA	DOI Approval of the Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area
9/5/2013	Aaron Yue, DTSC	Yvonne Meeks, PG&E, Christina Hong, CH2M Hill	CWG, Geo/Hydro TWG, Tribal Reps., TRC	Resend of 9/4/13 email due to problem with merge of documents and asked that 9/4/13 attachment be disregarded and use the revised attachment.
9/5/2013	Chris Guerre, DTSC	TWG Conference Call		Agenda: Specific Comments for Clarification #12 FMIT-7, Hualapai-7, Chemehuevi-7, Cocopah-7, CRIT-7; #84a FMIT-22 and #84b Hualapai-16, Chemehuevi-16, Cocopah-16, CRIT-16; #248 FMIT-33; #436a FMIT-128, #436b Hualapai-112, Chemehuevi-112, Cocopah-112, CRIT-112; #438 FMIT-130 #487 FMIT-150/#488 FMIT-151; #496 FMIT-159; #708 FMIT-183
9/5/2013	Leo Leonhart (H&A for FMIT)	Jose Marcos, DTSC		Requested Jose's solicitation for comments on soil be resent to him.
9/5/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		Due date for comments on RFI/RI Volume 1 Addendum is 9/9/13
9/6/2013	Yolanda Garza, DTSC	CTF	Leo Leonhart (H&A for FMIT), Aaron Yue, DTSC, Kim Liebhauser, BLM	Draft Agenda for 9/17/13 CTF meeting
9/9/2013	Jose Marcos, DTSC	Leo Leonhart, FMIT		Apologized, reply to Leo on 9/5 didn't go through. Saw that his comments were received earlier. Hope didn't cause any delay or confusion.
9/9/2013	Leo Leonhart (H&A for FMIT)	Aaron Yue, DTSC and Pam Innis, DOI	FMIT: Timothy Williams, Linda Otero, Nora McDowell-Antone, Courtney Coyle, Steven McDonald, PG&E, DTSC, BLM, TRC, Tribal Govts.	FMIT's comments on PG&E's March 26, 2013, document titled "Addendum to RCRA Facility Investigation/Remedial Investigation Report, Volume 1".
9/9/2013	Yolanda Garza, DTSC	FMIT: Nora McDowell-Antone, Linda Otero, Courtney Coyle, Steven McDonald, Angie Alvarado; Chemehuevi: Steven Escobar; CRIT: Howard Magill; Cocopah: Edgar Castillo; Hualapai: Dawn Hubbs; DTSC, PG&E,	Leo Leonhart (H&A for FMIT)	8/21/13 Topock Groundwater Mitigation and Monitoring Reporting Program sign-in sheet and action items.
9/9/2013	Aaron Yue, DTSC	Margaret Eggers, TRC	Dawn Hubbs, Hualapai, DTSC, ESA, PG&E	Clarification on PG&E's contract boundaries and the need to contact DTSC with requests, not directly to ESA. Re: Hualapai request for historical and archaeological site map and GIS shape files.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/9/2013	Margaret Eggers (TRC)	Aaron Yue	Dawn Hubbs, Hualapai, DTSC, ESA, PG&E	Replied to Aaron's email that the information was for Dawn and Nora only and did not want the information/map conveyed to her at any time.
9/9/2013	Aaron Yue, DTSC	Margaret Eggers, TRC	Dawn Hubbs, Hualapai, DTSC, ESA, PG&E	Thanked her for voicemail and email response. Didn't mean to alarm her or the tribes, just wanted to share our constraints and perspective in the contract as well as information sharing.
9/10/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		Agenda for Sept. 19 & 20 RAWP Addendum Scoping Meeting
9/10/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC		PG&E Comments on RFI/RI Volume 1 Addendum and direction to PG&E to compile and respond to the comments received.
9/10/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, ESA		Direction letter to PG&E requesting historical and archaeological site monitoring for sites within the soil project area (without enclosure).
9/10/2013	Aaron Yue, DTSC	Tribal Reps., DOI: Pam Innis; PG&E: Glenn Caruso; DTSC: Karen Baker, Jose Marcos		Direction letter to PG&E requesting historical and archaeological site monitoring for sites within the soil project area (with enclosure).
9/10/2013	Chris Guerre, DTSC	Geo Hydro TWG		Reminder of next week's meetings: TWG - 9/17 & 9/18; Risk Assessment - 9/19 & 9/20
9/12/2013	Chris Guerre, DTSC	Geo Hydro TWG		Agenda for TWG meeting on 9/17 & 9/18: Topics: Update on old well in bat cave wash; draft responses to 60% comments
9/13/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Agenda for 9/19 & 9/20/13 RAWP Addendum Scoping Meeting.
9/13/2013	Christina Hong, CH2M Hill	Geo/Hydro TWG		Per DTSC's request, handouts for scoping meeting have been uploaded onto the PG&E Topock Sharepoint site.
9/16/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Handout for Old Well Update for 9/17/13 TWG.
9/16/2013	Yolanda Garza, DTSC	CTF Members		Reminder that 9/18/13 CTF meeting is in Boulder City and not the usual CH2M Hill offices.
9/16/2013	Christina Hong, CH2M Hill	Geo/Hydro TWG		Handouts for 9/17-18, 2013 TWG Meeting: List of RTC's, RTC #776a and #776b, #289; Attachment A Alternative Pipeline Evaluation Matrix.
9/16/2013	Christina Hong, CH2M Hill	Geo/Hydro TWG		Handout for 9/17-18, 2013 TWG Meeting: Appendix B: Development of Groundwater Flow, Geochemical, and Solute Transport Models".
9/17/2013	Leo Leonhart (H&A for FMIT)	CTF Members		Links to GRAC meetings of potential interest.
9/17/2013	Leo Leonhart (H&A for FMIT)	CTF Members		Copy of Arizona Hydrological Society presentation to be given on Thursday, 9/19/13.
9/17/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart; CRIT: Howard Magill, Doug Bonamici (by phone); Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo, Jill McCormick (by phone); Chemehuevi: Thomas Pradetto (by phone); DTSC, DOI, BLM, PG&E and their consultants Keadjian, CH2M Hill & Arcadis; ETIC, TRC, MWD (by phone)		Clearinghouse Task Force Meeting.
9/17/2013	Yolanda Garza	CTF & Orientation Sub-committee		Request for help with dates and instructors in planning Orientation #2. Request for potential dates in Oct. and Nov. for instructors to be available one full day, and names of instructors and their areas of expertise by 10/1/13.
9/17/2013	Yolanda	CTF Members		Webex link for those not attending today's meeting in person.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/17/2013	Yolanda Garza, DTSC	Geo/Hydro TWG		Meeting location change announcement for TWG on 9/18/13 to Hilton Garden Inn in Henderson, NV.
9/17/2013	Chris Guerre, DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); CIT: Steve Escobar (phone), Tom Pradetto (phone), CRIT: Howard Magill; Hualapai: Dawn Hubbs, Bennett Jackson; Cocopah: Jill McCormick (phone); TRC: Charlie Schlinger, Margaret Eggers, Eric Rosenblum, Win Wright; DTSC, PG&E and their consultants CH2M Hill, Arcadis, DOI, USBR, ETIC, CRB, MWD		TWG Face-to-Face Meeting. Agenda items: Update on Old Well in Bat Cave Wash; Discuss Draft Responses to 60% Comments/ Topics: Pipeline evaluation matrix, Geographic location, Infiltration gallery in Bat Cave Wash, Reference to future documents in Table 6.1-1, Relocation of proposed monitoring well "I",
9/18/2013	Chris Guerre, DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); CIT: Steven Escobar (phone); Hualapai: Bennett Jackson, Dawn Hubbs; CRIT: Howard Magill; TRC: Win Wright, Margaret Eggers, Charlie Schlinger, Eric Rosenblum; DTSC, PG&E and their consultants Arcadis & CH2M Hill, USDOI, HSG, MWD		TWG Face-to-Face Meeting. Agenda items: 9/18: Discuss Draft Responses to 60% Comments/Topics: Appendix B – Modeling: TDS/Density, Nitrate Modeling, Flow Model Calibration/Sensitivity (PEST), Transport Model Calibration/Sensitivity, Uncertainty, Appendix B – Modeling (Continued), Soil Storage Locations/Soil Management: Updated soil storage locations, Consideration for storing soils from IM-3 decommissioning/sampling activities in vicinity of IM-3, □ Strawman of an evaluation matrix for storage locations.
9/18/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, ESA, TRC, Tribal Members		Meeting location change announcement for all interested parties attending the risk assessment meeting on 9/19 & 9/20. Now at Hampton Inn in Henderson.
9/18/2013	Aaron Yue, DTSC	Geo/Hydro TWG		Save the date appointments for 60% Comment Resolution TWG meetings: 10/17/13, 11/5/13, 11/20/13, and 12/12/13.
9/18/2013	Lisa Kellogg, Arcadis	Geo/Hydro TWG		Per request, emailed Appendix B 60% RTC particle tracking.
9/18/2013	Chris Guerre, DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); CIT: Steven Escobar (phone); Hualapai: Bennett Jackson, Dawn Hubbs; CRIT: Howard Magill; TRC: Win Wright, Margaret Eggers, Charlie Schlinger, Eric Rosenblum; DTSC, PG&E and their consultants Arcadis & CH2M Hill, USDOI and their consultant HSG, MWD, BOR		
9/19/2013	Christina Hong, CH2M Hill	Geo/Hydro TWG		As discussed at meeting, sent group 60% RTCs, the resolutions, and the punch list items.
9/19/2013	Curt Russell, PG&E	CWG, Geo/Hydro TWG, ESA, TRC, Tribal Members	Smith, Chris K; elia@groundwaterpartners.com; gvaldes@williamself.com; Barry.Collom@CH2M.com	Project Initiation Meeting - Field Work Phase, Final Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project
9/19/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Michael Sullivan; Hualapai: Dawn Hubbs; CRIT: Howard Magill; DTSC, BLM, DOI, FWS, TRC, CDFW, PG&E, Arcadis, Iris Environmental, Earth Risk, CH2M Hill		Soil Risk Assessment Workshop
9/20/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Russell Ray, Michael Sullivan; Hualapai: Dawn Hubbs; CRIT: Howard Magill; DTSC, BLM, DOI, FWS, TRC, CDFW, USBR, Iris Environmental; Arcadis, Earth Risk, Inc., CH2M Hill		Soil Risk Assessment Workshop

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/23/2013	Yolanda Garza, DTSC	Nora McDowell, FMIT, Dawn Hubbs, Hualapai	Aaron Yue, DTSC	Request to confirm that meeting dates are correct on the Topock calendar.
9/23/2013	Yolanda Garza	CTF Members		Sign-in sheet, draft CTF notes and action item matrix for review and comments from the 9/17/13 CTF.
9/23/2013	Leo Leonhart (H&A for FMIT)	Aaron Yue and Karen Baker, DTSC		Asked if Key Observation Points (KOP)/Viewshed meeting scheduled for 10/2 or 10/9? He's not available either date due to teaching commitments on Oct. Wednesdays.
9/23/2013	Aaron Yue, DTSC	Leo Leonhart (H&A), FMIT and Karen Baker, DTSC	Dawn Hubbs, Hualapai,, Nora McDowell-Antone, FMIT, Bobbette Biddulph, Candace Ehringer & Monica Strauss, ESA	Yes, firmed up date with Nora and Dawn for 10/1 @ 1:30, will try to get a room at the PG&E compressor station.
9/23/2013	Leo Leonhart (H&A for FMIT)	Aaron Yue and Karen Baker, DTSC	Dawn Hubbs, Hualapai,, Nora McDowell-Antone, FMIT, Bobbette Biddulph, Candace Ehringer & Monica Strauss, ESA	Do you anticipate starting off with an over-the-table discussion as opposed to going out to the field sites?
9/23/2013	Aaron Yue, DTSC	Leo Leonhart (H&A for FMIT); Addie Farrell, ESA, Karen Baker, DTSC	Dawn Hubbs, Hualapai,, Nora McDowell-Antone, FMIT, Bobbette Biddulph, Candace Ehringer & Monica Strauss, ESA	Thinks that Leo is right, but defers to ESA. Thinks discussion would be between ESA and Tribes to flush out how the viewshed approach would work and what info would be needed to make it happen. Goal is to get all that clarified and scheduled, and set a realistic time frame for the draft EIR.
9/23/2013	Aaron Yue, DTSC	Michael Sullivan, FMIT		Asked if he felt last week's meeting adequately covered Tribal concerns and if he's satisfied with moving forward with RAWP Addendum? Also, realized his presentation didn't make it into Arcadis' agenda. Do you want to make that presentation or wait until the review of the draft presentation?
9/24/2013	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Received email regarding meeting dates from Dawn Hubbs, Hualapai. Wondering why Cocopah was not included.
9/24/2013	Yolanda Garza, DTSC	Jill McCormick, Cocopah		Apologized for disregard of Cocopah and other tribes. Will reissue the confirmation with appropriate notification.
9/24/2013	Jill McCormick, Cocopah	Yolanda Garza, DTSC		Apologized if seemed harsh, but feels Cocopah is left out of the process.
9/24/2013	Aaron Yue, DTSC	Jill McCormick, Cocopah		Clarification that the viewshed discussion is a follow-up meeting with FMIT & Hualapai, but welcome to attend although Cocopah gave no input. Asked that Dawn & Nora provide coordination with other tribes and give DTSC direction if Tuesday is still the appropriate meeting day/time.
9/24/2013	Jill McCormick, Cocopah	Aaron Yue, DTSC		Hopeful that next week's meetings will give them more info. So they can provide specific comments on the process. If private meetings, will not attend but would like to schedule private meetings.
9/24/2013	Aaron Yue, DTSC	Jill McCormick, Cocopah		PG&E to notify all interested tribes to history and archaeological annual monitoring event and Freshwater implementation kick-off meeting. Invitations to view shed discussion is update to FMIT & Hualapai. It is not DTSC's intention to offend any part, but to respect those involved.
9/30 and 10/1/2013	PG&E	Attendees: FMIT: Nora McDowell; CRIT: Howard Magill, Nancy Swick; Hualapai: Dawn Hubbs, Bennett Jackson; Cocopah: Jill McCormick, Edgar Castillo		PG&E conducted modified annual archaeological monitoring of 14 known sites in the soil project area with participation of tribal monitors.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/1/2013	Yolanda Garza, DTSC	CWG Members		Link to survey and request to complete by 10/8/13. Survey regarding usefulness of newsletter.
10/1/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart (H&A); Hualapai: Dawn Hubbs; Cocopah: Jill McCormick; Chemehuevi: Steven Escobar; DTSC, ESA, Environmental Visual		DTSC and consultant ESA meeting with Tribes to discuss the Soil EIR Asthetic/ Viewshed Approach
10/6/2013	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing September 2013 CWG emails and attachments.
10/2/2013	Yolanda Garza, DTSC	CTF Members	Leo Leonhart, FMIT, Aaron Yue, DTSC, Christa Marting, Eticeng	Draft agenda for 10/15/13 CTF, notes from 9/17/13 CTF, CTF Calendar, CTF action items
10/2/2013	Russell Ray, FMIT	Aaron Yue, DTSC		Asked if all 3 meetings: 10/17, 11/5 & 12/5 are all the same subject matter? Asked if advisable to attend the Yuma meeting as well as those to be conducted by phone? On 10/3, Aaron replied that all the same subject matter (RTC's) but dealing with different comments in groups.
10/2/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone, Melven Holmes; Hualapai: Bennett Jackson, Dawn Hubbs; Cocopah: Edgar Castillo; CRIT: Nancy Swick, Howard Magill; PG&E & their consultants CH2M Hill; DTSC, CDFW, Applied Earthworks, GWP, Geo Systems Analysis, Northstar, WSA, Rain for Rent, Layne,		Topock Groundwater: Alternate Fresh Water Investigation meeting
10/7/2013	Yolanda Garza, DTSC	CWG Members		Follow-up on Topock Newsletter Survey and heads up for CWG frequency survey.
10/8/2013	Aaron Yue, DTSC	FMIT: Nora McDowell-Antone; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo		Follow-up to 10/1/13 meeting regarding viewshed discussion. Request for agenda for site walk on October 28, 2013.
10/10/2013	Chris Guerre, DTSC	Geo/Hydro TWG	CWG	Agenda for 10/16 & 10/17 TWG meetings to discuss 60% design comments.
10/10/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		CMP 1st half 2013 GWMR for Topock IM No. 3
10/10/2013	PG&E File (Lori) on Yolanda Garza's behalf	Geo/Hydro TWG, TRC, CTF		Link to survey and request to complete by 10/14/13. Survey regarding usefulness of newsletter.
10/10/2013	Aaron Yue, DTSC	Agenda Only, CWG, Tribal Reps, ESA, TRC, Geo/Hydro TWG		Latest contact lists and requests to send any needed updated.
10/14/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA		PG&E Schedule Graphics - Groundwater timeline
10/15/2013	DTSC	Attendees: FMIT: Nora McDowell-Antone; Leo Leonhart (H&A); Hualapai: Dawn Hubbs; CRIT: Howard Magill; Chemehuevi: Tom Pradetto; Cocopah: Edgar Castillo; DTSC: Karen Baker, Yolanda Garza, Isabella Alasti; PG&E, CH2M Hill, Arcadis, ETIC, MWD; by Phone: DOI, TRC, PG&E, Keadjian;		Clearinghouse Task Force (CTF) meeting to discuss groundwater design response to comment (RTC) process, Communication and Consultation, Stakeholder Meetings, Newsletter, Physical/Digital Model, Orientation Sub-Committee.
10/15/2013	Yolanda Garza, DTSC	CTF		Request for review and update of Draft Topock CTF Calendar.
10/16/2013	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, Tribal Reps., TRC, ESA		Forwarded RTC matrix for the RFI/RI Volume I Addendum.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/16/2013	DTSC	**Attendees:** FMIT: Nora McDowell-Antone (via telephone), Leo Leonhart (H&A), Courtney Coyle (Legal Rep) (via telephone), Michael Sulllivan (Toxicologist); Hualapai Indian Tribe: Dawn Hubbs; Technical Review Committee Members (TRC): Charlie Schlinger, Margaret Eggers, Win Wright, Robert Prucha; DTSC: Karen Baker, Aaron Yue, Yolanda Garza, Isabella Alasti, Chris Guerre. Jose Marcos (via telephone), Lori Hare (via telephone); Environmental Science Associates (ESA) on behalf of DTSC: Addie Farrell, Monica Strauss (via telephone); CDFW, CRB, PG&E and their consultants CH2M Hill, Arcadis, Blair, Church & Flynn Consulting Eng., Keadjian, USBLM, USBOR, USDOI, GRB for DOI, USFWS, MWD, Mojave County DPH		Face-to-Face Consultative Work Group Meeting. DTSC provided a Soil EIR Update.
10/16 - 10/17/13	Chris Guerre, DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A), Courtney Coyle; Hualapai: Dawn Hubbs, Bennet Jackson; TRC: Bob Prucha, Charlie Schlinger, Eric Rosenblum, Win Wright, Margaret Eggers (phone); DTSC, PG&E & their consultants CH2M Hill & Arcadis; DOI, MWD		TWG Face-to-Face meeting: Agenda Items: Review Punch List Items from Sept TWG; Discuss Draft Responses to 60% Comments: Project Boundary; Chemical Usage/Consultation; Overview Text ; Note 1 on Two Parcels; Section 1.2; PG&E Sustainability Program; IM3 Decommissioning; General Notes on Drawings; Appendix I; CEQA Compliance During Remedy Operations; Well Replacement Assumptions; Nitrate; Additional future provisional wells; Use of Portable Tanks; Cost Estimates; Sound Measurements; Appendix C Design Criteria.
10/17/2013	Aaron Yue, DTSC	Arelene Kinger, Fort Yuma-Quechan		Sent her invitation to the site walk and will add her email to the contact list.
10/17/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps.		Sent appointment for Site walk for contingent river extraction and East Ravine river bank wells on 10/28/13, 2:30-5:00 PM.
10/18/2013	Chris Guerre, DTSC	Geo/Hydro TWG		Current list of RTC/TWG meetings in Nov/Dec so can block off calendars.
10/21/2013	Dawn Hubbs, Hualapai	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Nora McDowell-Antone; Cocopah: Jill McCormick; CRIT: Doub Bonamici; Chemehuevi: Tom Pradetto; PG&E, BLM	Transmitted letter on behalf of Loretta Jackson-Kelly regarding archaeological site monitoring at Topock. Aaron Yue thanked her for the letter and DTSC will review and consider the Tribal comment where appropriate on the project.
10/22/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, Tribal Reps, TRC, ESA		Action Items from Topock Soil RA Meeting on 9/19 and 9/20/13.
10/27/2013	Chris Guerre, DTSC	Geo Hydro TWG	Tribal Reps., Isabella Alasti, DTSC, DOI, FWS, MWD, PG&E, CH2M Hill, Arcadis, Summit USA, USBOR, BLM, RWQCB, HIS	Agenda for 11/5/13 TWG meeting webcast to discuss Response to Commments (RTC) on 60% Groundwater Remedy Basis of Design Comments.

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10/28/2013	Jose Marcos, DTSC	Attendees: DTSC (Jose Marcos, Chris Guerre), ESA (Bobbette Biddulph, Monica Strauss, Sarah Spano, Candace Ehringer, Shannon Stewart, Ted & Chuck [Envirovisions]), Tribal Reps (Nora McDowell, Michael Sullivan, Dawn Hubbs, Edgar Castillo, Jill McCormick, Howard McGill), DOI (Pam Innis, George Shannon) , TRC (Eric Rosenblum, Win Wright, Bob Prucha), PGE (Curt Russell, Glenn Caruso)		DTSC and their consultant ESA met with Tribes in a follow-up viewshed field visit/discussion for the Soil Investigaiton EIR.
10/28/2013	Yolanda Garza, DTSC	CTF Members		Draft notes and action items from the 10/15/13 CTF meeting.
10/31/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Informed that PG&E submitted the 3rd Qt. mitigation measures compliance report to DTSC and that the full report can be downloaded from the CH2M Hill Sharepoint.
10/31/2013	Charlie Schlinger, TRC	Aaron Yue, DTSC		Asked if the mitigation measures compliance report is a limited-distribution / confidential project report to which the public does not have access or will it eventually be available on the DTSC website? Aaron Yue replied that DTSC considers the submitted document public and are not on DTSC's website due to a request from tribes that has not been resolved.
11/1/2013	Aaron Yue, DTSC	Geo Hydro TWG	Tribal Reps., Isabella Alasti, DTSC, DOI, FWS, MWD, PG&E, CH2M Hill, Arcadis, Summit USA, USBOR, BLM, RWQCB, HIS	Request to consider breakout sub-groups to increase efficiency of comment resolution.
11/5/2013	Aaron Yue, DTSC	Geo Hydro TWG Conference Call meeting		Agenda Items: Review Punch List Items from October TWG; Recap of site visit to evaluate/site locations for future provisional wells; Responses requested to be carried forward from Oct TWG'; D iscuss Draft Responses to 60% Comments: Well design options; Supplemental Noise Measurements; Well Maintenance; O&M Manual, Volume 2; Monitoring of Freshwater Supply; Lab/Field Analysis; Note 1 (#759 FMIT-191) Discuss Draft Responses to 60% Comments – Suggest two subgroup meetings: Subgroup Meeting #1 - Modeling: Start-up/"first injection cycle" monitoring; • Appendix B optimization/ refinement criteria/ sensitivity analysis; Appendix B. Subgroup Meeting #2 - Engineering: Appendix C Design Criteria; Appendix D; Appendix E; Appendix G.
11/6/2013	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing October 2013 CWG emails and attachments.
11/6/2013	Yolanda Garza, DTSC	CTF Members		Draft agenda for 11/19 CTF meeting, 10/15/13 CTF draft notes, CTF calendar, CTF action items

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/6/2013	Aaron Yue, DTSC	Yvonne Meeks, PG&E	CWG, Geo Hydro TWG, Tribal Reps, TRC, ESA	DTSC and DOI jointly instruct PG&E to proceed with installation of freshwater supply well at Site B and the aquifer testing of both Site B and existing HNWR-2 well.
11/11/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	Geo Hydro TWG		Draft TWG Agenda 11/19-11/20 and 60% RTC table
11/12/2013	Pam Innis, DOI	Geo Hydro TWG		Instructions for accessing the draft response to DOI-1 from the 60% Design Response to Comment (RTC) table.
11/13/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	Geo Hydro TWG		Updated 60% RTC table for discussion at 11/19-11/20 TWG meeting.
11/14/2013	Yolanda Garza, DTSC	CWG Members		Request to provide suggestions or edits on the 3D animation of the Groundwater Remedy to Yolanda by 11/26/13.
11/14/2013	Yolanda Garza, DTSC	CWG Members		Request to complete CWG meetings survey by 12/6/13.
11/14/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	Geo Hydro TWG		Agenda for TWG meeting on 11/19 and 11/20/13: Agenda items: Review 60% Punch list items on 10/16-17 & 11/5 TWG; Discuss draft responses to 60% comments.
11/14/2013	Karen Baker	FMIT: Nora McDowell-Antone, Linda Otero, Leo Leonhart, Courtney Coyle, Steve McDonald; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Steven Escobar; CRITs: Howard Magill, Doug Bonamici; PG&E, DTSC		E-mailed electronic copy of letters and handouts regarding "Comments Raised at August 21st Meeting on Groundwater Mitigation Measures to Mitigate Cultural Resource Impacts in the Final Environmental Impact Report"
11/15/2013	Charlie Schlinger, TRC	Christina Hong, CH2M Hill	FMIT: Nora McDowell-Antone, Leo Leonhart; Hualapai: Dawn Hubs; Cocopah: Edgar Castillo, Jill McCormick; CRIT: Doug Bonamici, Howard Magill; Chemehuevi: Thomas Pradetto, Steven Escobar, TRC	Memorandum concerning the 60% Basis of Design Response to Comments 317-321 regarding Noise.
11/18/2013	Aaron Yue, DTSC	Tribal Leaders and Representatives		Invitation to Discuss EIR Mitigation Measures for Potential Impacts from Soil Investigation and Characterization Activities on 12/16/13.
11/18/2013	Aaron Yue, DTSC	FMIT: Nora McDowell-Antone, Leo Leonhart, Michael Sullivan; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; Cocopah: Edgar Castillo, Jill McCormick; Chemehuevi: Thomas Pradetto, Ron Escobar, Steven Escobar; CRIT: Howard Magill, Doug Bonamici; TRC	ESA, DTSC	Follow-up to 10/28 visual meeting between DTSC, ESA & Tribes. DTSC was assigned an action item to clarify how the tribal perspective would be integrated into the visual resource analysis.
11/18/2013	Yolanda Garza, DTSC	CTF		CTF meeting reminders for tomorrow.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/19/2013	Yolanda Garza, DTSC	Attendees: FMIT: Nora McDowell-Antone; Leo Leonhart (H&A); Hualapai: Dawn Hubbs; Chemehuevi: Tom Pradetto; Cocopah: Edgar Castillo, Jill McCormick; TRC: Win Wright, Bob Prucha, Charlie SchlingerDTSC: Karen Baker, Yolanda Garza; PG&E, CH2M Hill, Arcadis, ETIC, MWD; by Phone: DOI, TRC, PG&E, Keadjian;		Clearinghouse Task Force (CTF) meeting. Karen Baker provided an overview of the CEQA process.
11/19/2013	Chris Guerre, DTSC	Attendees:		TWG Face-to-Face meeting: Agenda Items: Review 60% Punch List Items on October 16-17/ November 5 TWG; Responses requested to be carried forward from prior meetings; Discuss Draft Responses to 60% Comments: Aboveground vs. Belowground
11/20/2013	Chris Guerre, DTSC	Attendees:		TWG Face-to-Face meeting: Agenda Items: Discuss Draft Responses to 60% Comments regarding: Modeling; Unresolved RTCs related to modeling; Bio Topics; Subgroups report out/Q&A; Monitoring Program; Wells/Infrastructure; Various Topics; Unresolved RTCs from previous meetings.
11/21/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Aaron forwarded the letter from the SWRCB to DTSC regarding remedy requirements associated with injection of groundwater containing naturally occurring arsenic. This will be discussed at the next CWG meeting.
11/21/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	Geo Hydro TWG	Tribal Reps., Isabella Alasti, DTSC, DOI, FWS, MWD, PG&E, CH2M Hill, Arcadis, Summit USA, USBOR, BLM, RWQCB, HIS	Update 60% RTC Punch list and RTC table per this week's TWG meeting.
11/21/2013	Dawn Hubbs, Hualapai	Karen Baker, DTSC, Sheryl Bilbrey, PG&E, Pam Innis, DOI	FMIT: Nora McDowell-Antone, Hualapai: Loretta Jackson-Kelly, Cocopah: Jill McCormick; CRIT: Doug Bonamici, Chemehuevi: Thomas Pradetto; DTSC, PG&E, BLM	On behalf of the tribes involved with the Topock Remediation Project, final draft document for the Tribal Cultural Values Assessment (April, June and September 2013).
11/21/2012	Aaron Yue, DTSC	Dawn Hubbs, Hualapai		Regarding submittal of final draft document for the Tribal Cultural Values Assessment, Aaron inquired if the document should be managed as a confidential document due to the sensitive archaeological information specified within the report. Dawn Hubbs replied "Yes".
11/21/2013	Dawn Hubbs, Hualapai	Karen Baker, DTSC, Sheryl Bilbrey, PG&E, Pam Innis, DOI	FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly; TRC: Eric Rosenblum, Win Wright; ESA: Margaret Eggers; DTSC: Aaron Yue, PG&E: Yvonne Meeks; BLM: Kim Liebhauser	Request for attendance at the Hualapai Tribal Council Meeting 12/6/13.
11/22/2013	Dawn Hubbs, Hualapai	Karen Baker, DTSC, Sheryl Bilbrey, PG&E, Pam Innis, DOI	FMIT: Nora McDowell-Antone; DTSC: Aaron Yue, PG&E: Yvonne Meeks; BLM: Kim Liebhauser	Due to schedule conflicts for the 12/6/13 council meeting, rescheduling Hualapai Council Meeting to January. Karen replied that the January date works better for DTSC.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/25/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Punch list item #6 (Nov 5 TWG) - Updated Map for Soil Storage and Contruction Staging Areas
11/26/2013	Michael Sullivan, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Nora McDowell-Antone, Courtney Coyle, Leo Leonhart	Letter: Follow-up to Soil Risk Assessment Work Plan Meeting September 19, 20, 2013
11/26/2013	Michael Sullivan, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Nora McDowell-Antone, Courtney Coyle, Leo Leonhart; ESA: Bobbette Biddulph	Letter on the Appropriateness of the Tribal Land Use Evaluation in the Soils EIR.
11/27/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Draft 60% RTCs table with responses/ resolutions to date
12/2/2013	Aaron Yue, DTSC	Tribal Leaders and Representatives	DTSC, ESA	Reminder that DTSC has proposed to meet with tribes on 12/16/13 to discuss the conceptual mitigation measures for the soil investigation EIR.
12/2/2013	Dawn Hubbs, Hualapai	Sheryl Bilbrey, PG&E, Pam Innis, DOI, Karen Baker, DTSC	FMIT: Nora McDowell-Antone; Hualapai: Loretta Jackson-Kelly; DTSC	Reschedule of Hualapai Tribal Council meeting since some not able to attend on 12/6. Will inform of date of regular January council meeting after the holiday.
12/3/2013	Aaron Yue, DTSC	Dawn Hubbs & Nora McDowell-Antone		Confirmed 12/16/13 meeting per Dawn Hubbs' request.
12/3/2013	Dawn Hubbs, Hualapai	Aaron Yue, DTSC	FMIT: Nora McDowell-Antone, DTSC	Thank you for meeting confirmation
12/3 to 12/11/2013				PG&E conducted archaeological monitoring of sites within the Groundwater project area. Tribes were notified November 23 and December 5, 2013, but tribal monitors did not participate in the field work.
12/4/2013	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing November 2013 CWG emails and attachments.
12/6/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		60% Groundwater Remedy Basis of Design Response to Comment (RTCs) for 12/12/13 TWG and link to webconference.
12/6/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		TWG Agenda for 12/12/13 - list of RTCs for discussion.
12/6/2013	Yvonne Meeks, PG&E	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Nora McDowell; CRIT: Doug Bonamici; Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; Cocopah: Jill McCormick; Chemehuevi: Tom Pradetto; BLM: Goerge Shannon, Kim Liebhauser; PG&E: Sheryl Bilbrey; DTSC: Karen Baker	Re: Hualapai letter, "Monitoring of Archaeological and Historical Sites for the Soil Investigation Work Plan"
12/9/2013	Aaron Yue, DTSC	Tribal Leaders and Representatives		Confirmation of 12/16/13 mitigation measures discussion and request to change time from 1-4.
12/9/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	Geo/Hydro TWG		Draft 60% Basis of Design Response to Comments (RTCs) Table for 12/17-18 TWG meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/9/2013	Chris Guerre, DTSC	Geo/Hydro TWG		60% Groundwater Remedy Basis of Design Response to Comment (RTC) Meeting Agenda for 12/17 & 12/18
12/10/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Revised project contact lists
12/11/2013	Karen Baker	Tribal Leaders and Representatives	DTSC, ESA	Summary of Conceptual Cultural Resources Mitigation Measures for the Soil Investigation Draft EIR for discussion at 12/16 meeting.
12/11/2013	Karen Baker	Tribal Leaders and Representatives	DTSC, ESA	Call in number for 12/16/13 meeting.
12/11/2013	Yolanda Garza, DTSC	CTF Members	Aaron Yue, Christa Marting	Schedules and Lodging
12/11/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Updated 60% Groundwater Remedy Design Punch List Items/ Completed Item #3 from Nov 19-20 TWG
12/12/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	Geo/Hydro TWG		Figures for Today's Response to Comment (RTC) call
12/12/2013	Christina Hong, CH2M Hill (on behalf of DTSC)	Geo/Hydro TWG		Updated RTCs and Punch list items from 12/12/13 TWG meeting
12/12/2013	Chris Guerre, DTSC	TWG Conference Call		Agenda Items: Review Punch List Items from Nov 19-20 TWG (including report out from Modeling Subgroup); Discuss Draft Responses to 60% Comments (carried forward from Nov 19-20 TWG); Aboveground vs. Belowground; Engineering Topics: Move IRL-2 closer to road, Node 5, Pull boxes, FW-1, Arch Bridge, Monitoring Program.
12/13/2013	Courtney Coyle, FMIT	Karen Baker, Aaron Yue, DTSC	FMIT: Nora McDowell-Antone, Leo Leonhart, Steven McDonald	RE: Conceptual Cultural Resources mitigation measures for Soil Draft EIR discussion on 12/16. Courtney asked if we have an outline of the projected significant effects/impacts from the soil investigation to help tribes provide meaningful feedback at the meeting.
12/13/2013	Karen Baker	Courtney Coyle, FMIT	FMIT: Nora McDowell-Antone, Leo Leonhart, Steven McDonald, DTSC, ESA	Replied to Courtney that no, we do not have a summary of this ready for Monday, but hopes that since everyone has reviewed the workplan and walked the proposed soil boring locations, can have a productive meeting.
12/16/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Results for September/October 2013 Sampling
12/16/2013	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		3rd Quarter 2013 IMPM and GW Monitoring Report
12/16/2013	DTSC	Attendees: FMIT: Leo Leonhart, Steven McDonald, Courtney Coyle (by phone); Cocopah: Edgar Castillo, Jill McCormick; Chemehuevi: Steven Escobar; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; DTSC: Aaron Yue, Yolanda Garza, Karen Baker, Isabella Alasti; ESA: Bobbette Biddulph, Susan Wilcox; TRC: Charlie Schlinger, Bob Prucha, Eric Rosenblum, Margaret Eggers		DTSC and consultant ESA meet with Tribal representatives to discuss Conceptual Cultural Resources Mitigation for the draft Soil EIR. A follow-up meeting was scheduled to continue the discussion.
12/17/2013	DTSC	Attendees: FMIT: Leo Leonhart; Cocopah: Edgar Castillo, Jill McCormick; Chemehuevi: Steven Escobar; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Rudy Clark; TRC: Win Wright;DTSC, PG&E & their consultants Arcadis, Keadjian, ETIC; DOI, BLM, MWD		Face-to-Face Clearinghouse Task Force Meeting. Agenda included: Review of agenda and Identificaiton of new issues by CTF; Update on recent meetings and activities; Overview and update of priorities; Technical update from PG&E for Groundwater and Soils, Communication and Consultation Update; Sub-Committee Update on Phyical and Digital Models, Orientation, and Newletter

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/17-18/13	Chris Guerre, DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A), Courtney Coyle; CIT: Jill McCormick, Edgar Castillo, Steven Escobar; Hualapai: Rudy Clark, Loretta Jackson-Kelly, Dawn Hubbs; TRC: Margaret Eggers, Eric Rosenblum, Bob Prucha, Charlie Schlinger, Win Wright; DTSC, PG&E & their consultants CH2M Hill & Arcadis, USDOI, ETIC for DOI, USBR, MWD		Face-to-Face TWG Meeting: Agenda items: Review 60% Punch List Items/Subgroups Report Out; Discuss Draft Responses to 60% Comments: Decommissioning, Figure 4.2-1; Monitoring, General Topics, Follow-up on Chemistry RTCs, Follow-up on Noise RTCs, Remaining Unresolved Comments.
12/18/2013	Yolanda Garza, DTSC	CTF Members		Revised 2014 meetings schedule.
12/24/2013	Yolanda Garza, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Final opportunity to submit a survey for Topock meeting locations and comments for 2014.
12/27/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Save the date request for 1/23 TWG meeting.
12/27/2013	Aaron Yue, DTSC	Tribal Leaders and Representatives	DTSC, ESA	Invitation to discuss EIR Mitigation Measures for Potential Impacts from Soil Investigation and Characterization Activities on 1/23/14.
12/31/2013	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Forwarded link from Christina Hong to the latest 60% Groundwater Remedy Basis of Design Master Response to Comments (RTC) table on Sharepoint.
1/3/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Thomas Pradetto, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing December 2013 CWG emails and attachments.
1/7/2014	Yolanda Garza, DTSC	CTF	Aaron Yue, DTSC	Upcoming CTF meetings, draft CTF notes and action items.
1/7/2014	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Save the dates for February TWG, CWG and CTF meetings.
1/7/2014	Jill McCormick, Cocopah	Aaron Yue, DTSC		Asked if location will be Bullhead City or Laughlin for TWG, CWG and CTF meetings.
1/13/2014	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Response to comments matrix for the RFI/RI Volume I addendum for Soil. Written comments requested by 2/14/14.
1/15/2014	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		TWG agenda for 1/23/14 to review the final 60% Groundwater Remedy Basis of Design Response to Comments (RTCs) punch list and discuss select technical topics.
1/21/2014	Aaron Yue, DTSC	Tribal Leaders and Representatives	DTSC: Karen Baker, Jose Marcos, John Meerscheidt, Kimberly Hudson, ESA	Reminder about follow-up meeting with interested representatives on the conceptual mitigation measures for the soil investigation and characterization EIR on 1/23/14.
1/22/2014	Lori Hare (for Karen Baker)	Chairman Wayne Patch, Sr., CRITs	CRITs: Doug Bonamici, Howard Magill; ESA: Monica Strauss; DTSC: Karen Baker, Aaron Yue	Invitation to review and comment on Draft Tribal perspectives for soil investigation project draft EIR for the PG&E Soil Investigation Project. Mailed hard copy and faxed (email was rejected)
1/22/2014	Lori Hare (for Karen Baker)	Chairman Timothy Williams, FMIT	FMIT: Nora McDowell-Antone, Linda Otero; ESA: Monica Strauss; DTSC: Karen Baker, Aaron Yue	Invitation to review and comment on Draft Tribal perspectives for soil investigation project draft EIR for the PG&E Soil Investigation Project. Mailed hard copy and emailed.

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/22/2014	Lori Hare (for Karen Baker)	Chairwoman Sherry Cordova, Cocopah	Cocopah: Edgar Castillo, Jill McCormick; ESA: Monica Strauss; DTSC: Karen Baker, Aaron Yue	Invitation to review and comment on Draft Tribal perspectives for soil investigation project draft EIR for the PG&E Soil Investigation Project. Mailed hard copy and emailed.
1/22/2014	Lori Hare (for Karen Baker)	Chairwoman Sherry J Counts, Hualapai	Hualapai: Loretta Jackson-Kelly, Dawn Hubbs; ESA: Monica Strauss; DTSC: Karen Baker, Aaron Yue	Invitation to review and comment on Draft Tribal perspectives for soil investigation project draft EIR for the PG&E Soil Investigation Project. Mailed hard copy and emailed.
1/22/2014	Lori Hare (for Karen Baker)	Chairman Tito Smith, Chemehuevi	Chemehuevi: Ron Escobar, Thomas Pradetto, Steven Escobar; ESA: Monica Strauss; DTSC: Karen Baker, Aaron Yue	Invitation to review and comment on Draft Tribal perspectives for soil investigation project draft EIR for the PG&E Soil Investigation Project. Mailed hard copy and emailed.
1/22/2014	Nora McDowell-Antone, FMIT	Lori Hare, DTSC		Nora requested the Word version of the Tribal Prespectives for Soil Investigation Project Draft EIR. Lori send the Word version to Nora.
1/23/2014	DTSC	Attendees: FMIT: Nora McDowell-Antone, Courtney Coyle, Leo Leonhart, Michael Sullivan; CRIT: Howard Magill; Hualapai: Dawn Hubbs; DTSC: Aaron Yue, Yolanda Garza, Susan Wilcox, Isabella Alasti,Karen Baker, Chris Guerre, Jose Marcos (by phone); ESA: Monica Strauss, Bobbette Biddulph; TRC: Win Wright, Eric Rosenblum		DTSC and consultant ESA, held second meeting with Tribal representatives to discuss Conceptual Cultural Resource Mitigation for the Draft Soil Investigation EIR.
1/23/2014	DTSC	Attendees: FMIT: Nora McDowell-Antone, Michael Sullivan; CRIT: Howard Magill; Hualapai: Dawn Hubbs, Rudolph Clark; DTSC: Chris Guerre; PG&E: Curt Russell, Glen Riddle; CH2M Hill: Nathan BettsTRC: Margaret Eggers;		Face-to-Face TWG Meeting: Agenda items: Review Final 60% RTCs Punch List; Discuss Select Technical Topics: Aboveground vs. Belowground Piping, Alternative Piping Route to Well ER-6, Location of Remedy Freshwater Storage Tank, Evaluation of relocating infrastructure from Transwestern Bench to Park Moabi, Others.
1/28/2014	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Reminder of TWG on 2/11/14 and CWG on 2/12/14.
1/28/2014	Isabella Alasti, DTSC	Courtney Coyle, FMIT	Steve McDonald, FMIT	DTSC is concerned that FMIT is violating terms of the Settlement Agreement through its comments on certain mitigaition measures.
1/28/2014	Yolanda Garza, DTSC	CTF Members		CTF meeting will be held on 2/13/14.
1/29/2014	Jose Marcos, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		RFI/RI Soil Workplan Errata 1/27/14 from PG&E addressing request from DTSC for additional information on boundary demarcation and staging areas.
1/30/2014	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Shared the revised final Topock Ethnobotany Survey Report for information.
1/30/2014	Nora McDowell-Antone, FMIT	Lori Hare, DTSC		Nora requested a Word version of the "Overview of Tribal Prespectives" so they can edit it. Lori Hare sent her the Word version.
1/30/2014	Aaron Yue, DTSC	Christina Hong, CH2M Hill	Geo/Hydro TWG	Final Addendum to the Freshwater pre-injection treatment system basis of design technical memo (Appendix M).
1/30/2014	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Revised Final Topock Ethnobotany Survey Report
1/30/2014	Aaron Yue, DTSC	Geo/Hydro TWG		Comments from DTSC on the Freshwater Pre-Injection Treatment System basis of design.

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/3/2014	Yolanda Garza, DTSC	CTF		Draft agenda for 2/13/14, 12/17/13 meeting notes, sign in and action items, draft CTF calendar
2/3/2014	Lisa Michelleti Cope, Arcadis	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		February 2014 Topock Remediation Review Newsletter
2/4/2014	Yolanda Garza, DTSC	CTF		Updated CTF calendar
2/4-5/2014	Clearinghouse Task Force - Yolanda Garza, Aaron Yue, and Chris Guerre, DTSC	CWG members and others new to the PG&E Topock project . Tribal Presenters: Dawn Hubbs and Carrie Cannon from Hulapai, Nora McDowell from FMIT, Howard Magill from CRIT.		Orientation to the PG&E Topock Project including site tour, history, cleanup overview, cultural setting, tribal perspective, ecoloigcal background, archaeological background. Presenters included representatives from DTSC, PG&E, Tribes, and DOI.
2/6/2014	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Submittal of Compliance Monitoring Report (CMP) Second Half 2013 Groundwater Monitoring Report.
2/6/2014	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Results for November/December Fourth Quarter 2013 Sampling
2/6/2014	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Fourth Quarter 2013 Project Status Update - Topock Arizona Wells
2/6/2014	Chris Guerre, DTSC	Geo/Hydro TWG		2/11 TWG agenda
2/7/2004	Lisa Kellogg, Arcadis	Geo/Hydro TWG		Well Siting Handout, Potential Arsenic Monitoring Well Network
2/9/2014	Pam Innis, DOI	Geo/Hydro TWG		Updated DOI Pipeline Matrix
2/9/2014	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Availability of the Revised Final Topock Floristic Survey Report completed in December 2013.
2/10/2014	Lisa Kellogg, Arcadis	Geo/Hydro TWG		Relocation of Wells on National Trails Highway (NTH) Handout
2/11/2014	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart; Cocopah: Edgar Castillo; Hualapai: Dawn Hubbs, Bennett Jackson; CRIT: Howard Magill; TRC: Eric Rosenblum, Win Wright, Margaret Eggers, Charlie Schlinger; DTSC, PG&E & their consultants Arcadis, CH2M Hill, Cox Castle, DOI, MWD, CDFW, USFWS, BLM		Face-to-Face Technical Work Group meeting. Agenda items: Review Final 60% Groundwater Remedy BOD Response to Comments (RTCs) Punch List; Discuss Technical Topics: Design-critical 60% RTCs (Highest Priority), Aboveground vs. Belowground Piping, Proposed monitoring well network for As. Other RTCs: Discuss relocation of infrastructure from west to east of National Trails Highway, Tribes' feedback on noise-related RTCs, Tribes' feedback on chemistry-related RTCs, Others
2/12/2014	DTSC	Attendees: FMIT: Nora McDowell-Antone, Leo Leonhart, Steven McDonald, Courtney Coyle (phone); Cocopah: Edgar Castillo; Hualapai: Rudy Clark, Sr., Vernon Clark; Dawn Hubbs, Bennett Jackson; CRIT: Howard Magill; TRC: Margaret Eggers, Eric Rosenblum, Charlie Schlinger, Win Wright; DTSC and consultant ESA, DOI and consultant GRB; BLM, PG&E and consultants CH2M Hill, Arcadis, ETIC; DFW, CRB, MWD, USFWS, Mojave Co DPH, USBOR, SWRCB		Quarterly Face-to-Face CWG meeting. DTSC provided an update on the Soil Investigaiton Draft EIR process and anticipated schedule; Update on EIR mitigation measures; Alternative Freshwater Source Evaluation Update; Corrective Measure Implementation/ Remedial Design (CMI/RD); Project schedule update, Tribal Presentation by Hualapai, Programmatic Agreement Activities update; Consent Decree Update and Annual Meeting Survey Results
2/13/2014	DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart (by phone); Cocopah: Edgar Castillo; Hualapai: Dawn Hubbs; CRITs: Howard Magill; TRC: Margaret Eggers, Win Wright; DTSC, DOI, BLM, MWD, PG&E & their consultants CH2M Hill, Arcadis, Keadjian, ETIC		Clearinghouse Task Force meeting

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2/14/2014	Dawn Hubbs, Hualapai	DTSC: Aaron Yue, Karen Baker; DOI: Pam Inis; Hualapai: Rudy Clark, Robert Bravo, Loretta Jackson-Kelly; PG&E: Sheryl Bilbrey, Yvonne Meeks; BLM: Kim Liebhauser, George Shannon, Cocopah: Jill McCormick; CRIT: Doug Bonamici; CIT: Steven Escobar		Hualapai response to January RTC "Addendum to RCRA Facility Investiation/Remedial Investigation Report, Volume I". Aaron Yue thanked her for the comments and will forward to ESA for the EIR.
2/18/2014	Yolanda Garza, DTSC	CTF		CTF Draft Revised Calendar for review and comment.
2/19/2014	Nora McDowell-Antone, FMIT	Karen Baker, DTSC	FMIT: Timothy Williams, Linda Otero; DTSC: Aaron Yue; ESA: Monica Strauss	FMIT response to invitation letter dated 1/22/14. Aaron Yue replied that the comments would be given to ESA for EIR consideration. Nora thanked Aaron for acknowledging receipt of their comments.
2/19/2014	Nora McDowell-Antone, FMIT	Karen Baker, DTSC		Asked if Karen had time this afternoon or tomorrow morning to talk with her and Dawn Hubbs regarding the TRC. Karen responded that she is free from 9-10 on Thursday and asked if that will work for them.
2/19/2014	Karen Baker	Nora McDowell, FMIT		Thanked her for providing comments on the Draft Tribal Perspectives for the Soil Investigation Project Draft EIR. Karen and Aaron will review and see if discussion is needed. Also f/u if 9-10 tomorrow will work for them to talk. Nora confirmed the 9-10 time and provided a call-in number.
2/20/2014	Nora McDowell-Antone, FMIT	Nora McDowell-Antone, FMIT; Dawn Hubbs, Hualapai; Karen Baker, DTSC		Call to discuss issues related to the Technical Review Committee formed pursuant to the Groundwater FEIR
2/20/2014	Yolanda Garza, DTSC	CTF Members and Invitees		Draft Notes and action items from the 2/13 CTF meeting, CTF calendar with doc review, Topock Orientation Evaluation Summary.
2/28/2014	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		4th Quarter 2013 Topock Groundwater Remedy EIR Mitigation Measures Compliance Report
3/3/2014	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Save the date: 3/19/14 TWG meeting. Attached March 2013 RFI Addendum, RTC table 2/25/14.
3/3/2014	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Results for December 2013 Groundwater Montiroing Program (GMP) Sampling
3/6/2014	Leo Leonhart (H&A for FMIT)	Aaron Yue, DTSC and Pam Innis, DOI	FMIT: Courtney Coyle, C. Garcia, Nora McDowell, Linda Otero, Timothy Williams; Tribal Reps. For Hualapai, CRIT, Chemehuevi, Cocopah	FMIT comments on Alternative Pipeline Routings and Storage Areas for 60% Groundwater Remedy Basis of Design
3/7/2014	Yolanda Garza	CTF Members and Invitees		Draft agenda for 3/18 CTF meeting
3/10/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing February 2014CWG emails and attachments.
3/10/2014	Dawn Hubbs for Loretta Jackson-Kelly, Hualapai	Aaron Yue, DTSC and Pam Innis, DOI	Hualapai: Rudy Clark, Sr., Robert Bravo; DTSC: Karen Baker; Tribal Reps.	Hualapai comment letter on Pipeline and Soils, 60% Basis of Design (BOD)
3/10/2014	Dawn Hubbs for Loretta Jackson-Kelly, Hualapai	Aaron Yue, DTSC and Pam Innis, DOI	Hualapai: Rudy Clark, Sr., Robert Bravo; DTSC: Karen Baker; Tribal Reps.	Hualapai response to Unresolved Noise and Vibration comments letter.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/11/2014	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Agenda and 60% Groundwater Remedy Basis of Design (BOD) response to comments (RTC) table to 3/19/14 TWG webcast meeting.
3/13/2014	Edgar Castillo, Cocopah	Aaron Yue, DTSC, Pam Innis, DOI	Jill McCormick, Cocopah; Nora McDowell, FMIT; Dawn Hubbs, Hualapai; Doug Bonamici, CRITs; Karen Baker, DTSC	Soils Staging and Alt Pipeline Route Cocopah comment letter
3/13/2014	Aaron Yue, DTSC	Loretta Jackson, Hualapai	CWG, Geo/Hydro, TWG, Tribal Reps., TRC, ESA	Joint agencies response to 2/14/14 Hualapai letter regarding the RFI/RI Volume 1 Addendum RTC table and RFI/RI Soil Investigation WP Addendum and Errata for the PG&E Topock
3/13/2014	Aaron Yue, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Submittal of Paleontological Resources Management Plan: CUL-3 for DTSC review.
3/18/2014	Christina Hong, CH2M Hill	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Two handouts for 3/19 TWG: Pipeline B Alignment, Freshwater Supply Operational Scenarios
3/18/2014	Chris Guerre, DTSC	CWG, Geo/Hydro TWG, TRC, Tribal Reps., ESA		Correction to 3/19 TWG agenda
3/18/2014	DTSC	Attendees: FMIT: Leo Leonhart; CRIT: Doug Bonamici, Howard Magill; Hualapai: Loretta Jackson Kelly, Dawn Hubbs, Rudy Clark, Robert Bravo; Chemehuevi: Steven Escobar, Raymond Mejia; Cocopah: Edgar Castillo (phone); TRC: Charlie Schlinger; DTSC, PG&E, Arcadis, CH2M Hill, Keadjian & Associates, BLM, ETIC, MWD		Clearinghouse Task Force Meeting
3/19/2014	Chris Guerre, DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); CRIT: Howard Magill; Hualapai: Dawn Hubbs, Loretta Jackson-Kelly, Rudy Clark; TRC: Bob Prucha, Charlie Schlinger, Eric Rosenblum, Win Wright, Margaret Eggers; DTSC, PG&E & their consultants CH2M Hill & Arcadis; DOI, MWD, CRB		TWG Face-to-Face meeting. Agenda Items: Pipeline Alignment/Conceptual Info on Aboveground Infrastructure at Potential Freshwater Wells (HNWR-1/Site B); Potential Paths Forward for Freshwater Supply for Groundwater Remedy; RFI/RI Volume 1 Addendum Comment Resolution.
3/20/2014	Yolanda Garza, DTSC	CTF Members	Kim Liebhauser and Gloria Benson, BLM, Aaron Yue, DTSC, Charlie Schlinger, TRC	Presentation materials from 3/18/14 CTF meeting: communication protocol, 90% groundwater remedy basis of design response to comments (RTC) process improvements, final Topock CTF charter

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/24/2014	Kimber Liebhauser, DOI	Timothy Williams, FMIT, Edward "Tito" Smith, Chemehuevi; Sherry Cordova, Cocopah; Wayne Patch, Sr., CRITs; Sherry J. Counts, Hualapai; Bernadine Jones, Havasupai; Darrell Mike, Twenty-Nine Palms; Ernest Jones, Sr., Yavapai-Prescott; Advisory Council on Historic Prevention, Arizona State Parks, PG&E, USBOR, USFWS,	Chemehuevi: Jay Cravath; Cocopah: Jill McCormick, Edgar Castillo; CRITs: Wilene Fisher-Holt, Howard Magill; FMIT: Nora McDowell; Hualapai: Loretta Jackson Kelly, Dawn Hubbs; Havasupai: Travis Hamidreek; Twenty-Nine Palms: Anthony Madrigal; Yavapai: Gregg Glassco; OHP: Susan Stratton, Brendon Greenaway; AZ OHP: Ann Howard, Kris Dobschuetz; PG&E:, BOR, USFWS	Letter regarding BLM determination that it will not pursue a third-party, contracted ethnographic study
3/26/2014	Steven McDonald (FMIT)	Isabella Alasti	FMIT: Courtney Coyle, Timothy Williams, Nora McDowell, Linda Otero; DTSC: Debbie Raphael, Karen Baker	FMIT respone to letter to Courtney Coyle dated 1/28/14.
3/27/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Fourth Quarter and Annual 2013 PMP (IM 3 Performance) and Site-wide GMP (groundwater and surface water) monitoring report.
4/2/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing March 2014 CWG emails and attachments.
4/2/2014	Aaron Yue, DTSC	CWG. Geo Hydro TWG, TRC, Tribal Reps, ESA		Availability of the Freshwater Evaluation Tech Memo on Sharepoint Site
4/2/2014	Jose Marcos, DTSC	TWG & Tribal Representatives		RFI/RI Volume 1 Addendum Revised RTCs Table and 1957 Topo Map for review. Request to submit additional items by 4/18.
4/3/2014	Yolanda Garza, DTSC	CTF Members		Clearinghouse Task Force meeting on 4/15/14. Draft agenda and documents for review.
4/4/2014	Chris Guerre, DTSC	CWG. Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for January 2014 Monthly GMP sampling
4/4/2014	Chris Guerre, DTSC	CWG. Geo Hydro TWG, TRC, Tribal Reps, ESA		Save the date: TWG/Site Walk on 4/17/14
4/4/2014	Aaron Yue, DTSC	CWG. Geo Hydro TWG, TRC, Tribal Reps, ESA		Joint letter from DTSC/DOI joint direction letter to guide PG&E towards the 90% groundwater remedy basis of design. "Directives on Outstanding Issues of the Response to Basis of Design Report/ Intermediate (60%) Design Comments for PG&E Topock Compressor Station Remediation Site."
4/8/2014	Aaron Yue, DTSC	CWG. Geo Hydro TWG, TRC, Tribal Reps, ESA		Latest project contact lists
4/9/2014	Chris Guerre, DTSC	CWG. Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for February First Quarter 2014 Monthly Groundwater Monitoring Program (GMP) Sampling
4/15/2014	Yolanda Garza, DTSC	CTF Members		Draft CTF calendar and Interagency communication protocol.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/15/2014	DTSC	Attendees: FMIT: Nora McDowell; CRIT: Howard Magill;Chemehuevi: Steven Escobar, Raymond Mejia; TRC: Eric Rosenblum; DTSC, PG&E, Arcadis, CH2M Hill, Keadjian & Associates, BLM, ETIC, MWD		Clearinghouse Task Force Meeting - Primary focus of meeting was discussion of approach for the 90% groundwater remedy basis of design response to comment process.
4/16/2014	DTSC	Attendees: FMIT: Nora McDowell, Luke Johnson, Courtney Coyle (by phone); Chemehuevi: Raymond Mejiu; Cocopah: Edgar Castillo (by phone); CRIT: Howard Magill; Hualapai: Bennett Jackson; TRC: Margaret Eggers, Win Wright, Eric Rosenblum; DTSC, ESA, CRB, PG&E and their consultants CH2M Hill, Arcadis, Keadjian; USBLM, USBOR, Herndon for DOI, USFWS, DFW, MWD		Face-to Face CWG meeting. Agenda items: Project highlights; Significant Issues from 2/12/14 CWG, CWG action items; Update on Clearinghouse Task Force Activities; Soil EIR Updte; TWG Update; Update on EIR Mitigation Measures/Overview of the CIMP; CRIT Presentation; Update on CMI/RD including Freshwater Source and Implementation of 90% Groundwater Remedy Direction; Project Schedule Update; Programmatic Agreement Activities Update
4/17/2014	DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart; Chemehuevi: Raymond Mejia; CRIT: Howard Magill; TRC: Win Wright, Eric Rosenblum, Margaret Eggers; DTSC: Chris Guerre, Susan Wilcox; DOI: Mike Anderson; BLM: George Shannon; PG&E: Glen Riddle, Danielle Starring, Curt Russell, Glenn Caruso, Valisa Nez; ARCADIS: Margy Gentile, Fred Stanin, LIsa Kellogg, Lisa Cope, Eric Putnam; CH2M Hill: Mike Cavaliere; PVX: Shakeel Jogia		Face-to-face Geo/Hydro Technical Work Group Meeting - Site Walk of proposed locations for the arsenic monitoring wells for groundwater remedy design.
4/18/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PG&E officially posted their final RTCs on the 60% Groundwater Remedy Basis of Design (BOD) on the CH2M Sharepoint site.
4/21/2014	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Lodging Accomodations for July Topock meetings in San Diego.
4/22/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		4/17/14 TWG Site Walk Follow-up - comments on proposed locations for the arsenic monitoring wells are due 5/2/14.
4/24/2014	Yolanda Garza, DTSC	CTF Members		Draft notes from last weeks CTF for review and comments.
4/28/2014	Michael Sullivan, CSU Northridge	Jose Marcos, DTSC		Questions on Soils EIR and Risk Assessment Work Plan. Jose passed questions to Aaron Yue.
4/29/2014	Yolanda Garza, DTSC	CTF Members		Interagency Communication Guide for CTF - request for input by 5/1/14.
4/30/2014	Aaron Yue, DTSC	Michael Sullivan, CSU Northridge	CWG, Geo Hydro TWG, Tribal Reps, TRC, ESA	Response to inquiry on hyperaccumulative plants
5/1/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of 1Q 2014 Topock GW Remedy EIR Mitigation Measures Compliance Report
5/1/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Request for May TWG agenda items
5/1/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of 90% Standard Operating Procedures (SOPs) - Batch 1 for Groundwater Remdy Design
5/2/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PG&E Topock: Arsenic Monitoring Network - DTSC concurs with PG&E's proposed well network.

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5/2/2014	Leo Leonhart	Aaron Yue, DTSC, Pam Innis DOI	FMIT: Nora McDowell, Linda Otero, Courtney Coyle, Steven McDonald; Hualapai: Dawn Hubbs; Chemehuevi: Raymond Mejia; CRIT: Howard Magill, Doug Bonamici; Cocopah: Jill McCormick; TRC: Eric Rosenblum, Win Wright, Michael Sullivan; PG&E: Yvonne Meeks	FMIT Comments on PG&E Arsenic Monitoring Well Proposal for Groundwater Remedy Design
5/2/2014	Dawn Hubbs, Hualapai	DTSC: Aaron Yue, Karen Baker; DOI: Pam Innis; Hualapai: Rudy Clark, Robert Bravo, Loretta Jackson, Sherry J Counts; Cocopah: Jill McCormick; FMIT: Nora McDowell, Leo Leonhart; CRIT: Dough Bonamici		Hualapai comments on Proposed Arsenic Monitoring Network for PG&E Topock Compressor Station Groundwater Remedy.
5/5/2014	Edgar Castillo, Cocopah	DTSC: Aaron Yue, Karen Baker; DOI: Pam Innis; BLM: George Shannon, Kim Liebhauser; PG&E: Glen Caruso, Yvonne Meeks; FMIT: Nora McDowell; CRIT: Howard Magill; Hualapai: Loretta Jackson, Dawn Hubbs	Cocopah: Jill McCormick	Topock Compressor Station Tribal Cultural Values Assessment April 25, 2014 Amendment
5/6/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		5/21/14 TWG Agenda
5/7/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing April 2014 CWG emails and attachments.
5/7/2014	Karen Baker	Howard Magill, CRITs		Letter of appreciation for presence and presentation at the last CWG meeting.
5/7/2014	Yolanda Garza, DTSC	CTF Members and Invitees		Agenda for May 20, 2014 CTF meeting in Laughlin.
5/8/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of Risk Assessment Work Plan (RAWP) Addendum 2
5/16/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Matrix for discussion at 5/21/14 TWG regarding recommendations from tribes for arsenic compliance monitoring wells in California arsenic well evaluation.
5/16/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		5/21/14 TWG handouts and agenda
5/19/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Fowarded link from PG&E to the second batch of SOPs that are part of the 90% Groundwater Remedy Basis of Dsign.
5/19/2014	Nora McDowell, FMIT	CTF Members and Invitees		Informed the group that Eric Rosenbloom will attend the 5/20/14 CTF in her place.
5/20/2014	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Reminder about Topock meeting lodging reservations at a reduced rate for July CTF, CWG and TWG meetings.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/20/2014	DTSC	Attendees: FMIT: Nora McDowell; CRIT: Howard Magill;Chemehuevi: Raymond Mejia; Cocopah: Edgar Castillo; TRC: Eric Rosenblum; DTSC, PG&E, Arcadis, CH2M Hill, Keadjian & Associates, BLM, ETIC, MWD		Clearinghouse Task Force - Karen Baker discussed the timing and process for release of the Draft Soil EIR. Public comment period July 7 to August 21, 2014. Public meeting/hearings July 22 in Needles and July 23 in Golden Shores. Tribal representatives again asked for a copy of the Screencheck EIR. Karen explained that due to contractual requirement only PG&E could review the Screencheck EIR. No govenermental agencies, including Tribes would receive the Screencheck EIR.
5/21/2014	Chris Guerre, DTSC			Face-To-Face TWG Meeting: Agenda Items: Risk Assessment Work Plan (RAWP) Addendum II; Discuss specific Tribes' comments on As monitoring well network; Confirm path forward on Tribes/TRC modeling TM (dated 4/3/14); Update on Pipeline B routing (AZ portion, south of HNWR-1); Update on Pipe Routing at TCS Entrance; Others.
5/22/2014	Aaron Yue, DTSC	Yvonne Meeks, Christina Hong, PG&E	CWG, Geo/Hydro TWG, TRC, Tribal Reps	Transmitted letter to Yvonne Meeks "Request for Information Regarding Historic PG&E Wells".
5/22/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Lori Hare, DTSC	Tribes to submit a formal extention for review and comment on the RAWP Addendum II - verbal proposal from Hualapai is until the end of June. Request to tribes to discuss and put forth some meeting dates for the recreational user exposure scenario with DOI. Michael Sullivan not available on original proposal of 6/17, 6/18, 6/19.
5/27/2014	Leo Leonhart, FMIT	Aaron Yue, DTSC	Nora McDowell, Michael Sullivan, Courtney Coyle, Steven McDonald, FMIT	Request for clarification on slide #4 of TWG presentation for the RAWP regarding schedule for RAWP, RFI/RI, CEQA/EIR. Aaron sent clarification reply explaining the proper flow for this project.
5/29/2014	Yolanda Garza, DTSC	CTF Members and Invitees		Notes from 5/20/14 CTF, sign-in sheet, draft CTF calendar with document review for June 2014, CTF action items 5/29/14, and RWQCB 5/8/14 briefing.
6/2/2014	Nora McDowell, FMIT	Aaron Yue, DTSC	Michael Sullivan, Leo Leonhart, Courtney Coyle, Steven McDonald	FMIT request for an extension of time to respond to the RAWP addendum to 6/16/14. Aaron responded that DTSC will notify the CWG and TWG shortly regarding the extended due date.
6/4/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing May 2014 CWG emails and attachments.
6/3/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TWG agenda for 6/18/14
6/5/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Reminder of 6/18 & 6/19 TWG meetings.
6/6/2014	Yolanda Garza, DTSC	CTF Members		Draft agenda for 6/17/14 CTF meeting, 5/29/14 action items, draft calendar with document reviews for June 2014.
6/9/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		June TWG Meeting reminder

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6/12/2014	Michael Sullivan, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Nora McDowell, Courtney Coyle, Leo Leonhart, Steve McDonald	FMIT comments on the Topock Risk Assessment Work Plan (RAWP).
6/13/2014	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Last call for reduced loding rates in San Diego for Topock meetings in July 2014
6/16/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout for TWG Item 3, Proposed New Wells
6/16/2014	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		90% Groundwater Remedy Basis of Design Updates (Inside TCS, TW Bench, Improvements at TCS ponds)
6/16/2014	Lisa Kellogg, Arcadis	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout for TWG Meeting on TWG Arsenic Monitoring Wells for Groundwater Remedy
6/17/2014	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Change of conference room for tomorrow's TWG meeting.
6/17/2014	DTSC	Attendees: CRIT: Howard Magill; Hualapai: Dawn Hubbs; Chemehuevi: Raymond Mejia, Steven Escobar; Cocopah: Edgar Castillo; DTSC, PG&E, DOI, BLM, MWD, CH2M Hill, ARCADIS		Clearinghouse Task Force Meeting
6/17/2014	Dawn Hubbs, Hualapai	Aaron Yue, DTSC		Extension request for comments on Addendum 2 of the Health and Ecological Risk Assessment Work Plan.
6/18/2014	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	Pam Innis, DOI, Jose Marcos, DTSC, Christina Hong, CH2M Hill	Notified PG&E for scheduling purposes and DOI for consideration of requested extension.
6/18/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Earlier time for site walk due to high temperatures and request to keep noise level to a minimum.
6/18/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Updated Handout 3 "Proposed New Wells" as requested at TWG meeting.
6/18-19/2014		Attendees: Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo; Chemehuevi: Raymond Mejia, Steven Escobar; TRC: Charles Schlinger, Eric Rosenblum, Margaret Eggers, Bob Prucha; DTSC, DOI, PG&E, ARCADIS, CH2M Hill, MWD, BLM		Face-to-Face TWG Meeting and 6/19 Site Walk: Agenda Items: Follow-up on May 21 TWG/June 4 CHPMP: IRL-1 Well, Arsenic (As) Monitoring Network: Move IRL-1 150' As Compliance Well, IRL-3 As Compliance Wells, IRL-4 As Compliance Wells, Change FW-1 location to FW-1, Others; Planned Monitoring Well ZZ; Access to mouth of BCW for soil sampling from the north rather than south as shown in the Soil Work Plan; Recently Proposed Groundwater Monitoring Wells; Arizona Freshwater Well Update; 90% Design Update: Inside TCS, Transwestern Bench, Miscellaneous / Other – Alternate BCW crossing in uplands under evaluation, enhanced evaporation at TCS ponds, improvement of access road to FW-2, etc., Logistics for June 19 Site Walk. 6/19 Site Walk: Arsenic (As) Monitoring Network - IRL-1 150' As Compliance Well, FW-1 location, IRL-3 As Compliance Wells, IRL-4 As Compliance Wells; Planned Monitoring Well ZZ; Access to mouth of BCW for soil sampling from the north rather than south; Any DTSC Proposed Well Sites of Interest.
6/25/2014	Lisa Kellogg, Arcadis	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TWG Arsenic Monitoring Well Coordinates
6/26/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		1st Quarter 2014 Interim Measures (IM) Performance Monitoring and Groundwater Monitoring Report
6/26/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for April/May Second Quarter 2014 Monthly GMP Sampling

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6/26/2014	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	DTSC: Jose Marcos, CH2M Hill: Christina Hong; DOI: Pam Innis; PG&E: Yvonne Meeks	Since our reply granting extension for the RAWP Addendum 2 Comments to June 23rd, have not heard back from Hualapai. Please let DTSC, DOI & PG&E know if you will submit comments.
6/26/2014	Dawn Hubbs, Hualapai	Aaron Yue, DTSC	DTSC: Jose Marcos, CH2M Hill: Christina Hong; DOI: Pam Innis; PG&E: Yvonne Meeks	Hualapai will forward comments on Friday, June 27th.
6/26/2014	Yolanda Garza, DTSC	CTF Members		Draft notes from last meeting and request for agenda items for next meeting.
6/27/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of 90% Groundwater Remedy Basis of Design - Standard Operating Procedures (SOPs) - Batch 3
7/1/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing June 2014 CWG emails and attachments.
7/7/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Announcing beginning of 45 day comment period of soil investigation draft EIR. Attached Notice of Availability and links to the Draft EIR and Notice of Completion. Comment period ends 8/21/14.
7/8/2014	Yolanda Garza, DTSC	CTF		CTF meeting Agenda and handouts.
7/9/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		7/16/14 CWG agenda and 7/17/14 TWG agenda.
7/9/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent latest revisions of contact lists for review and update if needed.
7/10/2014	Michael Sullivan, FMIT	Aaron Yue, DTSC	FMIT: Nora McDowell, Leo Leonhart	Asked logistical questions about RAWP meeting. Aaron forwarded the email to DOI since they are the lead for that meeting.
7/10/2014	Michael Sullivan, FMIT	Aaron Yue, DTSC	FMIT: Nora McDowell, Leo Leonhart	Asked when the FMIT's response to the draft Risk Assessment Work Plan (RAWP) will be discussed with them. They want to discuss prior to the issuance of the RTC table. He claimed that there were agency commitments to additional RAWP meetings for the purpose of discussing these issues prior to the RAWP document which did not happen.
7/10/2014	Aaron Yue, DTSC	Michael Sullivan, CSU Northridge	FMIT: Nora McDowell, Leo Leonhart; DTSC: Karen Baker, Yolanda Garza, Shukla Roy-Semmen, Chris Guerre, James Eichelberger, Jose Marcos; DOI: Pam Innis	Agencies will respond to FMIT's 5/8/14 letter in writing. PG&E will prepare responses to all comments received on the draft Risk Assessment Work Plan (RAWP) addendum. There will be comment resolution discussions with the tribes. DTSC objects to the reference that DTSC committed to additional meetings with the tribes beyond the initial uptake meeting and two day scoping meetings that were held, but the suggestion was received for consideration.
7/14/2014	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, Charlie Schlinger, TRC	Updated project planning calendar

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7/15/2014	DTSC	Attendees: Hualapai Indian Tribe: Dawn Hubbs; Fort Mojave Indian Tribe (FMIT): Nora McDowell; Chemehuevi Indian Tribe (CIT): Steven Escobar; Cocopah Indian Tribe: Edgar Castillo, Jill McCormick; Colorado River Indian Tribe (CRIT): Doug Bonamici (via telephone); Technical Review Committee (TRC): Margaret Eggers, DTSC, BLM, RWQCB, PG&E, CH2M Hill, Arcadis, Keadjian & Assoc.		Clearinghouse Task Force Face-to-Face Meeting
7/16/2014	DTSC	Attendees: FMIT: Nora McDowell, Michael Sullivan; Legal Counsel for FMIT: Courtney Coyle, Steven McDonald; Hargis & Associates (H&A) for FMIT: Leo Leonhart, Shayne Kappus; CIT: Ron Escobar, Steven Escobar; Cocopah Indian Tribe: Jill McCormick; CRIT: Doug Bonamici; Hualapai Indian Tribe: Dawn Hubbs; Technical Review Committee (TRC): Margaret Eggers, Robert Prucha, Eric Rosenblum, Charlie Schlinger, Win Wright : DTSC, ESA on behalf of DTSC, ADEQ, CRB, PG&E and their consultants CH2M Hill, Arcadis, & Keadjian, CRWQCB, USBLM, USBOR, USDOI, Summit Technical Resources on behalf of DOI, USFWS, USFWS, MWD, Mohave County DPH;		Consultative Work Group Face-To-Face meeting. Agenda items: Project Highlights; Significant Issues from 4/16/14 CWG; Action Items; Update on CTF Activities - Response to Comment (RTC) protocol for 90% groundwater remedy design review; Soil Investigation Draft EIR; Programmatic Agreement Activities Update; Path Forward on Park Moabi Lease for Remedy Use; Drought Management; Update on EIR Mitigation Measures Implementation; Update on CMI/RD including 90% Design and Remedial Action Workplan; Project Schedule Update; Physical Model walk-through including training on its Use and Transport
7/17/2014	DTSC	Attendees: FMIT: Nora McDowell, Shayne Kappos, Michael Sullivan; Legal Counsel for FMIT: Courtney Coyle, Steven McDonald; H&A for FMIT: Leo Leonhart (via telephone); CIT: Steven Escobar; Cocopah: Edgar Castillo; Hualapai: Dawn Hubbs; TRC: Bob Prucha, Charlie Schlinger, Margaret Eggers; DTSC, USDOI, Summit Technical Resources on behalf of DOI, USBLM, USBOR, USFWS, MWD, ADEQ, PG&E and their consultants CH2M Hill & Arcadis		Technical Work Group Face to Face Meeting. Agenda items: Follow-up on June 18 TWG/June 19 Pre-90% Groundwater Remedy Design Site Walk: Arsenic monitoring network; Monitoring Well Z (former MW-ZZ); Monitorng Wells proposed by DTSC; Soil Sampling Access to mouth of BCW; 90% Groundwater Remedy Design Update: Floodplain road design; FWIP Update
7/22/2014	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		Requested that Rudy Clark, Ms. Carrie Imus and council liaisons for Topock are on all email conversations and to send them the 2014 planning calendar.
7/22/2014	Yolanda Garza, DTSC	Rudy Clark, Carrrie Imus, Hualapai		Sent them calendar for Topock project milestone documents and upcoming meetings. Also, will include them to CWG & TLP contact lists.
7/24/2014	Yolanda Garza, DTSC	CTF Members		Draft notes from last weeks CTF for review and comments, updated calendar and action items.
7/25/2014	Dawn Hubbs, Hualapai	Aaron Yue, DTSC		Request for extension for the comment period on the Draft Soils Investigation EIR through 9/21/14.
7/28/2014	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		Asked Yolanda to Fed-Ex a copy of the appendices for the Draft Soils EIR.
7/28/2014	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Agreed to send, requested mailing address instead of PO Box.
7/29/2014	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		Asked for clarification that they are only asking for the Appendices and already have the Soil Work plan.

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7/29/2014	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		Dawn asked that Yolanda include the Soils Work Plan also.
7/29/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided optional blank DEIR comment template.
7/29/2014	Aaron Yue, DTSC	Yvonne Meeks, PG&E, Christina Hong, CH2M Hill, A. Pierre, Iris	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	DTSC comments on the May 2014 Risk Assessment Work Plan Addendum 2
7/29/2014	Dawn Hubbs, Hualapai	Aaron Yue, DTSC		Request for extension for the comment period on the Draft Soils EIR through 9/21/14.
7/29/2014	Aaron Yue, DTSC	Dawn Hubbs, Rudy Clark, Carrie Imus, Loretta Jackson-Kelly, Hualapai	DTSC: Karen Baker, Isabella Alasti, Stacey Lear, Kimberley Hudson, John Meerscheidt; ESA: Shannon Stewart, Bobbette Biddulph; DOI: Pam Innis, Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Chemehuevi: Steven Escobar; TRC: Margaret Eggers, Eric Rosenblum, Bob Prucha	Apologized for the delay in response, DTSC is currently evaluating Hualapai's request for extension. DTSC will provide Hualapai with a written response once a decision is made.
7/30/2014	Nora McDowell, FMIT	Aaron Yue, DTSC, Dawn Hubbs, Rudy Clark, Carrie Imus, Loretta Jackson-Kelly, Hualapai	DTSC: Karen Baker, Isabella Alasti, Stacey Lear, Kimberley Hudson, John Meerscheidt; ESA: Shannon Stewart, Bobbette Biddulph; DOI: Pam Innis, Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Chemehuevi: Steven Escobar; TRC: Margaret Eggers, Eric Rosenblum, Bob Prucha	FMIT supports Hualapi's request for extension of the comment period of Draft EIR for Soils Investigation due to changes in personnel/transition and recruitment of the PM position, and amongst other review of documents for the Topock project.
7/30/2014	Aaron Yue, DTSC	Nora McDowell, FMIT, Dawn Hubbs, Rudy Clark, Carrie Imus, Loretta Jackson-Kelly, Hualapai	DTSC: Karen Baker, Isabella Alasti, Stacey Lear, Kimberley Hudson, John Meerscheidt; ESA: Shannon Stewart, Bobbette Biddulph; DOI: Pam Innis, Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Chemehuevi: Steven Escobar; TRC: Margaret Eggers, Eric Rosenblum, Bob Prucha	Thanked Nora for FMIT support email for Hualapai's comment period extension request. DTSC is in deliberation of the request and will provide a written response on the resolution.
7/30/2014	Yolanda Garza, DTSC	Dawn Hubbs, Hualapai		DTSC is working to meet her request of sending a hard copy of the Appendices and Soil Work Plan, but wants to ensure that they don't already have the hard copy. Should have received a hard copy during Federal consultation with DOI and disks of the appendices in the back of the hard copy Soil Work Plan EIR. Also, requested the reason for the request.

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7/31/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Upcoming TWG meetings on 8/20 & 9/17. 8/20 will be cancelled unless receive agenda items.
8/1/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing July 2014 CWG emails and attachments.
8/1/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Redline Well Decommissioning SOP for Groundwater Remedy
8/4/2014	Edgar Castillo, Cocopah	Dawn Hubbs, Hualapai	DTSC: Aaron Yue, Karen Baker, Isabella Alasti, Stacey Lear, Kimberley Hudson, John Meerscheidt; ESA: Shannon Stewart, Bobbette Biddulph; DOI: Pam Innis, Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Chemehuevi: Steven Escobar; TRC: Margaret Eggers, Eric Rosenblum, Bob Prucha	Hualapai supports the Fort Mojave and Hualapai tribe's request for an extension of Draft Soil EIR comment period.
8/4/2014	Aaron Yue, DTSC	Nora McDowell, FMIT, Dawn Hubbs, Hualapai, Edgar Castillo, Cocopah	Hualapai: Rudy Clark, Carrie Imus, Loretta Jackson-Kelly; DTSC: Karen Baker, Isabella Alasti, Kimberly Hudson, Stacey Lear; DOI: Pam Innis; Cocopah: Jill McCormick; CRIT: Doug Bonamici; Chemehuevi: Steven Escobar; TRC, ESA	DTSC approval of a 15 day extension to the Draft EIR Soils Comment period to 9/5/14.
8/4/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		DTSC approval of a 15 day extension to the Draft EIR Soils Comment period to 9/5/14.
8/4/2014	Aaron Yue, DTSC	Nora McDowell, FMIT, Dawn Hubbs, Hualapai, Edgar Castillo, Cocopah	Hualapai: Rudy Clark, Carrie Imus, Loretta Jackson-Kelly; DTSC: Karen Baker, Isabella Alasti, Kimberly Hudson, Stacey Lear; DOI: Pam Innis; Cocopah: Jill McCormick; CRIT: Doug Bonamici; Chemehuevi: Steven Escobar; TRC, ESA	Resend of DTSC approval of a 15 day extension to the Draft EIR Soils Comment period to 9/5/14 changing Final EIR to Draft EIR in the first paragraph of email. Dawn Hubbs & Edgar Castillo sent Thank you notes for the approval.
8/6/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Cancellation of 8/20/14 TWG meeting.
8/7/2014	Yolanda Garza, DTSC	CTF Members		Draft agenda for 8/19 CTF for review, action items and updated calendar.
8/11/2014	Yolanda Garza, DTSC	CTF Members		Change of 8/19 CTF meeting to a phone conference.
8/11/2014	Aaron Yue, DTSC	Email list in PG&E's mailing list database including Tribes		Sent electronic version of postcard for Draft Soil Investigation EIR Public Comment period extension.
8/13/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		1Q 2014 Topock GW Remedy EIR Mitigation Measures Compliance Report

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/15/2014	Dawn Hubbs, Hualapai	DTSC: Aaron Yue, Karen Baker, DOI, PG&ETRC, Hualapai: Loretta Jackson-Kelly, Rudy Clark, Bennett Jackson, Carrie Cannon, Sherry J. Counts, Philbert Watahomigie, Sr., Scott Crozier, Emma Tapija		Would like to hold a Hualapai Council meeting on 10/13 or 10/15/14. Karen Baker replied that either of those dates work for DTSC.
8/15/2014	Jill McCormick, Cocopah	DTSC: Karen Baker, Aaron Yue, DOI, BLM, FMIT: Nora McDowell, Linda Otero; CRIT: Doug Bonamici, Wilene Fisher-Holt, Chemehuevi: Steven Escobar, Raymond Mejia; Hualapai: Dawn Hubbs; Lorrie Jackson, Dean B. Suagee, Courtney Coyle, Edgar Castill, Jill McCormick		Sent Tribal TCVA Work Plan and Cover letter from the Tribal Working Group. Asked that Kim, Amanda, Pam, Aaron and Karen confirm that they received this email. Karen Baker confirmed receipt immediately.
8/15/2014	Aaron Yue, DTSC	Jill McCormick, Cocopah		Aaron asked for permission to pass the TCVA Work Plan document to our contract archaeologist, Susan Wilcox, and Monica Strauss at ESA. Jill McCormick replied that she will have to get his request approved by all the tribes and will get back to him some time next week.
8/15/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		2nd Quarter 2014 Interim Measures (IM) Performance Monitoring and Groundwater Monitoring Report
8/15/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of CMP First Half 2014 GW Monitoring Report for Interim Measures No. 3
8/19/2014	Jill McCormick, Cocopah	Aaron Yue, Karen Baker, DTSC		Received confirmation from Hualapai, FMIT, CRIT, Chemehuevi and Cocopah, that the TCVA Work Plan may be shared with Susan Wilcox and Monica Strauss, ESA. It was clarified that this document is highly sensitive and confidential information.
9/3/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing August 2014 CWG emails and attachments.
9/5/2014	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Draft agenda for 9/16 CTF, 9/3 action items, updated project calendar.
9/5/2014	Raymond Mejia, Chemehuevi	DTSC: Aaron Yue, Karen Baker; Chemehuevi: Steven Escobar; FMIT: Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici;		Chemehuevi Tribal representatives do not have any comments regarding the Draft Soil Investigation EIR.
9/5/2014	Yolanda Garza, DTSC	CTF Members	DTSC: Aaron Yue, Chris Guerre	Link to make on-line reservations for September meetings.
9/5/2014	Kelly McDonald, Steve McDonald Law Office (for Courtney Coyle), FMIT	Aaron Yue, DTSC	DTSC: Karen Baker; FMIT: Courtney Coyle, Leo Leonhart, Steve McDonald, Timothy Williams, Linda Otero; DOI: Pam Innis	FMIT Comments on Soils Investigation DEIR
9/9/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of Basis of Design Report/ Pre-Final (90%) Design and Construction/ Remedial Action Work Plan. Comments due on or before 11/14/14.
9/9/2014	Aaron Yue, DTSC	FMIT: Linda Otero, Timothy Williams, Courtney Coyle, Masipa360nma@gmail.com; DTSC: Isabella Alasti		Per their request, sent FMIT comments received on DEIR.
9/10/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		C/RAWP Section 3 editorial issue found. Wait for revised version if you have not already downloaded the document.
9/10/2014	Chris Guerre, DTSC	Geo/Hydro TWG		TWG agenda for next week.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/11/2014	Chris Guerre, DTSC	Geo/Hydro TWG		Corrected TWG agenda for next week.
9/11/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		C/RAWP Section 3 editorial issue corrected..
9/15/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent all contact lists for review and update.
9/15/2014	Aaron Yue, DTSC	Geo/Hydro TWG		Link to cost estimate for the 90% Groundwater Remedy Basis of Design.
9/16/2014	DTSC	Attendees: FMIT: Nora McDowell (phone), Leo Leonhart (H&A); Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; CRIT: Doug Bonamici; Chemehuevi: Raymond Mejia; Cocopah: Jill McCormick, Edgar Castillo; TRC: Margaret Eggers; DTSC, DOI, BLM, PG&E and their consultants CH2M Hill, ARCADIS, Keadjian		Face-to-Face Clearinghouse Task Force meeting.
9/17/2014	Chris Guerre, DTSC	Attendees: FMIT: Leo Leonhart (H&A), Nora McDowell (via telephone), Courtney Coyle (legal, via telephone), Steve McDonald (legal, via telephone); CRIT: Doug Bonamici; FMIT: Leo Leonhart (H&A), Nora McDowell (via telephone), Courtney Coyle (legal, via telephone), Steve McDonald (legal, via telephone); Chemehuevi: Raymond Mejia; Cocopah: Edgar Castillo, Jill McCormick; Hualapai: Dawn Hubbs; TRC: Margaret Eggers, Win Wright, Eric Rosenblum, Bob Prucha, Charlie SchlingerDTSC, DOI, Summit on behalf of DOI, BLM, CRB, BOR, ADEQ, MWD, Geopentch on behalf of MWD, PG&E, Arcadis on behalf of PG&E, CH2M Hill on behalf of PG&E, Pivox on behalf of PG&E: Cox on behalf of PG&E		Face-to-Face TWG Meeting: Agenda Items: RAWP II Addendum Response To Comments – Meeting logistics; Walk through 90% Groundwater Remedy Design Submittal: Overview of 90% Design Submittal and Organization. 90% Basis of Design Report: Document Organization, Main Text, Specific Appendices: Appendix B – Modeling, Appendix D – Engineering Drawings, Appendix E – Technical Specifications, Appendix L - O&M Manual, Appendix N – FWIP Tech Memo Addendum; Walk through 90% Design Submittal: Construction/Remedial Action Work Plan: Organization, Main Report, Appendices. Comment Process for 90% Design.
9/18/2014	Edgar Castillo, Cocopah	Aaron Yue, Karen Baker, DTSC	FMIT: Nora McDowell, Linda Otero, Leo Leonhart; Cocopah: Jill McCormick; CRIT: Doug Bonamici; Chemehuevi: Steven Escobar, Raymond Mejia	Cocopah tribal comments regarding the Draft EIR PG&E Topock Compressor Station Soil Investigation Project.
9/19/2014	Chris Guerre, DTSC	Geo/Hydro TWG		9/17/14 TWG meeting action items.
9/23/2014	Aaron Yue, DTSC	Michael Sullivan, FMIT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	DTSC clarification on misconceptions in May 8 and June 11, 2014 comments on RAWP Addendum and Addendum 2.
9/23/2014	Yolanda Garza, DTSC	CTF Members		Draft notes of the September CTF meeting, action items, sign-in sheet and calendar.
9/24/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Request for TWG agenda items.
9/25/2014	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Requested that discussion regarding the decommissioning of TCS-4 be added to the TWG agenda.
10/1/2014	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Link to annual CWG survey to help plan future meetings. Survey open 10/1 - 10/17, Results to be shared at 10/29 CWG meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/6/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing September 2014 CWG emails and attachments.
10/7/2014	Aaron Yue, DTSC	Yvonne Meeks & Glenn Caruso, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	DTSC request for PG&E to prepare a procedure and protocol to assist in the cooperative efforts and increase productivity during future archaeological resource monitoring and preconstruction verification field work.
10/8/2014	Loretta Jackson-Kelly, Hualapai	Karen Baker, DTSC & Pamela Innis, DOI	Hualapai: Sherry Counts, Rudy Clarke, Carrie Imus	Comments to DTSC letter of 10/7/14 regarding Infrastructure Site Verification Field Work and
10/8/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		CWG will be on 10/29 AM, TWG in the afternoon, 10/30 will have a field visit. Request for agenda items must be sent by 10/17.
10/8/2014	Dawn Hubbs, Hualapai	Chris Guerre	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Hualapai would like to add IRL3 well discussion in the context of 90% Groundwater Remedy Designand the proposed arsenic monitoring well MW-25 at the TWG.
10/9/2014	Aaron Yue, DTSC	Dawn Hubbs, Hualapai, Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	RE: Dawn's 10/8 email: Arsenic monitoring will be part of the well discussion at the TWG. Hope tribes prepared to provide input at the TWG for closure of this item.
10/13/2014	Yolanda Garza, DTSC	CTF Members		Reminder to submit surveys today.
10/15/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Attached figure 2.4-1A which depicts some of the existing utilities at the site that was missing from the 90% design and C/RAWP.
10/15/2014	Requested by Hualapai Tribal Council	Hualapai Tribal Council and Dawn Hubs; DTSC: Karen Baker, Yolanda Garza; DOI, Pam Innis; BLM, Kim Liebhauser, Amanda Dobson, Renee Kolvert, Gloria Benson; PG&E: Kevin Sullivan, Yvonne Meeks, Lisa Cope; TRC: Eric Rosenblum, Win Wright		DTSC gave a presentation to the Hualapai Council regarding the soil investigation project and draft EIR for Soil Investigation Work Plan. DOI and PG&E also provided updates on the groundwater remediation project status.
10/16/2014	DOI	Attendees: FMIT: Linda Otero, Michael Sullilvan, Nora McDowell (by phone), Leo Leonhart (H&A); Hualapai: Dawn Hubbs; CRIT: Doug Bonamici; TRC: Eric Rosenblum, DTSC, USBOR, USDOI, USFWS		Meeting for tribes to provide input on the recreational scenario, "Recreational Scenario for the Risk Assessment Work Plan Addendum II".
10/17/2014	Karen Baker, DTSC	TRC and Dawn Hubbs, Hualapai		Gave clarification of California Requirements for Groundwater Cleanup due to comments at 10/15/14 Hualapai Tribal Council meeting that missed a key element regarding receptors asthe basis for the remedial action.
10/17/2014	Dawn Hubbs, Hualapai	Karen Baker, DTSC	TRC Members	Thanked Karen for clarification on CA requirements for GW cleanup and for being part of their council meeting.
10/17/2014	Karen Baker, DTSC	Dawn Hubbs, Hualapai		Thanked Dawn for the opportunity to participate in the Hualapai Council meeting.
10/21/2014	Aaron Yue, DTSC	PG&E: Glenn Caruso, Yvonne Meeks, DTSC: Karen Baker	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Response to PG&E's request to reduce the archaeological and historical site annual monitoring effort, per CUL-1a-3a. DTSC will review and evaluate PG&E's proposal.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/21/2014	Dawn Hubbs, Hualapai	Aaron Yue, Karen Baker, DTSC	FMIT: Linda Otero, Nora McDowell, Hualapai: Loretta Jackson, Rudy Clark, Cocopah: Edgar Castillo, CRIT: Doug Bonamici, Chemehuevi: Raymond Mejia, DTSC BLM, DOI	Request that Susan Wilcox and Renee Kolvet be able to participate in the Monthly Tribal Monthly Update (TMU) meetings and request that Renee Kolvet attend CTF, CWG and TWG meetings.
10/21/2014	Karen Baker, DTSC	Dawn Hubbs, Hualapai	FMIT: Linda Otero, Nora McDowell, Hualapai: Loretta Jackson, Rudy Clark, Cocopah: Edgar Castillo, CRIT: Doug Bonamici, Chemehuevi: Raymond Mejia, DTSC BLM, DOI	This request will be added to the CTF meeting. DTSC has constraints on how Susan Wilcox can be used on the project, and she will be unable to attend the 10/23 Tribal Monthly Update (TMU) meeting.
10/21/2014	Dawn Hubbs, Hualapai	DTSC: Aaron Yue, Karen Baker, PG&E: Yvonne Meeks; FMIT: Nora McDowell, Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Chemehuevi: Raymond Mejia; Hualapai: Loretta Jackson-Kelly, Rudy Clark, Carrie Imus, Sherry J. Counts; DOI: Pam Innis		Regarding PG&E's letter dated 10/21/14 regarding minimizing cultural resource monitoring, would like to meet with DTSC with other tribes if interested to give tribal input prior to DTSC making a final response to PG&E.
10/21/2014	Aaron Yue, DTSC	Dawn Hubbs, Hualapai; DTSC: Karen Baker, PG&E: Yvonne Meeks; FMIT: Nora McDowell, Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Chemehuevi: Raymond Mejia; Hualapai: Loretta Jackson-Kelly, Rudy Clark, Carrie Imus, Sherry J. Counts; DOI: Pam Innis		DTSC recognizes the importance of gathering tribal input on monitoring matters, but will not be prepared to discuss this matter next week. DTSC must have an internal meeting first with Susan Wilcox (returns from leave next week). Susan will be present at the CWG/TWG meeting next week.
10/21/2014	Aaron Yue, DTSC	Yvonne Meeks, Christina Hong, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Joint letter from DTSC & DOI to PG&E providing instructions regarding elements that are noted as incomplete in the September 2014 BOD/ Pre-Final 90% Design Submittal for the final Groundwater Remedy. PG&E directed to prepare and submit a supplemental design packaged by 12/30/14 for distribution to stakeholders and tribes for review and to revise the schedule accordingly for the 10/29/14 CWG meeting.
10/21/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Table of noted elements missing from the September 2014 BOD/ Pre-Final 90% Design Submittal for the final Groundwater Remedy. The review period will be extended 30 days from the date of receipt of the supplemental design package. It is anticipated that the comment period will terminate in early February 2015.
10/21/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TWG agenda for 10/29 & 10/30/14.
10/22/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		CWG agenda for 10/29/14.
10/22/2014	Leo Leonhart, H&A for FMIT	Aaron Yue, DTSC, Pam Innis, DOI	Jim Schwall, Nora McDowell, FMIT	Asked for clarification regarding April 4th letter directing PG&E to include a decommissioning plan in the 90% Groundwater Remdy Basis of Design (BOD). Interim Measures (IM)3 decommisioing plan appears to retain the option of abandoning in place.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/22/2014	Aaron Yue, DTSC	Leo Leonhart, H&A for FMIT, Pam Innis, DOI	Jim Schwall, Nora McDowell, FMIT	Gave clarification and said that it tribes have a different opinion or preference from PG&E on IM3 decommission, should raise during upcoming meetings and submitted in written comments for response.
10/22/2014	Leo Leonhart, H&A for FMIT	Aaron Yue, DTSC	Jim Schwall, Nora McDowell, FMIT	Is comprehensive decommisioning plan an omission, wants to be clear.
10/22/2014	Aaron Yue, DTSC	Leo Leonhart, H&A for FMIT, Pam Innis, DOI	Jim Schwall, Nora McDowell, FMIT	PG&E is supposed to provide some discussion on timing, goals and scope of decommissioning, and believe should be part of the O&M Plan. The idea is that PG&E would capture the pledge to remove underground infrastructures as much as possible within the groundwater remedy design.
10/23/2014	Dawn Hubbs, Hualapai	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Requested clarification on exact due date for the 90% design comments.
10/23/2014	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Aaron clarified that the end of the comment period for the entire 90% BOD, O&M, and C/RAWP is February 9, 2015.
10/23/2014	Yolanda Garza, DTSC	CTF Members		Agenda for 10/28/14 CTF meeting.
10/28/2014	DTSC	Attendees: FMIT: Leo Leonhart (by phone), Nora McDowell (by phone); Chemehuevi: Steven Escobar (by phone); CRIT: Doug Bonamici, Howard Magill, Edgar Castillo; Hualapai: Dawn Hubbs; TRC: Margaret Eggers; DTSC, DOI, BLM, MWD, PG&E & their consultants CH2M hill, Arcadis, Keadjian		Face-to-Face Clearinghouse Task Force meeting
10/29/2014	DTSC	Attendees: FMIT: Linda Otero, Courtney Coyle, Michael Sullivan (by phone), Leo Leonhart (H&A), Kevin Fong (H&A), Jim Schwall (H&A), Nora McDowell; CIT: Raymond Mejia (by phone), Steven Escobar (by phone); Cocopah: Edgar Castillo; CRIT: Howard Magill, Doug Bonamici, Amanda Barrera, David Harper; Hualapai: Dawn Hubbs; TRC: Charlie Schlinger, Margaret Eggers, Win Wright, Robert Prucha, Eric Ronsenblum (by phone); DTSC, ESA, SWRCB, CRB, PG&E & their consultants CH2M HillArcadis, Cox, Pivox; USBLM, USBOR, USDOI and their consultant Summit Technical Resources; USFWS, MWD, ADEQ, Mohave Co DPH		Face-to-Face Consultative Work Group Meeting. Agenda Items: Review from last CWG: Project highlights, significant issues from 7/16/14 CWG, and CWG action items; Update on Clearinghouse Task Force Activities; Soil Investigation EIR Update; Programmatic Agreement Activities Update; Update on Use of Park Moabi for Remedy Use; 90% Design Review, Advancement and Schedule; Project Schedule Update; CWG Annual Survey Results
10/29/2014	Chris Guerre, DTSC	Attendees: FMIT: Linda Otero, Jim Schwall, Kevin Fong, Nora McDowell (via telephone), Courtney Coyle (legal via telephone), Leo Leonhart (H&A); Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo; TRC: Margaret Eggers, Bob Prucha, Win Wright, Charlie Schlinger, Eric Rosenblum (via telephone), CRIT: Doug Bonamici, Howard Magill; DTSC, DOI, Summit on behalf of DOI, BLM, MWD, Geopentech on behalf of MWD, ADEQ, CRB, BOR, PG&E, Arcadis on behalf of PG&E, CH2M Hill on behalf of PG&E		Face-to-Face TWG meeting. Agenda items: Corrective Measure Implementation/Remedial Design (CMI/RD) - Alternative Northern Bat Cave Wash Crossing - Select As Monitoring Well Locations - Select Construction/Staging Areas - Others; TCS Well 4 Decommissioning – Next Steps; Logistics for October 30 TWG Site Walk;.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/30/2014	Chris Guerre, DTSC	Attendees: FMIT: Linda Otero, Delbert Holmes, Jim Schwall (H&A), Kevin Fong (H&A); Cocopah: Edgar Castillo; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici; TRC: Win Wright, Margaret Eggers, Bob Prucha, Charlie Schlinger; DTSC, DOI and their consultant Summit, BORPG&E & their consultants CH2M Hill & Arcadis; BLM, Geopentech on behalf of MWD		TWG In Person Site Walk. Visit Select Arsenic Monitoring Well Locations; Visit/Delineate Select Construction/Staging Areas; Discussion after Site Walk.
11/5/2014	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing October 2014 CWG emails and attachments.
11/11/2014	Yvonne Meeks, PG&E	Karen Baker, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Per DTSC's request, provided "Archaeological and Historical Field Logistics Protocols for Site Monitoring and/or Verfication Activities".
11/12/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Instructions on how to download the 3rd Quarter Mitigation Measures Compliance Report from the CH2M Hill Sharepoint.
11/13/2014	Edgar Castillo, Cocopah	DTSC: Chris Guerre, Aaron Yue; DOI: Pam Innis	FMIT: Linda Otero; CRIT: Howard Magill; Hualapai: Dawn Hubbs, Loretta Jackson, Doug Bonamici	Request for extension to the Verification of Staging Areas and Arsenic Monitorng Well Locations comment deadline from November 19 to November 30, 2014.
11/13/2014	Aaron Yue, DTSC	Edgar Castillo, Jill McCormick, Cocopah	FMIT: Linda Otero; CRIT: Howard Magill; Hualapai: Dawn Hubbs, Loretta Jackson, Doug Bonamici; DTSC, DOI, PG&E	Response to request for extension. Request reason or rationale for request, prefer to proceed with 11/19 TWG to gather feedback from the Tribes for consideration, even if in verbal form, then will decide if additional time will be provided.
11/14/2014	Jill McCormick, Cocopah	Aaron Yue, DTSC, Edgar Castillo, Cocoaph	FMIT: Linda Otero; CRIT: Howard Magill; Hualapai: Dawn Hubbs, Loretta Jackson, Doug Bonamici; DTSC, DOI, PG&E	Explained that extension request is due to new issues regarding staging/construction areas and well presented to the tribes at the 10/30 field visit.
11/17/2014	Aaron Yue, DTSC	Jill McCormick, Edgar Castillo, Cocopah	FMIT: Linda Otero; CRIT: Howard Magill; Hualapai: Dawn Hubbs, Loretta Jackson, Doug Bonamici; DTSC, DOI, PG&E	Asked if possible for tribes to focus on location of well MW EE and provide input by this Friday. Will continue to consider any input from tribes on other aspects that were discussed during site walk.
11/17/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TWG agenda for conference call/Join Me meeting on 11/19.
11/18/2014	Jill McCormick, Cocopah	Aaron Yue, DTSC, Edgar Castillo, Cocopah	FMIT: Linda Otero; CRIT: Howard Magill; Hualapai: Dawn Hubbs, Loretta Jackson, Doug Bonamici; DTSC, DOI, PG&E	Tribes want well MWEE well location taken off the table and alternative selected by CH2M Hill. Want alternative location and access route to the well in map provided. Want BLM to amend the DPR site record to include new boundary mapped by the Tribes per the new discoveries protocol of the Cultural and Historic Properties Management Plan (CHPMP).

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11/19/2014	Chris Guerre, DTSC	TWG webconference: Attendees: FMIT: Linda Otero, Leo Leonhart, Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo; TRC: Win Wright, Eric Rosenblum, Margaret Eggers; DTSC, PG&E & their consultants CH2M Hill, BLM		Agenda Items: Follow-up from October TWG Site Walkfor Groundwater Remedy Design: Inputs from Tribes on Monitoring Well Locations and Preferred Limits to Staging Areas 6, 12 and 13.
11/25/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Request for agenda items for 12/10 TWG in Henderson, NV.
11/30/2014	Yolanda Garza, DTSC	CTF Members		Draft agenda for 12/9 CTF, calendar, sign-in sheet from 10/14, 10/28/14 CTF notes, Nov. 2014 action items
12/1/2014	Dawn Hubbs, Hualapai	DTSC: Aaron Yue; DOI: Pam Innis; Hualapai: Sherry J Counts, Rudy Clark, Nancy Brown; vhauser@achp.gov		Hualapai comment letter regarding Verfication of Staging/Construction areas etc.
12/1/2014	Linda Otero, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Timothy Williams, Shan Lewis, Nora McDowell, Courtney Coyle, Steve McDonald, Leo Leonhart; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick; CRIT: Doug Bonamici; Chemehuevi: Raymond Mejia	FMIT comment letter regarding Verification of Staging Areas and Arsenic Monitoring Well Locations
12/2/2014	Edgar Castillo, Cocopah	DTSC: Aaron Yue; DOI: Pam Innis; Hualapai: Dawn Hubbs, Loretta Jackson; Cocopah: Jill McCormick; CRIT: Howard Magill; FMIT: Linda Otero, Nora McDowell; Chemehuevi: Raymond Mejia, Steven Escobar		Official Letter: Verification of Staging Areas and Arsenic Monitoring Well Locations
12/3/2014	Dawn Hubbs, Hualapai	DTSC: Aaron Yue, DOI: Pam Innis; Hualapai: Sherry J Counts, Rudy Clark, Loretta Jackson; FMIT: Linda Otero, Nora McDowell; TRC: Charlie Schlinger		Additional comment letter regarding the Bridge Crossing near IM#.
12/3/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Request for TWG December Agenda Items
12/8/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Agenda for 12/10/14 TWG
12/8/2014	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout for Topic #8 - Walk through of select sctions of Construction/ Remedial Action Work Plan (C/RAWP) for the Groundwater Remedy
12/8/2014	Yolanda Garza, DTSC	CTF Members		Meeting location for CTF is in Henderson at CH2M Hill office on 12/9/14.
12/9/2014	DTSC	Attendees: FMIT: Nora McDowell (phone); Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo, Jill McCormick; CRIT: Howard Magill; Chemehuevi: Raymond Mejia; TRC: Eric Rosenblum; DTSC, DOI, BLM, PG&E and their consultants CH2M Hill, Arcadis, Keadjian; MWD		Clearinghouse Task Force meeting.
12/9/2014	Aaron Yue, DTSC	Jill McCormick, Cocopah, Pam Innis, Renee Kolvet, BLM, Susan Wilcox, DTSC	FMIT: Linda Otero, Nora McDowell, Hualapai: Loretta Jackson; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici; Howard Magill; DTSC: Karen Baker	Informed Jill that the shape files that include the Tribes' proposed alternative wells-access routes/storage/staging areas will need to be shared with PG&E to evaluate it against their design. Asked that she designate the person at PG&E to share it with.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/10/2014	Chris Guerre, DTSC	Attendees: FMIT: Nora McDowell; DTSC: Chris Guerre; PG&E: Valisa Nez; Arcadis on behalf of PG&E: Frank Lenzo, Fred Stanin; CH2M Hill on behalf of PG&E: Mike Cavaliere; Geopentech on behalf of MWD: Eric Fordham; CRB: Lindia Liu;		TWG Phone Meeting: Agenda Items: Clarification/Discussion of Tribal Input on Well Locations and Staging Areas: Well Locations (e.g., IRL-1/FW-1, Arizona Wells). Staging Areas/Construction Zones; Walk through select sections of C/RAWP: Section 4.3 – Site Management Practices. Section 5 – FMEA Tables, Appendix R – BMP Plan, Others.
12/10/2014	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Index to C/RAWP Appendices provided to aid review of 90% Groundwater Remedy Basis of Design
12/11/2014	Jeffery Smith, USBOR	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		As requested at 12/10/14 TWG, provided link to EPA Region 9 LCRGRP.
12/11/2014	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Instructions on how to download the EPA Region 9 LCRGRP from the Topock Program Sharepoint Site.
12/18/2014	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		January 2015 CWG postponed until February 2015 due to lack of substantial agenda items.
12/22/2014	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Topock 3rd Quarter 2014 IMPM and Groundwater Monitoring Report
12/23/2014	Aaron Yue, DTSC	Yvonne Meeks, Christina Hong, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Agencies' direction on remaining elements for 90% supplemental groundwater basis of design
12/23/2014	Aaron Yue, DTSC	FMIT: Leo Leonhart; CRIT: Doug Bonamici, Howard Magill; Chemehuevi: Ron Escobar, Raymond Mejia; Cocopah: Jill McCormick, Edgar Castillo;TRC	FMIT: Linda Otero, Nora McDowell, Walter Roderick; Hualapai: Dawn Hubbs, Loretta Jackson, DTSC	Response to Leo Leonhart's request for suggested TWG agenda items for a January TWG meeting.
1/5/2015	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing November and December 2014 CWG emails and attachments.
1/5/2015	Karen Baker, DTSC	Nora McDowell, FMIT		Request for assistance in setting up a meeting for our new Director, Barbara Lee, to meet with Chairman Williams and other representatives of FMIT in mid-January or late February.
1/5/2015	Linda Otero, FMIT	BLM: K. Liebhauser, R. Kovet; DOI: Pam Innis; DTSC: Aaron Yue, Susan Wilcox	FMIT: Timothy Williams, Nora McDowell, Courtney Ann Coyle, Steven McDonald; Hualapai: Dawn Hubbs, Jill McCormick; Cocopah: Edgar Castillo; CRIT: Doug Bonamici; Chemehuevi: Steven Escobar, Raymond Mejia	FMIT comment letter regarding the Cultural and Historical Property Treatment Plan
1/6/2015	Yolanda Garza, DTSC	CTF Members		1/20/15 CTF agenda and handouts.
1/7/2015	Aaron Yue, DTSC	Jill McCormick and Edgar Castillo, Cocopah	FMIT: Linda Otero, Nora McDowell; Hualapai: Loretta Jackson, Dawn Hubbs; CRIT: Doug Bonamici, Howard Magill; DOI: Pam Innis, BLM: Renee Kolvet	Reminder requesting a corrected pdf version of the GIS shape files for the proposed well locations and access routes for consideration. Asked if these can be provided by the end of the week.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/7/2015	Jill McCormick, Cocopah	Aaron Yue, DTSC, Edgar Castillo, Cocoaph	Linda Otero, Nora McDowell; Hualapai: Loretta Jackson, Dawn Hubbs; CRIT: Doug Bonamici, Howard Magill; DOI: Pam Innis, BLM: Renee Kolvet	PDF version of the GIS shape files were sent on 12/10/14. Aaron apologized, he did actually receive the maps.
1/7/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Meeting notes from December CTF. Requested a note if attending CTF in person. Also asked if Orientation instructors are available on 3/9 & 3/10 and to fill out potential participant list.
1/8/2015	Nora McDowell, FMIT	Karen Baker, DTSC; FMIT: Timothy Williams, Linda Otero, Victoria Hernandez		Referred Karen to Victoria Hernandez in scheduling a meeting for Director Barbara Lee and Chairman Williams.
1/8/2015	Dawn Hubbs, Hualapai	Yolanda Garza, DTSC		Hualapai will attend the CTF meeting in person.
1/8/2015	Karen Baker, DTSC	Victoria Hernandez, FMIT		Followed-up voice mail message regarding arranging a meeting with Barbara Lee and Chairman Williams. Requested a couple of potential dates that will work.
1/9/2015	Victoria Hernandez, FMIT	Karen Baker, DTSC		Asked if the week of January 20-23, 2015, would work for the meeting with Director Lee and Chairman Williams.
1/12/2015	Karen Baker, DTSC	Victoria Hernandez, FMIT		Week of 1/20-23 won't work. Asked if there are any dates in February that would work.
1/13/2015	Karen Baker, DTSC	Victoria Hernandez, FMIT		Asked if 2/5 or 2/5 would work for the Chairman to meet our director.
1/13/2015	Dawn Hubbs, Hualapai	DTSC: Aaron Yue, Karen Baker; DOI: Pam Innis; PG&E: Yvonne Meeks; Hualapai: Loretta Jackson	Chemehuevi: Raymond Mejia, Steven Escobar; Cocopah: Edgar Castillo, Jill McCormick; CRIT: Howard Magill, Doug Bonamici; FMIT: Nora McDowell, Linda Otero	Clarification regarding the Hualapai comment Bridge Crossing comment letter from 12/3/14 making a deferment to the FMIT. They will continue to contribute their comments and ideas in regards to the bridge, but will support FMIT's decision in the matter.
1/15/2015	Aaron Yue, DTSC	DTSC: Karen Baker; DOI: Pam Innis; PG&E: Yvonne Meeks; Hualapai: Dawn Hubbs, Loretta Jackson	Chemehuevi: Raymond Mejia, Steven Escobar; Cocopah: Edgar Castillo, Jill McCormick; CRIT: Howard Magill, Doug Bonamici; FMIT: Nora McDowell, Linda Otero	Aaron replied to Dawn's 1/13/15 email. We did not receive any input or opinion from FMIT. DTSC asked PG&E to evaluate the proposal as submitted and provide their design opinion as part of the supplemental design.
1/15/2015	Dawn Hubbs, Hualapai	DTSC: Chris Guerre, Aaron Yue; DOI: Pam Innis	FMIT: Nora McDowell, Linda Otero; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Hualapai: Loretta Jackson; Chemehuevi: Steven Escobar, Raymond Mejia, TRC	Listed agenda items they would like discussed at the February 2015 TWG meeting.

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/15/2015	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	FMIT: Nora McDowell, Linda Otero; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Hualapai: Loretta Jackson; Chemehuevi: Steven Escobar, Raymond Mejia, TRC; DTSC: Chris Guerre, Karen Baker, Isabella Alasti; DOI: Pam Innis	Aaron forwarded Dawn's list of suggested agenda items for the 2/15 TWG to PG&E for consideration and preparation. The exception is to review the decision process for determining/evaluating Operating Properly and Successfully (OPS). This must first be coordinated within the agencies because we have to blend CERCLA and RCRA programs together. Also provided the OPS definition from the 2013 DTSC/FMIT settlement agreement.
1/16/2015	Nora McDowell, FMIT	Aaron Yue, DTSC, Dawn Hubbs, Hualapai	FMIT: Leo Leonhart, Linda Otero; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici; Hualapai: Loretta Jackson; Chemehuevi: Steven Escobar, Raymond Mejia, TRC; DTSC: Chris Guerre, Karen Baker; DOI: Pam Innis	Would like to add one more TWG agenda item to Dawn's list. The tribes would like a description/list from PG&E as to what revised or new figures, text sections, additional appendices, etc., will comprise the supplemental package for the 90% Groundwater Remedy Basis of Design. Karen replied that Aaron is out of the office but forwarded the request to PG&E for consideration and preparation.
1/16/2015	Karen Baker, DTSC	CTF Members	Aaron Yue, DTSC	Additional handout regarding the 90% Groundwater Remedy Basis of Design Response to Comments (RTC) protocol for discussion at the 1/20 CTF meeting.
1/20/2015	DTSC	Attendees: FMIT: Leo Leonhart (phone), Nora McDowell (phone), Linda Otero (phone); Hualapai: Dawn Hubbs, Bennet Jackson; Chemehuevi: Steven Escobar (phone); CRIT: Doug Bonamici (phone), Howard Magill (phone); Cocopah: Edgar Castillo (phone); TRC: Eric Rosenblum (phone); DTSC, DOI, BLM, MWD, PG&E and their consultants CH2M Hill, Arcadis, Keadjian		Clearinghouse Task Force meeting. Update on 90% Groundwater Remedy Basis of Design and supplemental submittals and schedule; Orientation Requirements during Construction.
1/21/2015	Karen Baker, DTSC	Victoria Hernandez, FMIT		Follow-up to 1/13 request to see if Chairman Williams is available on 2/4 or 2/5 to meet with DTSC Director Lee.
1/22/2015	Yolanda Garza, DTSC	CTF Members		Revised calendar and hotel information for 2/17-19 meetings.
1/23/2015	Yolanda Garza, DTSC	CTF Members		Request for final submittals for Orientation candidates for 3/9 or 3/10 at the Compressor Station.
1/26/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared link to the 2014 second half combined CMP/PAR for IM3.
1/26/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared report and link to the 3rd Quarter 2014 PMP (IM3 Performance Monitoring) and Site-wide GMP (groundwater and surface water monitoring) reports.
2/2/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PG&E Topock submittal of Supplemental Pre-Final Design
2/3/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		4th Quarter 2014 Mitigation Monitoring and Reporting Program (MMRP) compliance report without appendices
2/5/2015		Attendees: DTSC Director Lee, Yolanda Garza; FMIT Chairman Timothy Williams and Linda Otero.		DTSC meeting with FMIT. FMIT provided historical information and cultural education about the areas that hold spiritual and religious significance to the Tribe. The meeting was followed by visits to culturally important areas includeing Grapevine Canyon near Spirit Mountain with Linda Otero.

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/5/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	CTF Agenda for February meeting in Havasu
2/10/2015	Aaron Yue, DTSC	CTF Members		Proposed agenda to discuss PG&E's request to reduce archaeological sites from DTSC's MMRP Annual Monitoring
2/10/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Distribution list of Final Soil Investigation EIR recipients for review and update by 2/27/15
2/11/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Agendas for 2/18/15 CWG and 2/19/15 TWG meetings
2/12/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Most current contact lists for review and update for: Agenda Only, CWG, TWG, Tribal Reps., ESA & TRC
2/12/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Agenda for February 2015 CTF in Havasu
2/12/2015	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing January 2015 CWG emails and attachments.
2/17/2015		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A), Charlotte Knox; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs, Bennet Jackson; Chemehuevi: Raymond Mejia, Steven Escobar; Cocopah: Edgar Castillo; TRC: Margaret Eggers; DTSC, BM, MWD, PG&E and their consultants CH2M Hill & Arcadis		Face-to-Face Clearinghouse Task Force meeting. Update on 90% Groundwater Remedy Basis of Design and supplemental submittals and schedule; Topock Tribal Monitoring Program Update; Orientation Requirements during Construction
2/18/2015		Attendees: FMIT: Nora McDowell, Charlotte Knox,Courtney Coyle (Legal Counsel), Leo Leonhart (H&A); CIT: Raymond Mejia, Steven Escobar; Cocopah Indian Tribe: Edgar Castillo; CRIT: Howard Magill, Doug Bonamici; ; Hualapai Indian Tribe: Dawn Hubbs, Bennett Jackson; TRC: Charlie Schlinger, Margaret Eggers, Win Wright, Robert Prucha, Eric Rosenbluml DTSC, SWRCB, PG&E and their consultants CH2M Hill, Arcadis & Pivox, USBLM, USDOI, Amber Taschereau; Summit Technical Resources, Inc., MWD, Mohave County DPH		Face-to-Face Consultative Work Group meeting. Agenda items: Review from last CWG: Project highlights, significant issues from 10/29/14 CWG, and CWG action items; Update on CTF activities; Soil EIR update, Programmatic Agreement Activities Update; Path Forward on Park Moabi Lease for Remedy Use; EIR Mitigation Measures Update; Project Schedule update; Update on CMI/RD including Supplemental 90% Groundwater Basis of Design; 90% Groundwater Remedy Basis of Design RTC Protocol; Remedy Construction Pre-Planning.
2/18/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Informed everyone that they lost power to the phone and are now re-establishing the call. Phone connection was lost to those calling into the CWG meeting.
2/19/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared schedule updates from CWG discussions as a result of delayed delivery of groundwater 90% supplemental design document.

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2/19/2015	Chris Guerre, DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart, Charlotte Knox, Courtney Coyle (via telephone); Hualapai: Dawn Hubbs, Bennett Jackson; CRIT: Howard Magill; Cocopah: Edgar Castillo; Chemehuevi: Raymond Mejia; TRC: Bob Prucha, Margaret Eggers, Charlie Schlinger, Eric Rosenblum, Win Wright; DTSC, ESA on behalf of DTSC, PG&E and their consultants CH2M Hill & Arcadis, DOI, Summit on behalf of DOI, BOR, MWD, Geopentech on behalf of MWD		Face-to-Face TWG meeting: Agenda items: Walk through the Supplemental 90% Groundwater Remedy Basis of Design including an update on proposed BCW crossing design; Walk through of Monitoring Decision Frameworks (Figures 2.2-2 through 2.2-9 in O&M Manual Volume 2 [Sampling and Monitoring]; Strategy for installation and associated hydraulic testing/monitoring modeling updates during installation and operation until OPS determination.
2/19/2015	Susan (Wilcox) Furnas, DTSC	Nora McDowell, FMIT		In person discussion after TWG. Susan asked Nora if she had any initial feedback for DTSC regarding the discussion of PG&E's proposal to reduce the number of archaeological sites to be monitored annually. Discussion on this topic.
2/19/2015	Susan (Wilcox) Furnas, DTSC	Dawn Hubbs, Hualapai		In person discussion after TWG. Susan asked Dawn if she had any initial feedback for DTSC regarding the discussion of PG&E's proposal to reduce the number of archaeological sites to be monitored annually. Discussion on this topic
2/23/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Response to Comment process table as a reminder of the procedures we will be following for the 90% Groundwater Remedy Basis of Design package.
2/24/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, Charlotte Knox, FMIT, Bennett Jackson, Hualapai	CTF notes, sign-in sheet, calendar from 2/17 CTF meeting.
2/24/2015	Yolanda Garza, DTSC	CTF Members		Shared list of who will attend Orientation in March 2015.
2/25/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Fourth Quarter 2014 Project Status Update - Topock Arizona wells
2/25/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for November/December Fourth Quarter 2014 GMP Samplin
2/25/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Solicitation for TWG meeting agenda
3/3/2015	Aaron Yue, DTSC	Yvonne Meeks, Glenn Caruso, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Concurrence on the use of attached Field Procedure for future archaeological monitoring and pre-construction archeological surveys
3/3/2015	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing February 2015 CWG emails and attachments.
3/6/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Documents for review for upcoming 3/17 CTF meeting: 2/15 Action items, notes, calendar and sign-in sheet.
3/9/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Change of location for 3/17/15 CTF meeting.
3/11/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TWG agenda for 3/18/15 Face-to-Face Meeting.
3/12/2015	Aaron Yue, DTSC	FMIT: Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici, Howard Magill; Chemehuevi: Steven Escobar		Informal check on progress of 90% Groundwater Remedy Basis of Design review. Asked if they think comments will be submitted by 3/16/15 due date or if they anticipate an extension request.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/16/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Tribes have expressed desire for a few extra days to submit 90% Groundwater Remedy Basis of Design comments. Comments must be submitted no later than March 20, 2015.
3/17/2015		Attendees: FMIT: Charlotte Knox, Leo Leonhart (H&A), Nora McDowell (via telephone); Chemehuevi: Amanda Sansoucie, Steven Escobar;Hualapai: Dawn Hubbs; TRC: Margaret Eggers; Cocopah: Edgar Castillo (via telephone)DTSC: Karen Baker, Yolanda Garza; PG&E: Yvonne Meeks, Kevin Sullivan, Valisa Nez (via telephone); Arcadis on behalf of PG&E: Lisa Cope; CH2M Hill on behalf of PG&E: Lisa Cope; DOI: Pam Innis; BLM: Gloria Benson, Kim Liebhauser, Renee Kolvet; MWD: Eddie Rigdon (via telephone), Maria Lopez (via telephone)		Face-to-Face Clearinghouse Task Force Meeting. As part of Updates, Karen Baker informed CTF that DTSC would re-notice Biological Resources section of Soil Investigaiton EIR for 45-day comment period approximately April 8 to May 25 and coordinated with Tribes and stakeholders on setting up a meeting with DTSC Director Lee. Other agenda items included Topock Orientation Training Report Out; Orientation Requirements During Construction
3/18/2015	Chris Guerre, DTSC	Attendees: FMIT: Leo Leonhart, Charlotte Knox, Nora McDowell (by phone), Courtney Coyle (by phone); Hualapai: Dawn Hubbs, Loretta Jackson-Kelly; Chemehuevi: Amanda Sansoucie, Steven Escobar; Cocopah: Edgar Castillo (by phone); TRC: Bob Prucha, Margaret Eggers, Charlie Schlinger, Win Wright; DTSC, DOI, BLM, PG&E, CH2M Hill (by phone), Arcadis (by phone), MWD (by phone), ADEQ (by phone), CRB (by phone), BOR (by phone)		Face-to-Face TWG meeting. Agenda items: Arizona Well Locations X and Y.
3/20/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided PG&E's Dec. 2013 Hydraulic Capture Report (TWG action item)
3/24/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Request to inform him if have not submitted comments on the 90% Design but will be doing so by 3/25/15 COB.
3/25/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, Charlotte Knox, FMIT, Charlie Schlinger, TRC	Draft CTF 3/17/15 Notes, sign, and action items. 4/15 Calendar.
4/2/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	ESA	DTSC Response to comments on the 90% Basis of Design and C/RAWP for the GW Remedy and request that PG&E begin the comment resolution process.
4/2/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PG&E Topock 4th Quarter 2014 and Annual Interim Measures (IM) Performance Monitoring and Groundwater Monitoring Report.
4/7/2015	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing March 2015 CWG emails and attachments.
4/7/2015	Yolanda Garza, DTSC	CTF Members		Draft 4/21 CTF agenda, 4/15 calendar, 3/25 action items and sign-in sheet
4/14/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Agendas for 4/22/15 CWG and TWG meetings.

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4/16/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Notice of Availability and announcement of comment period for the recirculated biological section of the Soil Investigation Draft EIR. Comments must be postmarked by COB 6/1/15.
4/16/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Winter Bat Habitat Assessment Report
4/17/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Desert Tortoise Habitat Assessment Report from 1/29/15 Survey.
4/20/2015		Attendees: Chairman Williams, Linda Otero, FMIT; Director Barbara Lee, Karen Baker, Yolanda Garza, DTSC		Meeting at FMIT Council Chamber regarding Subsequent EIR on the 90% Groundwater Remedy Basis of Design and Scoping comment period
4/20/2015		Attendees: Steven Escobar, Amanda Sansoucie, Chemehuev; Director Barbara Lee, Karen Baker, Yolanda Garza, DTSC		Meeting regarding EIR on the 90% Groundwater Remedy Basis of Design and Scoping comment period
4/20/2015		Attendees: FMIT: Nora McDowell, Linda Otero, Charlotte Knox; Chemehuevi: Amanda Sansoucie; CRITS: Doug Bonamici; DTSC: Director Barbara Lee, Karen Baker, Yolanda Garza		Meeting regarding EIR on the 90% Groundwater Remedy Basis of Design and Scoping comment period
4/20/2015	Aaron Yue, DTSC	Gabe Valdes, Universal Field Services		Requested email address update on mailing Topock's mailing list.
4/21/2015		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A), Charlotte Knox; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs, Bennet Jackson; Chemehuevi: Amanda Sansouci; Cocopah: Jill McCormick, Edgar Castillo; TRC: Margaret Eggers; MWD: Bart KOch, Eddie Rigdon; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; BLM: Kim Liebhauser, Renee Kolvet, Gloria Benson ; PG&E: Yvonne Meeks, Valisa Nez and their consultants CH2M Hill (Christina Hong) & Arcadis Lisa Cope), & Keadjian (Ed Moser)		Face-to-Face Clearinghouse Task Force meeting. Karne Baker announced a notice to recirculate the biology section of Soil Investigation EIR for public comment which started the 45 day comment period. The final day to submit comments is June 1. Also annouinced DTSC decision to prepare a SEIR for the Final Groundwater Remedy Design. Notice of Preparation Meetings to be held May 19 in Needles and May 20 in Topock. DTSC also offered a tribal only focused scoping meeting during mid-morning on May 19 or 20th).
4/21/2015	Karen Baker, DTSC	Chemehuevi: Amanda Sansoucie, Steven Escobar	Yolanda Garza, DTSC	Thank you for meeting with DTSC Director, Barbara Lee. Attached bat survey that will be performed starting next Monday.
4/21/2015	Karen Baker, DTSC	Chemehuevi: Amanda Sansoucie, Steven Escobar	Yolanda Garza, DTSC	Forwarded information from the EIR regarding the Yellow-billed Cuckoo.
4/22/2015		Attendees: FMIT: Charlotte Knox, Leo Leonhart (H&A), Courtney Coyle (Legal Rep.) (via telephone), Nora McDowell (via telephone); CIT: Amanda Sansoucie; Cocopah Indian Tribe: Edgar Castillo, Jill McCormick; CRIT: Howard Magill, Doug Bonamici; Hualapai Indian Tribe: Dawn Hubbs, Bennett Jackson; TRC: Margaret Eggers, Robert Prucha, Eric Rosenblum, Charlie Schlinger, Win Wright; DTSC and their consultant, ESA, CRWQCB, CRB, PG&E and their consultants CH2M Hill and Arcadis, BLM, BOR, DOI, MWD		Face to Face CWG Meeting. Agenda Items: Project highlights, Significant issues and action items from 2/18/15 CWG, CTF activities, CEQA Update, Programmatic Agreement Activities Update, Path Forward on Park Moabi Lease for Remedy Use, EIR Mitigation Measures Implementation; project schedule update
4/22/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided different call in number for phone attendees at CWG due to connection difficulties.
4/22/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided later time and different call in number for phone attendees at TWG meeting due connection difficulties.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/22/2015		Attendees: FMIT: Leo Leonhart, Charlotte Knox; Cocopah: Edgar Castillo, Jill McCormick; Chemehuevi: Amanda Sansoucie; Hualapai: Dawn Hubs; CRIT: Doug Bonamici, Howard Magill; TRC: Charlie Schlinger, Win Wright, Eric Rosenblum, Bob Prucha, Margaret Eggers; DTSC, DOI, BOR, MWD, PG&E, CH2M Hill on behalf of PG&E, Arcadis on behalf of PG&E		Face to Face Geo/Hydro TWG Meeting: Agenda items: 90% Groundwater Remedy Basis of Design, Response To Comment (RTC) Protocol; 90% Groundwater Remedy Basis of Design Comment Clarification
4/23/2015		Attendees: FMIT: Michael Sullivan, Leo Leonhart, Linda Otero, Charlotte Knox; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo; TRC: Bob Prucha, Win Wright, Eric Rosenblum; DTSC, DOI, BOR, USFWS, BLM, PG&E and their consultants Arcadis, Iris Env.		Risk Assessment Work Plan Addendum II Workshop, Lake Havasu, AZ
4/29/2015	Ms. Ruth Musser-Lopez, 420 E Street, Needles, CA 92363	Aaron Yue		Left a voice mail message for Aaron Yue. Very angry that she is not on the Topock mailing list and didn't receive the public notice of the partially recirculated draft EIR for soils. Said she will report DTSC for leaving her off the list. Aaron wrote to Ms Musser-Lopez informing her that he received her call and will add her to the mailing list. He also enclosed the notice of availability, the flier announcement and hard copy of the Partically Recirculated Draft EIR for review and comment. He included that instructions for submitting comments are provided on both.
4/30/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Draft notes, sign-in sheet and action items from 4/21/15 CTF meeting.
5/5/2015	Aaron Yue, DTSC	Interested Parties List		Availability of Notice of Preparation of a Subsequent EIR for the PG&E Topock Groundwater Remediation Project.
5/5/2015	Yolanda Garza, DTSC	Tribal Representatives List	Aaron Yue, Karen Baker, DTSC	Availability of Notice of Preparation of a Subsequent EIR for the PG&E Topock Groundwater Remediation Project.
5/6/2015	Aaron Yue, DTSC	Interested Parties List		Resent due to potential problem with 5/5/15 Email notice. Availability of Notice of Preparation of a Subsequent EIR for the PG&E Topock Groundwater Remediation Project.
5/6/2015	Aaron Yue, DTSC	lklein@coxcastle.com		Response to web form to be added to the mailing list. Provided NOP and flier that was sent in yesterday's email blast.
5/8/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		First Quarter 2015 PMP (IM 3 Performance Monitoring) and Site-wide GMP (groundwater and surface water) monitoring report.
5/8/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Topock results for February First Quarter 2015 GMP Sampling
5/12/2015	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Mike Jackson, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing April 2015 CWG emails and attachments.
5/13/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Action item from CWG: Summary of modification table between 2011 Groundwater Remedy FEIR and 90% Groundwater Remedy Basis of Design
5/14/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent latest revisions of contact lists for review and update if needed.

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5/15/2015	Courtney Coyle, FMIT	Aaron Yue, DTSC		Replied to action item from CWG: Summary of modification table between 2011 Groundwater Remedy FEIR and 90%Groundwater Remedy Basis of Design stating "It might also be helpful to know who prepared the document."
5/19/2015		Attendees: FMIT: Janice Hinkle, Leo Leonhart, Charlotte Knox, Angie Alvarado, Paul Jackson, Jr., Levi Evanston, Ron Flint, Colleen Garcia, Sandra Woods Bricker, Felton Bricker, Sr., Linda Otero; TRC: Charlie Schlinger, Margaret Eggers, Bob Prucha, Win Wright, Eric Rosenblum; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansoucie		Final Groundwater Remediation Project, Subsequent Environmental Impact Report, Tribal Focused Scoping Meeting, FMIT Band Room
5/20/2015	Aaron Yue, DTSC	Leo Leonhart, H&A for FMIT	Janice Hinkle, FMIT, Yvonne Meeks, PG&E, Karen Baker, DTSC	Sent copy of wells poster requested by Leo at 5/19/15 Scoping meeting.
5/21/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC	FMIT: Steve McDonald, Linda Otero, Timothy Williams; Leo Leonhart; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Howard Magill, Doug Bonamci	FMIT's transcript request of Subsequent EIR Tribal Focused Scoping Meeting at FMIT Band Room on 5/19/15. Aaron acknowledged receipt of their request and will forward the transcript once it is ready for release. Attached scoping meeting sign-in sheet as requested with contact info. redacted for privacy protection.
5/22/2015	Charlie Schlinger, TRC	Karen Baker, DTSC		Requested email of settlement agreements. Karen forwarded the main body of the 2006 Settlement Agreement between PG&E and FMIT.
5/22/2015	Edgar Castillo, Cocopah	FMIT: Charlotte Knox, Janice Hinkle, Linda Otero, Nora McDowell; Chemehuevi: Amanda Sansoucie, Raymond Mejia, Steven Escobar; Hualapai: Dawn Hubbs, Loretta Jackson; CRIT: Doug Bonamici, Howard Magill; Cocopah: Jill McCormick; DTSC: Karen Baker		Follow-up on discussion about talking to Hinkley PM for the RWQCB Lahonton Region regarding a presentation to/with the tribes. Karen replied that she and Aaron will follow-up with the RWQCB and then get back to him.
5/27/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Clarification notes on comments received during April 22, 2015 TWG Meeting.
5/28/2015	Aaron Yue, DTSC	Leo Leonhart, H&A for FMIT	FMIT: Janice Hinkle; Karen Baker, Yvonne Meeks	Per his request at scoping meeting, forwarded a copy of the wells poster to him.
5/28/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, Charlie Schlinger	Request for July 21, 2015 CTF agenda items.
5/29/2015	Dawn Hubbs, Hualapai	Aaron Yue, DTSC, CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Clarification notes on comments received during April 22, 2015 TWG Meeting: Clarified Page 3 Hualapai statement and asked that changes be made and table resubmitted.
5/29/2015	Loretta Jackson-Kelly, Hualapai	Aaron Yue, DTSC, Pam Innis DOI	Hualapai: Sherry Counts, CA SHPO, AZ SHPO, Karen Baker, DTSC	Comments to the Notice of Preparation (NOP) for a Subsequent EIR on 90% Groundwater Remedy Basis of Design and Addendum
6/1/2015	CRIT: Howard Magill, Wilene Fisher-Holt	Aaron Yue, DTSC		Withdrawal of Support for Monitoring Wells at Site 1, Arizona, and Requesting MW-X and MW-Y be elimimnated from 90% Groundwater Remedy Basis of Design

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6/1/2015	Timothy Williams, FMIT	Aaron Yue, DTSC	FMIT: Linda Otero, Janice Hinkle, Nora McDowell, Leo Leonhart, Michael Sullivan, Courtney Coyle, Steven McDonald; Tribal Reps Hualapai, Chemehuevi, CRIT, Cocopah; TRC, DOI: Pam Innis; BLM: Kim Liebhauser, Renee Kolvet	FMIT comments on the Partially Recirculated Soil DEIR
6/4/2015	Timothy Williams, FMIT	Aaron Yue, DTSC	FMIT: Linda Otero, Janice Hinkle, Nora McDowell, Chris Harper, Leo Leonhart, Michael Sullivan, Courtney Coyle, Steven McDonald; DOI, BLM, DTSC, CASHPO, AZ SHPO, ACHP	Comments on Notice of Preparation (NOP) for Subsequent EIR (May 5, 2015) and summary of modification table between 2011 FEIR and 90%Groundwater Remedy Basis of Design (May 2015)
6/4/2015	Fort Mojave Tribal Members	Aaron Yue		Comments on Notice of Preparation (NOP) for Subsequent EIR (SEIR) for the Topock Compressor Station Final Groundwater Remediation Project. Signed by 100 tribal members.
6/5/2015	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Wayne Patch, Sr., Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing May 2015 CWG emails and attachments.
6/12/2015	Karen Baker, DTSC	Edgar Castillo, Cocopah		Karen returned Edgar's phone call from 6/10/15 asking about follow up on meeting with the Lahonton RWQCB regardng PG&E Hinkley. Karen told Edgar that Aaron Yue is following up with the RWQCB to try and set this up and would let him know once he hears back. PG&E is scheduling meeting to share information on Hinkley in July, be we will still pursue a meeting with the RWQCB.
6/12/2015	Janice Hinkle, FMIT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Looking forward to PG&E Hinkley Remediation Webinar being offered by PG&E on 7/7/15.
6/22/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Reminder of schedule for RTC's on 90% Groundwater Remedy Basis of Design: PG&E will send out on 6/26/15; stakeholders to flag RTC's for discussion by 7/3/15; RTC's will be grouped for discussion and sent out by 7/8/15; TWG for RTC groups 7/22/15; Unless notified by 7/15/15 by reviewers, proposed RTC's will be reviewed and finalized during the July TWG meeting.
6/23/2015	Aaron Yue, DTSC	FMIT: Nora McDowell, Charlotte Knox, Janice Hinkle, Linda Otero; Cocopah: Edgar Castillo, Jill McCormick; Hualapai: Dawn Hubbs, Loretta Jackson; CRIT: Doug Bonamici, Howard Magill; Chemehuevi: Raymond Mejia, Steven Escobar; DOI, TRC	DTSC, Lisa Dernback, RWQCB	Request for number of nodes to be reserved for 7/8/15 RWQCB Lahontan Presentation on Hinkley. Responses received from DOI, Hualapai, Cocopah, Chemehuevi, FMIT

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6/26/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared link to the RTC table for the 90% Groundwater Remedy Basis of Design, C/RAWP and O&M Volumes for download. By 7/3, stakeholders requested to provide a list of comments for discussion at TWG meetings in July and August.
6/29/2015	Dawn Hubbs, Hualapai	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Requested hard copies be overnighted of RTC table for the 90% Groundwater Basis of Design, C/RAWP and O&M Volumes. They are unable to download from the link provided on 6/26. Also asked for extension until 7/10/15
6/29/2015	Karen Baker, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Extended dates to identify RTC's for discussion at TWG meetings per several tribal requests: Flag RTC's for discussion by 7/7/15.
6/29/2015	Leo Leonhart, H&A for FMIT	Karen Baker, DTSC		Considering the imminent delay due to the SEIR, asked why adherence to this aggressive schedule is still necessary?
6/29/2015	Karen Baker, DTSC	Leo Leonhart, FMIT		Replied to Leo's question: The primary reason is because DTSC and our contractor ESA can't fully evaluation the impacts of the project until the project is completely defined. There are still parts of the design, such as the Bat Cave Wash crossings, and Park Moabi facilities, that are changing. First step in SEIR process is preparing the project description after we complete the RTC process and all the design elements are defined. Will address this in July CWG presentation.
6/29/2015	Karen Baker, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent clarification in response to several emails expressing concern of the schedule for review of the 90% Design RTC's. 7/7 deadline is for RTC's to discussed at 7/23 TWG. RTC's received by 7/24 will be discussed at the 8/19 TWG meeting.
6/29/2015	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Hualapai cannot meet 7/7 deadline and are asking for 7/10 deadline.
6/29/2015	Howard Magill, CRIT	Aaron Yue, DTSC	Karen Baker, DTSC, Doug Bonamici, CRIT	Requests and extension for RTC to 7/10/15.
6/30/2015	Janice Hinkle, FMIT	Karen Baker, FMIT: Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick		Asked that the due date for list of RTC's for discussion be extended to 7/10 instead of 7/7.
6/30/2015	Karen Baker, DTSC	FMIT: Janice Hinkle, Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick		The timeframe is necessary to allow time to prepare for the 7/23 TWG agenda. Submit what you have identified by 7/7, and if more identified by 7/10, will see if can be included in 7/23 agenda. If not, can be included in 8/19 TWG agenda.
7/5/2015	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing June 2015 CWG emails and attachments.
7/6/2015	Jill McCormick, Cocopah	DTSC: Karen Baker; FMIT: Janice Hinkle, Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo		Would like to discuss all Cocopah comments from the RTC table at the July Topock meetings.

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7/7/2015	Aaron Yue, DTSC	FMIT: Nora McDowell, Charlotte Knox; Janice Hinkle, Linda Otero; Cocopah: Edgar Castillo, Jill McCormick; Chemehuevi: Amanda Sansouci, Raymond Mejia, Steven Escobar; Hualapai: Dawn Hubbs, Loretta Jackson; CRIT: Doug Bonamici, Howard Magill, Weldon Johnson; TRC, DTSC, DOI, Lisa Dernbach, Waterboard		Provided Lahontan Waterboard's presentation regarding PG&E Hinkley 7/8/15. Janick Hinkle, FMIT, replied with a thank you.
7/8/2015	Yolanda Garza, DTSC	FMIT: Nora McDowell, Charlotte Knox; Janice Hinkle, Linda Otero; Cocopah: Edgar Castillo, Jill McCormick; Chemehuevi: Amanda Sansouci, Raymond Mejia, Steven Escobar; Hualapai: Dawn Hubbs, Loretta Jackson; CRIT: Doug Bonamici, Howard Magill, Weldon Johnson; TRC, DTSC, Lisa Dernbach, Waterboard		Call in number and log in instructions for Lahontan Waterboard Presentation regarding on PG&E Hinkley on 7/8/15
7/8/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TWG Agenda for 7/23/15: Agenda included: Overview of Design RTC's; Discussion of 90% Groundwater Remedy Basis of Design RTCs.
7/8/2015	Yolanda Garza, DTSC	FMIT: Nora McDowell, Charlotte Knox; Janice Hinkle, Linda Otero; Cocopah: Edgar Castillo, Jill McCormick; Chemehuevi: Amanda Sansouci, Raymond Mejia, Steven Escobar; Hualapai: Dawn Hubbs, Loretta Jackson; CRIT: Doug Bonamici, Howard Magill, Weldon Johnson; TRC, DTSC, Lisa Dernbach, Waterboard		Provided Lahontan Water Board contact information to submit any questions on the PG&E Hinkley site. Janice Hinkle, FMIT, replied with a thank you..
7/10/2015	Jill McCormick, Cocopah	Karen Baker, Aaron Yue, Pam Innis	Edgar Castillo, Cocopah	Request for acknowledgement of 7/6/15 email requesting to discuss all Cocopah comments from the RTC table at the July Topock meetings.
7/10/2015	Karen Baker, DTSC	Jill McCormick, Cocopah	Aaron Yue, Pam Innis	Response to Jill's email: Her request was forwarded to PG&E. Explained that PG&E has been directed to begin with comments that have the most impact on location of infrastructure in the design. Attached a copy of the agenda and listed the Cocopah comment numbers to be discussed at the July meeting. Also reminded her that there is a column on the 90% Groundwater Remedy Basis of Design Response to Comments matrix where tribes can respond to the response given that will go into our administrative record.
7/10/2015	Aaron Yue, DTSC	Jill McCormick, Cocopah	Edgar Castillo, Cocopah , DTSC, DOI	Acknowledged receipt of her email. Stated that, because of the broad range of topics those comments covered and without specified differentiation in priorities, the agencies and PG&E will schedule the TWG discussions with preferences in priorities that others may have.
7/10/2015	Edgar Castillo, Cocopah	Aaron Yue, DTSC and Pam Innis, DOI	Tribal Reps, DTSC, BLM, ACHP, AZ BLM, CA SHPO, CA Tribal Advisor, Cal EPA, AZ SHPO, BOR	Comments regarding the placement of MW X and Y Arizona Monitoring Wells

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7/12/2015	Jill McCormick, Cocopah	Aaron Yue, DTSC	Edgar Castillo, Cocopah, DTSC, DOI, PG&E	Reply to Aaron Yue's 7/10/15: Sounds to her that, although Cocopah provided the items they would like to discuss at the upcoming meetings, he is disregarding their request for official consultation items in lieu of other priorities.
7/13/2015	Aaron Yue, DTSC	Jill McCormick, Cocopah	Edgar Castillo, Cocopah, DTSC, DOI, PG&E	Clarified his previous email and suggested that they can help us to help them buy giving us their relative priorities.
7/13/2015	Jill McCormick, Cocopah	Aaron Yue, DTSC	Edgar Castillo, Cocopah, DTSC, DOI, PG&E	Will try to prioritize the list before the July meetings.
7/13/2015	Aaron Yue, DTSC	Jill McCormick, Cocopah	Edgar Castillo, Cocopah, DTSC, DOI, PG&E	More opportunities to discuss comments in the August TWGs. Proposing to add 8/26 & 8/27 as web meetings for additional discussion time. Whatever priorities they can give us will help us to schedule the right people for the meetings.
7/14/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		CWG Agenda for 7/22/15: Announcements and Project Highlights; Drought Presentation; Bat Survey Summary; CEQA Update; EIR Mitigation Measures Update; Path Forward on Park Moabi Lease for Remedy Use; Programmatic Agreement Activities Update; Site Cleanup Progress and River Protection; Project Schedule Update.
7/14/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, Charlie Schlinger, TRC	CTF Agenda, action items, calendar, Response to Comments (RTC) schedule, GW Design RTC summary for 7/21/15 CTF meeting. Agenda items: CTF Purpose; CTF Focus; Identification of new issues by CTF participants; Update on recent meetings; Overview and update of priorities for action items from the 4/21/15 CTF meeting; Discussion on RTC Protocol; Comunication and Consultation update; Review of action items and agenda for next month.
7/14/2015	Jill McCormick, Cocopah	FMIT: Nora McDowell, Linda Otero, Christopher Harper, Janice Hinkle; Hualapai: Dawn Hubbs; Cocopah: Edgar Castillo; Chemehuevi: Steven Escobar, Amanda Sansoucie; CRIT: Howard Magill, Doug Bonamici; DTSC: Karen Baker, Aaron Yue; DOI: Pam Innis; BLM,		Forwarded Cocopah's letter to Kim Liebhauser, BLM, RE: Archaeological and Historial Investigations for the PG&E Topock Compressor Station, Addendum 12: Annual Report of Archaeological and Historical Resource Investigations During 2014.
7/14/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent out latest project contact lists with request for review and update as needed.
7/15/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 14A & 14B Project Schedule for 7/22/15 CWG
7/15/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 15A - Groundwater Remedy Design RTC Summary and protocol for 7/22/15 CWG
7/15/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Revised CWG agenda for 7/22/15 CWG and Handouts 3B - significant issues, & 3C - action items
7/15/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 7A, CEQA Update for Soil EIR and Groundwater Remedy SEIR for 7/22/15 CWG
7/16/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 3A (Project Highlights) for 7/22/15 CWG
7/16/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Final TWG Agenda for 7/23/15: Agenda Items: Overview of Design Response To Comments(RTC); Discussion of 90% Groundwater Remedy Basis of Design RTCs
7/17/2015	Leo Leonhart, H&A for FMIT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared an article "How the West Overcounts Its Water Supplies".
7/20/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Forwarded PG&E's Proposal for Interim Measures #3 Extraction Well Pumping Rate modifications dated 5/28/15.

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7/20/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared April/May 2015 groundwater monitoring results and attached graph for the four river monitoring wells.
7/21/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared MWD drought presentation for 7/22/15 CWG.
7/21/2015	Aaron Yue, DTSC	Margaret Eggers, TRC, Leo Leonhart, H&A for FMIT	Janice Hinkle, FMIT, Jill McCormick, Cocopah, Howard Magill, CRIT, PG&E, DOI, DTSC	DTSC relayed request to have their technical expert discuss X and Y after lunch instead of first thing in the morning. PG&E will let us know tomorrow. Requested link to the TRC whit paper.
7/21/2015		**Attendees:** FMIT: Janice Hinkle, Nora McDowell; H&A on behalf of FMIT: Leo Leonhart; CRIT: Wilene Fisher-Holt, Howard Magill, Weldon Johnson, Nick Zeyouma, Doug Bonamici (via telephone); Cocopah Indian Tribe: Jill McCormick; Chemehuevi Indian Tribe (CIT): Amanda Sansoucie; Technical Review Committee (TRC): Charlie Schlinger; DTSC, BLM, PG&E and their consultants CH2M Hill & Arcadis, DOI, MWD		Clearinghouse Task Force Face-to-Face Meeting. Agenda items: Roundtable identification of new issues by CTF participants and review of the day's agenda/participant validation of desired outcomes of the meeting; update on recent meetings, activities, project strategies: CEQA update for soil and groundwater; overview and update of priorities for action items from the 4/21/15 CTF meeting; Discussion of RTC protocol; communication and consultation update
7/21/2015		**Attendees:** FMIT: Janice Hinkle, Nora McDowell (phone), Leo Leonhart (H&A); CIT: Amanda Sansoucie; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Howard Magill; Weldon Johnson; TRC: Margaret Eggers, Bob Pruca, Charlie Schlinger ; DTSC: Karen Baker, Aaron Yue, Chris Guerre; DOI: Pam Innis and their consultants David Back and Mike Anderson; BLM: Renee Kolvet, Amanda Dodson, Gloria Benson		Consultation with Tribes on proposed remedy monitoring wells MW-X and MW-Y in Arizona.
7/22/2015		**Attendees:** FMIT: Nora McDowell, Janice Hinkle, Christopher Harper (phone), Leo Leonhart (H&A), Michael Sullivan (phone); CRIT: Weldon Johnson, Howard Magill, Doug Bonamici (phone); CIT: Amanda Sansouci; Cocopah: Jill McCormick; TRC: Margaret Eggers, Robert Prucha, Eric Rosenblum, Charlie Schlinger, Win Wright; DTSC, ESA on behalf of DTSC, PG&E and their consultants CH2M Hill, Arcadis & Pivox, DOI and their consultants Summit, BLM, BOR, MWD, USFWS, ADEQ, CRB, Mohave Co. DPH		Face-to-Face Consultative Workgroup Meeting . Agenda items: Project highlights, MWD Drought presentation; Update on CTF activities; Spring 2015 Bat Survey; CEQA update; EIR Mitigation Measures update; Path forward on Park Moabi lease for remedy use; Programmatic Agreement activities update; Site Cleanup progress and river protection; project schedule update; response to comment process: GW Design review summary.
7/22/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Lost phone connection and cannot dial in. Stay tuned, working on the problem.
7/22/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Fixed phone connection and coming back on line.
7/22/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Revised TWG agenda with proposed timing of each item and its order of discussion.
7/22/2015	Leo Leonhart, H&A for FMIT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		FMIT cannot accommodate the revised TWG agenda due to the unavailability of personnel in the PM. Request to swap BCW to the PM and the other items in the AM BCW slot.

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7/23/2015		**Attendees:** FMIT: Janice Hinkle, Leo Leonhart (H&A), Jim Schwall (phone); Cocopah: Jill McCormick; CRIT: Howard Magill, Doug Bonamici (phone); CIT: Amanda Sansoncie; TRC: Margaret Eggers, Charlie Schlinger, Eric Rosenblum, Win Wright , DTSC, ESA on behalf of DTSC, PG&E and their consultants Arcadis, CH2M Hill, DOI and their consultants Summit, BOR, BLM, MWD and their consultants Geopentech, CRB, ADEQ:		Face-to-Face Geo/Hydro TWG Meeting. Agenda items: Overview of Design Response to Comments (RTC's); Discussion of 90% Groundwater Remedy Basis of Design RTC's.
7/23/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		For the record, TWG agenda was changed according to Leo Leonhart's request on 7/22/15.
7/23/2015	Leo Leonhart, H&A for FMIT	Aaron Yue		Forwarded FMIT Comment letter regarding Verification of Staging Areas and Arsenic Monitoring Well Locations dated 12/1/14
7/23/2015	Aaron Yue, DTSC	Leo Leonhart, Nora McDowell, FMIT	Karen Baker, DTSC, Chris Guerre, DTSC, Pam Innis, DOI	Thanked them for forwarded the letter and matrix. Agencies having been considering the proposed matrix ever since it was developed. Suggested walk through of the 4 options from PG&E for further understanding of the constrains suggested by PG&E.
7/23/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided white paper on Evaluation of Tech Justification for Proposed MW X&Y dated 7/15/15.
7/23/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided TRC's PowerPoint presentation on MW X&Y, 7/21/15
7/23/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		2nd Response to Comments TWG Meeing on 90% Groundwater Remedy Basis of Design and Submission dates. Janice Hinkle, FMIT, replied with a thank you.
7/27/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		As requested at the last CWG, provided the updated CWG contact list correcting the email address for Nichole Osuch, ADEQ.
7/28/2015	Aaron Yue, DTSC	Dawn Hubbs, Hualapai		For the record, informed Dawn that we did follow up on her request to revise the language captured at the 4/22/15 TWG on the response table for the 90% Groundwater Remedy Basis of Design that she requested on 5/29/15.
7/28/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Reminder to propose Response To Comment (RTC) items for discussion 8/18 & 8/19 TWG. August CTF meeting is canceled.
7/29/2015	Leo Leonhart, H&A for FMIT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Request for RTC #16 at August TWG. Aaron Yue repllied that it will be flagged for discussion.
7/30/2015	Yolanda Garza, DTSC	CTF Members		CTF notes, calendar and action items update from July meeting.
8/3/2015	Yolanda Garza, DTSC	CTF Members		CTF note, actions and calendar from July meeting.
8/4/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Draft TWG Agenda for 8/18-19, 2015
8/5/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		2nd Quarter 2015 Topock Groundwater Remedy EIR Mitigation Measures Compliance Report
8/6/2015	Aaron Yue, DTSC	Cocopah: Sherry Cordova, Edgar Castillo, Jill McCormick	DTSC, ESA, DOI	Letter to Cocopah soliciting input as we begin preparation of the Groundwater Remedy Subsequent EIR by 10/9/15.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/6/2015	Aaron Yue, DTSC	Dennis Patch, Doug Bonamici, Howard Magill, Keith Moses, Amanda Barrera, Amelia Flores, Granthum Stevens, Herman Laffoon, Johnny Hill, Jr., JD Fisher, Josephina Rivera, Rebecca Loudbear, Valerie Welsh-Tahbo, Weldon Johnson, Wilene Fisher-Holt, Wilfred Nabahe	DTSC, ESA, DOI	Letter to CRIT soliciting input as we begin preparation of the Groundwater Remedy Subsequent EIR by 10/9/15.
8/6/2015	Aaron Yue, DTSC	Sherry Counts, Loretta Jackson-Kelly, Bennett Jackson, Carrie Cannon, Carrie Imus, Dawn Hubbs, Emma Tapija, Hilda Cooney, Marietta Jean Pagilawa, Philbert Watahomigie, Sr., Ronald Quasula, Sr., Rudy Clark, Sr., Shelton Scott Crozier	DTSC, ESA, DOI	Letter to Hualapai soliciting input as we begin preparation of the Groundwater Remedy Subsequent EIR by 10/9/15. Dawn replied with a thank you, we will certainly review and comment.
8/6/2015	Aaron Yue, DTSC	Chase Choate, Bill Hirt	DTSC, ESA, DOI	Letter to Fort Yuma-Quechan soliciting input as we begin preparation of the GW Remedy Subsequent EIR by 10/9/15.
8/6/2015	Aaron Yue, DTSC	Edward "Tito" Smith, Ron Escobar, Amanda Sansouci, Jay Cravath, Rayomd Mejia, Shirley Smith, Steven Escobar	DTSC, ESA, DOI	Letter to Chemehuevi soliciting input as we begin preparation of the Groundwater Remedy Subsequent EIR by 10/9/15.
8/6/2015	Aaron Yue, DTSC	Timothy Williams, Charlotte Knox, Linda Otero, Nora McDowell, Christine Medley, Luke Johnson, Shan Lewis, Christopher Harper, Janice Hinkle		Letter to FMIT soliciting input as we begin preparation of the Groundwater Remedy Subsequent EIR by 10/9/15.
8/10/2015	Aaron Yue, DTSC	FMIT: Janice Hinkle, Leo Leonhart, Nora McDowell; CRIT: Howard Magill, Weldon Johnson; Chemehuevi: Amanda Sansouci; Cocopah: Jill McCormick, Edgar Castillo; TRC, DOI, DTSC, BLM		July 21, 2015 Monitoring Wells (MW) X&Y consultation meeting sign-in sheet.
8/10/2015	Yolanda Garza, DTSC	CTF Members		Reminder that August CTF meeting is cancelled. TWG meetings will be held on 8/18 & 8/19.
8/11/2015	Dawn Hubbs, Hualapai	Karen Baker, DTSC, Pam Innis, DOI, Renee Kolvet, BLM, Sherry Counts, Loretta Jackson-Kelly, Hualapai		Invitation to attend their yearly council meeting updating the Hualapai Council on the Topock Remediation Project on 11/6/15.
8/11/2015	Karen Baker, DTSC	Pam Innis, DOI, Renee Kolvet, BLM, Sherry Counts, Loretta Jackson-Kelly, Hualapai	Aaron Yue, Yolanda Garza, Jose Marcos, DTSC	DTSC (Jose, Aaron & Yolanda) is available. Look forward to coordinating with her on the agenda.
8/12/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TWG Agenda for 8/18 & 8/19: Agenda items include: Update of remaining punch list/parking lot items from 7/23/15 TWG, Discussion of 90% Groundwater Remedy Basis of Design RTC's
8/13/2015	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Will forward two documents in response to RTC's and Soil Displacemet as soon as she can.
8/18/2015		**Attendees:** FMIT: Leo Leonhart (H&A), Nora McDowell, Janice Hinkle; CRIT: Howard Magill; CIT: Amanda Sansoucie; Cocopah: Edgar Castillo; TRC: Margaret Eggers, Charlie Schlinger, Bob Prucha, Win Wright, Eric Rosenblum (phone), DTSC, PG&E and their consultants Arcadis & CH2M Hill, BLM, BOR, DOI and their consultants Summit, ADEQ, MWD		Face-to-Face Geo/Hydro Technical Work Group Meeting. Agenda items: Overview of Design Response to Comments (RTC's); Discussion of 90% Groundwater Remedy Basis of Design RTC's.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/19/2015		**Attendees:** FMIT: Janice Hinkle, Leo Leonhart (H&A), Nora McDowell, Michael Sullivan (phone); Chemehuevi: Amanda Sansoucie; Cocopah: Edgar Castillo; CRIT: Howard Magill; TRC: Win Wright, Margaret Eggers, Bob Prucha, Eric Rosenblum (phone); DTSC, PG&E and their consultants Arcadis & CH2M Hill, BLM, BOR, DOI and their consultants Summit, ADEQ, MWD		Face-to-Face Geo/Hydro Technical Work Group Meeting. Agenda items: Overview of Design Response to Comments (RTC's); Discussion of 90% Groundwater Remedy Basis of Design RTC's.
8/20/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Proposed TWG Agenda for 8/26-8/27 RTC discussions.
8/20/2015	Leo Leonhart, H&A for FMIT	Aaron Yue, DTSC		Asked if there was anywhere he could download a copy of the Soil Investigation FEIR.
8/20/2015	Aaron Yue, DTSC	Leo Leonhart, H&A for FMIT	Nora McDowell, FMIT	Soil Investigation FEIR should be posted tomorrow. Key tribal members (Nora, Linda & Janice) were forwarded copies.
8/20/2015	Nora McDowell, FMIT	Aaron Yue, DTSC	Leo Leonhart, H&A for FMIT	How steadfast is the 10-day review period for Soil Investigation FEIR? Just received document last Thursday, August 13, 2015.
8/20/2015	Aaron Yue, DTSC	Nora McDowell, Leo Leonhart, FMIT	Kimberly Hudson, John Meerscheidt, Jose Marcos, DTSC	10-day period is to circulate an advance copy of the final document and RTCs as provided for in CEQA statute for publc agencies. The 10 days is not a review and comment period. If questions, feel free to contact him.
8/24/2015	Jose Marcos, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		DTSC's conditional approval letter of the Soil RFI/RI Workplan (2013) and the subsequent Addendum and Errata (January 2014)
8/25/2015	Dawn Hubbs, Hualapai	Jose Marcos, DTSC		Asked that he send them a copy of the Final Soils EIR. Jose replied that we sent a hard copy durng the 10-day circulation period that she should have received on 8/10 and 2 more copies to Loretta and Sherry Counts. We will be sendng a hard copy of the NOD and other Soil Investigation FEIR documents in the next few days. Will ask ESA if they can still print an extra copy. Requested that she let him know if she still needs one.
8/25/2015	Dawn Hubbs, Hualapai	Jose Marcos, DTSC		Dawn said she will look for her copies and later informed him that she found them.
8/25/2015	Michael Sullivan, FMIT	DTSC: James Eichelberger, Sulka Roy-Semmen	FMIT: Leo Leonhart; DTSC: Aaron Yue; TRC: Eric Rosenblum	Request to re-evaluate soil screening levels to allow as much soil as possible to remain on-site.
8/27/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Revised dates for completion of 90% Groundwater Remedy Basis of Design and direction for final design
8/31/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Replied to Adrienne LaPierre, IRIS Environmental, regarding the Risk Assessment Work Plan (RAWP) Addendum 2. DTSC agrees with the RAWP II in concept, but DTSC toxicologists need to consider field data because it is premature to determine COC, concentrations, locations, distributions, etc.). Requested that Final RAWP Addendum 2 be provided to project stakeholders and Tribal Reps in hard copies or electronically based on their preference.
8/31/2015	Aaron Yue, DTSC	All Tribal Reps	ESA, DTSC	Requested confirmation that the tribal reps are still open to meeting with DTSC and ESA on the preparation of the Subsequent EIR on 9/16/15.
8/31/2015	Dawn Hubbs, Hualapai	Aaron Yue	All Tribal Reps, ESA, DTSC	Replied to Aaron's email that Hualapai is not able to attend the meeting with DTSC and ESA on the preparation of the SEIR on 9/16/15. Not available 9/14-18.

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8/31/2015	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	All Tribal Reps, ESA, DTSC	Thanked Hualapai for notification that they cannot attend CTF, TWG and SEIR input meeting. Aaron asked if Hualapai will be requesting a separate date or will input from the tribe be provided in writiing?
9/1/2015	Dawn Hubbs, Hualapai	Aaron Yue	All Tribal Reps, ESA, DTSC	Asked if DTSC & ESA can meet with Hualapai on 9/23,24,25,28,29 or 30 regarding the SEIR?
9/1/2015	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	All Tribal Reps, ESA, DTSC	23-25 is not good for ESA. Open to lumping with the site verification field walk (either before or after)?
9/1/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC		Regarding soils and CEQA, asked when is their deadline for comments.
9/1/2015	Aaron Yue, DTSC	Janice Hinkle, FMIT	DTSC	There is not a comment period with the final soil EIR. Any party can challenge the project 30 days after certification of the EIR. The tribes will be invited to the site verification field walk at the end of September. If FMIT has concerns with the project, please let us know as soon as you can. The resolution of concerns will depend on the nature of the concerns.
9/2/2015	Edgar Castillo, Cocopah	Aaron Yue, DTSC		Cocopah is not available to attend the meeting on 9/16.
9/2/2015	Nora McDowell, FMIT	Aaron Yue, DTSC	FMIT: Janice Hinkle, Linda Otero; Cocopah: Edgar Castillo, Jill McCormick; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici, Howard Magill; Chemehuevi: Steven Escobar	FMIT will also not be participating in the 9/16 meeting. They will defer to the date and time availability of the Hualapai and Cocopah tribes. Offered use of ACS Conference room or the FM Band Room as potential venues for the meeting.
9/2/2015	Aaron Yue, DTSC	FMIT: Nora McDowell, Chemehuevi: Amanda Sansoucie, Steven Escobar; Cocopah: Edgar Castillo; CRIT: Doug Bonamici, Howard Magill	FMIT: Janice Hinkle, Linda Otero; Cocopah: Edgar Castillo, Jill McCormick; Hualapai: Dawn Hubbs; DTSC, ESA	Thanked Nora for reply and asked Doug, Howard, Amanda and Steven if they are in agreement with rescheduling the meeting.
9/2/2015	Doug Bonamici, CRIT	Aaron Yue, DTSC	FMIT: Nora McDowell, Janice Hinkle; Chemehuevi: Amanda Sansoucie, Steven Escobar; Cocopah: Edgar Castillo; CRIT: Howard Magill; Hualapai: Dawn Hubbs	Asked that Aaron proceed with cancellation. Want to meet when all Tribal Representatives are available.
9/2/2015	Aaron Yue, DTSC	CRIT: Doug Bonamici; FMIT: Nora McDowell, Janice Hinkle; Chemehuevi: Amanda Sansoucie, Steven Escobar; Cocopah: Edgar Castill; CRIT: Howard Magill; Hualapai: Dawn Hubbs	DTSC, ESA	Have consensus to cancel 9/16 SEIR input meeting. Will try to find a date and location for the last week of September and circulate another email to confirm availabilities before booking a venue.
9/2/2015	Aaron Yue, DTSC	Michael Sullivan, FMIT	FMIT: Leo Leonhart; TRC: Eric Rosenblum; DTSC: Karen Baker, James Eichelberger, Shukla Roy-Semmen; DOI: Pam Innis; USFWS: Carrie Marr, Dennis Smith	Reply to 8/25/15 to toxicologists to re-evaluate soil screening levels to allow as much soil as possible to remain on-site. DTSC & DOI are open to additional dialogue on this matter. Earliest opportunity toward end of September or early October. Asked that Michael provide some proposed dates for conference call to include DOI and USFWS.

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9/4/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC		Asked when will the certification for the Soil Investigation EIR take place. Aaron replied to Janice that the Soil Investigation EIR was certified on 8/24/15.
9/8/2015	Yolanda Garza, DTSC	CTF Members		9/15/15 CTF Agenda. Agenda items: CTF Purpose; CTF Focus; Roundtable identification of new issues; Update on recent meetings, activities, project strategies; Overview and update of priorities for action items from the 7/21/15 meeting; CEQA Update, Karen Baker announced October 5 meeting with Tribes on SEIR; Discussion on RTC Protocol Progress; Communication and Consultation Update; Review of action items and agenda for next month.
9/8/2015	Michael Sullivan, FMIT	Aaron Yue, DTSC		Asked for a detailed schedule of activities that would list what days PG&E teams will be in the field collecting samples.
9/8/2015	Aaron Yue, DTSC	Michael Sullivan, FMIT		Have not seen sampling schedule from PG&E yet. You can ask Curt. PG&E will also discuss at next weeks TWG meeting.
9/9/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Agenda for 9/15/15 TWG meeting: Agenda includes: Update on Soil Investigation Planning, TCS-4 Well decommissioning RTC/Planning; Update on PE-1 pumping modification; Wrap up, Review Action Items, Next TWG
9/9/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Correction to earlier email. CTF will also be held at the Hampton next Tuesday morning.
9/9/2015	Dawn Hubbs, Hualapai	Aaron Yue, DTSC		Inquired what date he came up with to reschedule the 9/15 meeting that Hualapai and other tribes cannot attend.
9/9/2015	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	FMIT: Nora McDowell, Janice Hinkle; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill, DTSC, ESA	Replied to above: Tribal SEIR input meeting either 9/28 or 9/29. Another alternative would be 10/5. Will confirm when Karen returns on Monday. Field walk for soil investigation is 9/22-9/25. FMIT has offered use of their facility, so need to check with them as well. All tribes have canceled SEIR input participation for next week electing to do a combined meeting, so next Tuesday is CTF 10-12 and TWG 1-3.
9/9/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC, Dawn Hubbs, Hualapai	FMIT: Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill, DTSC, ESA	Replied to above: Waiting on confirmation date and time. Space is being held tentatively for 9/28 @ 1PM.
9/9/2015	Aaron Yue, DTSC	Janice Hinkle, FMIT, Dawn Hubbs, Hualapai	FMIT: Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill, DTSC, ESA	Replied to above: Earliest can confirm date is 9/14 when Karen returns. Aaron not available to travel the last 2 weeks of September. How's everyone's schedules for 10/5?
9/9/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC	FMIT: Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill, DTSC, ESA	She is available on 10/5.

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9/14/2015	Aaron Yue, DTSC	FMIT: Janice Hinkle, Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansoucie; CRIT: Doug Bonamici, Howard Magill	ESA, DTSC	DTSC decided 10/5 is the preferred date for the proposed tribal input meeting for the Groundwater SEIR. Asked Janice if FMIT can provide a room for the meeting. To facilitate travel, asked if meeting can be in the afternoon, 1:30 or 2:00
9/14/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC; FMIT: Janice Hinkle, Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansoucie; CRIT: Doug Bonamici, Howard Magill	ESA, DTSC	Gave the address to the EPA office in Needles for 10/5/15 meeting at 1:00 PM.
9/14/2015	Aaron Yue, DTSC	FMIT: Janice Hinkle, Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansoucie; CRIT: Doug Bonamici, Howard Magill	ESA, DTSC	Karen will request confirmation from other tribes at CTF. Dawn stated 10/5 is good for her. If not other tribes object, we will plan on meeting on 10/5.
9/14/2015	Michael Sullivan, FMIT	Jose Marcos, DTSC		Requested assistance finding the Addendum and Errata (Jan 2014) for the Topock Soil Workplan. Jose provided the information when he returned on 9/21.
9/15/2015		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); CRIT: Doug Bonamici, Howard Magill, Weldon Johnson, Nick Zeyouma; Cocopah: Edgar Castillo; Chemehuevi: Amanda Sansoucie; TRC: Margaret Eggers; DTSC: Karen Baker, Yolanda Garza; DOI: Pam Innis; BLM: Jason West, Gloria Benson; MWD: Eddie Rigdon; PG&E: Yvonne Meeks, Kevin Sullivan, Valisa Nez and their consultants CH2M Hill & Arcadis		Agenda items: CTF Purpose; CTF Focus; Roundtable identification of new issues; Update on recent meetings, activities, project strategies; Overview and update of priorities for action items from the 7/21/15 meeting; Discussion on RTC Protocol Progress; Communication and Consultation Update; Review of action items and agenda for next month.
9/15/2015	Aaron Yue, DTSC	PG&E, DOI	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	RE: Topock RAWP Add 2. Some felt unclear by email of 8/31. DTSC believes the work plan provides adequate direction to conduct the upcoming Risk Assessment; however, data collected from the soil investigation will need to be reviewed and evaluated prior to completion of the Risk Assessment.
9/15/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	CTF Updated calendar per request in today's meeting.
9/16/2015	Jill McCormick, Cocopah	Yolanda Garza, DTSC	CTF Members	Cocopah unable to attend October meetings. In favor of Lake Havasu location for all meetings.
9/16/2015	Doug Bonamici, CRIT	Yolanda Garza, DTSC	CTF Members	Stated his preferences for meeting locations: Lake Havasu City, Bullhead City, Needles & Henderson. Gave other locations that might be considered as well.
9/16/2015	Tribes	Aaron Yue, DTSC	FMIT: Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs; DTSC, ESA	Responses to availability for Tribal SEIR input meeting on 10/5: Janice Hinkle, FMIT: Sounds Good; Amanda Sansoucie, Chemehuevi: Works for Chemehuevi as well; Jill McCormick, Cocopah: 10/5 should work for Cocopah.

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9/18/2015	Edgar Castillo, Cocopah	Aaron Yue & Karen Baker, DTSC	Chemehuevi: Amanda Sansoucie; FMIT: Charlotte Knox, Chris Harper, Janice Hinkle, Leo Leonhart (H&A), Linda Otero, Nora McDowell; Hualapai: Dawn Hubbs, Loretta Jackson; CRIT: Doug Bonamici, Howard Magill, Weldon Johnson; Cocopah: Jill McCormick; Chemehuevi: Raymond Mejia, Steven Escobar;	Cocopah's 90% Groundwater Remedy design RTC Table and MW X and Y Whitepaper response.
9/22/2015		Attendees: FMIT: Melvin Holmes, Janice Hinkle, Delbert Holmes; CRIT: Nick Zeyouma, Howard Magill, Weldon Johnson; TRC: Eric Rosenblum; DTSC, PG&E, CH2M, Applied Earthworks		Soil sampling field verification
9/23/2015	Aaron Yue, DTSC	Yvonne Meeks, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Extension approval letter for obtaining access agreements from Arizona Department of Transportation (ADOT), BNSF, CalTrans, and San Bernardino County for the soil investigation project.
9/24/2015	Aaron Yue, DTSC	FMIT: Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs;	DTSC, ESA	Request for any particular topics that tribes would like to discuss and have added to the 10/5 Tribal SEIR input meeting agenda. Attached table of activities that were modified or added since the January 2011 Certified EIR. Revised table based on 90% Groundwater Remedy Basis of Design RTC discussion will be shared once updated.
9/25/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Report and link to 2nd Quarter 2015 PMP and Site-Wide GMP monitoring report.
9/28/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared the project status fact sheet and link to website where uploaded. Hard copies were also mailed to members on the mailing list.
9/28/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared link and instructions to download from Sharepoint the Final Response to Commetns (RTC) matrix. This is not a request for review or comment.
9/30/2015	Aaron Yue, DTSC	FMIT: Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs;	DTSC, ESA	Re: Tribal SEIR Input Meeting. Shared agenda and attached revised table of remedy project acivities that were modified or added since the January 2011 Certified EIR with revisions based on 90% RTC discussion.
10/1/2015	Nora McDowell, FMIT	Aaron Yue, DTSC; FMIT: Janice Hinkle; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs;	DTSC, ESA	Re: Tribal SEIR Input Meeting revised table. Requested red-lined version showing changes since provided in May 2015. Also asked who will attend the meeting, will Susan Wilcox attend?
10/1/2015	Aaron Yue, DTSC	FMIT: Nora McDowell, Janice Hinkle; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs;	DTSC, ESA	Re: Tribal SEIR Input Meeting revised table. There isn't a single red-lined version of the table. Sent a file comparison between the May and latest version. Susan's contract ended and we are seeking a replacement anthropologist and/or archaeologist.

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10/1/2015	Addie Farrell	FMIT: Nora McDowell, Janice Hinkle; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansouci; CRIT: Doug Bonamici, Howard Magill; Hualapai: Dawn Hubbs;	DTSC, ESA	Listed ESA staff who will attend Tribal SEIR Input Meeting per Nora's request. Aaron also sent the names of DTSC staff who will attend.
10/5/2015		Attendees: FMIT: Nora McDowell, Linda Otero, Janice Hinkle, Leo Leonhart; CRIT: Doug Bomamici, Howard Magill; Cocopah: Jill McCormick; Hualapai: Dawn Hubbs; Chemehuevi: Amanda Sansoucie; TRC: Charlie Schlinger, Eric Rosenblum, Win Wright, Robert Puchra, Margaret Egars; DTSC Aaron Yue, Chris Guerre, Yolanda Garza; ESA: Addie Farrell, Monica Strauss, Candice Ethinger		Meeting at FMIT Office. Agenda items included: SEIR Process, Changes from 2011 FEIR to Final Groundwater Design, Tribal Input and Discussions, Path Forward
10/5/2015	Michael Sullivan, FMIT	Aaron Yue, DTSC	FMIT: Linda Otero, Nora McDowell, Janice Hinkle, Leo Leonhart; TRC: Eric Rosenblum; DTSC: Karen Baker, James Eichelberger, Shukla Roy-Semmen; DOI: Pam Innis; USFWS: Carrie Marr, Dennis Smith	Response to Aaron Yue's 9/2/15 response to him regarding potential meeting times to discuss re-evaluate soil screening levels. Suggested meeting face-to-face during the week of the CWG/TWG meetings.
10/9/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent CWG meeting location survey for 2016
10/9/2015	Edgar Castillo, Cocopah	DTSC: Aaron Yue, Karen Baker; Chemehuevi: Amanda Sansoucie, Raymond Mejia, Steven Escobar; Cocopah: Jill McCormick; FMIT: Charlotte Knox, Christopher Harper, Janice Hinkle, Leo Leonhart (H&A), Linda Otero, Nora McDowell; Hualapai: Dawn Hubbs, Loretta Jackson; CRIT: Doug Bonamici, Howard Magill, Weldon Johnson		Cocopah comments regarding SEIR, Addendum to the 90% Groundwater Remedy Baisis of Design
10/9/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC		Asked if FMIT can submit their SEIR today?
10/9/2015	Aaron Yue, DTSC	Janice Hinkle, FMIT	Daren Baker, Addie Farrel	If FMIT has input on the preparation of the DRAFT SEIR, please submit them as soon as you can.
10/9/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC	FMIT: Timothy Williams, Linda Otero, David Wolff, Nora McDowell, Leo Leonhart, Michael Sullivan, Courtney Coyle, Tribal Reps for Hualapai, Chemehuevi, CRIT and Cocopah; TRC Reps., DOI, BLM, DTSC	FMIT additional comments on SEIR on Topock Groundwater Remedy
10/14/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		One one hotel reservation made so far. To get negotiated discounts, please register by Friday.
10/14/2015	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Booked her reservation at Hilton Garden Inn.
10/14/2015	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Please note meeting is not in the Hampton on Astaire Drive, it is a different Hampton on Rose Parkway.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/14/2015	Aaron Yue, DTSC	CIT: Edward "Tito" Smith, Jay Cravath, Ron Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing September 2015 CWG & TWG emails and attachments.
10/14/2015	Aaron Yue, DTSC	Tribal Representatives List		Follow-up to action item from 10/5/15 SEIR Tribal Input meeting regarding the request to consider a revised groundwater remedy as proposed by the Cocopah, CRIT & Haualapai. Agencies cannot undertake evaluation of such a drastic change in the remedial diecision without justification and clear requests from the supporting tribes. Shared the nine selection criteria defined in the DTSC Statement of Basis and DOI Record of Decision for the selection of the remedy dated January 31, 2010.
10/14/2015	Aaron Yue, DTSC	Michael Sullivan, FMIT	FMIT: Linda Otero, Nora McDowell, Janice Hinkle, Leo Leonhart; TRC: Eric Rosenblum; DTSC: Karen Baker, James Eichelberger, Shukla Roy-Semmen, Jose Marcos; DOI: Pam Innis; USFWS: Carrie Marr, Dennis Smith; PG&E: Yvonne Meeks	Response to email on 10/5/15 regarding request to meet regarding re-evaluation of soil background levels to leave as much soil on site as possible. Reply: Agencies are sympathetic of the tribes concerns, however, not convinced that resolution is to have further evaluation of, or debate over, the soil screening levels. Rather, the agencies see an opportunity to further refine the schedule to complete the risk assessment so that soil management ultimately would be based on a comprehensive evaluation of both human and ecological risks, coupled with knowledge of concentrations and contaminants at the various AOCs and SWMUs. This will be discussed at the 10/28 CWG.
10/15/2015	Dawn Hubbs, Hualapai	Aaron Yue, DTSC, Pam Innis, DOI	Sherry Counts, Hualapai	Hualapai response to 9/22/15 Soils Investigation Field Verification
10/15/2015	Edgar Castillo, Cocopah	Aaron Yue, DTSC; Jill McCormick, Cocopah		Wanted to clarify that the Cocopah tribe did not ask for a switch to the pump and treat system.
10/16/2015	Yolanda Garza, DTSC	CTF Members		Draft agenda for 10/27 CTF, 9/15 meeting notes, action items and calendar.
10/19/2015	Yolanda Garza, DTSC	CTF Members		Corrected agenda for the 10/27/15 CTF Meeting.
10/19/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Joint direction letter on final design directives to PG&E.
10/20/2015	Aaron Yue, DTSC	Edgar Castillo, Jill McCormick, Cocopah		Apologized for the error, confirmed that Cocopah didn't ask for a switch to the pump and treat system.
10/20/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent the final RTC table with DTSC/DOI input. Between the RTC table and the Agencies' letter sent yesterday, PG&E has sufficient direction to proceed with the preparation of the final design document. Request final design be sumitted by 11/18/15.
10/20/2016		Attendees: Director Barbara Lee, Assistant Director Ana Mascaranas, Karen Baker, Yolanda Garza from DTSC; Janice Hinkle, Chris Harper from FMIT; Steven Escobar and Amanda Sansouci from Chemehuevi; Dawn Hubss from Hualapai; Doug Bonamici and Howard Magill from CRIT.		DTSC held a meeting with Interested Tribes. Discussion included policy of AB52 and consultation with Tribes; concerns regarding location of proposed monitoring wells X and Y in Arizona.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/20/2016		?????????		Tribal Monitor Health and Safety Training provided by Hargis at Topock Compressor Station
10/21/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared latest project contact lists and requested notification of any needed changes.
10/21/2015	Aaron Yue, DTSC	Janice Hinkle, FMIT		Asked if call in number for CWG/TWG as she won't be able to attend. Aaron replied that the number for CWG is on the agenda. No number for soil investigation kick-off meeting. Pointed out new item to be discussed is the revised schedule for the Risk Assessment to help reduce impacts associated with soil removal from the site during groundwter remedy construction, which the Agencies understand is a major concern for the tribes.
10/21/2016		Attendees: Director Barbara Lee, Assistant Director Ana Mascaranas, Karen Baker, Isabella Alasti, Yolanda Garza, Chairman Timothy Williams, Vice-Chairman Shan Lewis, Linda Otero, Janice Hinkle, David Wolf.		DTSC held a meeting with representatives of FMIT. Discussion included AB52, Settlement Agreement, and Supplemental EIR process.
10/21/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided a copy of Aqua Caliente's comment letter on the recirculated bio section of the DEIR as requested as an action item at the 7/22/15 CWG meeting.
10/21/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Forwarded matrix comparing differences between the 2011 FEIR project from the 90% Groundwater Remedy Basis of Design. This will continue to be developed as DTSC/ESA proceed with the SEIR. This was an action item from the 7/22/15 CWG meeting.
10/21/2015	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	CRIT: Guthrie Dick; Arcadis: Frank Lenzo; CH2M Hill: Jamie Eby; Summit: Jennifer McIntosh; DTSC: Perry Myers; TRC: Charlie Schlinger, Eric Rosenblum, Margaret Eggers, Ron Prucha, Sandra Flint, Win Wright	Hualapai would like to suggest for the next CWG informal discussions to sit down with agencies to more fully discuss, with all technical teams, the thinking behind a request for reevaluation of the existing remedial technology. She spoke to Director Lee, and the TRC has a good working technical memo that could be the start for this kind of discussion. They have a formal request being reviewed by their council regarding the pump and treat.
10/22/2015	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Acknowledged receipt of her request and asked how much time she is proposing during the CWG to discuss reeavaluation of insitu remedy versus pump and treat.
10/22/2015	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Reminder to submit 2016 CWG location surveys today.
10/22/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent Handouts 3B (Significant issues from 7/22/15 CWG) and 3C (CWG Action Item tracking) for 10/28/15 CWG.
10/23/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent Handout 4A - Tribal Monitoring, for 10/28/15 CWG.
10/23/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent Handout 3A - Project highlights since last CWG, for 10/28/15 CWG.
10/23/2015	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent Handout 8A - Update on EIR Mitigation Measures (MM) Implementation, for 10/28/15 CWG.

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10/24/2015	Karen Baker, DTSC	Dawn Hubbs, Hualapai		Let Dawn know that we have asked PG&E to respond to her request regarding TRC attendance at meetings and that DTSC thought it should be approved under the Mitigation Measures and Reporting Program (MMRP).
10/26/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared PG&E's "at-a-glance" soil and groundwater schedules for information.
10/26/2015	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent Handouts 9A -Corrective Measures Implementaton/Remedial Design (CMI/RD) update and 12a - Soil Investigation Update, for 10/28/15 CWG.
10/26/2015	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent Handouts 13A -Revised Soil Risk Assessment Schedule, for 10/28/15 CWG.
10/27/2015		**Attendees:** Fort Mojave Indian Tribe (FMIT): Janice Hinkle (phone); H&A on behalf of FMIT: Leo Leonhart; Hualapai: Dawn Hubbs; Chemehuevi Indian Tribe (CIT): Glenn Lodge; Colorado River Indian Tribe (CRIT): Howard Magill, Nick Zeyouma; Technical Review Committee (TRC): Charlie Schlinger; DTSC, DOI, BLM, MWD, PG&E & their consultants CH2M Hill, i		Clearinghouse Task Force Meeting. Agenda included: Project update for soil and groundwater; CEQA update for soil and groundwater,;Overview and update of priorities for action items from the 9/15/16 CTF meeting; communication an dconsultation update.
10/28/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent revised CWG agenda that included informal discussion on alternative groundwater remedy as requested by Tribes/TRC.
10/28/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent out RFI/RI Health & Safety Plan as requested during the CWG meeting.
10/28/2015		**Attendees:** FMIT: Janice Hinkle (phone), Leo Leonhart (H&A), Michael Sullivan; CRIT: Howard Magill, Nick Zeyouma; CIT: Glenn Lodge (phone); Cocopah: Jill McCormick (phone), Edgar Castillo (phone); Hualapai: Dawn Hubbs; TRC: Margaret Eggers, Robert Prucha, Eric Rosenblum, Charlie Schlinger, Win Wright (phone); DTSC, ESA on behalf of DTSC, PG&E and their consultants CH2M Hill & Arcadis, DOI, BLM, BOR, MWD, USFWS, ADEQ, CRWQCB, SWRCB		Face-to-Face CWG Meeting. Agenda items included: Project highlights; update on tribal monitor H&S training; Update on CTF activities; PA Activities update, Path forward on Park Moabi lease for remedy use; EIR Mitigation Measures update; CMI/RD update; Soil Investigation update; Revised Risk Assessment update; summary of schedule changes; TRC presentation regarding tribal request to reevaluate groundwater remedy from in-situ to pump and treat.
10/28/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Forwarded Power Point presentation prior to Technical Review Committee (TRC) giving presentation regarding groundwater remedy - pump and treat instead of in-situ.
10/29/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared Second quarter 2015 Performance Monitgoring Program (PMP) and Site-wide Groundwater Monitoring Program (GMP) monitoring report.

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10/29/2015		Attendees: FMIT: Melivin Holmes, Steven Rodriguez, Felton Bricker, Sr., Leo Leonhart (H&A), Anthony Holmes, Christopher Harper, Delbert Holmes, Janice Hinkle, Michael Sullivan, Jesse Hookman; Cocopah: Edgar Castillo, Jill McCormick; CRIT: Howard Magill; Hualapai: Dawn Hubbs; TRC: Eric Rosenblum; DTSC, PG&E, DOI, Groundwater Partners, BLM, USFWS, USBR, Vironex US, Cascade, CH2M Hill, Transcon, Pivox Corp, Applied Earthworks, Northstar		Soil Project Initiation meeting which included tribal talks on their perspectives on the field activities.
11/2/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared the 3rd Quarter Mitigation Measures and Monitoring Report (MMRP) compliance report.
11/2/2015	Aaron Yue, DTSC	Valisa Nez, Yvonne Meeks, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Shared DTSC's response to PG&E's request for second extension to obtain access agreements for work specified in the Soil RFI/RI Work Plan
11/4/2015	Jose Marcos, DTSC	Janice Hinkle, FMIT	DOI, DTSC, PG&E, CH2M Hill	Response to her letter dated 10/8/15 regarding the Soils Investigation Field Verification Survey and her concern of mesquite trees and artifacts in the vicinity of AOC11c. Janice replied with a thank you to Jose.
11/4/2015	Jose Marcos, DTSC	Dawn Hubbs, Hulapai	DOI, DTSC, PG&E, CH2M Hill	Response to her comment letter dated 10/15/15 regarding the Soils Investigation Field Verification Survey. Dawn thanked Jose for the email.
11/4/2015	Aaron Yue, DTSC	Yvonne Meeks, PG&E, Pam Innis, DOI	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Approval of request for a 2 week extension in submitting final design cost estimate.
11/4/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Cancellation of November 2015 TWG Meeting. Tribal members replied thanking Aaron for the email: CRIT: Doug Bonamici; FMIT: Janice Hinkle; CIT: Amanda Sansoucie; Cocopah: Edgar Castillo
11/5/2015	Aaron Yue, DTSC	Yvonne Meeks, Christina Hong, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Clarification letter on use of Staging Area 7 in Groundwater Remedy Basis of Design
11/10/2015	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	October CTF sign in sheet, notes & Action items, and cancellation of November CTF. Dawn Hubbs, Hualapai, replied with a "thank you". Yolanda replied with a "you're welcome".
10/16/2016	Karen Baker, DTSC	Attendees included: Cal EPA Secretary Matthew Rodriguez; DTSC: Director Barbara Lee, , Assistant Director Ana Mascaranas, Karen Baker, Isabella Alasti, FMIT: Chairman Timothy Williams, Linda Otero, Janice Hinkle, David Wolf.		On November 16, 2015, representatives of DTSC, Cal EPA and FMIT met to discuss Settlement Agreements.
11/18/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Forwarded summer bat survey for information.
11/19/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for October Third Quarter 2015 GMP Sampling
11/19/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PG&E sumittal of Groundwater Remedy Basis of Design (BOD) Report/Final 100% Design Submittal and Construction/Remedial Action Work Plan for Final GW Remedy. Instructions on how to download documents.

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11/20/2015	Leo Leonhart, H&A for FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: C. Coyle, J. Hinkle, S. McDonald, N. McDowell, L. Otero, T. Williams, Tribal Reps., TRC, PG&E	FMIT request letter regarding 10/19/15 Final Design Directives to PG&E on Modeling Follow-up for Topock Groundwater Remediation project.
11/20/2015	Janice Hinkle, FMIT	Aaron Yue, DTSC		Having problems downloading the Groundwater Remedy Basis of Design (BOD) Report/Final 100% Design and Construction/Remedial Action Work Plan for Final GW Remedy.
11/23/2015	Aaron Yue, DTSC	Janice Hinkle, FMIT	PG&E, CH2M Hill, DTSC	Re: Problem with downloading document: gave her link to DTSC/Topock website to retrieve document if unable to download from SharePoint or Drop Box as suggested.
11/24/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		DTSC's approval letter to third extension request from PG&E for the necessary access agreements with ADOTS and BNSF.
11/24/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		12/16/15 TWG cancellation due to lack of pressing issues and the holidays.
11/30/2015	Yolanda Garza, DTSC	CTF Members		No CTF meeting in December. Next CTF meeting is on 1/19 and CWG on 1/20.
12/7/2015	Aaron Yue, DTSC			Mailing of cd's containing November 2015 CWG & TWG emails and attachments.
12/9/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PG&E submittal of Final Design Cost Estimate
12/9/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Master comprehensive TOC for the 90% Groundwater Remedy Basis of Design.
12/15/2015	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent link to register at Hampton before 1/1/16 to received reduced hotel rate for 1/20 CWG.
12/15/2015	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Requested an update on the soils plan. Aaron replied that, yes, the soils investigation update will be part of the CWG. Leo Leonhart sent his concurrence with Dawn's request. Janice Hinkle, FMIT, sent her concurrence as well. Aaron replied to all that if a TWG meeting is being requested, to give specifics.
12/15/2015	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared PMP-GMP 2015 3rd Quarter report.
12/15/2015	Aaron Yue, DTSC	Yvonne Meeks, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Concurrence of TCS-4 Decommissioning
12/22/2015	Dawn Hubbs, Hualapai	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Request for DTSC to give an update on the status of the Groundwater Remedy SEIR, either at CWG or TWG. Aaron replied that it will be part of the CWG, but will discuss with the team to see what can be done about discussing in more depth.
12/22/2015	Aaron Yue, DTSC	Max Auyeung, DOT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Support of MW-U installation in I-40 median for the PG&E Topock Compressor Station environmental groundwater remediation project.
12/30/2015	Aaron Yue, DTSC	Edgar Castillo, Jill McCormick, Cocopah		DOI/DTSC did not receive the Cocopah letter in response to PG&E's model revision. Because the Cocopah comments are of the same nature as the FMIT & Chemehuevi (CIT) comments, offer DTSC response through the FMIT and CIT response.

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12/31/2015	Charlie Schlinger, TRC	Tribal Reps and TRC		Charlie sent an email to tribes informing them that his management has asked that he cease working on this project until they have a contract. Dawn Hubbs, Hualapai replied asking Yvonne Meeks, PG&E, what is going on. Jill McCormick, Cocopah, Nora McDowell, FMIT, Doug Bonamici, CRIT all replied in outrage as well. Aaron Yue, DTSC, replied that he will correspond with PG&E on the matter and asked Charlie Schlinger if it is PG&E that advised that he stop work or someone else outside of PG&E's contract. Charlie replied that the direction came from HDR.
1/5/2016	Aaron Yue, DTSC	CIT: Charles Wood, Jay Cravath; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing December 2015 CWG & TWG emails and attachments.
1/7/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		1/20/16 CWG agenda. Janice Hinkle, FMIT, replied with a thank you.
1/8/2016	Yolanda Garza, DTSC	CTF Members		Draft Agenda, action items and planning calendar for 2016
1/11/2016	Charlie Schlinger, TRC	Karen Baker, DTSC		Regarding contract for the TRC, recommending to his management that they sign.
1/12/2016	Yolanda Garza, DTSC	CTF Members		CTF meeting time is 11:00 PST, not MT. Revised calendar is also attached.
1/12/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Confirmation that CWG will commence at 9:30 AM Pacific Time.
1/13/2016	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for the annual CWG meeting location survey.
1/14/2016	Yolanda Garza, DTSC	CTF Members		Informed the group that Robert Perdue, RWQCB has requested to attend the CTF. Per protocol, asked if there were any concerns or comments. The following replied with no objection and Yolanda replied with a thank you: Jason West, BLM, Dawn Hubbs, Hualapai, Yvonne Meeks, PG&E, Janice Hinkle, FMIT, Doug Bonamici, CRIT,
1/15/2016	Jose Marcos, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Topock Soil RFI/RI Plan to Address Data Gaps Identified during Work Plan Implementation was submitted for review and comments by 1/27/16. Site walk is on 1/21, but can be set up on a different date if you can't make it.
1/15/2016	Christopher Harper, FMIT	Aaron Yue, DTSC	FMIT: Timothy Williams, Linda Otero, Charlotte Knox, Janice Hinkle, Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Amanda Sansoucie; CRIT: Howard Magill, Doug Bonamici; BLM, DTSC, PG&E	FMIT comments on 2015 Annual Site Monitoring Report

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1/15/2016	Jill McCormick, Cocopah	A. Caruso?, FMIT, Cocopah, CIT, CRIT	Aaron Yue, Karen Baker, DTSC; Yvonne Meeks, PG&EFort Mojave, Cocopah, Dawn Hubbs, Hualapai	Requested an extension of the comment period for the 2015 Annual Archaeological and Historical Site Monitoring and Conditions Assessments.
1/19/2016	Yolanda Garza, DTSC	CTF Members		Gave corrected call in number for the CTF meeting.
1/19/2016		Attendees: Hualapai: Dawn Hubbs; Chemehuevi: Amanda Sansoucie; CRIT: Doug Bonamici, Howard Magill; Cocopah: Edgar Castillo (phone); FMIT: Nora McDowell, H&A: Leo Leonhart; TRC: Eric Rosenblum; DTSC, DOI, BLM, PG&E, CH2M Hill, MWD, RWQCB		CTF Meeting. Agenda items included: - Project Update for Soil & GW; CEQA update for Soil & Groundwater; Model Update; Soil Implementation Schedule; Overview and update of priorities for action items from 10/27/15 CTF; Communication and Consultation Update
1/19/2016	Yolanda Garza, DTSC	CTF Members		Call in number used at the CTF meeting today is not the number for tomorrow's CWG.
1/20/2016	Wayne Monical, Park Moabi Resident	Topock Website Comments/Questions Form		Has been a homeowner since 2004 and only received notification this week from Pam Innis regarding community meetings.
1/20/2016	Yolanda Garza, DTSC	CTF Members		Draft notes and sign-in sheet from 1/19/16
1/20/2016		Attendees: FMIT: Nora McDowell, Michael Sullivan, Leo Leonhart (H&A), Courtney Coyle (Legal via telephone); CIT: Amanda Sansoucie; Cocopah Indian Tribe: Edgar Castillo (via telephone); CRIT: Doug Bonamici, Howard Magill; Hualapai Indian Tribe: Dawn Hubbs; TRC: Win Wright, Charlie Schlinger, Eric Rosenblum, Robert Prucha, Margaret Eggers (via telephone); DTSC, ESA on behalf of DTSC, CRWQCB, SWRCB, CRB, PG&E, CH2M Hill on behalf of PG&E, Arcadis on behalf of PG&E, BLM, BOR, DOI, MWD, ADEQ, Mohave County DPH		CWG meeting. Agenda items: Announcements and project highlights, CTF activities, SEIR status and update, PA Activities update, Path Forward on Park Moabi Lease for Remedy Use, update on EIR mitigation measures implementation, progress on Topock GW remediations, progress on soil investigation, project schedule update, Proposed IM3 Modificatons to Improve Gradient Control and Chromium Removal
1/21/2016		Attendees: FMIT: Nora McDowell, Chris Harper, Michael Sullivan; Hualapai: Dawn HubbsLyndee Hornell; Chemehuevi: Deron Fisher, Jr., Frank Brooks; CRIT: Nick Zeyouma, Howard Magill; TRC: Eric Rosenblum, Win Wright, Charlie Schlinger, Bob Prucha; DTSC: Chris Guerre, Jose Marcos; PG&E: Curt Russell, Yvonne Meeks; CH2M Hill: Christina Hong, Mike Cavaliere; DOI: Pam Innis; BLM: Renee Kolvet; Applied Earthworks: Pat Maloney; Pivox: Martin Bloes; Groundwater Partners, Inc.: Elie Ludrig; RWQCB: Robert Perdue; USBR: Jeff Smith; USFWS: Carrie Marr;		RFI/RI Soil Investigation Site Walk. Agenda: Walk-through of DGWP-01 in TCS Conference Room; Visit storm drain location SD-24; Visit AOC 19 and 14; Visit storm drain locations SD25 and SD26; visit AOC 27; Visit AOC 10 and storm drain locations SD21 and SD22; visit storm drain locations SD-20 and SD-23.
1/21/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Requested review of CWG sign-in sheet for contact list updates due to names striked out on sign-in sheet.

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1/25/2016	Janice Hinkle, FMIT	DTSC, DOI, BLM	FMIT: Courtney Coyle, David Wolff, Steven McDonald, Leo Leonhart (H&A), Michael Sullivan;Cocopah: Jill McCormick, Edgar Castillo; Hualapai: Dawn Hubbs; Chemehuevi: Steven Escobar, Amanda SanSoucie; CRIT: Howard Magill, Doug Bonamici TRC, BLM	FMIT Comments on the 1/13/16 Topock Soil RFI/RI Plan to Address Data Gaps Identified During Work Plan Implementation (DG-WP-01)
1/26/2016	Charlie Schlinger, TRC	Jose Marcos, DTSC		Asked for due date of comments/suggestions on the Data Gaps Plan. Jose replied that the date is 1/27/16.
1/27/2016	Dawn Hubbs, Hualapai	Aaron Yue, DTSC, Pam Innis, DOI, Sherry Counts, Hualapai		Comment letter regarding the Soils Data Gaps. Aaron Yue sent a thank you reply.
1/28/2016	Jose Marcos, DTSC	Yvonne Meeks, Glen Caruso, Curt Russell, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Soils Investigation Field Verification #2 in Support of Data Gaps Work Plan: MM CR-1c-2
1/28/2016	Jose Marcos, DTSC	PG&E: Yvonne Meeks, Curt Russell, Mike Cavaliere	FMIT: Janice Hinkle, Linda Otero, Timothy Williams. Leo Leonhart, Michael Sullivan; Hualapai: Dawn Hubbs; DTSC, DOI, TRC	Forwarded correspondence received from the FMIT and Hualapai requesting XRF and geophyscial data related to the data gap workplan 1.
1/28/2016	Yolanda Garza, DTSC	CTF Members		Draft notes and sign-in sheet from last CTF and request for agenda items for the next CTF on 2/16/16.
1/29/2016	Edgar Castillo, Cocopah	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Christopher Harper, Janice Hinkle, Linda Otero, Nora McDowell, ; Chemehuevi: Amanda Sansoucie, Raymond Mejia, Steven Escobar; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici, Howard Magill; Cocopah: Jill McCormick; Weldon Johnson	Comments on the 1/13/16 Topock Soil RFI/RI Plan to Address Data Gaps Identified During Work Plan Implementation (DG-WP-01)
2/1/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Q4 2015 EIR Mitigation Measures Compliance Report
2/1/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Latest revisions of all contact lists.
2/1/2016	Mike Cavaliere, CH2M Hill	Jose Marcos, DTSC, Yvonne Meeks, PG&E	FMIT: Janice Hinkle, Linda Otero, Timothy Williams, Leo Leonhart, Michael Sullivan; Hualapai: Dawn Hubbs; DTSC, DOI, TRC	Provided XRF and geophyscial data related to the data gap workplan 1 requested by FMIT & Hualapai.
2/2/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		DTSC/DOI conditional approval of Topock Soil RFI/RI - Plan to Address Data Gaps Identified During Work Plan Implementation, DG-WP-01, January 13, 2016
2/5/2016	Charlie Schlinger, TRC	Aaron Yue, DTSC		Is DTSC accepting input on the 100% Design Documents, and if so, until what date?

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/5/2016	Aaron Yue, DTSC	Charlie Schlinger,TRC	DTSC, DOI	100% Design was not circulated for comment, however, if substantive comments on the design for response to 90% comments are received, they will not be ignored. However, there is not guarantees or commitment to provide responses to the comments. Since there is no comment period, there is no cutoff date.
2/5/2016	Karen Baker, DTSC	Charlie Schlinger,TRC	DTSC, DOI	Clarified that they might be confusing the 100% Design with the SEIR process. Input to Draft SEIR is due by 3/11/16. He thanked Karen and said Aaron's perspective is helpful to them.
2/9/2016	Yolanda Garza, DTSC	CTF Members		Provided location and agenda for the 2/16/16 CTF meeting. Amanda Sansouci, replied that she has not seen a confirmation of a TWG meeting the following day.
2/9/2016	Aaron Yue, DTSC	CTF Members		We are not having a TWG in February. Next TWG will be in March 2016. Amanda Sansoucie, CIT, replied with a thank you.
2/9/2016	Yolanda Garza, DTSC	CTF Members		Planning calendar and updated meeting dates.
2/12/2016	Aaron Yue, DTSC	CIT: Charles Wood, Jay Cravath; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing January 2016 CWG & TWG emails and attachments.
2/16/2016		**Attendees:** FMIT: Nora McDowell (via telephone); Leo Leonhart (H&A via telephone); CRIT: Howard Magill; Chemehuevi: Amanda Sansoucie, Frank Brooks; TRC: Margaret Eggers; DTSC: Karen Baker, Yolanda Garza; PG&E: Yvonne Meeks, Kristin Mancini (via telephone); CH2M Hill on behalf of PG&E: Christina Hong (via telephone); Arcadis on behalf of PG&E: Lisa Micheletti-Cope; DOI – USBR: Jeffery Smith; USBLM: Renee Kovet; MWD: Maria Lopez (via telephone); RWCQB: Robert Perdue (via telephone)		Clearinghouse Task Force meeting. Agenda included: SEIR schedule, project update for soil and groundwater; CEQA update for soil and groundwater, model updates, Other; Overview and update of priorities for action items from the 1/19/16 CTF meeting; communication and consultation update - coordination with DOI/tribes
2/16/2016	Jose Marcos, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Topock Soil RFI/RI Plan to Address Data Gaps Identified during Work Plan Implementation (DWGP-02) February 2016
2/18/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		2/18/16 revision of all contact lists.
2/19/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Notification of Noise and Visual Site Reconnaissance for SEIR on 3/7, 3/8 & 3/9.
2/22/2016	Michael Sullivan, FMIT	Jose Marcos, DTSC, Pam Innis, DOI	FMIT: Nora McDowell, Leo Leonhart, Linda Otero	Request for additional information on Data Gap Memorandum #2.
2/23/2016	Leo Leonhart, H&A for FMIT	Christine Hong, CH2M Hill	Nora McDowell, FMIT, DTSC, PG&E	Asked if 30-60-90-100 progression will be updated on time for him to do a community meeting on 3/10 as requested by FMIT.
2/25/2016	Yolanda Garza, DTSC	CTF Members		2/16 CTF notes, calendar, sign in and action items.
2/25/2016	Yolanda Garza, DTSC	CTF Members		Links to hotel reservations at reduced rates at Hampton and Hilton in Henderson, NV
2/25/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Encouraged members to utilize the reduced hotel rates but not abuse the system by staying outside of DTSC scheduled meetings for this project.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/26/2016	Leo Leonhart, H&A for FMIT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		FMIT request that Monica Strauss, ESA Archaeologist, be in attendance at the Noise and Visual Site Reconnaissance for SEIR.
2/26/2016	Edgar Castillo, Cocopah	Aaron Yue, DTSC, Pam Innis, DOI	Tribal Reps	Comments on the 2/12/16 Topock Soil RFI/RI - Plan to Address Data Gaps Identified During Work Plan Implementation (DG-WP-02)
2/26/2016	Nora McDowell, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Timothy Williams, Linda Otero, Michael Sullivan, Leo Leonhart; BLM: Jason West, Renee Kolvet, Christopher Harper; Cocopah: Jill McCormick; Hualapai: Dawn Hubbs	Comments on the 2/12/16 Topock Soil RFI/RI - Plan to Address Data Gaps Identified During Work Plan Implementation (DG-WP-02)
2/27/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Gave clarification that Monica Strauss will attend the Noise and Visual Site Reconnaissance for SEIR. Meant to say that she will be available if tribes want to have discussion with her regarding anything specific.
3/1/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Conditional Approval from DTSC/DOI of Data Gap Work Plan 2 for Soil RFI/RI
3/2/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PG&E's submittal of Development of Groundwater Flow and Solute Transport Model Summary Report.
3/3/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Noise and Visual Site Reconnaissance for SEIR postponed due to weather. Looking at 3/23-3/25. Nora McDowell FMIT and Amanda Sansoucie, Chemehuevi confirmed they are good with the new dates.
3/7/2016	Yolanda Garza, DTSC	CTF Members		Agenda and supporting documents 3/15/16 CTF meeting
3/7/2016	Dawn Hubbs, Hualapai	Yvonne Meeks, PG&E	CTF Members	Wasn't able to get the reduced rate at the Hilton where she is staying. Yolanda asked for all the information so she can fix the problem.
3/7/2016	Yolanda Garza, DTSC	CTF Members		Agenda, action items, calendar for 3/15/16 meeting and documents from 2/25/16 CTF meeting.
3/8/2016	Aaron Yue, DTSC	CIT: Charles Wood, Jay Cravath; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing February 2016 CWG & TWG emails and attachments.
3/8/2016	Aaron Yue, DTSC	Leo Leonhart, H&A for FMIT, Dawn Hubbs, Hualapai	PG&E, ESA, DTSC	Provided comparison table of changes from 2011 FEIR to final groundwater design for their reference.
3/8/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Noise and Visual Site Reconnaissance for SEIR rescheduled for 3/23 & 3/24/16.
3/11/2016	Yolanda Garza, DTSC	CTF Members		Change to meeting location for next Thursday.
3/11/2016	Jill McCormick, Cocopah	CTF Members		Request for call in number for next week's meetings. Yolanda replied with the call-in information. Jill informed the group that neither her or Edgar will be there in person, but will call in.
3/14/2016	Edgar Castillo, Cocopah	Karen Baker, Aaron Yue, DTSC	Tribal Reps	Input from Tribes to DTSC Concerning Subsequent EIR (SEIR) Development

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/15/2016		**Attendees**: FMIT: Leo Leonhart (H&A via telephone); CRIT: Howard Magill, Nick Zeyouma; Cocopah: Edgar Castillo (via telephone); Hualapai: Dawn Hubbs; TRC: Charlie SchlingerDTSC: Karen Baker, Yolanda Garza; USDOI: Pam Innis; PG&E: Yvonne Meeks, Kristin Mancini (via telephone); CH2M Hill on behalf of PG&E: Christina Hong; Arcadis on behalf of PG&E: Lisa Micheletti-Cope; USBLM: Renee Kolvet, Amanda Dodson, Gloria Benson; MWD: Maria Lopez (via telephone); RWCQB: Robert Perdue (via telephone)		Face-to-face CTF Meeting. Agenda items included: Roundtable identification of new issues by CTF participants and review of the day's agenda/participant validation of desired outcomes of the meeting; update on recent meetings, activities, project strategy; SEIR Update; Response to Comment Process for Soil Investigation Report and Risk Assessment; overview of last Topock Leadership Partnership and Tripbal Leadership meeting of 2012.
3/16/2016		Attendees: Dawn Hubbs, Hualapai; Howard Magill, Nick Zeyouma, CRIT; Edgar Castillo, Cocopah; Leo Leonhart (Hargis) for FMIT; Margaret Eggars, Robert Puchra, Eric Rosenblum, TRC; Maria Lopez, Eric Fordham, MWD; Joey Pace, Nicole Osuch, ADEQ; Pam Innis, David Back DOI; Gloria Benson, Renee Kolvet, BLM; Yvonne Meeks, Christina Hong, Scott Potter, Kristin Mancici, Martin Barrackman, Brian Schroth, Jon Roller, PG&E and consultants; Karen Baker, Aaron Yue, Chris Guerre		Agenda Items: Discussion of Groundwater Model Update Pursurant to Agencies' Directive dated October 19, 2015.
3/16/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		4/21/16 TWG meeting is cancelled.
3/21/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		1/29/16 Paleontological Discovery Follow-up
3/21/2016	Dawn Hubbs, Hualapai	Win Wright, TRC, Hualapai: Philbert Wataomigie, Sandy Fling, Sherry Counts; PG&E: Yvonne Meeks; DTSC: Karen Baker		Forwarded letter from Sherry Counts requesting that Win Wright resign from the TRC with supporting documentation.
3/23/2016		Attendees: FMIT: Delbert Holmes; Hualapai: Dawn Hubbs, Lyndee Hornell; CRIT: Howard Magill, Nick Zeyouma; Chemehuevi: Deron Fisher, Jr., Frank Brooks; ESA: Candace Ehringer, Hu Chung, Hedi Rous, Sarah Spano; DTSC: Aaron Yue		Topock Noise and Visual site visit
3/24/2016		Attendees: FMIT: Delbert Holmes; Hualapai: Dawn Hubbs; Chemehuevi: Deron Fisher, Jr.,; ESA: Heidi Rous, Hu Chung,Candace Ehringer, Sarah Spano; PG&E: Curt Russel; Environmental Vision: Chuck Cornwall; DTSC: Aaron Yue		Topock Noise and Visual site visit
3/24/2016	Amanda Sansoucie, Chemehuevi	Win Wright, TRC	DTSC: Karen Baker, PG&E: Yvonne Meeks, Chemehuevi: Charles Wood	Letter from Charles Wood, Chairman, Chemehuevi requesting Win Wright resign from Technical Review Committee
3/28/2016	Aaron Yue, DTSC	Hualapai: Dawn Hubbs; CRIT: Howard Magill; Chemehuevi: Amanda Sansoucies; TRC: Charlie Schlinger; lhornell@gmail.com	ESA, DTSC	Per their request, sent sign-in sheets from 3/23 & 3/24 Noise/Visual Recon
3/30/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided updated table comparing 2011 EIR and final groundwater remedydesign. This fulfills an an action item from the CTF.
4/1/2016	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, wqtech.epa@cit-nsn.gov	Notes and action items from 3/15/16 CTF meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/6/2016	Win Wright, TRC	Karen Baker, DTSC		Shared problems within TRC.
4/7/2016	Bob Prucha, TRC	Karen Baker, Pam Innis	FMIT: Nora McDowell, Leo Leonhart (H&A); Hualapai: Dawn Hubbs, CRIT: Doug Bonamici, Howard Magill; Cocopah: Jill McCormick, Edgar Castillo	Provided link to 4/5/16 presentation on TRC review of Arcadis 2016 Groundwater and Fate/ Transport modeling report.
4/7/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Reminder of CWG meeting on 4/20/16 and special lodging rate at Hampton Inn and Hilton Garden Inn.
4/7/2016	Yolanda Garza, DTSC	CTF Members		Agenda for 4/19/16 CTF, meeting notes and action items from previous meeting, planning calendar
4/8/2016	Aaron Yue, DTSC	CIT: Charles Wood, Jay Cravath; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing March 2016 CWG & TWG emails and attachments.
4/11/2016	Yolanda Garza, DTSC	CTF Members		Asked if members having trouble finding lodging at special rate, let her know and she'll try to help.
4/18/2016	Doug Bonamici, CRIT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Announced Howard Magill's retirement. Aaron Yue asked when Howard will retire? Doug shared he will retire almost immediately. Edgar Castillo, Aaron Yue, Jason West & Dawn Hubbs replied to Doug's announcement that Howard will be missed.
4/19/2016		**Attendees:** FMIT: Nora McDowell, Leo Leonhart (H&A); Cocopah: Edgar Castillo (via telephone); Hualapai: Lyndee Hornell; CRIT: George Bourd-Mackin (via telephone); Chemehuevi: Darrell Fisher, Jr. (via telephone); DTSC: Karen Baker, Yolanda Garza; USDOI: Pam Innis; PG&E: Yvonne Meeks, Kristin Mancini (via telephone); CH2M Hill on behalf of PG&E: Christina Hong; Arcadis on behalf of PG&E: Lisa Micheletti-Cope; USBLM: Renee Kolvet, Amanda Dodson, Gloria Bullets Benson; RWCQB: Robert Perdue (via telephone);		Face-to-Face CTF Meeting. Agenda items included: Roundtable identification of new issues by CTF participants and review of the day's agenda/participant validation of desired outcomes of the meeting; update on recent meetings, activities, project strategies: project update for soil and groundwater, other; overview and update of priorities for action items from the 3/15/16 CTF meeting; Communication and consultation update; RTC process for Soil RI/FS and Risk Assessment; Planning Tribal Leadership meetings of 2017; Review of action items and agenda items for next month.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/20/2016		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); CIT: Steven Escobar, Deron Fisher, Jr.; Cocopah Indian Tribe: Edgar Castillo (via telephone); CRIT: Doug Bonamici, Howard Magill, David Harper, Fawnia James; Hualapai Indian Tribe: Lyndee Hornell; TRC: Charlie Schlinger, Eric Rosenblum, Robert Prucha, Margaret Eggers; DTSC: Karen Baker, Yolanda Garza, Aaron Yue, Isabella Alasti, Chris Guerre (via telephone), Jose Marcos (via telephone), Lori Hare (via telephone); ESA on behalf of DTSC: Addie Farrell (via telephone); CRWQCB: Robert Perdue (via telephone); PG&E: Yvonne Meeks, Curt Russell (via telephone), Juan Jayo, Jose Moreno-Jimenez, Andrea Gooden; CH2M Hill on behalf of PG&E: Christina Hong, Mike Cavaliere; Arcadis on behalf of PG&E: Lisa Micheletti-Cope, Kristin Mancini (via telephone); BLM: Renee Kolvet (via telephone), Gloria Bullets Benson; BOR: Jeff Smith; DOI: Pam Innis (via telephone); MWD: Maria Lopez, Eric Fordham (Geopentech via telephone); ADEQ: Nichole Osuch (via telephone);		Face-to-Face CWG Meeting. Agenda items included: Project highlights; Update on CTF activities; Programmatic Agreement Activities update, Park Moabi update, EIR Mitigation Measures update; CMI/RD update; Soils Investigation update, Project Schedule update
4/28/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent out latest project contact lists with request for review and update as needed.
4/28/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Tentatively scheduled TWG for 5/18/16 is cancelled.
4/28/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared PG&E's 1st Qt. 2016 mitigation measures compliance report
5/2/2016	Nora McDowell, FMIT	Aaron Yue, DTSC and Pam Innis, DOI	FMIT: Timothy Williams, Shan Lewis, Linda Otero, Leo Leonhart; Hualapai: Dawn Hubbs, CRIT: Doug Bonamici; Cocoaph: Jill McCormick, Edgar Castillo; Chemhuevi	FMIT comments on Arcadis' February 2016 document titled, *Development of Groundwater Flow and Solute Transport Models*
5/2/2016	Dawn Hubbs, Hualapai	Aaron Yue, DTSC, and Pam Innis, DOI	Hualapai: Sherry Counts; FMIT: Nora McDowell; CRIT: Doug Bonamici; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Steven Escobar, Raymond Mejia; DTSC: Karen Baker; BLM: Jason West, Gloria Benson	Hualapai comments on Arcadis' February 2016 document titled, Development of Groundwater Flow and Solute Transport Models

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/2/2016	Edgar Castillo, Cocopah	Aaron Yue, DTSC and Pam Innis, DOI	Hualapai: Sherry Counts; FMIT: Nora McDowell; CRIT: Doug Bonamici; Cocopah: Jill McCormick; Chemehuevi: Steven Escobar, Raymond Mejia; DTSC: Karen Baker; BLM: Jason West, Gloria Benson	Hualapai comments on Arcadis' February 2016 document titled, Development of Groundwater Flow and Solute Transport Models
5/2/2016	Nora McDowell, FMIT	Karen Baker, DTSC		Request for follow-up meeting on 5/18/16 with DTSC & DOI to discussTribes response to Arcadis Feb 2016 document, *Development of Groundwater Flow and Solute Transport Models*
5/2/2016	Karen Baker, DTSC	Nora McDowell, FMIT		Replied to Nora's meeting request that after review of comments received a meeting would be helpful. Agree with DOI that conference call would work, but if need a face-to-face meeting, 6/7/16 works best for DTSC, 5/18/16 second choice.
5/6/2016	Aaron Yue, DTSC	CIT: Charles Wood, Jay Cravath; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing April 2016 CWG & TWG emails and attachments.
5/10/2016	Yolanda Garza, DTSC	CTF Members		CTF Teleconference meeting on 5/17/16 agenda and handouts
5/13/2016	Edgar Castillo, Cocopah	Aaron Yue, DTSC	Christopher Harper, Dawn Hubbs, Doug Bonamici, Jill McCormick, Lyndee Hornell, Nora McDowell, Steven Escobar, Raymond Mejia, Monica Strauss, Pam Innis, Jason West	Cocopah comments to Noise Measurements for groundwater SEIR
5/13/2016	Nora McDowell, FMIT	DTSC: Karen Baker, Aaron Yue; DOI: Pam Innis; TRC: Charlie Schlinger; FMIT: Timothy Williams, Shan Lewis, Linda Otero, Leo Leonhart; Hualapai: Dawn Hubbs; Cocopah: Jil McCormick, Edgar Castillo; CRIT: Doug Bonamici;		FMIT comments to Noise Measurements for groundwater SEIR
5/17/2016	Yolanda Garza, DTSC	CTF Members		Reminder and handouts for today's Teleconference CTF meeting.
5/20/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for January - March First Quarter 2016 Groundwater Monitoring Program (GMP) Sampling Select hexavalent chromium well plots
5/20/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Link to Performance Monitoring Program (PMP)-Groundwater Monitoring Program (GMP) Q1 2016 Monitoring Report
5/20/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Link to Performance Monitoring Program (PMP)-Groundwater Monitoring Program (GMP) Q4 and Annual 2015 Monitoring Report
5/23/2016	Yolanda Garza, DTSC	CTF Members		Draft survey for review and comment regarding planning for a TLP meeting.
5/24/2016	Yvonne Meeks, PG&E	CTF Members		Comments to draft survey regarding planning of a TLP meeting

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/25/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Link to 4th Qt. and Annual 2015 PMP (IM3 Performance) and Site-wide groundwater and surface water monitoring report.
5/25/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Link to 1st quarter PMP (IM3 Performance) and Site-wid groundwater and surface water monitoring report.
6/9/2016	Aaron Yue, DTSC	CIT: Charles Wood, Jay Cravath; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Sherry Counts, Dawn Hubbs		Mailing of cd's containing May 2016 CWG & TWG emails and attachments.
6/13/2016	Edgar Castillo, Cocopah	DTSC: Karen Baker; FMIT: Chris Harper, Nora McDowell; Hualapai: Dawn Hubbs, Lyndee Hornell; CRIT: Doug Bonamici; Cocopah: Jill McCormick; CIT: Ron Escobar, Steven Escobar		When is deadline for tribal input regarding content in the draft SEIR. Edgar resent question to Aaron Yue as Karen is on vacation.
6/13/2016	Aaron Yue, DTSC	Edgar Castillo, Jill McCormick, Cocopah	DTSC, ESA	DTSC sent letter on 8/6/15 requesting tribal input by 10/23/15 and received input from Cocopah and FMIT. DTSC director met with tribes on 10/20/15 and offered additional opportunities for tribal input until 3/11/16. ESA is preparing Admin draft SEIR for DTSC. Is there specific concern or information the Tribes would like to present to DTSC for inclusion into the SEIR?
6/14/2016	Nora McDowell, FMIT	Aaron Yue, DTSC	Pam Innis, DOI	Provided link to bridge crossing information at Sacramento Wash in Groundwater Remedy Basis of Design.
6/14/2016	Aaron Yue, DTSC	Nora McDowell, FMIT	Pam Innis, DOI	Thanked Nora for the link. DOI sent additional information as well. Project will be added to the cumalative impact evaluation for the upcoming Supplemental Environmental Impact Report (SEIR).
6/15/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided agenda and handouts for 6/22 TWG meeting. Agenda items include: Tribal concerns and recommeded revisions to the updated Feb. 2016 model; history of modeling issues; modeling technical issues; use of groundwater well data; supplemental USGS studies relevant to model; tribal summary; discussion of groundwater model issues
6/15/2016	Yolanda Garza, DTSC	CTF Members		Provided updated calendar and image of the training center meeting location.
6/16/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Updated call in number on Agenda provided.
6/17/2016	Yolanda Garza, DTSC	CTF Members		Provided agenda and location map for 6/21 CTF meeting.
6/20/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared TWG meeting handouts for 6/22 TWG meeting.
6/21/2016	Yolanda Garza, DTSC	CTF Members		Shared Response to Comments (RTC) table template for Soil RFI-RI
6/21/2016	Yolanda Garza, DTSC	CTF Members		Reminded members that meeting is about to begin and provided location and call-in number.
6/22/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared comments from MWD on the Groundwater Model that was transmitted to DTSC on 5/24.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/22/2016		Attendees: FMIT: Nora McDowell, Luke Johnson, Leo Leonhart (H&A); Hualapai Indian Tribe: Dawn Hubbs; CRIT: Nick Zeyouma; CIT: Ron Escobar; Cocopah Indian Tribe: Edgar Castillo, Jill McCormick; TRC: Eric Rosenblum, Margaret Eggers; DTSC, DOI, BLM, BOR, MWD, PG&E and their consultants Arcadis, RWQCB		Geo/Hydro TWG Workgroup meeting: Agenda Items: Tribes and Technical Review Committee Presenting - Tribal Concerns and Recommended Revisions to the Updated February 2016 Model; Why Modeling is important to the Tribes?, History of Modeling Issues, Model technical issues, Use of groundwater well data, Supplemental USGS studies relevant to model, Tribal Summary, Discussion of groundwater model issues.
6/23/2016	Nora McDowell, FMIT	Aaron Yue, DTSC		Provided discussion points for Topock Model requested at 6/22/16 TWG meeting. Aaron forwarded this to ESA.
6/28/2016	Aaron Yue, DTSC	All Tribal Reps	DTSC, ESA	Invitation to tribes to discuss the proposed mitigation measures for SEIR for GW Remediation project. Proposed meeting is 7/19/16 after the CTF @ 1:30-3:30 at BOR office, NV.
6/28/2016	Nora McDowell, FMIT	Aaron Yue/Tribal Reps	DTSC, ESA	FMIT looks forward to reciept of proposed EIR discussion points for review. 2 hours of discussion doesn't seem like enough for something so important.
6/28/2016	Aaron Yue, DTSC	Nora McDowell, FMIT/Tribal Reps	DTSC, ESA	Since approved Mitigaiton Measures (MM) from 2011 FEIR have been vetted in subsequent meetings with Tribes, many of those measures are in place or completed. Time allocated will mainly be on proposed changes or additons. Can extend time if necessary.
7/1/2016	Yolanda Garza, DTSC	CTF Members		CTF draft agenda and handouts for July meeting.
7/1/2016	Yolanda Garza, DTSC	CTF Members		Map to BOR offices for CTF July meeting.
7/1/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Evaportranspiration by Phreatophytes along the Lower Colorado River at HNWR, AZ
7/5/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Cancellation of 7/21/16 TWG meeting.
7/7/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Proposed Protective Measures for Roosting Bats writtten by Dr. Dave Johnston based on survey results from last summer and this spring.
7/8/2016	Aaron Yue, DTSC	Hualapai Tribe	DTSC, ESA	Forwarded letter "Seeking Tribal Government Input on Development of Draft Tribal Perspectives for the PG&E Remediation Project SEIR" with attatchment: Table 1 - Summary of Native American Concerns Expressed during the Groundwater FEIR Process"
7/8/2016	Aaron Yue, DTSC	Fort Mojave Indian Tribe	DTSC, ESA	Forwarded letter "Seeking Tribal Government Input on Development of Draft Tribal Perspectives for the PG&E Remediation Project SEIR" with attatchment: Table 1 - Summary of Native American Concerns Expressed during the Groundwater FEIR Process"
7/8/2016	Aaron Yue, DTSC	Colorado River Indian Tribe	DTSC, ESA	Forwarded letter "Seeking Tribal Government Input on Development of Draft Tribal Perspectives for the PG&E Remediation Project SEIR" with attatchment: Table 1 - Summary of Native American Concerns Expressed during the Groundwater FEIR Process"

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7/8/2016	Aaron Yue, DTSC	Cocopah Indian Tribe	DTSC, ESA	Forwarded letter "Seeking Tribal Government Input on Development of Draft Tribal Perspectives for the PG&E Remediation Project SEIR" with attatchment: Table 1 - Summary of Native American Concerns Expressed during the Groundwater FEIR Process"
7/8/2016	Aaron Yue, DTSC	Chemehuevi Indian Tribe	DTSC, ESA	Forwarded letter "Seeking Tribal Government Input on Development of Draft Tribal Perspectives for the PG&E Remediation Project SEIR" with attatchment: Table 1 - Summary of Native American Concerns Expressed during the Groundwater FEIR Process"
7/11/2016	Nora McDowell, FMIT	Aaron Yue	FMIT, DTSC, ESA	Request for electronic copy of the Draft SEIR tribal perspective section in Word so they can redline it to submit their edits/comments.
7/12/2016	Aaron Yue, DTSC	Tribal Representatives List		Reminder and agenda for 7/19/16 meeting to discuss the GW Remedy draft SEIR MM concepts.
7/12/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Project contact lists for review and update.
7/13/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Agenda for 7/20/16 CWG meeting.
7/13/2016	Aaron Yue, DTSC	Tribal Representatives List	DTSC, ESA	Provided Mitigation Measures and Monitoring Report (MMRP) table of adopted measures in the 2011 Final Groundwater EIR to assist discussions on the conceptual measures in the SEIR.
7/13/2016	Dawn Hubbs, Hualapai	Yvonne Meeks, PG&E	DTSC, Hualapai, PG&E, Cocopah, FMIT	Comment letter regarding the recent Technical Review Committeee (TRC) concerns.
7/14/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		7/20/16 CWG Handouts 3A - Project highlights, 3B - significant issues, & 3C - action items
7/14/2016	Aaron Yue, DTSC	Tribal Representatives List		Reminder and revised agenda for 7/19/16 meeting to discuss the GW Remedy draft SEIR Mitigation Measures concepts.
7/14/2016	Yolanda Garza, DTSC	CTF Members	DTSC: Aaron Yue, Chris Guerre; BOR: K. Crane	Draft agenda for 7/19/16 CTF meeting.
7/15/2016	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		7/20/16 CWG handout 7A - EIR Mitigation Measures udate and 8A - CMI/RD update
7/15/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		7/20/16 CWG handout 11A - Arizona Well alternatives
7/18/2016	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		7/20/16 CWG Revised Handout 9A - Soil Investigation update.
7/18/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		7/20/16 CWG Handout 10 & 10B - schedule highlights
7/18/2016	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		7/20/16 CWG Handout 9A - Soil Investigation update
7/18/2016	Jason West, BLM	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	Cannot attend the CWG and requested to receive meeting notes. Aaron replied and told him about the significant issues that are sent out that will be shared.
7/19/2016	Yolanda Garza, DTSC	CTF Members		Reminder and call-in number for 7/19/16 CTF meeting.
7/19/2016	DTSC	Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); Cocopah: Edgar Castillo, Jill McCormick (via telephone); Hualapai: Dawn Hubbs; CRIT: David HarperJames Fania; Chemehuevi: Ron Escobar ; DTSC: Karen Baker, Yolanda Garza, Chris Guerre; ESA (DTSC consultant): Addie Farrell, Monica Strauss, Sarah Spano		DTSC and consultant ESA met with Tribal representatives (FMIT, CRIT, Chemehuevi, Hualapai, Cocopah) to discuss mitigation measure concepts for the Subsequent EIR ahead of notice of the Draft SEIR.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
7/19/2016	DTSC	Attendees: CRIT: Doug Bonamici (phone), David Harper, Fawnia James; Cocopah Indian Tribe: Jill McCormick (phone), Edgar Castillo (phone); FMIT: Nora McDowell; H&A on behalf of FMIT: Leo Leonhart; Hualapai Indian Tribe: Dawn Hubbs; CIT: Ron Escobar; TRC: Eric Rosenblum; DTSC, DOI, BLM, CRWQCB, MWD, PG&E and their consultants CH2M Hill & Arcadis		Face-to-Face Clearinghouse Task Force Meeting. Agenda items: Update on SEIR schedule, update on groundwater and soil activities; Overview and update of priorities; Communication and Consultation Update; Soil investigation Data package and summary of mitigation measures; planning Tribal Leadership meetings of 2017.
7/20/2016	Edgar Castillo, Cocopah	Karen Baker, DTSC	FMIT: Christopher Harper, Nora McDowell; Hualapai: Dawn Hubbs, Lyndee Hornell; CRIT: Doug Bonamici; Cocopah: Jill McCormick; CIT: Ron Escobar, Steven Escobar; DTSC: Aaron Yue	Proposed meeting in Lake Havasu on the afternoon of 8/9/16 to have follow-up meeting for SEIR Mitigation Measures meeting. Karen replied that DTSC is not available on that date and would be better to meet before ESA provides the 2nd admin. draft of the SEIR to DTSC on 8/15. Hopes they can participate in the 8/5/16 meeting. Edgar thanked Karen for reply and Cocopah will try to be at the meeting.
7/20/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TCS-4 Decommision Report for information.
7/20/2016	DTSC	**Attendees:** FMIT: Nora McDowell, Michael Sullivan (phone); H&A on behalf of FMIT: Leo Leonhart;CRIT: David Harper, Fawnia James; CIT: Ron Escobar; Hualapai Indian Tribe: Dawn Hubbs; TRC: Margaret Eggers, Robert Prucha, Eric RoseCharlie Schlinger; DTSC, ESA on behalf of DTSC, DOI, USBLM, ADEQ, CRWQCB, SWRCB, PG&E, CH2M Hill on behalf of PG&E: Arcadis on behalf of PG&E, MWD, Geopentech on behalf of MWD		Face-to-Face CWG Meeting. Agenda items: Project highlights, significant issues from 4/20/16 mtg, CWG action items, Response to Comment (RTC) process for soil RFI/RI and Risk Assessment; Draft template for RTCs table for soil RFI/RI and RI; Programmatic Agreement activities update; Park Moabi update; EIR MM update; CIM/RD Update; Soil Investigation update; Project schedule update; Arizona well alternatives.
7/21/2016	Edgar Castillo, Cocopah	Aaron Yue, DTSC	DOI: Pam Innis; BLM: Jason West, Gloria Benson; DTSC: Karen Baker, Ana Mascarenas; Tribal Reps, ACHP: Nancy Brown: CASHPO: Brendan Greenaway; AZSHPO: Ann Howard	Comments regarding the SEIR and review of DTSC's table comparing the 2011 FEIR and the final 100% Groundwater Remedy Basis of Design(BOD) Report.
7/21/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Comments and cover letter from BLM and DTSC to PG&E on the Treatment Plan as requested and record as a CWG action item. Nora McDowell, FMIT, thanked him for the quick response.
7/22/2016	Dennis Patch, Chairman, CRITs	Karen Baker, DTSC	CRIT Tribal Council, David Harper; ESA: Monica Strauss; DTSC: Aaron Yue	Draft Tribal Perspectives for PG&E GW Remediation Project SEIR
7/27/2016	Yolanda Garza, DTSC	Tribal Representatives List	Aaron Yue, Karen Baker	Agenda for 2nd tribal meeting on GW Remedy SEIR MM Meeting 8/5/16. Agenda items: Aesthetics, Biological Resources, and Noise Mitigation Measures.
7/27/2016	Yolanda Garza, DTSC	CTF Members	Aaron Yue	CTF Tribal survey, notes and other documents from 7/19/16 meeting.
8/3/2016	Yolanda Garza, DTSC	CTF Members	Aaron Ye, Chris Guerre	8/16/16 draft agenda and calendar.
8/3/2016	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		8/17/16 TWG is cancelled. Next TWG is 9/21/16.
8/3/2016	Yolanda Garza, DTSC	CTF Members		Reminder to get survey report to her by 8/15/16.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/4/2016	Leo Leonhart, H&A for FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Timothy Williams, Nora McDowell, Linda Otero, Chris Harper, Courtney Coyle, Steven McDonald, David Wolf; DTSC: Karen Baker; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Ron Escboar; CRI: Doug Bonamici	FMIT comments on "Arizona Well Alternatives" (formally opposing any wells in Arizona peninsula)
8/4/2016	Dawn Hubbs, Hualapai	Aaron Yue, DTSC, Pam Innis, DOI	Damon Clarke, Hualapai	Hualapai PropoSed Mitigation Measure Concepts
8/5/2016	DTSC	Attendees: FMIT: Nora McDowell, Linda Otero, Chris Harper; Cocopah: Edgar Castillo, Jill McCormick; Hualapai: Dawn Hubbs; Chemehuevi: Ron Escobar ; DTSC: Karen Baker, Aaron Yue, Yolanda Garza, Chris Guerre; ESA (DTSC consultant): Addie Farrell, Monica Strauss, Sarah Spano		DTSC and consultant ESA met with Tribal representatives (FMIT, Chemehuevi, Hualapai, Cocopah) to continue discussion of mitigation measure concepts for the Subsequent EIR ahead of notice of the Draft SEIR.
8/5/2016	Aaron Yue, DTSC	CIT: Charles Wood, Jay Cravath; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Pauline Jose; Hualapai: Chairperson, Dawn Hubbs		Mailing of cd's containing June and July 2016 CWG & TWG emails and attachments.
8/9/2016	Nora McDowell, FMIT	Aaron Yue, DTSC	Dawn Hubbs, Jill McCormick, Edgard Castillo, Doug Bonamici, Ron Escobar	FMIT Final Draft Topock Proposed Impact Concepts for Cultural Resource Impacts
8/12/2016	Yolanda Garza, DTSC	CTF Members	DTSC: Aaron Yue, Chris Guerre; CIT: Exec. Secretary	8/16/16 CTF draft agenda and calendar. Agenda items: Update on recent meetings, activities, project strategies: project update for soil and groundwater; Overview and update of priorities for action items from the 7/19/16 CTF meeting; Communication and Consultation update; Soil RI/FS Data package and Summary Mitigation Measures; Planning TLP meetings of 2017 - survey results discussion and path forward; review of action items and agenda for next month.
8/15/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Q2 2016 EIR Mitigation Measures Compliance Report for the Final Groundwater Remedy and Soil Investigation
8/15/2016	Dawn Hubbs, Hualapai	Karen Baker, DTSC	Jill McCormick, Edgar Castillo, Ron Escobar, Nora McDowell	Request to discuss two points regarding CUL-1a-4 after the CTF that Yvonne Meeks emailed to tribal reps on 7/22/16. Karen replied that, yes, they can meet to discuss after the CTF.
8/15/2016	Dawn Hubbs, Hualapai	Karen Baker, DTSC	Yolanda Garza, Nora McDowell, Ron Escobar, Edgar Castillo, Jill McCormick	Wanted to ensure that their mitigation meeting from 8/5 will not be discussed at CTF because tribes had asked that the meeting be kept confidential. Karen agreed that the meeting will not be discussed at the CTF.
8/16/2016	Leo Leonhart, H&A for FMIT	CTF Members	Aaron Yue, Chris Guerre, CIT Exec. Sec.	Shared sand tank model demonstrations.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
8/16/2016		Attendees: FMIT: Nora McDowell (phone); H&A on behalf of FMIT: Leo Leonhart (phone); Cocopah Indian Tribe: Edgar Castillo (phone);CIT: Ron Escobar; TRC: Charlie Schlinger; Hualapai Indian Tribe: Dawn Hubbs; DTSC: Karen Baker, Yolanda Garza; BLM: Gloria Bullets Benson (phone); California Regional Water Quality Control Board (CRWQCB): Robert Perdue (phone); PG&E: Yvonne Meeks (phone); Arcadis on behalf of PG&E: Lisa Micheletti-Cope, Kristin Mancini (phone); CH2M Hill: Christina Hong (phone); USDOI: Pam Innis (phone);		Clearinghouse Task Force Meeting. Agenda items included: Update on recent meetings, activities, project strategies: Project update for soil and groundwater; action items, Communication and Consultation update; Soil RI/FS data package and summary MM; Planning Tribal Leadership Meetings of 2017 - Survey results discussion and path forward
8/18/2016	Chris Guerre, DTSC	Dawn Hubbs, Hualapai	Aaron Yue, Karen Baker	Karen mentioned interest in discussing a GWMW. Please call him anytime to tell him the issue and any associated background information.
8/18/2016	Aaron Yue, DTSC	Tribal Representatives List	Karen Baker, Chris Guerre, ESA list	Deadline for input on Tribal Perspectives for PG&E GW Draft SEIR extended to 8/23/16.
8/22/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Second Quarter 2016 PMP (IM3 performance) and Sitewide GMP (groundwater and surface water) monitorng report FYI.
8/26/2016	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	CTF Notes, updated calendar and action item tracking from 8/16/16 CTF.
9/1/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Update on TWG meeting schedule for September and October 2016.
9/6/2016	Nora McDowell, FMIT	Chris Guerre, Aaron Yue, Karen Baker	Pam Innis, DOI, Dawn Hubbs, Hualapai	Request to clarify the intent of 10/5/16 Webex; 10/20 doesn't work for Michael Sullivan; request to hold CWG after CTF on 18th and TWG on 19th at TCS; when will MW-15 and modeling be presented?
9/7/2016	Aaron Yue, DTSC	Nora McDowell, FMIT	Pam Innis, DOI, Karen Baker, DTSC, Chris Guerre, DTSC, Dawn Hubbs, Hualapai	Aaron addressed all of Nora's requests from her 9/6/16 email. Nora replied with a thanks for clarification and appreciate taking Michael's schedule into consideration.
9/7/2016	Pam Innis, DOI	Aaron Yue, DTSC	Nora McDowell, FMIT, Dawn Hubbs, Hualapai, Chris Guerre, Karen Baker	Reserved conference room on 10/5 for DGWP #3 overview if interested. Needs to verify room will have internet capabilities. Nora replied to Pam that she will raise this with the tribes on 9/19/16.
9/7/2016	Dawn Hubbs, Hualapai	Pam Innis, DOI	Aaron Yue, Nora McDowell, Chris Guerre, Karen Baker	Shared her concern about MW-15 spikes noted in 2005 or 2007.
9/12/2016	Yolanda Garza, DTSC	CTF Members	DTSC: Aaron Yue, Chris Guerre; BOR: Jeff Smith	9/20/16 CTF draft agenda and documents. Agenda items include: Update on recent meetings, activities, project strategies: Project update for soil and groundwater; overview and update of priorities for action items from the 8/16/16 CTF meeting; communication and consultation update; Lessons learned summary - soil field investigation; planning TLP meetings of 2017 - survey results discussion and path forward; review of action items and agenda items for next month.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
9/14/2016		Attendees: FMIT: Melvin Homes, Nora McDowell, Delbert Holmes; DOI: Pam Innis; BLM: Renee Kolvet; PG&E/Pivox: Shakeel Jogia, Demetrio Ayala; Yvonne Meeks, Jennifer Darcangelo, Curt Russel, Chris Smith, Glenn Caruso; CH2M Hill: Mike Cavaliere; CRIT: Nick Zeyoviya; GWP: Eli Ludwig, Transcon: Brandy McWerin; DTSC by phone: Jose Marcos, Chris Guerre, Aaron Yue		Soil investigation lessons learned meeting
9/16/2016	Yolanda Garza, DTSC	CTF Members		Request to reserve lodging for October CTF and CWG meeting.
9/20/2016	Yolanda Garza, DTSC	CTF Members		Emailed TLP meeting survey results for discussion at meeting.
9/20/2016		Attendees: FMIT: Nora McDowell; CIT: Ron Escobar; Cocopah Indian Tribe: Jill McCormick, Edgar Castillo; TRC: Eric Rosenblum, DTSC, DOI, BLM, MWD, PG&E and their consultants CH2M Hill & Arcadis, RWQCB		Face-to-Face Clearinghouse Task Force Meeting. Agenda items: Update on recent meetings, activities, project strategies; action items, Communication and consultation update - coordination with DOI/Tribes; Lessons learned summary - soil field investigation; Planning Tribal Leadership Meeting in 2017 - survey results discussion and path forward
9/21/2016	Jose Marcos, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of Topock Soil Data Gap Work Plan (DGWP-3). Comments requested by 10/27/16.
9/23/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Reminder of CWG meeting on 10/19/16 and Soil data gap site walk on 10/20/16.
9/27/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared letter addressed to Yvonne Meeks, PG&E: Gathering of historical well information at PG&E Topock Compressor Station
9/28/2016	Yvonne Meeks, PG&E	Nora McDowell	H&A for FMIT: Leo Leonhart; FMIT: Michael Sullivan; DOI: Pam Innis; DTSC: Aaron Yue, Chris Guerre, Jose Marcos	Forward Nora McDowell's email "Data Gaps #3 information request". All information had been transmitted previously in the data packages, but Yvonne did respond to each question and shared with agencies to keep them in the loop.
9/30/2016	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Meeting notes, calendar and action item matrix from the 9/20/16 CTF meeting.
9/30/2016	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Action Item: Use of QR Codes for Improved communication methods
9/30/2016	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC	Correction to 10/18/16 date for the CTF meeting.
10/4/2016	Aaron Yue, DTSC	PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps,	DTSC/DOI join letter to PG&E providing Agency Directives on Topock Groundwater Remediation Project Model Revisions directing PG&E to set up meeting with representatives of Tribes, Agencies, Stakeholders to collaborate on proposed revisions to the model.
10/4/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Joint direction letter on necessary model revisions.
10/4/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Revised contact lists for Topock Project
10/4/2016	Aaron Yue, DTSC	CIT: Charles Wood, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Manfred Scott; Hualapai: Damon Clarke, Dawn Hubbs		Mailing of cd's containing August & September 2016 CWG & TWG emails and attachments to/from DTSC.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/5/2016		Attendees: FMIT: Nora McDowell, Leo Leonhart, Michael Sullivan; Cocopah: Edgar Castillo; CIT: Ron Escobar; TRC: Eric Rosenblum, Margaret Eggers, Charlie Schlinger; DTSC: Chris Guerre, Jose Marcos, Shukla Roy Semmen, Mike Eichelberger; PG&E: Curt Russell, Yvonne Meeks; CH2M Hill: Jay Piper, Mike Cavaliere, Keith Sheets, Christina Hong; Arcadis: Frank Lenzo, Kristin Mancini; SWRCB: Adriane Nunez; FWS: Carrie Marr; BOR: Jeff Smith; DOI: Pam Innis; Pivox Corp: Marty Bloes		Soil Investigation Data Gap 3 Overview meeting via conference/webcast
10/7/2016	Yolanda Garza, DTSC	CTF Members		Gentle Reminder - Hotel reservations for October Topock Meetings
10/7/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Gentle Reminder - Hotel reservations for October Topock Meetings
10/10/2016	Yolanda Garza, DTSC	CTF Members		Agenda and handouts for 10/18/16 CTF meeting.
10/13/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		10/19/16 CWG meeting agenda, Handouts 3B and 3C and Meeting Survey
10/13/2016	Leo Leonhart, H&A for FMIT	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		FMIT request to make an addition to the 10/19/16 CWG meeting agenda: Reason why dioxins and furans down Bat Cave Wash have now become a focus but not considered during original rounds of RI sampling.
10/13/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Request for RSVP for Alternate MW-Y Site walk at 2:30 PM on 10/19/16. Provided area maps.
10/18/2016		Attendees: H&A for FMIT: Leo Leonhart, Hualapai: Lyndee Hornell; CIT: Ron Escobar; CRIT: Toni Carlyle, Nick Zeyouma; TRC: Eric Rosenblum; DTSC: Karen Baker, Yolanda Garza; USDOI: Pam Innis; MWD: Maria Lopez; BLM: Renee Kolvet, Jason West; CRWQCB: Robert Perdue; PG&E: Yvonne Meeks, Kevin Sullivan, Jose Moreno; Arcadis for PG&E: Kristin Mancini (phone), Lisa Micheletti-Cope; CH2M Hill for PG&E: Christina Hong (phone)		Face-to-Face CTF Meeting. Agenda items included: Roundtable identification of new issues by CTF participants and review of the day's agenda/participant validation of desired outcomes of the meeting; update on recent meetings, activities, project strategies (project update for soil and groundwater and other); Overview and update of priorities for action items from the 8/16/16 CTF; Communication and Consultation Update - Coordination with DOI/Tribes; Planning TLP Meeting in 2017 - Discussion and Path Forward; Topock Meetings Planning for 2017
10/19/2016	Jose Marcos, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Provided UA-1 Letter to DOI dated 9/15/16 in response to an action item from 10/19/16 CWG meeting.
10/19/2016		Attendees: FMIT: Nora McDowell (via telephone), Leo Leonhart (H&A), Michael Sullivan (via telephone); CIT: Ron Escobar; CRIT: Nick Zeyouma, Toni Carlyle; Hualapai Indian Tribe: Lyndee Hornell; TRC: Eric Rosenblum, Robert Prucha, Charlie Schlinger; DTSC, ESA on behalf of DTSC, CRWQCB, SWRCB, PG&E and their consultants CH2M Hill and Arcadis, USBLM, USBOR, USDOI, MWD and their consultant Geopentech, ADEQ		Face-to-Face CWG meeting: Agenda items included: Project highlights, significant issues from 7/20/16 CWG meeting; CWG action items; update on CTF, Subsequent EIR update, Programmatic Agreement activities update; Park Moabi update; EIR Mitigation Measures Update; CMI/RD update; Soil investigation udate; Logistics for 10/20 TWG - soil site walk; Topock detailed schedule and summary of schedule changes.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
10/19/2016		Attendees: FMIT: Chris Harper; CIT: Ron Escobar; CRIT: Nick Zeyouma, Toni Carlisle; Hualapai: Lyndee Hornell; TRC: Eric Rosenblum, Bob Prucha, Charlie Schlinger; PG&E: Curt Russell; CH2M Hill: Mike Cavaliere; DTSC: Chris Guerre, Aaron Yue; Elia Ludwig, Groundwater Partners		Monitoring Well X-Y Site Walk
10/20/2016		Attendees: CRIT: Nick Zeyouma; CIT: Ron Escobar; Hualapai: Lyndee Hornell; FWS: Carrie Marr; TRC: Bob Prucha, Eric Rosenblum; DTSC: Karen Baker, Dot Lofstrom, Chris Guerre, Jose Marcos; DOI: Pam Innis; BLM: Renee Kolvet; PG&E: Curt Russell; CH2M Hill for PG&E: Keith Sheets, Christina Hong, Mike Cavaliere; Groundwater Partners: Elia Ludwig;		Monitoring Well X-Y Site Walk
10/21/2016	Leo Leonhart, H&A for FMIT	Jose Marcos, DTSC	FMIT: Michael Sullivan, Nora McDowell	UA-1: Request for draft versions of Plates 4A and 4B in the Data Gap Assessment. Jose forwarded the request to Mike Cavaliere, CH2M Hill. Mike Cavaliere send the draft plates requested on 10/27/16.
10/25/2016	Yolanda Garza, DTSC	CTF Members		TLP inquiry and 11/15/16 CTF in BOR. Options for TLP based on 10/19 CTF listed. CTF meeting via phone conference and satellite meeting venue included.
10/27/2016	Edgar Castillo, Cocopah	Karen Baker, DTSC, Yvonne Meeks, PG&E, Sandra Flint, TRC; Pam Innis, DOI		Finalized version of the Tribes-TRC protocols.
10/27/2016	Jill McCormick, Cocopah	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Linda Otero, Chris Harper; CIT: Ron Escobar; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici; BLM: Jason West, Gloria Benson Bullets; CA SHPO: Julianne Planco, Ann Howard	Comments on the 9/21/16 Topock Soil RFI/RI Plan to Address Data Gaps Identified during DGWP-3
10/27/2016	Dawn Hubbs, Hualapai	Aaron Yue, DTSC, Pam Innis DOI	Hualapai: Damon Clarke, Philbert Watahomigie	Comments on 9/21/16 Topock Soil RFI/RI - Plan to Address Data Gaps Identified During Work Plan Implementation (DGWP-3)
10/27/2016	Michael Sullivan, FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Timothy Williams, Shan Lewis, Linda Otero, Nora McDowell, Leo Leonhart, Courtney Coyle; BLM: Jason West; DTSC: Karen Baker, Ana Mascarenas; Tribal Reps CRIT, Cocpah, Hualapai & CIT; TRC	Fort Mojave Indian Tribe Comments on Data Gap Work Plan-3
10/31/2016	Nora McDowell, FMIT	CTF Members		FMIT response to 10/25/16 email from Yolanda Garza regarding options for the TLP meeting. Yolanda replied that responses to the inquiry will be discussed at the November CTF meeting.
10/31/2016	Edgar Castillo, Cocopah	CTF Members		Cocopah response to 10/25/16 email from Yolanda Garza regarding options for the TLP meeting. Expressed disappointment of FMIT, Cocopah & Hualapai tribes.
11/1/2016	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		11/16/16 TWG meeting is cancelled.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/2/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of Q3 2016 EIR Mitigation Measures Compliance Report for the Final Groundwater Remedy and Soil Investigation
11/3/2016	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, Eric Rosenblum, TRC	CTF agenda and handouts for 11/15/16 meeting.
11/4/2016	Yolanda Garza, DTSC	CTF Members		Yolanda asked that each member reply to her whether they will attend the CTF meeting in person or not. Replies: Edgar Castillo, Cocopah: calling in; Yvonne Meeks, PG&E and support: calling in; Nora McDowell, FMIT: calling in;
11/7/2016	Leo Leonhart, H&A for FMIT	Aaron Yue, DTSC, Pam Innis, DOI	FMIT: Timothy Willliams, Nora McDowell, Linda Otero, Chris Harper, Courtney Coyle, Steven McDonald, David Wolf; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; CIT: Ron Escobar; CRIT: Doug Bonamici; BLM: Jason West, Renee Kolvet; DTSC: Karen Baker	FMIT Comments on "Arizona Well Alternatives"
11/8/2016	Nora McDowell, FMIT	Pam Innis, DOI	FMIT: Timothy Williams, Shan Lewis, Linda Otero, Leo Leonhart, Michael Sullivan; Cocopah: Jill McCormick, Edgar Castillo: Hualapai: Dawn Hubbs; Chemehuevi: Ron Escobar; CRIT: David Harper, Toni Carlyle, Doug Bonamici; BLM, TRC	Pam forwarded to DTSC & PG&E: Fort Mojave Indian Tribe Response (FMIT) to California Department of Toxic Substances Control (DTSC) September 15, 2016, Letter re Undesignated Area 1 (UA-1)
11/10/2016	Jose Marcos, DTSC	Yvonne Meeks, PG&E	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	DTSC's approval letter of the "Technical Memorandum - Topock Soil RFI/RI Plan to Address Data Gaps Identified During Work Plan Implementation (DGWP-3)", dated September 21, 2016
11/10/2016	Yolanda Garza, DTSC	Nora McDowell, FMIT	CTF Members	Response to the letter received on October 31, 2016 regarding the Clearinghouse Task Force Tribal Leadership inquiry.
11/10/2016	Yolanda Garza, DTSC	Jill McCormick & Edgar Castillo, Cocopah	CTF Members	Response to the letter received on October 31, 2016 regarding the Clearinghouse Task Force Tribal Leadership inquiry.
11/10/2016	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		No TWG meetings in November or December 2016
11/10/2016	Aaron Yue, DTSC	CIT: Charles Wood, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Manfred Scott; Hualapai: Damon Clarke, Dawn Hubbs		Mailing of cd's containing October 2016 CWG & TWG emails and attachments to/from DTSC.
11/14/2016	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, Eric Rosenblum, TRC	Agenda and handouts for 11/15/16 Webex/Phone meeting:

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
11/14/2016	Jill McCormick, Cocopah	Yolanda Garza, DTSC, Edgar Castillo, Cocopah	CTF Members	Clarification that Edgar Castillo, Cocopah, did not participate in the October CTF meeting mentioned in 11/10/16 response to Cocopah's 10/31/16 letter.
11/14/2016	Yolanda Garza, DTSC	Jill McCormick & Edgar Castillo, Cocopah	CTF Members	Yolanda will add Jill McCormick's clarification that Edgar Castillo, Cocopah, did not participate in the October CTF meeting for the record.
11/14/2016	Yolanda Garza, DTSC	CTF Members	AaronYue, DTSC, Eric Rosenblum, TRC	Provided agenda and handouts for the 11/15/16 CTF meeting and clarification that meeting time is 10:00 AM Pacific Standard Time.
11/15/2016	Leo Leonhart, H&A for FMIT	Yolanda Garza, DTSC	CTF Members	Asked for clarification on the time zone reflected in the CTF agenda.
11/15/2016		Attendees: FMIT: Nora McDowell; H&A on behalf of FMIT: Leo Leonhart; Cocopah Indian Tribe: Edgar Castillo; CIT: Ron Escobar; Hualapai Indian Tribe: Dawn Hubbs; TRC: Margaret Eggers, DTSC, DOI, BLM, RWQCB, MWD, PG&E and their consultants CH2M Hill, Arcadis		Phone/Webex CTF meeting. Agenda included: Project update for soil and groundwater; action items; Communication and Consultation update; Planning Tribal Leadership Workshop of 2017; Topock Meetings Planning for 2017
11/15/2016	Aaron Yue, DTSC	Nora McDowell & Michael Sulllivan, FMIT	FMIT: Timothy Williams, Shan Lewis, Linda Otero, Nora McDowell, Leo Leonhart, Courtney Coyle, All Tribal Reps & TRC, DTSC: Karen Baker, Ana Mascarenas, Pam Innis, DOI	Response to Fort Mojave Indian Tribe letter dated 10/27/16 - "Comments on Data Gap Work Plan - 3 (DGWP-3)"
11/15/2016	Aaron Yue, DTSC	Jill McCormick & Edgar Castillo, Cocopah	FMIT: Linda Otero, Chris Harper; Chemehuevi: Ron Escobar; Hualapai: Dawn Hubbs; CRIT: Doug Bonamici; DTSC: Karen Baker; DOI: Pam Innis; BLM: Jason West, Gloria Benson Bullets; CSHPO: Julianne Polanco; ASHPO: Ann Howard	Response to Cocopah Indian Tribe letter dated October 27, 2016 - "Comments on the September 21st, 2016 Topock Soil RFI/RI - Plan to Address Data Gaps Identified During Work Plan Implementation (DGWP-3)"
11/15/2016	Aaron Yue, DTSC	Dawn Hubbs, Hualapai	Hualapai: Damon Clarke, Philbert Watahomigie; DTSC: Karen Baker, Jose Marcos; DOI: Pam Innis	Response to Hualapai Tribe letter dated October 27, 2016 - "Comments on the September 21st, 2016 Topock Soil RFI/RI - Plan to Address Data Gaps Identified During Work Plan Implementation (DGWP-3)"
11/18/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Supplemental and Errata Information for Final (100%) Design for the Final Groundwater Remedy.
11/21/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Annual project update fact sheet
11/30/2016	Yolanda Garza, DTSC	CTF Members		Meeting notes, calendar and action items from 10/18/16 CTF meeting
12/5/2016		Attendees: FMIT: Chris Harper, Delbert Holmes, Michael Sullivan; CIT: Ron Escobar; CRIT: Nick Zeyouma; Hualapai: Dawn Hubbs, DTSC, PG&E and their consultants CH2M Hill, DOI, Pat Maloney		Soil-Historical Resources Field Check

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
12/8/2016	Nora McDowell, FMIT	CTF Members		Tribal decision to proceed with 2/22/17 Tribal Leadership Orientation meeting and request for phone meeting to discuss meeting content and final agenda. Assumed Yolanda Garza will facilitate the call.
12/9/2016	Aaron Yue, DTSC	CIT: Charles Wood, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Manfred Scott; Hualapai: Damon Clarke, Dawn Hubbs		Mailing of cd's containing November 2016 CWG & TWG emails and attachments.
12/14/2016	Karen Baker, DTSC	Nora McDowell, FMIT, Yvonne Meeks, PG&E, Pam Innis, DOI, Yolanda Garza, DTSC, Aaron Yue, DTSC, Kevin Sullivan, PG&E		Replied to Nora's 12/8/16 email regarding setting up a planning meeting for the Tribal Leadership meeting. Since DTSC cannot be involved in the 2/22 meeting due to conflict with public notice of SEIR, PG&E agreed to support the meeting.
12/21/2016	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Happy holiday wishes. Replies received from FMIT: Leo Leonhart; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Doug Bonamici, Hualapai: Dawn Hubbs, PG&E, CH2M Hill, BLM, TLI, DOI
1/3/2017	Aaron Yue, DTSC	CIT: Charles Wood, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Manfred Scott; Hualapai: Damon Clarke, Dawn Hubbs		Mailing of cd's containing November & December 2016 CWG & TWG emails and attachments to/from DTSC.
1/4/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		No TWG meeting for January 2017
1/4/2017	Yolanda Garza, DTSC	CTF Members		Agenda and handouts for 1/17 CTF
1/4/2017		Attendees: FMIT: Nora McDowell, Michael Sullivan, M. Holmes, Delbert Holmes, Chris Harper; CRIT: Toni Carlyle, Nick Zeyouma, PG&E and their consultants CH2M Hill, GWP, TWS, Transcon, DTSC, DOI, Applied Earthworks, WAN		Data Gap Work Plan 3 Kick off meeting
1/6/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		No TWG meeting for January 2017
1/9/2017	Yolanda Garza, DTSC	CTF Members		2017 preliminary calendar for review and comments.
1/10/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Third Quarter 2016 Project Status Update- Topock Arizona Wells
1/10/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PMP-GMP Q3 2016 Monitoring Report - Posted
1/10/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for July-October Third Quarter 2016 GMP Sampling
1/12/2017	Yolanda Garza, DTSC	CTF Members		Most recent version of calendar for 2017.
1/12/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Cancellation of February 23rd TWG meeting.
1/12/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Topock Model Addendum Report
1/12/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA	ESA	Announcement on availability of Draft SEIR for Review

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1/12/2017	Ron Letcher, Potential homebuyer in Golden Shores	Aaron Yue, DTSC		Wants to know if Goldenshore water supply is contaminated before purchasing home. Aaron replied and explained history and contamination on the project. He suggested he also check with Golden Shores Water Company, ADEQ, and attend open house on 1/31/17 for more information.
1/12/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Agenda for the 1/18/17 CWG meeting.
1/12/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 3A (Project Highlights) for 1/18/17 CWG meeting.
1/12/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 3B Significiant Issues from 10/19/16 CWG and 3C (Action Items) for 1/18/17 CWG meeting.
1/13/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 5A - Overview of Draft SEIR for 1/18/17 CWG meeting.
1/13/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 13A - CWG Meeting Survey Result for 2017 for 1/18/17 CWG meeting.
1/14/2017	Jill McCormick, Cocopah	Jason West, BLM	Karen Baker, DTSC, Pam Innis DOI, Renee Kolvet, BLM, Tribal Reps., Yvonne Meeks, PG&E, Jennifer Darcangelo	2016 Annual Archaeological and Historical Site Monitoring and Condition Assessments Report
1/17/2017	Yolanda Garza, DTSC	CTF Members		Powerpoint presentation on Local Hire Program
1/17/2017		Attendees: FMIT: Nora McDowell; H&A on behalf of FMIT: Leo Leonhart; Cocopah Indian Tribe: Edgar Castillo (phone); CIT: Ron Escobar; Hualapai Indian Tribe: Lyndee Hornell, Dawn Hubbs; CRIT: Jennifer Corona, David Harper; TRC: Charlie Schlinger; DTSC, DOI, BLM, BOR, RWQCB, MWD, PG&E, CH2M Hill on behalf of PG&E, Arcadis on behalf of PG&E		Clearinghouse Task Force Meeting: Agenda items included: Update on recent meetings, activities, project strategies: Project update for soil and groundwater; review of action items; communication and consultation update; Local Hire Program
1/18/2017		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A), Michael Sullivan (phone); CIT: Ron Escobar; Cocopah: Edgar Castillo (phone); CRIT: David Harper, Jennifer Corona; Hualapai Indian Tribe: Dawn Hubbs, Lyndee Hornell; TRC: Eric Rosenblum, Robert Prucha (phone), Charlie Schlinger, Margaret Eggers, DTSC & their consultant ESA, PG&E & their consultants CH2M Hill, Arcadis, Pivox, BLM, BOR, USDOI, MWD		Consultative Work Group Face-To-Face meeting. Agenda items: Project Highlights; Significant Issues from 10/19/16 CWG; Action Items; Update on CTF Activities; Overview of Draft Subsequent EIR; Programmatic Agreement Activities update, Park Moabi update, EIR Mitigation Measures update, Progress on Topock Groundwater Remediation, Progress on Soil Investigation, Project Schedule update, Meeting survey results
1/26/2017	Yolanda Garza, DTSC	CTF Members	Aaron Yue, DTSC, David Harper, CRIT, Jose, PG&E, Jeffery Smith, USBOR, Jennifer Corona, CRIT, Lyndee Hornell, Hualapai	February CTF is cancelled due to the Tribal Executive Leadership meeting. Notes, action items and calendar from January CTF attached.
1/27/2017	Edgar Castillo, Cocopah, Nora McDowell, FMIT, Jill McCormick, Cocopah, Dawn Hubbs, Hualapai	Aaron Yue, DTSC & Pam Innis, DOI	TRC, BLM: Jason West,Renee Kolvet, Gloria Bullets Benson; FMIT: Leo Leonhart; PG&E: Yvonne Meeks	Recommendations Concerning Future Topock Flow and Contaminant Transport Modeling

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
1/31/2017		Attendees: FMIT: Nora McDowell, Angie Alvarado, Leo Leonhart (H&A); Chemehuevi: Ron Escobar; TRC: Margaret Eggers, Bob Prucha, Charlie Schlinger, Eric Rosenblum; Other: Peter Collis, Ruth Musser-Lopez		Final GW Remediation Draft SEIR Public Meeting, Needles, CA
2/1/2017		Attendees: FMIT: Nora McDowell, TRC: Eric Rosenblum; DOI: Michaela Noble; CH2M Hill: Keith Sheets; ADEQ: Nichole Osuch; Mohave Co DPH: Patty Mead; Other: Eli Ludwig, Mary Farrell, Sandy Hayes, James Gustafson, Ronald Wilson, Don Oswill, Leonard Snyder, Mark & Eileen Sparks, Joe Buckles, Linda Wayland,		Final GW Remediation Draft SEIR Public Meeting, Golden Shores, AZ
2/22/2017		Attendees: FMIT: Felton Bricker, Sandy Bricker, Christopher Harper, Charlotte Knox, Nora McDowell, Linda Otero, Jimmie Jordon, Timothy Williams, Leo Leonhart (H&A); Cocopah: J. Deal Begay, Jr., Edgar Castillo, Sherry Cordova, Edmund Domingues, Rosa Long, Jill McCormick; Hualapai: Damon Clarke, Stewart Crozier, Lindee Hornell, Dawn Hubbs, Jean Pagilawa, Philbert Watahomigie, Sr.; Chemehuevi: Ron Escobar, Steven Escobar, Winston Escobar, Edward Butch Ochoa, Sierra Pencille, Charles Wood; CRIT: David Harper, Jennifer Corona, Nick Zeyouna; TRC: Margaret Eggers, Bob Prucha, Eric Rosenblum, Charlie Schlinger; DTSC: Mohsen Nazemi, Yolanda Garza; DOI: Pam Innis, William Lodder, Michaela Noble; BLM: Gera Ashton, Gloria Benson, Renee Kolvet; BOR: John Ladd, Jeffery Smith; USFWS: Carrie Marr; PG&E: Jennifer Darcangelo, Jose Moreno Jimenez, Curt Russell, Virginia Strohl, Kevin Sullivan; CH2M Hill: Mike Cavaliere; Arcadis: Lisa Micheletti-Cope, Steven Perry		Tribal Executive Leadership Meeting presented by Interested Tribes and Department of Interior (DOI) with support from Bureau of Land Management (BLM) and PG&E. : Agenda items included: Project Overview - Kevin Sullivan, PG&E, Carrie Marr, USFWS: protection of biological resources; Federal Presentations by USDOI, BLM; Poster session, Panel discussion by Tribal Representatives from FMIT, Chemehuevi, Cocopah, & Hualapai; Tribal Leadership Discussion, Next Steps, Action Items, and Assigned tasks for moving forward; Optional site visit with DOI
2/23/2017		DTSC: Mohsen Nazemi, Yolanda Garza; FMIT, Cocopah, Hualapai, Chemehuevi		Topock site visit presented by PG&E with DOI and Interested Tribes. Tribal and Cultural views shared by FMIT, Cocopah, Hualapai and Chemehuevi tribes.
2/27/2017	Edgar Castillo, Cocopah	DTSC: Aaron Yue, Karen Baker, Mohsen Nazemi	FMIT: Christopher Harper, Nora McDowell; CRIT: David Harper, Toni Carlyle, Doug Bonamici; Hualapai: Dawn Hubbs, Lyndee Hornell; Cocopah: Jill McCormick, Lyndee Hornell, CIT: Ron Escobar	Edgar appointed by participating tribes (FMIT, CIT & Hualapai) to request a 1 week extension to the SEIR comment period deadline.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
2/27/2017	Aaron Yue	Edgar Castillo, Cocopah, Karen Baker & Mohsen Nazemi, DTSC	FMIT: Christopher Harper, Nora McDowell; CRIT: David Harper, Toni Carlyle, Doug Bonamici; Hualapai: Dawn Hubbs, Lyndee Hornell; Cocopah: Jill McCormick, Lyndee Hornell, CIT: Ron Escobar; Remy Moose Manley: Andee Leisy,; ESA: Addie Farrell, Sarah Spano	Response to Request for DSEIR Comment Period Extension: In the interest of cooperation and based on the provisions of Section 21091 (d) (A), as well as CEQA guidelines Section 15207, the Tribes can submit comments after the close of the comment period. DTSC will accept, consider and respond to Tribal comments received until 5:00 PM, March 6, 2017 without officially extending the Draft SEIR comment period which ends today.
3/2/2017	Aaron Yue	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PG&E Topock: Submittal of Q4 2016 EIR Mitigation Measures Compliance Report for the Final Groundwater Remedy and Soil Investigation
3/6/2017	Jill McCormick, Cocopah	DTSC: Aaron Yue, Mohsen Nazemi; DOI: Pam Innis, William Lodder; Michaela Noble, Nancy Brown, Julianne Polanco, Kathryn Leonard, Ann V Howard		Cocopah Comments on the Draft Subsequent Environmental Impact Report (DSEIR)
3/6/2017	Aaron Yue	Jill McCormick, Edgar Castillo, Cocpah	ESA: Addie Farrell, Sarah Spano	Inquired about attachments referenced at the end of the comment table that are not attached. Jill replied that there are no additional attachments. Aaron thanked her for the clarification.
3/6/2017	Nora McDowell, FMIT	Aaron Yue, DTSC	FMIT: Timothy Williams, Shan Lewis, Linda Otero, Leo Leonhart, Michael Sullivan, Christopher Harper, Courtney Coyle, Steven McDonald; DTSC: Mohsen Nazemi, Karen Baker, Ana Mascarenas; DOI: Pam Innis, Jason West, ahoward@azstateparks.gov, Julianne Polanco; Cocopah: Jill McCormick, Edgar Castillo; Hualapai: Dawn Hubbs; Chemehuevi: Ron Escobar; CRIT: David Harper, Doug Bonamici	Fort Mojave Comment Letter on Draft Subsequent Environmental Impact Report
3/6/2017	Aaron Yue	Dawn Hubbs, Hualapai	ESA: Addie Farrell, Sarah Spano	Inquired about attachments referenced at the end of the comment table that are not attached. Jill replied that there are no additional attachments. Aaron thanked her for the clarification.
3/6/2017	Yolanda Garza, DTSC	CTF Members		CTF draft agenda for 3/14/17, 3/6/17 action items, CTF purpose revised draft, draft mtg notes, calendar
3/6/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		No TWG meeting is scheduled for March.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
3/7/2017	Nora McDowell, FMIT	Aaron Yue, DTSC	FMIT: Timothy Williams, Shan Lewis, Linda Otero, Leo Leonhart, Michael Sullivan, Christopher Harper, Courtney Coyle, Steven McDonald; DTSC: Mohsen Nazemi, Karen Baker, Ana Mascarenas; DOI: Pam Innis, Jason West, ahoward@azstateparks.gov, Julianne Polanco; Cocopah: Jill McCormick, Edgar Castillo; Hualapai: Dawn Hubbs; Chemehuevi: Ron Escobar; CRIT: David Harper, Doug Bonamici	Sent pdf of Attachments A, B and C - FMIT comment leter on DSEIR document to replace docx file sent on 3/6/17.
3/14/2017	Yolanda Garza, DTSC	CTF Members		Reminder of CTF phone meeting today.
3/14/2017	Yolanda Garza, DTSC	CTF Members		Reminder that meeting start time is at 10:00 AM PST.
3/14/2017		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); Cocopah Indian Tribe: Jill McCormick, Edgar Castillo; TRC: Margaret Eggers DTSC: Aaron Yue, Yolanda Garza; DOI: Pam Innis; PG&E: Kevin Sullivan, Curt Russell, Jennifer D'Arcanegelo, Jose Moreno-Jimenez; Arcadis on behalf of PG&E: Lisa Micheletti Cope, Kristin Mancini; CH2M Hill on behalf of PG&E: Christina Hong; BLM: Gloria Benson;		Clearinghouse Task Force Phone/WebEx Meeting. Agenda included: - Project Update for Soil and Groundwater - Priorities for action items - Communication and consultation update - Assembly Bill 52
3/15/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for Jan-March First Quarter 2017 GMP Sampling
3/15/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for November-December Fourth Quarter 2016 GMP Sampling
3/24/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PMP-GMP Q4 2016 and Annual Monitoring Report - Posted
3/28/2017	Aaron Yue	Hualapai: Dawn Hubbs; FMIT: Nora McDowell, Linda Otero, Chris Harper; CRIT: David Harper; Cocopah: Jill McCormick, Edgar Castillo; CIT: Ron Escobar; CRIT: James Fawnia	FMIT: Leo Leonhart; TRC, ESA, DTSC	Meeting invitation to discuss draft SEIR mitigation measure comments received. Propose meeting after CWG on 4/19 and the following morning on 4/20.
3/28/2017	Dawn Hubbs, Hualapai	Aaron Yue, DTSC	Hualapai: Dawn Hubbs; FMIT: Nora McDowell, Linda Otero, Chris Harper; CRIT: David Harper; Cocopah: Jill McCormick, Edgar Castillo; CIT: Ron Escobar; CRIT: James Fawnia	Hualapai will attend the 4/19 & 4/20 meeting to discuss DSEIR mitigation measure comments received.
3/29/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		4/19/17 CWG meeting reminder and hotel reservation information.
3/30/2017	Yolanda Garza, DTSC	CTF Members		Agenda and attachments for 4/18/18 CTF meeting.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
4/11/2017	Aaron Yue, DTSC	FMIT: Nora McDowell, Linda Otero, Christopher Harper; Hualapai: Dawn Hubbs; CRIT: David Harper, Fawnia James; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Ron Escobar	H&A: Leo Leonhart; TRC: Charlie Schlinger, Eric Rosenblum, Margaret Eggers, Ron Prucha; DTSC: Karen Baker, Chris Guerre, Yolanda Garza; ESA: Sarah Spano, Monica Strauss, Candace Ehringer	Meeting invitation to discuss draft SEIR mitigation measure comments received and Agenda. Agenda items include: - Review of tribal comments on SEIR mitigation measures: Existing measures: Bilogical Resources, Cultural Resources, Hydrology, Noise; and Suggested Measures
4/12/2017	Yolanda Garza, DTSC	CTF Members		Updated agenda and handouts for 4/18 CTF meeting.
4/12/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Topock IM-3 Combined Fourth Quarter 2016 Monitoring and Semi-annual and Annual O&M Report.
4/12/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Submittal of combined CMP 2016 Annual Groundwater Monitoring Report/PAR for Topock Interim Measures No. 3
4/13/2017	Yolanda Garza, DTSC	CTF Members		Revised CTF calendar
4/14/2017	Aaron Yue, DTSC	CIT: Charles Wood, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Manfred Scott; Hualapai: Damon Clarke, Dawn Hubbs		Mailing of cd's containing February and March 2017 CWG & TWG emails and attachments.
4/18/2017	Yolanda Garza, DTSC	CTF Members		DTSC Tribal Affairs presentation for 4/18/17 CTF meeting.
4/19/2017		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); Cocopah: Edgar Castillo, Jill McCormick; CRIT: Jennifer Corona, Toni Carlyle; Hualapai Indian Tribe: Dawn Hubbs; TRC: Eric Rosenblum (phone), Robert Prucha (phone), Charlie Schlinger, Margaret Eggers; DTSC and their consultants ESA, PG&E and their consultants CH2M Hill & Pivox; BLM, BOR, MWD, ADEQ, CRWQCB		Face to Face Consultative Work Group meeting: Agenda included: - Project Highlights - Significant Issues from 1/18/17 CWG - CWG Action Items - CTF Activities - PA Activities - Park Moabi update - Tribal and Stakeholder presentations - EIR MM update - Progress on GW cleanup - Progress on soil investigation - Project schedule update
4/19/2017		Attendees: FMIT: Nora McDowell, Leo Leonhart; Cocopah: Edgar Castillo, Jill McCormick; CRIT: Jennifer Corona, Toni Carlyle; Hualapai: Dawn Hubbs; TRC: Charlie Schlinger, Margaret Eggers; DTSC: Karen Baker, Aaron Yue, Yolanda Garza; ESA: Addie Farrell, Sarah Spano, Monica Strauss, Candace Ehringer		Meeting to discuss comments on the Draft Subsequent EIR Mitigation Measures (Final GW Project SEIR)

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4/24/2017	Nora McDowell, FMIT	Aaron Yue and Pam Innis	FMIT: Timothy Willliams, Shan Lewis, Linda Otero; BLM: Jason West Rene Kolvet, Gloria Bullets Benson; DTSC: Karen Baker, Mohsen Nazemi, Ana Mascarenas; Cocopah: Jill McCormick, Edgar Castillo; Hualapai: Dawn Hubbs; CRIT: David Harper, Toni Carlyle, Jennifer Corona; Chemehuevi: Ron Escobar; TRC: Ron Prucha, Eric Rosenblum, Charlie Schlinger, Margaret Eggers	Attachment to FMIT letter on January 9, 2017 Topock Groundwater Modeling. Aaron Yue responded that we will consider the comments regarding the modeling addendum.
4/24/2017	Dawn Hubbs, Hualapai	DTSC: Aaron Yue, Karen Baker, Mohsen Nazemi; DOI: Pam Innis; BLM: Gloria Bullets Benson, Renee Kolvet, Jason West; Hualapai: Philbert Watahomigie Sr., Damon R. Clarke		Comments and Recommendations Concerning January 9, 2017 Topock Groundwater Modeling Addendum. Aaron replied that the agencies will review and consider the comments.
4/24/2017	Jill McCormick and Edgar Castillo, Cocopah	Aaron Yue and Pam Innis	BLM: Jason West, Renee Kolvet, Gloria Bullets-Benson; DTSC: Karen Baker, Mohsen Nazemi, Ana Mascarenas; Tribal Reps	Comments and Recommendations Concerning January 9, 2017 Topock Groundwater Modeling Addendum. Aaron replied that the agencies will review and consider the comments.
4/27/2017	Jill McCormick, Cocopah	DOI: Pam Innis; DTSC: Aaron Yue, Karen Baker, Mohsen Nazemi, Ana Mascarenas; BLM: Renee Kolvet, Jason West; FMIT: Nora McDowell; Hualapai: Dawn Hubbs; Chemehuevi: Ron Escobar; CRIT: Toni Carlyle		Cocopah's Response to Cultural and Historic Properties Treatment Plan. Aaron Yue acknowledged that we will review the comments, confer with BLM & PG&E if necessary and provide a response to these comments.
5/11/2017	Yolanda Garza, DTSC	CTF Members		CTF conference call next week and postponement of TWG until June.
5/15/2017	Aaron Yue	Thomas Gates, California Energy Commission	DTSC, ESA	Request to meet regarding the Genesis project mitigation measures. Thomas Gates replied that he is available to meet and added that the mitigation was for Cahuilla, Chemehuevi and Mojave affiliated tribes; 16 tribes in all including CRIT. Aaron replied with meeting time of 1:30 on Tuesday.
5/16/2017	Aaron Yue, DTSC	FMIT: Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Jennifer Corona, Toni Carlyle; Chemehuevi: Escobar, Ron Escobar	ESA, DTSC, TRC	Postponement of 5/23/17 follow-up tribal meeting on mitigation measure comments until further along in our evaluations.
5/16/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared updated contact lists for CWG, TWG, Tribal Reps., ESA, & TRC

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Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
5/16/2017	Nora McDowell, FMIT; Dawn Hubbs, Hualapai	Aaron Yue, DTSC	FMIT: Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Jennifer Corona, Toni Carlyle; Chemehuevi: Escobar, Ron Escobar, ESA, DTSC, TRC	RE - Rescheduling of tribal meeting: appreciate the situation and look forward to rescheduling the meeting.
5/16/2017	Karen Baker, DTSC	CTF Members		Reminder that conference call meeting is about to start.
5/16/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Contact lists as of 5/1/17 for review and update.
5/23/2017	Edgar Castillo, Cocopah	Monica Strauss, ESA	FMIT: Nora McDowell; Cocopah: Jill McCormick	Request for 6/9/17 teleconference between tribes and ESA only.
5/24/2017	Monica Strauss, ESA	Edgar Castillo, Cocaph	FMIT: Nora McDowell; Cocopah: Jill McCormick	Yes, ESA is available for a teleconference with tribes on 6/9/17.
5/26/2017	Yolanda Garza, DTSC	CTF Members		Draft notes, action items and calendar from the 5/16 CTF.
5/30/2017	Aaron Yue, DTSC	Jill McCormick, Cocopah		Phone discussion: ESA/DTSC contacted Jill on the proposed mitigation measures follow-up meeting with Tribes. Edgar proposed to have a conference call on une 9. DTSC/ESA is not sure of the objective of that proposed meeting. In past discussion (post April meeting with Tribes) we understand that Cocopah has additional thoughts on Mitigation Measures that were not provided during the April meeting. We wanted to hear from Cocopah some of their concerns and suggestions. Jill followed up with Tribal Council and was given feedback. She will put something in writing by this week. She is also unclear of the nature of the proposed meeting on June 9th. She will find out from Edgar and get it postponed.
5/31/2017	Nora McDowell, FMIT	Monica Strauss, ESA	Cocopah: Jill McCormick, Edgar Castillo	Thanked Monica for her quick response and will send a list of topics for discussion next week.
6/1/2017	Jill McCormick, Cocopah	Aaron Yue, DTSC, Monica Strauss, ESA, Edgar Castillo, Cocopah		Nora is okay with cancelling 6/9/17 meeting. Working on MM document and will get it to you ASAP.
6/1/2017	Aaron Yue, DTSC	Cocopah: Jill McCormick, Edgar Castillo; ESA: Monica Strauss		DTSC will notify tribes when read to have a follow-up to the April meeting.
6/1/2017	Jill McCormick, Cocopah	Aaron Yue, DTSC		Proposed funding to aid the tribe in continued restoration of the Limitrophe region of the Colorado River corridor. Also, would like to support Hualapai's mitigation proposal for a cultural preserve, educational scholarships, and the trail study/landscape study.
6/1/2017	Aaron Yue, DTSC	Dawn Hubbs, Hualapai		Appendix C drawings are only available in hard copy right now. Inquired if she wants him to ask PG&E to pursue an electronic version from PG&E for her.
6/1/2017	Dawn Hubbs, Hualapai	Aaron Yue, DTSC		Reply to Aaron's email: Wants paper and electronic copy, but doesn't want it mentioned to PG&E that the electronic copy is per their request. Aaron replied that he will not mention that Hualapai is asking for a copy.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
6/2/2017	Aaron Yue, DTSC	CIT: Charles Wood, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRITS: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Sr., Chase Choate, Manfred Scott; Hualapai: Damon Clarke, Dawn Hubbs		Mailing of cd's containing April and May 2017 CWG & TWG emails and attachments.
6/4/2017	Jill McCormick, Cocopah	Aaron Yue, DTSC		Cocopah comments on the Draft SEIR Mitigation Measures
6/7/2017	Doug Bonamici, CRIT/Leo Leonhart (H&A)	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared a link from OSHA for a Heat Stress Prevention app
6/12/2017	Yolanda Garza, DTSC	CTF Members		Agenda, calendar and action items for next CTF meeting on 6/20/17.
6/20/2017	Nora McDowell, FMIT	CTF Members		Asked if we had a heat stroke on the phone system during the CTF meeting.
6/20/2017	Yolanda Garza, DTSC	CTF Members		
6/21/2017		Attendees: FMIT: Nora McDowell, Michael Sullivan, Leo Leonhart (H&A), CIT: Ron Escobar; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Toni CarlyleTRC: Charlie Schlinger, Eric Rosenblum, Bob Prucha, Margaret Eggers; DTSC, CH2M Hill, MWD, DOI, USFWS, Pivox, Arcadis, Iris		TWG Webinar meeting. Agenda: Overview of Soil Data Gap Work Plan No. 3 Results.
6/23/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Upcoming TWG meeting on 8/16/17
6/23/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		PGUE Topock PMP-GMP Q1 2017 Monitoring Report
6/23/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared Arizona groundwater data as well as emails regarding a sampling frequency change in AZ Well MW-55-120.
6/23/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Fourth Quarter 2016 Project Status Update - Topock Arizona Wells
6/23/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for April-June Second Quarter 2017 GMP Sampling
6/26/2017	Yolanda Garza, DTSC	FMIT: Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Jennifer Corona, Toni Carlyle; CIT: Ron Escobar	DTSC, ESA	Invitation to follow-up Tribal meeting on mitigation measures on 7/17/17 at 1:30-4, BOR in Boulder City.
6/27/2017	Yolanda Garza, DTSC	CTF Members		Draft notes, calendar and action items from the 6/20/17 CTF meeting.
6/28/2017	Yolanda Garza, DTSC	CTF Members		Correction to 6/27/17 email that date of next TWG meeting is postponed to August 16th.
7/6/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Forwarded the Bio Completion Report for the soil sampling activities between November 2015 and April 2017 on behalf of BLM and USFWS.
7/12/2017	Yolanda Garza, DTSC	CTF Members		Draft agenda for 7/18/17 CTF, notes and action items from 6/20 CTF
7/12/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Proposed aAgenda for 7/18/17 CWG meeting.
7/12/2017	Aaron Yue, DTSC	FMIT: Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; Hualapai: Dawn Hubbs; CRIT: Jennifer Corona, Toni Carlyle; CIT: Ron Escobar, Steven Escobar	DTSC	Future Activity Allowance 25%: DTSC is proposing to have a meeting with tribes next Thursday to go over the communication strategy/protocol to be followed during construction & O&M of the groundwater remedy.
7/13/2017	Nora McDowell, FMIT	DTSC: Aaron Yue, Cocopah: Jill McCormick, Edgar Castillo, Hualapai: Dawn Hubbs; CRIT: Jennifer Corona, Toni Carlyle, CIT: Ron Escobar, Steven Escobar	DTSC: Karen Baker, Yolanda Garza	Inquired if Mitigation Measures will also be discussed at the Future Activity Allowance 25% meeting? Aaron replied that, yes, he just sent an email.

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
7/13/2017	Karen Baker, DTSC	DTSC: Aaron Yue, Cocopah: Jill McCormick, Edgar Castillo, Hualapai: Dawn Hubbs; CRIT: Jennifer Corona, Toni Carlyle, CIT: Ron Escobar, Steven Escobar	DTSC: Yolanda Garza	Also replied to Nora's email that the 7/18 meeting is to discuss the proposed communication strategy/protocol flow chart for the Future Activity Allowance in the SEIR. On 8/14, DTSC Exec Staff would like to meet with tribes to discuss DTSC responses to tribal comments on the Draft SEIR prior to finalization of the document.
7/18/2017		**Attendees:** FMIT: Nora McDowell; H&A on behalf of FMIT: Leo Leonhart; Hualapai: Dawn Hubbs; CRIT: Jennifer Corona, Toni Carlyle; Cocopah Indian Tribe: Edgar Castillo; CIT: Ron Escobar; TRC: Margaret Eggers; DTSC, USBLM, USBOR, CRWQCB, PG&E and their consultants CH2M Hill & Arcadis, USDOI, MWD		Clearinghouse Task Force Meeting. Agenda Items included: Project update for Soil and Groundwater; Overview and update of priorities from action items from 6/20/17 CTF meeting; Communication and Consultation Update - coordination with DOI/Tribes; Discussion on physical model;
7/19/2017		**Attendees:** FMIT: Nora McDowell, Leo Leonhart (H&A); Hualapai Indian Tribe: Dawn Hubbs; TRC: Margaret Eggers, Charlie Schlinger, Eric Rosenblum, Robert Prucha; CIT: Ron Escobar; Cocopah Indian Tribe: Edgar Castillo (phone), Jill McCormick (phone); CRIT: Toni Carlyle, Jennifer Corona; DTSC, CRWQCB, PG&E and their consultants CH2M Hill, Arcadis & Pivox; USBLM, USBOR, USDOI, MWD, ADEQ		CWG meeting: Agenda items: Announcements and project highlights; Update on CTF activities; Programmatic Agreement Activities update, EIR Mitigation Measures update, Progress on groundwater Cleanup; Progress on Soil Investation/Transition to Soil Risk Assessment; Project Schedule update
7/19/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Sent out different phone number to call in to the CWG meeting.
7/20/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Resend of letters and emails on the issue associated with the land ownership for the remediation sytem (separated in two batches due to file size).
7/24/2017	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Lodging reservation information for upcoming TWG meeting on 8/16/17
7/25/2017	Yolanda Garza, DTSC	CTF Members		Meeting notes, action items, sign in, calendar and remembrance from 7/18/17 TWG meeting.
7/28/2017	Yolanda Garza, DTSC	CTF Members		Reminder that deadline is 7/31 for lodging availability at a reduced rate (Aug 15/16 CTF)
7/28/2017	Yolanda Garza, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Reminder that deadline is 7/31 for lodging availability at a reduced rate (Aug 15/16 CTF)
8/3/2017	Yolanda Garza, DTSC	CTF Members		Agenda and handouts for 8/15/17 CTF meeting.
8/7/2017	Nora McDowell, FMIT	Aaron Yue, DTSC	FMIT: Timothy Williams, Shan Lewis, Linda Otero, Leo Leonhart; DTSC: Karen Baker, Ana Mascarenas, Mohsen Nazemi; Cocopah: Jill McCormick, Edgar Castillo; Hualapai: Dawn Hubbs; Chemehuevi: Ron Escobar, Steve Escobar; CRIT: David Harper, Toni Carlyle; TRC: Charlie Schlinger, Margaret Eggers, Bob Prucha, Eric Rosenblum	FMIT Comment letter on Future Activity Allowance 25% and Flowchart
8/7/2017	Jose Marcos, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		August 16, 2017 TWG Agenda

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8/8/2017	Aaron Yue, DTSC	FMIT: Nora McDowell; Hualapai: Dawn Hubbs; CRIT: Toni Carlyle, Jennifer Corona, David Harper; CIT: Ron Escobar; Cocopah: Edgar Castillo, Jill McCormick	Karen Baker, Yolanda Garza, DTSC	Revised Communication Protocol flow chart in response to 7/18/17 tribal comments to be discussed at 8/15 meeting prior to the CTF.
8/14/2017		Attendees: FMIT: Linda Otero, Shan Lewis, Nora McDowell, Leo Leonhart; CIT: Ron Escobar, Steven Escobar; Cocopah: Edgar Castillo, Jill McCormick; DTSC: Barbara Lee, Mohsen Nazemi, Dot Lofstrom, Karen Baker, Aaron Yue, Yolanda Garza		Tribal-DTSC Meeting
8/15/2017		Attendees: FMIT: Nora McDowell, Chris Harper; Cocopah: Jill McCormick, Edgar Castillo; CIT: Ron Escobar; CRIT: Jennifer Corona; Hualapai: Dawn Hubbs; DTSC, DOI, PG&E, USBR, BLM		Annual Monitoring Meeting - Tribes/DTSC/DOI
8/15/2017		Attendees: FMIT: Nora McDowell, Leo Leonhart, H&A (phone); CRIT: Toni Carlyle (phone); Cocopah: Edgar Castillo, Jill McCormick; Chemehuevi: Ron Escobar; Hualapai: Dawn Hubbs; TRC: Margaret Eggers; DTSC, USDOI, PG&E and their consultants CH2M Hill and Arcadis; BLM, MWD, & BOR		Clearinghouse Task Force Meeting. Agenda included: - Project update for Soil and Groundwater - Overview and update of priorities for action itens from the 6/20/17 CTF meeting - Communication and Consultation update - coordination with DOI/Tribes - Discussion on physical model, video and Orientation
8/16/2017		Attendees: FMIT: Michael Sullivan, Nora McDowell, Leo Leonhart, H&A (phone); Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Jennifer Corona; TRC : Eric Rosenblum, Charlie Schlinger, Bob Prucha, Margaret Eggers; DTSC, BLM, BOR DOI, FWS, PG&E and their consultants Arcadis, CH2M Hill, Integral, Iris Env., MWD		Technical Work Group Meeting.
8/17/2017	Karen Baker, DTSC	CTF Members	Aaron Yue, DTSC	Updated CTF 2017 Planning Calendar
8/17/2017	Karen Baker, DTSC	FMIT: Nora McDowell; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Ron Escobar; CRIT: Toni Carlyle		As requested, sent final fully signed MOU between DTSC and DOI
8/18/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Shared the 2nd Quarter 2017 EIR Mitigation Measures Compliance report.
8/18/2017	Dawn Hubbs, Hualapai	Barbara Lee, DTSC	DTSC: Mohsen Nazemi, Aaron Yue, Karen Baker; Hualapai: Damon Clarke, Philbert Watahomigie; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Brian Etsitty, Toni Carlyle, Doug Bonamici; Chemehuevi: Steven Escobar, Ron Escobar	Formal Review Request from the Hualapai Tribal Historic Preservation Office in Regards to SEIR Review.

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8/29/2017	Nora McDowell, FMIT	Karen Baker, DTSC		Follow-up on sidebar discussion on 8/15 and 8/14/17 Tribes-DTSC meeting. Request for Cul-5 language now. Also asked what point in the CEQA process did DTSC decide to exclude FMIT. Asked for summary of information provided to her and the rationale. Also asked that the NOP be circulated for future CEQA actions in compliance with AB52.
8/31/2017	Karen Baker, DTSC	Nora McDowell, FMIT		In reply to Nora's email on 8/29/17, Karen explained that the NOP is still pre-decisional and cannot be shared at this time and has not been shared with anyone outside of DTSC. The exclusion of FMIT from CUL-5 is on the basis of the 2012 Settlements between DTSC/FMIT and PGE/FMIT. Karen shared the waiver language from the DTSC-FMIT Settlement Section 10, part c, Waiver and Sextion X Dismissal of Amended Petition, Release and Waiver B. Director Lee committed to circulation of the NOP to implement AB52 which will be reiterated in the response to comments on the SEIR.
9/6/2017	Aaron Yue, DTSC	CIT: Charles Wood, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRIT: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Chase Choate, Manfred Scott; Hualapai: Damon Clarke, Dawn Hubbs		Compact discs containing CWG/TWG emails and attachments from DTSC provided during June - August 2017.
9/7/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		TWG meeting scheduled for 9/20/17 has been cancelled.
9/12/2017	Yolanda Garza, DTSC	CTF Members	Aaron Yue, Steven Perry	Calendar, draft agenda for 9/19; mtg notes from 8/15/17; action items 8/15/17; 2018 Orientation Syllabus draft
9/13/2017	Jill McCormick, Cocopah	Pam Innis, DOI, Jason West, BLM, Karen Baker, DTSC, Aaron Yue, DTSC, Mark Slaughter, BOR	Edgar Castillo, Cocopah	Advised that any members of the TRC in attendance for the meeting today are not representing the Cocopah tribe on matters of consultation. They do not speak for the Cocopah tribe or represent the tribe for matters of consultations in any way. Any issues regarding consultation should be directed to the Tribal Council and Cultural Resources Department staff. Karen Baker thanked her for letting us know.
9/13/2017	Yolanda Garza, DTSC	CTF Members	Aaron Yue, Steven Perry, Curt Russell, Jose Moreno-Jimenez	8/15/17 action items, 2018 Topock Orientation Syllabus draft, Calendar, draft notes 8/15/17, draft agenda 9/19/17
9/13/2017		Attendees: FMIT, CRIT, CIT, Cocopah, Hualapai, DTSC, DOI, BLM		Meeting to discuss development of protocol for consultation during construction.
9/19/2017	Yolanda Garza, DTSC	CTF Members	Aaron Yue, Steven Perry, Curt Russell, Jose Moreno-Jimenez	Gentle Reminder - meeting is today at 10 AM.
9/19/2017		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); Cocopah: Jill McCormick, Edgar Castillo; PG&E: Kevin Sullivan, Curt Russell, Jose Moreno; CH2M Hill: Christina Hong; Arcadis: Kristin Mancini, Steven Perry; MWD: Maria Lopez; DOI: Pam Innis, BLM: Rene Kolvet; DTSC: Karen Baker, Yolanda Garza		Clearinghouse Task Force Teleconference. Agenda items included: - Project update for Soil & Groundwater - Overview and update of priorities for action items from the August 15, 2017 CTF meeting - Communication and Consultation update - Coordination with DOI/Tribes - Discussion on Updates to Physical Model and Video

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9/27/2017	Yolanda Garza, DTSC	CTF Members	Curt Russell, Aaron Yue, Jose Moreno-Jimenez	Drft CTF notes from 9/19/17, action items and calendar for review and comment
9/29/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Window for room reservations for October meetings at a discounted rate closed 10/2/17.
10/3/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Annual meeting survey and lodging reminder for October 2017 meetings
10/5/2017	Yolanda Garza, DTSC	CTF Members	Curt Russell, Aaron Yue, Jose Moreno-Jimenez	CTF meeting 10/17/17 agenda and handouts
10/12/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Latest contact lists for review and update.
10/12/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		CWG meeting agenda for 10/18/17
10/12/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handouts 3B (significant issues from July 2017 CWG), and 3 C (action items
10/13/2017	Aaron Yue, DTSC	Dawn Hubbs, Hualapai, Nora McDowell, FMIT, Jill McCormick, Cocopah, Edgar Castillo, Cocopah	CWG, Tribal Reps	Agencies response to Tribal Comments on January 2017 Addendum to the Groundwater Flow and Solute Transport Models
10/13/2017	Christina Hong, CH2M Hill	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handouts 6A (EIR Mitigation Measures Implementation Update), 7A (Groundwater Cleanup Update), & 8A (soils update) for 10/18/17 CWG meeting
10/13/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handout 3A - (Project Highlights) for 10/18/17 CWG.
10/16/2017		Attendees: FMIT: Chris Harper; CIT: Winston Escobar, Ron Escobar; CRIT: Nick Zeyouma, Toni Carlyle, Bryan Etsitty; Cocopah: Edgar Castillo, Jill McCormick; Hualapai: Dawn Hubbs; Pat Moloney (AE?); PG&E: Curt Russell, Jennifer Darcangelo; DTSC: Aaron Yue		Annual Site Assessment Preparation Meeting
10/17/2017		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); CRIT: Jennifer Corona, Toni Carlyle Cocopah: Jill McCormick, Edgar Castillo; Hualapai: Dawn Hubbs; CIT: Ron Escobar, Winston Escobar; TRC: Margaret Eggers; DTSC, USDOI, PG&E and their consultants CH2M Hill & Arcadis; BLM, BOR, MWD		Clearinghouse Task Force Meeting: Agenda items included: Update on recent meetings, activities, project strategies: Project update for soil and groundwater; review of action items; communication and consultation update; Updates to Physical Model and Video
10/17/2017		Attendees: FMIT: Nora McDowell, Leo Leonhart (H&A); CIT: Ron Escobar, Winston Escobar; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; CRIT: Toni Carlyle, Jennifer Corona; TRC: Margaret Eggers, Charlie Schlinger; DTSC, DOI, BLM		Second meeting to further discuss consultation during construction.
10/18/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Handouts 9A (detailed schedule) and 9B (summary of key changes) for 10/18/17 CWG

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10/18/2017		Attendees: FMIT: Nora McDowell, Michael Sullivan, Leo Leonhart (H&A); Cocopah Indian Tribe: Edgar Castillo, Jill McCormick; CRIT: Toni Carlyle (phone), Jennifer Corona (phone);Hualapai Indian Tribe: Dawn Hubbs; TRC: Margaret Eggers, Charlie Schlinger, Robert Prucha; DTSC: Dot Lofstrom, Karen Baker, Yolanda Garza, Aaron Yue, Isabella Alasti, Chris Guerre (phone), Lori Hare (phone); CRWQCB: PG&E: Kevin Sullivan, Curt Russell, Matt Dudley, Juan Jayo; CH2M Hill on behalf of PG&E: Christina Hong; Arcadis on behalf of PG&E: Lisa Micheletti-Cope; USBLM: Renee Kolvet, Gloria Bullets Benson (phone); USBOR: Jeff Smith; USDOI: Pam Innis; Geopentech on behalf of DOI: Eric Fordham; MWD: Maria Lopez, Jill C. Teraoka (phone); Arizona Department of Environmental Quality (ADEQ): Nichole Osuch (phone)		Consultative Work Group face-to-face meeting. Agenda items included: - Announcements and project highlights - Update on CTF activities - Programmatic Agreement Activities update - Update on EIR mitigation measures implementation - Progress on GW cleanup - Progress on Soil Risk Assessment/Soil RFI/RI Reporting - Project schedule update - Meeting survey
10/30/2017	Nora McDowell, FMIT	Barbara Lee, DTSC	FMIT: Timothy Williams, Shan Lewis, Dwolff, Linda Otero, Charlotte Knox; Hualapai: Dawn Hubbs; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Ron Escobar, Steve Escobar; CRIT: Doug Bonamici, Bryan Etsitty, Toni Carlyle; DTSC: Mohsen Nazemi, Ana Mascarenas, Karen Baker, Aaron Yue; EPA: Yana Garcia; DOI: Pam Innis	Request to extend Final SEIR review period to 30 days. Karen replied to Nora that she is discussing the request with Director Lee and should be able to respond shortly.
10/30/2017	Edgar Castillo, Cocopah	Barbara Lee, DTSC	FMIT: Nora McDowell; CRIT: Bryan Etsitty, Jennifer Corona, Toni Carlyle; Hualapai: Dawn Hubbs, Lyndee Hornell; Cocopah: Jill McCormick; Chemehuevi: Ron Escobar; DTSC: Mohsen Nazemi, Karen Baker, Ana Mascarenas, Aaron Yue; EPA: Yana Garcia; DOI: Pam Innis	Request to extend Final SEIR review period to 30 days. Karen replied to Edgar that she is discussing the request with Director Lee and should be able to respond shortly.

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10/30/2017	Ron Escobar, Chemehuevi	Barbara Lee, DTSC	Barbara Lee forwarded to DTSC: Isabella Alasti, Mohsen Nazemi, Ana Mascarenas, Karen Baker; EPA: Yana Garcia	Request to extend Final SEIR review period to 30 days. Karen replied to Ron that she is discussing the request with Director Lee and should be able to respond shortly.
11/6/2017		Attendees: FMIT: Chris Harper, Cecil Collier, Sr.; Cocopah: Jill McCormick, Edgar Castillo; CIT: Winston Escobar, Ron Escobar; CRIT: Nick Zeyouma, Rudy Martinez; Hualapai: Dawn Hubbs; Applied Earthworks: Renee Elder, Pat Moloney, Diane Douglas; PG&E: Kim Cueras, Curt Russell, Glenn Caruso, Jennifer Darcangelo; DTSC: Aaron Yue;		Topock Annual Site Condition Assessment
11/6/2017	Aaron Yue, DTSC	CIT: Charles Wood, Steven Escobar; Cocopah: Sherry Cordova, Jill McCormick; CRIT: Dennis Patch, Wilfred Nabahe; FMIT: Timothy Williams, Linda Otero; Fort Yuma-Quechan: Keeny Escalanti, Chase Choate, Manfred Scott; Hualapai: Damon Clarke, Dawn Hubbs		CDs containing emails and attachments provided to the CWG/TWG from DTSC during September - October 2017.
11/7/2017		Attendees: FMIT: Chris Harper, Cecil Collier, Sr.; Cocopah: Jill McCormick, Edgar Castillo; CIT: Winston Escobar, Ron Escobar; CRIT: Nick Zeyouma, Rudy Martinez; Hualapai: Dawn Hubbs; Applied Earthworks: Renee Elder, Pat Moloney, Diane Douglas; PG&E: Kim Cueras, Glenn Caruso, Jennifer Darcangelo; DTSC: Aaron Yue; DOI: Pam Innis		Topock Annual Site Condition Assessment
11/8/2017		Attendees: FMIT: Chris Harper, Delbert Holmes; Cocopah: Jill McCormick, Edgar Castillo; CIT: Winston Escobar, Ron Escobar; CRIT: Nick Zeyouma, Rudy Martinez; Hualapai: Dawn Hubbs; Applied Earthworks: Renee Elder, Pat Moloney, Diane Douglas; PG&E: Jennifer Darcangelo; DTSC: Aaron Yue; DOI: Pam Innis		Topock Annual Site Condition Assessment
11/9/2017		Attendees: FMIT: Chris Harper, Nora McDowell; Cocopah: Jill McCormick, Edgar Castillo; CIT: Winston Escobar, Ron Escobar; CRIT: Nick Zeyouma, Rudy Martinez, Rene Von Fleet, Toni Carlyle; Hualapai: Dawn Hubbs; PG&E: Glenn Caruso		Topock Annual Site Condition Assessment
11/13/2017	Yolanda Garza, DTSC	CTF Members	Aaron Yue, Bryan Etsitty, Jose Moreno-Jimenez	CTF cancellation proposal for 12/5/17 meeting and 10/17/17 draft notes and documents.
11/14/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		2017 Topock Southwestern Willow Flycatcher Presence/Abasence Survey Reports
11/14/2017	Aaron Yue, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Topock Groundwater Remediation Project Pre-Construction Floristic Survey Report - Spring 2017
11/17/2017	Chris Guerre, DTSC	CWG, Geo Hydro TWG, TRC, Tribal Reps, ESA		Results for July - October 3rd Qt. 2017 GMP Sampling
11/17/2017	Aaron Yue, DTSC	Curt Russell, Christina Hong	CWG, TWG, Tribal Reps., TRC	Direction on Refinement of Risk Assessment Evaluation

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11/20/2017	Aaron Yue, DTSC	FMIT: Chris Harper, Nora McDowell; CRIT: Toni Carlyle, Bryan Etsitty; Cocopah: Jill McCormick, Edgar Castillo; Chemehuevi: Ron Escobar; Hualapai: Dawn Hubbs; PG&E: Curt Russell	BLM: Renee Kolvet; PG&E: Jennifer Darcangelo	Verification of information gathered during the 2017 annual site condition assessment for review and update by 12/1/17.
12/4/2017		Hualapai: Dawn Hubbs; DTSC: Mohsen Nazemi, Karen Baker, Aaron Yue, Yolanda Garza		DTSC met with Dawn Hubbs, Hualapai, in response to August 18, 2017 letter request to evaluate Pump and Treat in lieu of selected groundwater remedy.
12/5/2017		Attendeees: FMIT, CRIT, CIT, Cocopah, Hualapai, DTSC, DOI, FWS, BLM		CHPMP meeting hosted by BLM.
12/5/2017		Attendees: FMIT: Nora McDowell, Linda Otero, Shan Lewis, Chris Harper, Leo Leonhart (H&A); CRIT: Toni Carlyle, Bryan Etsitty, Douglas Bonamici; CIT: Winston Escobar, Ron Escobar; Cocopah: Jill McCormick, Edgar Castillo; Hualapai: Dawn Hubbs; TRC: Margaret Eggers; DTSC: Mohsen Nazemi, Karen Baker, Aaron Yue, Yolanda Garza		DTSC/Tribal meeting on Supplemental EIR. Agenda items: - Final SEIR Response to Comments/ Finalization of the SEIR: - Cumulative Mitigation for Impact to the Topock Traditional Cultural Property - Use of the Future Activity Allowance in the Draft SEIR/ Communication Protocol - Assembly Bill 52 - Final SEIR Schedule and Delivery Preference
12/6/2017		Attendees: FMIT: Nora McDowell, Linda Otero, Leo Leonhart (H&A); CRIT: Doug Bonamici, Bryan Etsitty, Toni Carlyle; CIT: Ron Escobar, Winston Escobar; Hualapai: Dawn Hubbs; DTSC: Karen Baker, Aaron Yue, Yolanda Garza, Chris Guerre (phone); BLM: Gloria Benson, Renee Kolvet; DOI: Mike Anderson (phone)		DOI meeting on Consultation during Construction.

KEY:

Yellow = Fort Mojave Indian Tribe (FMIT)
Orange = Multiple tribes including FMIT
Light Green = Multiple tribes **NOT including** FMIT
Light blue - Chemehuevi Indian Tribe
Red - Cocopah Indian Tribe
Light Purple = Colorado River Indian Tribes (CRIT)
Light Pink = Fort Yuma-Quechan Indian Tribe
Aqua = Havasupai Indian Tribe
Bright Green = Hualapai Indian Tribe
Hot Pink = Torres-Martinez Indian Tribe
Light Orange = Twenty-Nine Palms Indian Tribe
Green = Yavapai-Prescott Indian Tribe
= Other Tribal Contacts
Gray - Technical Review Committee Members

Acronyms Used:

ACHP	Advisory Council on Historic Preservation
ADEQ	Arizona Department of Environmental Quality
AZ SHPO	Arizona State Historic Preservation Office
BIA	Bureau of Indian Affairs
BLM	United States Bureau of Land Management
BOD	Basis of Design
BOR	United States Bureau of Reclamation
C/RAWP	Construction/Remedial Action Work Plan
CA SHPO	California State Historic Preservation Office
CEQA	California Environmental Quality Act
CFG	California Department of Fish and Game
CHPMP	Cultural and Historic Properties Management Plan
CIMO	Cultural Impacts Mitigation Program
CIT	Chemehuevi Indian Tribe
CMI/RD	Corrective Measures Implementation/ Remedial Design
CMP/PAR	
COPCs/COPECs	Constutients of Potential Concern/Constituents of Poential Enviromental Concern
CRWQCB	California Regional Water Quality Control Board
CTF	Clearinghouse Task Force
CWG	Consultative Workgroup
DEIR	Draft Environmental Impact Report
DOI	United States Department of Interior
DTSC	California Department of Toxic Substances Control

Date	Entity From/ Effort Made By	To/Attendees	cc:	Communication Subject
			EDAW/AECOM	EIR Consultant to DTSC. EDAW became AECOM during course of EIR preparation

APPENDIX ENERGY

Energy Calculations

Topock
Fuel Conversion

Construction Fuel Consumption Summary

	gallons		Constructin Length
Year	**Diesel**	**Gas**	**Months**
Pre Construction	55,602	14,109	4
Phase 1	352,980	45,956	19
Phase 2	186,165	29,674	12
IM3 Decom.	85,660	7,957	15
Decommissioning	149,283	20,468	12
FFA	90,886	8,057	12
Total	***771,294***	***105,753***	62
Average Annual	149,283	20,468	
State Usage (2012)	2,600,000,000	14,600,000,000	
Project % State	0.0057%	0.0001%	

Annual Operational Fuel Consumption

	gallons	
	Diesel	**Gas**
Phase 1/Phase 2		
	3,870	46,705
Offroad Activities (includes Generators)		
	51,779	0
Total Operational		
	55,649	46,705
Project % State	0.0021%	0.0003%

Assumptions

10.15	diesel	KgCO2/gallon[1]
8.91	gasoline	KgCO2/gallon[1]
1	MT = 1,000 kilograms	

Construction	diesel	Used for trucks (haul and vendor) and off-road equipment
	gasoline	worker vehicles
	*Mitigated and unmitigated emissions will be the same as vehicle use does not change.	
Operation	diesel	Majority of trucks and buses
	gasoline	remaining vehicle mix

LCFS & Pavley assumed for on-road vehicles after year 2011

1 U.S. Energy Information Administration Voluntary Reportion of Greenhouse Gases Program, located here: http://www.eia.gov/oiaf/1605/coefficients.html

Topock

Fuel Conversion - Construction

	Total CO_2 MT/yr	Fuel Type	Factor $KGCO_2$/gal	Gallons	Total Diesel (gal)	Total Gas (gal)
Pre Construction (Total)						
Off-road	261.84	diesel	10.15	25,796.99		
Haul	240.6761	diesel	10.15	23,711.93		
Vendor	61.849	diesel	10.15	6,093.50		
Worker	125.7083	gasoline	8.91	14,108.68	55,602.41	14,108.68
Phase 1 (total)						
Off-road	3,024.91	diesel	10.15	298,020.40		
Haul	0	diesel	10.15	0.00		
Vendor	557.8373	diesel	10.15	54,959.34		
Worker	409.4651	gasoline	8.91	45,955.68	352,979.74	45,955.68
Phase 2 (Total)						
Off-road	1,575.64	diesel	10.15	155,235.00		
Haul	0	diesel	10.15	0.00		
Vendor	313.9416	diesel	10.15	30,930.21		
Worker	264.3969	gasoline	8.91	29,674.18	186,165.20	29,674.18
IM3 Decommissioning (Total)						
Off-road	778.00	diesel	10.15	76,649.79		
Haul	0	diesel	10.15	0.00		
Vendor	91.453	diesel	10.15	9,010.15		
Worker	70.8997	gasoline	8.91	7,957.32	85,659.94	7,957.32
Future Activities Allowance						
Off-road	907.23	diesel	10.15	89,382.19		
Haul	0.08	diesel	10.15	7.52		
Vendor	15.19	diesel	10.15	1,496.79		
Worker	71.79	gasoline	8.91	8,056.69	90,886.49	8,056.69

APPENDIX GWMM

Groundwater FEIR and SEIR Mitigation Measures Comparison Table

GROUNDWATER FEIR AND SEIR MITIGATION MEASURES COMPARISON TABLE

1.1 Introduction

This table presents a comparison between the mitigation measures included in the Topock Compressor Station Groundwater Remediation Project Final EIR (DTSC 2011) as reflected in the Mitigation Monitoring and Reporting Program (MMRP) approved by DTSC on January 31, 2011, and those presented in this subsequent environmental impact report (SEIR) for the Pacific Gas and Electric Company Topock Compressor Station Final Groundwater Remediation Project (Final Groundwater Remedy Project). The original measures are presented as they were approved in the MMRP. The strikeout/underline reflects the modifications and additions presented in this SEIR for the Final Groundwater Remedy Project.

Groundwater FEIR and SEIR Mitigation Measures Comparison Table
Aesthetics
Mitigation Measures AES-1: Substantial Adverse Effects on Scenic Vistas (Groundwater FEIR Measure with Revisions) ~~Impacts on Views from Topock Maze Locus B, a Scenic Vista (Key View 5).~~
The proposed ~~p~~Project shall be designed and implemented to adhere to the design criteria presented below:~~.~~ a) Existing mature plant specimens (i.e., medium- to large-sized trees, large or prominent shrubs, and tall predominately herbaceous) shall be protected in place during construction, operation, and decommissioning phases consistent with CUL1a-5. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation consistent with CUL-1a-5. b) Revegetation of disturbed areas within the riparian vegetation along the Colorado River shall occur concurrently with construction operations. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any riparian vegetation is disturbed and shall be implemented consistent with CUL1a-5. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist. c) Plant material shall be consistent with surrounding native vegetation. d) The color of the wells, pipelines, reagent storage tanks, control structures, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity along the view corridor. Integral color concrete should be used in place of standard gray concrete. e) The final revegetation plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the design objectives and criteria are being met. Planting associated with biological mitigation may contribute to, but may not fully satisfy, visual mitigation. f) The requirements of the *Aesthetics and Visual Resources Protection and Revegetation Plan* (C/RAWP Appendix N) shall be implemented throughout the construction, operation and maintenance, and decommissioning phases of the Project, including but not limited to replacement planting procedures (see Section 4.3), maintenance and adaptive management (see Section 5.2), and photo-monitoring (see Section 5.3). These measures apply to new Project components added as part of the Future Activity Allowance, should they be visible from Key View 5 or any of the other key views identified in the SEIR.
Mitigation Measures AES-2: Substantial Damage to Scenic Resources within a Scenic Corridor (Groundwater FEIR Measure with Revisions) ~~Impacts on Views from Colorado River, a Scenic Resources Corridor (Key View 11).~~
The proposed ~~p~~Project shall be ~~designed and~~ implemented to adhere to the design criteria presented below and the Future Activity Allowance, if needed, shall be designed and implemented to adhere to the design criteria below:~~.~~ a) A minimum setback requirement of 20 feet from the water (ordinary high water mark) shall be enforced, except with regard to any required river intake facilities, to prevent substantial vegetation removal along the riverbank. b) Existing mature plant specimens shall be protected in place during construction, operation, and decommissioning phases. The identification of plant specimens that are determined to be mature and retained shall occur as part of the design phase and mapped/identified by a qualified plant ecologist or biologist and integrated into the final design and project implementation consistent with CUL1a-5. c) Revegetation of disturbed areas within the riparian vegetation along the Colorado River shall occur concurrently with construction operations. Plans and specifications for revegetation shall be developed by a qualified plant ecologist or biologist before any riparian vegetation is disturbed. The revegetation plan shall include specification of maintenance and monitoring requirements, which shall be implemented for a period of 5 years after project construction or after the vegetation has successfully established, as determined by a qualified plant ecologist or biologist. d) Plant material shall be consistent with surrounding native vegetation.

Groundwater FEIR and SEIR Mitigation Measures Comparison Table
e) The color of the wells, pipelines, and utilities shall consist of muted, earth-tone colors that are consistent with the surrounding natural color palette. Matte finishes shall be used to prevent reflectivity along the view corridor. Integral color concrete should be used in place of standard gray concrete. f) The final revegetation plans and specifications shall be reviewed and approved by an architect, landscape architect, or allied design professional licensed in the State of California to ensure that the design objectives and criteria are being met. Planting associated with biological mitigation may contribute to, but may not fully satisfy, visual mitigation. g) The requirements of the *Aesthetics and Visual Resources Protection and Revegetation Plan* (C/RAWP Appendix N) shall be implemented throughout the construction, operation and maintenance, and decommissioning phases of the Project, including but not limited to replacement planting procedures (see Section 4.3), maintenance and adaptive management (see Section 5.2), and photo-monitoring (see Section 5.3). These measures apply to new Project components added as part of the Future Activity Allowance, should they be visible from Key View 11 or any of the other key views identified in the SEIR.
~~**Mitigation Measures AES-3**: Impacts on Visual Quality and Character along the Colorado River (Key View 11).~~ **No Longer Applicable**
~~Mitigation Measure AES-1 shall be implemented. Implementation of Mitigation Measures AES-1 would reduce the overall change to the visual character of the view corridor along the Colorado River. Although the proposed project would still be visible, incorporating a facilities design that is aesthetically sensitive and preserving the vegetation would blend the proposed project into their visual setting within the floodplain and would reduce the overall contrast of the proposed project.~~
Air Quality/ Greenhouse Gas Emissions
Mitigation Measure AIR-1: Short-Term Construction-Related Emissions of Criteria Air Pollutants ~~and Precursors~~ (Groundwater FEIR Measure).
PG&E shall implement the fugitive dust control measures below for any construction and/or demolition activities: • Use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emissions during dust episodes. Use of a water truck to maintain moist disturbed surfaces and actively spread water during visible dusting episodes shall be considered sufficient; • Cover loaded haul vehicles while operating on publicly maintained paved surfaces; • Stabilize (using soil binders or establish vegetative cover) graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such delay is caused by precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions; • Cleanup project-related track out or spills on publicly maintained paved surfaces within twenty-four hours; and • Curtail nonessential earth-moving activity under high wind conditions (greater than 25 miles per hour) or develop a plan to control dust during high wind conditions. For purposes of this rule, a reduction in earth-moving activity when visible dusting occurs from moist and dry surfaces due to wind erosion shall be considered sufficient to maintain compliance.
Mitigation Measure AIR-1a: Short-Term Construction-Related Emissions of Criteria Air Pollutants and Precursors (New Measure)
PG&E's construction contractor shall ensure that all off-road equipment with a horsepower greater than 50 horsepower have USEPA certified Tier 4 interim engines or engines that are certified to meet or exceed the NO_X emission ratings for USEPA Tier 4 engines. This measure excludes specialty construction equipment where Tier 4 interim engines cannot currently be obtained within the industry, or older equipment cannot be retrofitted to meet Tier 4 emissions standards. During construction and decommissioning, the construction contractor shall maintain a list of all operating equipment in use on the Project site. The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. For specialty equipment where Tier 4 interim engines are not available, documentation supporting this conclusion shall be included in the equipment files. Once Tier 4 equipment is available for a piece of specialty equipment, it shall be incorporated into the construction fleet, replacing the existing non-Tier 4 piece of equipment. Equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. Construction contractors shall also ensure that all nonessential idling of construction equipment is restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.

Groundwater FEIR and SEIR Mitigation Measures Comparison Table
Biological Resources
Mitigation Measures BIO-1: Potential Fill of Wetlands and Other Waters of the United States and Disturbance or Removal of Riparian Habitat (Measure Completed – no longer applicable).
~~Areas of sensitive habitat in the project area have been identified during project surveys. These areas include floodplain and riparian areas, wetlands, and waters of the United States. Habitats designated by DFG as sensitive, including desert washes and desert riparian, are also included. To the extent feasible, elements of the project shall be designed to avoid direct effects on these sensitive areas. During the design process and before ground disturbing activities within such areas (not including East Ravine), a qualified biologist shall coordinate with PG&E to ensure that the footprints of construction zones, drill pads, staging areas, and access routes are designed to avoid disturbance of sensitive habitats to the extent feasible. DTSC shall be responsible for enforcing compliance with design and all preconstruction measures.~~ ~~If during the design process it is shown that complete avoidance of habitats under USACE jurisdiction is not feasible, the Section 404 permitting process shall be completed, or the substantive equivalent per CERCLA Section 121(e)(1). In either event, the acreage of affected jurisdictional habitat shall be replaced and/or rehabilitated to ensure "no-net-loss."~~ ~~Before any ground-disturbing project activities begin in areas that contain potentially jurisdictional wetlands, the wetland delineation findings shall be documented in a detailed report and submitted to USACE for verification as part of the formal Section 404 wetland delineation process and to DTSC. For all jurisdictional areas that cannot be avoided as described above, authorization for fill of wetlands and alteration of waters of the United States shall be secured from USACE through the Section 404 permitting process before project implementation. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods agreeable to USACE and consistent with applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented.~~ ~~Alternately, if USACE declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, the substantive equivalent of the Section 404 permitting process shall be complied with by ensuring that the acreage of jurisdictional wetland affected is be replaced on a "no-net-loss" basis in accordance with the substantive provisions of USACE regulations. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods consistent with USACE methods, and consistent with the purpose and intent of applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented. In any event, a report shall be submitted to DTSC to document compliance with these mandates.~~ ~~If during the design process it is shown that complete avoidance of habitats under DFG jurisdiction (such as changes to the natural flow and/or bed and bank of a waterway) is infeasible, a Section 1602 streambed alteration agreement shall be obtained from DFG and affected habitats shall be replaced and/or rehabilitated. If complete avoidance of identified riparian habitat is not feasible, the acreage of riparian habitat that would be removed shall be replaced or rehabilitated on a no-net-loss basis in accordance with DFG regulations and, if applicable, as specified in the streambed alteration agreement, if needed. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods agreeable to DFG and consistent with the purpose and intent of applicable county policies and codes, as well as those policies outlined under the respective federal agency guidance documents. Minimization and compensation measures adopted through the permitting process shall also be implemented. Restoration of any disturbed areas shall include measures to achieve "no-net-loss" of habitat functions and values existing before project implementation. These measures shall be achieved by developing and implementing a habitat restoration plan submitted to DFG, BLM, and USFWS that is agreeable to these agencies, or, alternately, through the implementation of a habitat restoration plan consistent with the substantive policies of DFG, BLM, and USFWS. The plan shall include a revegetation seed mix or plantings design, a site grading concept plan, success criteria for restoration, a monitoring plan for achieving no net loss of habitat values and functions, and an adaptive management plan.~~ ~~Alternately, if DFG declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, and during the design process it is shown that complete avoidance of habitats under DFG jurisdiction (such as changes to the natural flow and/or bed and bank of a waterway) is infeasible, the substantive mandates of a streambed alteration agreement shall be implemented, and affected habitats shall be replaced and/or rehabilitated. If complete avoidance of identified riparian habitat is not feasible, the acreage of riparian habitat that would be removed shall be replaced or rehabilitated on a "no-net-loss" basis in accordance with DFG regulations and, if applicable. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods agreeable to DFG and consistent with the purpose and intent of applicable county policies and codes, as well as those policies outlined under the respective federal agency guidance documents. Minimization and compensation measures adopted through the permitting process shall also be implemented. Restoration of any disturbed areas shall include measures to achieve "no-net-loss" of habitat functions and values existing before project implementation. These measures shall be achieved by developing and implementing a habitat restoration plan developed consistent with the substantive policies of DFG, BLM and USFWS. The plan shall include a revegetation~~

Groundwater FEIR and SEIR Mitigation Measures Comparison Table
~~seed mix or plantings design, a site grading concept plan, success criteria for restoration, a monitoring plan for achieving no net loss of habitat values and functions, and an adaptive management plan.~~
Mitigation Measure BIO-1a: No-net loss of Jurisdictional Wetlands/Water Function or Value (New Measure)
Unavoidable direct impacts to jurisdictional areas shall be documented by a wetland specialists or Field Contact Representative (FCR) during implementation of the proposed Project. To document unavoidable direct impacts, the extent of work areas near jurisdictional areas shall be delineated in the field using GPS technology and pre- and post-impact conditions of jurisdictional areas documented with photographs. The nature of construction within work areas shall also be described, including the Project facilities installed, equipment utilized, and duration of construction activities. Documentation of unavoidable impacts shall be submitted to CDFW and DTSC to ensure adequate mitigation is provided consistent with the requirements below. Unavoidable direct impacts to non-disturbed jurisdictional ephemeral waters (estimated at up to approximately 1.61 acres including direct impacts resulting from planned facilities and additional facilities constructed under the Future Activity Allowance) shall be mitigated to ensure no-net-loss of function or value. Mitigation shall include both (a) and (b) detailed below. Mitigation for ground disturbance associated with restoration and enhancement activities shall not be required. a) In-place restoration of jurisdictional areas directly impacted by construction at a 1:1 ratio (i.e., 1 acre of restoration for each acre of direct impact to non-disturbed jurisdictional area) shall occur in accordance with the *Havasu National Wildlife Refuge Habitat Restoration Plan* (Appendix G to the C/RAWP (CH2M Hill 2015b)) and *Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats* (Appendix O to the C/RAWP (CH2M Hill 2015b)). In-place restoration of areas directly impacted during construction will occur in two phases. The first phase will involve restoration within the areas directly impacted by construction where it will not interfere with continued operation and maintenance of the proposed Project (e.g., restoration of temporary construction work areas). The first phase of restoration shall begin within 1 year of completing construction. The second phase will involve restoration of areas that will be occupied by Project facilities to occur following decommissioning of the proposed Project. Restoration of jurisdictional areas following decommissioning of the proposed Project will be guided by a Final Habitat Restoration Plan (refer to Mitigation Measure BIO-1b). b) To address temporal loss of jurisdictional areas directly impacted by construction, PG&E shall provide compensatory mitigation at a minimum 2:1 ratio (2 acres of compensation for each acre of direct impacts to non-disturbed jurisdictional area). Compensatory mitigation to address temporal loss shall be agreed upon with CDFW prior to the start of construction, involve the same amount and quality of jurisdictional area(s) disturbed, and include one or more of the following approaches: 1) acquisition and preservation in perpetuity; 2) restoration; and/or 3) enhancement. Acquisition and preservation may include establishment of a conservation easement or purchase of credits from a CDFW- and/or USACE -approved mitigation banking program, or compliance with an applicable CDFW and/or USACE-approved in-lieu fee program. Restoration may include conversion of non-wetland habitat to functioning wetland habitat. Enhancement may include removal of non-native species in existing wetland habitat. As summarized in the technical memorandum, *Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts*, included as Appendix V to the C/RAWP (CH2M Hill 2015b), PG&E has identified restoration areas within the historical floodplain of the Colorado River. The historical floodplain no longer functions as a riparian habitat with hydrologic connectivity to the river; therefore, restoration in the historical floodplain may qualify as compensatory mitigation to address temporal loss if hydrologic function can be restored. PG&E shall prepare a mitigation plan prior to the start of construction to specify methodology, criteria for meeting the 2:1 mitigation requirement, and monitoring and reporting for compensatory mitigation. The plan shall be subject to CDFW approval and in conformance with the identified performance standards, and submitted to DTSC, BLM, BOR, USFWS, DOI, Interested Tribes, and other appropriate landowners for review and comment within 60 days prior to finalization, as appropriate based on location of impacts. Restoration of jurisdictional areas within the Project Area shall be guided by the Havasu National Wildlife Refuge Habitat Restoration Plan (Appendix G to the C/RAWP [CH2M Hill 2015b]) and Habitat Restoration Plan for Riparian Vegetation and Other Sensitive Habitats (Appendix O to the C/RAWP [CH2M Hill 2015b]), as approved by CDFW, USFWS, and DOI. Implementation of these plans will be informed by the technical memorandum, Assessment of Proposed Mitigation Planting Areas for Final Groundwater Remedy Impacts, included as Appendix V to the C/RAWP (CH2M Hill 2015b), which provides preliminary information on the condition within fourteen proposed mitigation planting areas. The habitat restoration plans also specify on-site restoration success criteria, monitoring and reporting requirements, and adaptive management

Groundwater FEIR and SEIR Mitigation Measures Comparison Table
guidelines for salvage and replanting of trees, shrubs, and perennial species. In accordance with the habitat restoration plans, removal of riparian trees (e.g., palo verde trees) shall be replaced at a 3:1 ratio (i.e., planting 3 trees in restoration areas for each tree removed during construction). The success criteria for mitigation plantings shall be a final minimum plant replacement ratio of 2.25:1 (75% overall survival rate) of mitigation plantings at the end of a minimum 5-year monitoring period. Adaptive management guidelines outline modifications to restoration approaches, as appropriate, to ensure successful establishment of native vegetation and desired density of cover of plants. As required by the plans, the following adaptive management actions shall be implemented if success criteria are not being met: weed control, irrigation modification, herbivory protection, and additional plantings. Reporting to DTSC, CDFW, and USFWS shall be completed within 90 days of completing each monitoring year. The habitat restoration plans also specify design and construction avoidance and minimization measures, including: • Locating pipelines, wells, and staging and storage areas along roadways, pipeline rights-of-way, and other previously disturbed areas to avoid impacts to vegetation to the extent feasible. • Performing pre-activity surveys prior to ground disturbance to identify and demark with flagging, fencing, and/or signage areas of native vegetation and sensitive habitats in the immediate vicinity of the construction areas. • Providing construction workers with environmental awareness training regarding biological resources including sensitive species and habitats.
Mitigation Measure BIO-1b: Final Remedy Restoration Plan (New Measure).
A Final Remedy Restoration Plan shall be developed and implemented following decommissioning of the proposed Project. The Final Remedy Restoration Plan will address restoration of areas that were impacted during construction, operation and maintenance, and decommissioning of the proposed Project, specifying salvage/replanting measures, as well as success criteria, monitoring, and adaptive management requirements for restored areas. Success criteria for restoration areas will be similar to that identified in the existing habitat restoration plans (i.e., 75% overall survival rate of mitigation plantings at the end of a minimum 5-year monitoring period). Adaptive management actions to ensure successful establishment of native vegetation and desired density of cover of plants will include weed control, irrigation modification, herbivory protection, and additional plantings. The plan shall be submitted to DTSC, CDFW, BLM, BOR, USFWS, DOI, and other appropriate landowners for review. The Final Remedy Restoration Plan shall also be provided to Interested Tribes for review and comment, consistent with Mitigation Measure CUL-1a-16.
Mitigation Measures BIO-2a: Disturbance of Special-Status Birds and Loss of Habitat (Groundwater FEIR Measure with Revisions).
The proposed Project has been designed to minimize removal of habitat for special-status birds. Impact avoidance and minimization measures required by the BIAMP shall be implemented (refer to Appendix S of the C/RAWP [CH2M Hill 2015b]). Avoidance and minimization measures required by the BIAMP include prohibiting construction near or in special-status bird habitat; limiting construction during the breeding seasons; requiring an on-site biological monitoring during field activities; implementing buffers around active nests to the extent practical and feasible to limit noise and visual disturbances; and conducting worker awareness training and monitoring to assess the activity effect, ambient activities, site conditions, and bird behavior to determine the efficacy of nest avoidance buffers. ~~To the extent feasible, the project implementation plans shall be designed to minimize removal of habitat for special-status birds. During the design process and before ground disturbing activities (except within the East Ravine as described in the Revised Addendum and unless otherwise required as noted below), a qualified biologist shall coordinate with PG&E to ensure that the footprints of project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on habitat and nesting habitat for other special-status species, to the extent feasible. DTSC will ensure compliance with all preconstruction and construction phase avoidance measures identified during this process and included in any design plans. Vegetation removal and other activities shall be timed to avoid the nesting season for special-status bird species that may be present. The nesting cycle for most birds in this region spans March 15 through September 30.~~ ~~***Preconstruction Measures***~~ ~~Preconstruction breeding season surveys shall be conducted during the general nesting period, which encompasses the period from March 15 through September 30, if the final design of the project (including East Ravine investigation Sites I, K and L) could result in disturbance or loss of active nests of special-status bird species. If vegetation removal or other disturbance related to project implementation is required during the nesting season, focused surveys for active nests of special-status birds shall be conducted before such activities begin. A qualified biologist shall conduct preconstruction surveys to identify active nests that could be affected. The appropriate area to be surveyed and the timing of the survey~~

Groundwater FEIR and SEIR Mitigation Measures Comparison Table
~~may vary depending on the activity and species that could be affected. For the Yuma clapper rail, the preconstruction surveys shall specifically identify habitat within 300 feet of construction areas, in accordance with substantive policies of USFWS including those set out in USFWS protocols.~~ ~~***Construction Measures***~~ ~~Before the initiation of project elements that could result in disturbance of active nests or nesting pairs of other special-status birds, a qualified biologist shall be consulted to identify appropriate measures to minimize adverse impacts during the construction phase of the project. If deemed appropriate for the final project design because of the potential for impacts, minimization measures will include focusing construction activities that must be conducted during the nesting season to less-sensitive periods in the nesting cycle, implementing buffers around active nests of special-status birds to the extent practical and feasible to limit visual and noise disturbance, conducting worker awareness training, and conducting biological monitoring (including noise monitoring to determine if construction noise at the edge of suitable nesting habitat is elevated above 60 dBA Leq or ambient levels).~~ ~~An avoidance and minimization plan for special status bird species, as defined in Table 4.3-3 and those species protected under the federal Migratory Bird Treaty Act, including the Yuma clapper rail, shall be developed and implemented in consultation with USFWS, and agreed upon by DTSC. Avoidance and impact minimization measures, such as prohibiting construction near or in sensitive bird habitat, limiting construction during breeding seasons, and requiring an on-site biological monitor, shall be included in the design plan and implemented to the extent necessary to avoid significant impacts on sensitive bird species.~~
Mitigation Measure BIO-2b: Disturbance of Desert Tortoise and Loss of Habitat <u>(Groundwater FEIR Measure with Revisions).</u>
<u>To the extent feasible, project construction (including planned facilities and those potentially constructed as part of the Future Activity Allowance) shall be designed to minimize removal of habitat for the desert tortoise. Before any ground-disturbing project activities begin, a qualified desert tortoise biologist shall identify potential desert tortoise habitat in areas that could be affected. Through coordination with the designated qualified biologist, PG&E shall ensure that the footprints of Project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on potential desert tortoise habitat to the extent feasible. Through coordination with the designated qualified biologist, PG&E shall ensure that the footprints of Project facilities and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on potential desert tortoise habitat to the extent feasible. In areas where impacts to potential desert tortoise habitat are unavoidable, measures outlined in the PBA and in the USFWS letter concurring with the PBA, shall be implemented, as described below.</u> <u>A qualified desert tortoise biologist shall conduct pre-activity desert tortoise clearance surveys immediately prior to activities that would result in unavoidable impacts to tortoise habitat. The pre-activity survey will occur immediately prior to ground-disturbance. If feasible, the preconstruction desert tortoise surveys would coincide with one of the two peak periods of desert tortoise activity (i.e., if feasible, the surveys should be conducted in either the period from April through May, or from September through October). Otherwise, pre-activity clearance surveys shall be in full accordance with the substantive requirements of USFWS protocols. Any desert tortoise burrows and pallets outside of, but near, work areas shall be flagged so that they may be avoided during work activities. At conclusion of work activities, all flagging shall be removed. Should any live tortoises be found during the clearance survey, or if a tortoise moves into the work area, all work shall stop immediately and the animal shall be left to move out of the work area on its own accord. To the extent feasible, tortoises shall not be handled. PG&E will have a USFWS-approved desert tortoise handler available if and when a tortoise requires active relocation. USFWS shall be contacted prior to handling any live tortoises. All encounters of desert live desert tortoises shall be reported to USFWS, BLM, CDFW, and DTSC. Information to be reported will include for each individual: the location (narrative, vegetation type, and maps) and date of observation; general conditions and health; any apparent injuries and state of healing; and diagnostic markings.</u> <u>PG&E shall designate a field contact representative (FCR) who will be responsible for overseeing compliance with proper execution of the mitigation measures. The FCR will be on-site during implementation of all ground disturbing activities. The FCR shall be trained by the qualified desert tortoise biologist and have authority to halt activities that are in violation of the mitigation measures/or pose a danger to listed species. The FCR will have a copy of the mitigation measures and may be a project manager, PG&E representative, or qualified biologist. All employees and contractors shall be required to attend a worker awareness training prior to working on the proposed Project. The FCR shall maintain record of all employees and contractors who have completed the worker awareness training.</u> <u>USFWS may identify additional conservation measures should Project plans change, or if new information regarding the distribution or abundance of desert tortoise becomes available. PG&E shall implement any additional conservation measures identified by USFWS through the</u>

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Section 7 consultation process. ~~***Preconstruction Measures***~~ ~~In areas where impacts to potential desert tortoise habitat are unavoidable, measures outlined in the Programmatic Biological Agreement (PBA) and in the USFWS letter concurring with the PBA, shall be implemented, as described below. To the extent feasible, project construction shall be designed to minimize removal of habitat for the desert tortoise. Before any ground-disturbing project activities begin, and except within the East Ravine for which potential effects to the tortoise have been considered per the PBA), a USFWS-authorized desert tortoise biologist shall identify potential desert tortoise habitat in areas that could be affected by the final project design. Through coordination with the authorized biologist, PG&E shall ensure that the footprints of project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on potential desert tortoise habitat to the extent feasible. These measures include the presence of a USFWS-authorized desert tortoise biologist on-site who will examine work areas and vehicles for the presence of desert tortoises, and who will conduct preconstruction desert tortoise surveys in areas where unavoidable impacts to tortoise habitat would occur. If feasible, the preconstruction desert tortoise surveys would coincide with one of the two peak periods of desert tortoise activity (i.e., if feasible, the surveys should be conducted in either the period from April through May, or from September through October). The preconstruction surveys shall be in full accordance with the substantive requirements of USFWS protocols.~~ ~~***Construction Measures***~~ ~~Before the initiation of project elements that could result in disturbance of desert tortoises or desert tortoise habitat, a USFWS-authorized desert tortoise biologist shall be consulted to identify appropriate measures to minimize adverse impacts. Minimization measures are likely to include micro-siting structures, pipelines, and access roads in previously disturbed areas or in areas with sparse scrub vegetation, conducting worker awareness~~
Mitigation Measure BIO-2c: Disturbance of Special-Status Species and Loss of Habitat Caused by Decommissioning <u>(Groundwater FEIR Measure with Revisions)</u>
To avoid impacts on special-status species that may occur within the project area as a result of decommissioning activities, an ~~a~~Avoidance and M~~m~~inimization ~~p~~Plan shall be developed and implemented through consultation with CDFW ~~CDFG~~, BLM, and USFWS. <u>The Avoidance and Minimization Plan will specify species-specific measures, including seasonal restrictions for decommissioning activities (i.e., avoidance of the avian breeding season and maternity roosting season for bats where habitat exists) as needed, as well as avoidance buffers around known locations of special-status species or their habitats. Avoidance and minimization measures identified in the plan shall be based on surveys conducted prior to decommissioning, and during the breeding season (as previously defined in the Groundwater FEIR for each species or suite of species). To the extent appropriate, the Avoidance and Minimization Plan for decommissioning activities will include applicable measures identified in the existing BIAMP and PBA.</u> ~~These measures shall be based on surveys conducted prior to decommissioning, and during the breeding season (as previously defined in this EIR for each species or suite of species).~~ Restoration of any disturbed areas shall include measures to achieve no net loss of habitat functions and values existing before project implementation. These measures shall be achieved by developing and implementing a F~~f~~inal ~~habitat~~ Remedy R~~r~~estoration P~~p~~lan <u>(refer to Mitigation Measure BIO-1b)</u> ~~submitted to DFG, BLM, and USFWS that is agreeable to these agencies~~. The plan shall include a revegetation seed mix or plantings design, a site grading concept plan, success criteria for restoration, a monitoring plan for achieving no net loss of habitat values and functions, and an adaptive management plan <u>(i.e., 75% overall survival rate of mitigation plantings at the end of a minimum 5-year monitoring period). Adaptive management actions to ensure successful establishment of native vegetation and desired density of cover of plants will include weed control, irrigation modification, herbivory protection, and additional plantings. The Final Remedy Restoration Plan shall be submitted to DTSC, CDFW, BLM, BOR, USFWS, DOI, and other appropriate landowners for review. The Final Remedy Restoration Plan shall also be provided to Interested Tribes for review and comment, consistent with Mitigation Measure CUL-1a-16.</u>
<u>Mitigation Measure BIO-2d: Disturbance to Ring-Tailed Cat Individuals and Habitat (New Measure).</u>
<u>The following measures shall be implemented to avoid and minimize impacts to ring-tailed cat:</u> <u>i. Pre-activity surveys for ring-tailed cats shall be conducted by a qualified biologist with species-specific experience prior to the start of ground disturbing activities (including during construction, operation and maintenance, and decommissioning phases) where suitable denning habitat is present. No activities that will result in disturbance to dens or individual ring-tailed cats will proceed prior to</u>

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completion of the surveys. If no active dens are found, no further action is needed. If a ring-tailed cat den is present, additional measures shall be implemented as outlined below, and the CDFW shall be notified of any active dens within the proposed disturbance area.
ii. If an active ring-tailed cat den is found during pre-activity surveys, Project facilities that may result in direct impacts to the active den shall be reconfigured to avoid the loss of the den if feasible. If Project facilities cannot be modified to avoid a den, activities with the potential to disturb the den shall cease and CDFW shall be contacted immediately. If approved by CDFW, demolition of the den site shall commence only outside of the breeding season (February 1 to August 30) when the den has been confirmed to be vacated. If an occupied non-breeding den is found in an area scheduled to be impacted, prior to disturbance, the CDFW shall be notified to review and approve the proposed procedures to ensure that no take of the species occurs as a result of the action. Areas with unoccupied dens that need to be removed shall first be disturbed at dusk, just prior to removal that same evening, to allow adult ring-tailed cats to escape during the darker hours.
Mitigation Measure BIO-2e: Disturbance of Nelson's Bighorn Sheep (New Measure).
Nelson's bighorn sheep is observed during ground-disturbing activities (including during construction, operation and maintenance, and decommissioning phases), work within 125 feet of individuals shall be halted (CDFW 2016). Project activities can recommence after the bighorn sheep moves more than 125 feet away on its own. If proximity of Nelson's bighorn sheep to a proposed construction area may result in construction delays, PG&E shall contact CDFW prior to proceeding with ground disturbing activities to determine an appropriate course of action.
Mitigation Measure BIO-2f: Disturbance or Loss of Special-status Bat Species (New Measure).
Bats occupying Roost 9 (refer to Figure 4.3-7) shall be safely excluded after the maternity season (which ends August 31) and before bats go into hibernation or torpor (which begins October 31) through the use of a one-way door. Exclusion of bats shall be performed by a biologist holding a Memorandum of Understanding from CDFW to handle bats in California or a biologist otherwise licensed by the State of California to do so. After bats are safely excluded, fast drying foam shall be used to fill the void to prevent bats from re-entering the cavity.
To the extent possible, ground disturbance within proximity of suitable maternity roosting habitat for special-status bat species as shown in Figure 4.3-7 should occur outside the maternity season (March 15 through August 31). If activities critical to meeting the Project objectives are determined necessary during the maternity season, measures (i) through (v) below will be implemented. Measures (i) through (v) are not required for activities implemented outside the maternity season.
i. High- and low-frequency noise disturbance shall be minimized by establishing avoidance buffers around known roost locations. Required buffer distance will vary by roost site and noise source. Table 4.3-5 provides buffer requirements for known roosting sites and noise source. Note, vehicles and heavy equipment may travel under the railroad bridges on National Trails Highway as these vehicles are generally moving quickly and are not expected to create much frequency noise while passing under the bridges.
ii. To minimize potential effects to bats during nighttime activities, the Project must reduce or eliminate light levels at night. If artificial lighting at night is needed, floodlights shall be adjusted so that the angle of the beam is less than 70 degrees and directed away from roost sites. All nighttime lights shall be directed downward if possible. If lighting is required for minimum safety and security purposes, light barriers shall be used to reduce the potential for light to reach roosts. For example, if lights are needed to ensure safety of a work area, the light could be positioned so that a hillside blocks the light reaching the roosts sites. Smaller barriers, such as plywood sheeting, can be used, but lighting shall not surround a roost within the given buffer zones. Lights with high blue-white or ultraviolet content shall be avoided. When using nighttime lighting a buffer of 250 feet shall be maintained between every light source near roost sites 2 through 9, and a buffer of 400 feet shall be maintained near roost sites 1 and 10 (Table 4.3-5).
iii. To minimize effects of increased human activities, pedestrians shall not approach active roosts during the maternity season, and a 65-foot buffer shall be maintained between roosts and foot traffic.
iv. To minimize air quality degradation near roosts, stationary heavy equipment vehicles, large generators, and large idling trucks producing diesel exhaust shall not operate for more than 2 minutes within 250 feet of a bat roost (Table 4.3-5). Vehicles shall not idle their engine while under a bridge.
v. A biological monitor shall be on-site during ground disturbing activities within proximity of roosts to ensure avoidance and

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minimization measures (including avoidance buffers) are properly implemented.

Because roosting bats, including maternity colonies, switch roosts especially on a season-by-season basis, roost locations shall be identified by a qualified biologist specializing in bats at least once each for the spring and summer periods of the maternity season once every three years. Additionally, because western red bats could potentially breed in the large tamarisk groves located in Arizona, acoustic surveys for a minimum of three consecutive nights during fair weather (above 50 degrees Fahrenheit, no rain or high winds) during the summer maternity season shall occur once every three years. If western red bats are recorded acoustically, an attempt to locate active roost sites shall occur to establish appropriate buffer zones around each roost. If known roost sites do not change locations after three sets of surveys (over the course of nine years) roosts shall be surveyed for spring and summer periods once every five years thereafter. Avoidance and minimization measures described (i) through (v) above shall be implemented when activities are planned near newly discovered roosting locations between March 15 and August 31.

Table 4.3-5 Bat Roost Buffer Distance per Equipment Category[1]

	Buffer Distance (feet) by Equipment Category[2]					
Roost Site	Construction Trucks and Heavy Equipment	Small Vehicles	Drilling, Trenching, and Light Equipment	Light Source	Pedestrian Traffic and Water Sampling Equipment	Stationary Diesel Exhaust Sources > 2 minutes
1	120	90	150	400	65	250
2	90	65	150	250	65	250
3	90	65	150	250	65	250
4	90	65	150	250	65	250
5	90	65	150	250	65	250
6	90	65	150	250	65	250
7	90	65	150	250	65	250
8	90	65	150	250	65	250
9	90	65	150	250	65	250
10	90	65	150	250	65	250
Hypothetical Townsend's big eared bat roosts	400	200	200	400	200	250

[1] Roost buffers shall be implemented when ground disturbing activities are scheduled to occur during the maternity season (March 15 through August 31). Roost buffers are not needed for activities occurring outside the maternity season.

[2] Equipment Categories (see Appendix BOD for more detail):

Construction Trucks and Heavy Equipment/Stationary Diesel Exhaust Sources: e.g., dump trucks, 18-wheeled flatbed trucks, front-end loaders, water trucks.

Small Vehicles: e.g., pick-up trucks, UTVs.

Drilling, Trenching, and Light Equipment: e.g., excavators, backhoes, road graders, drill rigs, trenching machines.

Pedestrian Traffic and Water Sampling Equipment: e.g., hand tools, water quality instruments.

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Source: H.T. Harvey & Associates 2016

Mitigation Measure BIO-2g: Disturbance of Northern Mexico Gartersnake (New Measure).

The following measures, as detailed in the USFWS Concurrence Letter (USFWS 2017), shall be implemented for activities undertaken within 600 feet of potential northern Mexican gartersnake habitat at the southern end of Topock Marsh in Arizona. These measures are additional to the general measures required by Section 3.4 of the PBA (included as Appendix U to the C/RAWP).

1. Workers shall exercise caution when traveling near potential gartersnake habitat along the southern margin of Topock Marsh. During the most-active season for northern Mexican gartersnakes (February 1st to November 30th), workers will not exceed 10 mph when traveling off-road to maximize the likelihood that gartersnakes would be seen and avoided by drivers. During the inactive season (December 1st to January 31st) workers will not exceed 25 mph when traveling off-road. Construction personnel will abide by the posted speed limit while traveling on the Oatman-Topock Highway.
2. Work will stop if a gartersnake is found within the immediate area to be disturbed and the gartersnake will be allowed to leave the site on its own volition.
3. A qualified biologist shall perform preconstruction surveys prior to ground disturbing activities with the intention of identifying potential microhabitat sites (artificial or natural cover such as debris, wood, or rock piles, wildcat dump sites, high rodent burrow densities, etc.) favorable to gartersnakes in the disturbance area to focus search effort for potential gartersnakes.
4. When possible, ground disturbing activities should be avoided when snakes may be inactive and underground, in order to avoid injury to snakes. Construction will be completed when the northern Mexican gartersnake is active (February1st through November 30th).
5. Material stockpiles located near the southern margin of Topock Marsh shall be limited to designated storage areas that are more than 600 feet from potentially suitable northern Mexican gartersnake habitat or on the opposite side of the Oatman Highway.
6. All open holes and trenches shall be inspected for trapped gartersnakes at the beginning, middle, and end of the work day, at a minimum. During excavation of trenches and to the extent possible, earthen ramps or wooden planks shall be provided to facilitate the escape of any wildlife species that may inadvertently become entrapped and to leave the site on its own volition (adapted from General Project Management Measure Number 17 of the PBA [Appendix U to the C/RAWP (CH2M Hill 2015b)]).

Mitigation Measure BIO-2h: Disturbance of Special-Status Plants (New Measure).

To reduce potential construction-related impacts to populations of mousetail suncup and other potentially occurring special-status plant species, at least one pre-construction survey shall be conducted prior to the start of any ground-disturbing activities in areas of suitable habitat. The survey shall be conducted in areas where construction is planned and during the blooming period of those species which are either known to occur or likely to occur in the area (i.e., generally March through May but dependent on rainfall patterns). The survey shall be conducted by a qualified botanist skilled at identification of the plant species in the region. The qualified botanist shall determine where pre-construction surveys are required based on existing habitat conditions. The locations of identified special-status plants shall be flagged and mapped using GPS, and a construction avoidance buffer of at least 50 feet where possible shall be established at identified locations to ensure no direct or indirect impacts occur. If the work cannot be conducted outside of the 50-foot buffer, the qualified botanist will identify construction limits and access routes that avoid impacts to known plants. PG&E shall not proceed with ground-disturbing activities that may adversely impact areas within 50 feet of special-status plants without first conferring with CDFW.

To the maximum extent feasible, additional Project facilities to be constructed under the Potential Future Activity Allowance shall be sited to avoid suitable habitat for special-status plant species. If additional Project facilities to be constructed under the Potential Future Activity Allowance cannot be sited to avoid suitable habitat, one of the following measures shall apply.

- Assume suitable habitat is occupied by special-status plant species and provide mitigation (as prescribed in (i) through (iii) below); or
- Verify absence or avoidance of individuals by performing focused presence/absence surveys within the suitable habitat to be impacted. Verification of presence/absence shall require data from at least two years of focused surveys within the previous 5 years. Focused presence/absence surveys shall be performed by a qualified botanist during the blooming period of potentially occurring species (i.e., generally March through May but dependent on rainfall patterns). If special-status plant species are observed and

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avoidance cannot be achieved, mitigation shall be provided (as prescribed in (i) through (iii) below). Results of all surveys performed following construction of the Proposed Project shall be incorporated onto a comprehensive map of suitable habitat and known rare plant populations within the Project Area. As noted above, if disturbance within 50 feet of a special-status plant species cannot be avoided, PG&E shall contact CDFW to determine appropriate minimization and mitigation measures. Such measures may include, but may not be limited to, the approaches listed below. PG&E shall not proceed with ground disturbing activities that may directly or indirectly impact areas within 50 feet of special-status plants without first conferring with CDFW. The appropriate means to mitigate unavoidable impacts shall be determined based on coordination with CDFW while taking into account the nature and extent of unavoidable impacts and the species' rarity and known distribution within the Project Area. Mitigation may include a combination of the approaches outlined below, or other approaches determined by CDFW to sufficiently mitigate the impact. To the extent possible, mitigation of unavoidable impacts to special-status plants may occur in conjunction with mitigation for temporal loss of jurisdictional wetlands and waters. i. *Seed Collection for Restoration*: Seed from individuals to be impacted would be collected prior to ground-disturbing activities. The seed would be collected following the protocols set forth by the Center for Plant Conservation and, if long-term storage is necessary, placed in a secure seed bank facility such as the Agricultural Research Service National Center for Genetic Resources Preservation in Fort Collins, Colorado. Collected seed would be applied to restoration areas within the Project Area. Restoration plans developed for the proposed Project would be revised to include success criteria for restoration of the special-status plant species to ensure successful re-establishment of the impacted species. Success criteria for impacted special-status plants would be developed through coordination with CDFW. ii. *Enhancement of Known Populations*: Known populations of the species to be impacted would be enhanced by undertaking actions to increase the size of the known population. Such actions may include improving the quality of occupied habitat (e.g., invasive species removal) and/or seeding to facilitate population expansion. Enhancement of known populations may occur at off-site populations that are currently conserved or within the occupied portions of the Project Area that can be conserved. An enhancement plan for impacted special-status plants would be developed through coordination with CDFW. The plan shall be approved by CDFW and submitted to DTSC, BLM, BOR, USFWS, DOI, and Interested Tribes for review and comment prior to finalization. iii. *Preservation of Occupied Habitat:* Habitat occupied by the species to be impacted would be permanently protected by establishing a conservation easement. PG&E would coordinate with CDFW to determine the conditions of the conservation easement, including the required acreage of occupied habitat to be conserved and requirement monitoring and management of the conserved population. The agreed upon conditions would be detailed in a mitigation plan for impacted special-status plants. The plan shall be approved by CDFW and submitted to DTSC, BLM, BOR, USFWS, DOI, Interested Tribes, and other appropriate landowners for review and comment prior to finalization.
~~**Mitigation Measure BIO-3a**: Potential Impacts to Aquatic Habitat Related to Turbidity, Erosion, Sedimentation, and Overall Water Quality during Construction of the Intake Structure~~ **No Longer Applicable**
~~Hydrology & Water Quality Mitigation Measure HYDRO-1 shall be implemented in order to reduce water quality impacts related to erosion and pollutant runoff through implementation of BMPs. In addition, installing the cofferdam and dewatering a portion of the proposed intake structure site during fish screen construction may result in fish stranding. PG&E and its contractor shall coordinate with a qualified fisheries biologist to develop and implement a fish rescue plan. The fish rescue effort would be implemented during the dewatering of the area behind the cofferdam and would involve capturing those fish and returning them to suitable habitat within the river.~~ ~~The fish rescue plan shall identify and describe the following items: collection permits needed, fish capture zones, staffing, staging areas, fish collection and transport methods, species prioritization, resource agency contacts, fish handling protocols, fish relocation zones, site layout and progression of dewatering and fish rescue, and records and data. To ensure compliance, a fisheries biologist shall be present on-site during initial pumping (dewatering) activities and to oversee the fish rescue operation.~~
~~**Mitigation Measure BIO-3b**: Potential Loss or Degradation of Aquatic Habitat~~ **No Longer Applicable**
~~To restore, replace, or rehabilitate habitat impacted by the intake structure, PG&E shall implement the measures described below. Unless as provided below, PG&E shall confer with DFG regarding potential disturbance to fish habitat and shall obtain a streambed alteration agreement, pursuant to Section 1602 of the California Fish and Game Code, for construction work associated with intake structure construction; PG&E shall~~

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~~also confer with DFG pursuant to the CESA regarding potential impacts related to the loss of habitat or other operational impacts on state-listed fish species, respectively. PG&E shall comply with all requirements of the streambed alteration agreement and any CESA permits to protect fish or fish habitat or to restore, replace, or rehabilitate any important habitat on a "no-net-loss" basis.~~
~~Alternatively, if DFG declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, the project proponent shall consult with DFG regarding potential disturbance to fish habitat and shall meet the substantive policies of a streambed alteration agreement and of the CESA for construction work associated with intake structure construction and operations. PG&E shall comply with all substantive requirements of the streambed alteration agreement and CESA to protect fish and fish habitat or to restore, replace, or rehabilitate any important habitat on a "no-net-loss" basis and to operate the facility in accordance with CESA to ensure no net loss of habitat function.~~
~~Additionally, PG&E shall consult with USACE regarding the need to obtain permits under section 404 of the CWA and section 10 of the Rivers and Harbors Act. In conjunction with these permitting activities, the USACE must initiate consultation with USFWS under Section 7 of the Federal ESA regarding potential impacts of the proposed project on federally listed fish species due to the loss of habitat on federally listed fish species. PG&E shall implement any additional measures developed through the ESA Section 7 processes, or its equivalent, to ensure "no-net-loss" of habitat function.~~
~~Alternatively, if USACE and/or USFWS decline to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, PG&E shall confer with USFWS regarding potential disturbance to federally listed fish species and federally listed fish species habitat and shall meet the substantive mandates under Section 7 of the Federal ESA regarding potential impacts to fish or to habitat of federally listed fish species. PG&E shall implement any additional measures developed through that processes, including compliance with the substantive requirements of all of what would be permit conditions if not exempt pursuant to CERCLA, and to ensure "no-net-loss" of habitat function.~~
~~Because the type and extent of habitat potentially affected is unknown, PG&E shall have an instream habitat typing survey conducted in the area potentially affected by the intake construction. Further, cooperation with USFWS and other fisheries biologists shall determine suitable and acceptable location(s) for the intake structure(s) to avoid the spawning habitat of special-status fish species. PG&E shall avoid habitat modifications, especially to habitat that is preferred by native fishes for spawning or rearing including side channels, cobble or gravel bars, and shallow backwaters. If these habitat types cannot be avoided, any disturbed habitat will be restored or replaced to achieve "no-net-loss" of habitat types and values as described above.~~
~~**Mitigation Measure BIO-3c:** Potential Fish Entrainment and Impingement during Operation of the Intake Structure~~ **No Longer Applicable**
~~Both screened and unscreened diversions can entrain larval life stages of fish. For example, adverse effects to early life stages of fish could occur if diversions coincide with planktonic larval life stages that occur during summer months, a period of high entrainment vulnerability. Prior to operation of the intake structure, PG&E shall consult with USFWS and DFG to determine the most vulnerable time of the year for entrainment or impingement of razorback sucker and bonytail chub eggs or larvae.~~
~~PG&E shall install a state-of-the-art positive-barrier fish screen that would minimize fish entrainment and impingement at the intake structure. The fish screen shall be designed in accordance with DFG and the National Marine Fisheries Service criteria, with specific consideration given to minimizing harm to fish eggs and other early life stages.~~
~~To ensure that the fish screen operates as intended and reduce the risk of impacts, long-term monitoring of the operations and maintenance of the positive-barrier screen shall be conducted. Monitoring at the onset of diversions through the intake shall include approach velocity measurements immediately after the positive-barrier screen operations begin, with fine-tuning of velocity control baffles or other modifications as necessary, to achieve uniform velocities in conformance with the screen criteria established by regulatory agencies.~~
Cultural Resources
~~**Mitigation Measure CUL-1a: During Design, Construction, O&M, and Decommissioning Implement Measures to Avoid, Minimize, or Mitigate Impacts on Cultural Resources~~ **Introductory Text Not Applicable**
~~Establishment of a cultural impact mitigation program and a Corrective Measures Implementation Workplan (CMI Workplan), with specific activities stipulated for each phase of the project, will reduce the potential for impacts on historical resources within the project area, and will help preserve the values of and access to the Topock Cultural Area for local tribal users. As detailed below, measures will be implemented to avoid known resources, re-use existing disturbed areas to the extent feasible, allow for tribal input to the final design and maintain access for tribal users during design, construction, operation, and decommissioning activities, as appropriate. During construction, a Worker Education~~

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~~Program and regular archaeological and tribal monitoring will be implemented, and measures intended to reduce the potential for incursion by outside parties will be strengthened. This measure does not apply to the activities included as part of the East Ravine Revised Addendum, Groundwater Investigation (dated December 31, 2010).~~
Mitigation Measure CUL-1a-1: Avoidance and Preservation in Place (Groundwater FEIR Measure with Revisions).
During ~~development of the final design and~~ the construction, operation and maintenance, and decommissioning phases of the ~~p~~Project, PG&E shall carry out all Project activities, and shall require all subcontractors to ~~carry out all investigative, testing, and remediation activities, including all supporting operations and maintenance activities~~ implement established protocols regarding Project activities, in ways that avoid, minimize, and mitigate significant impacts to resources associated with the Topock TCP, ~~adverse effects to historically significant cultural and historic resources,~~ consistent with the CEQA Guidelines and with Stipulation I.B of the PA and Section 7.1 of the CHPMP, ~~and including the Topock Cultural Area,~~ and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners.
Mitigation Measure CUL-1a-2: Develop Tribal Access Plan (Measure Completed – Tribal Access Plan attached as Appendix P of the C/RAWP).
~~As part of the CMI Workplan, PG&E shall develop a written access plan to preserve tribal members' access to, and use of, the project area for religious, spiritual, or other cultural purposes. This plan will allow access to the extent PG&E has the authority to facilitate such access, and be consistent with existing laws, regulations, and agreements governing property within the project area. The access plan may place restrictions on access into certain areas, such as the Compressor Station and the existing evaporation ponds, subject to DTSC review with regard to health and safety concerns and to ensure noninterference with approved remediation activities. This access plan may be developed in coordination with the federal agencies with land management responsibilities in the project area (e.g., BLM and USFWS) in accordance with the related stipulation (General Principle I.C) contained in the Programmatic Agreement (Appendix PA). PG&E shall demonstrate a good faith effort to coordinate with Interested Tribes by including communication logs as part of the CMI Workplan.~~ **CUL-1a-2a: Implement Tribal Access Plans (New Measure).** During the construction, operation and maintenance, and decommissioning phases of the Project, on non-federal land, Tribal access shall be permitted in a manner consistent with Section 2.1 "Protocols for Continued Tribal Coordination" of the CIMP (as described below in Mitigation Measure CUL-1a-8q) and "Protocol to Preserve Tribal Member's Access to, and Use of, the Project Area" as included in Appendix P of the C/RAWP, and on federal land, Tribal access will be governed by the provisions of Appendix B "Tribal Access Plan" of the CHPMP. Procedures required by Appendix P of the C/RAWP include protocols and timelines for requesting access to PG&E property for religious, spiritual, or other cultural purposes and notification procedures (for additional details on requirements of the CIMP see below Mitigation Measure CUL-1a-8q, Section 2.11). Procedures required by Appendix B of the CHPMP include allowing Interested Tribes to access federal lands without specific authorization for the purposes of collecting materials (such as plants and minerals) or for traditional or ceremonial noncommercial uses; protocols for obtaining access permission for other purposes (such as larger or overnight gatherings); privacy measures that prohibit recording Tribal activities; and closure of some areas and roads to public access.
Mitigation Measure CUL-1a-3: Site Security (Groundwater FEIR with Revisions).
During construction, operation and maintenance, and decommissioning of the Project, PG&E shall enhance existing measures to prevent and reduce incursions from recreational and/or other outside users from affecting unique archeological and historically significant resources, including resources within the Topock TCP ~~Cultural Area~~, by implementing Measures CUL-1a-3a, -3c, -3d, and -3e.~~:~~ a) **CUL-1a-3a: Professional Qualifications and Annual Site Condition Assessment.** PGE's approved ~~Retaining a~~ Qualified Cultural Resource Consultant ~~to implement the~~ shall carry out all cultural resources work associated with the Project and implement the Mitigation Monitoring and Reporting Program (MMRP). Cultural resources consulting staff shall meet, or be under the direct supervision of individuals meeting, the minimum professional qualifications standards set forth by the Secretary of the Interior (codified in 36 CFR Part 61; 48 FR 44739), as provided in Stipulation XI.A of the PA. In the event that PG&E needs to retain a new Qualified Cultural Resource

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Consultant, or additional cultural consultants, DTSC shall have approval authority over PG&E's selection of cultural resources consultants.

During construction, operation and maintenance, and decommissioning of the Project, the Qualified Cultural Resources Consultant shall ~~and~~ conduct~~ing~~ yearly site ~~inspections~~ condition assessments ~~(or less frequently upon approval by DTSC)~~ of ~~identified~~ documented historical resources (as identified in Table 4.4-2 of this SEIR, as well as any future resources identified within the Project Area, and any additional resources that the BLM requests be included in the annual site condition assessments), including ~~inspections~~ site condition assessments of the Topock TCP ~~Cultural Area~~, to determine if substantial adverse changes have occurred relative to the condition of the historical resources during the past year ~~or prior to the implementation of the proposed project~~. Site condition assessments may occur less frequently or may be limited in geographic scope upon approval by DTSC and in coordination with PG&E, Interested Tribes, and BLM. PG&E shall offer to retain a T~~t~~ribal monitor at historic rates of compensation or T~~t~~ribal representatives designated by the Tribal Council or chairperson, if so requested, to accompany the Qualified Cultural Resources Consultant during the site condition assessment ~~inspections~~. Annual site condition assessment reports in the established format shall be prepared documenting the results of the site condition assessments. PG&E shall provide reports to DTSC and the Interested Tribes for review and comment in accordance with CIMP Section 2.3 "*Protocols for the Review of Cultural Resource-Related Documents" and* Section 6.6.5 "*Periodic Site Monitoring*" of the CHPMP. Based on the results of the report, DTSC may request that PG&E initiate a meeting with agencies and Interested Tribes to discuss the findings within 30 days of submittal of the reports. ~~The Qualified Cultural Resource Consultant shall be a person who is acceptable to DTSC and who is also a qualified archaeologist with a graduate degree in archaeology, anthropology or closely related field, plus at least 3 years of full-time professional experience in general North American archaeological research and fieldwork, with expertise/experience in the Southwest preferred.~~

~~b)~~ **CUL-1a-3b: Develop Site Security Plan (Measure Completed – Site Security Plan attached as Appendix Q of the C/RAWP).** ~~Developing a site security plan as part of the CMI Workplan. The site security plan shall include, but not be limited to, instructions for PG&E personnel to inspect the project site routinely during construction and report any human-caused disturbance to project facilities and the surrounding environment to DTSC and the appropriate landowner, such as BLM, USFWS, or FMIT, as appropriate, depending on the ownership of the property involved in the incursion. Notification shall be within a specified period, as established in the site security plan for the event, and shall also be summarized as part of the periodic implementation status report, as approved by DTSC for remedy implementation. This measure does not impose any obligation on PG&E to perform law enforcement duties on federal or private lands, but is intended to provide increased observation of potential intrusions into the project area during construction and operation of the final remedy that may impact significant cultural resources. PG&E staff, or assigned agents, should be instructed to report any outside disturbance to the environment personally observed over the course of the working day. Information shall be reported within a specific period, as established in the site security plan, to DTSC and the appropriate landowners, such as BLM, USFWS, or FMIT, depending on the ownership of the property intruded upon. The site security plan may also include the use of PG&E security cameras at major ingress/egress gates into the project site. Finally, if requested by the FMIT the plan may include the use of private security personnel to patrol the FMIT-owned parcel within the project area to prevent outside incursions.~~

c) **CUL-1a-3c: Coordination with BLM and San Bernardino County (Groundwater FEIR Measure with Revisions).** PG&E shall continue to C~~c~~oordinate~~ing~~ with BLM and San Bernardino County to facilitate ~~an~~ outreach ~~effort~~ to the staff at Moabi Regional Park, requesting that they communicate to visitors the parts of the P~~p~~roject A~~a~~rea that are off limits to off-road vehicle usage because of health and safety concerns, public lands management plans, or landowner requests. PG&E shall make a good faith effort to involve the surrounding tribes in this outreach effort, providing Interested Tribes with the opportunity to comment on outreach materials or provide a T~~t~~ribal representative ~~cultural resources specialist~~ the opportunity to participate in the outreach activities. As part of this outreach effort, PG&E shall work with Moabi Regional Park ~~Moabi~~ and offer to design, develop, and fund the installation of an informational ~~kiosk~~ display (e.g., bulletin board, kiosk) within Moabi Regional Park ~~Moabi~~ that informs visitors of the work being done in connection with the Project ~~at the project site. PG&E shall involve the tribes to the maximum extent feasible, as determined by DTSC, in the design and development of the informational kiosk.~~

As provided in Appendix P of the C/RAWP, PG&E shall use information gathered during previous meetings with BLM, San Bernardino Regional Parks Department, Moabi Regional Park concessionaires, and Interested Tribes to facilitate the execution of visitor outreach materials. PG&E shall develop draft visitor outreach materials; develop a draft training session for Moabi Regional Park visitor-contact employees; develop display design concepts and draft informational content; and develop a draft plan for executing other outreach ideas identified during meetings. Once initial materials and plans are drafted, PG&E shall consult with the BLM, San Bernardino Regional Parks Department, Moabi Regional Park concessionaires, and Interested Tribes and provide these stakeholders an opportunity to review and

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comment on any outreach plan prior to its implementation. PG&E shall initiate conversations with key stakeholders (i.e., BLM, San Bernardino County, Moabi Regional Park, and Interested Tribes) within six months of approval of the Final Remedy Design. In addition to Appendix P of the C/RAWP, PG&E shall complete and implement outreach materials and plans prior to the start of construction. Materials shall be reviewed by PG&E at each phase of the Project and may be updated with input from Interested Tribes and with approval by DTSC, as the Project progresses. d) **CUL-1a-3d: Signage (Groundwater FEIR Measure with Revisions).** PG&E shall post ~~Posting~~ signage to indicate those parts of the P~~p~~roject A~~a~~rea that are off limits to off-road vehicle usage due to possible health and safety concerns and to reduce potential damage to environmental resources. If agreed to by land owners and/or local, state, or federal management entities within the P~~p~~roject A~~a~~rea, PG&E shall work with the relevant land owner or land management entity to develop, design, and fund the installation of easily visible and clear signage. This may include coordination with BLM to install signage noting the designation of the area as an Area of Critical Environmental Concern owing to its biological and cultural resources, while ensuring that signs are placed in a way that does not draw unwanted attention to specific resources. As provided in Appendix P of the C/RAWP, PG&E shall initiate conversations with key stakeholders (i.e., BLM, San Bernardino County, Park Moabi) within six months of the final approval of the Final Remedy Design. In addition to the key stakeholders listed in Appendix P of the C/RAWP, the FMIT shall be included as a landowner in the Project Area. In addition to requirements set forth in Appendix P of the C/RAWP, PG&E shall include Interested Tribes as key stakeholders in the design and installation of signage, and shall install signage prior to the start of construction, if possible, dependent on cooperation and input from land owners and land management entities. **CUL-1a-3e: Site Security (New Measure)**. Site security procedures shall be implemented in a manner consistent with the Site Security Plan (C/RAWP Appendix Q). The Site Security Plan includes, but is not limited to, protocols for regular inspections of the Project Area during working and non-working hours; ensuring construction zones and protective measures are being maintained; ensuring personnel use designated travel routes and parking areas; notification and reporting of outside disturbances to the environment; worker cultural resources sensitivity training; and visitor access controls.
Mitigation Measure CUL-1a-4: Technical Review Committee (Groundwater FEIR Measure with Revisions).
PG&E shall work with representative members of the Interested Tribes to convene and retain a multidisciplinary panel of independent scientific and engineering experts as part of a Technical Review Committee (TRC). The TRC may be called upon by the Interested Tribes to review Project-related documents and attend Project-related meetings. TRC efforts must be specific to that person's area of expertise and with the objective of advising interested tribal members on technical matters relating to the remedy design and its construction. The TRC shall be made up of not more than five multidisciplinary experts. ~~who will be on call to review project-related documents, participate in project-related meetings, and advise interested tribal members on technical matters relating to the final design and remedy.~~ The TRC shall include only persons with technical expertise~~, including but not~~ limited to geology, hydrology, water quality, engineering, paleontology, toxicology, chemistry, or biology~~, or botany~~. ~~Before July 1, 2011, PG&E shall post an open grant or Request for Qualifications (RFQ) and retain members of the TRC at rates comparable to those paid historically to tribal experts by PG&E for the remediation project.~~ TRC members shall be retained at rates comparable to those paid historically to tribal experts by PG&E. TRC members shall be selected by majority vote amongst participants from the ~~of one representative from each participating~~ Interested Tribes. ~~PG&E shall provide Interested Tribes at least 30 days notice of the meeting to select TRC members and to review TRC candidate qualifications. For the purposes of contracting, the grant may be awarded to one tribal government to manage or, alternatively,~~ For the purposes of contracting, this grant may be awarded to one tribal government to manage, or, alternatively, PG&E may reimburse the tribe or TRC members directly. The entirety of the monies shall be used to fund the scientific and engineering team exclusively, and shall not be used to fund other tribal government expenses or used to support legal counsel. ~~A stipulation of the open grant shall be that the scientific and engineering team shall provide all deliverables and results to all involved tribes, despite a possible contract agreement with only one tribe or with PG&E.~~ Activities shall be reported to DTSC for review and to ensure PG&E is in compliance at least annually. ~~Upon conclusion of the construction phase of the project,~~ Funding for the TRC shall continue until DTSC has determined that the remedy is operating properly and successfully, at which time the necessity and dollar value of the TRC shall be assessed by ~~PG&E and, with the approval of~~ DTSC~~,~~ and the provision of the TRC may ~~shall either~~ be extended, reduced, or terminated ~~under the operations and maintenance phase~~. During the operation and maintenance and decommissioning phases, the necessity of the TRC shall be periodically evaluated by DTSC.

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This is the same committee referenced by CR-1e-8 in the Topock Soil Investigation Project EIR and MMRP. ~~An annual activity report shall be sent to DTSC for review and to ensure PG&E is in compliance.~~
Mitigation Measure CUL-1a-5: Avoidance of Indigenous Plants of Biological and Cultural Significance (Groundwater FEIR Measure with Revisions).
During construction, operation and maintenance, and decommissioning of the Project, ~~S~~should any indigenous plants of traditional cultural significance and listed in Appendix PLA of ~~this~~ the Groundwater FEIR be identified within the ~~p~~Project ~~a~~Area, PG&E shall avoid, protect, and encourage the natural regeneration of the identified plants. ~~when developing the remediation design, final restoration plan, and IM-3 decommission plan.~~ In the event that impacts on the identified plants cannot be avoided and such plants will be displaced, provisions included in the Plan for Culturally Significant Plants (Appendix A of the CIMP) shall be implemented. ~~PG&E shall retain a qualified botanist who shall prepare a plant transplantation/monitoring plan which can be included as part of the Cultural Impact Mitigation Program (CIMP) referenced in CUL-1a-8 either by (1) transplanting such indigenous plants to an on-site location, or (2) providing a 2:1 ratio replacement to another location decided upon between PG&E and members of the Interested Tribes. Plans to transplant or replace such plants shall be approved by DTSC. In coordination with the qualified botanist, PG&E shall monitor all replanted and replacement plants for at least 3-5 years, and shall ensure at least a 75 percent survivorship during that time.~~ This mitigation measure is not meant to replace or subsume any actions required by state or federal entities with regard to the protection of species listed as rare, threatened, or endangered. Appendix A of the CIMP requires preconstruction surveys of works areas, staging areas, and access routes to identify and demarcate culturally significant plants; protocols for transplanting culturally significant trees and plants; protocols for salvaging topsoil for re-use during site rehabilitation to encourage regrowth of desert annuals; collecting seeds for future planting; protocols for replacement planting by container grown plants/trees; and future monitoring of transplanted trees and shrubs.
Mitigation Measure CUL-1a-6: Noise (Groundwater FEIR Measure with Revisions).
During construction, operation and maintenance, and decommissioning of the Project, a~~A~~ll ~~additional~~ phone calls and alarms associated with remediation activities or facilities shall not be routed through PG&E's existing alarm system utilized at the ~~compressor~~ S~~s~~tation. The notification system for remediation-related alerts and/or phone calls shall not introduce additional noise to the P~~p~~roject A~~a~~rea, to the maximum extent feasible, provided there is ongoing compliance with applicable safety regulations or standards of the Federal Energy Regulatory Commission, Occupational Safety and Health Administration, and other agencies. ~~(See Mitigation Measure NOISE-3 for additional mitigation related to the Topock Cultural Area).~~
Mitigation Measure CUL-1a-7: Nighttime Lighting (Groundwater FEIR Measure with Revisions).
During construction, operation and maintenance, and decommissioning of the Project, n~~N~~ighttime construction-related activities shall be limited to circumstances that require the continuation of work into the nighttime periods because it ~~that~~ cannot be disrupted or suspended (including but not limited to conditions during drilling or concrete pouring) ~~until the following day, such as, but not limited to, well drilling and development or decommissioning activities~~ or work may require an early morning start to ensure completion within 1 day or because of heat constraints including with regard to personnel health and safety. To minimize lighting impacts, lighting shall include shrouding or shielding for portable lights, the use of the lowest allowable height and fewest feasible numbers of lights consisting of downward-facing fixtures fitted with cutoff shields to reduce light diffusion. No permanent light poles shall be installed. However, lighting would also be required to comply with the minimum county, state, and federal security and safety standards (as described in Appendix P – Cultural Resources Protocols). ~~Lighting considerations, including the potential use of solar power for some lighting, shall be included as part of the remedial design plan to be developed with involvement of Interested Tribes and the U.S. Department of the Interior. To minimize construction and operations-related lighting impacts, the lighting in the remedial design plan shall include, at a minimum: (1) shrouding/shielding for portable lights needed during construction and operational activities; (2) installation of portable lights at the lowest allowable height and in the smallest number feasible to maintain adequate night lighting for safety; (3) shielding and orientation of lights such that off-site visibility of light sources, glare, and light from construction activities is minimized to the extent feasible. No additional permanent poles shall be installed for lighting. This mitigation measure is not meant to replace or subsume any actions required by the County or state or federal entities with regard to lighting required for minimum security and safety purposes.~~
CUL-1a-8 (a through p): Develop Cultural Impact Mitigation Program (CIMP) (Measure Completed – Cultural Impact Mitigation

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Program attached as Appendix H of the C/RAWP).

~~CUL-1a-8:~~ ~~Prior to commencement of construction, PG&E shall submit as part of the final Remedial Design, a CIMP developed in coordination with Interested Tribes for DTSC's review and approval. The CIMP may be developed in coordination with the federal agencies with land management responsibilities in the project area (e.g., BLM and USFWS) in accordance with the Programmatic Agreement (Appendix PA). The CIMP shall include, at a minimum and to DTSC's satisfaction, the following:~~

- ~~a) Protocols for continued communication. Consistent with past practice and the communication processes previously entered into by PG&E with Interested Tribes, the company shall continue to communicate with Interested Tribes during the design, construction, operation, and decommissioning of the project. Prior to implementation of construction, PG&E shall communicate with Interested Tribes that place cultural significance on the Topock Cultural Area. Outreach efforts between the Tribes and PG&E shall be communicated by PG&E to DTSC quarterly during the design and construction phase for review and input, and annually during project operations.~~
- ~~b) Protocols for the appropriate treatment of archaeological materials that may be disturbed or discovered during implementation of the final remedy, including protocols for the repatriation of significant items of cultural patrimony that may be recovered during the project, and protocols for the curation of cultural materials recovered during the project. Treatment of archaeological sites may include data recovery or capping. If data recovery is proposed, a Research Design following California Office of Historic Preservation guidelines or federal guidelines, as applicable, shall be prepared and reviewed and approved by DTSC.~~
- ~~c) Protocols for the review of cultural resource-related documents throughout the design, construction, and operational phases.~~
- ~~d) Protocols for the review of project design documents before the beginning of construction, including reviews of project design documents throughout the design process (e.g., Preliminary [approximately 30% completed], Intermediate [approximately 60% completed] and Pre-final design).~~
- ~~e) Protocols for the appropriate methods to be used to restore the environment to its preconstruction condition upon decommissioning of individual groundwater remedy facilities.~~
- ~~f) A plan for the decommissioning and removal of the IM-3 Facility and proposed restoration of the site (to be an appendix to the CIMP).~~
- ~~g) Protocols for the repatriation of clean soil cuttings generated during construction activities and during drilling associated with repair/replacement activities during operations and maintenance phases. The soil cuttings shall be managed in compliance with applicable laws and regulations on site.~~
- ~~h) Protocols for the appropriate methods, consistent with Mitigation Measure NOISE-3, to reduce auditory impacts.~~
- ~~i) Protocols for the appropriate methods, consistent with Mitigation Measures AES-1 and AES-2, to reduce visual intrusions.~~
- ~~j) Protocols for tribal notification in advance of project-related activities that the Interested Tribes may feel have the potential to cause adverse impacts to sensitive cultural resources.~~
- ~~k) Protocols to be followed by project personnel to accommodate, if feasible as determined by DTSC, key tribal ceremonies that involve the Topock Cultural Area.~~
- ~~l) Provisions affording sufficient tribal monitors to observe ground-disturbing activities and/or other scientific surveying (e.g., biological surveys) that may occur in preparation for construction activities. Ground-disturbing~~

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~~activities include trenching, excavation, grading, well excavation/drilling, decommissioning of the IM-3 Facility and subsurface pipeline, or other construction-related activities.~~

~~m) Provisions of reasonable compensation for tribal monitors consistent with historic rates.~~

~~n) Locations requiring specific protective devices, such as temporary fencing, flagging, or other type of demarcation during construction.~~

~~o) Protocols for the reporting of discoveries of cultural importance consistent with existing statutes and regulations.~~

p) ~~Protocols for the inspection of remediation facilities and/or staging areas throughout the construction phase~~.

CUL-1a-8q: Implement Cultural Impact Mitigation Program (New Mitigation Measure).

All activities related to the Final Remedy Design, as well as implementing the Future Activity Allowance, long-term operation and maintenance, and future decommissioning activities, shall be implemented consistent with provisions of the Cultural Impact Mitigation Program (CIMP). In addition to the parties listed in Section 2.15 of the CIMP as requiring consultation regarding discoveries and review of draft documents, DTSC shall also be included in these processes. PG&E, in consultation with the Interested Tribes, may amend the CIMP if protocols or procedures require modification due to unforeseen circumstances, as deemed necessary by DTSC. The CIMP, which is based upon Groundwater FEIR measures CUL-1a-8 (a through p), is summarized below. The text below is intended to provide a brief summary of the primary impact-reducing components of the CIMP, some of which reference the federal requirements of the PA and CHPMP (the CIMP, PA, and CHPMP may be amended or revised from time to time). Where this summary text differs from the CIMP (or the PA or CHPMP) or subsequent revision, the language of the CIMP (or PA or CHPMP) shall govern.

Section 2.1- Protocols for Continued Tribal Communication: This provides methods for facilitating open communication with Interested Tribes; documenting the Interested Tribes' preferences for method of open communication; and reporting Tribal outreach to DTSC. This protocol incorporates reference to Section 6.7 "Protocols for Tribal Notification and Consultation in Advance of Certain Activities" of the CHPMP, which requires the BLM to establish email and mail distribution lists for all Points of Contact (POCs) and distribution of documents in accordance with Appendix B of the PA.

Section 2.2 - Protocols for Appropriate Treatment of Archaeological Materials: This describes how PG&E will continue to collaborate with Interested Tribes, respecting their preferences for avoidance and other treatment of archaeological discoveries; pre-construction field verifications; implementing procedures in Section IX of the PA and Section 8.1 and Appendix C of the CHPMP (i.e., cease work measures, notification protocols, inspecting and evaluating significance of discoveries, avoiding discoveries if possible and establishing protective measures, and treatment of discoveries that cannot be avoided). This section also outlines collection and curation protocols and data recovery procedures.

Section 2.3 - Protocols for the Review of Cultural Resource-Related Documents: This describes the dissemination and review of cultural resource-related documents; outlines types of documents available for review and comment; provides a timeframe for review and comment; and provides an opportunity for Interested Tribes to present their unique perspectives on cultural significance of the area, including natural and cultural resources, Tribal beliefs, religions, customs, and current practices. This protocol incorporates reference to Section XI of the PA.

Section 2.4 - Protocols for the Review of Project Design Documents: This documents the procedures for dissemination and Tribal review and comment on the completed groundwater remedy design documents prior to the beginning of construction. The Final Remedy Design document was completed and submitted to DTSC on November 18, 2015.

Section 2.5 - Protocols for Restoring the Environment to Its Preconstruction Conditions Upon Decommissioning: This protocol includes a description of the general approach to restoring areas affected by the Final Remedy Design (e.g., backfill and compaction; grading and contouring; habitat restoration and revegetation; and consideration/accommodating requests for Tribal ceremonies); completion of a restoration plan within 120 days of the Department of the Interior's (DOI's) certification of the completion of the remedy; development of the restoration plan in consultation with land owners and managers; and consultation with Signatories, Interested Tribes, and Invited Signatories to the PA. (Mitigation Measure CUL-1a-17, described below, requires implementation of the restoration plan.)

Section 2.6 - IM-3 Decommissioning Plan (Appendix B of the CIMP): The IM-3 Decommissioning Plan includes procedures for IM-3 system lay-up; procedures for decommissioning and removing the IM-3 system; waste management procedures; best management practices and

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mitigation measures compliance; soil confirmation sampling; a general approach for restoring areas originally affected by IM-3 operations; approvals and reporting requirements during the phases of IM-3 system closure; and a proposed work schedule. **Section 2.7 - Protocols for Repatriation of Clean Soils During Construction:** The approach and management to soil displacement was documented in "Revised Management Protocol for Handling and Disposition of Displaced Site Material" (Appendix B of the Soil Management Plan) and outlines the procedures and measures to minimize the amount of displaced material that leaves the Project Area and to provide for the eventual return, reuse, or restoration of the material onto the lands from which it was displaced. The management protocol was incorporated into the Soil Management Plan (Appendix L of the C/RAWP) – see Mitigation Measure CUL-1a-18 below for additional details on the procedures in the Soil Management Plan. **Section 2.8 - Noise Protocol:** This protocol includes establishing a disturbance coordinator for Project-related noise concerns; implementing engineering controls to minimize construction-related noise (e.g., install temporary noise barriers such as berms, stockpiles, dumpsters, bins, and/or engineered acoustical barriers) within identified noise buffers; selecting noise monitoring locations in coordination with Interested Tribes; maintaining all construction equipment according to manufacturer guidelines and fitting equipment with the best available noise suppression devices; shrouding or shielding impact tools; muffling or shielding exhaust ports on power equipment; limiting idling of construction equipment; procedures for addressing Project-related noise concerns; and communication/notification with Interested Tribes. **Section 2.9 - Protocols for the Appropriate Methods, Consistent with Mitigation Measures AES-1 and AES-2, to Reduce Visual Intrusions:** This protocol includes the measures listed in SEIR Mitigation Measures AES-1 and AES-2, including a minimum setback of 20 feet from the water to prevent substantial vegetation removal along the riverbank; protecting mature plants; revegetation of disturbed areas within the riparian vegetation along the Colorado River; using plant material consistent with surrounding native vegetation; construction wells, pipeline, and utilities in muted, earth-tone colors consistent with the surrounding natural color palette. The protocol also summarizes the design concepts that PG&E incorporated into the Project, including locating final aboveground facilities within existing facilities when appropriate; building designs that are harmonious with existing buildings and nearby landforms; flush-mount or below-ground installations whenever feasible; construction within existing transportation corridors; working within previously disturbed sites whenever possible; placing aboveground facilities away from traffic where feasible; and designing lighting to minimize glare. The protocol also describes the opportunities afforded to agencies, Interested Tribes, and other stakeholders to provide their input on visual aspects of the Project design, such as providing visuals in design packages and allowing reviewing parties to request additional visualizations or key views. The protocol also provides notification procedures to address temporary visual intrusions during Project implementation. **Section 2.10 - Protocols for Tribal Notification in Advance of Project-Related Activities:** Whenever possible, PG&E will notify Interested Tribes at least two weeks in advance of project-related ground-disturbing activities (such as grading, trenching, boring, drilling, or other excavation). Methods of notification may include, but are not limited to: through workplans and Project schedules; formal presentation or announcements at meetings; posting schedules online; email; telephone when advance notification was not possible; monthly schedules of field activities; weekly look-ahead schedules; and/or daily information sheets during times of intensive Project activity. **Section 2.11 - Protocols to Accommodate Tribal Ceremonies or Activities Involving Topock Cultural Area:** Key Tribal ceremonies involving the Topock Cultural Area [Topock TCP] will be accommodated if feasible as determined by DTSC. Any Tribe(s) wishing to perform such a ceremony may contact PG&E's Site Manager by telephone, email, or in writing to discuss the specific request. For the purposes of this protocol, key Tribal ceremonies will include any ceremonies or activities for which the Tribes choose to notify and/or ask for assistance. PG&E will consider the request and decide if the request can be accommodated as is, with modifications, or not at all, and will notify the requestor by phone or in person as soon as possible. PG&E staff, consultants, contractors or subcontractors will conduct themselves appropriately and, if invited to participate, will be respectful, turn off cell phones, and refrain from photography without permission. PG&E will maintain confidentiality of documents and sensitive information to the maximum extent allowed by the law. The Tribal representative will be responsible for further discussion of ceremonial activities with other identified impacted landowners, if necessary. Access to the Project Area by Tribal religious practitioners for the purpose of conducting Tribal ceremonies will be consistent with Federal and state laws, regulations, and agreements governing the property within the Project Area. Such access will also be consistent with the Tribal Access Plan prepared in response to 2011 Groundwater FEIR Mitigation Measure CUL-1a-2, "Protocol to Preserve Tribal Member's Access to, and Use of, the Project Area" as included in Appendix P of the C/RAWP, General Principle I.C of the BLM's PA, and Appendix B "Tribal Access Plan" of the CHPMP. **Section 2.12 - Protocols for Tribal Monitors to Observe Ground-Disturbing Activities:** PG&E will notify Interested Tribes of planned ground-disturbing activities and other scientific surveying within a minimum of one week and in the event of schedule changes. Tribal monitors will prepare and submit Daily Monitoring Logs. This protocol references Section 6.6.4 "Construction Monitoring" of the CHPMP, which

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requires advance notification and inviting Tribal monitors to observe ground-disturbing activities in accordance with Appendix C of the PA. **Section 2.13 - Provision of Reasonable Compensation for Tribal Monitors:** PG&E will provide reasonable compensation for Tribal monitors who work on the Project consistent with historic rates. **Section 2.14 - Protocols for Protective Measures for Archaeological/Historical Sites During Construction:** This protocol provides for identifying protective measures cultural sites, to the extent feasible, prior to construction; modifying construction zones to avoid discoveries identified during construction; implementing protective measures (such as covering, flagging, or fencing); if needed, modifying exclusion zones in consultation with the parties in the field; providing for archaeological and Tribal monitoring of implementation and removal of protective measures; periodic inspection of protective measures during construction; inspection, documentation, evaluation, and protection of discoveries; notification to Tribal monitors of discoveries; and restoration of areas to pre-constructions conditions after removal protective measures. **Section 2.15 - Protocols for Reporting Discoveries of Cultural Importance:** This protocol outlines how PG&E will notify DTSC and BLM of discoveries of previously unidentified or suspected historic or archaeological resources (including human remains and/or associated funerary objects or graves), as well as Interested Tribes if the resource is Native American in origin; will cease work within the vicinity of the discovery until the discovery has been evaluated and treatment developed; implement protective measures, if necessary; choose avoidance as the preferred method for the treatment of cultural resources, particularly for human remains, items of cultural patrimony, or funerary objects; and document discoveries in a culturally sensitive manner, and invite Interested Tribes to assist with documentation to identify Tribal cultural values. If further studies are required for any discovery, PG&E will consult with BLM, who will consult with Interested Tribes. Documentation will be provided to BLM and Interested Tribes (for Native American resources) for review and comment and final documents will be distributed to DTSC, BLM, Interested Tribes, and PG&E, and to ASM or CHRIS as appropriate. **Section 2.16 - Protocols for Inspecting Remediation Facilities and/or Staging Areas During Construction:** The locations of remediation facilities and staging area will be examined for cultural resources throughout the construction phase. Interested Tribes will receive notice at least 2 weeks in advance whenever possible. Previously impacted land will be selected wherever feasible for re-use as staging areas and/or the siting of remediation facilities and direct physical impacts to the Topock Maze as it is manifested archaeologically will be completely avoided when siting any staging area or remediation facility. Any resources present will be avoided to the extent feasible. This protocol also provides for archaeological and Tribal monitoring of earth-disturbing activities at remediation facilities and/or staging areas during construction, and states that these monitors will at all times comply with Project-wide and job site-specific safety requirements.
Mitigation Measure CUL-1a-9: Preference for Previously Disturbed Areas (Groundwater FEIR Measure with Revisions).
During ~~selection of~~ the design of areas to be used as part of the Future Activity Allowance,~~ and specific locations for physical remediation facilities,~~ PG&E shall, in communication with the Interested Tribes (and subject to their review), and to the maximum extent feasible, as determined by DTSC, give: (1) priority to previously disturbed areas for the placement of new physical improvements; and (2) priority to re-use of existing physical improvements, such as but not limited to wells and pipelines, but not including the IM-3 ~~f~~Facilities. "Disturbed" areas in this context means those areas outside of documented archaeological site boundaries that have experienced ground disturbance in the last 50 years. ~~PG&E shall produce an aerial map of these disturbed areas to guide project design, and PG&E shall make a good faith effort to provide tribes with an opportunity to review and comment on the information displayed on the map in determining "disturbed" areas.~~
Mitigation Measure CUL-1a-10: Avoidance of Topock Maze (Groundwater FEIR Measure with Revisions).
During construction, and operation and maintenance, and decommissioning activities, as well as activities associated with the Future Activity Allowance, PG&E shall consider the location of Loci A, B, and C of the Topock Maze during the design of Project components ~~and approval of the physical facilities necessary for the final remedy~~ and is prohibited from creating any direct physical impact on the Topock Maze, as it is manifested archaeologically. ~~Through~~ T~~t~~he design of facilities as part of the Future Activity Allowance~~, PG&E~~ shall also prevent all indirect (e.g. noise, aesthetics) impacts on the Topock Maze, to the maximum extent feasible as determined by DTSC.
Mitigation Measure CUL-1a-11: Open Grant Funding (Groundwater FEIR Measure with Revisions).
During the construction phase of the Project, PG&E shall provide an open grant for one ~~two~~ part-time cultural resource specialist/project manager position~~s~~ for each of the five Interested Tribes: Chemehuevi, Cocopah, CRIT, FMIT, and Hualapai. ~~during the design and construction phases of the remediation project. The positions shall be filled by qualified members of an Interested Tribe as nominated by a majority vote of~~

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~~their Tribal Council(s) and appointed by DTSC's project manager if more than two members are nominated.~~ The award of the grants is for the timely review of Project documents, participating in project-related meetings, coordinating and managing input and interests for the Tribe on the Project, and to act as a Tribal liaison with PG&E and regulatory agencies. ~~continued involvement in review of project documents and participation in project-related meetings, including TRC meetings, at rates of historic compensation.~~ The part-time cultural resources specialist/project manager shall be compensated at rates of historic compensation with provisions for escalation of rates tied to the U.S. Department of Labor, Bureau of Labor Statistics Employment Cost Index. ~~Additionally, in light of FMIT's ownership of land in the project area and historical involvement in the environmental process, additional funding is guaranteed for one full-time FMIT position upon submission of an application by a qualified FMIT member who shall be appointed by the FMIT council, provided such funding is not duplicative of the services and funding provided by PG&E pursuant to the Settlement Agreement between PG&E and the FMIT in Fort Mojave Indian Tribe v. Dept. of Toxic Substances Control, et al., Case No. 05CS00437 for a position with the FMIT's AhaMakav Culture Society.~~ The payment of grant monies shall be timed to the awarded tribes' fiscal cycles so that the tribes are not forced to front funds for long periods of time. These positions shall act as cultural resources contacts and project managers for interactions between the tribes, PG&E, and DTSC to ensure coordination during construction of the remedy to avoid, reduce, or otherwise mitigate impacts on resources qualifying as historical resources under CEQA. ~~for review and comment of subsequent project and/or environmental documents related to the design and implementation of the groundwater remediation project to avoid, reduce, or otherwise mitigate impacts on historical resources, as defined by CEQA.~~ This funding is separate from provisions for tribal monitor positions and shall not be used for routine tribal business or legal counsel. For review and approval, PG&E shall provide DTSC with the names of the selected grant recipients and a~~n annual~~ report that summarizes activities associated with the grant program, at least annually. ~~Upon the conclusion of the construction phase of the project,~~ Funding for these positions shall continue until DTSC has determined that the remedy is operating properly and successfully, at which time the necessity of the cultural resource specialist/project manager positions shall be assessed by DTSC, and the positions shall be extended, reduced, or terminated. During the operation and maintenance and decommissioning phases, the necessity of the positions shall be periodically evaluated by DTSC. ~~and dollar value of the grant program shall be assessed by PG&E and, with the approval of DTSC, shall either be extended or terminated under the operations and maintenance phase~~. These positions shall be inclusive of those references by CR-1e-9 in the Topock Soil Investigation Project EIR and MMRP and not additive.
Mitigation Measure CUL-1a-12: Tribal Ceremonies (Groundwater FEIR Measure with Revisions).
PG&E shall provide reasonable ~~sufficient~~ opportunity, as determined by DTSC, for Interested Tribes to conduct ~~provide~~a traditional healing/cleansing ceremony (or ceremonies) before and after ~~ground disturbing~~ the construction phase ~~activities occur~~. Accommodations for Tribal ceremonies shall be implemented consistent with Section 2.11 *"Protocols to Accommodate Tribal Ceremonies or Activities Involving Topock TCP"* of the CIMP (as described above in Mitigation Measure CUL-1a-8q) and Section 7.2 *"Accommodation of Tribal Activities and Ceremonies Involving the Topock Maze/TCP"* (see below) and Appendix B of the CHPMP (as described above in Mitigation Measure CUL-1a-2a). As described in Section 7.2 of the CHPMP, the BLM will continue to work with the Interested Tribes to identify Tribal activities and ceremonies that are associated with the Topock TCP and to consult with the Interested Tribes and PG&E to develop treatment measures to accommodate them.
Mitigation Measure CUL-1a-13: Develop Worker Education Training Program (Measure Completed – Worker Education Training Program is attached in Appendix P of the C/RAWP).
~~PG&E shall, in communication with Interested Tribes, develop as part of the CMI Workplan, a worker cultural sensitivity education program. The program shall be implemented before commencement of construction and throughout construction and operations as personnel are added. This program may include information provided directly by tribal entities either in written form or on video, in a manner consistent with Appendix C in the existing BLM Programmatic Agreement. The worker cultural sensitivity education program shall ensure that every person working on the project as an employee or contractor, before participating in design or outdoor activities at the project site, is informed regarding:~~ ~~• the cultural significance of the Topock Cultural Area,~~ ~~• appropriate behavior to use within the Topock Cultural Area,~~ ~~• activities that are to be avoided in the Topock Cultural Area, and~~

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~~• consequences in the event of noncompliance.~~
CUL-1a-13a: Implement Worker Education Training (New Measure).
During construction, operation and maintenance, and decommissioning of the Project, worker education training procedures shall be implemented consistent with the protocols identified in Appendix P of the C/RAWP. The following provides a summary of the worker education training procedures as identified in Appendix P of the C/RAWP. The worker education program will be implemented prior to commencement of any ground-disturbing activities and as personnel are added. The program includes, but is not limited to: mandatory training for PG&E employees, consultants, contractors, and subcontractors who are involved with construction or ground disturbing activities (including decommissioning and restoration); cultural sensitivity training to familiarize personnel with the sacred nature of the area; providing for participation of Interested Tribes, Tribal monitors, archaeological monitors, and Federal agency staff as appropriate; and non-tolerance of any disrespectful behavior in the field and removal of any staff, workers, or contractors who do not comply. Personnel engaged in field activities will be trained prior to conducting fieldwork and personnel engaged in design work will be trained as soon as practicable after being assigned to the Project. Training will be conducted at each Field Project Orientation meeting prior to each substantial Project work phase and at additional opportunities as identified by PG&E in collaboration with the Interested Tribes. Training will include, but is not limited to discussion topics such as: the significance and sensitivity of the Topock TCP; appropriate on-site behavior; protection of significant cultural resources; worker responsibilities (avoidance of sensitive areas, staying on designated routes and work areas, etc.); and consequences of noncompliance. Presentation materials that may be developed will be shared with Interested Tribes for their input. PG&E will maintain training records that will be dated and signed by the trainee and trainer.
Mitigation Measure CUL-1a-14: Tribal Notification of Potential Future Activities (New Measure).
For any potential Future Activity Allowance that requires preparation of a work request, work plan, or technical memorandum, PG&E shall submit the subject documentation to DTSC, which will contain a description of the proposed activities, any available information regarding current conditions, and tracking information regarding how much of the Future Activity Allowance would be used by the particular activity, should it be authorized by DTSC. DTSC shall then provide the documentation to Interested Tribes (and other stakeholders) for review and comment. Timeline for review and consideration of Tribal comments shall be made by DTSC on a case-by-case basis, dependent on the known resources present on the subject location and the urgency of the Future Activity Allowance to ensure the proper and successful operation of the Remedy. Following Tribal review of the documentation, next steps could include modifications to the work plan, additional correspondence (i.e., site walk, meetings), or authorization by DTSC of the necessary Future Activity Allowance. If the Future Activity Allowance is ultimately approved by DTSC, all the applicable mitigation measures defined in this SEIR will apply.
Mitigation Measure CUL-1a-15: Future Activity Allowance Cultural Resources Survey (New Measure).
During the planning phase of any Future Activity Allowance activities, all areas that may be subject to construction or operation and maintenance activities as part of the Future Activity Allowance, plus a 50-foot buffer, and have not been surveyed in the past 5 years, shall be subject to archaeological resources survey prior to any ground disturbing activity. The survey shall be conducted by the Qualified Cultural Resources Consultant and shall document resources potentially qualifying as historical resources under CEQA (both as contributors to the Topock TCP and as individual historical resources). Tribal monitors shall be invited to participate in the survey. PG&E's Qualified Cultural Resources Consultant shall document the results of the survey in a *Future Activity Allowance Cultural Resources Survey Report* that follows the *"Archaeological Resource Management Reports guidelines and Department of Parks and Recreation"* guidelines. PG&E's Qualified Cultural Resources Consultant shall also prepare Department of Parks and Recreation 523 forms and file them with the South Central Coastal Information Center (for resources in California) and Arizona State Museum site cards shall be prepared and filed with the Arizona State Museum (for resources in Arizona). PG&E shall distribute draft reports to DTSC, BLM, and the Interested Tribes for review and comment consistent with Section 2.3 *"Protocols for the Review of Cultural Resources-Related Documents"* of the CIMP and Section 6.7 *"Protocols for Tribal Notification and Consultation in Advance of Certain Activities"* of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). PG&E shall submit final reports to DTSC, BLM, and the Interested Tribes no less than 2 weeks prior to the start of ground disturbance in an area. In the event that resources potentially qualifying as historical resources under CEQA (either as contributors to the Topock TCP or as individual historical resources) are identified during the survey, avoidance and preservation in place shall be the preferred manner of mitigating impacts to the resources. If avoidance of the identified resources is determined by DTSC, in coordination with respective landowners, Interested Tribes, and PG&E, to be infeasible, procedures provided in Section 2.2 *"Protocols for the Appropriate Treatment of Archaeological Materials"* of the

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CIMP, Section 8 "Discoveries" and Appendix C "Discovery Plan" of the CHPMP (as described above in Mitigation Measure CUL-1a-8q), and Appendix D *"Plan of Action"* of the CHPMP (as described below in Mitigation Measure CUL-4) shall be implemented. If DTSC determines that an expedited action is necessary in order to respond to the changing site condition, pre-construction inspection protocols identified in Section 2.16, *"Protocols for Inspecting Remediation Facilities and or Staging Areas During Construction"* of the CIMP shall then be followed. This section requires tribal notification in advance of the pre-construction inspection, archaeological and tribal inspection of the area, avoidance of identified resources if possible, or treatment if necessary, and monitoring of any ground disturbance. In instances where Future Activity Allowance activities are proposed in the field due to an immediate need as a result of unforeseen circumstances, PG&E shall conduct the activity in consultation with an archaeological monitor and Tribal Monitor on the ground, and notify DTSC and the appropriate DOI agency of the activity within 24 hours.
Mitigation Measure CUL-1a-16: Implement Restoration Plan (New Measure).
Restoration following decommissioning of the Project shall be implemented in a manner consistent with Section 2.5 *"Protocols for Restoring the Environment to its Preconstruction Conditions Upon Decommissioning"* of the CIMP (as described above in Mitigation Measure CUL-1a-8q) and the Havasu National Wildlife Refuge Restoration Plan (C/RAWP Appendix G; see Mitigation Measure BIO-1a in this SEIR). Additionally, consistent with requirements of Section 6.3 *"Environmental Restoration"* of the CHPMP, a Remedy Decommissioning Plan will be submitted by PG&E to DOI within 120 days of DOI's certification of completion of the CERCLA Remedial Action and determination by DOI that removal of such facilities is protective of human health and the environment. The Remedy Restoration Plan shall be provided to DTSC and Interested Tribes for review and comment, consistent with Mitigation Measure BIO-1b.
Mitigation Measure CUL-1a-17: Displaced Soil Procedures (New Measure).
Procedures for the management and handling of displaced soils resulting from activities associated with construction, operation and maintenance, and decommissioning of the Project shall be treated in a manner consistent Section 2.7 "*Protocols for Repatriation of Clean Soils Cuttings Generated During Construction"* of the CIMP (as described above in Mitigation Measure CUL-1a-8q) and the Soil Management Plan (C/RAWP Appendix L). The following provides a summary of the Soil Management Plan procedures as identified in Appendix L of the C/RAWP. Where this summary text differs from the Soil Management Plan or subsequent revision, the language of the Soil Management Plan shall govern. As indicated in the Soil Management Plan, clean soil (material that is determined to have a representative concentration that is equal to or less than the interim screening level or project-specific cleanup goal) will be labeled and stored on-site in 55-gallon drums/small containers, roll-off bins, and/or stockpiles for return, re-use, and/or restoration. Soil classified as RCRA and non-RCRA hazardous waste, and non-hazardous soil that is unsuitable for final disposition on-site because contaminants are present above the interim screening level or Project-specific cleanup goal, will be labeled and stored temporarily on-site and transported off-site for disposal. Options for return, re-use, and/or restoration on-site that have been identified include: replacement of original material into original or other borings, trenches, or excavations; creation of topographical or landscape barriers to protect sensitive areas; creation of berms or other structures to prevent erosion; on-site road maintenance; and stockpiling in designated areas.
Mitigation Measure CUL-1a-18: Aesthetics (New Measure).
During construction, operation and maintenance, and decommissioning, protocols for the protection of visual resources shall be implemented in a manner consistent with Section 2.9 *"Protocols for the Appropriate Methods, Consistent with Measures AES-1 and AES-2 [of the Groundwater FEIR] to Reduce Visual Intrusions"* of the CIMP (see also Mitigation Measures AES-1 and AES-2 of this SEIR).
Mitigation Measure CUL-1a-19: Implement Treatment Plan for the Topock TCP (New Measure).
All activities associated with construction, operation and maintenance, and decommissioning of the Final Remedy Design shall be implemented consistent with provisions of the *Cultural and Historical Property Treatment Plan for the Topock Compressor Station* (Hanes and Price in progress), which is being prepared pursuant to requirements of the Stipulation VII.B and Appendix B of the PA and mitigation measure CUL-1b/c-3 of the Groundwater FEIR. The Treatment Plan shall address treatment to the Topock TCP and its contributors, in addition to historical resources other than the Topock TCP (this is the same Treatment Plan referenced in Section 7 *"Cultural Property-Specific Treatment Measures"*

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of the CHPMP, which can be used to satisfy the requirements of this mitigation measure). PG&E shall submit the Treatment Plan to DTSC for review and approval. PG&E shall also distribute the Treatment Plan to the Interested Tribes for tribal review consistent with Section 2.3 *"Protocols for the Review of Cultural Resources-Related Documents"* of the CIMP and Section 6.7 *"Protocols for Tribal Notification and Consultation in Advance of Certain Activities"* of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). The Treatment Plan may be amended in the future in the event of new discoveries or greater than anticipated impacts. Treatment Plan amendments shall be required in instances where the current content of the Treatment Plan is insufficient to address necessary treatment measures and shall be determined in coordination amongst PG&E, BLM, DTSC, and Interested Tribes.

~~Mitigation Measures CUL-1b and 1c:~~ ~~During Design, Construction, O&M, and Decommissioning Consider the Location of Historical Resources and Implement Measures to Avoid Resources to the Extent Feasible~~

~~The following actions will reduce the potential for impacts on identified historically significant resources (other than the Topock Cultural Area, which is separately addressed in CUL-1a) within the project area. As detailed below, these actions include consideration of the location of historical resources, preparation of a cultural resources study, and preparation of a treatment plan. Monitoring of ground-disturbing activities during project construction will further protect historically significant resources. Protective actions are also described pertaining to the discovery of any previously unidentified potentially significant cultural resources.~~

Mitigation Measures CUL-1b/c-1: Consider Locations of Historical Resources during Design (Groundwater FEIR Measure with revisions). PG&E shall consider the locations of the identified historic resources ~~described above (Table 4.4-3)~~ during the design of the physical improvements necessary for the proposed P~~p~~roject and avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible, as determined by DTSC. ~~The final~~ Future design plans for the project, in relation to known cultural resources, shall ~~will~~ be submitted to DTSC for review and approval.

Mitigation Measure CUL-1b/c-2: Prepare a Cultural Resources Study (Measure Completed – several cultural resources studies were completed, including "Geoarchaeological Assessment for the Topock Remediation Project" [Appendix T of the C/RAWP] and "*Results of Pre-Construction Field Verification Inspections for the Topock Compressor Station Groundwater Remedy*" [Moloney and Price 2014, confidential report on file at DTSC]). ~~During preparation of the final design, and consistent with CUL-1a-3, PG&E shall retain a Qualified Cultural Resources Consultant to prepare a cultural resources study that assesses the potential for the construction, operations, or decommissioning of specific proposed improvements to result in significant impacts on identified historically significant resources described in Impacts CUL-1b and CUL-1c. This may include a geoarchaeological investigation and/or non-destructive remote-sensing surveys of potentially disturbed areas to determine if a potential exists for buried historical and archaeological resources. "Significant impacts" as used here means the potential for construction to demolish or materially alter in an adverse manner those physical characteristics of a resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR. The study will be submitted to DTSC for review and evaluation to determine if existing mitigation measures are appropriate.~~

Mitigation Measure CUL-1b/c-3: Prepare and Implement a Treatment Plan for Historical Resources other than the Topock TCP (Groundwater FEIR Measure with Revisions). Prior to the start of construction, PG&E shall prepare and implement a Treatment Plan that identifies measures to lessen impacts to historical resources other than the Topock TCP that cannot be avoided by the Project and will be subject to significant impacts (this is the same Treatment Plan – *Cultural and Historical Property Treatment Plan for the Topock Compressor Station* [Hanes and Price in progress] – described above in Mitigation Measure CUL-1a-19 and is currently being prepared). ~~If the cultural resources study determines that the construction of physical improvements would result in significant impacts on identified historically significant resources described in Impacts CUL-1b and CUL-1c, and avoidance of the resource is not feasible, PG&E shall prepare a treatment plan that identifies measures to reduce these impacts (see above description of the CIMP) for DTSC's review and approval.~~ The T~~t~~reatment P~~p~~lan shall identify which criteria for listing on the NRHP/CRHR contribute to the affected resource's significance and which aspects of significance would be materially altered by construction, operations, or decommissioning and shall provide for reasonable efforts to be made to permit the resource to be preserved in place or left in an undisturbed state consistent with the CEQA Guidelines with Stipulation I.B of the PA and Section 7 of the CHPMP, and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners. PG&E shall submit the Treatment Plan to DTSC for review and approval. PG&E shall also distribute the Treatment Plan to the Interested Tribes for tribal review consistent with Section 2.3 *"Protocols for the Review of Cultural Resources-Related Documents"* of the CIMP and Section 6.7 *"Protocols for Tribal Notification and Consultation in Advance of Certain Activities"* of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). The Treatment Plan may be amended in the future in the event of new discoveries or greater than anticipated impacts. Treatment

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Plan amendments shall be required in instances where the current content of the Treatment Plan is insufficient to address necessary treatment measures and shall be determined in coordination amongst PG&E, BLM, DTSC, and Interested Tribes. ~~Methods of accomplishing this may include capping or covering the resource with a layer of soil. To the extent that a resource cannot feasibly be preserved in place or left in an undisturbed state, excavation as mitigation shall be restricted to those parts of the resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a historically significant resource if the treatment plan determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource. The plan shall require communication with all Interested Tribes with regard to their perspectives and wishes for the treatment of the resources.~~

Mitigation Measure CUL-1b/c-4: Cultural Resources Monitoring Program and Inadvertent Discovery Measures (Groundwater FEIR Measure with Revisions).

~~Consistent with CUL-1a-3a above, PG&E shall retain a Qualified Cultural Resources Consultant to observe ground-disturbing activities and shall be required to request the participation of tribal monitors during those activities, including steps necessary during operations and decommissioning activities to ensure that historically significant resources are avoided to the maximum extent feasible, as determined by DTSC, during actual construction (see the description of the CMI Workplan, above). The Qualified Cultural Resources Consultant shall provide training to construction personnel on the locations of identified resources, values associated with the identified resources, responsibility for reporting suspected historic resources, and procedures for suspension of work in the immediate vicinity of the discovery, and shall use exclusionary fencing, flagging, or other appropriate physical barriers to mark the boundaries of identified resources. The Qualified Cultural Resources Consultant shall invite participation from Interested Tribal members to participate in the training.~~

~~In the event that previously unidentified potentially significant cultural resources are discovered during ground-disturbing activities, the Qualified Cultural Resources Consultant shall have the authority to divert or temporarily halt ground-disturbing activities in the area of discovery to allow evaluation of the potentially significant cultural resources. If such discoveries occur on land managed by a federal agency, Stipulation IX (Discoveries) of the Programmatic Agreement shall apply and are deemed adequate by DTSC. If a discovery occurs on other lands within the project area, the Qualified Cultural Resources Consultant shall contact the PG&E and DTSC project managers at the time of discovery and, in consultation with DTSC and tribal monitors, shall evaluate the resource before construction activities will be allowed to resume in the affected area. For significant cultural resources, and before construction activities are allowed to resume in the affected area, the resource(s) shall be recovered with coordination of the tribal monitors and DTSC. Recovery may include a Research Design and/or Data Recovery Program submitted to DTSC for review and approval. The Qualified Cultural Resources Consultant (and tribal monitors) shall determine the amount of material to be recovered for an adequate sample for analysis or data recovery. Any concerns or recommendations regarding the ground-disturbing activities or the handling of cultural resources shall be directed to the Qualified Cultural Resources Consultant or PG&E's site supervisor.~~

Mitigation Measure CUL-1b/c-4a: Cultural Resources Monitoring Program. All ground-disturbing activities associated with construction, operation and maintenance, and decommissioning phases of the Project, including the Potential Future Activities, shall require archaeological monitoring and PG&E shall invite Tribal monitors to participate. The Cultural Resources Monitoring Program shall be implemented in a manner consistent with Sections 2.10 "*Protocols for Tribal Notification in Advance of Project-Related Activities*" and 2.12 "*Protocols for Tribal Monitors to Observe Ground Disturbing Activities*" of the CIMP, Appendix C "*Topock Remediation Project Programmatic Agreement Tribal and Archaeological Monitoring Protocol*" of the PA, and Section 6.6.4, "*Construction Monitoring*," of the CHPMP (as described above in Mitigation Measure CUL-1a-8q). In addition to the parties that require notification and coordination as listed in Appendix C of the PA, PG&E shall also notify DTSC.

During construction, PG&E shall document monitoring activities in the monthly progress reports or quarterly compliance reports, meeting at a minimum those requirements described in Section 2.6.3.3 "*Additional Reporting During Remedy Construction*" and Table 2.3-1 "*Communication Framework During Construction and Startup*" of the C/RAWP, and incorporate any additional communication requirements directed by DTSC and DOI. During operation and maintenance, PG&E shall document monitoring activities in the quarterly progress reports or annual compliance reports described in Section L2.2 "*Summary of Communication Procedures and Protocols*" and Table L2.2-1 "*Communication Framework During Operation and Maintenance*." During decommissioning, PG&E shall document monitoring activities in monthly progress reports or quarterly monitoring compliance reports consistent with those described in Section 2.6.3.3 "*Additional Reporting During Remedy Construction*" and Table 2.3-1 "*Communication Framework During Construction and Startup*" of the C/RAWP. Documentation of monitoring shall generally include dates of monitoring, monitoring participants, activities observed, and descriptions of any archaeological

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resources encountered (resource location information shall be kept separate and confidential). Department of Parks and Recreation 523 forms, following the Office of Historic Preservation's Instructions for Recording Historical Resources, shall be prepared by the Qualified Cultural Resources Consultant and filed with the South Central Coastal Information Center (for archaeological resources in California) and Arizona State Museum site cards shall be prepared by the Qualified Cultural Resources Consultant and filed with the Arizona State Museum (for archaeological resources in Arizona) for all newly identified and updated archaeological resources, and shall be compiled and provided to DTSC as they become available. Interested Tribes shall be afforded an opportunity to provide input on archaeological discoveries site forms and updates in accordance with measures outlined in the Treatment Plan (Mitigation Measure CUL-1a-19) and BLM policies and practices pertaining to information sharing. **Mitigation Measure CUL-1b/c-4b: Inadvertent Discoveries.** During construction, operation and maintenance, and decommissioning phases of the Project, procedures for the treatment of inadvertent discoveries of resources potentially qualifying as historical resources under CEQA shall be implemented in a manner consistent with Section 2.2 "*Protocols for the Appropriate Treatment of Archaeological Materials*" of the CIMP, and Section 8 "*Discoveries*" and Appendix C "*Discovery Plan*" of the CHPMP (as described above in Mitigation Measure CUL-1a-8q), and Appendix D "*Plan of Action*" of the CHPMP (as described below in Mitigation Measure CUL-4). In addition to the parties listed in Section 2.15 of the CIMP as requiring consultation regarding discoveries and review of draft documents, DTSC shall also be included in these processes. **Mitigation Measure CUL-1b/c-5: Avoidance and Preservation in Place (New Measure).** During the construction, operation and maintenance, and decommissioning phases of the Project, PG&E shall carry out all Project activities, and shall require all subcontractors implement established protocols regarding Project activities, in ways that avoid, minimize, and mitigate significant impacts to historical resources other than the Topock TCP and unique archaeological resources consistent with the CEQA Guidelines and with Stipulation I.B of the PA and Section 7.3 of the CHPMP, and to the maximum extent feasible as determined by DTSC, in coordination with PG&E, Interested Tribes, and respective landowners. **Mitigation Measure CUL-1b/c-6: Implementation of Additional Protective Measures (New Measure).** Mitigation Measures CUL-1a-3 (Site Security); CUL-1a-3a (Professional Qualifications and Annual Site Condition Assessment); CUL-1a-3c (Coordination with BLM and San Bernardino County); CUL-1a-3d (Signage) CUL-1a-3e (Site Security); CUL-1a-8q (Implement Cultural Impact Mitigation Program); CUL-1a-9 (Preference for Previously Disturbed Areas); CUL-1a-13a (Implement Worker Education Training Program); and CUL-1a-15 (Future Activity Allowance Cultural Resources Survey) shall be implemented to further reduce impacts to historical resources other than the Topock TCP and/or unique archaeological resources prior to and during construction, operation and maintenance, and decommissioning, as prescribed in each measure which are described in detail above. **Mitigation Measure CUL-1b/c-7: Compliance with SOI Standards (New Measure).** Prior to the start of decommissioning activities, PG&E shall retain a qualified architectural historian who meets the Secretary of the Interior's professional qualification standards for architectural history. The qualified architectural historian shall review the decommissioning plan to ensure that removal of the pipeline from the Old Trails Arch Bridge (36-027678), if proposed, would not materially impair the bridge. The architectural historian shall prepare a technical memorandum documenting the results of the review, and provide any recommendations to reduce impacts to less than significant, if necessary, prior to start of decommissioning activities.
~~**Mitigation Measure CUL-2: During Project Design Consider the Location of Unique Archaeological Resources and Avoid Resources to the Maximum extent Feasible**~~ **No Longer Applicable**
~~Cultural resources that qualify as unique archaeological sites in the project area would probably also meet one or more of the criteria for historical resources and would be subject to Mitigation Measures CUL-1b/c-2 and CUL-1b/c-3. The mitigation measures under this identified impact are the same as listed for Impact CUL-1b and CUL-1c.~~ ~~These mitigation measures would reduce the potential for impacts on unique archaeological resources.~~
Mitigation Measure CUL-3: Implement the Paleontological Resources Management Plan (PRMP) and Paleontological Monitoring (Groundwater FEIR Measure with Revisions).~~**Conduct Survey and Construction Monitoring**~~
PG&E shall comply with all requirements of the *Paleontological Resources Management Plan* (Arcadis 2015) related to paleontological

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resources prior to and during construction, operation and maintenance, and decommissioning. The following is a summary of the procedures in the PRMP, which includes: retention of a Principal Paleontologist to oversee paleontological monitoring and to be on-call in the event of discovery; paleontological resources awareness training; future survey of any areas ranked PYFC 3a or above if additional work is planned and they were not previously surveyed; paleontological monitoring of grading and trenching in known sensitives areas and also in the event that sensitive sediments are encountered elsewhere (monitoring of borings, regardless of depth or diameter, is not required); cease work measures and notification protocols in the event of a discovery; recovery of discovered fossils; documentation, preparation, identification, and analysis of recovered fossils; reporting; and curation of paleontological resources of scientific value at an accredited repository. Treatment and disposition of recovered fossils shall be conducted in coordination with the respective landowner.

~~A paleontological investigation, including a detailed survey of the project area by a qualified paleontologist, shall be conducted to refine the potential impacts on unique paleontological resources within the final design area and determine whether preconstruction recovery of sensitive resources and/or construction monitoring would be warranted. If construction monitoring is determined to be warranted, ground-altering activity would be monitored by a qualified paleontologist to assess, document, and recover unique fossils. Monitoring shall include the inspection of exposed surfaces and microscopic examination of matrix in potential fossil bearing formations. In the event microfossils are discovered, the monitor shall collect matrix for processing. In the event paleontological resources are encountered during earthmoving activities, recovered specimens shall be prepared by the paleontologist to a point of identification and permanent preservation. PG&E shall retain a Qualified Paleontologist to observe ground-disturbing activities where determined necessary based on the results of the paleontological investigation and shall be required to request the participation of tribal monitors during those activities, including steps necessary during operations and decommissioning activities to ensure that historically significant resources are avoided to the maximum extent feasible, as determined by DTSC, during actual construction (see above description of the CMI Workplan). Paleontological resources of scientific value shall be identified and curated into an established, accredited, professional museum repository in the region with permanent retrievable paleontological storage. This measure does not apply to the activities included as part of the East Ravine Revised Addendum, Groundwater Investigation.~~

Mitigation Measure CUL-4: ~~With~~ Discovery of Human Remains (Groundwater FEIR Measure with Revisions). ~~or Burials Suspend Work, Protect Remains, and Comply with Local, State, and Federal Laws Regarding Discoveries During Ground-Disturbing Activities~~

In the event of the discovery of human remains, PG&E shall implement the requirements of Section 2.2 "*Protocols for Appropriate Treatment of Archaeological Materials*" and Section 2.15 "*Protocols for Reporting Discoveries of Cultural Importance*" the CIMP (as described above in Mitigation Measure CUL-1a-8q) and Section 8.2 "*Treatment of Any Human Remains, Funerary Objects, Ceremonial Objects, and Items of Cultural Patrimony*" and Appendix D "*Plan of Action*" of the CHPMP (see below). Consistent with Section D.4 of the CHPMP, the determination of whether remains are human or non-human will be made by qualified personnel, such as a physical or forensic anthropologist. In accordance with the CHPMP Appendix D (D.3.3), the BLM is responsible for notifying the appropriate Interested Tribes regardless of land ownership. Discoveries on federal land shall follow the procedures outlined in sections D.3.3.1 and D.3.9.1 of Appendix D of the CHPMP. Discoveries on non-federal land in Arizona shall follow the procedures outlined in Sections D.3.3.2 and D.3.9.2 of Appendix D CHPMP. Discoveries on non-federal land in California shall follow the procedures outlined in Sections D.3.3.3 and D.3.9.3 of Appendix D of the CHPMP. The following provides a summary of the plans, procedures, and requirements that govern actions to be taken in the event of the discovery of human remains.

CHPMP Section 8.2:

- Section VII.H of the PA stipulates that the CHPMP will include a Plan of Action to be implemented if human remains are discovered within the APE, and that the Plan of Action will address the roles of the PA Signatories, Tribes, and Invited Signatories;
- The PA stipulates further that the BLM will be the lead Federal Agency responsible for seeing that the terms of the Plan of Action are executed, and that human remains and funerary objects must be treated in a culturally appropriate and respectful manner.

CHPMP Appendix D – Section D.3.3:

This section requires that, in the event that human remains are discovered within the Project Area and without respect to land ownership, PG&E will cease work and establish a protective buffer; ensure that the remains are not disturbed further and are treated with appropriate respect and cultural sensitivity; notify BLM within 24 hours; and cooperate with parties responsible for responsible for carrying out the treatment measures described in CHPMP Subsections D.3.3.1-D.3.3.3 (see below).

CHPMP Appendix D – Sections D.3.3.1 and D.3.9.1 (discoveries on Federal land): Additional requirements of this section include:

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- Complying with the Native American Graves Protection and Repatriation Act (NAGPRA) and its Federal implementing regulations outlined in 43 Code of Federal Regulations (CFR) Part 10, which requires establishing a chain of command for the remains, identifying and notifying lineal descendants, and consultation with the appropriate Tribe(s) to identify and implement appropriate treatment.
- Following California Health and Safety Code 7050.5 et seq., which includes notifying the San Bernardino County coroner for discoveries in California and contacting the California Native American Heritage Commission (NAHC).
- Following Public Resources Code 5097.98, which includes designation of a Most Likely Descendant by the NAHC and consultation with the MLD.

CHPMP Appendix D - Sections D.3.3.2 and D.3.9.2 (discoveries on non-Federal land in Arizona): Additional requirements of this section include:

- Contacting the Director of the Arizona State Museum (ASM) for discoveries in Arizona on "lands, other than lands owned or controlled by this state, any agency or institution of this state or any county or municipal corporations within this state."
- Complying with ARS 41-865, which includes consultation with the ASM, identifying the group with cultural affinity for the remains and/or objects, and consultation with the governing body of the group with cultural affinity to determine appropriate treatment and disposition of the remains and/or objects.

CHPMP Appendix D - Sections D.3.3.3 and D.3.9.3 (discoveries on non-Federal land in California): Additional requirements of this section include:

- Complying with California Health and Safety Code 7050.5 et seq., which requires notifying the San Bernardino County coroner for discoveries in California and contacting the NAHC.
- Complying with Public Resources Code 5097.98, which includes designation of a MLD by the NAHC and consultation between the landowner and MLD to identify and implement appropriate treatment.

~~Ground-disturbing activities may disturb as-yet undiscovered human remains or Native American burials and associated grave goods. PG&E shall retain a Qualified Cultural Resource Consultant and request designated tribal monitor(s) to train construction personnel in the identification of human remains so that they may aid in the identification of such resources (see above description of the CIMP). A Qualified Cultural Resource Consultant and tribal monitor(s) shall be in place to adequately oversee all ground-disturbing activities. In the event human remains are uncovered over the course of project construction, operation and maintenance, and/or decommissioning activities, the following procedures shall be followed to ensure compliance with all applicable local, state, and federal laws.~~

~~a) The construction contractor shall immediately suspend work within the vicinity of the discovery and determine if the remains discovered are human or nonhuman. This determination shall be made by the Qualified Cultural Resources Consultant, a qualified archaeologist and/or physical anthropologist with expert skill in the identification of human osteological (bone) remains.~~

~~b) The Qualified Cultural Resources Consultant (and tribal monitor), or construction contractor, shall protect discovered human remains and/or burial goods remaining in the ground from additional disturbance.~~

~~c) The Qualified Cultural Resources Consultant, archaeologist, or construction site supervisor shall contact the San Bernardino County Coroner, and the PG&E and DTSC project managers immediately. In California, all subsequent action shall conform to the protocols established in the Health and Safety Code and regulations. In Arizona, the Qualified Cultural Resources Consultant or PG&E construction site supervisor will follow Arizona laws and the implementing regulations. Human remains found on federal land would require the notification of the BLM Havasu City field office and compliance with applicable federal laws and regulations, including the Native American Graves Protection and Repatriation Act if the remains are determined to be of Native American origin. The Qualified Cultural Resources Consultant shall coordinate the interaction between Interested Tribes, PG&E, the County, and DTSC to determine proper treatment and disposition of any remains.~~

~~d) The San Bernardino County Coroner will determine if the remains are of recent origin and if an investigation of the cause of death is required (California Health and Safety Code Section 7050.5). If the coroner determines that the human remains are not Native American and not evidence of a crime, project personnel shall coordinate with the Qualified Cultural Resources Consultant (s) to develop an appropriate treatment plan. This may include contacting the next-of-kin to solicit input on subsequent disposition of the remains. If there is no next-of-kin, or recommendations by the next-of-kin are considered unacceptable by the landowner, the~~

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~~landowner will reinter the remains with appropriate dignity in a location outside the project area and where they would be unlikely to be disturbed in the future.~~ ~~e) In the event that the San Bernardino County Coroner determines that the human remains are Native American and not evidence of a crime, project personnel shall contact the NAHC so that a most likely descendent (MLD) can be identified as required under California Public Resources Code Section 5097.98.~~ ~~f) The MLD (s) shall inspect the area in which the human remains were found and provide treatment recommendations to the landowner and PG&E site manager in accordance with the provisions of PRC Section 5097.98. The treatment may include reburial, scientific removal of the discovered human remains and relinquishment to the MLD(s), nondestructive analysis of human remains and/or other culturally appropriate treatment. If the MLD(s) so requests, the landowner would reinter the remains with the appropriate dignity in a location outside the area of disturbance in a location unlikely to be disturbed in the future.~~ g) ~~To the maximum extent feasible, Mitigation Measure CUL-4 shall be implemented in a manner that is consistent with mitigation required by local, state, and federal requirements~~.
Geology, Soils, and Seismicity
Mitigation Measure GEO-1a: Construction, Operation and Maintenance, and Decommissioning Impacts Related to Erosion of Soils (Groundwater FEIR Measure with Revisions).
a) A DTSC-approved grading and erosion control plan, prepared by a California Registered Civil Engineer, shall be completed prior to implementation of any grading in areas of the site where there is a potential for substantial erosion or loss of top soils. The plan shall outline specific procedures for controlling erosion or loss of topsoil during construction, operation and maintenance, and decommissioning. b) To ensure soils do not directly or indirectly discharge sediments into surface waters as a result of construction, operation and maintenance, or decommission activities, PG&E ~~shall~~ developed a SWPPP as discussed in mitigation measure HYDRO-1 ~~of the "Hydrology and Water Quality" section of this EIR~~. The SWPPP ~~shall identify~~ identifies best management practices (BMPs) that would be used to protect stormwater runoff and minimize erosion during construction. PG&E shall prepare plans to control erosion and sediment, prepare preliminary and final grading plans, and shall prepare plans to control urban runoff from the project site during construction, consistent with the substantive requirements of the San Bernardino County Building and Land Use Services Department for erosion control. c) During road preparation activities, loose sediment shall be uniformly compacted consistent with the substantive San Bernardino County Building and Land Use Services Department requirements to aid in reducing wind erosion. Ongoing road maintenance including visual inspection to identify areas of erosion and performing localized road repair and regrading, installation and maintenance of erosion control features such as berms, silt fences, or straw wattles, and grading for road smoothness shall be performed as needed to reduce potential for erosion. d) Regarding the potential for contaminated soils to be eroded and contribute contamination into receiving waters, Mitigation Measures ~~GEO-2~~ GEO-1a and HAZ-2 shall be implemented. Mitigation Measure ~~GEO-2~~ GEO-1a provides the provisions for mitigating erosion through BMPs which shall be implemented. Mitigation Measure HAZ-2 provides the provisions for safe work practices and handling of contaminated soils as investigation derived wastes.
Mitigation Measure GEO-1b: Construction, Operation, Maintenance, and Decommissioning Impacts Related to Differential Compaction of Soils (Groundwater FEIR Measure with Revisions).
a) BMPs shall be implemented during construction, operation and maintenance, and decommissioning activities to minimize impacts on the affected areas. Such BMPs could include, but would not be limited to, the following: uniform compaction of roadways created for accessing the project area as per San Bernardino County Building and Land Use Services Department requirements, returning areas adversely affected by differential compaction to preexisting conditions when these areas are no longer needed, and continuing maintenance of access roads, wellhead areas, and the treatment facility areas.

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b) Work area footprints shall be minimized to the greatest extent feasible to limit the areas exposed to differential compaction. Where possible, existing unpaved access roads and staging/working areas shall be reused and maintained for different stages of the construction. New graded areas for staging or for access roads shall be compacted to a uniform specification, typically on the order of 90 to 95% compaction and consistent with substantive San Bernardino County Building and Land Use Services Department requirements to reduce differential compaction and subsequent erosion of site soils. c) After the completion of the operation and maintenance phase, the disturbed areas which result in increased potential for compaction shall be returned to their respective preexisting condition by regrading consistent with the preconstruction slopes as documented through surveys that may include topographic surveys or photo surveys. The areas will be returned to the surrounding natural surface topography and compacted consistent with unaltered areas near the access roads or staging areas in question. The habitat restoration plan ~~outlined~~ prepared in compliance with ~~in~~ ~~m~~Mitigation ~~m~~Measure BIO-1 ~~shall~~ includes restoration of native vegetation or other erosion control measures where revegetation would be infeasible or inadequate, for purposes of soil stabilization and erosion control of the Project Area.
Hazards and Hazardous Materials
Mitigation Measure HAZ-1a: Spills or Releases of Contaminants during Operation and Maintenance Activities (Groundwater FEIR Measure with Revisions).
a) PG&E shall store, handle, and transport hazardous material in compliance with applicable local, state, and federal laws. b) All chemical storage and loading areas shall be equipped with proper containment and spill response equipment. BMPs to be implemented may include, but are not limited to, use of secondary containment in mixing and storage areas; availability of spill kits and spill containment booms, and appropriate storage containers for containment of the materials generated during the spill response. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D, specifications in Appendix E, and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented during construction, operation and maintenance, and decommissioning of the Project. c) A project-specific Hazardous Materials Business Plan (HMBP), chemical standard operating procedure (SOP) protocols and contingency plans shall be developed to ensure that proper response procedures would be implemented in the event of spills or releases. Specifically, the HMBP and SOPs shall describe the procedures for properly storing and handling fuel on-site, the required equipment and procedures for spill containment, required personal protective equipment, and the measures to be used to reduce the likelihood of releases or spills during fueling or vehicle maintenance activities. BMPs to be implemented may include, but are not limited to, use of secondary containment in mixing and storage areas; availability of spill kits and spill containment booms, and appropriate storage containers for containment of the materials generated during the spill response. The field manager in charge of operations and maintenance activities shall be responsible for ensuring that these procedures are followed at all times. SOPs are provided in Appendix B to the C/RAWP (CH2M Hill 2015b); the HMBP in Appendix L to the Final Remedy Design (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), shall all be implemented during construction, operation and maintenance, and decommissioning of the Project.
Mitigation Measure HAZ-1b: Spill or Release of Contaminants during Construction and Decommissioning Activities (Groundwater FEIR Measure with Revisions).
a) Fueling areas and maintenance areas would be supplied with proper secondary containment and spill response equipment. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D, specifications in Appendix E, and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented during construction, operation and maintenance, and decommissioning of the Project. b) PG&E shall develop fueling SOP protocols and a contingency plan that would be implemented at all fueling areas on-site. The SOPs shall describe the procedures for properly storing and handling fuel on-site, the required equipment and procedures for spill containment, required PPE, and the measures to be used to reduce the likelihood of releases or spills during fueling or vehicle maintenance activities. Potential measures include but are not limited to, fuel storage in bermed areas, performing vehicle maintenance in paved and bermed areas, and availability of spill kits for containment and cleanup of petroleum releases. The field

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manager in charge of construction and decommissioning activities shall be responsible for ensuring that these procedures are followed at all times. SOPs are provided in Appendix B (CH2M Hill 2015b); the HMBP in Appendix L (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), shall all be implemented during construction, operation and maintenance, and decommissioning of the Project. c) PG&E shall comply with local, state, and federal regulations related to the bulk storage and management of fuels. The Final Remedy Design provides engineering drawings of chemical storage and loading areas in Appendix D; specifications in Appendix E (Operation and Maintenance Manual), Volume 3; the HMBP in Appendix L (Operation and Maintenance Manual), Volume 1, Appendix E; and the Contingency Plan in Appendix L (Operation and Maintenance Manual), Volume 3 (CH2M Hill 2015a), which shall all be implemented during construction, operation and maintenance, and decommissioning of the Project.
Mitigation Measure HAZ-2: Reasonably Foreseeable Releases of Chemicals from Excavated or Disturbed Soil (Groundwater FEIR Measure with Revisions).
Subsequent to the Groundwater FEIR and in compliance with Groundwater FEIR Mitigation Measure HAZ-2, PG&E developed a Final Construction Health and Safety Plan provided in C/RAWP, Appendix D, and a Draft Operation and Maintenance Health and Safety Plan in the Final Remedy Design, Appendix L, Volume 5. A final Operation and Maintenance Health and Safety Plan will be submitted to DTSC and DOI during the start-up phase of the remedy, and should include any separate plans provided by contractors. ~~Before initiating ground-disturbing operations, a health and safety plan shall be developed and implemented by qualified environmental professionals to ensure health and safety precautions are being met. It is not possible to prepare the health and safety plan at this stage of the planning process because final construction plans and other design documents have not been finalized in sufficient detail. However, at a minimum,~~ T~~t~~he health and safety plans ~~shall~~ include procedures to mitigate potential hazards, ~~and such procedures shall~~ which ~~shall~~ include the use of PPE, measures that provide protection from physical and chemical hazards~~, measures that provide protection from chemical hazards~~ that may be present at the site, decontamination procedures, and worker and health and safety monitoring criteria to be implemented during construction. The worker health and safety plans includes protective measures and PPE that are specific to the conditions of concern and meet the requirements of the U.S. Occupational Safety and Health Administration's (OSHA's) construction safety requirements and Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). In accordance with OSHA requirements, appropriate training and recordkeeping shall also be a part of the health and safety program. The health and safety plans shall be certified by a Certified Industrial Hygienist in accordance with OSHA regulations. The worker health and safety plan shall be provided to the construction workers for review and all workers shall be required to sign the plan, which will be kept on the construction site at all times. Contractors and subcontractors may also provide their own health and safety plans, providing the contractors and subcontractors health and safety plans are compliant with OSHA requirements and have been provided to PG&E and DTSC for review. Worker safety training shall occur prior to initiation of ground disturbing activities. Training shall include the review of all health and safety measures and procedures. All workers and engineering inspectors at the site shall provide written acknowledgement that the soils management plan (discussed below), worker health and safety plan, and any existing community health and safety plan were reviewed and training was received prior to commencement of construction activities. The following are specific elements and directives that shall be included in the health and safety plan and implemented by PG&E during construction, operation and maintenance, and decommissioning of this project: a) Vehicles traveling on unpaved roadways or surfaces would be directed to avoid traveling in areas where contaminated soils are known to be present; vehicle speeds shall be controlled (e.g., limited to 15 mph or slower) to limit generation of dust; measures, such as wetting of surfaces, will be employed to prevent dust generation by vehicular traffic or other dust-generating work activities. b) Pre-mobilization planning shall occur during which the likelihood of encountering contaminated soils shall be reviewed along with the HMBP, site-specific health and safety plan, and SOPs so that the procedures are followed and the contingencies for handling contaminated soils are in-place prior to implementing the field operations. c) Should evidence of contaminated soil be identified during ground disturbing activities (e.g., noxious odors, discolored soil), work in this area will immediately cease until soil samples can be collected and analyzed for the presence of contaminants as directed by the site supervisor or the site safety officer. Contaminated soil shall be managed and disposed of in accordance with a project-specific health and safety plan and soil management plan. The health and safety plan and soil management plan shall be approved by DTSC before beginning any ground-disturbing activities. While the project is exempt from the requirements of the San Bernardino County

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Division of Environmental Health, the health and safety plan ~~and soil management plan~~ shall be prepared in general accordance with the substantive requirements of this agency. d) In the event that drilling sites must be located within areas of suspected soil contamination, the appropriate PPE shall be worn by all personnel working in these areas and methods specified in the health and safety plan used to control the generation of dust. When working in these areas, personnel shall be required to follow all guidance presented in the site-specific health and safety plan and soil management plan. The site-specific health and safety plan shall include provisions for site control such as, but not limited to, delineation of the exclusion, contaminant reduction and support zones for each work area, decontamination procedures, and procedures for the handling of contaminated soils and other investigation derived wastes. Soil that is excavated shall be loaded directly into containers such as roll-off bins; dust suppression methods shall be used prior to and during loading of soils into the bins. Suspected contaminated soils shall be segregated from suspected uncontaminated soils. e) Personnel working at the site shall be trained in Hazardous Waste Operations. f) All soil excavated and placed in roll-off bins or trucks for transportation off-site shall be covered with a tarp or rigid closure before transporting, and personnel working in the area shall be positioned upwind of the loading location, as practicable.
Mitigation Measure HAZ-3: Final Groundwater Remedy Decommissioning Plan (New Measure).
Upon achieving the Remedial Action Objectives for the groundwater remedy, PG&E shall provide a written request with documentation to the DTSC and DOI requesting approval for decommissioning the groundwater remedy. Upon approval from DTSC and DOI, PG&E shall then prepare and submit a Final Groundwater Remedy Decommissioning Plan within 120 days to DTSC and DOI for their review and approval. This plan shall comply with the requirements in the Programmatic Agreement (BLM 2010), the Cultural and Historic Properties Management Plan (BLM 2012), the Consent Decree and Appendix C, Scope of Work, to Consent Decree (DOI 2013) (or functional equivalent if those document names change in the future), and the mitigation measures included within this SEIR. This plan shall include the decommissioning specifications and procedures currently described in the Final Remedy Design, but shall be updated to incorporate technology and regulatory changes, if any. In particular, the updated Final Groundwater Remedy Decommissioning Plan shall check for updates to waste disposal acceptance criteria to identify the appropriate disposal or recycling facilities for the Final Groundwater Remedy infrastructure to be removed, and for changes in well abandonment procedures by regulatory agencies (the States of California and Arizona, and the Counties of San Bernardino [California] and Mohave [Arizona]).
Hydrology and Water Quality
Mitigation Measure HYDRO-1: Exceedance of Water Quality Standards (Groundwater FEIR with Revisions).
~~The project shall implement BMPs to meet the substantive criteria of NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ NPDES No. CAS000002 (General Permit) (SWRCB 2009) as well as all other applicable federal, state, and local permit and regulatory requirements, even if a permit is not required pursuant to CERCLA, for purposes of ensuring the protection of receiving water quality. As such, a BMP plan shall be prepared and implemented for the project prior to construction and decommissioning phase activities.~~ ~~Impacts on water quality from pollutants, including soils from erosion, shall be controlled through use of the following types of BMPs, which shall be incorporated into the appropriate project-specific BMP plan. The General Permit requirements include specific BMPs as well as numeric effluent levels (NELs) and numeric action levels (NALs) to achieve the water quality standards (SWRCB 2009:3). Types of BMPs cited in the General Permit (SWRCB 2009:Attachment A:7) include:~~ ~~a) Scheduling of Activities;~~ ~~b) Prohibitions of Practices;~~ ~~c) Maintenance Procedures;~~ ~~d) Other Management Practices to Prevent or Reduce Discharge of Pollutants to Waters of the United States;~~ ~~e) Treatment Requirements; and~~ ~~f) Operating Procedures and Practice to Control Site Runoff, Spillage or Leaks, Sludge or Waste Disposal, or Drainage from Raw~~

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~~Materials Storage.~~

~~Visual inspections and monitoring and sampling are required under the General Permit to evaluate the effectiveness of the BMPs and to determine whether modifying BMPs or implementing additional BMPs is required. The BMP designations cited below are based on those used by the California Stormwater Quality Association Construction BMP Handbook (California Stormwater Quality Association 2003) and are consistent with the types of BMPs referenced in the General Permit:~~

- ~~g) Scheduling (SS-1): Proper scheduling assists in identifying ways to minimize disturbed areas, which allows for a reduction in the active project area requiring protection and also minimizes the length of time disturbed soils are exposed to erosive processes.~~
- ~~h) Preservation of Existing Vegetation (SS-2): Preserving existing vegetation to the maximum extent practicable facilitates protection of surfaces from erosion and can also help to control sediments. Sensitive areas should also be clearly identified and protected.~~
- ~~i) Hydraulic Mulch (SS-3), Straw Mulch (SS-6), and Wood Mulching (SS-8): Using various mulches is a method for temporarily stabilizing soil and can be used on surfaces with little or no slope.~~
- ~~j) Geotextiles, Plastic Covers, and Erosion Control Blankets/Mats (SS-7): These erosion control methods can be used on flat or, usually, sloped surfaces, channels, and stockpiles.~~
- ~~k) Stabilized Construction Entrance/Exit (TC-1): A graveled area or pad located at points where vehicles enter and leave a construction site can be built. This BMP provides a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.~~
- ~~l) Runoff Control Measures (SS-9, SS-10, and SC-10): These include graded surfaces to redirect sheet flow, diversion dikes or berms that force sheet flow around a protected area, and stormwater conveyances (swales, channels, gutters, drains, sewers) that intercept, collect, and redirect runoff. Diversions can be either temporary or permanent. Temporary diversions include excavation of a channel along with placement of the spoil in a dike on the downgradient side of the channel, and placement of gravel in a ridge below an excavated swale. Permanent diversions are used to divide a site into specific drainage areas, should be sized to capture and carry a specific magnitude of storm event, and should be constructed of more permanent materials. A water bar is a specific kind of runoff diversion that is constructed diagonally at intervals across a linear sloping surface such as a road or right-of-way that is subject to erosion. Water bars are meant to interrupt accumulation of erosive volumes of water through their periodic placement down the slope, and divert the resulting segments of flow into adjacent undisturbed areas for dissipation.~~
- ~~m) Silt Fence (SC-1): A temporary sediment barrier consisting of fabric is designed to retain sediment from small disturbed areas by reducing the velocity of sheet flows.~~
- ~~n) Gravel Bag Berm (SC-6) and Sand/Gravel Bag Barrier (SC-8): A temporary sediment barrier consisting of gravel-filled fabric bags is designed to retain sediment from small disturbed areas by reducing the velocity of sheet flows.~~
- ~~o) Desilting Basin (SC-2) and Sediment Trap (SC-3): Constructing temporary detention structures facilitates the removal of sediment from waters. The devices provide time for sediment particles to settle out of the water before runoff is discharged.~~

~~Secondary concerns include potential pollutants from inappropriate material storage and handling procedures and nonstormwater discharges. These will be addressed through the following types of BMPs, which shall be incorporated into the stormwater BMP plan:~~

- ~~p) Material Delivery and Storage (WM-1): Provide covered storage for materials, especially toxic or hazardous materials, to prevent exposure to stormwater. Store and transfer toxic or hazardous materials on impervious surfaces that will provide secondary containment for spills. Park vehicles and equipment used for material delivery and storage, as well as contractor vehicles, in designated areas.~~
- ~~q) Spill Prevention and Control (WM-4): Ensure that spills and releases of materials are cleaned up immediately and thoroughly. Ensure that appropriate spill response equipment, preferably spill kits preloaded with absorbents in an overpack drum, is provided at convenient locations throughout the site. Spent absorbent material must be managed and disposed of in accordance with applicable regulations. In particular, absorbents used to clean up spills of hazardous materials or waste must be managed as hazardous waste unless characterized as nonhazardous.~~
- ~~r) Solid Waste Management (WM-5): Provide a sufficient number of conveniently located trash and scrap receptacles to promote proper~~

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disposal of solid wastes. Ensure that the receptacles are provided with lids or covers to prevent windblown litter.

s) Hazardous Waste Management (WM-6): Provide a sufficient number of proper receptacles to promote proper disposal of hazardous wastes.

t) Concrete Waste Management (WM-8): Dispose of excess concrete in specific concrete washout facilities.

u) Sanitary/Septic Waste Management (WM-9): Locate sanitary and septic waste facilities away from drainage courses and traffic areas. Maintain the facilities regularly.

v) Vehicle and Equipment Cleaning (NS-8): Clean vehicles and equipment that regularly enter and leave the construction site.

w) Vehicle and Equipment Fueling (NS-9): Fuel vehicles and equipment off-site whenever possible. If off-site fueling is not practical, establish a designated on-site fueling area with proper containment and spill cleanup materials.

x) Vehicle and Equipment Maintenance (NS-10): Use off-site maintenance facilities whenever possible. Any on-site maintenance areas must be protected from stormwater runoff and on-site flooding.

In addition to BMPs implemented to avoid or reduce impacts from the construction and decommissioning phases, BMPs shall also be implemented to avoid or reduce impacts from the operations and maintenance phases. To address potential violation of water quality standards caused by insufficient treatment, system failure at concentrations in excess of water quality standards, proper design shall include contingency measures such as safeguards to shut down the extraction wells in case of pipeline failure or malfunction. In addition, operation of the proposed project will be governed by and follow an operations and maintenance plan.

PG&E will comply with all applicable water quality standards, the General Permit, and any SWRCB or RWQCB resolutions identified as ARAR, as well as a corrective action monitoring program. Under the corrective action monitoring program, data will be collected to measure performance of the remedy, compliance with standards, and progress of the remedial action as a part of the project description. In addition, the project will be operated to continually assess performance issues and to modify the type, method, and configuration of the treatment delivery systems to enhance performance of the remedy to attain the cleanup goals and to respond to site conditions and performance issues as described in the project description.

A SWPPP will also be prepared for the proposed project, which will contain BMPs related to industrial activities (industrial SWPPP). The BMPs are designed to reduce pollutants in discharges that may affect receiving water quality during operations and maintenance of the proposed project. As noted above, BMP designations are based on those used by the California Stormwater Quality Association Construction BMP Handbook (California Stormwater Quality Association 2003) and those referenced in the General Permit The SWPPP will incorporate BMPs such as the following:

y) Good Housekeeping: Maintain facility in a clean manner and train facility personnel to contribute to a safe, clean, and orderly environment by properly disposing of trash in designated containers, storing materials in appropriate locations, and keeping equipment clean and in good working condition.

z) Preventative Maintenance: Prevent or minimize release of pollutants. Develop Standard Operating Procedures for operation and maintenance of facility components and train employees to follow the procedures.

aa) Non-Stormwater Discharges (SC-10): Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Conduct regular inspections of high priority areas.

bb) Spill Prevention, Control, and Cleanup (SC-11): Store materials properly to prevent spills from entering the storm drain system or surface waters. Ensure that spill cleanup materials are located on-site and are easily accessible. Clean up leaks and spills immediately using proper absorbent materials. Absorbents used to clean up hazardous materials must be disposed of as hazardous waste. Educate employees about spill prevention and cleanup.

cc) Vehicle and Equipment Fueling (SC-20): Maintain clean fuel-dispensing areas using dry cleanup methods, such as sweeping or using rags and absorbents for leaks and spills. Cover the fueling area to prevent contact with stormwater. Train personnel in pollution prevention, focusing on containment of spills and leaks.

dd) Outdoor Loading/Unloading (SC-30): Load and unload chemicals during dry weather, if possible, and load and unload in designated areas. Check equipment regularly for leaks.

ee) Outdoor Liquid Container Storage (SC-31): Cover the storage area with a roof and provide secondary containment. Inspect storage

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~~areas regularly for leaks or spills.~~ ~~ff) Outdoor Equipment Operations (SC-32): Perform activities during dry weather, cover the work area with a roof, and use secondary containment. Train employees in proper techniques for spill containment and cleanup.~~ ~~gg) Waste Handling and Disposal (SC-34): Cover storage containers with leak-proof lids, check for leaks weekly, and clean storage areas regularly. Ensure that wastes are disposed of properly.~~ ~~hh) Tank Design System: Ensure that tank systems have sufficient strength to avoid collapse, rupture, or failure and that they are protected against physical damage and excessive stress. Provide adequate secondary containment.~~ ~~In conformance with the substantive requirements of General Permit (Order No. 2009-0009-DWQ, a monitoring and reporting program will be implemented to assess the effectiveness of BMPs and to modify BMPs and revise the SWPPP, if necessary, to continue to reduce pollutants and impacts on receiving waters. The monitoring program shall include the following minimum elements as per the General Permit:~~ ~~ii) quarterly, nonstormwater visual inspections,~~ ~~jj) storm-related visual inspections within 2 business days of a qualifying rain event (producing precipitation of one-half inch or more of discharge),~~ ~~kk) visual inspection after a storm event,~~ ~~ll) monitoring of nonvisual pollutants based on the calculated risk level for the project, with Risk Level 2 and 3 requiring a minimum of three samples per day during qualifying rain events (SWRCB 2009:Tables 5 and 6, 22–27), and~~ ~~mm) monitoring and reporting for linear projects as per Attachment A of the General Permit~~ ~~Results of this monitoring shall be reported annually to DTSC and to the Storm Water Multi-Application Reporting and Tracking System (SMARTS). The annual report shall include a summary and evaluation of all sampling and analysis results, original laboratory reports, and chain of custody forms; a summary of all corrective actions taken during the compliance year; and identification of any compliance activities or corrective actions that were not implemented.~~ ~~NEL Violation Reports and/or NAL Violation Reports are required for Risk Level 3 and linear underground/overhead project (LUP) Type 3 Discharges. Should the project meet these criteria, the respective reports shall be submitted within 5 days of the end of the storm event, as per General Permit requirements, and provide the required information identified (SWRCB 2009:26–27 and Attachment A).~~ ~~The implementation of stormwater plans shall include an education component to train workers on water quality concerns and proper BMP implementation, maintenance, and repair, in addition to stormwater management program training on the construction BMP plan and industrial SWPPP.~~
Mitigation Measure HYDRO-1a/2a/3a: Construction Best Management Practices Plan (Groundwater FEIR Measure with Revisions).
Subsequent to the Groundwater FEIR and as noted in the Regulatory Background, the Construction General Permits were updated for California (2014) and Arizona (2013). In compliance with the Groundwater FEIR Mitigation Measures HYDRO-1, HYDRO-2, and HYDRO-3, and incorporating the construction general permit updates, PG&E prepared a BMP Plan for construction activities (C/RAWP, Appendix M; CH2M 2015b). The BMP Plan complies with the substantive requirements of the California and Arizona Construction General Permits, as well as all other applicable federal, state, and local permit and regulatory requirements, even if a permit is not required pursuant to CERCLA, for purposes of ensuring the protection of receiving water quality. Details of the BMPs are provided in the BMP Plan and are summarized below. Site workers shall be trained in the implementation of these BMPs. Erosion Control BMPs: The following measures shall be used to reduce erosion and control sediment: • Preservation of Existing Vegetation – Existing vegetation will be preserved to the maximum extent practicable to facilitate protection of surfaces from erosion and help control sediments. To the extent practical, remedy facilities have been located on previously disturbed areas. In the event that existing vegetation needs to be disturbed, areas that need to be preserved will be identified by a qualified biologist and marked with temporary fencing. Site workers will be informed of the limits of disturbance within the construction site and will be instructed to keep clear of delineated areas. • Geotextiles and Mats – Natural (e.g., excelsior, straw, coconut) or synthetic (usually polyethylene) materials will be used to reduce soil erosion by wind or water.

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- Road Preparation and Maintenance – During road preparation activities, loose sediment will be uniformly compacted, consistent with the substantive San Bernardino County Building and Land Use Services Department requirements, to aid in reducing wind erosion. Ongoing road maintenance will include: (1) visual inspections to identify areas of erosion, (2) localized road repair and regrading, installation, and maintenance of erosion control features such as berms, silt fences, or straw wattles, (3) grading for road smoothness, and (4) measures to reduce water erosion, such as clearing ditches and culverts of debris.

Sediment Control BMPs: The following materials would be used to retain sediment in place where soil is being disturbed by construction processes, to intercept runoff and reduce flow velocity, and to allow sediment to settle from runoff before water leaves the construction site.

- Silt Fences – Silt fences are typically used in combination with sediment basins and sediment traps as erosion control measures.
- Fiber Rolls/Sediment Wattles – These consist of aspen wood excelsior, straw, flax, or other similar materials rolled and bound into tight tubular rolls and placed on the face of slopes at regular intervals, depending on steepness of slopes. Fiber rolls/sediment wattles will be inspected prior to a forecasted rain event and after rain events to ensure the fiber rolls are working properly. Sediment accumulated by the fiber rolls will be removed to maintain the effectiveness of the fiber rolls.
- Gravel Bag Berms – Gravel bag berms can be used as an alternative to fiber rolls and sediment wattles. If used, they will be installed prior to rain events to form a barrier to intercept runoff or reduce its velocity. Gravel bags will also be used, if necessary, during trenching activities when stockpiles are on-site. In the event that gravel bag berms are used as perimeter erosion control, bags will be stacked, one on top of the other (two high). When used to anchor stockpiles, the bags will be placed one high.
- Sandbag Berms – Sandbag berms can also be used as an alternative to fiber rolls and sediment wattles. If used, they will be installed prior to rain events to form a barrier to intercept runoff or reduce its velocity. Sandbags will also be used, if necessary, during trenching activities when stockpiles are left overnight. In the event that sandbag berms are needed, they will be placed around the staging area and trenching area.
- Straw-Bale Barriers – Straw-bale barriers can also be used as an alternative to fiber rolls, gravel bag berms, and sandbag berms.

Material Delivery and Storage - Proper management practices for delivery and storage of materials will be implemented to ensure minimal discharge or elimination of discharge of these materials to the storm drain systems or waterways. Construction materials and equipment will be parked and stored in the staging area. Materials subject to rain erosion and dispersion within the storage area will be covered during nonworking days and prior to and during rain events. Storage and transfer of toxic or hazardous materials (e.g., ethanol, acids for well cleaning) will be on impervious surfaces appropriate to the stored materials.

Material Use – Proper use of materials will be implemented to ensure minimal or complete elimination of discharge to the storm drain systems or waterways. Spill cleanup materials will be kept near the construction and staging areas. Leaks and spills will be cleaned up immediately using proper absorbent materials, which will then be disposed of as hazardous waste, unless determined to be non-hazardous waste.

Stockpile Management – Stockpile management was discussed above in "Runoff from Soil Stockpile at Soil Processing Area."

Spill Prevention and Control – Spill prevention and control procedures and practices will be implemented in conjunction with the Waste Management Plan to prevent and control spills anytime chemicals and/or hazardous materials are stored on the construction site. Leaks and spills will be immediately cleaned up to the extent possible using absorbent materials, which will then be disposed of properly. Leaks and spills shall not be covered and/or buried or washed with water. Kits with appropriate spill response equipment will be kept near the construction and staging areas. The materials used for cleaning will not be allowed to enter storm drains or watercourses and will be collected and disposed of in accordance with BMPs. In particular, absorbents used to clean up spills of hazardous materials or waste must be managed as hazardous waste unless characterized as non-hazardous.

Solid Waste Management – Solid waste management procedures and practices will be implemented at the beginning and throughout the Project. Solid waste, consisting primarily of asphalt concrete waste, shall be loaded directly onto trucks for off-site disposal. Loose debris will be picked up daily. Trash and scrap receptacles shall be placed at convenient locations to promote proper disposal of solid wastes. Receptacles shall be provided with lids or covers to prevent windblown litter. Hazardous wastes shall be accumulated at appropriate collection locations following appropriate labeling and management requirements pursuant to Title 22, California Code of Regulations.

Concrete Waste Management – Concrete waste management procedures will be implemented where concrete is used as a construction material or where concrete dust and debris result from demolition activities. The concrete waste containers will be placed a minimum 50 feet from any drainage ways. Washouts will include secondary containment so that there is no discharge into the underlying soil and onto the surrounding

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areas. Watertight containers with lids and secondary containment, manufactured for the expressed purpose of containing waste concrete and its liquid residue, may be used. Containers will be emptied or removed from the project site when 75 percent of the full capacity has been reached. Sanitary/Septic Waste Management – Sanitary/septic waste management procedures and practices are implemented at construction sites when a temporary or portable sanitary/septic waste system exists. Sanitary facilities will be located away from Staging Areas 6 and 7 (due to proximity to culturally sensitive areas), drainage facilities, waterways, and from traffic circulation. In the event of high winds or a risk of high winds, temporary sanitary facilities will be secured with spikes or weighed down to prevent overturning. The sanitation subcontractor will monitor on-site sanitary/septic waste storage and disposal procedures on a weekly basis in accordance with the sanitary/septic waste management BMPs. Wastewater will not be discharged or buried. Waste will be removed and disposed off-site. Regular waste collection should be arranged before facilities overflow. The sanitary facility will be located a minimum of 50 feet away from drainage facilities and away from waterways and traffic circulation. Liquid Waste Management – Liquid waste management procedures will be employed to prevent the discharge of pollutants from liquid waste to the storm drain systems or watercourses. Liquid waste management will be applied if non-hazardous residuals or wastes are generated by construction activities. Tracking Control BMPs – A temporary construction entrance is defined as a stabilized point of entrance/exit to a construction site to reduce the tracking of mud and dirt onto private or public paved roads by construction vehicles. A temporary construction entrance will be established at applicable paved intersections and entry points to prevent sediment tracking. The temporary construction entrance will be inspected routinely. Good Housekeeping BMPs – Good housekeeping measures will be implemented on-site for the duration of the project and include the following: • Store chemicals in watertight containers (with appropriate secondary containment) in a completely enclosed storage cabinet, trailer, or sealed drums shed to prevent spillage and leakage. • Minimize exposure of construction materials to precipitation. • Cover waste disposal containers at the end of every business day and during rain events. • Prevent discharges from waste disposal containers to the stormwater drainage system or receiving water. • Prevent oil, grease, or fuel from leaking into the ground, storm drains, or surface waters. • Immediately clean up leaked material and dispose of properly. • Establish and maintain effective perimeter controls and stabilize construction entrances and exits to control erosion and sediment discharges from the site. • Conduct regular stormwater tailgate meetings with the workforce when the project is staffed and work is under way.
Mitigation Measure HYDRO-1b/2b/3b: O&M SWPPP (Groundwater FEIR Measure with Revisions)
Subsequent to the Groundwater FEIR and in compliance with the Groundwater FEIR Mitigation Measures HYDRO-1, HYDRO-2, and HYDRO-3, PG&E prepared a SWPPP for operation and maintenance activities (O&M SWPPP; Final Remedy Design, Appendix L, Volume 1, Appendix D; CH2M Hill 2015a) to comply with the substantive requirements of the 2015 California General Industrial Storm Water Permit. The O&M SWPPP requires the BMPs summarized below. Site workers shall be trained in the implementation of these BMPs. Good Housekeeping, including: • Observe all outdoor areas associated with industrial activity; including stormwater discharge locations, drainage areas, conveyance systems, waste handling/disposal areas, and perimeter areas impacted by off-facility materials or stormwater run-on to determine housekeeping needs. Clean and dispose of properly any identified debris, waste, spills, tracked materials, or leaked materials • Minimize or prevent material tracking • Minimize dust generated from industrial materials or activities • Ensure that all facility areas impacted by rinse/wash waters are cleaned as soon as possible • Cover all stored industrial materials that can be readily mobilized by contact with stormwater • Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind or contact with stormwater

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• Prevent disposal of any rinse/wash waters or materials into the stormwater conveyance system • Minimize stormwater discharges from non-industrial areas (e.g., stormwater flows from employee parking area) that contact industrial areas of the facility • Minimize authorized non-stormwater discharges from non-industrial areas (e.g., potable water, fire hydrant testing) that contact industrial areas of the facility Preventive Maintenance, including: • Identify all equipment and systems used outdoors that may spill or leak pollutants • Observe the identified equipment and systems to detect leaks, or identify conditions that may result in the development of leaks • Establish inspection schedule and maintenance schedule of identified equipment and systems • Establish procedures for prompt maintenance and repair of equipment, and maintenance of systems when conditions exist that may result in the development of spills or leaks Material Handling and Waste Management, including: • Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with stormwater during a storm event • Contain all stored non-solid industrial materials or wastes that can be transported or dispersed by the wind, erosion or contact with stormwater during handling • Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use • Divert run-on and stormwater generated from within the facility away from all stockpiled materials • Clean all spills of industrial materials and/or wastes that occur during handling • Observe and clean as appropriate, any outdoor material/ or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes Erosion and Sediment Controls, including: • Implement effective wind erosion controls • Provide effective stabilization for inactive areas, finished slopes, and other erodible areas prior to a forecasted storm event • Maintain effective perimeter controls and stabilize all site entrances and exits to sufficiently control discharges of erodible materials from discharging or being tracked off the site • Divert run-on and stormwater generated from within the facility away from all erodible materials The Industrial General Permit requires that the site, to the extent feasible, implement and maintain any advanced BMPs necessary to reduce or prevent discharges of pollutants in its stormwater discharge in a manner that reflects best industry practice considering technological availability and economic practicability and achievability. Advanced BMPs may include: • Exposure Minimization BMPs (such as storm resistant shelters that prevent the contact of stormwater with the industrial materials or areas of industrial activity) • Storm Water Containment and Discharge Reduction BMPs that divert, infiltrate, reuse, contain, retain, or reduce the volume of stormwater runoff • Treatment Control BMPs (the implementation of one or more mechanical, chemical, biologic, or any other treatment technology) • Storm resistant shelters (i.e., buildings) for Operations at the TW Bench, Hazardous Materials storage at the TCS, and Carbon Amendment facilities at the MW-20 Bench • Storm water drainage at the TW Bench to divert stormwater run on and reduce the volume of stormwater runoff • Features in access roads to reduce erosion and divert storm water from remedy facilities such as wells and associated control

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equipment
~~**Mitigation Measure HYDRO-2:** Exceedance of Water Quality Standards and/or Waste Discharge Requirements~~ **Replaced with HYDRO 1a/2a/3a**
~~Implement Mitigation Measure HYDRO-1. Implementation of appropriate BMPs defined in Mitigation Measure HYDRO-1 would minimize impacts on water quality by controlling erosion and siltation. Consequently, any impacts associated with erosion and siltation resulting from alterations of drainage and hydrology and water quality during construction, operation and maintenance, and decommissioning.~~
~~**Mitigation Measure HYDRO-3:** Exceedance of Water Quality Standards and/or Waste Discharge Requirements~~ **Replaced with HYDRO 1a/2a/3a**
~~Implement Mitigation Measure HYDRO-1. Mitigation Measure HYDRO-1 shall be implemented. Implementation of appropriate BMPs defined in Mitigation Measure HYDRO-1 would minimize impacts on water quality by controlling potential pollutants, including sediment, and runoff discharges from the project area. Consequently, any impacts associated with pollutants resulting from alterations of drainage and water quality during construction, operation and maintenance, and decommissioning.~~
Mitigation Measure HYDRO-4: Manganese Treatment System (New Measure).
Sampling as described in the Final Remedy Design, specifically in the Sampling and Monitoring Plan provided in the Operation and Maintenance Manual (CH2M Hill 2015a, Appendix L), shall be implemented throughout the duration of the groundwater remedy and shall include groundwater monitoring for manganese. If manganese exceeds concentrations as specifically identified in Table 2.2-1 of Appendix L, O&M Volume 2 (e.g., 1 to 2.5 mg/L at California wells downgradient of the IRZ, or above baseline concentrations in Arizona wells), then PG&E shall evaluate and implement operational modifications to control the manganese in accordance with Section 2, O&M Volume 2. If operational modifications are unsuccessful at decreasing manganese concentrations to below the action levels cited on the above-referenced Table 2.2-1 and as determined by DTSC, then the contingency measure of manganese treatment shall be implemented. As described in the Project Description (Section 3.6.3.1) of this SEIR and in Appendix J of the Final Remedy Design, PG&E shall implement manganese treatment using the Dissolved Metals Removal System in the Remedy-Produced Water Conditioning Plant if capacity is available or install an adsorptive or greensand filtration treatment system (or equivalent) preferentially located at the Remedy-Produced Water Conditioning Plant if space is available. If capacity and space are not available at the Remedy-Produced Water Conditioning Plant, the manganese treatment system could be located at the TW Bench or the MW-20 Bench (after the IM-3 system is decommissioned/removed). A manganese treatment system shall remain operational until the manganese concentrations remain below concentrations identified in Table 2.2-1 and DTSC approves of the cessation of the system.
Mitigation Measure HYDRO-5: Contingent Freshwater Pre-Injection Treatment (New Measure).
To implement the Final Groundwater Remedy such that PG&E will be able to respond to the triggering conditions described below, PG&E shall implement the following measures.
Mitigation Measure HYDRO-5a: Incorporate Arsenic Monitoring of Freshwater Injection into the Sampling and Monitoring Plan (New Measure).
Sampling as described in the Final Remedy Design, specifically in the Sampling and Monitoring Plan provided in the Operation and Maintenance Manual (CH2M Hill 2015a, Appendix L), shall be implemented throughout the duration of the groundwater remedy, even after injection ceases. Wells used to monitor freshwater supply injection shall be sampled and analyzed in accordance with the Project monitoring program for arsenic and other chemicals as described in the Sampling and Monitoring Plan. PG&E shall install and monitor wells designated in the Final Remedy Design for arsenic monitoring located approximately 150 feet and 225 feet from each freshwater injection well to comply with the SWRCB's requirements for freshwater injection with arsenic concentrations above the California MCL. Monitoring shall commence prior to freshwater injection and continue until observed arsenic concentrations return to pre-injection levels pursuant to Mitigation Measure HYDRO 5d. Monitoring wells for the freshwater injection area shall initially be sampled monthly for the first two quarters, then quarterly thereafter, unless the monitoring interval is modified with prior DTSC approval. The results of this monitoring shall determine whether Mitigation Measures HYDRO-5b and 5c are implemented.

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Mitigation Measure HYDRO-5b: Assessment and Implementation of Interim Action if the California MCL is Exceeded 150 Feet Radially from Freshwater Injection Point (New Measure).
If, as a result of the monitoring required in Mitigation Measure HYDRO-5a, the concentration of arsenic at the leading edge of the arsenic plume is found to exceed the arsenic water quality objective (California MCL) 150 feet radially from the freshwater injection point, PG&E shall immediately reassess their groundwater modeling and identify interim actions to limit the migration of the arsenic plume. PG&E shall submit the assessment and proposed action to DTSC within 60 days (or other timeframe directed by DTSC) of confirmed detections above water quality objectives.
Mitigation Measure HYDRO-5c: Implementation of Alternatives if California MCL is Exceeded for Arsenic 225 feet from any Freshwater Injection Point (New Measure).
If the concentration of arsenic at the leading edge of the plume migrates and exceeds the water quality objective (California MCL) at 225 feet radially from the freshwater injection point, PG&E shall promptly notify DTSC and resample within 30 days. If the expedited resample confirms the exceedance, PG&E shall immediately cease fresh water injection. The injection shall not recommence until PG&E either blends the water source to below the California MCL at the point of injection; constructs and re-routes any contingent freshwater supply lines and appurtenances to the Contingent Freshwater Pre-Injection Treatment System to pre-treat the water and remove arsenic before injection; or proposes a new water source that will comply with the California water quality objectives for injection. PG&E shall obtain approval from DTSC prior to implementation of the options identified above. Pre-injection treatment of the freshwater shall continue until further monitoring indicates that pre-treatment is no longer needed and DTSC approves of cessation of pre-treatment.
Mitigation Measure HYDRO-5d: Post-Remedy Arsenic Monitoring (New Measure).
The SWRCB provided remedy requirements associated with injection of groundwater containing naturally occurring arsenic in a 2013 position letter (SWRCB 2013). To ensure that water quality objectives are not exceeded in groundwater within freshwater injection areas after completion of the remedy, sampling of the arsenic monitoring wells and possibly other wells (as directed by DTSC) would continue under the Sampling and Monitoring Plan for an estimated 20 years and possibly longer after completion of active treatment to ensure that arsenic concentrations are within and remain at pre-remedy background levels. The sampling would cease after results demonstrate that the concentrations of arsenic remain within water quality objectives and DTSC approves of ceasing the monitoring for arsenic.
Mitigation Measure HYDRO-6: Protection of Non-Project Water Supply Wells (New Measure).
To minimize any potential impacts to non-Project water supply wells associated with the long-term operation and maintenance of the Final Groundwater Remedy Project, PG&E shall implement the mitigation measure described below.
Mitigation Measure HYDRO-6a: Incorporate Non-Project Water Supply Wells and/or Additional Wells into Monitoring Program (New Measure).
• For water supply wells located within about one mile of HNWR-1A (currently Topock-2, Topock 3, Marina-1, Sanders, Smith, PGE-9N, PGE-9S, MTS-1, MTS-2, and GSRV-2), PG&E shall request well construction information and access to sample, test and assess current well conditions. If access is granted, PG&E shall add the non-Project water supply wells to the monitoring program (Appendix L, O&M Volume 2, Sampling and Monitoring Plan, Section 5.4). If access is denied, PG&E will alert DTSC of such response in a timely manner and provide associated documentation. If the well owner does not otherwise respond within 60 days, PG&E shall initiate a second request. If the well owner still does not respond, PG&E will alert DTSC of such response in a timely manner and provide documentation of both attempts to contact the owner. If new non-Project water supply wells are installed or discovered in the general area in the future, DTSC may direct PG&E to take additional action for access and add them to the wells listed above at any time. • PG&E shall submit a well installation work plan to DTSC describing installation of a new nested monitoring well located between HNWR-1 and wells Topock-2/Topock-3 since wells Topock-2/Topock-3 are currently the largest producing non-Project supply wells in the area. The work plan shall also propose the installation of any additional monitoring wells that are needed to ensure protection of the water resource in the vicinity of the non-Project water supply wells. PG&E shall submit the well installation work plan to DTSC

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within twelve months of DTSC's approval of the remedy design and would be implemented only after DTSC's review and approval. Up to ten well locations from the total borehole count evaluated in this SEIR can be allocated for the monitoring of water quality to protect non-Project water supply wells. Overtime, wells may be added to or removed from the monitoring program (with prior DTSC approval) based on accumulated data or lack thereof. • Monitoring of wells identified in this mitigation measure shall initially be quarterly for the first two years of operation and include groundwater levels and chemical constituents to establish baseline conditions and assess seasonal variations in the area of the non-Project water supply wells and monitoring wells. Pressure transducers shall be fitted to monitoring wells, Well HNWR-1, Site B, and the above-listed non-Project water supply wells (some which are not currently pumping) to track and evaluate pumping effects over time and to assist with assessments required below in Mitigation Measure HYDRO-6b and 6c. Chemical testing shall include, at a minimum, Title 22 metals, Cr(VI), stable isotopes of hydrogen and oxygen, general minerals, and TDS. After the second year of monitoring, sampling frequencies may be reduced to semi-annually for two additional years and annually thereafter with DTSC approval. The well network, monitoring frequency, pressure transducer monitoring, and chemical constituents may be modified with DTSC approval.
Mitigation Measure HYDRO-6b: Water Supply Mitigation (New Measure).
• If non-pumping groundwater elevations substantially decrease from baseline conditions established under HYDRO-6a in a monitored non-Project water supply well (e.g., below top of well screen, below pump depths, or causes significant decrease in well yield) or a similar groundwater elevation decrease is observed in a water resource protection monitoring well described in HYDRO-6a, PG&E shall inform DTSC as soon as practicable and no longer than two weeks (unless modified with DTSC approval) after receipt of data documenting such an event. Additionally, PG&E will assess well and aquifer conditions to evaluate if the Project has caused a substantial decrease in groundwater elevations/well yield. PG&E shall promptly provide its assessment to DTSC for review. At a minimum, the assessment shall consider the following conditions: o Historical well usage o Well condition o Anticipated drawdown effects o Regional groundwater level trends • If PG&E or DTSC determines that the Project has adversely impacted a non-Project water supply well to the extent that the Project is determined to be the primary cause, or one of the primary contributing causes, of the reduction in well yield or elevation such that the well does not provide sufficient water, PG&E shall promptly notify the well owner. PG&E shall coordinate with the well owner(s) to arrange for an interim drinking water supply if necessary, and develop a plan (for DTSC approval) which will assist in restoring the water resource by using measures that may include: o Lowering the well pump o Rehabilitating the well o Deepening the existing well o Providing short and/or long term replacement of water supply o Constructing a new replacement well, o Modifying remedy operations (e.g., placing a packer in HNWR-1A) An alternate course of action may be considered, provided it is mutually agreeable to DTSC, PG&E, and the well owner. Unless an alternative period is approved by DTSC, the plan/alternate course of action should be provided to DTSC for approval within 30 days of determining that the Project adversely impacted a non-Project water supply well.
Mitigation Measure HYDRO-6c: Water Quality Mitigation (New Measure).
• If the groundwater quality of a non-Project water supply well deteriorates by exceeding water quality objectives (e.g., MCLs for drinking water wells) and baseline conditions established pursuant to HYDRO-6a, PG&E will immediately notify DTSC and DOI and

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take steps to collect confirmation samples from the well within 60 days of original sample collection unless modified with DTSC approval. PG&E shall identify/confirm the specific uses of the well and inform DTSC, DOI, the Arizona Department of Environmental Quality, and the well owner of the deterioration as soon as possible (e.g., within 7 days of receiving confirmation samples results). This shall include PG&E providing both the initial and confirmation sample data to agencies and well owner even if the initial exceedance is not confirmed. • If PG&E or DTSC determines that the Project has adversely impacted a non-Project water supply well to the extent that the Project is determined to be the primary cause, or one of the primary contributing causes, of the reduction in water quality, PG&E shall immediately notify the well owner. PG&E shall coordinate with the well owner(s) to arrange for an interim drinking water supply if necessary, and develop a plan (for DTSC approval) which will assist in restoring the water resource by using measures which may include: o Deepening the existing well o Providing short and/or long term replacement of water supply o Constructing a new replacement well o Conducting water treatment, o Modifying remedy operations (e.g., placing a packer in HNWR-1A) o An alternate course of action may be considered, provided it is mutually agreeable to DTSC, PG&E and the well owner. The plan/alternate course of action should be provided to DTSC for approval within 30 days, unless modified with DTSC approval, of determining that the Project adversely impacted a non-Project water supply well. • If the groundwater quality of any monitoring well installed as part of HYDRO-6a deteriorates by exceeding water quality objectives (e.g., MCLs for drinking water wells) and baseline conditions, PG&E shall conduct confirmation sampling and promptly assess aquifer conditions to evaluate if the Project has adversely impacted the well. PG&E shall promptly inform DTSC, DOI, and the Arizona Department of Environmental Quality of any adverse impacts and provide an assessment with any recommendations for review and approval.
Noise
Mitigation Measure NOISE-2: Potential Impacts to Noise Levels and Noise Standards (Groundwater FEIR Measure with Revisions). ~~Project-Generated Construction-Related Noise Levels.~~
• Construction equipment shall be properly maintained per manufacturer specifications and fitted with the best available noise suppression devices (e.g., mufflers, silencers, wraps). All impact tools shall be shrouded or shielded, and all intake and exhaust ports on power equipment shall be muffled or shielded. • Construction equipment shall not idle for extended periods of time (more than 15 minutes) when not being utilized during construction activities. A notable exception is when a support vehicle is needed to remain running for health and safety reasons (i.e., air conditioning), consistent with health and safety procedures. • Construction activities shall include, but not limited to, the use of berms, stockpiles, dumpsters, and or bins to shield the nearest noise-sensitive receptor adjacent to construction activities to within acceptable non-transportation noise level standards. When construction activities are conducted within the distances outlined earlier ~~above~~ (i.e., 1,850 feet and 5,830 feet from California receptors and 330 feet and 735 feet from Arizona receptors for daytime and nighttime noise, respectively) relative to noise-sensitive uses in the project area, noise measurements shall be conducted under the supervision of ~~by~~ a qualified acoustical consultant at the nearest noise-sensitive land use relative to the construction activities with a sound level meter that meets the standards of the American National Standards Institute (ANSI Section S14 1979, Type 1 of Type 2) to ensure that construction noise associated with the project component complies with applicable daytime and nighttime noise standards. Coordination with the Tribes and appropriate landowner(s) shall occur to allow opportunity for input in determining noise monitoring locations. If noise levels are still determined to exceed noise standards, temporary engineered acoustical barriers shall be erected as close to the construction activities as feasible, breaking the line of sight between the source and receptor where noise levels exceed applicable standards. Coordination with the

Groundwater FEIR and SEIR Mitigation Measures Comparison Table
Tribes shall occur in a manner consistent with the Cultural Impact Mitigation Program (CIMP; see Appendix H to the C/RAWP) throughout all Project phases, including input in determining constraints in locating temporary noise barriers to avoid or minimize physical impact to cultural resources. All acoustical barriers shall be constructed with material having a minimum surface weight of 2 pounds per square foot or greater and a demonstrated Sound Transmission Class (STC) rating of 25 or greater as defined by the American Society for Testing and Materials' Test Method E90. Placement, orientation, size, and density of acoustical barriers shall be specified by a qualified acoustical consultant. • A disturbance coordinator will be designated by the PG&E ~~project applicant~~, which will post contact information in a conspicuous location near groundwater project activity areas ~~construction areas~~ so that it is clearly visible to nearby noise-sensitive receptors ~~receivers~~ as identified in Figure 4.7-1 and Interested Native American Tribes (Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, and the Hualapai Indian Tribe). ~~most likely to be disturbed.~~ The coordinator will manage and thoroughly investigate complaints resulting from the Project-related noise to ensure resolution. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by PG&E to ensure compliance with applicable standards. Noise complaints shall be reported to DTSC as soon as practicable and no more than 72 hours upon receipt of complaint. Resolutions will be recorded, tracked, and reported to DTSC on a monthly basis. The disturbance coordinator will contact nearby noise-sensitive receptors as labeled in Figure 4.7-1 and Interested Tribes, advising them of the Project activity schedule. The disturbance coordinator will also consider the timing of Project activities in relation to Tribal ceremonial events that are sensitive to noise in a manner consistent with the Cultural Impact Mitigation Program (CIMP) Section 2.11 (see Appendix H to the C/RAWP). ~~In addition, mailing of the same information will be sent to nearby receptors and all tribes. The coordinator will manage complaints resulting from the construction noise. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by the project applicant to ensure compliance with applicable standards. The disturbance coordinator will contact nearby noise-sensitive receptors, advising them of the construction schedule.~~ • This shall be achieved in part through annual project update mailings (could be combined with other annual project mailings) to potentially impacted owners/occupants of sensitive land uses to give notice of possible disturbances and impacts. The mailing shall also identify the disturbance coordinator's contact information.
Mitigation Measure NOISE-1: Short-Term Groundborne Noise and Vibration Levels Caused by Project ~~Construction~~ Activities near Sensitive Receptors (Groundwater FEIR Measure with Revisions).
• ~~Construct n~~ New wells shall be constructed a minimum of 45 feet from vibration-sensitive receptors, as feasible. ~~Avoid c~~ Constructing wells within 30 feet of vibration-sensitive land uses located in California and 275 feet of vibration-sensitive land uses located in Arizona shall be avoided.~~;~~ • A disturbance coordinator will be designated by PG&E ~~the project applicant~~, which will post contact information in a conspicuous location near Project activity areas such as on construction fencing or trailers, but with consideration to culturally sensitive areas such as the Topock Maze. ~~the entrance so that it is clearly visible to nearby receivers most likely to be disturbed.~~ Signage will be clearly visible to nearby vibration-sensitive receptors as identified in Figure 4.7-1. The coordinator will manage complaints resulting from the construction vibration. Reoccurring disturbances will be evaluated by a qualified acoustical consultant retained by the project applicant to ensure compliance with applicable standards. The disturbance coordinator will contact nearby vibration-sensitive receptors, advising them of the construction schedule. This shall be achieved in part through annual project update mailings (could be combined with other annual project mailings) to owners/occupants of potentially impacted sensitive land uses to give notice of possible disturbances and impacts. The mailing shall also identify the disturbance coordinator's contact information.
~~• **Mitigation Measure NOISE-3:** Land Use Compatibility of Future Project Noise Levels with Places of Worship and the Topock Cultural Area~~
~~• Provided that the proposed project would be required to achieve the normally acceptable exterior noise level standard for places of worship, the following mitigation measure shall be incorporated in the project design:~~ ~~• Implement all of the mitigation measures outlined for Impact NOISE-1 and Impact NOISE-2;~~ ~~• Upon completion of detailed project design, the determination of remediation activities and the schedule established to achieve these activities shall be communicated to Native American tribes. PG&E shall maintain a liaison with requesting Tribes to alert them to~~

Groundwater FEIR and SEIR Mitigation Measures Comparison Table
~~project activities that would generate new noise in the Topock Cultural Area on at least an annual basis.~~
Water Supply
~~Mitigation Measure WATER-1:~~ ~~Depletion of Groundwater~~ **Partially Completed and Replaced with HYDRO 6**
~~To mitigate potentially significant effects on local groundwater levels associated with the freshwater extraction wells, in the event that freshwater is to be supplied from wells rather than from a surface intake, a hydrologic analysis shall be conducted during the design phase of the project to evaluate the proposed pumping rates for extraction, the potential cone of depression, and the extraction effect on any existing wells in proximity. Proximity shall be defined by the cone of depression boundary of any well to be used in the extraction process. Extraction well location and/or extraction rates shall be adjusted during project design based on this analysis to ensure that extraction does not substantially adversely affect the production rates of existing nearby wells (e.g., adversely affect well production such that existing land uses would not be supported). It shall be demonstrated using computer simulations or other appropriate hydrologic analysis that production rates of existing nearby wells will not be substantially affected before the installation of any new freshwater extraction wells.~~
Cumulative
Mitigation Measure CUL-5: Cumulative Impacts to the Topock TCP (New Measure). PG&E shall provide funding to the following Tribes (Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, and Hualapai Indian Tribe) that would facilitate actions to preserve the cultural and ecological integrity of the Topock TCP, and that would provide interpretation, and/or educational programs related to the Topock TCP. The funds shall be used for the purposes of ensuring the preservation, conservation and transmission of cultural values associated with the Topock TCP, including furthering Tribal knowledge and community awareness of the TCP's importance and meaning for each Tribe. The funds shall be used to implement interpretive facilities or programs, land preservation/conservation, educational programs (such as grant funding to further the cultural understanding, including research of the Topock area). The Project's Conditions of Approval will identify the amount of the one-time contribution to be made by PG&E, and the type of funding mechanism to be utilized as determined by DTSC. The funding mechanism shall provide for the management of individual funds for each of the four Tribes, and shall administer the release of funds upon review and approval of proposals by Tribe(s). Proposals must meet the above-described purpose related to preservation/conservation, interpretation, and/or educational programs pertaining to the Topock TCP, and must meet pre-established minimum criteria. The funding mechanism shall also provide tracking and verification through documentation of the appropriate use of the funds. Within 6 months of Project approval, DTSC shall develop Tribal Funding Application Guidelines for distribution to the Tribes. The Tribal Funding Application Guidelines will identify the funding management organization that will manage the funds and will provide guidance on accessing the funds, including the identification of minimum criteria by which proposals will be evaluated. Within 30 days of notification by DTSC that the funding management organization has been established, PG&E shall provide documentation that the required funding contribution has been made. The funding organization shall report to DTSC upon the following three occasions: (1) receipt of a proposal by Tribe(s), (2) approval and release of funds, and (3) verification of implementation/use of funds. Funding shall be available for use within the duration of the active remedy, currently estimated to be approximately 30 years. **Mitigation Measure NOISE-3: Cumulative Noise Increases from Remedial Activities (New Measure).** Coordination between teams implementing soil remedial activities (including investigation, pilot testing, and remediation) and groundwater remediation shall occur as to avoid cumulative noise levels to exceed ambient noise levels by 5 dBA or greater, or to exceed applicable County standards at any sensitive receptor (as defined in Chapter 4.7 of this SEIR). If concurrent activities must occur near common sensitive receptors, real time noise measurements of activities shall be conducted by a qualified acoustical consultant (or contractor trained by an appropriate qualified acoustical consultant) at the nearest noise-sensitive land use with a sound level meter that meets the standards of the American National Standards Institute (ANSI Section S14 1979, Type 1 of Type 2). If exceedances are not observed, monitoring can be discontinued. If exceedances are experienced, temporary barriers shall be erected as close to the construction activities as feasible, breaking the line of sight between the source and receptor where noise levels exceed applicable standards. If noise cannot be effectively mitigated, one or more of the concurrent activities shall be modified (options include but are not limited to using lower-noise-producing equipment or manual methods, relocating activities further away from each other, or avoiding/rescheduling concurrent activity, etc.) so as to result in appropriate noise levels.

APPENDIX IS
Modified Initial Study

Introduction

This Modified Initial Study Checklist for the Pacific Gas and Electric Company Topock Compressor Station Groundwater Remediation Project (Final Groundwater Remedy Project; proposed Project) at the PG&E Topock Compressor Station (Station) and surrounding area (Project Area) provides additional analysis in support of the Subsequent Environmental Impact Report (SEIR) prepared for the proposed Project. The Project as described in the Topock Compressor Station Groundwater Remediation Project Final EIR (DTSC 2011; Groundwater FEIR) included a general description of the elements that make up the selected groundwater remedy (e.g., remediation wells, monitoring wells, pipelines, freshwater intake locations, and associated infrastructure). The *Basis of Design Report/Pre-Final (100%) Design Submittal for the Final Groundwater Remedy PG&E Topock Compressor Station, Needles, California, November* (Final Remedy Design; PG&E 2015b), which includes the *Operation and Maintenance Manual Final (100%) Design Submittal* (O&M Manual) and the *Construction/Remedial Action Work Plan for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California* (C/RAWP), provides more detail on the ultimate number and specific locations of the remedy elements, and is described in detail in Chapter 3, "Project Description" of the SEIR.

Explanation of Checklist Evaluation Categories

Where were Impacts Analyzed in the Groundwater FEIR?

This column provides a reference to the pages of the Groundwater FEIR where information and analysis may be found relative to the environmental issue listed under each topic.

Could Proposed Project Changes Involve New Significant Impacts or More Severe Impacts?

Pursuant to Section 15162(a)(1) of the California Environmental Quality Act (CEQA) Guidelines, this column indicates whether the changes represented by the proposed Project as described in Chapter 3 of the SEIR under the Final Remedy Design could result in new significant impacts that have not already been considered and mitigated by the Groundwater FEIR, or that could substantially increase the severity of a previously identified impact. If a "yes" answer is given, additional analysis for that resource topic is evaluated in the SEIR.

Any New Circumstances Involving New Significant Impacts or More Severe Impacts?

Pursuant to Section 15162(a)(2) of the CEQA Guidelines, this column indicates whether there have been new circumstances, such as changes to the Project Area or the vicinity (environmental setting) that have occurred subsequent to the certification of the Groundwater FEIR, which could result in the proposed Project having significant impacts that were not considered or mitigated by the Groundwater FEIR, or which substantially increase the severity of a previously identified impact. If a "yes" answer is given, additional analysis for that resource topic is evaluated in the SEIR.

Any New Information Indicating New Significant Impacts?

Pursuant to Section 15162(a)(3) of the CEQA Guidelines, this column indicates whether there are any new significant environmental impacts due to new information becoming available since certification of the Groundwater FEIR. This applies to any new regulations that might change the nature of analysis or the specifications of a mitigation measure. If additional analysis is conducted as part of this Initial Study and the environmental conclusion remains the same as presented in the Groundwater FEIR, no further analysis is needed. However, if new information presented could result in new significant impacts, additional analysis for that resource topic is evaluated in the SEIR.

Final EIR Mitigation Measures Address Impacts?

Pursuant to Section 15162(a)(3) of the CEQA Guidelines, this column indicates whether mitigation measures that are considerably different from those analyzed in the Groundwater FEIR would substantially reduce one or more significant effects. If "N/A" is indicated, this Initial Study concludes that the impact does not occur as a result of the proposed Project, and therefore no mitigation is needed. A "yes" indicates that mitigation measures from the Groundwater FEIR are sufficient at reducing impacts and no revisions are necessary. If a "no" answer is given, it indicates that either revised or additional mitigation measures may be necessary in order to reduce impacts, and additional analysis for that resource topic is evaluated in the SEIR.

Checklist Evaluation

Aesthetics

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR?	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater FEIR Mitigation Measures Address Impacts?
AESTHETICS — Would the proposed Project:					
a) Have a substantial adverse effect on a scenic vista?	Section 4.1 (Aesthetics), pgs. 4.1-27 to 4.1-47.	Yes	No	Yes	Yes
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Section 4.1 (Aesthetics), pgs. 4.1-27 to 4.1-49.	Yes	No	Yes	N/A
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	Section 4.1 (Aesthetics), pgs. 4.1-27 to 4.1-50.	Yes	No	Yes	Yes
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	Section 4.1 (Aesthetics), pg. 4.1-50.	Yes	No	Yes	N/A

Discussion

a) **Potentially Significant Impact.** The Project Area contains and is surrounded by high-quality scenic vistas, such as the Colorado River, the "Needles" rock formation, and desert floor of the Mojave Valley. At the time the Groundwater Final EIR was prepared, the level of detail and location of planned buildings and structures for major equipment and key supporting functions for the groundwater remedy were programmatic in nature. A series of key views and before and after visual simulations were provided based on conceptual locations of remedy infrastructure types and locations. The Groundwater Final EIR assumed a maximum of 170 wells (remediation and monitoring wells), three different freshwater source options (including a freshwater intake structure on the Colorado River and freshwater supply wells), 35,000 square feet of storage facilities and tanks, above and belowground pipelines, utilities, and roadways, and a maximum footprint of 110,000 square feet for building and structures.

Subsequent to certification of the Groundwater FEIR, the Final Remedy Design, as described in Chapter 3, "Project Description," of the SEIR, was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. For example, the proposed Project includes up to 61 more wells than originally anticipated, identifies specific locations for proposed buildings and structures (that total 68,000 square feet less than anticipated in the Groundwater FEIR), underground piping (as opposed to the combined underground and aboveground piping option assumed in the Groundwater FEIR), and new facilities near Moabi Regional Park that were not previously considered. The proposed buildings and structures would be located in

four main areas, namely the Station, the Transwestern (TW) Bench, the Monitoring Well-20 (MW-20) Bench, and the northwestern area of Moabi Regional Park.

While some of the buildings and structures were considered in the Groundwater FEIR, many were not. Given the scenic vistas within and surrounding the Project Area, the sensitivity of potential viewers, and the new locations of visible infrastructure, additional analysis, including new before and after visual simulations, is needed to determine whether the proposed Project may result in new significant impacts to a scenic vista, and whether the Mitigation Measures AES-1 and AES-2 remain sufficient to reduce potential impacts. Therefore further analysis of the proposed Project's potential impacts to scenic vistas will be conducted in the SEIR.

b) **Potentially Significant Impact**. Scenic resources within the Project Area and vicinity include views from Interstate 40 (I-40), an eligible scenic highway, the Needles Rock Formation, views to the Topock Maze scenic vista, views to the Mohave Valley from Chemehuevi Mountain, and views to the Colorado River, a scenic resource. The Groundwater FEIR concluded that there could be adverse impacts to scenic resources within a scenic corridor. Subsequent to the Groundwater FEIR, the Final Remedy Design, as described in Chapter 3, "Project Description," of the SEIR, was prepared to include design details not available in 2011. The proposed Project now includes new features to the west, northwest, and northeast of the Station that were not addressed in the Groundwater FEIR. This includes the vicinity of the TCS Evaporation Ponds, areas along National Trails Highway/Historic Route 66 near the BNSF railway crossing and potential staging areas at the I-40 junction with Park Moabi Entrance Road. Due to the introduction of new facilities within potentially scenic corridors, additional analysis is needed to determine if the proposed Project may substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. The SEIR will need to evaluate Mitigation Measures AES-1 and AES-2 to determine if they are still effective to reduce impacts or whether additional mitigation measures are necessary.

c) **Potentially Significant Impact**. The visual setting in the area surrounding the Project Area is characterized by steep rocky slopes south of the Station giving way to the meandering bank of the river and Topock Marsh, along with the Havasu National Wildlife Area, to the north and east, with the western portion of the Project Area surrounded by largely undeveloped alluvial plateaus and shallow drainage washes. In addition to the Station, visible built features traversing the Project Area include I-40, the BNSF rail line and natural gas transmission facilities, along with related infrastructure including steel bridges, pipelines, roadbeds and engineered cut slopes. Developed land in the vicinity of the Project Area includes Park Moabi, a mobile home development, and Moabi Regional Park, a recreation facility, both located immediately northwest of the Project Area. The proposed Project would introduce additional wells, roads, pipelines, and other associated infrastructure beyond what was evaluated in the Groundwater FEIR. The introduction of these new features may alter the visual character and quality of the Project Area and therefore, additional analysis is needed in the SEIR to address whether changes may result in new significant impacts. The SEIR will

also evaluate whether Mitigation Measures AES-1 and AES-2 remain sufficient to reduce potential impacts or if new mitigation measures are required.

d) **Potentially Significant Impact**. The Groundwater FEIR concluded that impacts associated with light and glare would be considered less than significant, and no mitigation measures were required. Subsequent to the Groundwater FEIR, the Final Remedy Design provides new detail regarding light and glare sources~~, such as the use of solar panels, which were not previously analyzed in the FEIR~~ and provides additional detail about the need for activities during nighttime hours that may need additional lighting. Additional analysis is needed in the SEIR to evaluate if the introduction of new light and glare sources within the Project Area would result in new significant impacts. The SEIR will also consider whether new mitigation measures to address light and glare impacts are necessary.

Summary

The Groundwater FEIR concluded that there would be significant impacts to visual resources, which required implementation of Mitigation Measures AES-1 and AES-2. The SEIR will evaluate the impacts associated with the proposed Project and consider whether these measures are sufficient to reduce visual impacts. Revised and/or new mitigation measures may be required for the proposed Project to ensure no new significant adverse impacts occur. Based on the discussion presented above, the proposed Project would potentially result in new significant adverse impacts based on new information. Thus, aesthetic issues "a" through "d" from the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):		Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
AGRICULTURAL AND FOREST RESOURCES —						
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.						
	Would the proposed Project:					
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A

Discussion

a) **No Impact**. As discussed in the Groundwater FEIR, the Project Area is characterized by arid conditions and high temperatures. While there are agricultural uses north of the Project Area and Needles along the Colorado River, the landscape in the Project Area consists of considerably eroded small to moderately sized terraces with very steep slopes. These conditions are not conducive to agricultural uses. Following a review of Farmland Mapping and Monitoring Program maps, no farmland designated as Prime Farmland, Unique Farmland, or Farmland of Local Importance were identified within the Project Area or in the vicinity. Subsequent to certification of the Groundwater FEIR, the Project

Area was refined to cover any additional areas that are needed for construction, long-term operation, and decommissioning of the groundwater remedy, and also eliminate certain areas that were determined not to be needed for proposed Project activities. A review of the 2012 Farmland Mapping and Monitoring Program maps confirm that conditions have not changed since the Groundwater FEIR was certified and no new agricultural lands would be converted due to the proposed Project. As a result, the proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Resource issues associated with Prime Farmlands, Unique Farmland, or Farmland of Local Importance are not evaluated further in the SEIR.

b) **No Impact**. The Groundwater FEIR did not identify lands under a Williamson Act contract on or near the Project Area. A review of current California Department of Conservation maps (CDC 2014) confirms no lands under a Williamson Act contract occur in or near the Project Area. As a result, the proposed Project would not conflict with existing zoning for agricultural use, or a Williamson Act contract, consistent with the evaluation presented in the Groundwater FEIR. Therefore, this resource topic is not evaluated further in the SEIR.

c) **No Impact**. Since the certification of the Groundwater FEIR, the CEQA Guidelines were updated to evaluate a project's potential impact to Forest Lands, Timberland, and Timberland Production Zones. The California Public Resource Code defines Forest Land and Timberland, and the California Government Code defines Timberland Production Zones as follows:

> **Forest land (12220(g)):** Land that can support 10-percent native tree cover of any species, including: hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.
>
> **Timberland (4526):** Land, other than land owned by the Federal government and land designated by the Board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees.
>
> **Timberland Production Zone (51104(g)):** Timber Land Production Zone (TPZ) are areas which have been zoned in accordance with applicable statutes and are devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses.

Land within the Project Area is not designated as forest land, timberland, or zoned as a Timberland Production Zone (County of San Bernardino 2007), and therefore, the proposed Project would have no impact related to existing zoning for, or cause the rezoning of forest land, timberland, or land zoned for timberland production. Resource issues associated with timberlands are not evaluated further in the SEIR.

d) **No Impact**. As discussed above in threshold c), the Project Area is not designated as forest land. As such, implementation of the proposed Project would not result in loss or conversion of forest land to non-forest use. Resource issues associated with forest lands are not evaluated further in the SEIR.

e) **No Impact**. As discussed above, the Project Area does not include Farmland or forest land. The Final Remedy Design would therefore, not result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. This resource issue is not evaluated further in the SEIR.

Summary

The Groundwater FEIR concluded that the proposed Project would result in no significant impacts, either directly or indirectly, to agricultural resources. Based on the analysis presented above, the proposed Project would not result in new significant impacts, nor have any substantial change in circumstances been identified that would result in new significant impacts to agricultural resources. Evaluation of forest lands and timber lands was not a requirement of CEQA at the time the Groundwater FEIR was prepared and therefore was not included in the Groundwater FEIR analysis. Nevertheless, the Project Area is not designated as forest land, timberland or timberland production zone and therefore, would have no impact to these resources. No new information of substantial importance related to agricultural resources, forest lands or timber lands has been identified. Thus, the agricultural and forestry resource issues will not require further evaluation in the SEIR.

Issues (and Supporting Information Sources):		Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the proposed Project:**						
a)	Conflict with or obstruct implementation of the applicable air quality plan?	Section 4.2 (Air Quality), pgs. 4.2-26 to 4.2-31.	No	No	No	Yes
b)	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Section 4.2 (Air Quality), pgs. 4.2-26 to 4.2-31.	Yes	Yes	Yes	No
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	Section 6.0 (Cumulative Impacts), pgs. 6-28 to 6-29.	Yes	Yes	Yes	No
d)	Expose sensitive receptors to substantial pollutant concentrations?	Section 4.2 (Air Quality), pgs. 4.2-32 to 4.2-33.	Yes	Yes	Yes	No
e)	Create objectionable odors affecting a substantial number of people?	Section 4.2 (Air Quality), pg. 4.2-33.	No	No	No	N/A

Discussion

a) **Less than Significant Impact**. The Project Area is located in the Mojave Desert approximately 12 miles southeast of the city of Needles, California, 5 miles south of Golden Shores, Arizona, and 1 mile southeast of the Moabi Regional Park in California. Air quality at the Project Area is regulated by the U.S Environmental Protection Agency (EPA), the Air Resources Board (ARB), the Mojave Desert Air Quality Management District (MDAQMD), and San Bernardino County. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. The Groundwater FEIR was found to comply with California's regulations and no violation of Arizona air quality regulations was found to occur because California regulations were stricter for all pollutants than those of Arizona, which are consistent with federal standards. According to the MDAQMD, a project would not conflict with the implementation of local air quality plans if it complies with all applicable District rules and regulations, including control measures, and is consistent with the growth forecasts in the applicable plans (or is directly included in the applicable plan).

The proposed Project includes the construction of wells, remediation facilities, new and upgraded roadways, and other non-well related infrastructure and facilities throughout the

Project Area, and specifically at the MW-20 Bench, Moabi Regional Park, the Transwestern Bench as well as the Station and TCS Evaporation Ponds. It also established updated information regarding construction duration and phase overlaps. The proposed Project is required to comply with the Groundwater FEIR mitigation measures and applicable regulations.

The Final Remedy Design incorporates design details and plans called for under Mitigation Measure AQ-1 to reduce fugitive dust emissions in the Project Area. The proposed Project would comply with all applicable District rules and regulations (See Section 4.2, "Air Quality and Greenhouse Gas Emissions of the SEIR). The proposed Project is not a residential land use project and therefore, would not increase the number of dwelling units or residents in the Project Area. The proposed Project would therefore not conflict with the growth estimations included in the local general plans. Additionally, the minimal increase of 90 daily trips in traffic from construction of the proposed Project compared to the Groundwater FEIR, and a decrease in operation-related trips, would not exceed the anticipated growth in vehicle trips anticipated within San Bernardino County under the General Plan. Because the proposed Project would not conflict with the local General Plans and would comply with all applicable rules and regulations established by the MDAQMD, the proposed Project would not conflict with the implementation of the local air quality plans. The proposed Project does not conflict with or obstruct implementation of the applicable air quality plan, no new significant impact or substantially more severe impacts would occur. For this reason, the analysis of the proposed Project's compliance with the applicable air quality plans does not require further evaluation in the SEIR.

b) **Potentially Significant Impact**. The proposed Project is within the Mojave Desert Air Basin (MDAB). The MDAB is comprised of the eastern portion of Kern County, the northeastern portion of Los Angeles County, the eastern portion of Riverside County, and all of San Bernardino County. The MDAQMD is the agency with jurisdiction over the majority of the MDAB. The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. The Groundwater FEIR indicated that construction-related emissions would be short-term or temporary in duration and determined that the proposed Project would not violate or contribute substantially to an existing or projected air quality violation or conflict with air quality planning efforts. As a result, this impact was found to be less than significant. The Groundwater FEIR also determined that long-term operational emissions would not constitute an air quality violation since all stationary sources would be required to meet applicable MDAQMD standards. The Final Remedy Design includes design details and plans not previously known at the time the Groundwater FEIR was certified, including a detailed construction phasing scenario. This detailed construction phasing of the proposed Project will require additional analysis to determine if the proposed Project could potentially violate current air quality standards. The SEIR will also evaluate whether the Mitigation Measure AIR-1 remains sufficient at reducing emissions or if new mitigation measures are required.

c) **Potentially Significant Impact**. The Groundwater FEIR concluded that there would not be a cumulatively considerable net increase of criteria pollutants because emissions from operational activities were not found to exceed regulatory thresholds. In addition, emissions from construction/decommissioning activities were found to be reduced below regulatory thresholds with the incorporation of mitigation. The Final Remedy Design incorporates design details and plans not previously known at the time the Groundwater FEIR was certified, including a detailed construction phasing scenario. This new information would require additional analysis to determine if the proposed Project results in a cumulative net increase in criteria pollutants, including whether Mitigation Measure AIR-1 remains sufficient at reducing pollutant emissions or if new mitigation measures are required. Further analysis is needed in the SEIR to determine if the proposed Project would result in a new significant impact or more substantially severe impacts than the Groundwater EIR.

d) **Potentially Significant Impact**. The Groundwater FEIR described the closest stationary sources of toxic air contaminants (TACs) to the Project Area as the existing Station, southern California gas company locations (approximately 12–15 miles to the northwest), and Needles Desert Community Hospital (approximately 12 miles to the northwest). Vehicles on I-40, U.S. Highway 95 and other roads in the vicinity were identified as sources of diesel PM and other TACs associated with vehicle exhaust. The Groundwater FEIR determined that construction activities would result in no impacts to sensitive receptors with respect to TAC emissions, and that use of pumps, generators, and other stationary sources during operation would be subject to MDAQMD regulations. Subsequent to certification of the Groundwater FEIR, additional sources of TAC emissions were identified within 1,000 feet of proposed Project facilities within the Project Area. In addition, the Final Remedy Design includes the placement of new facilities and infrastructure near new sensitive receptors not previously identified in the Groundwater FEIR. Additional analysis is needed in the SEIR to evaluate if the proposed Project would result in new significant air quality emissions impacts to sensitive receptors.

e) **Less than Significant Impact**. The Groundwater FEIR indicated that no known odor sources are located in the immediate vicinity of the Project Area, except for existing Station operations such as ~~exhaust gasses and~~ natural gas odorants ~~(mercaptan)~~. The Groundwater FEIR identified negligible impacts associated with odors from exhaust emissions from on-site diesel equipment and operation of the new facilities that would generate exhaust from pumps. The proposed Project would not add any additional sources or types of odors and therefore would not result in odor emissions that are substantially different than analyzed within the Groundwater FEIR. As a result, the proposed Project would not create objectionable odors affecting a substantial number of people consistent with the conclusions presented in the Groundwater FEIR. This resource issue is not evaluated further in the SEIR.

Summary

The Groundwater FEIR concluded that there would be significant air quality impacts and required implementation of Mitigation Measure AIR-1. The SEIR will evaluate the impacts associated with the proposed Project and consider whether these measures are sufficient at reducing air

quality impacts. Revised and/or new mitigation measures may be required for the proposed Project to ensure no new significant adverse impacts occur. Based on the discussion presented above, the proposed Project would potentially result in new significant adverse impacts based on new information. Thus, air quality issues “b” through “d” from the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
BIOLOGICAL RESOURCES — Would the proposed Project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Section 4.3 (Biological Resources), pgs. 4.3-27 to 4.3-37	Yes	Yes	Yes	Yes
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Section 4.3 (Biological Resources), pgs. 4.3-25 to 4.3-27	Yes	Yes	Yes	Yes
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Section 4.3 (Biological Resources), pg. 4.3-37	Yes	Yes	Yes	Yes
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Section 4.3 (Biological Resources), pgs. 4.3-36 to 4.3-37	Yes	Yes	Yes	N/A
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Section 4.3 (Biological Resources), pgs. 4.3-36 to 4.3-37	No	No	No	N/A
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	Section 4.3 (Biological Resources), pgs. 4.3-36 to 4.3-37	No	No	No	N/A

Discussion

a) **Potentially Significant Impact**. The Project Area is located within both the Mojave and Colorado Deserts. These deserts are separated by the Colorado River; portions of the Project Area east of the Colorado River (in Arizona) are located within the Colorado Desert while portions of the Project Area west of the Colorado River are located within the Mojave Desert. The terrain and habitat in the Project Area generally includes relatively flat sparsely vegetated desert, unvegetated desert pavement, numerous shallow to deep ephemeral washes, and gently rolling hills. Several biological surveys were conducted during preparation of the Groundwater FEIR. The Groundwater FEIR

evaluated a total of 31 special-status species with a potential to occur on the Project Area, including one plant species and 30 wildlife species. The Groundwater FEIR determined that impacts to special-status wildlife species associated with construction, operation and maintenance, and decommissioning would be a potentially significant impact.

Subsequent to certification of the Groundwater FEIR, additional details were developed regarding new or modified infrastructure needed to support the remedy, which resulted in additional soil disturbance and augmented facility footprints from what was analyzed in the Groundwater FEIR. There have also been additional field surveys performed since publication of the Groundwater FEIR, that include the potential occurrence of 11 additional special-status terrestrial wildlife species not previously considered. Additional analysis is needed to determine whether the proposed Project may result in new significant impacts to special status species and whether the Mitigation Measures BIO-2a through BIO-2c remain sufficient at reducing potential impacts or if new mitigation measures are required. Therefore further analysis of the proposed Project's potential impacts to special-status species will be conducted in the SEIR.

b) **Potentially Significant Impact**. Sensitive habitats evaluated in the Groundwater FEIR include areas mapped as desert wash and desert riparian. Sensitive riparian habitats are located along the Colorado River and in Bat Cave Wash. The exact locations of infrastructure were not known when the Groundwater FEIR was certified; thus, impacts to sensitive riparian habitat were not quantified. Nevertheless, the Groundwater FEIR determined that biological impacts to sensitive habitat areas and wetlands associated with construction, operation and maintenance, and decommissioning activities would result in a potentially significant impact. Subsequent to certification of the Groundwater FEIR, additional details were developed regarding new or modified infrastructure needed to support the remedy, which resulted in additional soil disturbance and augmented facility footprints from what was analyzed in the Groundwater FEIR. In addition, biological surveys have been conducted since 2011 that inform the location and types of sensitive habitats within the Project Area. Further analysis is needed to determine whether the proposed Project may result in new significant impacts to riparian habitats and whether the Mitigation Measure BIO-1 remains sufficient at reducing potential impacts or if new mitigation measures are required. Therefore further analysis of the proposed Project's potential impacts to riparian habitats will be conducted in the SEIR.

c) **Potentially Significant Impact**. Aquatic habitats associated with the Colorado River within the Project Area were found to include freshwater marsh and emergent wetlands in the Groundwater FEIR. The dominant habitat of the Project Area was determined to be creosote bush scrub, which was sparsely vegetated with widely distributed creosote (*Larrea tridentata*). Bat Cave Wash and other unnamed washes west of the Colorado River were found to support mesquite, palo verde, and mesquite/palo verde habitat types. Arrow weed and salt cedar were determined to be co-dominant habitats along the Colorado River floodplain.

The California side of the Colorado River floodplain was determined to provide limited wetland habitat due to the general lack of emergent vegetation occurring within the river. Jurisdictional wetlands and waters of the United States were documented in the Groundwater FEIR based on wetland delineations conducted within the Project Area, which included freshwater marsh and emergent wetlands associated with the Colorado River. Wetland vegetation consisted primarily of common reed (*Phragmites communis*), cattails (*Typha* sp.), sedges (*Carex* sp.), and bulrush (*Scirpus* sp.). The Colorado River and all intermittent drainages across the Project Area were mapped as potential waters of the United States. The exact locations of infrastructure were not known when the Groundwater FEIR was certified; thus, the Groundwater FEIR did not quantify impacts to jurisdictional resources and sensitive riparian habitat. Subsequent to the Groundwater FEIR, the Final Remedy Design includes detailed information on planned facilities, wells, new access roads, and infrastructure. Direct impacts to riparian habitat under CDFW jurisdiction are not anticipated with implementation of the Final Remedy Design. However, the proposed Project could result in additional acres of disturbance to jurisdictional resources and sensitive riparian habitat during construction, operation and maintenance, and decommissioning activities. Therefore, further evaluation is needed in the SEIR to assess impacts to aquatic habitats and to determine if Mitigation Measure BIO-1 remains sufficient at reducing potential impacts or if new mitigation measures are required.

d) **Potentially Significant Impact**. The Groundwater FEIR evaluated the potential effects to fish species and spawning habitat. Specifically, the Groundwater FEIR evaluated the potential effects from the freshwater intake structure that was included as a component analyzed in 2011. The freshwater intake structure (including a cofferdam) adjacent to the Colorado River and activities within Bat Cave Wash and other drainages was determined to have the potential to cause a number of potential impacts to fish species and aquatic habitat through increased levels of turbidity, siltation, sedimentation, toxics contamination, and dewatering for the intake structure. In addition, the potential for other activities to result in sedimentation and increased turbidity or other contamination could have degraded water quality and adversely affected fish habitat and fish populations. Additionally, wells, roads, and pipelines would have been placed in Bat Cave Wash or other drainages, which could have conveyed sediments or contaminants during a flash flood. As a result, this impact was determined to be potentially significant and Mitigation Measures BIO-3a through BIO-3c were required, which are specific to the freshwater intake structure. The proposed Project evaluated in this SEIR does not include construction of the freshwater intake structure along the Colorado River. Still, further analysis is needed in the SEIR to determine whether additional impacts would result to aquatic species from implementation of the proposed Project, and whether mitigation measures are required to reduce potential impacts.

The Groundwater FEIR identified potential wildlife movement corridors within aquatic and terrestrial environments associated with the Project Area, and was found to not adversely interfere with any terrestrial wildlife movement through the Project Area, or through the region due to components being widely distributed across the Project Area. The dispersed nature of the components would result in the site retaining relatively large, contiguous, and

intact areas of wildlife habitat within the Project Area, which would remain as viable areas for use by wildlife. Since the Groundwater FEIR, new information has become available regarding the potential use of the Project Area as suitable bat maternity roosting areas for a number of common and special-status bat species, particularly within Bat Cave Wash and the East Ravine. As currently designed, construction of new buildings, roads, pipelines, and wells proposed near potential bat maternity roosting habitat may result in impacts to active bat maternity roosts. Therefore, further evaluation is needed in the SEIR to assess impacts to bat maternity roosts, which are considered a type of native wildlife nursery site, and to determine whether mitigation measures would be required to reduce potential impacts.

e) **Less than Significant Impact**. Regional and local plans applicable to the Project Area include the Lower Colorado River Multi-Species Conservation Program (LCR MSCP), *County of San Bernardino 2007 General Plan*, *Mohave County General Plan*, BLM *Lake Havasu Resource Management Plan*, and *Lower Colorado* River *National Wildlife Refuges Comprehensive Management Plan*. The Groundwater FEIR concluded consistency with all regional and local plans, based on the following analysis:

- Because water diversions would be relatively low, the Groundwater FEIR found that there would likely be little effect on the attainment of the LCR MSCP goals and objectives, the conservation strategy of the LCR MSCP, or the viability of the covered species.
- The activities associated with the Groundwater FEIR were not found to fall within a prohibited activity of the *Lake Havasu Land Management Plan* and the activities would not degrade the biological resources element of the Beale Slough Riparian and Cultural Area of Critical Environmental Concern (ACEC). Therefore, actions associated with cleanup of the contaminated groundwater would not conflict with management goals because these actions would reduce the potential for long-term adverse effects on sensitive resources.
- The activities associated with the Groundwater FEIR were found to not conflict with the overall management goals of the Havasu National Wildlife Refuge and would not be a prohibited activity under the *Lower Colorado River National Wildlife Refuges Comprehensive Management Plan*. Although the physical implementation of activities (i.e., drilling wells, installing pipes and a treatment plant) may not be compatible with the purposes of the refuge, reducing the potential for long-term harm from contaminated groundwater would be compatible and could be permitted.
- No conflicts with BLM's management plan or the ACEC management prescriptions described in the BLM's 2007 *Lake Havasu Resource Management* Plan were found to occur with implementation of the Groundwater FEIR. The activities were not prohibited in the ACEC per the Lake Havasu Resource Management Plan and the Project activities was found to not cause irreparable damage to the ACEC's relevant characteristics or important values described above. In addition, construction, operations & maintenance, and

decommissioning activities would not reduce the potential for long-term adverse effects on sensitive resources in the ACEC.

- The goals and policies for the *County of San Bernardino 2007 General Plan* and the Mohave County General Plan were found not to be in conflict with implementation of the Groundwater FEIR. The Groundwater FEIR was found that activities would not affect substantial areas of habitat and would not substantially diminish habitat values because the activities would have a small overall footprint, would not occur within pristine habitat, and has comprehensive mitigation requirements for restoration and revegetation (see the SEIR Biological Resources discussion). Particularly, activities within Arizona would not impact environmentally sensitive areas.

The Groundwater FEIR determined that impacts associated with construction, operation and maintenance, and decommissioning would have little effect on the attainment of the LCR MSCP, *County of San Bernardino 2007 General Plan,* and *Lower Colorado River National Wildlife Refuges Comprehensive Management Plan*. Therefore, impacts were considered consistent with the goals and objectives of these regional and local plans and the viability of the covered species therein. Since impacts were determined to be less than significant to regional and local plans, no mitigation measures were prescribed. Similarly, the proposed Project analyzed in this SEIR would not conflict with the applicable area-wide plans because the proposed Project would continue to not involve activities that are prohibited in the area of influence of these plans, nor would the proposed Project cause irreparable damage to the characteristics managed in the aforementioned plans. The proposed Project would not result in any new significant impacts or substantially more severe impacts on regional and local plans than previously identified in the Groundwater FEIR. Therefore, additional analysis of the proposed Project's consistency with local and regional plans is not required in the SEIR.

f) **Less than Significant Impact**. HCP, NCCP, and other approved local, regional or state habitat conservation plans applicable to the Project Area include the LCR MSCP, *County of San Bernardino 2007 General Plan*, *Mohave County General Plan*, BLM *Lake Havasu Resource Management Plan*, and *Lower Colorado River National Wildlife Refuges Comprehensive Management Plan*. As discussed above under item "d", the Groundwater FEIR determined that construction, operation and maintenance, and decommissioning activities would be consistent with all regional and local plans. The proposed Project evaluated in this SEIR has not significantly changed such that it would conflict with applicable area-wide plans because the proposed Project would not involve activities that are prohibited in the area of influence of these plans, nor would the proposed Project cause irreparable damage to the characteristics managed in the aforementioned plans. Since the proposed Project would not result in new significant impacts or substantially increase the severity of impacts previously identified in the Groundwater FEIR on biological resources with respect to conflicting with conservation plans, no further analysis is presented in SEIR.

Summary

The Groundwater FEIR concluded that the Project would have potentially significant impacts related to sensitive biological species and habitats and required Mitigation Measures BIO 1 through BIO-3c. The SEIR will evaluate the impacts associated with the proposed Project and consider whether these measures are sufficient at reducing biological resource impacts. Revised and/or new mitigation measures may be required for the proposed Project to ensure no new significant adverse impacts occur. Based on the discussion presented above, the proposed Project would potentially result in new significant adverse impacts based on new information, with the exception of consistency with applicable biological management plans. Thus, biological resource issues "a" through "d" from the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
CULTURAL RESOURCES — Would the proposed Project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Section 4.4 (Cultural Resources), pgs. 4.4-60 - 4.4-70.	Yes	Yes	Yes	Yes
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Section 4.4 (Cultural Resources), pgs. 4.4-70 - 4.4-71.	Yes	Yes	Yes	Yes
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Section 4.4 (Cultural Resources), pgs. 4.4-71 - 4.4-72.	Yes	Yes	Yes	Yes
d) Disturb any human remains, including those interred outside of formal cemeteries?	Section 4.4 (Cultural Resources), pgs. 4.4-72 - 4.4-74.	Yes	Yes	Yes	Yes

Discussion

a) **Potentially Significant Impact**. The Groundwater FEIR indicated that the Project Area occurs within the Topock Cultural Area (TCA), an area of unique archaeological, tribal, and historical importance. All known resources within the Groundwater FEIR Project Area were considered to be historical resources for the purposes of CEQA. The Groundwater FEIR concluded that there would be a potentially significant impact to the TCA. While direct impacts to the unique feature known as the Topock Maze (CA-SBR-219), as it is manifested archaeologically, were not anticipated, the introduction of additional infrastructure, ground-disturbing activity, and overall nature of modern intrusions were determined to result in changes to the character, nature, and use of the historical resource. The Groundwater FEIR found that there would be an indirect affect to the Topock Maze environment. Further impacts to specific known historical resources were addressed at a programmatic level, as exact project-level details were not known at the time. To reduce the impacts, the Groundwater FEIR included Mitigation Measure CUL-1a. To reduce the potential impacts to other known and as yet undiscovered historical resources, the Groundwater FEIR included Mitigation Measure CUL-1b/c.

Subsequent to certification of the Groundwater FEIR, the Final Remedy Design was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. The proposed Project would require 45,200 cubic yards of soil disturbance, which would be

more than three times the 13,400 cubic yards of soil disturbance analyzed in the Groundwater FEIR. In addition to updated details regarding the proposed Project, new information has been provided regarding the presence of known historical resources within the Project Area.

While some of the buildings and structures were considered in the Groundwater FEIR, many were not. Given the new level of detail that is available as well as the new information about historical resources in the Project Area, further analysis is needed to determine whether the proposed Project would result in new significant impacts to historical resources, and whether the Mitigation Measures CUL-1a through CUL1a-12 and CUL-1b/c-1 through CUL-1b/c-4 remain sufficient at reducing potential impacts or if new mitigation measures are required. Therefore, further analysis of the proposed Project's potential impacts to historic resources will be conducted in the SEIR.

b) **Potentially Significant Impact**. The Groundwater FEIR found that there could be undocumented archaeological resources that may qualify as unique archaeological resources within the Project Area and that they could be discovered during ground disturbance. However, archaeological resources identified in the Project Area had not yet been formally evaluated to determine whether they qualify as unique archaeological resources under CEQA. To reduce the potential impacts, the Groundwater FEIR proposed Mitigation Measure CUL-2.

Subsequent to certification of the Groundwater FEIR, the Final Remedy Design was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. The proposed Project would require 45,200 cubic yards of soil disturbance, which would be more than three times the 13,400 cubic yards of soil disturbance analyzed in the Groundwater FEIR. In addition to updated details regarding the proposed Project, new information has been provided regarding the presence of known archaeological resources within the Project Area.

While some of the buildings and structures were considered in the Groundwater FEIR, many were not. Given the new level of detail that is available as well as the new information about archaeological resources in the Project Area, further analysis is needed to determine whether the proposed Project would result in new significant impacts to archaeological resources, and whether the Mitigation Measure CUL-2 remains sufficient at reducing potential impacts or if new mitigation measures are required. Therefore, further analysis of the proposed Project's potential impacts to archaeological resources will be conducted in the SEIR.

c) **Potentially Significant Impact**. Given the regional location of the Project Area within the Colorado River Valley, the Groundwater FEIR found that there was the potential for unique paleontological resources to occur within the Project Area. Pleistocene Quaternary alluvium units, Bouse Formation, and Chemehuevi Formation were found to be located in the Project Area and they all have the potential to contain fossils, some of

which may be considered unique under CEQA. To reduce the potential impact to less than significant, the Groundwater FEIR included Mitigation Measure CUL-3.

Subsequent to certification of the Groundwater FEIR, the Final Remedy Design was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. The proposed Project would require 45,200 cubic yards of soil disturbance, which would be more than three times the 13,400 cubic yards of soil disturbance analyzed in the Groundwater FEIR. In addition to updated design details, new information has been provided regarding the presence of paleontological resources within the Project Area.

Given the new level of detail that is available, as well as the new information about paleontological resources in the Project Area, further analysis is needed to determine whether the proposed Project would result in new significant impacts to paleontological resources, and whether Mitigation Measure CUL-3 remains sufficient at reducing potential impacts or if new mitigation measures are required. Therefore, further analysis of the proposed Project's potential impacts to paleontological resources will be conducted in the SEIR.

d) **Potentially Significant Impact**. The Groundwater FEIR concluded that there would be a potentially significant impact to human remains. While no documented sites in the Project Area were known to contain burials of grave goods, the lack of systematic archaeological excavation was seen as indicator that there was not enough data to conclude that the Project Area did not contain human remains. The Groundwater FEIR found that given the site density and historical uses of the Project Area, there was a potential to encounter human remains, and that ground disturbance could encounter human remains. To reduce the potential impact, the Groundwater FEIR included Mitigation Measure CUL-4.

Subsequent to certification of the Groundwater FEIR, the Final Remedy Design was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. The proposed Project would require 45,200 cubic yards of soil disturbance, which would be more than three times the 13,400 cubic yards of soil disturbance analyzed in the Groundwater FEIR.

Given the new level of detail that is available as well as the new information about cultural resources in the Project Area, further analysis is needed to determine whether the proposed Project would result in new significant impacts to human remains, and whether Mitigation Measure CUL-4 remains sufficient at reducing potential impacts or if new mitigation measures are required. Therefore, further analysis of the proposed Project's potential impacts to human remains will be conducted in the SEIR.

Summary

The Groundwater FEIR concluded that there would be significant impacts to cultural resources and required Mitigation Measures CUL-1a through CUL1a-12, CUL-1b/c-1 though CUL-1b/c-4,

CUL-2, CUL-3, and CUL-4. The SEIR will evaluate the impacts associated with the proposed Project and consider wither these measures continue to be sufficient to reduce impacts to cultural resources. Revised and/or new mitigation measures may be required for the Final Groundwater Remedy Project to ensure no new significant adverse impacts occur. Based on the discussion presented above, the Final Remedy Design would potentially result in new significant adverse impacts based on new information. Thus, aesthetic issues "a" through "d" from the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
GEOLOGY, SOILS, AND SEISMICITY — Would the proposed Project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	Section 4.5 (Geology and Soils), pg. 4.5-46.	No	No	No	N/A
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)					
ii) Strong seismic ground shaking?					
iii) Seismic-related ground failure, including liquefaction?					
iv) Landslides?					
b) Result in substantial soil erosion or the loss of topsoil?	Section 4.5 (Geology and Soils), pgs. 4.5-47. to 4.5-49.	No	No	No	Yes
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	Section 4.5 (Geology and Soils), pg. 4.5-47.	No	No	No	N/A
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	Section 4.5 (Geology and Soils), pg. 4.5-47.	No	No	No	N/A
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	Section 4.5 (Geology and Soils), pg. 4.5-46.	No	No	No	N/A

Discussion

a) **Less than Significant Impact.** The Groundwater FEIR indicated that the Project Area did not occur within an earthquake fault zone as designated by the Alquist-Priolo Earthquake Fault Zone Act. The nearest historically active faults (active within the past 200 years, as defined by the Alquist-Priolo Earthquake Fault Zoning Act) are the Pinto Mountain and Pisgah-Bullion fault zones, both located approximately 94 miles west-southwest of the site. Because no known active faults are located on the site, the potential for surface rupture (cracking or breaking of the ground during an earthquake) was determined to be less than significant.

The Groundwater FEIR determined the Project Area was located in an area considered by the California Geological Survey to be a relatively low intensity ground-shaking zone. The California Geological Survey has identified the peak ground acceleration, which is the measure of how hard the earth shakes in a given geographic area, for the Project Area to have a 2% probability of exceeding 6% of the acceleration of gravity in 50 years. The potential for seismic activity in this area was considered low because of the Project Area's substantial distance from active faults. Facilities would not expose people to great risk of earthquake-related impacts, including the effects of strong ground shaking that could result in risks to people or damage to structures. Further, all proposed facilities would be constructed in accordance with the requirements of the Uniform Building Code, including requirements for seismic design and the policies and implementation measures of the County General Plan's Safety Element (June 15, 2005).

In addition, because of the Project Area's substantial distance from active faults and the low risk associated with ground shaking, any seismic-related earth failure, including liquefaction, was not expected to be substantial. Therefore, the Groundwater FEIR determined there would not be an increase in the exposure of people or structures to potential substantial adverse effects related to earthquakes or seismic events, and impacts were considered less than significant. No mitigation measures were required.

The Groundwater FEIR determined that the Project Area was located in a geological area that is relatively stable. A large portion of the Project Area is relatively flat and is therefore not susceptible to landslides, either on- or off-site. Portions of the Project Area with abrupt elevation changes may be susceptible to localized rock falls, but are not located adjacent to any hillsides or areas that could be subject to the effects of widespread slope failures or landslides. For these reasons, the Groundwater FEIR determined there would be less than significant impacts related to landslides and no mitigation measures were required.

Subsequent to certification of the Groundwater FEIR, the proposed Project, as described in Chapter 3 of the SEIR, was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. Since the underlying site conditions remain the same for the proposed Project, no new or substantially more severe impacts are expected to occur. No additional analysis regarding seismic activity, liquefaction or landslides is needed and these issues are not further evaluated in the SEIR.

b) **Less than Significant Impact after Mitigation**. The Groundwater FEIR determined that there could be disturbed areas that would be exposed to wind and water erosion during construction activity. During wind events, which are not uncommon in the desert region, fine-grained surface soils may become airborne, creating dust. At sufficient concentrations, inhalation of particulate matter (i.e., dust) in human lungs can cause a variety of health problems. Further, wind-blown sediment can degrade sensitive equipment parts and processes. During winter storm events, rain of sufficient intensity could dislodge soil particles from the soil surface. Once particles are dislodged, and if

excessive rainfall generates runoff, localized erosion could occur, which was determined could lead to the degradation of on-site soils and nearby waterways, including the Colorado River. In addition, in areas that could be disturbed by activities and that would be adjacent to existing sources of contamination, such as those within or adjacent to the Solid Waste Management Units and Areas of Concern, there was found to be the potential to encounter contaminated soils. If these soils were eroded, they could contribute contaminants to receiving waters. This potential for increased erosion during construction and decommissioning activities, including potential for erosion from unpaved access roads, was identified as a potentially significant impact in the Groundwater FEIR.

The Groundwater FEIR also identified impacts associated with differential compaction (i.e., where an area of soils is compacted at a much greater degree than surrounding soils and where the surrounding soils are more easily eroded) of soils caused by the substantial number of heavy, loaded trucks that would travel along unpaved or graded areas. The degree of differential compaction of soils in the Project Area would vary because of truck weight, duration of traffic, and surface soil type along the truck travel routes; however, activities associated with the proposed Project could result in substantial wearing of Project Area roadways, which could lead to changes to the drainage patterns, rutting, and locally greater erosion rates. Further, where utilities and water conveyance structures would be installed underground, the recompacted soils may cause changes to the existing drainage of the area and may prevent the infiltration of water in these areas. The Groundwater FEIR identified Mitigation Measures GEO-1a and 1b to address soil-related impacts.

Subsequent to certification of the Groundwater FEIR, the proposed Project, as established in the Final Remedy Design and described in Chapter 3 of the SEIR, was prepared to include design details not available in 2011. The proposed Project would require the construction of wells, piping corridors, buildings, and associated infrastructure that could increase soil erosion and siltation on and off the Project Area. The proposed Project would require 45,200 cubic yards of soil disturbance, which would be more than three times the 13,400 cubic yards of soil disturbance analyzed in the Groundwater FEIR. However, the increases in soil disturbance and additional infrastructure would not change the procedures and protocols established under Mitigation Measures GEO-1a and GEO-1b in the Groundwater FEIR, which would still be required for this SEIR. In addition, provisions in the Best Management Practices Plan from the C/RAWP Appendix M (CH2M 2015b) for soil disturbance and erosion would be applicable to the proposed Project as follows:

Erosion Control BMPs: The following measures will be used to reduce erosion and control sediment:

- Preservation of Existing Vegetation - Existing vegetation will be preserved to the maximum extent practicable to facilitate protection of surfaces from erosion and help control sediments. To the extent practical, remedy facilities have been located on

previously disturbed areas. In the event that existing vegetation needs to be disturbed, areas that need to be preserved will be identified by a qualified biologist and marked with temporary fencing. Site workers will be informed of the limits of disturbance within the construction site and will be instructed to keep clear of delineated areas.

- Geotextiles and Mats - Natural (e.g., excelsior, straw, coconut) or synthetic (usually polyethylene) materials will be used to reduce soil erosion by wind or water.

- Road Preparation and Maintenance - During road preparation activities, loose sediment will be uniformly compacted, consistent with the substantive San Bernardino County Building and Land Use Services Department requirements, to aid in reducing wind erosion. Ongoing road maintenance will include: (1) visual inspections to identify areas of erosion, (2) localized road repair and regrading, installation, and maintenance of erosion control features such as berms, silt fences, or straw wattles, (3) grading for road smoothness, and (4) measures to reduce water erosion such as clearing ditches and culverts of debris.

Sediment Control BMPs: The following materials would be used to retain sediment in place where soil is being disturbed by construction processes, to intercept runoff and reduce flow velocity, and to allow sediment to settle from runoff before water leaves the construction site.

- Silt Fences - Silt fences are typically used in combination with sediment basins and sediment traps as erosion control measures.

- Fiber Rolls/Sediment Wattles - These consist of aspen wood excelsior, straw, flax, or other similar materials rolled and bound into tight tubular rolls and placed on the face of slopes at regular intervals, depending on steepness of slopes. Fiber rolls/sediment wattles will be inspected prior to a forecasted rain event and after rain events to ensure the fiber rolls are working properly. Sediment accumulated by the fiber rolls will be removed to maintain the effectiveness of the fiber rolls.

- Gravel Bag Berms - Gravel bag berms can be used as an alternative to fiber rolls and sediment wattles. If used, they will be installed prior to rain events to form a barrier to intercept runoff or reduce its velocity. Gravel bags will also be used, if necessary, during trenching activities when stockpiles are on-site. In the event that gravel bag berms are used as perimeter erosion control, bags will be stacked, one on top of the other (two high). When used to anchor stockpiles, the bags will be placed one high.

- Sandbag Berms - Sandbag berms can also be used as an alternative to fiber rolls and sediment wattles. If used, they will be installed prior to rain events to form a barrier to intercept runoff or reduce its velocity. Sandbags will also be used, if necessary, during trenching activities when stockpiles are left overnight. In the event that sandbag berms are needed, they will be placed around the staging area and trenching area.

- Straw-Bale Barriers - Straw-bale barriers can also be used as an alternative to fiber rolls, gravel bag berms, and sandbag berms.

With adherence to Mitigation Measures GEO-1a and 1b from the Groundwater FEIR and the project-specific BMP Plan that has been prepared as part of the Final Remedy Design, specifically related to soil erosion and loss of topsoil, no new impact or increase in the severity of impacts would occur. In addition, impacts related to water quality and potential impacts related to contaminants within excavated soils will be evaluated in detail in the SEIR (see discussion related to Hazards and Hazardous Materials and Hydrology and Water Quality below).

Mitigation Measure GEO-1a: Construction, Operation and Maintenance, and Decommissioning Impacts Related to Erosion of Soils.

a) A DTSC-approved grading and erosion control plan, prepared by a California Registered Civil Engineer, shall be completed prior to implementation of any grading in areas of the site where there is a potential for substantial erosion or loss of top soils. The plan shall outline specific procedures for controlling erosion or loss of topsoil during construction, operation and maintenance, and decommissioning.

b) To ensure soils do not directly or indirectly discharge sediments into surface waters as a result of construction, operation and maintenance, or decommission activities, PG&E ~~shall~~ developed a SWPPP as discussed in mitigation measure HYDRO-1 ~~of the "Hydrology and Water Quality" section of this EIR~~. The SWPPP ~~shall identify~~ identifies best management practices (BMPs) that would be used to protect stormwater runoff and minimize erosion during construction. PG&E shall prepare plans to control erosion and sediment, prepare preliminary and final grading plans, and shall prepare plans to control urban runoff from the project site during construction, consistent with the substantive requirements of the San Bernardino County Building and Land Use Services Department for erosion control.

c) During road preparation activities, loose sediment shall be uniformly compacted consistent with the substantive San Bernardino County Building and Land Use Services Department requirements to aid in reducing wind erosion. Ongoing road maintenance including visual inspection to identify areas of erosion and performing localized road repair and regrading, installation and maintenance of erosion control features such as berms, silt fences, or straw wattles, and grading for road smoothness shall be performed as needed to reduce potential for erosion.

d) Regarding the potential for contaminated soils to be eroded and contribute contamination into receiving waters, Mitigation Measures ~~GEO-2~~ GEO-1a and HAZ-2 shall be implemented. Mitigation Measure ~~GEO-2~~ GEO-1a provides the provisions for mitigating erosion through BMPs which shall be implemented. Mitigation Measure HAZ-2 provides the provisions for safe work practices and handling of contaminated soils as investigation derived wastes.

Mitigation Measure GEO-1b: Construction, Operation and Maintenance, and Decommissioning Impacts Related to Differential Compaction of Soils.

a) BMPs shall be implemented during construction, operation and maintenance, and decommissioning activities to minimize impacts on the affected areas. Such BMPs could include, but would not be limited to, the following: uniform compaction of roadways created for accessing the project area as per San Bernardino County Building and Land Use Services Department requirements, returning areas adversely affected by differential compaction to preexisting conditions when these areas are no longer needed, and continuing maintenance of access roads, wellhead areas, and the treatment facility areas.

b) Work area footprints shall be minimized to the greatest extent feasible to limit the areas exposed to differential compaction. Where possible, existing unpaved access roads and staging/working areas shall be reused and maintained for different stages of the construction. New graded areas for staging or for access roads shall be compacted to a uniform specification, typically on the order of 90 to 95% compaction and consistent with substantive San Bernardino County Building and Land Use Services Department requirements to reduce differential compaction and subsequent erosion of site soils.

c) After the completion of the operation and maintenance phase, the disturbed areas which result in increased potential for compaction shall be returned to their respective preexisting condition by regrading consistent with the preconstruction slopes as documented through surveys that may include topographic surveys or photo surveys. The areas will be returned to the surrounding natural surface topography and compacted consistent with unaltered areas near the access roads or staging areas in question. The habitat restoration plan ~~outlined~~ prepared in compliance with ~~in~~ mitigation measure BIO-1 ~~shall~~ includes restoration of native vegetation or other erosion control measures where revegetation would be infeasible or inadequate, for purposes of soil stabilization and erosion control of the project area.

Timing:	Implementation prior to and during construction, operation and maintenance, and decommissioning.
Responsibility:	PG&E would be responsible for the implementation of these measures. DTSC would be responsible for ensuring compliance.
Significance after Mitigation:	The impact would be **less than significant** after implementation of the mitigation measures detailed above.

c) **Less than Significant Impact**. As described in the Groundwater FEIR, the Project Area is underlain by soils with a very low potential for shrink/swell and subsidence due to a very low clay content. Additionally, portions of the Project Area that are relatively flat

would not be subject to the effects of landslides. Areas with abrupt elevation changes, such as along Bat Cave Wash, may be susceptible to localized rock falls, but not to widespread slope failure or landslides. Subsequent to certification of the Groundwater FEIR, the proposed Project, as described in Chapter 3 of the SEIR, was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. Since the underlying site conditions remain the same for the proposed Project, no new or substantially more severe impacts are expected under this issue. No additional analysis regarding unstable soils, landslides or slope failures is needed in the SEIR.

d) **Less than Significant Impact**. As described in the Groundwater FEIR, the soils present in the Project Area are generally sands and gravels that are moderately compacted. Seismicity hazards and peat soils are not present in the Project Area. Groundwater-induced hydrocompaction would not occur because soils are situated upon near-surface bedrock that is not influenced by hydrocompaction. Based on a review of the NRCS soil survey for Mohave County, Arizona (NRCS 2006:52, 61, 72, Table 15), which contains soils consistent with those found elsewhere in the Project Area, the soils have no potential for subsidence. Soils found in the Project Area are generally identified as having low expansion properties by the NRCS due to very low clay content. The Groundwater FEIR determined there would be less than significant impacts related to subsidence, and unstable or expansive soils. No mitigation measures were required. Subsequent to certification of the Groundwater FEIR, the proposed Project, as described in Chapter 3 of the SEIR, was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. Since the underlying site conditions remain the same for the proposed Project, no new or substantially more severe impacts are expected under this issue. No additional analysis regarding subsidence, unstable or expansive soils is needed and these issues are not further evaluated in the SEIR.

e) **Less than Significant Impact**. The Groundwater FEIR did not identify impacts related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. The proposed Project includes the use of one 10,000 gallon underground septic waste tank at the TW Bench and two buried septic tanks at the Construction Headquarters/ Long-Term Remedy Support Area; wastewater will not be discharged or buried. Waste will be removed and disposed of offsite. As a result, the soil would be able to support these temporarily-placed tanks. Furthermore, components of the proposed Project that are contained in the Best Management Practices Plan from the C/RAWP Appendix M (CH2M 2015b) for sanitary/septic waste management would be applicable to the proposed Project as follows:

> Sanitary/Septic Waste Management - Sanitary/septic waste management procedures and practices are implemented at construction sites when a temporary or portable sanitary/septic waste system exists. Sanitary facilities will be located away from drainage facilities, waterways, and from traffic circulation. In the event of high winds or a risk of high winds, temporary sanitary facilities will be secured with spikes or

weighed down to prevent overturning. The sanitation subcontractor will monitor onsite sanitary/septic waste storage and disposal procedures on a weekly basis in accordance with the sanitary/septic waste management BMPs. Wastewater will not be discharged or buried. Waste will be removed and disposed offsite. Regular waste collection should be arranged before facilities overflow. The sanitary facility will be located a minimum of 50 feet away from drainage facilities and away from waterways and traffic circulation.

With adherence to the BMP Plan specifically related to sanitary/septic waste management, no impact would occur to soil stability regarding septic tanks. No additional analysis regarding soil stability and septic tanks is needed and this issue is not further evaluated in the SEIR.

Summary

The Groundwater FEIR concluded that there would be potentially significant impacts due to ground-disturbing activities that could alter the natural drainage patterns and erosion rates of the area and required Mitigation Measures GEO 1-a and 1-b. Although increases in soil disturbance and additional infrastructure would occur compared to the amount analyzed in the Groundwater FEIR, the procedures and protocols established under Mitigation Measures GEO-1a and GEO-1b in the Groundwater FEIR would still be required in this SEIR to reduce impacts to drainage patterns and erosions rates. In addition, provisions in the Best Management Practices Plan from the C/RAWP Appendix M (CH2M 2015b) would be implemented. Impacts related to water quality and potential impacts related to contaminants within excavated soils will be evaluated in detail the SEIR (see discussion related to Hazards and Hazardous Materials and Hydrology and Water Quality below). Based on the analysis presented above, the Project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts to geology and soils, nor have any substantial change in circumstances been previously identified that would result in new significant impacts or substantially more severe impacts to geology and soils. Similarly, no new information of substantial importance related to geology and soils has been identified. Thus, geology and soils issues will not require further evaluation in the SEIR.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
GREENHOUSE GAS EMISSIONS — Would the proposed Project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Section 4.2 (Air Quality), pg. 4.2-31.	Yes	No	Yes	Yes
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Section 4.2 (Air Quality), pg. 4.2-31.	No	No	Yes	Yes

Discussion

a) **Potentially Significant Impact**. The GHG analysis provided in the Groundwater FEIR was based on the construction and operation of up to 170 new wells along with water conveyance/utilities/roadways. When construction emissions were averaged over the construction time frame, total annual emissions were 2,394 $MTCO_2e$/year for the first four years of construction and 1,739 $MTCO_2e$/year for the remainder of operation activities. This was determined to be well below the 25,000 $MTCO_2e$/year threshold established under Assembly Bill (AB 32) as necessary for achieving the AB 32 goals (CalEPA 2014). Therefore, the construction and operation of the Groundwater FEIR was found not to result in GHG emissions that would exceed the applicable thresholds of significance and no mitigation measures were required. As detailed in Chapter 3 of the SEIR, the proposed Project includes the construction of wells, remediation facilities, new and upgraded roadways, and other non-well related infrastructure and facilities at the MW-20 Bench, Moabi Regional Park, the Transwestern Bench, the Station and TCS Evaporation Ponds. It also established updated information regarding construction duration and phase overlaps. This project-level specificity has been identified subsequent to the certification of the Groundwater FEIR in 2011. Based on changes and new detailed information, new GHG modeling and analysis is required in the SEIR to determine if the proposed Project may result in new or substantially more severe impacts.

b) **No Impact**. The Groundwater FEIR was subject to the following Federal, State, and local plans, policies and regulations pertaining to GHGs:

- Assembly Bill 1493
- Executive Order S-3-05
- Assembly Bill 32, the California Global Warming Solutions Act of 2006
- AB 32 Climate Change Scoping Plan
- Executive Order S-1-07

- Senate Bill 1368
- Senate Bill 97
- Senate Bills 1078 and 107 and Executive Order S-14-08
- Senate Bill 375

The GHG analysis conducted in the Groundwater FEIR determined that there would not be a conflict with any applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions. Based on the Final Remedy Design as detailed in Chapter 3 of this SEIR, the proposed Project includes the construction of wells, remediation facilities, new and upgraded roadways, and other non-well related infrastructure and facilities at the MW-20 Bench, Moabi Regional Park, the Transwestern Bench as well as the Station and TCS Evaporation Ponds. It also established updated information regarding construction duration and phase overlaps. According to the MDAQMD, a project would not conflict with the implementation of local air quality plans if it complies with all applicable District rules and regulations, including control measures, and is consistent with the growth forecasts in the applicable plans (or is directly included in the applicable plan). The proposed Project would comply with all applicable district rules and regulations, and because it would not require the addition of housing, either directly or indirectly, would be consistent with growth forecasts for the area. Additionally the proposed Project has incorporated specific actions to support Rule 403 into the proposed Project, as required by air quality mitigation measures. Since the proposed Project would comply with all applicable district rules and regulations, no additional analysis with regards to applicable plan, policy or regulations adopted for the purpose of reducing GHG emissions is needed in the SEIR. This resource issue is not further evaluated in the SEIR.

Summary

The Groundwater FEIR concluded that operations would not generate greenhouse gas emissions above the California mandatory reporting limit, nor would project-related emissions conflict with an applicable plan, policy or regulation adopted for purposes of reducing GHG emissions. Based on the discussion presented above, the Final Remedy Design would potentially result in new significant adverse impacts relative to GHG emissions, based on new design-related information. The SEIR will evaluate the impacts associated with the proposed Project and consider whether new mitigation measures are needed to reduce GHG impacts. Thus, GHG-related impact “a” from the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):		Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
HAZARDS AND HAZARDOUS MATERIALS — Would the proposed Project:						
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Section 4.6 (Hazards), pgs. 4.6-14 to 4.6-17.	Yes	Yes	Yes	No
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Section 4.6 (Hazards), pgs. 4.6-17 to 4.6-19.	Yes	Yes	Yes	No
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Section 4.6 (Hazards), pg. 4.6-13.	No	No	No	N/A
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	Section 4.6 (Hazards), pg. 4.6-13.	No	No	No	N/A
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	Section 4.6 (Hazards), pg. 4.6-13.	No	No	No	N/A
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	Section 4.6 (Hazards), pg. 4.6-13.	No	No	No	N/A
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Section 4.6 (Hazards), pgs. 4.6-13 to 4.6-14.	No	No	No	N/A
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	Section 4.6 (Hazards), pg. 4.6-14.	No	No	No	N/A

Discussion

a) **Potentially Significant Impact**. The Groundwater FEIR determined that the use of equipment, such as trucks, excavators, drill rigs, and generators (unless powered by on-site electrical power), would use fuels (gasoline or diesel) and lubricants (oils and greases) that would be transported to and used in the Project Area. The Groundwater FEIR was found to require the construction and eventual decommissioning of structures, such as wells, buildings, treatment systems, and piping between wells and treatment systems, which would involve the use of paint, glues, solvents, thinners, or other

chemicals. During the construction, operation and maintenance, and decommissioning phases, materials would be removed and transported from the Project Area to offsite disposal facilities and some of these materials could be hazardous. For example, the removed materials could include excavated soil with chemicals at concentrations above action levels (and therefore deemed "hazardous" under California law, if not RCRA), spent filters containing hazardous materials, or equipment that has become contaminated during its use. As defined in the Groundwater FEIR, reasonably foreseeable spills and accident conditions could occur involving the release of hazardous materials during transport or handling, which could be an adverse effect on workers during construction, operation, maintenance, or decommissioning activities; potential visitors to the Project Area after construction is complete; the public and environment along offsite transportation routes; or the environment during construction, operation, maintenance, or decommissioning activities. The Groundwater FEIR identified these impacts as significant and included Mitigation Measure HAZ-1a and 1b to address impacts related to the routine transport, use, and disposal of hazardous materials.

Subsequent to certification of the Groundwater FEIR, additional details were developed in the Final Remedy Design regarding the number, location and periodic maintenance of wells, lengths of piping and roads, footprints of treatment infrastructure, and clean-in-place systems that would be constructed to implement the proposed Project. The modifications would result in an increased use of acids and cleaning chemicals, fuel, lubricants, paint, glue, and solvents, and an increase in the volume of disturbed soil, some of which may have chemicals at concentrations above hazardous waste levels. Construction, operation and maintenance, and decommissioning of the proposed Project could result in the potential release of hazardous materials during use or delivery of hazardous materials as a result of component failure (e.g., valve, flange, or pipe), tank failure, or human error (e.g., tank overfilling). For this reason, additional analysis is needed to determine if the proposed Project would result in substantially more severe impacts relative to the transport, use, or disposal, or potential spill or accidental release of hazardous materials. The SEIR will need to evaluate the Mitigation Measures HAZ-1a and HAZ-1b to determine if they are still effective to reduce impacts or whether additional mitigation measures are necessary.

b) **Potentially Significant Impact**. The Groundwater FEIR determined that a significant hazard to the public or the environment would result from reasonably foreseeable upset and accident conditions involving the release of chemicals from excavated or disturbed soil. To mitigate the impacts, the Groundwater FEIR required implementation of Mitigation Measure HAZ-2. The proposed Project changes analyzed in this SEIR would result in an increased use of fuel, lubricants, paint, glue, and solvents, and an increase in the volume of disturbed soil, some of which may have chemicals at concentrations above hazardous waste levels. Construction, operation and maintenance, and decommissioning of the proposed Project could result in the potential release of hazardous materials during use or delivery of hazardous materials as a result of component failure (e.g., valve, flange, or pipe), tank failure, or human error (e.g., tank overfilling), or as a result of excavated or disturbed soil. For this reason, additional analysis is needed to determine

whether changes may result in new or more substantially severe impacts relative to the accidental release of hazardous materials into the environment for the proposed Project. The SEIR will need to evaluate Mitigation Measure HAZ-2 to determine if they are still effective at reducing impacts or whether additional mitigation measures are necessary.

c) **No Impact.** The Groundwater FEIR determined that facilities would not occur within ¼ mile of a school and therefore this significance criterion was not considered further. The components of the Final Groundwater Remedy Project are similar to those analyzed in the Groundwater FEIR. While the Project Area has been slightly modified, and the exact locations of proposed Project infrastructure identified, since the Groundwater FEIR, the nearest school (Topock Elementary) is still approximately 4 miles from the nearest proposed Project component. Additionally, major haul routes would be limited to major interstates and would not include roadways near the existing school. The proposed Project would not result in new or more severe impacts related to hazards near schools; therefore this issue would not require additional analysis in the SEIR. Resource issues associated with hazards near schools are not evaluated further in this SEIR.

d) **No Impact.** As indicated in the Groundwater FEIR, the entire Station is on the Cortese List. Upon completion of site cleanup activities for both soil and groundwater, the listing on the EnviroStor database (one of the several lists that comprise the Cortese List; DTSC 2016) would be changed by DTSC from "active" to "closed." Note that the soil remediation efforts, as determined necessary by DTSC based on results of the Soil Investigation Project EIR, would be completed at a future date, after a soil work plan is developed. Activities to clean up the Topock site for groundwater and soil contamination are therefore ongoing and reasonably anticipated. No new or significant hazards would be presented to the public or the environment under the Final Remedy Design and no new analysis is needed in the SEIR. Resource issues associated with hazardous materials sites are not evaluated further in this SEIR.

e) **No Impact**. The Groundwater FEIR determined that facilities would not be located within 2 miles of a public airport or public use airport. The nearest airport is the Needles Municipal Airport located approximately 8 miles southeast. Based on a current review of the current comprehensive land use plan, which defines limitations to development within specified "Referral Areas" and based on distance from the Needles Municipal Airport, the Project Area is not located within any specified Referral Areas. Because conditions have not changed since certification of the Groundwater FEIR, the proposed Project would not result in any increased safety hazards for people working in the Project Area. No new or significant hazards would be presented to the public or the environment under the Final Remedy Design and no new analysis is needed in the SEIR. Resource issues associated with airport-related hazards are not evaluated further in this SEIR.

f) **No Impact**. As identified in the Groundwater FEIR, the nearest private airport, Eagle Airpark, near Mojave City, Arizona is approximately 13 miles southeast of the Project Area. No significant impacts were identified and no mitigation measures were required for this issue in the Groundwater FEIR. These conditions have not changed since the

Groundwater FEIR was certified. The proposed Project would not have new or more severe airport-related hazard impacts since the Project Area is not within the vicinity of a private airstrip. Resource issues associated with private airstrip-related hazards are not evaluated further in this SEIR.

g) **No Impact.** The Groundwater FEIR identified emergency response programs in the Project Area, which are sponsored by the local fire departments and the Mohave County Municipal Community Emergency Response Team. With regard to emergency response programs associated with the Station, PG&E prepared a Hazardous Materials Business Plan for the Topock Compressor Station, Interstate 40 and Park Moabi Road, Needles, California. The document discusses a variety of emergency response procedures to be followed that are specific to the Station, including those related to fire hazards, spills, flash floods, earthquakes, natural gas releases, respiratory hazards, and underground storage tank releases. The Hazardous Materials Business Plan contains an evacuation plan and procedures, including maps showing the locations of emergency exits, fire extinguishers, spill control equipment, and other areas of potential significance from an emergency response standpoint. Emergency coordinators were assigned to ensure that the required activities described in the Hazardous Materials Business Plan would be properly followed during an emergency at the Station. The Hazardous Materials Business Plan included emergency notification procedures, evacuation procedures, and emergency response procedures. The Groundwater FEIR determined that there would be no adverse impacts to I-40 and U.S. 95 other than adding a relatively small amount of additional vehicles related to construction activities that would not degrade level of service on roadways or result in congestion at intersections, and would, therefore, not interfere with the designated evacuation routes defined in the County of San Bernardino 2007 General Plan. Therefore, impacts were found not to occur related to emergency response plans.

Subsequent to certification of the Groundwater FEIR, additional details were developed in the Final Remedy Design regarding the number and location of wells, lengths of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the proposed Project. The Hazardous Materials Business Plan was modified and is included as Appendix L of the Final Remedy Design (Operations and Maintenance Plan, Volume 1, Appendix E). The proposed Final Groundwater Remedy Project would not adversely affect major interstates and roadways such as I-40, U.S. 95, Oatman-Topock Highway or local roadways other than adding a relatively small amount of additional vehicles related to proposed Project construction, operation and maintenance, and decommissioning activities. Based on the recent traffic study (LIN Consulting, Inc. 2016; Appendix TRA) prepared for the proposed Project, the construction, operation and maintenance, and decommission activities would result in approximately 76 inbound vehicles during peak morning hours and 58 outbound vehicles during peak evening hours. The proposed Project-related traffic was determined to not degrade the level of service on roadways or result in congestion at intersections (Lin Consulting 2016; Appendix TRA). Therefore, the proposed Project would not interfere with the designated evacuation routes or impair implementation of an adopted emergency response plan or evacuation plan. Since the proposed Project would not result in new or more severe

impacts related to an adopted emergency response plan/evacuation plan, no additional analysis is needed in the SEIR. Resource issues associated with emergency response plans are not evaluated further in the SEIR.

h) **Less than Significant Impact**. The Groundwater FEIR determined that there would be no significant risk to facilities due to wildfires. There was, however, a wildland fire that originated on April 6, 2016, 10 miles southeast of Needles and 2 miles west of Golden Shores (BLM 2016). The fire was fueled by riparian fuels including Salt Cedar. Although this fire demonstrates the ability for riparian areas within the Project Area to burn, no permanent residences are proposed as part of the proposed Project that would result in loss, injury or death. While workers would be on-site intermittently for the duration of construction, operation and maintenance, and decommissioning activities, use the proposed Project facilities are not anticipated to pose an increase in threat due to wildland fires. The proposed Construction Headquarters would be located in proximity to residents near Moabi Regional Park and, if a fire resulted at that particular location, it could expose people or structures to a significant risk of loss, injury or death. PG&E's Hazardous Materials Business Plan is included as Appendix L of the Final Remedy Design (Operations and Maintenance Plan, Volume 1, Appendix E), which discusses a variety of emergency response procedures to be followed that are specific to the Station, including those related to fire hazards. The Hazardous Materials Business Plan contains an evacuation plan and procedures, including maps showing the locations of emergency exits, fire extinguishers, spill control equipment, and other areas of potential significance from an emergency response standpoint. Since the likelihood of fire hazards is low, and given the protocols in place within the Hazardous Materials Business Plan, the proposed Project would not result in new or more severe impacts related to fire hazards. There would be no new or more severe impacts related to wildfires resulting from the proposed Project. No additional analysis is needed in the SEIR. Resource issues associated with wildland fires are not evaluated further in the SEIR.

Summary

The Groundwater FEIR concluded that there would be potentially significant impacts related to the transport, use, or disposal, or potential spill or accidental release of hazardous materials and required Mitigation Measures HAZ 1-a, HAZ 1-b, and HAZ-2 to address the impacts. The SEIR will evaluate the impacts associated with the proposed Project and consider whether these measures are sufficient at reducing impacts as they relate to the transport, use, disposal, or potential spill/accidental release of hazardous materials. Revised and/or new mitigation measures may be required for the proposed Project to ensure no new significant adverse impacts occur. Based on the discussion presented above, the proposed Project would potentially result in new significant adverse impacts based on new information. Thus, hazards and hazardous materials issues "a" and "b" from the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
HYDROLOGY AND WATER QUALITY — Would the proposed Project:					
a) Violate any water quality standards or waste discharge requirements?	Section 4.7 (Hydrology and Water Quality), pgs. 4.7-48 to 4.7-54.	Yes	Yes	Yes	Yes
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Section 4.12 (Water Supply) - pgs. 4.12-9 to 4.12-12.	Yes	Yes	Yes	Yes
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	Section 4.7 (Hydrology and Water Quality), pg 4.7-54.	Yes	Yes	Yes	Yes
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	Section 4.7 (Hydrology and Water Quality), pg 4.7-54.	Yes	Yes	Yes	Yes
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	Section 4.7 (Hydrology and Water Quality), pgs. 4.7-48 to 4.7-55.	Yes	Yes	Yes	Yes
f) Otherwise substantially degrade water quality?	Section 4.7 (Hydrology and Water Quality), pgs. 4.7-48 to 4.7-54.	Yes	Yes	Yes	Yes
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	Section 4.7 (Hydrology and Water Quality), pg. 4.7-47.	No	No	No	N/A
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	Section 4.7 (Hydrology and Water Quality), pg. 4.7-47.	No	No	No	N/A
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	Section 4.7 (Hydrology and Water Quality), pg. 4.7-47.	No	No	No	N/A

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	Section 4.7 (Hydrology and Water Quality), pg. 4.7-47.	No	No	No	N/A

Discussion

a) **Potentially Significant Impact**. As discussed in the Groundwater FEIR, construction, operation and maintenance, and decommissioning activities were found to potentially result in the exceedance of water quality standards and objectives if pollutants (e.g., sediment, partially-treated or untreated contaminated groundwater, materials stored and handled on-site) are released and have the potential to become exposed to stormwater runoff. Earth-disturbing construction activities such as grading, drilling, and excavation and the construction of infrastructure, were found to lead to temporary impacts associated with water quality runoff. Construction activities involving soil disturbance, excavation, cutting/filling, stockpiling, and grading were found to potentially degrade receiving water quality, primarily the Colorado River and receiving drainages. During a storm event, the potential for sediment to load surface water runoff flowing over disturbed soils increases, resulting in additional erosion of the site surface and impacts on water quality of the receiving waters. Construction materials such as asphalt, concrete, and equipment fluids were found to also be potentially exposed to rainfall, which would result in contaminated surface water runoff and adverse impacts on receiving water quality.

In addition, operation and maintenance activities were found to potentially cause a violation of water quality standards (nondegredation rule) if the pipeline conveying extracted water and/or carbon amended water from ruptures causes untreated water to enter the Colorado River or nearby washes or infiltrate into the soil. Loading and unloading activities, including unloading treatment chemicals and containers and loading treatment system solids and empty chemical containers for disposal, was also found to potentially result in a release of pollutants, which would violate water quality standards. Additional pollutant sources include trucks used for loading/unloading and forklifts used to move containers. A release of pollutants could potentially occur if containers are dropped or punctured during loading/unloading causing a leak, or from incidental oil and fluid leaks from trucks and forklifts. Water quality impacts on receiving waters were determined to be significant and the Groundwater FEIR identified Mitigation Measure HYDRO-1 to address the impact.

Subsequent to certification of the Groundwater FEIR, the Final Remedy Design was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. The proposed Project would require 45,200 cubic yards of soil disturbance, which would be more than three times the 13,400 cubic yards of soil disturbance analyzed in the

Groundwater FEIR. Proposed project changes include increased use of fuel, lubricants, paint, glue, and solvents, and an increase in the volume of disturbed soil that could result in additional erosion/water quality impacts. The construction activities would include ground disturbing activities that could result in the release of pollutants (sediment and/or chemicals) and the use of chemicals (e.g., fuels, lubricants, paints, solvents) that if released could affect water quality. Given the new level of detail that is available, further analysis is needed to determine whether the proposed Project would result in new significant impacts to water quality standards or waste discharge requirements. The SEIR will need to evaluate the Mitigation Measure HYDRO-1 to determine if it is still effective to reduce impacts or whether additional mitigation measures are necessary.

b) **Potentially Significant Impact.** The Groundwater FEIR ("Water Supply" Section 4.12) concluded that the depletion of groundwater supplies, lowering of groundwater levels, or adverse impacts to recharge would be potentially significant. Although it was determined in the Groundwater FEIR that there would not be a substantial depletion of groundwater supplies, localized effects on the groundwater table near the freshwater extraction wells were found to be possible, and impacts depended on pumping rates and the proximity and depths of other wells. Given the potential for adverse effects depending on the location, depth, and pumping rates associated with the freshwater flushing element, this impact was identified to be a significant impact. The Groundwater FEIR included Mitigation Measure WATER-1, which required conducting a hydrologic analysis to ensure no localized impacts to groundwater supply occur.

Subsequent to certification of the Groundwater FEIR, the Final Remedy Design was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. Given the new level of detail that is available, further analysis is needed to determine whether the proposed Project would result in new significant impacts to groundwater supplies. The SEIR will need to evaluate the Mitigation Measure WATER-1 to determine if it is still effective to reduce impacts or whether additional mitigation measures are necessary.

c) **Potentially Significant Impact**. The Groundwater FEIR determined that construction, operation and maintenance, and decommissioning would have the potential for localized alteration of drainage patterns. These alterations could result in temporarily increasing runoff during operation and maintenance caused by increased impervious areas. The impervious areas include features such as well heads and vaults, remediation equipment compounds, and chemical storage areas. The Groundwater FEIR found that installation of these features would redirect surface water flows around the features. Temporary ponding and/or flooding could also result from such activities, from temporary alterations of the drainage patterns, or from the temporary creation of a sump condition from grading. Flows from the Project Area were identified to be predominantly sheet flow to the Colorado River and were not anticipated to be significantly altered. Alterations would temporarily result in erosion and siltation if flows were substantially increased or routed to concentrated flow paths that would not have the capacity to carry the flow. The

increased impervious area was expected to be predominantly noncontiguous, therefore minimizing the impact of concentrated flow paths, increased flow rates, and associated erosion and siltation. Increased runoff was identified to potentially result in increased erosion and siltation. The Groundwater FEIR determined this to be a significant impact and identified Mitigation Measure HYDRO-2 (which was simply to implement Mitigation Measure HYDRO-1) to address the impacts. As described above, given the new level of detail that is available, further analysis is needed to determine whether the proposed Project would result in new significant impacts due to increased erosion and siltation. The SEIR will need to evaluate Mitigation Measure HYDRO-2 to determine if it is still effective to reduce impacts or whether additional mitigation measures are necessary.

d) **Potentially Significant Impact**. The Groundwater FEIR determined that construction and decommissioning activities would not increase flows that would result in flooding on-site or off-site. Operation and maintenance activities were found to include the long-term presence of new impervious surfaces that would increase runoff from the Project Area; however, these surfaces would be discontinuous and would continue to flow predominantly as sheet flow directly to the Colorado River. Increased flows were found to be minimal in comparison to total flows to the receiving water and were not expected to result in flooding on-site or off-site. No impacts related to on- or off-site flooding were anticipated in the Groundwater FEIR, and therefore were not considered further in the FEIR analysis.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Given the new level of detail that is available, further analysis is needed to determine whether the proposed Project would result in new significant impacts due to increased flows resulting in flooding, on-site or off-site. The SEIR will need to evaluate whether mitigation measures would be required to reduce impacts.

e) **Potentially Significant Impact**. The Groundwater FEIR concluded that construction, operation and maintenance, and decommissioning would use localized runoff management measures, if needed, to handle on-site flows, and would not require construction of new stormwater drainage facilities or expansion of existing facilities. No impacts related to new stormwater drainage facilities were anticipated and this issue was not analyzed further in the Groundwater FEIR.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Given the new level of detail that is available, further analysis is needed to determine whether the proposed Project may create or contribute runoff water that would exceed the capacity of existing or planned stormwater

drainage facilities. Therefore further analysis of the proposed Project's potential impacts to existing and planned stormwater drainage facilities will be conducted in the SEIR. The SEIR will need to evaluate whether mitigation measures would be required to reduce impacts.

f) **Potentially Significant Impact**. The Groundwater FEIR determined that hydrology and water quality impacts associated with in situ treatment by-products would result in a less than significant impact and that no mitigation measures were required. However, the presence of elevated concentrations of arsenic and possibly hexavalent chromium in the freshwater sources was not known at that time and was not analyzed. In addition, details of various components of the Final Remedy Design were not known at that time and were therefore not available for analysis. The Groundwater FEIR addressed the potential for elevated levels of arsenic and other byproducts that could result from reductive processes. The Groundwater FEIR also proposed implementation of Mitigation Measure HYDRO-1 but this measure was focused on sediment or chemicals that could be released during construction and decommissioning activities (specifically sediment, asphalt, concrete, or equipment fluids), and the potential for pipeline breaks or leaks that could release extracted water or carbon substrate-amended water that might enter drainages and the Colorado River. The mitigation measure required compliance with applicable local, state, and federal laws, and the preparation and implementation of BMPs consistent with the California and Arizona General Construction Permits.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Given the new level of detail that is available, further analysis is needed to determine whether the proposed Project may result in new water quality impacts. The SEIR will need to evaluate Mitigation Measure HYDRO-1 to determine if it is still effective to reduce impacts or whether additional mitigation measures are necessary.

g) **No Impact**. The Groundwater FEIR stated that a floodplain borders both sides of the Colorado River in the Project Area and upstream in the Mohave Valley. Portions of the Project Area are located on or near the 100-year floodplain of the Colorado River. However, because of upstream dams and flow regulation, the river no longer floods. The Groundwater FEIR concluded that there were no sensitive land uses, such as residential or commercial structures, in a floodplain area. No structures or infrastructure were planned for the floodplain area that would impede or redirect flood flows. Therefore, no impacts were identified to occur within the existing floodplain. Conditions remain the same since the Groundwater FEIR, meaning the Project Area is not subject to flooding because upstream dams and flow regulation control the flow of the Colorado River and the river no longer floods. In addition, the proposed Project does not include the construction of housing. No impacts would occur relative to flood hazards and this issue will not be evaluated further in the SEIR.

h) **No Impact**. As stated above and discussed in the Groundwater FEIR, no structures or new infrastructure were planned for the floodplain area that would impede or redirect flood flows. Therefore, no impacts were identified to occur within the existing floodplain. Conditions remain the same since the Groundwater FEIR, and the Project Area not subject to flooding because upstream dams and flow regulation control the flow of the Colorado River and the river no longer floods. In addition, the proposed Project does not include the construction of housing. No impacts would occur relative to flood hazards and this issue will not be evaluated further in the SEIR.

i) **No Impact**. As described in the Groundwater FEIR, the closest dam to the Project Area is Parker Dam, located 42 miles downstream. Davis Dam and Hoover Dam are located approximately 55 and 108 miles upstream of the Project Area, respectively. The Hazards Overlay Map of the County General Plan indicates that the Project Area is not in an area that would be subject to inundation due to failure of either dam. Therefore, the Groundwater FEIR determined no impact would occur related to inundation caused by dam failure. Conditions remain the same relative to the Project Area's proximity to existing dams. The dams are too far away to significantly affect the Project Area in the unlikely event of a dam failure. Therefore, no new or substantially more severe impacts would occur relative to dams and this issue is not evaluated further in the SEIR.

j) **No Impact**. As discussed in the Groundwater FEIR, the Project Area is not located near a coastline that a tsunami could reasonably be expected to inundate. The local geology and the minimal amount of rain received in the Project Area are not favorable to the generation of a mudflow that could cause significant impacts. The generation of the seiche from direct ground movement along a fault is not likely. The potential for seismic waves to generate a seiche is minimal, due to the limited occurrence of sedimentary rocks that could transmit the seismic energy into the water of the Colorado River. Therefore, no impacts would occur related to inundation by seiche, tsunami, or mudflow. The proposed Final Groundwater Remedy Project occurs in the same general Project Area as analyzed in the Groundwater FEIR, and therefore, would not result in new or more severe impacts. These issues are not further evaluated in the SEIR.

Summary

The Groundwater FEIR concluded that potentially significant impacts could occur related to hydrology and water quality and required Mitigation Measures HYDRO-1, HYDRO-2 to address the impacts. The SEIR will evaluate the impacts associated with the proposed Project and consider whether these measures are sufficient to reduce impacts as they relate to water quality, increased drainage flows, groundwater supply/recharge, and stormwater drainage facilities. Revised and/or new mitigation measures may be required for the proposed Project to ensure no new significant adverse impacts occur. Based on the discussion presented above, the proposed Project would potentially result in new significant adverse impacts based on new information. Thus, hydrology and water quality issues "a" through "f" from the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
LAND USE AND LAND USE PLANNING — Would the proposed Project:					
a) Physically divide an established community?	Section 4.8 (Land Use and Planning), pgs. 4.8-9 to 4.8-10.	No	No	No	N/A
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	Section 4.8 (Land Use and Planning), pgs. 4.8-10 to 4.8-11.	No	No	No	N/A
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	Section 4.8 (Land Use and Planning), pgs. 4.8-10 to 4.8-11.	No	No	No	N/A

Discussion

a) **No Impact**. Based on the Groundwater FEIR, there are two residential communities in the vicinity of the Project Area: a mobile home park located in the Moabi Regional Park in San Bernardino County, California, and the residential community of Topock, located along I-40 on the eastern bank of the Colorado River in Mohave County, Arizona. The Topock Bay Marina is also located off I-40 at Oatman-Topock Highway and includes a restaurant. The Groundwater FEIR found that implementation would result in pipelines extending through or adjacent to the communities of Moabi Regional Park and Topock. The Groundwater FEIR determined that pipelines placed underground would not conflict with existing land uses (such as recreation) or physically divide the residential communities, and therefore activities were determined to result in less than significant impacts to residential communities.

Subsequent to the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. New facilities not previously included in the Groundwater FEIR include the Construction Headquarters/ Long Term Remedy Support Area and Soil Storage and Processing Area, located southwest of Moabi Regional Park. The Construction Headquarters would function as the logistics headquarters during the construction phase. The Long Term Remedy Support Area would function as an operations and maintenance support area for the lifetime of the proposed Project. Facilities include workshop/sample processing building with sample processing rooms, equipment decontamination pad, utility pad, offices, septic tanks, wastewater tank. This new facility is in close proximity

to the residential area of the Moabi Regional Park, however, it would not result in the physically division of the existing community.

The proposed Project includes the HNWR-1A freshwater supply well located in the Havasu National Wildlife Refuge in Arizona. This facility would contain aboveground piping, electrical control equipment, and a sand separator. The sand separator separates sand and or other solids from water using centrifugal force. The electric submersible water pumps installed at borehole locations would be below grade and encased in a subsurface concrete vault. Because they are electric and would be installed below grade, and because no communities are located in the vicinity of these Project features in Arizona, the proposed Project would not divide an established community.

Similar to the Groundwater FEIR, the proposed Project would include new infrastructure and pipelines that would be coincident with existing utility and transportation corridors; north-south main alignments will use existing crossings of the freeway and railroad (e.g., at National Trails Highway, through the Bat Cave Wash culvert), and east-west main connections will follow alignments of existing roads (I-40, railroad, National Trials Highway, IM-3 access road, pipeline ROW roads). Pipeline infrastructure would be placed underground, thereby minimizing land use impacts. The proposed Project would not physically divide an established community, and no new or substantially more severe impacts relative to land use would occur with the proposed Project. These issues are not further evaluated in the SEIR.

b) **No Impact**. The Groundwater FEIR determined that facilities would be located in an area designated for either open space, resource conservation, and/or institutional under the San Bernardino County General Plan. The San Bernardino County General Plan identifies that the purpose of the land use designation of open space is to maintain open space. Because some of the facilities such as existing monitoring wells and access are already located within the open space areas, the analysis conducted in the Groundwater FEIR demonstrated consistency with these existing land uses. The Groundwater FEIR also demonstrated consistency with intended land uses, as these would be facilities that serve the existing operation of the Station, which provides the public with gas and electricity. The Groundwater FEIR determined that no conflict would occur with the overall intent of the San Bernardino County General Plan land use designations. The Groundwater FEIR determined that all infrastructure associated with remediation of the contaminated groundwater plume was considered necessary to protect public health and safety and would be removed following implementation of a successful remedy. Therefore, ultimate location of facilities required for implementation of the groundwater remedy would not conflict with the policies of BLM's Approved Resource Management Plan. The facilities were determined to be consistent with the goals of planning policies and documents applicable to the Project Area. The Groundwater FEIR determined that no conflict would occur with existing plans, policies, or regulations.

The proposed Final Groundwater Remedy Project occurs in the same general Project Area as analyzed in the Groundwater FEIR. The land use findings identified in the

Groundwater FEIR would be the same for the proposed Project. Because the proposed Project would not conflict with applicable land use plans, policies, or regulations, no impacts would occur. Resource issues associated with consistency with local plans are not evaluated further in the SEIR.

c) **No Impact**. The Groundwater FEIR indicated that wells and pipelines would be constructed in areas designated as a USFWS National Wildlife Refuge intended to conserve a diversity of wildlife and their habitats for the benefit of current and future generations. Because water diversions would be relatively low, the Groundwater FEIR determined there would be little effect on the attainment of the LCR MSCP goals and objectives, the conservation strategy of the LCR MSCP, or the viability of the covered species. The Groundwater FEIR determined consistency with adopted HCP/NCCP plans and no impact was identified.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. The proposed Project is not expected to conflict with existing HCPs or NCCPs for the following reasons:

- The proposed Project does not fall within a prohibited activity identified in the *Lake Havasu Land Management Plan* and the associated activities would not degrade the biological resources element of the ACEC. Therefore, actions associated with cleanup of the contaminated groundwater would not conflict with management goals because these actions would reduce the potential for long-term adverse effects on sensitive resources.
- The proposed Project would not conflict with the overall management goals of the HNWR and would not be a prohibited activity under the *Lower Colorado River National Wildlife Refuges Comprehensive Management Plan*. Although the physical implementation of proposed Project activities (i.e., drilling wells, installing pipes and a treatment plant) may not be compatible with the purposes of the refuge, reducing the potential for long-term harm from contaminated groundwater would be compatible and could be permitted.

Because the proposed Project would not conflict with an applicable HCP, or natural community conservation plan, no impacts would occur. Therefore, this resource topic is not further evaluated in the SEIR.

Summary

The Groundwater FEIR concluded that there would be less than significant impacts related to land use and planning. Based on the analysis presented above, the proposed Project would not result in new significant impacts or substantially more severe impacts than previously identified in the Groundwater FEIR. The proposed Project would not result in a substantial change in circumstances that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to land use has been identified. Thus, land use and planning issues will not require further evaluation in the SEIR.

Mineral Resources

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
MINERAL RESOURCES — Would the proposed Project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	Section 5.3.2 (Other CEQA Sections), pg. 5-18-19.	No	No	No	N/A
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	Section 5.3.2 (Other CEQA Sections), pg. 5-18-19.	No	No	No	N/A

Discussion

a) **No Impact**. As described in the Groundwater FEIR, the California Surface and Mining Act of 1975 required the classification of land into Mineral Resource Zones (MRZs) according to the land's known or inferred potential to contain mineral resources. The portion of the Project Area that is within California has been classified as MRZ-4. MRZ-4 is defined as areas where geologic information does not rule out either the presence or absence of mineral resources. MRZ-4 is commonly applied to areas of unknown mineral potential that occur within a broader favorable terrain known to host economic mineral deposits (CDC 1985). There are three general categories of geologic mineral resources that may be present in the Project Area including:

- Construction Mineral Materials: Sand, gravel, and crushed rock. The federal land management agencies including the U.S. Bureau of Land Management (BLM), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Bureau of Reclamation (Reclamation) refer to these as "saleable mineral resources."
- Metallic and Rare Minerals: Gold, silver, platinum, iron, copper, lead, zinc, gemstones and semiprecious materials. The federal land management agencies refer to these as "locatable mineral resources."
- Leasable Mineral Resources: Oil, coal, sodium, potassium and geothermal resources. The federal land management agencies refer to these as "leasable mineral resources" (BLM 2008).

It is possible that any of the three resource categories listed above may be present in the Project Area because the portion of the Project Area that is located in California is classified as MRZ-4. The classification of MRZ-4 is also applied to areas that occur within a broader favorable terrain known to host economic mineral deposits (CDC 1985). Metallic, rare, and leasable minerals may also be present, but their existence in the Project Area is unknown at this time. The Project Area's geologic units/site stratigraphy and the physical characteristics and setting, as detailed above, indicate that construction

mineral materials, including sand and gravel, are present in the Project Area. The Groundwater FEIR determined that although there was the potential for some mineral resources to exist in and around the Project Area, implementation of the groundwater remedy would not significantly reduce the availability of known mineral resources. There are no mining claims on or immediately adjacent to the Project Area. In addition, the majority of federal lands in the Project Area are closed to mineral entry (i.e., mining claims) under the General Mining Act of 1872, as amended (BLM 2007:44). Therefore, the Groundwater FEIR determined no impact would occur related to loss of availability of a known mineral resource, either of regional or local importance.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. The underlying site conditions remain the same as described in the Groundwater FEIR. Because the proposed Project is not located on lands used for mining mineral resources and construction, operation and decommissioning activities would not result in the loss of availability of known mineral resources, the proposed Project would not result in new or more substantially severe impacts to mineral resource impacts. Therefore no additional analysis is needed in the SEIR.

b) **No Impact.** The Groundwater FEIR stated that a portion of the Project Area that is within California has been classified as MRZ-4. MRZ-4 is defined as areas where geologic information does not rule out either the presence or absence of mineral resources. Although classified as such, the Project Area is not located in an important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Therefore, the Groundwater FEIR found there would be no impacts to mineral resources.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. The underlying site conditions remain the same as described in the Groundwater FEIR and the MRZ designation has not changed. As such, the proposed Project would not result in new or more substantially severe impacts to mineral resource impacts. No additional analysis is needed in the SEIR.

Summary

The Groundwater FEIR concluded that there would not be potentially significant impacts related to mineral resources. Because the underlying site conditions remain the same, the proposed changes would not involve new significant impacts or substantially more severe impacts. Similarly, no new information indicating new significant impacts to mineral resources has been identified. This resource issue will not be evaluated further in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
NOISE — Would the proposed Project:					
a) Result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Section 4.9 (Noise), pgs. 4.9-18 to 4.9-19.	Yes	Yes	Yes	Yes
b) Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	Section 4.9 (Noise), pgs. 4.9-19 to 4.9-20.	Yes	Yes	Yes	Yes
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Section 4.9 (Noise), pgs. 4.9-18 to 4.9-19.	Yes	Yes	Yes	Yes
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Section 4.9 (Noise), pgs. 4.9-21 to 4.9-24.	Yes	Yes	Yes	Yes
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	Section 4.9 (Noise), pgs. 4.9-18.	No	No	No	N/A
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	Section 4.9 (Noise), pgs. 4.9-18.	No	No	No	N/A

Discussion

a) **Potentially Significant Impact**. The Groundwater FEIR stated that the existing noise environment within the Project Area was influenced primarily by transportation noise emanating from vehicular traffic along I-40 and train operations on the BNSF Railway, both of which travel through the Project Area. The majority of vehicular traffic noise occurred along I-40 and to a lesser extent along Park Moabi Road and National Trails Highway. Noise associated with the operation of the Station was audible within the vicinity of the Station and the IM-3 Facility; however, because of the existing topography (intervening mesas) noise-sensitive receptors did not have direct exposure to these noise sources. Additional noise sources included occasional aircraft overflights and recreational activities (watercraft operations) at regional parks and on the nearby Colorado River.

The Groundwater FEIR indicated that the freshwater flushing component would be enclosed in new buildings, which would provide adequate noise shielding, and electric submersible pumps would be installed below grade and encased in a subsurface concrete vault. Additional generators would be small enough to be shielded by on-site structures,

natural topography, or permanent noise enclosures to reduce visual and noise effects on receptors. Operation was found not to result in any non-transportation noise sources (i.e., water filtration facilities, generators, or wells) that would generate noise levels resulting in a noticeable, permanent increase in ambient noise levels at nearby sensitive receptors. Therefore, impacts were found to be less than significant in the Groundwater FEIR and no mitigation measures were required.

Subsequent to certification of the Groundwater FEIR, additional details were developed regarding new or modified infrastructure needed to support the remedy, which resulted in more specificity regarding the sources of noise and vibration generation from what was analyzed in the Groundwater FEIR. Details regarding construction scheduling were also provided. The proposed Project includes the construction of a Construction Headquarters and Soil Processing/Clean Soil Storage Area that was not included in the Groundwater FEIR. Construction of these facilities would be located near Moabi Regional Park, in an area not previously assessed for noise and vibration impacts. Construction also includes installation of a pipeline in Arizona to connect the freshwater well network in Arizona to proposed Project facilities in California, which was not originally proposed in the Groundwater FEIR. Construction staging areas were also identified with specificity. Other proposed modifications to facilities would be generally similar to what was proposed in the Groundwater FEIR in terms of noise and vibration generation. Given the new level of detail that is available, further analysis is needed to determine whether the proposed Project may result in new significant impacts related to exposure of persons to, or generation of, noise levels in excess of standards and whether new mitigation measures are needed to reduce potential impacts. Therefore further analysis of the Project's potential noise impacts will be conducted in the SEIR.

b) **Potentially Significant Impact**. The Groundwater FEIR found that vibration standards would be exceeded if construction activities occurred within 30 feet and 275 feet of a vibration-sensitive land use when conducted within the California and Arizona portions of the Project Area, respectively. If construction were to occur within these distances of a vibration-sensitive land use, damage to property was expected to occur. For annoyance and/or sleep disruption related to vibration-sensitive receptors, it was anticipated that vibration standards would be exceeded when these activities occurred within 45 feet. If construction were to occur within this distance (i.e., 30 feet within California and 275 feet within Arizona) of a vibration-sensitive receptor, annoyance and/or sleep disruption could occur. The Groundwater FEIR concluded that construction-related vibration levels had the potential to, depending on the location of new wells, exceed the San Bernardino County Development Code in California (Section 83.01.090) and/or the Mohave County Zoning Ordinance in Arizona. As a result, this impact was found to be potentially significant. The Groundwater FEIR included Mitigation Measure NOISE–1, which required that construction of new wells be located at a minimum of 45 feet from vibration-sensitive receptors.

Based on the new details described above including specific locations and types of activities that would occur, further analysis is needed to determine whether the proposed

Project may result in new significant impacts related to exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels and whether new mitigation measures are needed to reduce potential impacts. Therefore further analysis of the Project's potential noise and vibration impacts will be conducted in the SEIR.

c) **Potentially Significant Impact**. The Groundwater FEIR indicated that the long-term operation of the groundwater remedy would result in predicted traffic noise level increases along the affected segment of Park Moabi Road from I-40 to National Old Trails Road that range from 2.2 to 4 dB. The Groundwater FEIR would not result in a substantial permanent increase in ambient noise levels relative to existing sensitive receptors in the Project Area above existing levels, or expose persons to or generate noise levels in excess of applicable standards. Therefore, impacts were found to be less than significant in the Groundwater FEIR and no mitigation measures were required.

Based on the new details described above, further analysis is needed to determine whether the proposed Project may result in a substantial permanent increase in ambient noise levels relative to existing sensitive receptors and whether new mitigation measures are needed to reduce potential impacts. Therefore further analysis of the proposed Project's potential permanent noise impacts is required in the SEIR.

d) **Potentially Significant Impact**. The Groundwater FEIR stated that construction activities conducted within 1,850 feet and 5,830 feet from sensitive receptors in California would exceed San Bernardino County's daytime and nighttime noise standards of 55 dB and 45 dB L_{eq}, respectively. Construction activities conducted within 330 feet and 735 feet of noise-sensitive receptors in Arizona would exceed Mohave County's daytime and nighttime noise standards of 70 dB and 63 dB L_{eq}, respectively. Construction-related noise levels were found to exceed applicable standards and could consequently result in a temporary substantial increase in ambient noise levels, particularly if construction activities would occur during the nighttime hours. As a result, this impact was found to be potentially significant in the Groundwater FEIR. The Groundwater FEIR included Mitigation Measure NOISE-2, which required construction equipment to be properly maintained per manufacturer specifications and fitted with the best available noise suppression.

Based on the new details described above, further analysis is needed to determine whether the proposed Project may result in impacts relative to a temporary substantial increase in ambient noise levels and whether new mitigation measures are needed to reduce potential impacts. Therefore further analysis of the proposed Project's potential temporary noise impacts is required in the SEIR.

e) **No Impact**. As discussed in the Groundwater FEIR, the Project Area is not located within 2 miles of a public airport or public use airport. The nearest airport is the Needles Airport located approximately 8 miles northeast. Because the Project Area is at least 8 miles from an airport, noise impacts would not occur for people working in the Project

Area. These conditions have not changed since the Groundwater FEIR was certified. The proposed Project would not result in new or more severe airport-related noise impacts since it is not located within the vicinity of an airport. No additional analysis is needed in the SEIR.

f) **No Impact**. As identified in the Groundwater FEIR, the nearest private airport, Eagle Airpark, near Mojave City, Arizona is approximately 13 miles southeast of the Project Area. No significant airport noise impacts were identified in the Groundwater FEIR and no mitigation measures were required for this issue. The Groundwater FEIR determined there would not be airport noise impacts for people residing or working in the Project Area. These conditions have not changed since the Groundwater FEIR was certified. The proposed Project would not have new or more severe airport-related noise impacts since it is not within the vicinity of a private airstrip. No additional analysis is needed in the SEIR.

Summary

The Groundwater FEIR concluded that there would be potentially significant impacts related noise and required Mitigation Measures NOI-1 and NOI-2 to address those impacts. The SEIR will evaluate the impacts associated with the proposed Project and consider whether these measures are sufficient to reduce noise impacts as they relate to exposure of persons to, or generation of, noise levels in excess of standards; noise and vibration, and substantial temporary and permanent increase in ambient noise levels. Revised and/or new mitigation measures may be required for the proposed Project to ensure no new significant adverse impacts occur. Based on the discussion presented above, the proposed Project would potentially result in new significant adverse impacts based on new information. Thus, noise issues “a” through “d” from the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
POPULATION AND HOUSING — Would the proposed Project:					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Section 5.3.3 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	Section 5.3.3 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	Section 5.3.3 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A

Discussion

a) **No Impact**. The Groundwater FEIR stated that the groundwater remedy would not induce substantial population growth in the Project Area, based on the maximum number of new full-time employees and new residents that could result from construction, operation, and decommissioning. The Groundwater FEIR estimated this number to be 295 workers during construction, 88 workers during operation and maintenance, and 48 workers during decommissioning activities. The construction phase, which would result in the most employment, would represent 0.012% of growth in the region. It was expected that the majority of these new employees would be from the local employment base. Based on the existing labor pool, there would be no need for new housing to be constructed. The Groundwater FEIR determined that no impact would occur.

Subsequent to certification of the Groundwater FEIR, additional details were developed in the Final Remedy Design regarding the number and location of wells, lengths of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the proposed Project. To implement the Final Groundwater Remedy Project, there would be 168 workers during Phase 1; 181 workers during Phase 2; up to 12 employees during operations and maintenance; and 102 workers during decommissioning activities. Currently, PG&E operates the Station with over 100 employees. It should be noted that Phases 1 and 2 of construction do not substantially overlap; therefore the workforce numbers would be less than what was estimated in the Groundwater FEIR for construction, as well as operations and maintenance. The proposed Project would result in approximately double the employees during the decommissioning phase; however, this number is consistent with the normal requirements of daily Station operation. The labor force is generally from the surrounding region, including the communities of Topock,

Needles, Bullhead City, Laughlin, Kingman, Lake Havasu, and unincorporated Mojave and San Bernardino Counties. Similarly, new employees for the proposed Project are expected to come from the local employment base. The additional number of employees would not induce substantial population or the need for new housing, and therefore, no significant impacts associated with population and housing would be expected. No additional analysis will be required in the SEIR.

b) **No Impact.** The Groundwater FEIR determined that activities would not displace substantial numbers of existing housing units, and no impacts were identified. Similar to the Groundwater FEIR, the proposed Project analyzed in this SEIR would generate a significant number of additional workers during the construction, operation and maintenance, and decommissioning activities. Based on new detailed design information, the proposed Project would generate more employment population than anticipated in the Groundwater FEIR. There would be 168 workers during Phase 1; 181 workers during Phase 2; up to 12 employees during operations and maintenance; and 102 workers during decommissioning activities. However, based on the projected increase of workers and the availability of existing labor within the region, this would not displace substantial numbers of existing housing units. No further analysis is required in the SEIR.

c) **No Impact**. The Groundwater FEIR determined that activities would not displace substantial numbers of people, necessitating the construction of replacement housing. No impacts were identified. Similar to the Groundwater FEIR, the proposed Project would generate additional workers during the construction, operations, and decommissioning activities. However, based on the projected increase of workers and the availability of labor within the region, this would not displace substantial numbers of people, nor require the construction of replacement housing. No further analysis is required in the SEIR.

Summary

The Groundwater FEIR concluded that there would not be potentially significant impacts related to population and housing. Based on the analysis presented above, the employment population identified in the proposed Project would not result in new significant impacts or substantially more severe impacts to population and housing, nor have any new circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information that would result in new significant impacts has been identified. Thus, no further analysis relative to population and housing is needed in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
PUBLIC SERVICES — Would the proposed Project:					
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:					
i) Fire protection?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
ii) Police protection?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
iii) Schools?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
iv) Parks?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
v) Other public facilities?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A

Discussion

a-i) **No Impact**. The Groundwater FEIR determined there would be no impacts to fire protection services based on the projected employment population during construction, operation and maintenance, and decommissioning. The Groundwater FEIR estimated the employment population to be 295, 88, and 48, respectively. Existing public services were found to be able to accommodate this slight increase in population while still maintaining acceptable service ratios, response times, or other performance objectives. No new or expanded public services would be required with implementation of the Groundwater FEIR.

Subsequent to certification of the Groundwater FEIR, additional details were developed in the Final Remedy Design regarding the number and location of wells, lengths of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the proposed Project. To implement the Final Groundwater Remedy Project,

there would be 168 workers during Phase 1; 181 workers during Phase 2; up to 12 employees during operation and maintenance; and 102 workers during decommissioning activities. Currently, PG&E operates the Station with over 100 employees. It should be noted that Phases 1 and 2 of construction do not substantially overlap; therefore the workforce numbers would be less than what was estimated in the Groundwater FEIR for construction, as well as operations and maintenance. The proposed Project would result in approximately double the employees during the decommissioning phase; however, this number is consistent with the normal requirements of daily Station operation.

Subsequent to the Groundwater FEIR and in compliance with Groundwater FEIR Mitigation Measure HAZ-2, PG&E developed a Final Construction Health and Safety Plan provided in C/RAWP, Appendix D, and a Draft Operation and Maintenance Health and Safety Plan in the Final Remedy Design. The Construction Health and Safety Plan describes procedures and training requirements to assess, monitor, control, and reduce hazards to workers, visitors, and the public. This plan includes emergency response procedures in the event that a hazardous materials incident occurs. The Construction Health and Safety Plan meets the standards set by the United States OSHA (29 CFR 1910 and 1926), and Cal/OSHA), and Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations found at Title 8 of the California Code of Regulations Section 5192 (8 CCR 5192). The employees required to implement the Final Groundwater Remedy Project would commute to the Project Area and would not require new housing. Therefore, existing fire services would be able to accommodate the workforce while still maintaining acceptable service ratios, response times, or other performance objectives. The proposed Project is not expected to require new or expanded fire services and no further evaluation of this topic is required in the SEIR.

(a-ii) The Groundwater FEIR determined there would be no impacts to police protection services based on the projected employment population during construction, operation and maintenance, and decommissioning. The Groundwater FEIR determined that implementation of the groundwater remedy would not result in any new or expanded police. As described above, the employees required to implement the Final Groundwater Remedy Project would commute to the Project Area and would not require new housing. Therefore, existing police protection services would be able to accommodate the workforce while still maintaining acceptable service ratios, response times, or other performance objectives. The proposed Project is not expected to require new or expanded police protection services and no further evaluation of this topic is required in the SEIR.

(a-iii) The Groundwater FEIR stated that no new or expanded schools would be required to implement the groundwater remedy. Since the remedy would not induce population growth or include the construction of new housing units, no increase would occur to student enrollment at the existing schools. Given the nature of activities associated with the groundwater remediation, no substantial increase in population growth or housing units would occur. Therefore, no substantial increase in student enrollment would be expected at the existing schools. Similar to the Groundwater FEIR, the proposed Project would not result in a substantial increase in population or require the construction of new

housing units. Therefore, no substantial increase in student enrollment is expected at the local schools. No further evaluation of this topic is required in the SEIR.

(a-iv) The Groundwater FEIR did not identify any impacts to existing parks. Since the groundwater remedy analyzed in the Groundwater FEIR would not induce population growth or the construction of new housing units, no increase would occur to the demand of park services. The proposed Project analyzed in this SEIR would not result in a substantial increase in population or require the construction of new housing units. The increase in the employment population would not be substantial, and therefore no impacts to park services are expected. No further evaluation of this topic is required in the SEIR.

(a-v) The Groundwater FEIR stated that since the groundwater remedy was not a community development project it would therefore not generate the need for additional public services. Similar to the Groundwater FEIR, the proposed Project analyzed in this SEIR is not a community development project. Additionally, the employment population generated by the proposed Project during construction, operation and maintenance, and decommissioning activities, would not result in the need for additional public services. Existing public services would accommodate the workforce while still maintaining acceptable service ratios, response times, or other performance objectives. No impacts to public services are expected and no further analysis is needed in the SEIR.

Summary

The Groundwater FEIR concluded that the groundwater remedy would result in less than significant impacts related to public services. Based on the analysis presented above, the employment population generated by the proposed Project would not result in new significant impacts or substantially more severe impacts to public services, including fire service, police, schools, parks and other public services; nor have any new circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information that would result in new significant impacts has been identified. Thus, no further analysis relative to public services is needed in the SEIR.

Recreation

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
RECREATION — Would the proposed Project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	Section 5.3.5 (Other CEQA Sections), pgs. 5-19 to 5-20.	No	No	No	N/A
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	Section 5.3.5 (Other CEQA Sections), pgs. 5-19-5-20.	No	No	No	N/A

Discussion

a) **No Impact**. The Groundwater FEIR determined the maximum number of new full-time employees that could occur with implementation of the groundwater remedy would be 40 employees. The Groundwater FEIR determined that the addition of up to 40 new residents would not be considered a substantial change in population. Existing recreational facilities was found to accommodate this slight increase without causing substantial physical deterioration. In addition, operation of the groundwater remedy analyzed in the Groundwater FEIR would not introduce facilities that would preclude existing recreational uses that occur on the Colorado River or the National Wildlife Refuge, which includes boating, wildlife observation and photography, education and interpretation, hunting, and fishing. Therefore, the Groundwater FEIR determined that no impact related to the physical deterioration of recreational facilities would occur.

Subsequent to certification of the Groundwater FEIR, additional details were developed regarding new or modified infrastructure needed to support the remedy. As described above, the employees required to implement the Final Groundwater Remedy Project would commute to the Project Area and would not require new housing. Therefore, the additional employees would be commuting to the Project Area, and are not expected to result in an impact to existing recreational facilities in the Project Area. No further analysis relative to the physical deterioration to recreational facilities is needed in the SEIR.

.b) **No Impact**. As stated in the Groundwater FEIR, the groundwater remedy would not result in the construction or expansion of recreational facilities that would lead to adverse effects to the physical environment, and did not propose the construction of any new recreational facilities.

Subsequent to certification of the Groundwater FEIR, additional details were developed regarding new or modified infrastructure needed to support the remedy. Similar to the

Groundwater FEIR, the proposed Project does not include the construction of new recreational facilities, and therefore would not result in adverse effects to the physical environment. No further analysis relative regarding this topic is needed in the SEIR.

Summary

The Groundwater FEIR concluded that less than significant impacts would occur related to recreation services. Based on the analysis presented above, the employment population generated would not result in new significant impacts or substantially more severe impacts to recreational facilities or services, nor have any new circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information that would result in new significant impacts has been identified. Thus, no further analysis relative to recreation services is needed in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
TRANSPORTATION AND TRAFFIC — Would the proposed Project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Section 4.10 (Transportation) pg. 4.10-23.	No	No	No	N/A
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Section 4.10 (Transportation) pgs. 4.10-12 to 4.10-23.	No	No	No	N/A
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	Section 4.9 (Noise), pg. 4.9-18.	No	No	No	N/A
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Section 4.10 (Transportation) pg. 4.10-23.	No	No	No	N/A
e) Result in inadequate emergency access?	Section 4.6 (Hazards) pgs. 4.6-13 to 4.10-14.	No	No	No	N/A
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Section 4.10 (Transportation) pgs. 4.10-23.	No	No	No	N/A

Discussion

a) **Less than Significant Impact.** The transportation study area evaluated in the Groundwater FEIR included local roads that serve the Station, Moabi Regional Park, and adjacent lands, and I-40, a major regional highway that serves northern Arizona and the Mojave Desert region. The Groundwater FEIR identified the following applicable transportation plans, ordinance and policies that pertain to the Project's transportation study area:

- Caltrans' Guide for the Preparation of Traffic Impact Studies;
- SANBAG's Regional Transportation Plan (RTP); and
- Circulation and Infrastructure Element of the San Bernardino County General Plan.

The Groundwater FEIR determined that no alternative transportation facilities services located in the study area would be affected by construction, operation and maintenance, and decommissioning and no conflict with any specific plans or policies supporting alternative transportation modes would occur. Therefore, the Groundwater FEIR determined that this impact would be less than significant. No mitigation measures were required.

Subsequent to the Groundwater FEIR, a new traffic study (Lin Consulting 2016; Appendix TRA) was prepared for the proposed Project to confirm whether the traffic conclusions identified in the Groundwater FEIR were still valid, given the updated baseline condition and new information that is available. The traffic study reviewed the Project's roadway network and confirmed that access to and from the proposed Project would remain the same as evaluated in the Groundwater FEIR. Additionally, as described in the 2014 Freshwater Addendum, new roadways were added to the Project Area on the Arizona side to provide access to the freshwater source evaluation activities. The freshwater sites would be accessed from I-40 at Oatman-Topock Highway by way of an unpaved road that originates from Oatman-Topock Highway.

Similar to the Groundwater FEIR, the proposed Project is subject to the same transportation plans, ordinances, and policies that were addressed in the FEIR. As stated in the Groundwater FEIR, Caltrans would need to issue an encroachment permit for proposed Project-related activities that would occur within the right-of-way for I-40. As long as the encroachment process follows Caltrans requirements, and there are no significant changes in traffic levels of service (LOS) associated with the potential construction activities in the Caltrans right-of-way, no state requirements specific to transportation are needed to address the proposed Project. Based on the traffic study analysis, current LOS are "A" and with addition of proposed Project traffic, the LOS would remain the same as current levels. The proposed Project would adhere to Caltrans encroachment permit requirements should proposed Project-related activities occur within the I-40 right-of-way. The proposed Project is not expected to conflict with the applicable transportation plans, ordinances, and policies listed above and no additional analysis is needed in the SEIR.

b) **Less than Significant Impact**. The Groundwater FEIR evaluated transportation impacts associated with construction and operation from implementing the groundwater remedy. The intersections and roadway segments assessed in the Groundwater FEIR included facilities that provide direct access to I-40 (the ramp terminal intersections and segments of Park Moabi Road), because these intersections and roadway segments were determined to have the highest potential to result in an impact (e.g., they were the most utilized roadway facilities in the Project Area and traffic would be added to them). Park Moabi Road is a two-lane paved facility in the Project Area, with one travel lane in each direction. The Groundwater FEIR estimated that up to 76 daily truck trips would occur during the construction phase. All roadway segments and study intersections, including unsignalized intersections, operated at an acceptable LOS and would continue to operate acceptably during all phases of the groundwater remediation Project. The Groundwater FEIR

determined that there would not result in a significant traffic and circulation impact on the local and regional transportation networks and no mitigation was required.

As addressed in the 2014 Freshwater Addendum, transportation impacts from the proposed freshwater well explorations would occur in Arizona at I-40 and Oatman-Topock Highway, which was outside of the original Project Area. The 2014 Addendum confirmed that due to the limited number of trips associated with the proposed alternative freshwater source evaluation activities, traffic and circulation on the local and regional transportation networks would not be significantly impaired. Impacts to traffic would remain less than significant and no mitigation was required. Additional traffic control measures were identified in the Final Remedy Design that apply to the local roadways in Arizona (CH2M Hill 2015b). Lane closures during construction would be required for some portions of the freshwater pipe in Arizona, including temporary single-lane closures along the Topock-Oatman Highway. The Project requires the preparation of traffic control plans, which would include the plan for use of temporary signage and delineators. The traffic control plans would be prepared by the individual construction contractors for their work and reviewed by PG&E's construction management team. Traffic control plans would be prepared for submittal to San Bernardino and Mohave Counties as part of the encroachment permitting process, and traffic control measures would be designed in accordance with applicable state and federal highway temporary traffic control guidelines.

Based on the traffic study included as Appendix TRA in the SEIR, the proposed Project would generate 166 daily truck trips during the construction phase of the proposed Project. Even with this increase of 90 projected trips from what was analyzed in the Groundwater FEIR, similar to the Groundwater FEIR, all roadway segments and study intersections, including unsignalized intersections, would continue to operate at an acceptable LOS during all phases of the proposed Project. Therefore, the proposed Project would not result in a significant traffic and circulation impact on the local and regional transportation networks and no mitigation will be required. No additional analysis is needed in the SEIR to address this issue.

c) **No Impact**. The Groundwater FEIR determined that there would not be a change in air traffic patterns, including caused by either an increase in traffic levels or a change in location of facilities, that results in substantial safety risks to air traffic patterns. As identified in the current traffic analysis for the SEIR, the Project would generate up to 166 vehicles on a daily basis during construction, up to 104 vehicles on a daily basis for operation and maintenance, and up to 63 vehicles on a daily basis during decommissioning activities. These traffic volumes would not change the baseline traffic levels or patterns on the ground, and therefore would not be visible from the sky or impact air traffic patterns. No facilities would be installed that could propose safety risks or otherwise modify air traffic patterns. No additional analysis is needed in the SEIR for this issue.

d) **No Impact**. The Groundwater FEIR stated that San Bernardino County had developed standard roadway cross-sections to ensure the safe and efficient movement of all modes of travel on their roadways. The Groundwater FEIR indicated that Park Moabi Road did not

meet current San Bernardino County roadway standards in that the paved roadway was 1 foot narrower than intended by San Bernardino County standards. This was a preexisting condition used by traffic, including heavy trucks, that access the Project Area, and no known hazards or safety concerns were identified for this condition. The Groundwater FEIR concluded that while traffic would be added to this roadway during the construction, operations and maintenance, and decommissioning phases, this increase in traffic was not anticipated to pose a hazard or safety concern such that it would result in a significant environmental impact. Impacts related to transportation hazards were determined to be less than significant. No mitigation measures were required.

As confirmed in the proposed Project traffic study included as Appendix TRA in the SEIR, the local and regional roadway networks would remain the same as the Groundwater FEIR, including the new roadways described above for the freshwater source activities. Construction of the proposed Project would require approximately 90 more daily trips during construction than were anticipated in the Groundwater FEIR. However, this increase does not impact LOS standards, traffic congestion, or traffic conditions at Park Moabi Road, as demonstrated in Appendix TRA to the SEIR. Additionally, as identified in the C/RAWP (CH2M Hill 2015b), the Project will include the preparation of traffic control plans including the use of signage and delineators to maintain the safety of motorists and pedestrians during construction. As such, the proposed Project is not expected to result in substantial safety risks and no impacts are expected to occur. No additional analysis is needed in the SEIR to address this issue.

e) **No Impact.** The Groundwater FEIR noted that the activities would utilize existing public roads for access and delivery purposes, similar to existing operations at the Station. No new public access roads would be built and no increases in traffic volumes would be anticipated that would conflict with an adopted emergency response plan or emergency evacuation plan. This impact was determined to be less than significant and no mitigation measures were identified. Similar to the Groundwater FEIR, the proposed Project analyzed in this SEIR would not adversely affect major transportation routes such as I-40, US 95, and National Trails Highway, as described in the traffic study because the additional proposed Project traffic would not degrade the LOS on roadways or result in congestion at intersections. The proposed Project will also include a Final Construction Health and Safety Plan that describes procedures and training requirements to assess, monitor, control, and reduce hazards to workers, visitors, and the public, including emergency response procedures in the event that a hazardous materials incident occurs. The proposed Project is also required to prepare traffic control plans, which will include the plan for use of temporary signage and delineators, and will be prepared by the individual construction contractors for their work and reviewed by PG&E. Traffic control plans will be prepared for submittal to San Bernardino and Mohave Counties as part of the encroachment permitting process, and traffic control measures will be designed in accordance with applicable state and federal highway temporary traffic control guidelines. The proposed Project is therefore, not expected to interfere with designated evacuation routes and no significant impact were occur. Therefore, this issue is not evaluated further in the SEIR.

f) **No Impact**. As described in the Groundwater FEIR, there are no alternative transportation services in the Project Area that would be affected by construction, operation and maintenance, and decommissioning phases. In addition, the Groundwater FEIR found that there would be no conflict with any specific plans or policies supporting alternative transportation. Impacts to alternative transportation services associated with the proposed Final Groundwater Remedy Project would not result in new or substantially more severe impacts. No further analysis is needed in the SEIR.

Summary

The Groundwater FEIR concluded that there would be less than significant impacts related to transportation and traffic. Based on the analysis presented above, the traffic generated by the proposed Project would not result in new significant impacts or substantially more severe impacts to the local and regional transportation network, nor have any new circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information that would result in new significant impacts has been identified. Thus, no further analysis relative to transportation and traffic is needed in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
UTILITIES AND SERVICE SYSTEMS — Would the proposed Project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Section 4.11 (Utilities), pg. 4.11-4.	Yes	Yes	Yes	N/A
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	Section 4.11 (Utilities), pg. 4.11-4.	Yes	Yes	Yes	N/A
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	Section 4.11 (Utilities), pg. 4.11-4.	Yes	Yes	Yes	N/A
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Section 4.12 (Water Supply), pgs. 4.12-7 to 4.12-9.	Yes	Yes	Yes	N/A
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Section 4.11 (Utilities), pg. 4.11-4.	Yes	Yes	Yes	N/A
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Section 4.11 (Utilities), pgs. 4.11-4 to 4.11-6.	Yes	Yes	Yes	N/A
g) Comply with federal, state, and local statutes and regulations related to solid waste?	Section 4.11 (Utilities), pgs. 4.11-4 to 4.11-6.	No	No	No	N/A

Discussion

a) **Potentially Significant Impact**. The Groundwater FEIR notes the construction, operation and maintenance, and decommissioning phases would not generate substantial amounts of domestic wastewater (sewage or gray water). The Groundwater FEIR stated that effluent would not be generated that would exceed applicable standards or capacity. The Groundwater FEIR described the removal process of non-hazardous wastewater from the IM-3 Facility to a 2,000-gallon tank on-site, which was then removed by a wastewater disposal contractor. Because this effluent was disposed of by the wastewater contractor and handled consistent with applicable requirements and regulations, the Groundwater FEIR determined it would not exceed applicable water treatment standards and did not exceed existing treatment capacity. The Groundwater FEIR determined this impact would be less than significant, and no mitigation measures were required.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. For example, the proposed Project includes up to 61 more wells than originally anticipated, identifies specific locations for proposed buildings and structures (that total 68,000 square feet less than anticipated in the Groundwater FEIR), more extensive fluid conveyance piping and trenching than what was assumed in the Groundwater FEIR (see Table 3-2 in Chapter 3, "Project Description" for the numerical differences), and new facilities near Moabi Regional Park that were not previously considered. The proposed buildings and structures would be located in four main areas, namely the Station, the TW Bench, MW-20 Bench, and the northwest area of Moabi Regional Park. Additionally, the proposed Project includes construction of a Remedy-Produced Water Conditioning System and the Contingent Freshwater Pre-Injection Treatment System, improvements to the TCS Evaporation Ponds, and three separate septic tanks that would treat wastewater and potentially exceed applicable standards or capacity. Therefore, further evaluation is needed in the SEIR to assess impacts to wastewater treatment requirements and to determine if new mitigation measures are required.

b) **Potentially Significant Impact.** As stated above, the Groundwater FEIR determined construction of new treatment facilities would not be required because it would not generate substantial amounts of domestic wastewater (sewage or gray water). The Groundwater FEIR determined impacts to wastewater treatment facilities would not be significant. No mitigation measures were identified. Subsequent to certification of the Groundwater FEIR, the Final Remedy Design, as described in Chapter 3 of the SEIR, was prepared to include design details not available in 2011. This includes specific types, amounts, and locations of infrastructure that would be used for the proposed Project. Additionally, the proposed Project includes construction of a Remedy-Produced Water Conditioning System and the Contingent Freshwater Pre-Injection Treatment System, improvements to the TCS Evaporation Ponds, and three separate septic tanks that would treat wastewater. Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Based on the new details, further analysis is needed to determine whether the proposed Project may require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities and if new mitigation measures are needed to reduce potential impacts. Therefore further analysis of the proposed Project's impacts to existing facilities is required in the SEIR.

c) **Potentially Significant Impact**. The Groundwater FEIR stated that the IM-3 Facility had a general permit to discharge stormwater to the surrounding landscape and dry washes from the Colorado Basin RWQCB. To comply with the general permit, a SWPPP and notice of intent were required. At the time the Groundwater FEIR was certified, the

Station was operating under Waste Discharge Identification number 736IO19443. A SWPPP for the Topock Project Area was prepared to identify sources of pollutants that could affect discharges. The SWPPP described BMPs to reduce pollutants in discharges that may impact receiving water quality. As described in the Groundwater FEIR, the IM-3 Facility injected treated groundwater back into the aquifer and did not discharge treated water to the surrounding landscape. The Groundwater FEIR determined impacts to stormwater facilities would not be significant and no mitigation measures were identified. Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Based on the new details, further analysis is needed to determine whether the proposed Project may require or result in the construction of new storm water drainage facilities, or expansion of existing facilities and if new mitigation measures are needed to reduce potential impacts. Therefore further analysis of the proposed Project's impacts to existing stormwater facilities is required in the SEIR.

d) **Potentially Significant Impact**. The Groundwater FEIR stated that no consumptive use would be associated with the in situ treatment and freshwater flushing elements because all extracted water would come from the Colorado River Basin and would be returned to the Colorado River Basin via reinjection wells within the Colorado River accounting surface. Drinking water for use by construction personnel would be trucked from off-site. Other construction and operation and maintenance activities would require a small amount of water that would be served by PG&E's existing LCWSP entitlement. PG&E's existing LCWSP entitlement was sufficient to serve the groundwater remedy needs during construction, operation and maintenance, and decommissioning. The Groundwater FEIR determined the impact to be less than significant. No mitigation measures were identified.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Based on the new details, further analysis is needed to determine if sufficient water supplies are available to serve the proposed Project from existing entitlements and resources and if new mitigation measures are needed to reduce potential impacts. Therefore additional analysis regarding water supply is required in the SEIR.

e) **Potentially Significant Impact**. The Groundwater FEIR stated that construction and operation of a groundwater remediation system and would not require the construction or expansion of new wastewater treatment facilities. Therefore no impacts would occur, and this threshold was not considered further in the FEIR. Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Based on the new details, further analysis is needed to determine if the proposed Project would exceed the capacity of existing wastewater treatment facilities and if new

mitigation measures are needed to reduce potential impacts. Therefore additional analysis regarding the proposed Project's impact to wastewater treatment facilities is required in the SEIR.

f) **Potentially Significant Impact**. The Groundwater FEIR concluded that construction would generate 2,400 total cubic yards of solid waste, including incidental trash. The waste stream would consist of investigation-derived waste (drill cuttings and water associated with well construction), which would be disposed of as hazardous or nonhazardous waste depending on its classification. Operation would generate nonhazardous waste that would include incidental trash (i.e., food containers and other routine waste) generated by personnel, and construction materials from repair of constructed facilities, which would be anticipated to total up to 200 cubic yards per year (3.8 cubic yards per week). The Groundwater FEIR concluded construction and operation waste streams would be minimal in relation to available or foreseeable capacity at the surrounding landfills, and therefore, impacts to solid waste disposal services were determined to be less than significant and no mitigation was required. The Groundwater FEIR also estimated the groundwater remedy would generate 300 cubic yards per year of hazardous waste requiring offsite disposal. Based on the permitted capacities identified at the time the Groundwater FEIR was published, the estimated 300 cubic yards per year of hazardous waste generated was determined to not exceed the permitted capacity of either the Kettleman Hills Landfill or the Clean Harbors Buttonwillow Landfill. The Groundwater FEIR concluded that impacts to hazardous waste facilities would be less than significant and no mitigation measures were required.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Based on the new details, further analysis is needed to determine if sufficient landfill capacity is available to serve the proposed Project for both hazardous and non-hazardous wastes, and if new mitigation measures are needed to reduce potential impacts. Therefore additional analysis regarding solid waste disposal capacity is required in the SEIR.

g) **No Impact**. The Groundwater FEIR included a review of the regulatory setting for the corrective action at the Station, including the federal Resource Conservation and Recovery Act and California's delegated authority to regulate hazardous waste and associated state laws and regulations developed pursuant to the delegated authority. The Groundwater FEIR also included a regulatory context for the regulation of stormwater discharge and groundwater discharge in injection wells. The Groundwater FEIR determined that the groundwater remedy complied with applicable regulations relative to the treatment and disposal of non-hazardous and hazardous wastes. No impacts were identified and no mitigation measures were developed. Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy

Project. The proposed Project analyzed in this SEIR requires adherence to federal, state, and local regulations regarding the proper handling and disposal of both hazardous and nonhazardous wastes. The proposed Project includes relevant plans and procedures such as the Waste Management Plan (Appendix R), which provides detailed procedures to manage wastes generated during construction, operations, and decommissioning activities. No impacts are anticipated with regards to compliance with federal, state and local regulations for solid waste and therefore, this issue is not discussed further in the SEIR.

Summary

The Groundwater FEIR concluded that less than significant impacts would occur related to utilities and service systems. Based on the discussion presented above, the proposed Project would potentially result in new significant adverse impacts relative to utilities and service systems, based on new information. The SEIR will evaluate the impacts associated with the proposed Project and consider whether new mitigation measures are needed to reduce utility impacts. Thus, issue "a" through "d" and issue "f" of the checklist will require further evaluation in the SEIR.

Issues (and Supporting Information Sources):	Where were Impacts Analyzed in the Final EIR.	Could Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	New Circumstances that could Result in New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Do the Groundwater Final EIR Mitigation Measures Address Impacts?
WATER SUPPLY— **Would the proposed Project:**					
a. Have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements?	Section 4.12 (Water Supply), pgs. 4.12-7 to 4.12-9.	Yes	Yes	Yes	Yes.
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Section 4.12 (Water Supply), pgs. 4.12 to 4.12-9.	No	No	Yes	Yes

Discussion

a) **Potentially Significant Impact.** The Groundwater FEIR stated that no consumptive use would be associated with the in situ treatment and freshwater flushing elements because all extracted water would come from the Colorado River Basin and would be returned to the Colorado River Basin via reinjection wells within the Colorado River accounting surface. Drinking water for use by construction personnel would be trucked to the Project Area from off-site. Other construction and operation and maintenance activities would require a small amount of water that would be served by PG&E's existing LCWSP entitlement. PG&E's existing LCWSP entitlement was sufficient to serve the groundwater remedy needs during construction, operation and maintenance, and decommissioning. The Groundwater FEIR determined the impact to be less than significant. No mitigation measures were identified.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. Based on the new details, further analysis is needed to determine if sufficient water supplies are available to serve the proposed Project from existing entitlements and resources and if new mitigation measures are needed to reduce potential impacts. Therefore additional analysis regarding water supply is required in the SEIR.

b) **Potentially Significant Impact**. The Groundwater FEIR determined localized effects on the groundwater table near the freshwater extraction wells were possible. Depending on where the extraction wells were sited, existing nearby supply wells were found to be

adversely affected. The Groundwater FEIR concluded this impact would be potentially significant and identified Mitigation Measure WATER-1 to address the impact.

Subsequent to publication of the Groundwater FEIR, additional details were developed regarding the number and location of wells, lengths and locations of piping and roads, and footprints of treatment infrastructure that would be constructed to implement the Final Groundwater Remedy Project. This includes specific types, amounts, and locations of infrastructure that would be used. For example, the proposed Project includes up to 61 more wells than originally anticipated, identifies specific locations for proposed buildings and structures (that total 68,000 square feet less than anticipated in the Groundwater FEIR), underground piping (as opposed to aboveground piping as assumed in the Groundwater FEIR), and new facilities near Moabi Regional Park that were not previously considered. Based on the new details, further analysis is needed to determine if the proposed Project would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume and if new mitigation measures are needed to reduce potential impacts. Therefore additional analysis regarding groundwater supply/recharge is required in the SEIR.

Summary

The Groundwater FEIR concluded that potentially significant impacts would occur related to water supply. Based on the discussion presented above, the proposed Project would potentially result in new significant adverse impacts relative to supply, based on new information. The SEIR will evaluate the impacts associated with the proposed Project and consider whether new mitigation measures are needed to reduce water supply impacts. Thus, issue areas “a” and “b” of the checklist will require further evaluation in the SEIR.

References

California Department of Toxic Substances Control (DTSC). 2011 (January). *Final Environment Impact Report for the Topock Compressor Station Groundwater Remediation Project,* SCH #2008051003.

2016. EnviroStor Database: Pacific Gas & Electric/ Topock Compressor Station (80001836). Accessed 11/2/16. Available: http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=80001836

California Department of Conservation (CDC). 1985. California Department of Conservation, Division of Mines and Geology, Mineral Land Classification of the Northeast Quarter of the Needles 1-Degree by 2-Degree Sheet, San Bernardino County, CA.

2014. State of California Williamson Act Contract Land.

California Environmental Protection Agency (CalEPA), Air Resources Board. 2014. Assembly Bill 32 Overview. Available: https://www.arb.ca.gov/cc/ab32/ab32.htm

Lin Consulting, Inc. 2016 (May). *Traffic Impact Analysis Report for PG&E Topock Compressor Station, City of Needles, CA Groundwater Remediation Project.*

Natural Resources Conservation Service (NRCS). 2013. Web Soil Survey. Available: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

San Bernardino County. 2007 (March 13). County of San Bernardino 2007 General Plan. Adopted March 13, 2007; effective April 12, 2007. Land Use Services Division. San Bernardino, CA. Prepared by URS Corporation, Santa Ana, CA.

U.S. Bureau of Land Management. 2016. InciWeb the Incident Information System: Topock Fire. Incident Updated 4/9/2016. Accessed 5/12/2016. Available: http://inciweb.nwcg.gov/incident/4684

APPENDIX NOI
Noise Calculations

Roadway Construction Noise Model (RCNM),Version 1.1

Report date ########
Case Descr Topock Groundwater SEIR DECOMMISSIONING

		Baselines (dBA)			---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night	
Maze Locu	Residential	43.5	43.5	43.5	

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Vacuum Street Sweepe	No	10		81.6	600	0
Vacuum Street Sweepe	No	10		81.6	600	0
Backhoe	No	40		77.6	600	0
Crane	No	16		80.6	600	0
Dump Truck	No	40		76.5	600	0
Dump Truck	No	40		76.5	600	0
Excavator	No	40		80.7	600	0
Excavator	No	40		80.7	600	0
Excavator	No	40		80.7	600	0
Man Lift	No	20		74.7	600	0
Front End Loader	No	40		79.1	600	0
Front End Loader	No	40		79.1	600	0
Shears (on backhoe)	No	40		96.2	600	0
Mounted Impact Hami	Yes	20		90.3	600	0

			Results												
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
			Day		Evening		Night		Day		Evening		Night		
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Vacuum Street Sweepe	60	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Vacuum Street Sweepe	60	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Backhoe	56	52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Crane	59	51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Dump Truck	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Dump Truck	54.9	50.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Excavator	59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Excavator	59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Excavator	59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Man Lift	53.1	46.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Front End Loader	57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Front End Loader	57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Shears (on backhoe)	74.6	70.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Mounted Impact Hami	68.7	61.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Total	74.6	71.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Maze Locu	Residential	46.2	46.2	46.2

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Vacuum Street Sweep	No	10		81.6	1200	0
Vacuum Street Sweep	No	10		81.6	1200	0
Backhoe	No	40		77.6	1200	0
Crane	No	16		80.6	1200	0
Dump Truck	No	40		76.5	1200	0
Dump Truck	No	40		76.5	1200	0
Excavator	No	40		80.7	1200	0
Excavator	No	40		80.7	1200	0
Excavator	No	40		80.7	1200	0
Man Lift	No	20		74.7	1200	0
Front End Loader	No	40		79.1	1200	0
Front End Loader	No	40		79.1	1200	0
Shears (on backhoe)	No	40		96.2	1200	0
Mounted Impact Ham	Yes	20		90.3	1200	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Vacuum Street Sweep	54	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vacuum Street Sweep	54	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	50	46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	52.9	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	48.8	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	48.8	44.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	53.1	49.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	53.1	49.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	53.1	49.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	47.1	40.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	51.5	47.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	51.5	47.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shears (on backhoe)	68.6	64.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Ham	62.7	55.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	68.6	65.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Maze Locu	Residential	42.8	42.8	42.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Vacuum Street Sweep	No	10		81.6	2400	0
Vacuum Street Sweep	No	10		81.6	2400	0
Backhoe	No	40		77.6	2400	0
Crane	No	16		80.6	2400	0
Dump Truck	No	40		76.5	2400	0
Dump Truck	No	40		76.5	2400	0
Excavator	No	40		80.7	2400	0
Excavator	No	40		80.7	2400	0
Excavator	No	40		80.7	2400	0
Man Lift	No	20		74.7	2400	0
Front End Loader	No	40		79.1	2400	0
Front End Loader	No	40		79.1	2400	0
Shears (on backhoe)	No	40		96.2	2400	0
Mounted Impact Ham	Yes	20		90.3	2400	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Vacuum Street Sweep	48	38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vacuum Street Sweep	48	38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	43.9	40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	46.9	39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	42.8	38.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	42.8	38.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	47.1	43.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	47.1	43.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	47.1	43.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	41.1	34.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shears (on backhoe)	62.6	58.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mounted Impact Ham	56.7	49.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.6	59.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date ########
Case Descr Topock Groundwater SEIR PIPELINE

		Baselines (dBA)			---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night	
Topock 66	Residential	43.5	43.5	43.5	

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84		180	0
Backhoe	No	40		77.6	180	0
Concrete Pump Truck	No	20		81.4	180	0
Concrete Mixer Truck	No	40		78.8	180	0
Dump Truck	No	40		76.5	180	0
Excavator	No	40		80.7	180	0
Vacuum Street Sweepe	No	10		81.6	180	0
Dozer	No	40		81.7	180	0
Generator	No	50		80.6	180	0
Man Lift	No	20		74.7	180	0
Front End Loader	No	40		79.1	180	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	72.9	68.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	66.4	62.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	70.3	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	67.7	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	65.3	61.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vacuum Street Sweepe	70.5	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	70.5	66.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	69.5	66.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	63.6	56.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	68	64	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	72.9	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

	Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
AZ residen	Residential	43.5	43.5	43.5

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84		220	0
Backhoe	No	40		77.6	220	0
Concrete Pump Truck	No	20		81.4	220	0
Concrete Mixer Truck	No	40		78.8	220	0
Dump Truck	No	40		76.5	220	0
Excavator	No	40		80.7	220	0
Vacuum Street Sweep	No	10		81.6	220	0
Dozer	No	40		81.7	220	0
Generator	No	50		80.6	220	0
Man Lift	No	20		74.7	220	0
Front End Loader	No	40		79.1	220	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	71.1	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	64.7	60.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	68.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	65.9	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	63.6	59.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	67.8	63.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vacuum Street Sweep	68.7	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	68.8	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	67.8	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	61.8	54.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	66.2	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.1	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descr Topock Groundwater SEIR SOIL PROCESSING

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
SFR Park M	Residential	49	49	49

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84		1100	0
Backhoe	No	40		77.6	1100	0
Concrete Pump Truck	No	20		81.4	1100	0
Concrete Mixer Truck	No	40		78.8	1100	0
Dump Truck	No	40		76.5	1100	0
Excavator	No	40		80.7	1100	0
Vacuum Street Sweep	No	10		81.6	1100	0
Dozer	No	40		81.7	1100	0
Generator	No	50		80.6	1100	0
Man Lift	No	20		74.7	1100	0
Front End Loader	No	40		79.1	1100	0

	Results													
	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	57.2	53.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	50.7	46.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	54.6	47.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	52	48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	49.6	45.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	53.9	49.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vacuum Street Sweep	54.7	44.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	54.8	50.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	53.8	50.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	47.9	40.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	52.3	48.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	57.2	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

	Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Pirate Cove	Residential	49	49	49

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84		2300	0
Backhoe	No	40		77.6	2300	0
Concrete Pump Truck	No	20		81.4	2300	0
Concrete Mixer Truck	No	40		78.8	2300	0
Dump Truck	No	40		76.5	2300	0
Excavator	No	40		80.7	2300	0
Vacuum Street Sweepe	No	10		81.6	2300	0
Dozer	No	40		81.7	2300	0
Generator	No	50		80.6	2300	0
Man Lift	No	20		74.7	2300	0
Front End Loader	No	40		79.1	2300	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	50.7	46.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	44.3	40.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	48.1	41.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	45.5	41.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	43.2	39.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	47.5	43.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vacuum Street Sweepe	48.3	38.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	48.4	44.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	47.4	44.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	41.4	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	45.9	41.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	50.7	52.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Traffic Noise Calculations
Existing Plus Project Future Plus Project

Project: Topock GW 2016

Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Park Moabi North of I-40	45	39	41	0	57.2	53.6	51.6	58.4	54.8	52.8
Park Moabi South of I-40	45	19	18	0	53.7	50.1	48.2	54.9	51.3	49.4
I-40 East of Park Moabi	65	9	14	0	55.1	52.2	50.4	56.3	53.4	51.6
0	45			0	-	-	-	-	-	-
Existing With Project										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Park Moabi North of I-40	45	89	76	0	60.5	56.9	55.0	61.7	58.1	56.2
Park Moabi South of I-40	45	49	38	0	57.9	54.3	52.4	59.2	55.5	53.6
I-40 East of Park Moabi	65	25	23	0	57.7	54.7	53.0	58.9	56.0	54.2
0	45			0	-	-	-	-	-	-
Future With Project										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Park Moabi North of I-40	45	93	81	0	60.7	57.1	55.1	61.9	58.3	56.4
Park Moabi South of I-40	45	53	41	0	58.2	54.6	52.7	59.5	55.8	53.9
I-40 East of Park Moabi	65	26	25	0	57.9	55.0	53.3	59.1	56.2	54.5
0	45			0	-	-	-	-	-	-

CNEL

Summary	25 ft. from ROW		At ROW	
	Project	Cumulative	Project	Cumulative
Roadway/Segment	Increment	Increment	Increment	Increment
Park Moabi North of I-40	3.3	3.5	3.3	3.5
Park Moabi South of I-40	4.2	4.5	4.3	4.6
I-40 East of Park Moabi	2.6	2.8	2.6	2.8
0	-	-	-	-

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Dist 1 **25**
Dist 2 **50**

Predicted Exisiting Noise Levels Table

	CNEL		
Roadway/Segment	ROW	25 Feet	50 Feet
Park Moabi North of I-40	58.4	54.8	52.8
Park Moabi South of I-40	54.9	51.3	49.4
I-40 East of Park Moabi	56.3	53.4	51.6
Vignes Street from 1st Street to 2nd Street	62.3	59.6	57.9
0	-	-	-

Predicted Future Noise Levels Table

Roadway/Segment	Existing	Existing With Project	Future With Project	Project Increment	Cumulative Increment
Park Moabi North of I-40	54.8	58.1	58.3	3.3	3.5
Park Moabi South of I-40	51.3	55.5	55.8	4.2	4.5
I-40 East of Park Moabi	53.4	56.0	56.2	2.6	2.8
Vignes Street from 1st Street to 2nd Street	59.6	61.1	62.8	1.5	3.2
0	-	-	-	-	-

Roadway Traffic Noise Calculations
Future No Project Future With Project

Project: Topock GW 2016

Existing										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Park Moabi North of I-40	45	39	41	0	57.2	53.6	51.6	58.4	54.8	52.8
Park Moabi South of I-40	45	19	18	0	53.7	50.1	48.2	54.9	51.3	49.4
I-40 East of Park Moabi	65	9	14	0	55.1	52.2	50.4	56.3	53.4	51.6
0	45			0	-	-	-	-	-	-
Future No Project										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Park Moabi North of I-40	45	43	46	0	57.7	54.1	52.1	58.9	55.3	53.3
Park Moabi South of I-40	45	22	21	0	54.5	50.9	48.9	55.7	52.1	50.1
I-40 East of Park Moabi	65	11	16	0	55.7	52.8	51.0	56.9	54.0	52.2
0	45			0	-	-	-	-	-	-
Future With Project										
	Speed	Traffic Volumes			Leq			CNEL		
Roadway/Segment	MPH	AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Park Moabi North of I-40	45	93	81	0	60.7	57.1	55.1	61.9	58.3	56.4
Park Moabi South of I-40	45	53	41	0	58.2	54.6	52.7	59.5	55.8	53.9
I-40 East of Park Moabi	65	26	25	0	57.9	55.0	53.3	59.1	56.2	54.5
0	45			0	-	-	-	-	-	-

CNEL

Summary	25 ft. from ROW		At ROW	
	Project	Cumulative	Project	Cumulative
Roadway/Segment	Increment	Increment	Increment	Increment
Park Moabi North of I-40	3.0	3.5	3.0	3.5
Park Moabi South of I-40	3.7	4.5	3.8	4.6
I-40 East of Park Moabi	2.2	2.8	2.2	2.8
0	-	-	-	-

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

Dist 1 **25**
Dist 2 **50**

Predicted Exisiting Noise Levels Table

	CNEL		
Roadway/Segment	ROW	25 Feet	50 Feet
Park Moabi North of I-40	58.4	54.8	52.8
Park Moabi South of I-40	54.9	51.3	49.4
I-40 East of Park Moabi	56.3	53.4	51.6
Vignes Street from 1st Street to 2nd Street	51.0	48.2	46.6
0	-	-	-

Predicted Future Noise Levels Table

Roadway/Segment	Existing	Future No Project	Future With Project	Project Increment	Cumulative Increment
Park Moabi North of I-40	54.8	55.3	58.3	3.0	3.5
Park Moabi South of I-40	51.3	52.1	55.8	3.7	4.5
I-40 East of Park Moabi	53.4	54.0	56.2	2.2	2.8
Vignes Street from 1st Street to 2nd Street	48.2	-	51.2	-	3.0
0	-	-	-	-	-

Roadway Traffic Noise Calculations
Haul Trucks

Project: Topock GW 2016 Haul Trucks

Existing

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Park Moabi North of I-40	45	39	41	0	57.2	53.6	51.6	58.4	54.8	52.8
Park Moabi South of I-40	45	19	18	0	53.7	50.1	48.2	54.9	51.3	49.4
I-40 East of Park Moabi	65	9	14	0	55.1	52.2	50.4	56.3	53.4	51.6

Existing With Haul Trucks

Roadway/Segment	Speed MPH	Traffic Volumes AM	PM	ADT	Leq ROW	Leq 25 Feet	Leq 50 Feet	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Park Moabi North of I-40	45	40	44	0	57.5	53.9	51.9	58.7	55.1	53.1
Park Moabi South of I-40	45	20	19	0	54.0	50.3	48.4	55.2	51.6	49.6
I-40 East of Park Moabi	65	12	16	0	55.8	52.9	51.2	57.0	54.1	52.4
0	45			0	-	-	-	-	-	-

Predicted Exisiting Noise Levels Table

Roadway/Segment	CNEL ROW	CNEL 25 Feet	CNEL 50 Feet
Park Moabi North of I-40	58.4	54.8	52.8
Park Moabi South of I-40	54.9	51.3	49.4
I-40 East of Park Moabi	56.3	53.4	51.6
	-	-	-
0	0.0	0.0	0.0

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	48.0%	9.7%	9.7%	67.4%
Medium Truck	8.0%	0.2%	0.2%	8.4%
Heavy Truck	24.0%	0.1%	0.1%	24.2%
	80.0%	10.0%	10.0%	100.0%

Topock Operation and Maintenance

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

Calculation

				R1					R2				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Long Term Support Area					**53**	***47.6***				**94**	***88***		
Forklift	1	75	10%	1100	48	38	41	0	10.5	89	79	82	0
Tractor/Loader/Backhoe	1	80	25%	1100	53	47	50	0	10.5	94	88	91	0
				1100	0	0.0	3	0	10.5	0	0	3	0
Compressor Station					**42**	***42.0***				**82**	***82***		
Pumps	6	61.02	100%	1100	42	42	45	0	10.5	82	82	85	0
Carbon Amendment building					**41**	***44.6***				**71**	***75***		
Carbon Substrate Pump	1	40.39	100%	330	24	24	27	0	10.5	54	54	57	0
Well Maintenance Reagent Pum	1	40.39	100%	330	24	24	27	0	10.5	54	54	57	0
Produced Water Transfer Pump	1	57.39	100%	330	41	41	44	0	10.5	71	71	74	0
Booster Pump	1	52.39	100%	330	36	36	39	0	10.5	66	66	69	0
Sump Pump	1	48.39	100%	330	32	32	35	0	10.5	62	62	65	0
Clean-inplace Reagent Pump	1	53.39	100%	330	37	37	40	0	10.5	67	67	70	0
Conditioned Water Injection Pur	1	53.39	100%	330	37	37	40	0	10.5	67	67	70	0
TCS Evaporation Pond					**42**	***42.1***				**86**	***86***		
Cummins GGMC	1	72.24	100%	900	42	42	45	5	10.5	86	86	89	0
Vertical Pump	2	52.39	100%	900	30	30	33	0	10.5	69	69	72	0

Roadway Traffic Noise Calculations

Topock SEIR
Topock SEIR

Existing													
	Speed	Traffic Volumes			Leq			Ldn			Distance, Feet		
Roadway/Segment	MPH	AM	PM	ADT	ROW	75 Feet	25 Feet	ROW	75 Feet	25 Feet	60 Ldn	65 Ldn	70 Ldn
I-40	60			11600	75.7	68.1	71.6	76.5	68.9	72.3	683	297	78
Park Moabi Road	25			712	57.0	47.9	51.7	57.8	48.6	52.4			
Future No Action													
	Speed	Traffic Volumes			Leq			Ldn			Distance, Feet		
Roadway/Segment	MPH	AM	PM	ADT	ROW	75 Feet	25 Feet	ROW	75 Feet	25 Feet	60 Ldn	65 Ldn	70 Ldn
I-40	60			33130	78.7	72.3	75.5	79.4	73.1	76.2	1347	600	174
Park Moabi Road	25			37320	72.3	64.8	68.2	73.1	65.5	69.0	201	88	17
Future With Alternative													
	Speed	Traffic Volumes			Leq			Ldn			Distance, Feet		
Roadway/Segment	MPH	AM	PM	ADT	ROW	75 Feet	25 Feet	ROW	75 Feet	25 Feet	60 Ldn	65 Ldn	70 Ldn
I-40	60			33220	78.7	72.4	75.5	79.5	73.1	76.2	1379	615	179
Park Moabi Road	25			37410	72.3	64.8	68.3	73.1	65.5	69.0	201	88	17

CNEL

Summary	75 ft. from ROW		At ROW	
	Project	Cumulative	Project	Cumulative
Roadway/Segment	Increment	Increment	Increment	Increment
I-40		4.2	0.1	3.0
Park Moabi Road		16.9		15.3

	% of ADT			
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

APPENDIX NOP

Notice of Preparation

Department of Toxic Substances Control

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Matthew Rodriguez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

NOTICE OF PREPARATION
FOR A SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

Date: May 5, 2015

To: State Clearinghouse
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

and

Responsible Agencies, Trustee Agencies, Federal Agencies, Native American Tribes, and Interested Organizations and Individuals

Subject: Notice of Preparation of a Subsequent Environmental Impact Report, SCH No. 2008051003 (Pub. Resources Code, § 21166; Cal. Code Regs., Tit. 14, § 15162 [CEQA Guidelines])

Lead Agency: California Department of Toxic Substances Control

Contact: Mr. Aaron Yue, Project Manager
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Phone: (714) 484-5439
Fax No.: (714) 484-5329
E-mail: aaron.yue@dtsc.ca.gov

Prepared by: Environmental Science Associates (ESA)
Addie Farrell, Project Manager
626 Wilshire Blvd., Ste. 1100
Los Angeles, CA 90017
Phone: (213) 599-4300

PROJECT TITLE

Subsequent Environmental Impact Report for the Topock Compressor Station Final Groundwater Remediation Project

PROJECT LOCATION

The Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Station) is situated in the Mojave Desert approximately 12 miles southeast of the city of Needles, California, and 1 mile southeast of Moabi Regional Park in California. The Station is one-half mile west of the community of Topock, Arizona,

which is situated directly across the Colorado River from the Station, and 4 miles south of Golden Shores, Arizona. The Station is one-half mile west of the Colorado River and south of Interstate 40 and occupies a portion of the 66.8 acres of land owned by PG&E (see inset of Figure 1). The area in which the Topock Compressor Station Final Groundwater Remediation Project (proposed project) activities could occur covers additional surrounding land owned and managed by a number of private entities and government agencies, including the Havasu National Wildlife Refuge managed by the U.S. Fish and Wildlife Service, lands managed by the U.S. Department of Interior, Bureau of Land Management, rights of way for the Burlington Northern Santa Fe Railroad and California Department of Transportation, and a portion of land owned by the Fort Mojave Indian Tribe. Project activities would occur almost entirely within the project site that was established in the 2011 *Final Environmental Impact Report for the Topock Compressor Station Groundwater Remediation Project* (Groundwater Remediation Project; Groundwater final environmental impact report [FEIR]), and the 2013 Addendum to the 2011 Groundwater FEIR, with the exception being an area near Park Moabi and the use of existing evaporation ponds permitted by the Regional Water Quality Control Board (see Figure 1).

INTRODUCTION AND PURPOSE OF THE NOTICE OF PREPARATION

The California Environmental Quality Act (CEQA) Guidelines Section 15162 provides that when an EIR has been certified for a project, a subsequent EIR (SEIR) shall not be prepared unless the lead agency determines that one or more of the following has occurred: (1) substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified effects; (2) substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or (3) new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete shows the project would result in one or more significant effects not discussed in the prior EIR, or that significant effects previously identified may be substantially more severe.

The California Department of Toxic Substances Control (DTSC) is the lead agency for the proposed Project. DTSC has determined that modifications to the Groundwater Remediation Project made during the remedy design process could trigger one or more of the three provisions above for requiring preparation of an SEIR. DTSC is required to follow the notice provisions for a Notice of Preparation (NOP) as provided in CEQA Guidelines Section 15087. This NOP serves that purpose.

PROJECT BACKGROUND

Groundwater beneath and near the Station has been contaminated by chemicals associated with historical wastewater discharge from Station operations related to compression of natural gas in areas known as Bat Cave Wash and East Ravine. The main contaminant of concern in groundwater is hexavalent chromium [Cr(VI)], which was used in the past as an additive to the cooling water used at the Station and is harmful to human health and ecological receptors in the environment. Other chemicals present in the groundwater include total chromium [Cr(T)], molybdenum, selenium, and nitrates.

The Groundwater Remediation Project, as analyzed and approved in the 2011 Groundwater FEIR and the 2013 Addendum to the EIR, involves manipulation of subsurface water flow to move a contaminated groundwater plume with Cr(VI) and other chemicals of potential concern (COPCs), originating from past operations at the Station, through a treatment zone. This treatment zone, or "in situ reactive zone (IRZ)," will be created by introducing a carbon substrate such as, but not limited to, ethanol, molasses, lactate, or whey to induce microbial growth, which in turn creates an environment where the Cr(VI) is reduced to less toxic trivalent chromium [Cr(III)] and precipitated.

The Groundwater FEIR was certified by DTSC on January 31, 2011 (SCH No. 2008051003); it considered the potentially significant adverse environmental impacts of adopting the preferred remedy, determined to be Alternative E—In Situ Treatment with Freshwater Flushing—through the *Final Groundwater Corrective Measures Study/Feasibility Study Report for SWMU 1/AOC 1 and AOC 10* process, completed in December 2009. The Groundwater FEIR focused its analysis on the potentially significant adverse environmental impacts of the type of selected remedy as opposed to the other alternative remedy methods considered, and explained that additional analysis may be required upon completion of the design phase for the precise facilities and their locations necessary for implementation. Although some project-specific information was discussed, the EIR mostly provided a general description of the infrastructure that would be used for the project, including IRZ wells, storage facilities, and extraction and injection wells. Relatedly, the Groundwater FEIR identified and considered the potential effects from a maximum number of wells, pipeline, footprint for tanks, control buildings, and related infrastructure anticipated at the time to be needed to construct and implement the final remedy. The exact location and specifics of these facilities was conceptual at that time.

In August 2013, DTSC adopted Addendum No. 1 to the Groundwater FEIR that evaluated Alternative Freshwater Source Evaluation Activities (DTSC 2013), which allowed for water sampling and drilling at two exploratory borehole sites (Site B and the HNWR-1 well) located outside the Groundwater EIR project boundary on the Arizona side of the Colorado River. The purpose was to identify water source of sufficient quantity and quality for the freshwater flushing component of the groundwater remedy.

In September 2014, PG&E released the *Basis of Design Report/Pre-Final (90%) Design Submittal for the Final Groundwater Remedy* (90% Design) at the Station. The 90% Design Report includes modifications to the Groundwater Remediation Project previously analyzed in the Groundwater FEIR. This SEIR will identify and consider the substantial changes to the Groundwater Remediation Project or new information, as those terms are defined in CEQA Guidelines Section 15162, that would likely result in one or more new significant and unavoidable adverse impacts, not previously identified, or that would result in a substantial increase in the severity of a previously identified significant effects over and above those impacts already previously considered.

PROJECT DESCRIPTION

The project evaluated in the SEIR will focus primarily on the modifications or changes to the Groundwater Remediation Project since the 2011 Groundwater FEIR and the 2013 Addendum to the EIR that were identified through completion of the *Basis of Design Report/Pre-Final (90%) Design Submittal for the Final Groundwater Remedy* (90% Design) (PG&E September 2014) and the *Supplemental Pre-Final (90%) Design Submittal for the Final Groundwater Remedy* (Supplemental 90% Design) (PG&E

February 2015). The SEIR will be prepared for purpose of DTSC's consideration of adoption of the Final Remedy Design. Project components not refined or modified in the 90% Design and Supplemental 90% Design are not analyzed again in this SEIR; the original analysis and mitigation measures for those components included in the Groundwater FEIR are still accurate and relevant, although they may be revised as part of the SEIR process. Some of the primary changes to the Groundwater Remediation Project that will be considered in the SEIR are as follows:

- Use of freshwater from Arizona that contains elevated levels of naturally occurring arsenic
- Expansion of project area to include various project elements such as a construction headquarters and soil processing and storage area near Moabi Regional Park
- An overall anticipated increase in the amount of ground disturbance that would be required for construction and installation of infrastructure needed for implementation of the final groundwater remedial system
- An increase in the amount of electricity that would be required to operate the groundwater remedial system
- A septic system and remedy-generated water polish system that were not originally anticipated in the 2011 Groundwater FEIR
- Specific design regarding a crossing of Bat Cave Wash

ENVIRONMENTAL EFFECTS TO BE EXAMINED IN THE SEIR

The purpose of an SEIR is to identify and consider any new or substantially more severe significant adverse impacts on the environment from the revisions to a previously approved project and to identify measures that can reduce, avoid, or mitigate significant adverse impacts. Based upon prior consultation with interested parties, comments received on the Groundwater FEIR, and the environmental assessments conducted in and around the site to date, DTSC has determined that the modifications to the proposed project as analyzed in the 2011 Groundwater FEIR and the 2013 Addendum may have new or substantially more severe significant impacts on the following resource areas:

- Aesthetics
- Air Quality/Greenhouse Gas
- Biological Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Utilities, Service Systems, and Energy

PROVIDING COMMENTS ON THE NOTICE OF PREPARATION

Responsible agencies, trustee agencies, federal agencies, Native American Tribes, and interested organizations and individuals are encouraged to submit comments regarding the scope and content of the environmental information to be contained in the draft SEIR for DTSC's consideration. DTSC requests comments on the NOP from agencies and interested parties within 30 days of issuing the NOP, as indicated in CEQA Guidelines Section 15082(b).

Comments on this NOP should be submitted as soon as possible and must be submitted to DTSC, postmarked or emailed, no later than June 4, 2015. Please send written comments to Mr. Aaron Yue,

DTSC Project Manager, at the address listed on page 1 of this NOP. When submitting comments, please identify a contact person to whom the answer to the questions will be presented.

Documents related to the proposed project are available for review at the project repositories listed below and on the internet at http://www.dtsc-topock.com/.

Needles Branch Library 1111 Bailey Avenue Needles, CA 92363 Chemehuevi Indian Reservation Environmental Protection Office 2000 Chemehuevi Trail Havasu Lake, CA 92363 Golden Shores/Topock Station Library 13136 Golden Shores Parkway Topock, AZ 86436 Lake Havasu City Library 1770 McCulloch Blvd. Lake Havasu City, AZ 86403	Colorado River Indian Tribes Library Second Avenue and Mohave Road Parker, AZ 85344 Parker Public Library 1001 Navajo Avenue Parker, AZ 85344 California Department of Toxic Substances Control 5796 Corporate Avenue Cypress, CA 90630 Monday–Friday: 9 a.m.–noon or 1 p.m.–4 p.m. Please call for an appointment at (714) 484-5337.

DTSC will host two scoping meetings to give the responsible agencies, trustee agencies, federal agencies, Native American Tribes, and interested organizations and individuals an opportunity to appear and comment on the scope and content of the draft SEIR. These scoping meetings will consist of introductions, a project overview, a CEQA process overview, and an opportunity for meeting participants to comment on the scope and content of the SEIR. A reasonable amount of time will be allotted to allow all participants who wish to provide oral comments the opportunity to do so. Written comments will also be accepted at the meetings. Scoping meetings have been scheduled at the following locations and times.

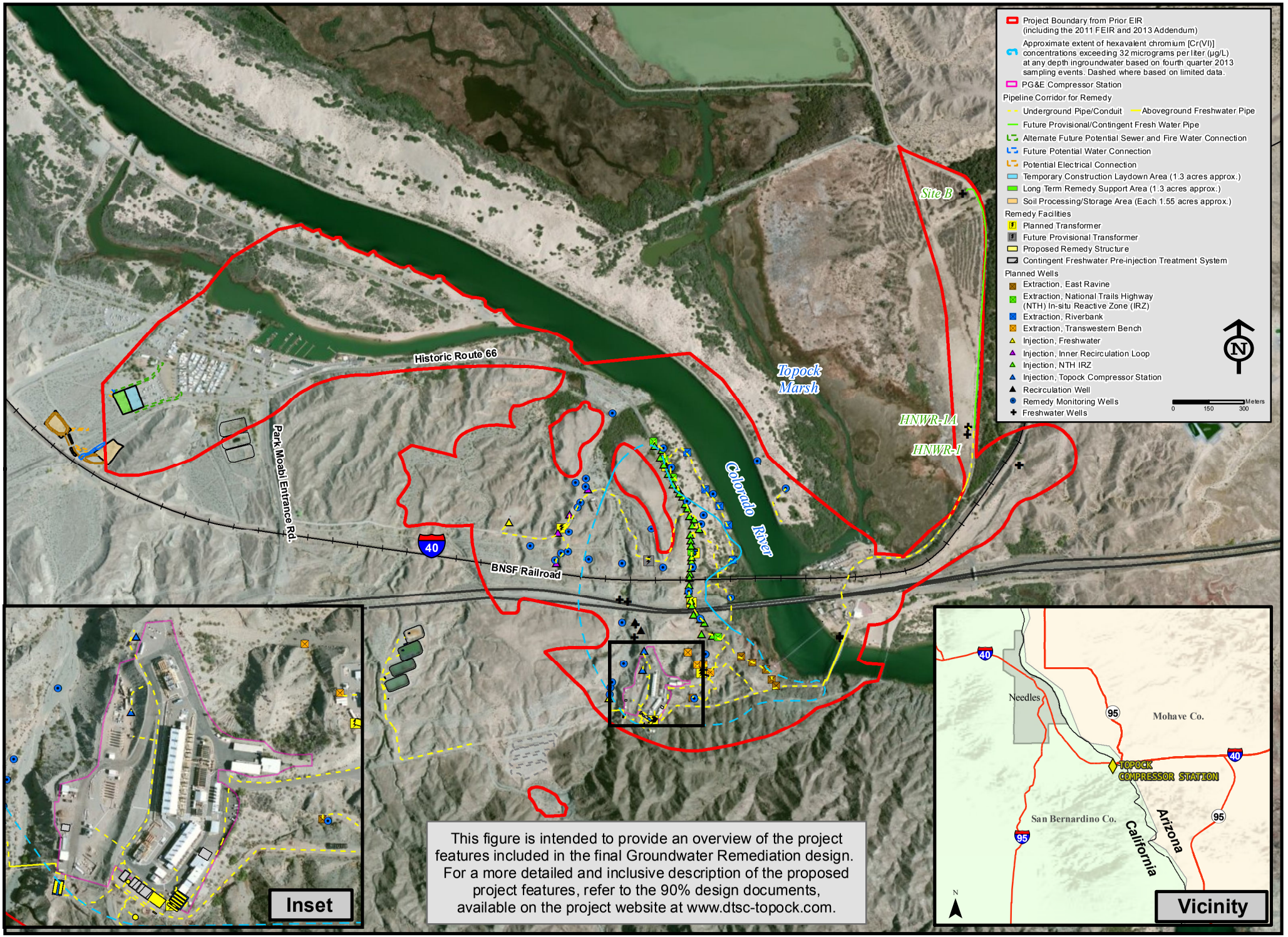
Public Scoping Meetings			
City	**Address**	**Date**	**Time**
Needles, CA	Needles Senior Center 1699 Bailey Avenue Needles, CA 92363	Tuesday, May 19, 2015	5:00–7:00 p.m.
Golden Shores, AZ	Golden Shores Community Center 13136 Golden Shores Parkway Golden Shores, AZ 86436	Wednesday, May 20, 2015	5:00–7:00 p.m.

CONTACT

If you have any questions or wish to discuss the project, please contact Aaron Yue, DTSC Project Manager, at (714) 484-5439 or email: aaron.yue@dtsc.ca.gov, or Stacey Lear, DTSC Public Participation Specialist, at (714) 484-5354 or email: stacey.lear@dtsc.ca.gov, or toll free at (800) 855-7100. For media inquiries, please contact Sandy Nax, DTSC Public Information Officer, at (916) 327-6114 or email: sandy.nax@dtsc.ca.gov.

INFORMATION FOR THE DISABLED AND HEARING IMPAIRED

The meeting rooms for the scoping meetings are accessible to people with disabilities. If translation services are needed or if additional accommodations for the disabled are needed, please notify Stacey Lear, DTSC Public Participation Specialist, at (714) 484-5354 or email: stacey.lear@dtsc.ca.gov no later than 10 working days before the meeting. TYY users may use the California Relay Service at 711 in state or 1-800-855-7100 outside California.



Source: Esri, Google Earth, PG&E 2014

Notice of Preparation
Figure 1

APPENDIX SCO

Scoping Report

Appendix A

Notice of Preparation

Department of Toxic Substances Control

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Matthew Rodriguez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

NOTICE OF PREPARATION
FOR A SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

Date: May 5, 2015

To: State Clearinghouse
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

and

Responsible Agencies, Trustee Agencies, Federal Agencies, Native American Tribes, and Interested Organizations and Individuals

Subject: Notice of Preparation of a Subsequent Environmental Impact Report, SCH No. 2008051003 (Pub. Resources Code, § 21166; Cal. Code Regs., Tit. 14, § 15162 [CEQA Guidelines])

Lead Agency: California Department of Toxic Substances Control

Contact: Mr. Aaron Yue, Project Manager
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Phone: (714) 484-5439
Fax No.: (714) 484-5329
E-mail: aaron.yue@dtsc.ca.gov

Prepared by: Environmental Science Associates (ESA)
Addie Farrell, Project Manager
626 Wilshire Blvd., Ste. 1100
Los Angeles, CA 90017
Phone: (213) 599-4300

PROJECT TITLE

Subsequent Environmental Impact Report for the Topock Compressor Station Final Groundwater Remediation Project

PROJECT LOCATION

The Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Station) is situated in the Mojave Desert approximately 12 miles southeast of the city of Needles, California, and 1 mile southeast of Moabi Regional Park in California. The Station is one-half mile west of the community of Topock, Arizona,

which is situated directly across the Colorado River from the Station, and 4 miles south of Golden Shores, Arizona. The Station is one-half mile west of the Colorado River and south of Interstate 40 and occupies a portion of the 66.8 acres of land owned by PG&E (see inset of Figure 1). The area in which the Topock Compressor Station Final Groundwater Remediation Project (proposed project) activities could occur covers additional surrounding land owned and managed by a number of private entities and government agencies, including the Havasu National Wildlife Refuge managed by the U.S. Fish and Wildlife Service, lands managed by the U.S. Department of Interior, Bureau of Land Management, rights of way for the Burlington Northern Santa Fe Railroad and California Department of Transportation, and a portion of land owned by the Fort Mojave Indian Tribe. Project activities would occur almost entirely within the project site that was established in the 2011 *Final Environmental Impact Report for the Topock Compressor Station Groundwater Remediation Project* (Groundwater Remediation Project; Groundwater final environmental impact report [FEIR]), and the 2013 Addendum to the 2011 Groundwater FEIR, with the exception being an area near Park Moabi and the use of existing evaporation ponds permitted by the Regional Water Quality Control Board (see Figure 1).

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The California Department of Toxic Substances Control (DTSC) is the lead agency for the proposed Project. DTSC has determined that modifications to the Groundwater Remediation Project made during the remedy design process could trigger one or more of the three provisions above for requiring preparation of an SEIR. DTSC is required to follow the notice provisions for a Notice of Preparation (NOP) as provided in CEQA Guidelines Section 15087. This NOP serves that purpose.

PROJECT BACKGROUND

Groundwater beneath and near the Station has been contaminated by chemicals associated with historical wastewater discharge from Station operations related to compression of natural gas in areas known as Bat Cave Wash and East Ravine. The main contaminant of concern in groundwater is hexavalent chromium [Cr(VI)], which was used in the past as an additive to the cooling water used at the Station and is harmful to human health and ecological receptors in the environment. Other chemicals present in the groundwater include total chromium [Cr(T)], molybdenum, selenium, and nitrates.

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PROJECT DESCRIPTION

The project evaluated in the SEIR will focus primarily on the modifications or changes to the Groundwater Remediation Project since the 2011 Groundwater FEIR and the 2013 Addendum to the EIR that were identified through completion of the *Basis of Design Report/Pre-Final (90%) Design Submittal for the Final Groundwater Remedy* (90% Design) (PG&E September 2014) and the *Supplemental Pre-Final (90%) Design Submittal for the Final Groundwater Remedy* (Supplemental 90% Design) (PG&E

February 2015). The SEIR will be prepared for purpose of DTSC's consideration of adoption of the Final Remedy Design. Project components not refined or modified in the 90% Design and Supplemental 90% Design are not analyzed again in this SEIR; the original analysis and mitigation measures for those components included in the Groundwater FEIR are still accurate and relevant, although they may be revised as part of the SEIR process. Some of the primary changes to the Groundwater Remediation Project that will be considered in the SEIR are as follows:

- Use of freshwater from Arizona that contains elevated levels of naturally occurring arsenic
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- A septic system and remedy-generated water polish system that were not originally anticipated in the 2011 Groundwater FEIR
- Specific design regarding a crossing of Bat Cave Wash

ENVIRONMENTAL EFFECTS TO BE EXAMINED IN THE SEIR

The purpose of an SEIR is to identify and consider any new or substantially more severe significant adverse impacts on the environment from the revisions to a previously approved project and to identify measures that can reduce, avoid, or mitigate significant adverse impacts. Based upon prior consultation with interested parties, comments received on the Groundwater FEIR, and the environmental assessments conducted in and around the site to date, DTSC has determined that the modifications to the proposed project as analyzed in the 2011 Groundwater FEIR and the 2013 Addendum may have new or substantially more severe significant impacts on the following resource areas:

- Aesthetics
- Air Quality/Greenhouse Gas
- Biological Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Utilities, Service Systems, and Energy

PROVIDING COMMENTS ON THE NOTICE OF PREPARATION

Responsible agencies, trustee agencies, federal agencies, Native American Tribes, and interested organizations and individuals are encouraged to submit comments regarding the scope and content of the environmental information to be contained in the draft SEIR for DTSC's consideration. DTSC requests comments on the NOP from agencies and interested parties within 30 days of issuing the NOP, as indicated in CEQA Guidelines Section 15082(b).

Comments on this NOP should be submitted as soon as possible and must be submitted to DTSC, postmarked or emailed, no later than June 4, 2015. Please send written comments to Mr. Aaron Yue,

DTSC Project Manager, at the address listed on page 1 of this NOP. When submitting comments, please identify a contact person to whom the answer to the questions will be presented.

Documents related to the proposed project are available for review at the project repositories listed below and on the internet at http://www.dtsc-topock.com/.

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DTSC will host two scoping meetings to give the responsible agencies, trustee agencies, federal agencies, Native American Tribes, and interested organizations and individuals an opportunity to appear and comment on the scope and content of the draft SEIR. These scoping meetings will consist of introductions, a project overview, a CEQA process overview, and an opportunity for meeting participants to comment on the scope and content of the SEIR. A reasonable amount of time will be allotted to allow all participants who wish to provide oral comments the opportunity to do so. Written comments will also be accepted at the meetings. Scoping meetings have been scheduled at the following locations and times.

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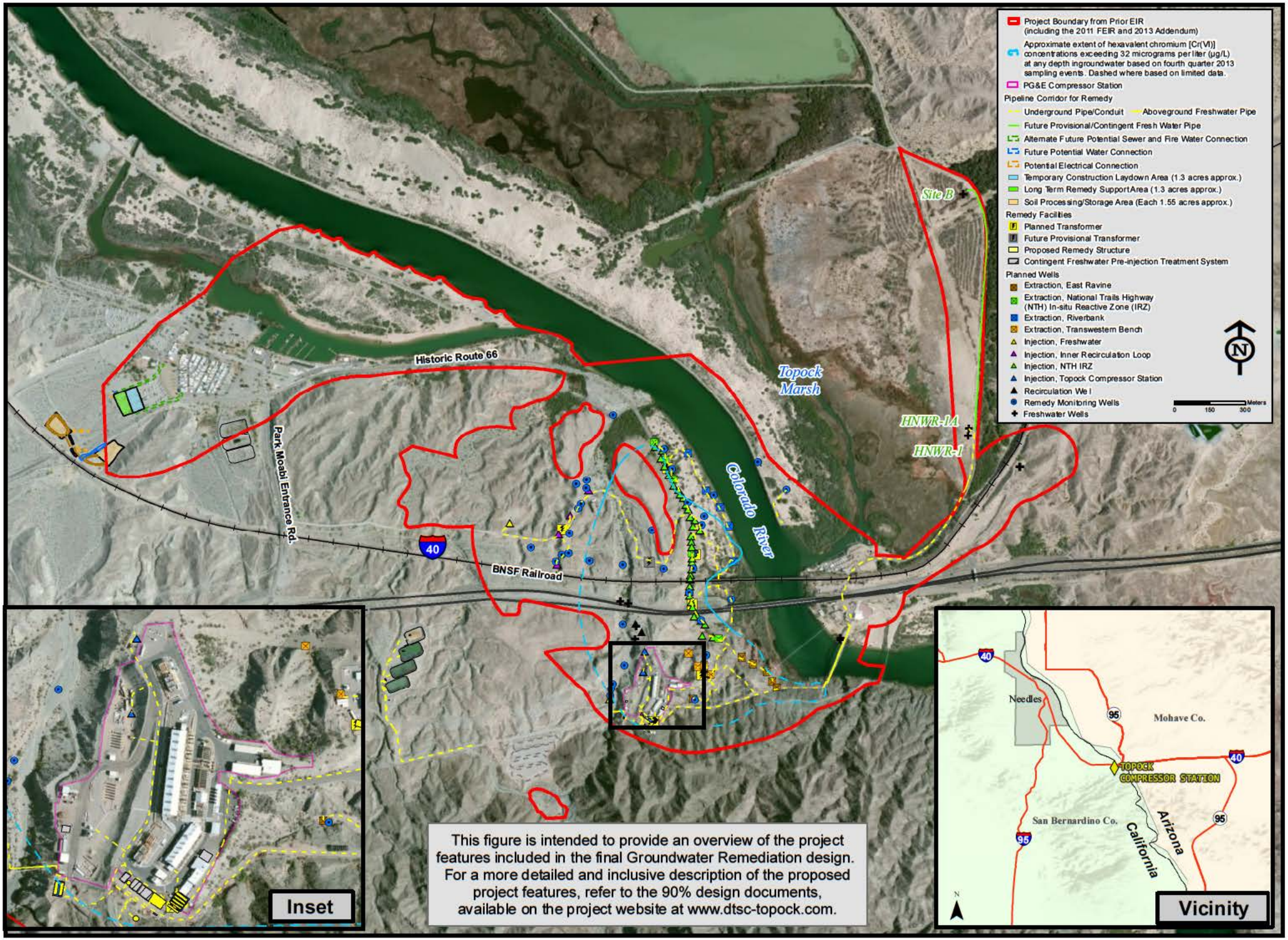
Golden Shores, AZ	Golden Shores Community Center 13136 Golden Shores Parkway Golden Shores, AZ 86436	Wednesday, May 20, 2015	5:00–7:00 p.m.

CONTACT

If you have any questions or wish to discuss the project, please contact Aaron Yue, DTSC Project Manager, at (714) 484-5439 or email: aaron.yue@dtsc.ca.gov, or Stacey Lear, DTSC Public Participation Specialist, at (714) 484-5354 or email: stacey.lear@dtsc.ca.gov, or toll free at (800) 855-7100. For media inquiries, please contact Sandy Nax, DTSC Public Information Officer, at (916) 327-6114 or email: sandy.nax@dtsc.ca.gov.

INFORMATION FOR THE DISABLED AND HEARING IMPAIRED

The meeting rooms for the scoping meetings are accessible to people with disabilities. If translation services are needed or if additional accommodations for the disabled are needed, please notify Stacey Lear, DTSC Public Participation Specialist, at (714) 484-5354 or email: stacey.lear@dtsc.ca.gov no later than 10 working days before the meeting. TYY users may use the California Relay Service at 711 in state or 1-800-855-7100 outside California.



This figure is intended to provide an overview of the project features included in the final Groundwater Remediation design. For a more detailed and inclusive description of the proposed project features, refer to the 90% design documents, available on the project website at www.dtsc-topock.com.

Source: Esri, Google Earth, PG&E 2014

Notice of Preparation
Figure 1

Appendix B

NOP Mailing List

Topock Groundwater NOP Distribution Summary

Group	Delivery Type	Contents	Location in Appendix
Office of Planning and Research	Hand Deliver	• NOP	N/A
San Bernardino County Clerk	Courier/Hand Deliver	• NOP	N/A
Information Repositories	Hand Deliver	• NOP • Scoping meeting flier (25 color copies) • NOP public notice	Table 2 in scoping summary report
Responsible/Trustee Agencies Tribal Chairs	Priority Mail	• NOP • Scoping meeting flier (black/white)	B-1
DTSC Stakeholder Mailing List	First Class Stamp	• NOP • Scoping meeting flier (black/white)	B-2
Zip Code 86436	Bulk Mail	• NOP • Scoping meeting flier (black/white)	N/A
DTSC Email List	Email	• NOP • Scoping meeting flier (color)	B-3

Appendix B-1

Responsible/Trustee Agencies and Tribal Chairs

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
COL. Kimberly M. Colloton	PMP, LA District	Army Corps of Engineers		915 Wilshire Blvd	Los Angeles	CA	90017
Gerardo Salas	Staff Contact	Army Corps of Engineers		915 Wilshire Blvd	Los Angeles	CA	90017
Ed Pert	Regional Manager	CA Department of Fish and Wildlife	Region 5	3883 Ruffin Road	San Diego	CA	92123
Michael Horn	Pollution Coordinator	CA Department of Fish and Wildlife	OSPR Inland	PO Box 3131	Wrightwood	CA	92397
Arturo Delgado	Environmental Scientist	California Department of Fish and Wildlife		1416 Ninth Street	Sacramento	CA	95814
		California Department of Fish and Wildlife	Inland Desert Region Main Office	3602 Island Empire Boulevard Suite C-22	Ontario	CA	91764
Canh Nguyen	Environmental Scientist	California Department of Fish and Wildlife		PO Box 2160	Blythe	CA	92226
Charlton Bonham	Director	California Department of Fish and Wildlife		1416 9th Street 12th Floor	Sacramento	CA	95814
Richard Kim	Environmental Scientist	California Department of Fish and Wildlife	Inland Desert Region Main Office	PO Box 2160	Blythe	CA	92226
Dr. Carol Roland-Nawi	State Historic Preservation Officer	California Dept. of Parks and Recreation	Office of Historic Preservation	PO Box 942896	Sacramento	CA	94296
Robert Perdue	Executive Officer	California Regional Water Quality Control Board	Colorado River Basin Region	73-720 Fred Waring Drive Suite 100	Palm Desert	CA	92260
Jennifer Lucchesi	Executive Officer	California State Lands Commission		100 Howe Avenue Suite 100	South Sacramento	CA	95825-8202
Basem Muallem	District 8 Director	CalTrans		464 West 4th Street	San Bernardino	CA	92402
Malcolm Dougherty	Acting Director	CalTrans		PO Box 942873	Sacramento	CA	94273-0001
Michael Parker		CalTrans		50 Higuera Street	San Luis Obispo	CA	93401-5415
Steven Escobar	Environmental Director	Chemehuevi Indian Tribe		PO Box 1976	Havasu Lake	CA	92363
The Honorable Edward D. "Tito" Smith	Chairman	Chemehuevi Indian Tribe		PO Box 1976	Havasu Lake	CA	92363
The Honorable Sherry Cordova	Chairwoman	Cocopah Indian Tribe		14515 South Veterans Drive	Somerton	AZ	85350
Tanya Trujillo	Executive Director	Colorado River Board of California		770 Fairmont Avenue Suite 100	Glendale	CA	91203
Sylvia "Cindy" Homer	Vice Chairwoman	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
The Honorable Dennis Patch	Chairman	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
CEQA Review - Intergovermental Review		Department of Transportation (Caltrans)	District 8	464 West 4th Street	San Bernardino	CA	92401
Linda D. Otero	Director	Fort Mojave Indian Tribe	Aha Makav Cultural Society	PO Box 5990	Mohave Valley	AZ	86440
The Honorable Timothy Williams	Chairman	Fort Mojave Indian Tribe		500 Merriman Avenue	Needles	CA	92363
The Honorable Keeny Escalanti	President	Fort Yuma-Quechan Indian Tribe		350 Picacho Rd	Yuma	AZ	85365
The Honorable Don Watahomigie	Chairman	Havasupai Indian Tribe		PO Box 10	Supai	AZ	96435
Dawn Hubbs	Program Manager, RPA	Hualapai Indian Tribe	Hualapai Department of Cultural Resources	PO Box 310 941 Hualapai Way	Peach Springs	AZ	86434
Loretta Jackson-Kelly	Director/THPO	Hualapai Indian Tribe		PO Box 310 941 Hualapai Way	Peach Springs	AZ	86434
The Honorable Sherry J. Counts	Chairwoman	Hualapai Indian Tribe		PO Box 310	Peach Springs	AZ	86434
Bart Koch	Safety and Environmental Services Section Manager	Metropolitan Water District	Southern California	PO Box 54153	Los Angeles	CA	90054-0153
Jeffrey Kightlinger	General Manager	Metropolitan Water District	Southern California	PO Box 54153	Los Angeles	CA	90054-0153
Eldon Heaston	Executive Offices	Mojave Desert Air Quality Management District		14306 Park Avenue	Victorville	CA	92392
Dwight Dutschke	Native American Heritage Coordinator	Office of Historic Preservation		PO Box 942896	Sacramento	CA	94296-0001
Milford Wayne Donaldson, FAIA	State Historic Preservation Officer	Office of Historic Preservation		PO Box 942896	Sacramento	CA	94296-0001
Corwin Porter	Chief	San Bernardino County	Division of Environmental Health	385 North Arrowhead Avenue 2nd Floor	San Bernardino	CA	92415-0182
Josh Dugas	Program Manager	San Bernardino County	Division of Environmental Health	385 North Arrowhead Avenue 2nd Floor	San Bernardino	CA	92415
Peter Brierty	Fire Marshal	San Bernardino County	Fire Department	620 South E. Street	San Bernardino	CA	92415
Mark Hartwig	Fire Chief	San Bernardino County Fire Department		620 South "E" Street	San Bernardino	CA	92415-0182
Paul D. Thayer	Executive Officer	State Lands Commission		100 Howe Avenue Suite 100	South Sacramento	CA	95825-8202
Jonathan Bishop	Chief Deputy Director	State Water Resources Control Board		1001 I Street 16th Floor	Sacramento	CA	95815
Mike Lauffer	Chief Counsel	State Water Resources Control Board		1001 I Street 16th Floor	Sacramento	CA	95815
Tom Howard	Executive Director	State Water Resources Control Board		1001 I Street 16th Floor	Sacramento	CA	95815
The Honorable Mary Maxine Resvaloso	Chairwoman	Torres-Martinez Desert Cahuilla Indian Tribe		PO Box 1160	Thermal	CA	92274
Wilfred J. Nabahe	Director	Twenty-Nine Palms Indian Tribe	Environmental Protection Office	26600 Mohave Road	Parker	AZ	85344
Greg Glassco		Yavapai-Prescott Indian Tribe	Culture Research Department	530 East Merritt Street	Prescott	AZ	86301-2038
The Honorable Ernest Jones, Sr.	President	Yavapai-Prescott Indian Tribe		530 East Merritt Street	Prescott	AZ	86301-2038

Appendix B-2

Topock Stakeholder List

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
John M. Fowler	Executive Director	Advisory Council on Historic Preservation		401 F Street NW Suite 308	Washington	DC	20001-2637
Margaret Park, AICP	Director of Planning & Natural Resources	Agua Caliente Band of Cahuilla Indians		5401 Dinah Shore Drive	Palm Springs	CA	92264
Air Resources Board		Air Resources Board		PO Box 2815	Sacramento	CA	95812
Arizona State Land Department		Arizona State Land Department	Environmental Contamination Prevention & Remediation Program	1110 West Washington Street	Phoenix	AZ	85007
Ian MacMillan	Program supervisor	Area Resources CEQA Intergovernmental Review South Coast Quality Management District		21865 Copley Drive	Diamond Bar	CA	91765-4178
Tony Davis	Reporter	Arizona Daily Star		4850 South Park Avenue	Tucson	AZ	85714
Amanda Stone	Southern Regional Office Director	Arizona Department of Environmental Quality	Waste Programs	1110 West Washington Street	Phoenix	AZ	85007
Danielle Taber	Project Manager	Arizona Department of Environmental Quality	Voluntary Remediation Program	1110 West Washington Street	Phoenix	AZ	85007
Dave Becker	Project Manager	Arizona Department of Environmental Quality		1110 West Washington Street	Phoenix	AZ	85007
Henry Darwin	Director	Arizona Department of Environmental Quality		1110 West Washington Street	Phoenix	AZ	85007
Julie Hoskin, ADEQ	Manager, Voluntary Remediation Program	Arizona Department of Environmental Quality		1110 West Washington Street	Phoenix	AZ	85007
Julie Riemenschneider	Manager, Remedial Projects Section	Arizona Department of Environmental Quality		1110 West Washington Street	Phoenix	AZ	85007
Mark Shaffer	Communications Director	Arizona Department of Environmental Quality		1110 West Washington Street	Phoenix	AZ	85007
Sybil Smith	Waste Programs Division	Arizona Department of Environmental Quality		2625 North King Street	Flagstaff	AZ	86004
Tina LePage	Remedial Projects Section Manager	Arizona Department of Environmental Quality		1110 West Washington Street	Phoenix	AZ	85007
Wendy Flood	Community Outreach Coordinator	Arizona Department of Environmental Quality		1110 West Washington Street	Phoenix	AZ	85007
Larry Voyles	Director	Arizona Department of Game and Fish		5000 West Carefree Highway	Phoenix	AZ	85086-5000
Arizona Department of Transportation		Arizona Department of Transportation	Environmental Planning Group	1611 West Jackson Street	Phoenix	CA	85007
John Halikowski	Director	Arizona Department of Transportation		206 South 17th Avenue #100-A	Phoenix	AZ	85007-3233
Michael J. Lacey	Deputy Director	Arizona Department of Water Resources		3550 North Central Avenue Suite 200	Phoenix	AZ	85012
Bob Posey		Arizona Fish & Game Department	Kingman Office	5325 Stockton Hill Road	Kingman	AZ	86409-1043
Joe Cavello	Plant Manager	Arizona LNG, Ltd		5499 West Needle Mountain Road	Topock	AZ	86436
State Land Commissioner	State Land Commissioner	Arizona State Land Department		1616 West Adams Street # 305	Phoenix	AZ	85007
Ann Howard	Deputy SHPO/Archaeologist	Arizona State Parks	State Historic Preservation Office	1300 West Washington Street	Phoenix	AZ	85007
James Garrison		Arizona State Parks	State Historic Preservation Office	1300 West Washington Street	Phoenix	AZ	85007
Mr. Peter Kuhns		Associations of Community Organizations For Reform Now (ACORN)		3655 S. Grand Avenue Suite 250	Los Angeles	CA	90012
Jaclyn Winkel	Environmental Planner II	Bay Area Air Quality Management District	Planning Department	939 Ellis Street 6th Floor	San Francisco	CA	94109
Dick Gilbert	Acting HWNR Manager	Bill Williams River NWR		60911 Hwy 95	Parker	AZ	85344
Robert Martinez		BNSF		2159 Casa Linda Street	Needles	CA	92363
Bob Leuck	Assistant Public Works Director	Bullhead City		2355 Trane Road	Bullhead City	AZ	86442
Jack Hakim	Mayor	Bullhead City		2355 Trane Road	Bullhead City	AZ	86442
Toby Cotter	City Manager	Bullhead City		2355 Trane Road	Bullhead City	AZ	86442
Michael Ahrens	Acting Field Manager	Bureau of Land Management	Needles Field Office	1303 South Highway 95	Needles	CA	92363
Paul Meyer	Natural Resource Specialist	Bureau of Land Management	National Applied Resources Science Center	PO Box 25047 Denver Federal Center, BLM RS-130	Denver	CO	80225-0047
Roxie Trost	District Manager	Bureau of Land Management	Colorado River District / Lake Havasu Field Office	2610 Sweetwater Avenue	Lake Havasu City	AZ	86406
Valerie Thomas	Chief	Bureau of Reclamation - Lower Colorado Region	Resources Management Office	PO Box 61470 LC 2640	Boulder City	NV	89006-1470
Lena Kent	Director of Public Affairs	Burlington Northern Santa Fe (BNSF)		2650 Lou Menk Drive	Fort Worth	TX	76131-2830
Gerald D. Secundy		CA Council for Environmental and Economic Balance		100 Spear Street Suite 805	San Francisco	CA	94105
Brian Kelly	Acting Secretary	California Business, Transportation & Housing Agency		915 Capitol Mall Suite 350 B	Sacramento	CA	95814
Canh Nguyen	Environmental Scientist	California Department of Fish and Wildlife		17041 South Lovekin	Blythe	CA	92226
Alex Barnum	Deputy Secretary for Comms and External Affairs	California Environmental Protection Agency		1001 I Street PO Box 2815	Sacramento	CA	95812-2815
Grant Cope	Deputy Secretary for Environmental Policy	California Environmental Protection Agency		1001 I Street PO Box 2815	Sacramento	CA	95812-2815
Matt Rodriguiz	Secretary	California Environmental Protection Agency		1001 I Street PO Box 2815	Sacramento	CA	95812-2815
Jose Cortez	Water Resources Control Engineer	California Regional Water Quality Control Board	Colorado River Basin Region	73-720 Fred Waring Drive Suite 100	Palm Desert	CA	92260

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
John Laird	Secretary	California Resources Agency		1416 Ninth Street Suite 1311	Sacramento	CA	95814
Robina Suwol	Executive Director	California Safe Schools		Box 2756	Toluca Lake	CA	91610
Major General Anthony L. Jackson	State Parks Director	California State Parks		PO Box 942896	Sacramento	CA	94296
Kevin de León	Senate Pro	California State Senate		State Capitol	Sacramento	CA	95814
David Modeer	General Manager	Central Arizona Project		PO Box 43020	Phoenix	AZ	85080-3020
Central Arizona Water Conservation District		Central Arizona Water Conservation District		23636 N. 7th Street	Phoenix	AZ	85024
Frankie Burton	Public Involvement Specialist	CH2M HILL		155 Grand Avenue Suite 800	Oakland	CA	94612
Glenn Lodge	Environmental	Chemehuevi Indian Tribe		PO Box 1976	Havasu Lake	CA	92363
Shirley Smith	Vice Chairperson	Chemehuevi Indian Tribe		PO Box 1976	Havasu Lake	CA	92363
Citizens Utilities Company		Citizens Utilities Company		927 Hancock Road	Bullhead City	AZ	86442
David G Brownlee	City Manager	City of Needles		817 Third Street	Needles	CA	92363
Dr. Robert Richardson	Council Member	City of Needles		817 Third Street	Needles	CA	92363
Edward Paget	Mayor	City of Needles		817 Third Street	Needles	CA	92363
Jeff Williams	Vice Mayor	City of Needles		817 Third Street	Needles	CA	92363
Louise Evans	Council Member	City of Needles		817 Third Street	Needles	CA	92363
Shawn Gudmundson	Council Member	City of Needles		817 Third Street	Needles	CA	92363
Tom Darcy	Council Member	City of Needles		817 Third Street	Needles	CA	92363
Tony Fraizer	Council Member	City of Needles		817 Third Street	Needles	CA	92363
City of Needles Electric		City of Needles Electric		817 3rd Street	Needles	CA	92363
Clark County		Clark County	Comprehensive Planning Department	500 South Grand Central Parkway	Las Vegas	NV	89155
Dale Phillips	Vice Chairman	Cocopah Indian Tribe		14515 South Veterans Drive	Somerton	AZ	85350
Colorado River Basin Regional Water Quality Control Board		Colorado River Basin Regional Water Quality Control Board		73-720 Fred Waring Drive Suite 100	Palm Desert	CA	92260
Lindia Liu	Water Resources Control Engineer	Colorado River Board of California		770 Fairmont Avenue Suite 100	Glendale	CA	91203-1035
Mark Van Vlack	Senior Engineer	Colorado River Board of California		770 Fairmont Avenue Suite 100	Glendale	CA	91203-1035
Amanda Barrera	Council Member	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Amber Van Fleet		Colorado River Indian Tribes	Environmental Protection Office	26600 Mohave Road	Parker	AZ	85344
Amelia Flores	Secretary	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Angelita Thompson		Colorado River Indian Tribes		PO Box 360	Parker	AZ	85344
Charley Land	Water Quality Specialist	Colorado River Indian Tribes	Environmental Protection Office	26600 Mohave Road	Parker	AZ	85344
Dennis Patel	Education	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Dennis Welsh, Jr.	Council Member	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Duncan Fisher		Colorado River Indian Tribes		PO BOx 1034	Parker	AZ	85344
Genela Satawake		Colorado River Indian Tribes		PO Box 161	Parker	AZ	85344
Guthrie Dick	Director Environmental Protection Office	Colorado River Indian Tribes	Environmental Protection Office	26600 Mohave Road	Parker	AZ	85344
Herman TJ Laffoon	Council Member	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Johnson "J.D." Fisher	Council Member	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Joyce Diech		Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Ms Daphne Hill-Poolaw	Elder	Colorado River Indian Tribes		Route 1 Box 23-B	Parker	AZ	85344
Fred Nelson		Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Phillip Smith		Colorado River Indian Tribes		997 Smith Road	Needles	CA	92363
Richard Armstrong	Chief of Tribal Police	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Stewart Eddy	Utilities	Colorado River Indian Tribes		PO Box 827	Parker	AZ	85344
Theo DelaRosa		Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Valerie Welsh-Tahbo	Treasurer	Colorado River Indian Tribes		26600 Mohave Road	Parker	AZ	85344
Elvira Bailey-Holgate		Colorado River Indian Tribes Library		26600 Mohave Road	Parker	AZ	85344
Jose Luis Olmedo Velez	Executive Director	Comite Civico del Valle, Inc.		699 E. Street	Brawley	CA	92227
Penny Pew	State Director	Congressman Paul Gosar		122 N. Cortez Street Suite 104	Prescott	AZ	86301
Tom Van Flein	Chief of Staff	Congressman Paul Gosar		122 N. Cortez Street Suite 104	Prescott	AZ	86301
Shari Farrington	Field Representative	Congressman Trent Frank	8th District	7121 West Bell Road Suite 200	Glendale	AZ	85303

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
Control Board		Control Board		320 West 4th Street Suite 200	Los Angeles	CA	90013-2343
Cindy Chen		County of Los Angeles	Department of Environmental Health	5050 Commerce Drive	Baldwin Park	CA	91706
Mr. Keith Jones, REHS	Deputy Director	County of Riverside	Department of Environmental Health Hazardous Materials Management Division	PO Box 7489	Riverside	CA	92513-7489
Chief		Department of Environmental Health		PO Box 129261	San Diego	CA	92112
Department of Environmental Health	Chief	Department of Environmental Health		PO Box 129261	San Diego	CA	92112
Mr. Dale Deweese		Department of Environmental Health Hazardous Materials Management		PO Box 129261	San Diego	CA	92112-9261
Terry Fulp	Regional Director, Boulder City Office	Department of Interior	Bureau of Reclamation	Lower Colorado Regional Office P.O. Box 61470	Boulder City	NV	89006-1470
Aaron Yue	Project Manager, Geology Permitting and Corrective Action Branch	Department of Toxic Substances Control		5796 Corporate Avenue	Cypress	CA	90630
Julie Johnson		Department of Toxic Substances Control	File Room	5796 Corporate Avenue	Cypress	CA	90630
Karen Baker, CEG, CHG	Chief, Geological Services Branch	Department of Toxic Substances Control		5796 Corporate Avenue	Cypress	CA	90630
Miriam Ingenito	Director	Department of Toxic Substances Control		1001 I Street PO Box 806	Sacramento	CA	95814-0806
Reed Sato	Chief Counsel	Department of Toxic Substances Control		1001 I Street PO Box 806	Sacramento	CA	95814-0806
Stacy Lear	Public Participation Specialist	Department of Toxic Substances Control		5796 Corporate Avenue	Cypress	CA	90630-4732
Stewart Black	Deputy Director, Cleanup Program	Department of Toxic Substances Control		1001 I Street PO Box 806	Sacramento	CA	95814-0806
Yolanda Garza	Supervising HSE I	Department of Toxic Substances Control		5796 Corporate Avenue	Cypress	CA	90630
Department of Water Resources		Department of Water Resources		PO Box 942836	Sacramento	CA	94236
Jean Fuller	Senator	District 18		State Capitol Room 3063	Sacramento	CA	95814
Ben Hueso	Senator	District 40		State Capitol Room 2054	Sacramento	CA	95814
Larry Allen		Eagles Lodge		PO Box 10	Needles	CA	92363
Leslie Johnson		Eagle's Lodge 2599		PO Box 10	Needles	CA	92363
El Paso Natural Gas		El Paso Natural Gas		PO Box 1087	Colorado Springs	CO	80944
Leonard Owensby	Lodge Officer	Elk's Lodge No. 1608		1000 Lily Hill Drive	Needles	CA	92363
Energy Commission		Energy Commission		PO Box 944295	Sacramento	CA	94244-2950
Francisco DaCosta	Director	Environmental Justice Advocacy		4909 Third Street	San Francisco	CA	94124
Arsenio Mataka	Assistant Secretary	Environmental Justice and Tribal Affairs		1001 I Street PO Box 2815	Sacramento	CA	95812-2815
Barry Dill		First Strategic		300 W. Clarendon Suite 460	Phoenix	AZ	85013
Steve Roman		First Strategic		3022 N. Manor	Phoenix	AZ	85014
Fort Mojave Cultural Preservation		Fort Mojave Cultural Preservation		500 Merriman Avenue	Needles	CA	92363
Christine Medley	Bio-Defense Specialist	Fort Mojave Indian Tribe		500 Merriman Avenue	Needles	CA	92363
Luke Johnson	EPA Director, Environmental Office	Fort Mojave Indian Tribe		500 Merriman Avenue	Needles	CA	92363
Paul Jackson		Fort Mojave Indian Tribe	Culture Society	1900 Race Street	Needles	CA	92363
Rachel Zellner	On Behalf of FMIT	Fort Mojave Indian Tribe		500 Merriman Avenue Suite 250	Needles	CA	92363
Shan Lewis	Vice Chairman	Fort Mojave Indian Tribe		500 Merriman Avenue	Needles	CA	92363
Fort Mojave Tribal Council		Fort Mojave Tribal Council		500 Merriman Avenue	Needles	CA	92363
Chase Choate	Environmental Director	Fort Yuma-Quechan Indian Tribe	Environmental Protection Office	PO Box 1899	Yuma	AZ	85366-1899
Pauline Jose	Acting Chair/Museum Director	Fort Yuma-Quechan Indian Tribe		PO Box 1899	Yuma	AZ	85366-1899
Frontier Communications		Frontier Communications		Three High Ridge Park	Stamford	CT	06905
Tom Daugherty		Golden Shores		PO Box 666	Topock	AZ	86436
Eileen Sparks	Secretary	Golden Shores Water Company, Inc.		PO Box 37	Topock	CA	86436
Karen Brereton		Golden Shores Water Department		PO Box 37	Topock	AZ	86436
Don McWhirter	President	Golden Shores/Topock Civic Association		13136 Golden Shores Parkway PO Box 65	Topock	AZ	86436
Kim Stoddard		Golden Shores/Topock Station Library		PO Box 1086	Topock	AZ	86436-1086
Nancy McFadden	Executive Secretary	Governor Jerry Brown		c/o State Capital Suite 1173	Sacramento	CA	95814
Kevin Kinsall	Policy Advisor	Governor Jan Brewer	Natural Resources	1700 West Washington Street	Phoenix	AZ	85007
Bradley Angel		Greenaction of Health & Environmental Justice		559 Ellis Street	San Francisco	CA	94109
Brian Chamberlain		Havasupai Indian Tribe		PO Box 10	Supai	AZ	86435

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
Daphne Sierra		Havasupai Indian Tribe		PO Box 10	Supai	AZ	86435
Dimolene Kaska	Tribal Administrator	Havasupai Indian Tribe		PO Box 10	Supai	AZ	86435
Matthew Putesoy	Vice Chairperson	Havasupai Indian Tribe		PO Box 10	Supai	AZ	86435
Bennett Jackson	Cultural Resource Technician	Hualapai Department of Cultural Resources		PO Box 310	Peach Springs	AZ	86434
Inland Valley News		Inland Valley News		2009 Porterfield Way Suite C	Upland	CA	91786
Edward Moser		Keadjian Associates, LLC		690 Walnut Avenue #210, Mare Island	Vallejo	CA	94592
Chuck Wilson	County Administrative Officer	La Paz County		1112 Joshua Avenue	Parker	AZ	85344
John Drum	Vice Chairman	La Paz County		1112 Joshua Avenue	Parker	AZ	85344
Joy Reeves		La Paz County	Board of Supervisors	1112 Joshua Avenue	Parker	AZ	85344
Marion Shontz	Health Director	La Paz County		1112 Joshua Avenue	Parker	AZ	85344
Scott Bernhart	Office Manager	La Paz County	Community Development	1112 Joshua Avenue	Parker	AZ	85344
Steve Biro	Emergency Services Director	La Paz County		1112 Joshua Avenue	Parker	AZ	85344
DL Wilson	Chairman of the Board	La Paz County Board of Supervisors	District 1 Supervisor	1108 Joshua Avenue	Parker	AZ	85344
King Clapperton	Supervisor	La Paz County Board of Supervisors	District 2	1108 Joshua Avenue	Parker	AZ	85344
Mike Baker	Development Services Director	La Paz County, Arizona		1112 Joshua Suite 202	Parker	AZ	85344
Tara Short		Lake Havasu Aquatic Park		100 Park Avenue	Lake Havasu City	AZ	86403
Kathy Tippett	Director of Administration	Lake Havasu Area Chamber of Commerce		314 London Bridge Road	Lake Havasu City	AZ	86403
Charlie Cassens	Public Information Officer	Lake Havasu City		2330 McCulloch Boulevard North	Lake Havasu City	AZ	86403
Dean Barlow	Council Member	Lake Havasu City		2330 McCulloch Boulevard North	Lake Havasu City	AZ	86403
Don Callahan	Vice Mayor	Lake Havasu City		2330 McCulloch Boulevard North	Lake Havasu City	AZ	86403
Donna Brister	Council Member	Lake Havasu City		2330 McCulloch Boulevard North	Lake Havasu City	AZ	86403
Jeni Coke	Council Member	Lake Havasu City		2330 McCulloch Boulevard North	Lake Havasu City	AZ	86403
Mark S. Nexsen	Mayor	Lake Havasu City	Lake Havasu City Municipal Offices	2330 McCulloch Boulevard North	Lake Havasu City	AZ	86403
Cynthia Amador		Lake Havasu City Library		1770 North McCulloch Boulevard	Lake Havasu City	AZ	86403
Doyle Wilson		Lake Havasu City Public Works Department		2330 McCulloch Boulevard North	Lake Havasu City	AZ	86403
J. Greg Froslie, P.E.	Assistant Public Works Director, City Engineer	Lake Havasu City Public Works Department		900 London Bridge Road	Lake Havasu City	AZ	86404
Janice M. Schneider	Attorney	Latham & Watkins		555 11th St NW Suite 1000	Washington	DC	20004
LHP Realty		LHP Realty		501 W Highway 66	Kingman	AZ	86401-5735
Department of Toxics Epidemiology	Director	Los Angeles County	Department of Health Services	313 N. Figueroa Street Room 127	Los Angeles	CA	90012
Dr. Paul Simon		Los Angeles County	Department of Health Services	3530 Wilshire Boulevard Suite 800	Los Angeles	CA	90010
Los Angeles Regional Water Quality	Control Board	Los Angeles Regional Water Quality		320 West 4th Street Suite 200	Los Angeles	CA	90013-2343
Marc Lifsher	Reporter	Los Angeles Times		202 West 1st Street	Los Angeles	CA	90012
Bob Muir	Media Relations/ Spokesperson	Metropolitan Water District		PO Box 54153	Los Angeles	CA	90054-0153
John Clairday, Esq.	Deputy General Counsel	Metropolitan Water District		PO Box 54153	Los Angeles	CA	90054-0153
Kathy Cole	Executive Legislative Representative	Metropolitan Water District		PO Box 54153	Los Angeles	CA	90054-0153
Ruth Murphy	On-Site Manager	Metropolitan Water District	Southern California	PO Box 54153	Los Angeles	CA	90054-0153
Becky Bramlett	Environmental Health Sanitarian	Mohave County	Department of Public Health	2001 College Drive Suite 95	Lake Havasu City	AZ	86403-1953
Buster D. Johnson	Supervisor	Mohave County	Third District	2001 College Drive Suite 90	Lake Havasu City	AZ	86403
Gary Watson	Supervisor	Mohave County	First District	700 West Beale Street	Kingman	AZ	86401
Hildy Angius	Supervisor	Mohave County	Second District	1130 Hancock Road	Bullhead City	AZ	86442
Mary Ann Roche	EH Supervisor	Mohave County	Department of Public Health	PO Box 7000	Kingman	AZ	86402
Mike Hendrix	County Manager	Mohave County		PO Box 7000	Kingman	AZ	86401
Mike Hendrix	County Administrator	Mohave County		700 West Beale Street	Kingman	AZ	86402-7000
Nicolas S. Hont, P.E.	Director	Mohave County	Planning & Zoning Department	700 West Beale Street	Kingman	AZ	86402-7000
Patty Mead	Director	Mohave County	Department of Public Health	700 W. Beale Street PO Box 7000	Kingman	AZ	86402
Steven Moss	Supervisor	Mohave County	Mohave County Board of Supervisors	700 West Beale Street	Kingman	AZ	86402-7000
Mohave Electric Cooperative		Mohave Electric Cooperative		928 Hancock Road	Bullhead City	AZ	86442
Neil Young	Reporter	Mohave Valley Daily News		PO Box 21209	Bullhead City	AZ	86439
Deborah Hughson	Science Advisor	Mojave National Preserve		2701 Barstow Road	Barstow	CA	92311
Mojave Pipeline		Mojave Pipeline		PO Box 1087	Colorado Springs	CO	80944

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
Cynthia Gomez	Executive Secretary and Governor's Tribal Advisor	Native American Heritage Commission		1550 Harbor Blvd Suite 100	West Sacramento	CA	95691
Larry Myers	Executive Secretary	Native American Heritage Commission		915 Capitol Mall Room 364	Sacramento	CA	95814
Natural Resources Agency		Natural Resources Agency		1416 Ninth Street Suite 1311	Sacramento	CA	95814
Eva Webster		Needles Branch Library		1111 Bailey Avenue	Needles	CA	92363
Sue Godnick		Needles Chamber of Commerce		PO Box 705	Needles	CA	92363
Terri Anderson	President	Needles Chamber of Commerce		100 G Street	Needles	CA	92363
Robin Richards	Editor	Needles Desert Star		800 W. Broadway Suite E	Needles	CA	92363
Needles Historical Society		Needles Historical Society		923 Front Street	Needles	CA	92363
Wilma Baldwin		Needles Museum		211 Walnut	Needles	CA	92363
Needles Public Utilities Authority		Needles Public Utilities Authority		817 3rd Street	Needles	CA	92363
Grace Robinson		Needles Senior Citizens Center		1699 Bailey Avenue	Needles	CA	92363
Susan East		Needles Senior Citizens Center		1699 Bailey Avenue	Needles	CA	92363
Diane Eckles	Chief	Office of Environmental Health	Arizona Department of Health Services	150 N 18th Avenue Suite 140	Phoenix	AZ	85007
Nancy Brown	Advisory Council on Historic Preservation	Office of Federal Agency Programs		1100 Pennsylvania, NW Suite 803	Washington	DC	20004
Dr. Richard Sanchez	Director	Orange County Health Care Agency Environmental		1241 East Dyer Road Suite 120	Santa Ana	CA	92705
Chris Smith	Sr. Environmental Inspector	Pacific Gas and Electric Company		1716 McCulloch Blvd South	Lake Havasu City	AZ	86406-8845
Danielle Starring	Project Manager	Pacific Gas and Electric Company	Contracting/Construction Support	3401 Crow Canyon Road	San Ramon	CA	94583
Glen Riddle		Pacific Gas and Electric Company		PO Box 337	Needles	CA	92363
Jeff Smith	Media Relations	Pacific Gas and Electric Company		705 P Street	Fresno	CA	93721
Jose Moreno-Jimenez	Principal Remediation External Affairs	Pacific Gas and Electric Company		22999 Community Boulevard	Hinkley	CA	92347
Kristen Doud	Community Relations Representative	Pacific Gas and Electric Company		1918 H Street 2nd floor	Bakersfield	CA	93301
Lee Stoney		Pacific Gas and Electric Company	Environmental Remediation	3401 Crow Canyoon Road	San Ramon	CA	94583
Melissa A. Lavinson	Sr. Director Federal Government Relations	Pacific Gas and Electric Company		900 7th Street NW Suite 950	Washington	DC	20001
Valisa E. Nez	Project Environmental Scientist	Pacific Gas and Electric Company		2901 Claremont Avenue Apt 4	Berkeley	CA	94705-2458
Virginia Strohl	Senior Terrestrial Biologist	Pacific Gas and Electric Company		1455 E. Shaw Avenue	Fresno	CA	93710
Duce Minor		Parker Area All. Comm Empowerment		1309 9th Street	Parker	AZ	85344
Dan Beaver	Mayor	Parker City		1314 11th Street	Parker	AZ	85344
Jerry Hooper	Vice Mayor	Parker City		1314 11th Street	Parker	AZ	85344
Lori Wedemeyer	Town Manager (Acting)	Parker City		PO Box 610	Parker	AZ	85344
John Gutekunst		Parker Pioneer		726 South Kofa Avenue	Parker	AZ	85344-5025
Jeannie Smith		Parker Public Library		1001 Navajo Avenue	Parker	AZ	85344
Candy Cockrell	Town Clerk	Parker Town Hall		1314 11th Street	Parker	AZ	85344
Arthur W Tate	Owner	Pirate Cove Resort		1100 London Bridge Road Suite G102	Lake Havasu City	AZ	86404
Regional Water Quality Control Board		Regional Water Quality Control Board	Los Angeles	320 West 4th Street Suite 200	Los Angeles	CA	90013-2343
Representative Doris Goodale		Representative Doris Goodale		1700 West Washington Street Room 306	Phoenix	AZ	85007
Representative Sonny Borrelli	Representative	Representative Sonny Borrelli		1700 West Washington Street Room 306	Phoenix	AZ	85007
Alia Beard Rau	Reporter	Republic Media		200 East Van Buren	Phoenix	AZ	85004
Mr. Larry Ward	Assessor	Riverside County		2724 Gateway Drive	Riverside	CA	92507
Gary Ovitt	Supervisor	San Bernardino County	Fourth District	385 North Arrowhead Avenue Fifth Floor	San Bernardino	CA	92415
Gregg Devereaux	Chief Executive Officer	San Bernardino County	Administrative Office	385 North Arrowhead Avenue	San Bernardino	CA	92415
Curt Hagman	Supervisor	San Bernardino County	District 4	385 North Arrowhead Avenue Fifth Floor	San Bernardino	CA	92415
James Ramos	Supervisor	San Bernardino County	Third District	385 North Arrowhead Avenue Fifth Floor	San Bernardino	CA	92415
Janice Rutherford	Supervisor	San Bernardino County	Second District	385 North Arrowhead Avenue Fifth Floor	San Bernardino	CA	92415
Josie Gonzales	Supervisor	San Bernardino County	Fifth District	385 North Arrowhead Avenue Fifth Floor	San Bernardino	CA	92415
Keith Lee	Director Regional Parks	San Bernardino County		777 E. Rialto Avenue	San Bernardino	CA	92415
Mr. Tom Hudson	Director	San Bernardino County	Land Use Services Department	385 North Arrowhead Avenue	San Bernardino	CA	92415
Mr. Daniel Avera	Director	San Bernardino County	Department of Public Health	385 North Arrowhead Avenue	San Bernardino	CA	92415
Robert A. Lovingood	Supervisor	San Bernardino County	First District	385 North Arrowhead Avenue Fifth Floor	San Bernardino	CA	92415

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
Troy Burton	Assistant Director Regional Parks	San Bernardino County		777 E. Rialto Avenue	San Bernardino	CA	92416
San Bernardino County Fire Department		San Bernardino County Fire Department	Hazardous Materials Division	620 South "E" Street	San Bernardino	CA	92415-0182
Denise M Landstedt	Senior Water Resources Specialist	San Diego County	Water Authority	4677 Overland Avenue	San Diego	CA	92123
Bob Huff	Senate Minority Leader	Senate Minority Leader Bob Huff		State Capitol Room 305	Sacramento	CA	95814
Jennifer Duck	Chief of Staff	Senator Dianne Feinstein	San Francisco Office	1 Post Street Suite 2450	San Francisco	CA	94104
Ben Starck	Field Representative	Senator Jean Fuller	District 16	State Capitol Room 3063	Sacramento	CA	95814
Dana Culhane	District Director	Senator Jean Fuller	District 16	State Capitol Room 3063	Sacramento	CA	95814
Christine Chucri	State Director	Senator Jeff Flake		Senate Russell Office Building 368	Washington	DC	20510
Matthew Specht	Chief of Staff	Senator Jeff Flake		Senate Russell Office Building 368	Washington	DC	20510
Gina Gormley	State Director	Senator John McCain		2201 East Camelback Road Suite 115	Phoenix	AZ	85016
Pablo Carrillo	Chief of Staff	Senator John McCain		2201 East Camelback Road Suite 115	Phoenix	AZ	85016
Senator Kelli Ward	Senator	Senator Kelli Ward		1700 West Washington Street Room 306	Phoenix	AZ	85007
Liz Allen		Sierra Club		394 Blaisdell	Claremont	CA	91711
SoCal Gas		SoCal Gas		PO Box C	Monterey Park	CA	91756
Mr. Jay Chen	Manager	South Coast Air Quality Management District		21865 East Copley Drive	Diamond Bar	CA	91765-4182
Southwest Natural Gas		Southwest Natural Gas		PO Box 98890	Las Vegas	NV	8919-8890
Southwest Water Company		Southwest Water Company		12535 Reed Road	Sugar Land	TX	77478
Michael Nutt	Communications Manager	Southwest Water Inc.		PO Box 8245	Fort Mohave	AZ	86427
Victor Hewlett	Owner	Southwest Water Inc.		PO Box 8245	Fort Mohave	AZ	86427
Toni Atkins	Assembly Speaker	California State Assembly		PO Box 942849	Sacramento	CA	94249-0078
Sheila M. Soderberg, PG	Senior Engineering Geologist	Spills, Leaks, Investigation & Cleanup Program Central Coast Water Board		895 Aerovista Place Suite 101	San Luis Obispo	CA	93401
Jay Obernolte	Assembly Member	State Assembly (District 33)		State Capitol Office: Room 4116	Sacramento	CA	94249
Patricia DuMont	Environmental Compliance Supervisor, Resource Services	State Department of Parks and Recreation	Resources Management Division	1416 9th Street	Sacramento	CA	95814
State Department of Parks and Recreation		State Department of Parks and Recreation	Colorado Desert District	200 Palm Canyon Drive	Borrego Springs	CA	92004-5005
Doug Ducey	Governor	State of Arizona		1700 West Washington Street	Phoenix	AZ	85007
John McCain	Senator	State of Arizona	Arizona	2201 East Camelback Road Suite 115	Phoenix	CA	85016
Representative		State of Arizona	District 24	1700 West Washington Street Room 345	Phoenix	AZ	85007-2812
Representative		State of Arizona	District 3	1700 West Washington Street Room 303	Phoenix	AZ	85007-2812
Trent Franks	Representative	State of Arizona	District 8	7121 West Bell Road Suite 200	Glendale	AZ	85308
Barbara Boxer	Senator	State of California		3404 10th Street Suite 704	Riverside	CA	92501
Chris Carillo	Field Representative	State of California	Office of Senator Diane Feinstein	750 B Street Suite 1030	San Diego	CA	92101
Dianne Feinstein	Senator	State of California		One Post Street Suite 2450	San Francisco	CA	94104
Jerry Brown	Governor	State of California		c/o State Capitol Suite 1173	Sacramento	CA	95814
Shannon Grove	State Assembly	State of California	District 34	4900 California Avenue Suite #100-B	Bakersfield	CA	93309
Ahmad Kashkoli		State Water Resources Control Board	Division of Financial Assistance Regional Programs Unit	1001 I Street 16th Floor	Sacramento	CA	95815
Mary Benson		Sun Valley Business Improvement District		11070 Sheldon Street	Sun Valley	CA	91352
Kelly Moran		TDC Environmental, LLC		4020 Bayview Avenue	San Mateo	CA	94403
The Black Voice News		The Black Voice News		PO Box 912	Riverside	CA	92502-0912
Steven P. McDonald	On Behalf of FMIT	The McDonald Law Firm, LC		7855 Fay Avenue Suite 250	La Jolla	CA	92037-4265
Dave Bell	Reporter	Today's News-Herald		2225 W. Acoma Boulevard	Lake Havasu City	AZ	86403
Chet Hitt	Director	Topock 66		14999 Historic Route 66	Topock	AZ	86436
Topock 66		Topock 66		14999 Historic Route 66	Topock	AZ	86436
Pat Colloran	Editor	Topock Topics / Golden Shores Women's Club / Golden Shores Civic Center		PO Box 999	Topock	AZ	86436
Debi Livesay	Water Resource Manager	Torres-Martinez Desert Cahuilla Indian Tribe		PO Box 1160	Thermal	CA	92274
Matt Krystall	Tribal Resource Manager	Torres-Martinez Desert Cahuilla Indian Tribe		PO Box 1160	Thermal	CA	92274
Raymond Torres	Vice Chairman	Torres-Martinez Desert Cahuilla Indian Tribe		PO Box 1160	Thermal	CA	92274

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
Rodney Bonner	Tribal Administrator	Torres-Martinez Desert Cahuilla Indian Tribe		PO Box 1160	Thermal	CA	92274
Darla K. Tilley	Community /Senior Center Director	Town of Parker		1115 12th Street	Parker	AZ	85344
Nick Panchev	Director	Toxic Tort Towns (TTT)		25633 Anderson Ave	Barstow	CA	92311-3435
Transwestern Pipeline		Transwestern Pipeline		PO Box 5560 Attn: Randy Williams	Mohave Valley	AZ	86440
Transwestern Pipeline		Transwestern Pipeline		3545 Rainbow Drive Attn: Randy Lance	Kingman	AZ	86409
Charlie Schlinger	Civil Environmental Engineer	TRC		1401 North 4th Street #212	Flagstaff	AZ	86004
Michael Endicott		Tres Amigos Verdes		912 Cole Street Box 163	San Francisco	CA	94117
Darrell Mike	Spokesman	Twenty-Nine Palms Indian Tribe		46-200 Harrison Place	Coachella	CA	92236
Dr. Marshall Cheung	Environmental Coordinator	Twenty-Nine Palms Indian Tribe		47-250 Dillon Road	Coachella	CA	92236
William Anderson	Environmental Scientist III	Twenty-Nine Palms Indian Tribe		47-250 Dillon Road	Coachella	CA	92236
Lorri Gray	Regional Director	U.S. Bureau of Reclamation	Lower Colorado Regional Office	PO Box 61470	Boulder City	NV	89006-1470
Amanda Dodson	Assistant Field Manager - Lands & Resources	U.S. Department of the Interior	Bureau of Land Management	2610 Sweetwater Avenue	Lake Havasu City	AZ	86406
Becky Heick	District Manager	U.S. Department of the Interior	Bureau of Land Management	2610 Sweetwater Avenue	Lake Havasu City	AZ	86406
Brian Farmer	Deputy Resources Management Office Director	U.S. Department of the Interior	Bureau of Reclamation	PO Box 61470 Attn: LC 2640	Boulder City	NV	89006-1470
Cathy Wolff-White	Environmental Protection Specialist	U.S. Department of the Interior	Bureau of Land Management	2610 Sweetwater Avenue	Lake Havasu City	AZ	86406
Craig J. Johnson	Archaeologist	U.S. Department of the Interior	Bureau of Land Management	2755 Mission Boulevard	Kingman	AZ	86401
Deborah Rawhouser	Associate State Director	U.S. Department of the Interior	Bureau of Land Management	One North Central Avenue Suite 800	Phoenix	AZ	85004-4427
Kimber Liebhauser	Field Manager	U.S. Department of the Interior	Bureau of Land Management	2610 Sweetwater Avenue	Lake Havasu City	AZ	86406
Marc Maynard	Environmental Compliance Group Manager	U.S. Department of the Interior	Bureau of Reclamation	500 Fir Street	Boulder City	NV	89006-1470
Mike Biever	Environmental Protection Specialist	U.S. Department of the Interior	Bureau of Reclamation	7301 Calle Agua Salada	Yuma	AZ	85364
Mike Henderson	Assistant Field Manager for Recreation & Visitor Services	U.S. Department of the Interior	Bureau of Land Management	2610 Sweetwater Avenue	Lake Havasu City	AZ	86406
Neil Kornze	Director	U.S. Department of the Interior		1849 C Street NW Room 5665	Washington	DC	20240
Pamela Innis		U.S. Department of the Interior	Office of Environmental Policy and Compliance	PO Box 25007 MS D108	Denver	CO	80225-0007
Raymond Suazo	AZ State Director	U.S. Department of the Interior	Bureau of Land Management	One North Central Avenue Suite 800	Phoenix	AZ	85004-4427
Robb Pilkington	Representative	U.S. Department of the Interior	Fish and Wildlife Services: Havasu National Wildlife Refuge	317 Mesquite Avenue	Needles	CA	92363
Ruben Sanchez	Field Manager	U.S. Department of the Interior	Bureau of Land Management	2755 Mission Boulevard	Kingman	AZ	86401
William Lodder, Jr.	Manager	U.S. Department of the Interior	Office of Environmental Policy and Compliance	1849 C Street NW MS 2340	Washington	DC	20240
Willie Taylor	Director, Environmental Policy & Compliance	U.S. Department of the Interior		1849 C Street NW Room 5665	Washington	DC	20240
Benjamin N. Tuggle	Regional Director	U.S. Fish and Wildlife Service	Region 2 (Southwest)	PO Box 1306	Albuquerque	NM	87103-1306
Carrie Marr	Environmental Contaminant Specialist	U.S. Fish and Wildlife Service		2321 W Royal Palm Road Suite 103	Phoenix	AZ	85021
Senior leadership		U.S. Fish and Wildlife Service		317 Mesquite Avenue	Needles	CA	92363
University of California, Office of the President - Natural Reserve System		University of California	Office of the President -Natural Reserve System	1111 Franklin Street 6th Floor	Oakland	CA	94607-5200
Planning/Environmental Resources Branch		US Army Corp of Engineers	Los Angeles District	915 Wilshire Boulevard Suite 1101	Los Angeles	CA	90017
US Army Corp of Engineers Arizona/Nevada		US Army Corp of Engineers	Arizona/Nevada Area	3636 North Central Avenue Suite 900	Phoenix	AZ	95012-1939
Janice Hellen		US Bureau Reclamation	Yuma Area Off	7301 Calle Agua Salada	Yuma	AZ	85364
Jim Cherry	Area Manager	US Bureau Reclamation	Yuma Area Off	7301 Calle Agua Salada	Yuma	AZ	85364
US Fish and Wildlife Service Ecological Services		US Fish and Wildlife Service Ecological Services		2177 Salk Avenue Suite 250	Carlsbad	CA	92008-7385
US Fish and Wildlife Service Ecological Services		US Fish and Wildlife Service Ecological Services		6010 Hidden Vallley Road Suite 101	Carlsbad	CA	92011-4219
Valley Well Drilling		Valley Well Drilling		PO Box 637	Topock	AZ	86436
Chuck White		Waste Management Inc.		4127 Frontera Drive	Davis	CA	95618-6709
Western Arizona Council of Governments		Western Arizona Council of Governments		208 North Fourth Street	Kingman	AZ	86401
Steve Mauk	Director	Yavapai County		1120 Commerce Drive	Prescott	AZ	86305
Alagra Raymond				[redacted]	Topock	AZ	86436
Allan Rawlings				[redacted]	[redacted]	[redacted]	[redacted]
Anne Twomey				[redacted]	[redacted]	[redacted]	[redacted]
Barbara Bivens				[redacted]	[redacted]	[redacted]	[redacted]
Barbara McBride				[redacted]	[redacted]	[redacted]	[redacted]

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
Barbara Reed				[redacted]	[redacted]	[redacted]	[redacted]
Ben Coleman				[redacted]	[redacted]	[redacted]	[redacted]
Beverly Martin				[redacted]	[redacted]	[redacted]	[redacted]
Bill Hartwick				[redacted]	[redacted]	[redacted]	[redacted]
Bob Guley				[redacted]	[redacted]	[redacted]	[redacted]
Bob Thurbush				[redacted]	[redacted]	[redacted]	[redacted]
Bonnie and Ronald Griffin				[redacted]	[redacted]	[redacted]	[redacted]
Bonnie Deesen				[redacted]	[redacted]	[redacted]	[redacted]
Bruce Blizzard				[redacted]	[redacted]	[redacted]	[redacted]
C. Brown				[redacted]	[redacted]	[redacted]	[redacted]
C.M. Layman				[redacted]	[redacted]	[redacted]	[redacted]
Charles Bassett				[redacted]	[redacted]	[redacted]	[redacted]
Charles Deshazer				[redacted]	[redacted]	[redacted]	[redacted]
Charles Freteluco				[redacted]	[redacted]	[redacted]	[redacted]
Charles Sanders				[redacted]	[redacted]	[redacted]	[redacted]
Charlie Brown				[redacted]	[redacted]	[redacted]	[redacted]
Chrissy Mazzeo				[redacted]	[redacted]	[redacted]	[redacted]
Chuck Curtis, P.E.				[redacted]	[redacted]	[redacted]	[redacted]
Coreen Conrey				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
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Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
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Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Current Resident				[redacted]	[redacted]	[redacted]	[redacted]
Cynthia A. Paul				[redacted]	[redacted]	[redacted]	[redacted]
Dale Holste				[redacted]	[redacted]	[redacted]	[redacted]

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code
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Diane Francis				[redacted]	[redacted]	[redacted]	[redacted]
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Don McCane				[redacted]	[redacted]	[redacted]	[redacted]
Ed Chemleski				[redacted]	[redacted]	[redacted]	[redacted]
Edward Daves				[redacted]	[redacted]	[redacted]	[redacted]
Elizabeth McKenzie				[redacted]	[redacted]	[redacted]	[redacted]
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Holly Lundgren				[redacted]	[redacted]	[redacted]	[redacted]
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Jack and Karen Kelley Trustees				[redacted]	[redacted]	[redacted]	[redacted]
Jack Meister				[redacted]	[redacted]	[redacted]	[redacted]
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Jeannie Boyer				[redacted]	[redacted]	[redacted]	[redacted]
Jeff Flake				[redacted]	[redacted]	[redacted]	[redacted]
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Jim Gwinnup				[redacted]	[redacted]	[redacted]	[redacted]
Jim Vann				[redacted]	[redacted]	[redacted]	[redacted]
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John and Barbara Thompson				[redacted]	[redacted]	[redacted]	[redacted]
John Barney				[redacted]	[redacted]	[redacted]	[redacted]
John Hovda				[redacted]	[redacted]	[redacted]	[redacted]
John McFadyen				[redacted]	[redacted]	[redacted]	[redacted]
Joseph P. Mellette				[redacted]	[redacted]	[redacted]	[redacted]
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Kathleen Bradley				[redacted]	[redacted]	[redacted]	[redacted]
Kathy Eaton				[redacted]	[redacted]	[redacted]	[redacted]
Kayleen Maya				[redacted]	[redacted]	[redacted]	[redacted]
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Marcelina Brunette							
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Maria O. Burrows							
Marilyn Hammond							
Marsha Ross							
Martin and Marcia Brown							
Martin L Richardson							
Matt Klein							
Melvin Wood							
Michael Chadburn							
Michael Heaton							
Michelle Atta							
Mike Black							
Mike Shaver							
Nancy Caterino							
P.K. Whitledge							
Peter and Charlotte Guarisco							
Peter J. Demus							
Philip Rusch							
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Ralph A. Loda							
Ralph Matthews							
Ralph W. Smith							
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Rick Dischinger							
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Appendix B-3

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Dave Fogerson	Sr. Civil Engineer	San Diego County	Water Authority	4677 Overland Avenue	San Diego	CA	92123	dfogerson@sdcwa.org
Win Wright	Professional Engineer, Certified Professional Hydrologist	Southwest Hydro- Logic		265 Ridge Road	Durango	CO	81303	wgwright@frontier.net
Representative		State of Arizona	District 24	1700 West Washington Street Room 345	Phoenix	AZ	85007-2812	
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Michael Anderson	DOI Engineering Support	SUMMIT Technical Resources Inc.		5460 Ward Road Suite 205	Arvada	CO	80002	manderson@summitusa.net
Steven P. McDonald	On Behalf of FMIT	The McDonald Law Firm, LC		7855 Fay Avenue Suite 250	La Jolla	CA	92037-4265	smcdonald@spmcdonaldlaw.com
Roland Ferrer	Planning Director	Torres-Martinez Desert Cahuilla Indian Tribe		PO Box 1160	Thermal	CA	92274	RFerrer@tmdci-nsn.gov
Nick Panchev	Director	Toxic Tort Towns (TTT)		25633 Anderson Ave	Barstow	CA	92311-3435	info@toxictorttowns.org
Charlie Schlinger	Civil Environmental Engineer	TRC		1401 North 4th Street #212	Flagstaff	AZ	86004	cms@zanjero.biz
Wilfred J. Nabahe	Director	Twenty-Nine Palms Indian Tribe	Environmental Protection Office	26600 Mohave Road	Parker	AZ	85344	wilfred.nabahe@crit-nsn.gov
John Krause	Regional Environmental Scientist	U.S. Bureau of Indian Affairs	Branch of Environmental Management	BIA, Western Regional Office Branch of Environmental Management, PO Box 10	Phoenix	AZ	85001	John.Krause@bia.gov
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Jeff Smith	Project Manager Boulder City Office	U.S. Department of the Interior	Bureau of Reclamation	PO Box 61470 Attn: LC 2640	Boulder City	NV	89006-1470	JefferySmith@usbr.gov
Kimber Liebhauser	Field Manager	U.S. Department of the Interior	Bureau of Land Management	2610 Sweetwater Avenue	Lake Havasu City	AZ	86406	kliebhau@blm.gov
Linda L. Miller	Refuge Manager	U.S. Department of the Interior	Fish and Wildlife Services: Havasu National Wildlife Refuge	317 Mesquite Avenue	Needles	CA	92363	linda_l_miller@fws.gov
Marc Maynard	Environmental Compliance Group Manager	U.S. Department of the Interior	Bureau of Reclamation	500 Fir Street	Boulder City	NV	89006-1470	MMaynard@usbr.gov
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Daryl Magnuson	Deputy Refuge Manager	U.S. Fish and Wildlife Service	National Wildlife Refuge	317 Mesquite Ave	Needles	CA	92363	Daryl_Magnuson@fws.gov
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Vincent Slayton-Garcia, REHS	District Environmental Health Officer	U.S. Public Health Service CDR, IHS, Phoenix Area IHS/Western AZ District, Office of Environmental Health & Engineering	Indian Health Service	1553 W. Todd Drive #107	Tempe	AZ	85283	vincent.garcia@ihs.gov
James Peterson		U.S. Senate	Office of Senator Diane Feinstein	750 B Street Suite 1030	San Diego	CA	92101	james_peterson@feinstein.senate.gov

Name	Title	Company/ Organization	Department/ Region	Mailing Address	City	State	Zip Code	Email
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Anne Twomey				[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Anthony Fletcher	Communtiy Member			[redacted]				[redacted]
Dennis Fatlokowicz				[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Dottie Houcle				[redacted]				[redacted]
Mike Exsted				[redacted]				[redacted]

Appendix C

NOP Public Notice

State of California
Department of Toxic Substances Control

Public Scoping Meetings

The California Department of Toxic Substances Control (DTSC) invites the public to provide comments on the Notice of Preparation for a Draft Subsequent Environmental Impact Report for the **Topock Compressor Station Final Groundwater Remediation Project**.

DTSC determined that the preparation of a Subsequent Environmental Impact Report is required to evaluate potential environmental impacts resulting from design details of the selected remedy (In-situ Treatment with Freshwater Flushing) that were modified since the approval of the conceptual Groundwater Remediation Project in the 2011 Final Groundwater Remedy Environmental Impact Report (SCH No. 2008051003) and the 2013 Addendum to the Environmental Impact Report.

Attend upcoming public meetings to learn more about the project and provide comments to help scope the environmental issues to be addressed in the Draft Subsequent Environmental Impact Report.

MEETING LOCATIONS

Needles
Tuesday, May 19, 2015, 5 to 7 p.m.
Needles Senior Citizens Center
1699 Bailey Ave.
Needles, CA 92363

Golden Shores
Wednesday, May 20, 2015, 5 to 7 p.m.
Golden Shores Community Center
13136 Golden Shores Parkway
Golden Shores, AZ 86436

Comments may be submitted at public meetings, mailed, faxed or emailed to:

Aaron Yue, Project Manager
Department of Toxic Substances Control
5796 Corporate Ave., Cypress, CA 90630
Fax: (714) 484-5329
Email: aaron.yue@dtsc.ca.gov

For more information, visit **www.dtsc-topock.com** or contact Aaron Yue, DTSC Project Manager, at (714) 484-5439 or aaron.yue@dtsc.ca.gov.

All comments must be submitted to DTSC, postmarked or emailed, no later than June 4, 2015, for consideration in the Draft Subsequent Environmental Impact Report.

ACCOMMODATIONS FOR DISABLED AND INFORMATION FOR THE HEARING IMPAIRED: The meeting rooms are accessible to people with disabilities. If translation services are needed or if additional accommodations for the disabled are needed, please notify Stacey Lear at (714) 484-5354 or email to stacey.lear@dtsc.ca.gov no later than 10 working days before the meeting. TYY users may use the California Relay Service at 711 in state or 1-800-855-7100 outside California.

5-day forecast for the Tri-state

TODAY
Partly sunny and breezy with a chance of rain. High around 85. South wind 15 to 25 mph. Overnight: Partly cloudy with a low around 66.

WEDNESDAY
Mostly sunny and breezy with a high around 94. South wind 15 to 25 mph. Overnight: Partly cloudy with a low around 63.

THURSDAY
Mostly sunny and breezy with a slight chance of rain. High around 82. Overnight: Partly cloud with a chance or rain. Low around 59.

FRIDAY
Partly sunny with a chance of rain. High around 74. Overnight: Mostly cloudy with a chance of rain. Low around 53.

SATURDAY
Partly sunny with a chance of rain. High around 78. Overnight: Partly cloudy with a chance of rain. Low around 61.

Temperatures

Statistics from yesterday:

High/low temperatures:
Bullhead City:

88/68

Other cities:
Kingman 72/54
Lake Havasu 84/71
Laughlin 87/70
Needles 87/73

In the air

Precipitation:
Bullhead City
Yesterday ..... 0.20"
Season to date ..... 1.97"
Normal to date ..... 2.87"
Last rainfall ..... April 25
Humidity at 6 p.m. 80%
Dewpoint at 6 p.m. ..... 59°

Life Guides:
UV Rating ..... Very High
Air Quality ..... Very Good
Pollen Count ..... Medium

In the water

Lake Mohave Level 642.57
Lake water temperature ..... 69°
Expected releases today from Davis Dam:
Midnight ..... 3 units
6 a.m. ..... 4 units
9 p.m. ..... 3 units
11 p.m. ..... 2 units

Average of 16,400 cfs
For info 702-293-8373

In the sky

Sun and Moon, today:
Sunrise ..... 5:44 a.m.
Sunset ..... 7:26 p.m.
Moonrise ..... 9:08 p.m.
Moonset ..... 6:58 a.m.

Moon Phases

New	First	Full	Last
May 17	May 25	June 2	May 11

Arizona temperatures

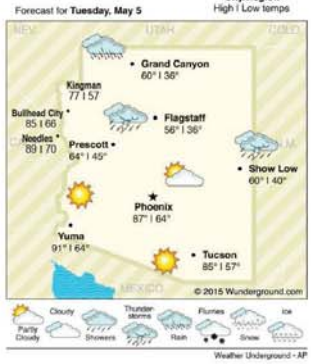
Temperatures indicate Monday's high and low to 5 p.m. MST.

	Hi	Lo	Prc
Alpine	71	28	
Bellemont	59	34	0.04
Bisbee	74	54	
Carefree	86	54	1.10
Davis	82	63	
Douglas	88	57	
Elgin	75	47	
Eloy	94	61	0.11
Flagstaff	59	37	0.07
Grand Canyon	57	32	0.03
Nogales	78	54	
Page	73	57	T
Payson	76	50	0.22
Phoenix Deer Valley	83	61	0.54
Phoenix Sky Harbor	85	65	0.22
Prescott	61	55	0.05
Safford	82	62	T
Saint Johns	67	48	0.14
Scottsdale	82	63	0.47
Sedona	68	54	0.02
Show Low	66	45	0.19
Sonora Desert	80	62	
Springerville	63	37	0.08
Tucson	83	63	T
Williams	75	39	0.06
Window Rock	65	43	0.22
Winslow	68	49	0.21
Youngtown	94	65	0.24
Yuma	89	70	

Arizona forecast

Forecast for **Tuesday, May 5**

City/Region
High | Low temps



Weather Underground - AP

National temperatures

Temperatures indicate Sunday's high and low to 5 p.m. MST.

	Hi	Lo	Prc	Otlk
Albany,N.Y.	87	54		Cldy
Albuquerque	77	56	.62	Cldy
Amarillo	79	55	.02	Rain
Anchorage	57	33		Cldy
Atlanta	81	59		PCldy
Atlantic City	84	47		Rain
Austin	84	59		Cldy
Baltimore	84	50		Rain
Billings	74	43		Cldy
Birmingham	83	57		Clr
Bismarck	70	30		PCldy
Boise	84	51		PCldy
Boston	84	67		Cldy
Buffalo	79	55		Cldy
Burlington,Vt.	86	48		Clr
Casper	68	38	.07	Cldy
Cheyenne	57	44	.01	Rain
Chicago	74	58	.32	Rain
Cincinnati	80	56		PCldy
Cleveland	81	60	.04	Rain
Columbia,S.C.	84	54		Clr
Columbus,Ohio	81	52	.22	Cldy
Concord,N.H.	87	42		Cldy
Dallas-Ft Worth	81	65		Cldy
Dayton	78	61		Cldy
Denver	80	49	.10	Rain
Des Moines	71	61	.02	Rain
Detroit	77	61	.10	Cldy
Duluth	67	43		Clr
El Paso	86	65	.02	PCldy
Fairbanks	61	37		Cldy
Fargo	70	35		Clr
Grand Rapids	74	58	.44	Cldy
Great Falls	76	33		Cldy
Greensboro,N.C.	81	56		Clr
Hartford Spgfld	87	46		Cldy
Helena	78	39		Cldy
Honolulu	84	71	.01	Clr
Houston	84	61		Rain
Indianapolis	76	58	.13	Cldy
Jackson,Miss.	84	51		Clr
Jacksonville	80	54		PCldy
Juneau	59	37		Clr
Kansas City	83	60		PCldy
Key West	79	74		Rain
Las Vegas	83	70		PCldy
Little Rock	84	60		PCldy
Los Angeles	69	56		Cldy
Louisville	85	58		PCldy
Lubbock	80	57	1.73	Rain
Memphis	85	62		Clr
Miami Beach	80	71		Rain
Milwaukee	88	60		Rain
Mpls-St Paul	72	50	.04	Cldy
Nashville	85	53		Clr
New Orleans	82	63	.02	PCldy
New York City	85	57		Cldy
Oklahoma City	81	60		Cldy
Omaha	67	57	.05	Cldy
Orlando	83	65		Clr
Philadelphia	85	54		Rain
Pittsburgh	82	50		Rain
Portland,Maine	76	42		Cldy
Portland,Ore.	64	47		Rain
Providence	82	48		Cldy
Raleigh-Durham	82	53		Clr
Rapid City	59	44	.22	Cldy
Reno	79	49		PCldy
Richmond	84	54		Clr
Sacramento	74	51		Clr
St Louis	86	68	.01	PCldy
Salt Lake City	76	58		Cldy
San Antonio	83	68		Cldy
San Diego	68	61		Cldy
San Francisco	61	52		Clr
Santa Fe	73	48	.01	Cldy
St Ste Marie	59	53	.31	Clr
Seattle	63	45		Rain
Shreveport	84	56		Cldy
Sioux Falls	72	45		Cldy
Spokane	75	43		PCldy
Syracuse	84	52		Cldy
Tampa	84	65		Cldy
Topeka	85	62	.01	PCldy
Tulsa	83	64		Cldy
Washington,D.C.	84	56		Rain
Wichita	85	57		Clr

National Temperature Extremes
High Monday Not Available
Low Monday 24 at Poplar, Mont., and Olney, Mont.

Today in history

Today is Tuesday, May 5, the 125th day of 2015. There are 240 days left in the year.

Today's Highlights in History:

On May 5, 1945, in the only fatal attack of its kind during World War II, a Japanese balloon bomb exploded on Gearhart Mountain in Oregon, killing Elsie Mitchell, the 26-year-old pregnant wife of a minister, and five children: Dick Patzke, 14; Jay Gifford, 13; Edward Engen, 13; Joan Patzke, 13; and Sherman Shoemaker, 11.

On this date:

In 1821, Napoleon Bonaparte, 51, died in exile on the island of St. Helena.

In 1862, Mexican troops defeated French occupying forces in the Battle of Puebla.

In 1865, what's believed to be America's first train robbery took place as a band of criminals derailed a St. Louis-bound train near North Bend, Ohio; they proceeded to rob the passengers and loot safes on board before getting away.

In 1925, schoolteacher John T. Scopes was charged in Tennessee with violating a state law that prohibited teaching the theory of evolution. (Scopes was found guilty, but his conviction was later set aside.)

In 1955, West Germany became a fully sovereign state.

In 1961, astronaut Alan B. Shepard Jr. became America's first space traveler as he made a 15-minute suborbital flight aboard Mercury capsule Freedom 7.

In 1973, Secretariat won the Kentucky Derby, the first of its Triple Crown victories.

In 1981, Irish Republican Army hunger-striker Bobby Sands died at the Maze Prison in Northern Ireland in his 66th day without food.

In 1985, President Ronald Reagan kept a controversial promise to West German Chancellor Helmut Kohl by leading a wreath-laying ceremony at the military cemetery in Bitburg.

In 1994, Singapore caned American teenager Michael Fay for vandalism, a day after the sentence was reduced from six lashes to four in response to an appeal by President Bill Clinton, who considered the punishment too harsh.

Ten years ago: Tony Blair won a historic third term as Britain's prime minister, but his Labor Party suffered a sharply reduced parliamentary majority.

Five years ago: Preliminary plans for a mosque and cultural center near ground zero in New York were unveiled, setting off a national debate over whether the project was disrespectful to 9/11 victims and whether opposition to it exposed anti-Muslim biases.

One year ago: A narrowly divided Supreme Court upheld Christian prayers at the start of local council meetings.

Today's Birthdays: Actress Pat Carroll is 88. Saxophonist Ace Cannon is 81. Country singer-musician Roni Stoneman is 77. Actor Michael Murphy is 77. Actor Lance Henriksen is 75. Comedian-actor Michael Palin is 72. Actor John Rhys-Davies is 71. Rock correspondent Kurt Loder is 70. Rock musician Bill Ward (Black Sabbath) is 67. Actress Melinda Culea is 60. Actress Lisa Ellbacher is 58. Actor Richard E. Grant is 58. NBC newsman Brian Williams is 56. Rock musician Shawn Drover (Megadeth) is 49. Actress Tina Yothers is 42.

Thought for Today: "Some of us think holding on makes us strong; but sometimes it is letting go." — Hermann Hesse, German-born Swiss poet and author (1877-1962).

State of California
Department of Toxic Substances Control

Public Scoping Meetings

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Department of Toxic Substances Control
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Email: aaron.yue@dtsc.ca.gov

For more information, visit **www.dtsc-topock.com** or contact Aaron Yue, DTSC Project Manager, at (714) 484-5439 or aaron.yue@dtsc.ca.gov.

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Classes

BEADING CLASSES

BULLHEAD CITY — The Old Beadys bead club meets Tuesday and Thursday, 9 a.m. to 5 p.m. Lessons are free with the purchase of supplies. Walk-ins are welcome, no reservations necessary.

Location is 2113 Highway 95 Suite 9, Bullhead City. For more information, call 928-716-1191.

BIRTH EDUCATION & PRENATAL CLASSES

FORT MOHAVE — Free birth education and prenatal classes are offered at Valley View Medical Center, 5330 Highway 95, Fort Mohave.

Advance registration is required. The class meets in three evening sessions with a varied schedule.

For more information, contact Labor and Delivery at 928-788-7094.

BRIDGE LESSONS

BULLHEAD CITY — Intermediate bridge lessons are offered Tuesdays and Fridays from 9 to 11:30 a.m. at the Laughlin Senior Association on Hancock Road in Bullhead City.

Lessons are $5 per session.

If you have an interest, call Bob King at 928-300-8553 to sign up or for more information.

Some of the topics are Stayman, Jacoby transfers, leads and defensive signals, weak two openings, strong two clubs and responses, negative doubles, other doubles, overcalls, Blackwood and Gerber, DOPI, Ogust, Weiss and much more.

The Laughlin Senior Association meets at 967 Hancock Road in Bullhead City. Some of the group's other activities include double-deck pinochle, poker, hand-and-foot and crafts. New ideas for games are welcome.

For more information, call King at 928-300-8553.

CAREPRO CAREGIVERS PROGRAM

LAUGHLIN — CarePro — Care Partners Reaching Out in Laughlin — is starting a program in Laughlin for individuals who act as caregivers for individuals with dementia. The program is free and provides information about dementia and its impact; how to manage frustration, irritation and stress; how to communicate with a loved one who has dementia; and the need for a caregiver to take care of their own health.

Individuals who may be interested in the program are encouraged to contact Shirley Celcis at 702-248-2770 for an initial phone consultation.

CPR AND FIRST AID

BULLHEAD CITY — American CPR and First Aid classes are being offered by CPR Plus Fingerprint Services on Saturdays.

Hosted by Community Financial Wellness at the Suddenlink Community Center, 2380 Third Street, Suite 806, several classes are available with flexible times and affordable pricing of $25 per student. Students will receive a two-year certification card for American CPR and First Aid, a book, and a mini first-aid kit. Mobile CPR classes are available for groups of 5 or more at your business. Low-cost certified mobile fingerprint services are also available with convenient hours at your business location. Discount rates are available.

For information call Vicki at 928-542-4393 or Darlene at 928-699-0548.

DIABETES EDUCATION

FORT MOHAVE — Free diabetic self-management education classes are offered every other month at Valley View Medical Center in Fort Mohave. Classes are taught by registered dietitians and certified diabetic educators.

The one-month session consists of eight hours of education held from 12:30 to 2:30 p.m. on Thursdays. Classes run every other month.

Classes are free with a one-time supply charge of $20.

Seating is limited and registration is required.

For more information, call Jen Womack, RD, CDE, at 928-788-7202.

DRIVER SAFETY

BULLHEAD CITY — AARP is sponsoring a Smart Driver safety class on Wednesday, June 3, from 9 a.m. to 1 p.m. at the Bullhead City Senior Center, 2285 Trane Road.

The program is open to anyone age 50 or older with a valid driver license from any state.

The class is a one-day lecture format with discussions. Those who complete the course may be eligible for a reduction of their automobile insurance premiums.

AARP membership is not required to take the course.

For more information or to reserve a spot in the class, call Bob Welke at 928-754-2541.

LAUGHLIN — The next AARP Smart Driver Class for seniors will be held in Laughlin at the government center on Thursday, May 21, from noon to 4 p.m.

Greg Kramer will be presenting the class.

Those wishing to attend may call Greg at 702-327-0780 to register.

You will learn: Defensive driving techniques, proven safety strategies, new traffic laws and rules of the road

Upon completion you could be eligible to receive a discount on your car insurance.*

Course fee is $20 or $15 for members of AARP. Course fees may be paid by check or money order payable to AARP at time of class. Arriving 10 to 20 minutes early is helpful in having an on-time start and completion for the class.

DUI CLASSES

BULLHEAD CITY — Court-ordered 36-hour and 16-hour DUI classes offered on Saturdays and Sundays Earn your certificate as part of reinstating your driver license.

Classes are from 8 a.m. to 4 p.m., and presented by state-certified counselors. One no-charge class is offered per group for low-income clients. For more information, call Frank at 928-715-9209.

EMERGENCY RESPONSE EDUCATION

BULLHEAD CITY — Emergency Response Education can train you to be effective and knowledgeable during emergency situations by teaching you CPR and first aid.

Health Care providers and the lay public can learn what to do when an emergency occurs by receiving training from an actual emergency care provider who has taught other emergency providers in the state of Arizona for more than 20 years.

American Heart Association provider courses have the proven science to back up what is taught, and is accepted on a national level. When you are required to have a CPR credential for your work, personal advancement, or to meet national healthcare standards call us today for pre- registration, or for special accommodations at 928-542-6195.

Classes are held on a monthly basis at the Suddenlink Community Center.

Wouldn't it be nice to know how emergency providers are prepared for emergency situations? Now you can make a difference in someone's life. Reserve your seat today.

JOINT REPLACEMENT

FORT MOHAVE — A free class for those planning knee and hip replacements is at 3 p.m. on the third Thursday of every month at Valley View Medical Center, 5330 S. Highway 95, Fort Mohave.

For reservations or additional information, call 928-788-3604.

MASTER GARDENERS

BULLHEAD CITY — The Bullhead City Master Gardeners will hold a home gardening day on the second Thursday of each month, from 10 a.m. to noon at the Mohave Annex Building, 1130 Hancock Road in Bullhead City.

Persons with any questions regarding plants, trees or watering problems may call the Arizona/Mohave County Cooperative Extension Master Gardener hotline at 928-753-3788.

MCC SUMMER CLASSES

BULLHEAD CITY — Mohave Community College is accepting registration for summer classes, which begin May 18. MCC's summer semester schedule offers students classes in English, business, art, history, science, computers, math, and techniques for college success. Classes are offered on each of MCC's four campuses and online.

Start the college and federal financial aid application process right away. To register or for more information go to www.mohave.edu/summer2015 or call 866-664-2832.

Mohave Community College is once again providing some relief from summer temperatures with leisure courses starting this month on MCC's campuses in Bullhead City, Colorado City, Kingman, and Lake Havasu City.

The summer schedule for MCC's Bullhead City campus at 3400 Highway 95 includes: Frugal Gourmet cooking classes, jewelry and metalsmithing, healthcare provider CPR, motorcycles basic rider course, acrylic painting, and watercolor made simple.

Leisure classes being offered on the North Mohave campus in Colorado City at 480 S. Central Ave. includes: full-body sculpting, high-intensity interval training, and pilates.

Leisure classes being offered on MCC's Neal Campus-Kingman at 1971 Jagerson Ave. include: ceramics, motorcycles basic rider course, motorcycles skills practice, and introduction to digital photography.

Community education classes being offered on MCC's Lake Havasu City campus at 1977 Acoma Blvd., West include: motorcycles basic rider course, healthcare provider CPR, ceramics, yoga, watercolor, lapidary, silversmithing, glass fusing, ballet, and computers for beginners.

To review MCC's summer schedule, go to www.mohave.edu and click on the "Event Calendar" link, which is located inside the yellow "Quick Links" tap in the upper right-hand corner of the home page.

For more information, or to sign-up, contact Cheryl MacLean at 866-664-2832 or by email at cmaclean@mohave.edu.

NEEDLES LIBRARY PROGRAMS

NEEDLES – The Needles Branch of the San Bernardino County Library, 1111 Bailey Ave., offers special programs for children, teens and adults. The lineup through June 6:

Story time for all ages is offered Mondays at 11:30 a.m. and Wednesdays at 4 p.m.

Craft Corner begins at 2 p.m. Saturdays.

A teen art class called "Emerging Artist" is held Tuesdays at 4 p.m.

The library offers a wealth of resources including books, periodicals, digital and analog recordings, Internet access and more. It's open Monday through Wednesday from 11 a.m. to 7 p.m.; Thursday from 10 a.m. to 6 p.m.; and Saturdays from 9 a.m. to 5 p.m. The library is closed Friday and Sunday. Call 760-326-9255.

PICKLE BALL

BULLHEAD CITY — Pickle Ball games and classes are being offered by the Bullhead City Recreation Division.

Pickle Ball activities are held at the gym in the Suddenlink Community Center, 2380 Third Street.

Games are played on Mondays, Wednesdays and Fridays from 9 to 11 a.m. Classes are held on Thursdays from 9 to 11 a.m. Cost is $1 per session. Equipment is provided.

For more information, contact the Bullhead City Recreation Division at 928-763-9400, Ext. 188.

SCHOLASTIC YOUTH CLAY TARGET PROGRAM

MOHAVE VALLEY — Youngsters can learn the advantages and opportunities offered through team-based shooting sports in a Scholastic Clay Target Program being offered now at the Tri-State Shooting Park.

Sign up any time. Call Alison for details at 928-486-4135.

The group meets every other Saturday at the park along Boundary Cone Road, 6.71 miles east of Highway 95. The group has shotguns, ammunition, clay pigeons, hearing and eye protection.

SEWING CLASS

KINGMAN — A beginning and intermediate sewing class, Sewing for Fun, is offered on Thursdays from 9 to 11 a.m. at the Kathryn Heidenreich Adult Center, 1776 Airway Ave. in Kingman.

Learn the basics. Project ideas will be discussed each week. Participants who have a sewing machine are asked to bring it to the class. Loaners will be available for those who don't have a machine.

Cost is $1 per student per class. Funds assist programs offered at the Adult Center.

Participants must be 21 or older.

For more information, call Debera at 928-757-2778.

SQUARE DANCERS

BULLHEAD CITY — The Tri-State River Squares Square Dance Club is looking for couples that can square dance and those that would like to learn.

Contact Don & Ethel at 928-330-2344, don ethel@mohavebb.com, or Doug & Kathy at 928-444-4481, Kathy@pettengill.com for information.

Bullhead City couple arrested after hit-and-run accident

Daily News staff

BULLHEAD CITY — Two people were arrested after fleeing the scene of an accident where their vehicle struck another vehicle, a pedestrian and a rock.

Emergency crews responded to reports of an accident Sunday night about 10:15 p.m. at the north intersection of the Bullhead Parkway and Highway 95, said Emily Fromelt, BHCPD public information officer. It was reported that the two people in the vehicle fled the scene of the accident.

Police received information that the two people were hiding in the bushes near the Colorado River. Witnesses also told police that the two suspects were running across Highway 95.

Officers detained Lillian Domenic Jenkins, 25, and her husband, Jason Anthony Jenkins, 30, Fromelt said.

Jason Jenkins reportedly lied to police, saying that they were robbed and running after the man who robbed them. Jenkins also reportedly lied by saying neither he nor Lillian was driving the vehicle, that they were passengers.

Officers later confirmed that Lillian was driving and that the couple were not robbed, Fromelt said.

It was determined that Lillian Jenkins failed to yield as she was turning the vehicle south onto Highway 95 and clipped the side of a passing vehicle. Lillian Jenkins then over-corrected and drove onto the sidewalk, hitting a pedestrian and high-centering on a rock, making her vehicle no longer drivable. Jason Jenkins and Lillian Jenkins then fled.

Lillian Jenkins was arrested for suspicion of aggravated assault, failure to remain at the scene of an accident and failure to provide identification. She was also cited for no mandatory insurance, driving on the sidewalk and making an unsafe turn.

Jason Jenkins was arrested for providing false information to police.

Both Lillian Jenkins and Jason Jenkins were booked into the Mohave County Jail in Kingman.

FIRE DEPARTMENTS: Area agencies discuss pooling resources

Continued from A1

with the other chiefs and to talk with their boards to seriously look at consolidating, but that's all it was, just a request," said BHCFD Fire Chief Rick Southey. "In the interim time I met with the other two chiefs and they informed me that there is a plan going on between Fort Mojave and Mohave Valley and I carried that back to my board. We certainly did not want to interfere with that, we didn't want to throw any monkey wrench into the works, so we stated we're not going to talk about consolidation, but we would like to have a joint meeting, mostly to discuss common issues.

"I was kind of surprised when this took the turn that it did about consolidation, because I told my counterparts that it wasn't going to be a discussion about consolidation, so I apologize to them and I'm a little embarrassed over that.

"We (fire chiefs) do talk on a regular basis about the kinds of things that we can discuss. One of the things that has happened in the past is that we've had a number of false starts. One board or one department would say let's do consolidation; we'd start gathering information and then the board would change or things would just die out.

I think it's good that we get direction and I think that's what we're looking for. I think that we can go off in a number of directions as far as looking at shared services, consolidations, intergovernmental agreements, different kinds of agreements. But we're not the governing body, the boards control the money and the direction of the board. You give us direction, we follow that direction."

"I think we have a plan started and we'll continue looking at what we're doing and I think our battalion chiefs will work with the fire chiefs to look at some of the things we just discussed. It's a start," said Pralguske. "It's more or less a look at things that we can do together to help expenses, shared services, those type of things.

"That's the direction we're going, not strictly exploring what we're going to do to consolidate, I don't think we're at that point yet. I do believe that we probably should let the chiefs get together and work with each other and come up with some ideas. Then in ninety days, we can get together and talk about what's come up since the last time we met. It will be interesting to see where we go with it."

SNAKES: Common but still scary

Continued from A1

be bitten."

Residents of Bullhead City who find a rattlesnake in their house or in their yard can call 928-763-6000 to contact Animal Control during regular business hours, said Emily Fromelt, Bullhead City Police Department public information officer. After business hours residents should call BHCPD non-emergency dispatch at 928-763-1999.

"The snake will be removed from the house or the yard and relocated in the desert," Fromelt said.

The BHCPD received a call about a rattlesnake inside an apartment Monday night and sent help for the nervous tenant.

Pecjak was also a bit unsettled after her wildlife encounter.

"I'll never look at my backyard the same way again," she said.

HOW THEY VOTED: Needles City Council and Needles Public Utility Authority meeting in regular session on April 28, 2015. Council members Tom Darcy, Louise Evans, Tony Frazier, Shawn Gudmundson, Robert Richardson M.D., Jeff Williams and Mayor Ed Paget M.D. were present

NCC executive session, including:

Conference with labor negotiator San Bernardino Public Employees Association. City Manager Rick Daniels negotiating for the city.

Conference with labor negotiator Needles Unclassified Employees Association. Daniels negotiating for city.

Conference with real property negotiator RLD Realty I Limited Partnership for lease price and terms in the city-owned portion of Needles Marina Park, 100 Marina Dr. Daniels negotiating for city.

Conference with real property negotiator Crown Castle for an area that is part of the NPUA-owned parcel APN 0651-121-22. Daniels negotiating for city.

There were no reportable actions taken on the first four items.

Public employee performance evaluation for city manager.

Councilman Tom Darcy and Vice-mayor Jeff Williams will meet with the city manager and report back in open session.

NCC informational item: Annual report of the San Bernardino County Sheriff Department, Needles' Colorado River Station. Report presented by Capt. Ross Tarangle, station commander.

NCC discretionary item: Interviews were held and Debra Downey was appointed to the Planning Commission and Board of Public Utilities.

Darcy-Y, Evans-N, Frazier-Y, Gudmundson-N, Richardson-Y, Williams-Y

Recess NCC meeting, convene joint meeting with NPUA

NCC/NPUA action item: Acquire financial management software system. Brought by Kimberly Mitchell.

NCC vote: Darcy-Y, Evans-Y, Frazier-Y, Gudmundson-Y, Richardson-Y, Williams-Y
NPUA vote: Darcy-Y, Evans-Y, Frazier-Y, Gudmundson-Y, Paget-Y, Richardson-Y, Williams-Y

Adjourn joint meeting, reconvene NCC meeting

NCC action item, consent calendar including:

Approve revised warrants register totaling $172,201.99 through March 20; $283,240.98 through April 3; $162,918.93 through April 14; $177,812.46 through April 17; and $540,588.53 through April 28.

Waive second reading, adopt and publish summary of Ordinance 569-AC, amending municipal code pertaining to regulation of massage establishments

Authorize staff to accept work completed by Jonovich Companies for sewer line in the wash area behind Colorado River Medical Center and file notice of completion with the county recorder. Cost was reported to be $85,962 on a project originally estimated at $98,926.

Darcy-Y, Evans-Y, Frazier-Y, Gudmundson-Y, Richardson-Y, Williams-Y

NCC action item: Provide historical structure designation to the Masonic Temple/Needles Theater building. Brought by Daniels.

Darcy-Y, Evans-Y, Frazier-Y, Gudmundson-Y, Richardson-Y, Williams-Y

NCC action item: Adopt Vision, Mission and Value Statements and Goals for fiscal year 2015-16. Brought by Daniels.

Darcy-Y, Evans-Y, Frazier-Y, Gudmundson-Y, Richardson-Y, Williams-Y

NCC informational item: Rejuvenate sand traps at River's Edge Golf Course using golf course improvement funds. Daniels asked for a motion to accept the project and said he would bring it back for formal authorization at the next meeting. It was so moved and approved. Brought by Daniels.

Darcy-Y, Evans-Y, Frazier-Y, Gudmundson-Y, Richardson-Y, Williams-Y

NCC action item: Accept bid on the California Avenue relief sewer project. Brought by Tammy Ellmore, engineering technician II.

Darcy-Y, Evans-Y, Frazier-Y, Gudmundson-Y, Richardson-Y, Williams-Y

NCC informational item: Hear fire services report. Daniels provided options for alternatives for fire service. There was commentary from council members and Division Chief John Chamberlin. No action was taken. The item is expected to come back for further discussion during the regular meeting of May 12.

Key: Y is a yes vote, N is a no vote, A is abstain from voting. Council members must abstain in the case of a conflict of interest. Mayor Ed Paget, or the presiding officer in his absence, votes only in the case of a tie. The presiding officer does vote on the actions of the Needles Public Utility Authority and Public Financing Authority. Ordinances require two separate readings and affirmative votes of at least four council members for passage. Emergency ordinances may be passed on one reading but require five affirmative votes.

JENNIFER DENEVAN with ROBIN RICHARDS/News West

Center to host marketing seminars

MOHAVE COUNTY — Small business owners have an opportunity to attend a marketing seminar at no cost in May in Mohave County.

Mohave Community College's Small Business Development Center is hosting "Build Your Marketing Too kit," presented by Lynn Ruby, CEO and founder of Ruby Marketing Systems.

"Business owners and managers will have a chance to learn what marketing really is and isn't, how marketing has changed to benefit small businesses, how to set marketing goals, and the four pillars of marketing success," said Lisa Card, SBDC analyst. "We want to assure business owners that it's okay to start small and to start now."

The seminars will be offered from 9:30-11 a.m. Thursday, May 21, in Building 200 on MCC's Lake Havasu City campus; from 2-3:30 p.m. on Thursday, May 21, in Building 2000 on MCC's Neal Campus-Kingman. There is no cost to attend the seminars.

MCC's SBDC provides one-on-one confidential counseling to assist small business owners with new business start-ups or existing businesses that may want to expand or need guidance during challenges.

For more information or to RSVP contact Card at 866-664-2832 or lcard@mohave.edu.

Dispensaries: pay taxes or face closure

By JENNIFER DENEVAN
NEEDLES DESERT STAR

NEEDLES — Some of the medical marijuana dispensaries in town may be closed if they don't comply with a final notice for turning in their taxes, based on a report given by City Manager Rick Daniels at April 14 city council meeting.

Daniels said the city has completed audits on the medical marijuana dispensaries. The city has sent final notices to those that are delinquent in turning in their taxes.

Medical marijuana has been an ongoing issue for the city for years. It began with a moratorium, extensions on that moratorium and finally came to getting an ordinance passed allowing dispensaries as long as they complied with a list of expectations. Among those are paying all the appropriate taxes. The possibility of closing some of those dispensaries and reducing the number of them because it appeared they were not paying their taxes was also mentioned at that meeting.

Part of the debate during the council meeting in November centered on the public's concern about the number of dispensaries and their locations in the city. Understanding that some of the dispensaries might close appeared to help ease some worries, though not all of them. Since then, Daniels has reported performing audits to see if dispensaries have been compliant with the tax portion of the ordinance. The city has been waiting for completion of those audits before anything could be done.

This is their last opportunity to come into compliance with the city's ordinance, Daniels said. If they don't, he will come back to the council for other remedial actions, which could include removal of their ability to operate in the city.

HEROIC

Continued from Page 1

Sacramento.

Responding to a report of a collision on westbound Interstate 40 about 20 miles west of Needles on Dec. 14, 2009, Officer Urrea found a burning vehicle with the driver trapped inside.

Three Good Samaritans had already stopped and were trying to rescue the victim. The driver's door was jammed, the engine compartment was fully engulfed in flames, and the semiconscious victim could not unbuckle his seat belt.

At great personal risk, Officer Urrea climbed through the passenger door, unbuckled the seat belt and, with the help of the other individuals, pulled the victim through the driver's door window to safety.

The heat and flame were so intense the victim's socks were smoldering when he was pulled from the vehicle. He was transported by air ambulance and survived his injuries.

Without the heroic actions of Officer Urrea, the victim's survival would have been highly unlikely.

FIRE: City looking for ways to control cost of protection

Continued from Page 1

similar fund to the asset replacement funds for the utilities because the fire equipment needs to be replaced and is expensive. A fire engine alone is worth about $600,000, he said. Granted, that fire engine should last hundreds of thousands of miles and more than 20 years, he added.

Part of the problem with staying with the county as is, is the cost. That portion of the budget would approximately be doubled and the city can't afford that, he said. A hiccup with contracting with Mohave Valley is it wouldn't provide any discernable savings and would cost about $1.2 million also, he continued.

The kicker with annexation is a portion of the property tax would be transferred to the fire district, Daniels said. For example, the city may collect $800,000 in property taxes but $612,000 of that would actually go to the fire district.

In that case, the district stands to gain from any incremental increase in property valuation but they also would bear the costs, Daniels said. It also means if the district needed more money they'd have to go to the taxpayers for increases.

The city could create its own fire department and that may be the cheapest option but it may not, Daniels said. It would also require being absolutely spot on with providing the correct services and knowing the ins and outs of all the moving parts such has having dispatch appropriately addressed.

Council member Tom Darcy said he really doesn't see any other option but to annex into the fire district but expressed concerns with not having the appropriate coverage. Fellow councilman Shawn Gudmunson agreed.

Gudmundson said he wants to see a staffed engine left in the city at all times, though that may not be possible because the city is rural. He also expressed concerns about the cost recovery program and the city not getting money back for mutual aid as they should.

Division Chief John Chamberlin said he didn't have the statistics readily on hand but mutual aid was probably used about 40 times a year. There are also other assets the county has to dispatch to ensure coverage.

He said he has the flexibility to shift firefighters and equipment around as needed, though time and distance are factors. He has his own concerns about how much staff is in Needles and plans to increase it back to at least five when he can, Chamberlin added.

ROBIN RICHARDS/News West file

This U.S. Army rock monument is one of several near the KOA Campground to honor military men and women. The monuments were created by Jim Nickel and his wife, Starr. It began as a personal project for his wife and then before long he was creating the monuments for all the military branches. The newest one is for the U.S. Coast Guard. The plan is for the riders of the Run for the Wall to ride past the monuments this year. Residents are encouraged to come out and show support for the riders.

RUN: For the Wall visits Needles May 13

Continued from Page 1

Killed in Action from all wars, and to support our military personnel all over the world."

The Run's Central Route starts in California and goes through Arizona, New Mexico, Colorado, Kansas, Missouri, Illinois, Indiana, Kentucky, West Virginia and Virginia.

"To lead this mission across our beautiful country is a great honor. I am very humbled indeed," Don "EZ" Burns, Central Route Coordinator, said in his statement to riders on the Run's website. "Far too many of you have never been properly thanked for your service, or properly welcomed home. You have never had the emotional parade expressing gratitude and pride in what you have accomplished," he added.

Burns also provided information regarding the number of military personnel still unaccounted for. "Out of the 83,000 missing, 75 percent of the losses are located in the Asian Pacific, and over 41,000 of the missing are presumed lost at sea (i.e. ship losses, known aircraft water losses, etc). Even though efforts of (Joint POW/MIA Accounting Command) have been responsible for the recovery of hundreds of remains, we must continue to remain vigilant in the pursuit to bring our missing home," Burns said in his statement. To see his complete comments, visit www.rftw.org and select Central Route.

Donations to help with the riders' visit to Needles are encouraged and accepted by the chamber. Make checks payable to Needles Chamber of Commerce and mail to 100 G St., Needles, CA 92363.

Forum reveals face of poverty in Needles

By JENNIFER DENEVAN
Needles Desert Star

NEEDLES — A community needs forum held April 29 provided residents the opportunity to highlight what services and help are needed most in Needles and to gain information about resources available to combat poverty in the area.

Many of the same types of concerns addressed at similar meetings were highlighted. The lack of medical services and complications with being a border town and insurances were a big part of the talk. Lack of transportation, a grocery store and court services were also highlighted. Housing garnered a lot of attention.

Community Action Partnership of San Bernardino County held the forum. Sandra Brown, planning program specialist for the partnership, provided some ground rules for how the forum would be conducted and a presentation about the partnership.

She provided a slide show about the partnership and how they work. Brown said community action agencies were established as part of the President Lyndon B. Johnson war on poverty and the Economic Opportunity Act of 1964.

The goal was to not only relieve the symptoms of poverty, Brown said, but to cure it and above all prevent it from happening. She discussed the partnership's mission and vision.

Brown provided information about the structure of the organization and the primary objective. The main focus was to discuss why the forums were being held and what was to be accomplished.

Employees of the agency also discussed various programs available through the partnership including the food bank program, Energy, Education and Environmental Services Program, which provides energy conservation assistance to eligible low-income residents and processes applications for the Home Energy Assistance Program (HEAP). They also discussed veteran support services, children and youth programs, income tax assistants program and transitional housing to name a few.

The rest of the forum allowed residents to talk about services lacking in Needles. Much of the comment was dominated by medical and insurance related issues, transportation, lack of a grocery store and the poor state of housing.

Residents talked about the lack of doctors, particularly specialists and dentists. Concerns were also expressed over the complications related to having Medi-Cal but not being able to go across the river for medical needs because that insurance isn't accepted. For those who can go across the river, there could be the added complication of not being able to get there due to lack of transportation.

The housing situation turned into a major portion of the discussion. Several residents expressed strong concerns about landlords not keeping up their end of the bargain with keeping homes safe and up to code.

As comments were being made, members of the partnership tried to provide some possible resources and also took thorough notes so if there wasn't a service available through the partnership, they can report that information back to the state.

HEAP was also available to try and help residents during the forum with various energy needs. Raffle prizes were given away

The partnership takes the information and uses it to work on how to better serve communities. Some of the information will be passed onto the state level.

JENNIFER DENEVAN/Needles Desert Star

Eddie Garcia, left, of the Community Action Partnership, hands George DeLeon a certificate for his efforts in helping coordinate the community needs forum in Needles April 29. The forum heard from many residents about concerns of not receiving needed services. The forum also gave residents a chance to learn about the Home Energy Assistance Program, HEAP.

WATER: Use reduction mandated throughout California

ornamental turf on public street medians or outside of newly constructed homes and buildings not in accordance with emergency regulations or other requirements. Those two join existing prohibitions of using potable water to wash sidewalks and driveways, allowing runoff when irrigating with potable water, using hoses with no automatic shutoff nozzle to wash cars, using potable water in decorative features that do not recirculate water, irrigating outdoors during and within 48 hours following measurable rainfall, and restaurants serving water to customers except by request.

Hotels and motels must offer guests the option to not have linens and towels laundered daily.

A report must be filed on Dec. 15 to demonstrate compliance.

Local agencies can fine property owners up to $500 a day for violating the prohibitions; the state water board can issue cease and desist orders and charge water suppliers up to $10,000 a day for their violation.

The regulations were to be submitted to the Office of Administrative Law which had up to 10 days to approve or deny; if approved the regulations take effect immediately and continue for 270 days.

There's little speculation that the office might deny the move, especially in light of news released by the U.S. Department of Agriculture three days later.

"Across most of the West, snowpack isn't just low - it's gone," said hydrologist David Garen from the USDA's Natural Resources Conservation Service. "With some exceptions, this year's snowmelt streamflow has already occurred."

Fellow NRCS hydrologist Cara McCarthy reported snowmelt inflow into the Lake Powell Reservoir on the Colorado River is forecast at 34 percent of normal.

Visit the state water board at http://www.swrcb.ca.gov/; learn how to conserve at SaveOurWater.com; view the state's drought response at Drought.CA.Gov.

RUN: Makes annual lunch stop in Needles today

Continued from Page 1

The group's mission is, "To promote healing among all veterans and their families and friends, to call for an accounting of all Prisoners of War and those Missing in Action (POW/MIA), to honor the memory of those Killed in Action (KIA) from all wars, and to support our military personnel all over the world."

"I've seen the run come through Needles and read about it in the motorcycle magazines for a number of years," Horst said. "I've seen it on I-40 a number of times when traveling to the LA area. Last year when they came through and the chamber was so involved I thought, 'You know, maybe next year I should give it a try.'"

Now on his third Electra Glide, Horst is not a stranger to motorcycle touring. He rarely brings the big bagger out for short jaunts but does visit places like Williams and Flagstaff, Ariz., and has made multiple trips to the Sturgis Motorcycle Rally in the Black Hills of South Dakota.

The Run for the Wall event, he commented, "is extremely well organized."

While hundreds make the entire trip along the south, central or midway route more can join each morning. By the time the group arrives in Washington, D.C., where they'll place a plaque at the apex of the Vietnam Veterans Memorial on the Saturday before Memorial Day, the ranks will have swollen to around 2,000, Horst reported. Many will join the Rolling Thunder Parade on Sunday, with an expected 350,000 motorcycles.

CLEANUP: Comment now

Continued from Page 1

The selected remedy is called in-situ treatment with freshwater flushing. The project calls for creating a washing machine like process - it pumps water from one end into wells and moves water to behind the hexavalent chromium plume to wells that pump the water toward a natural filter.

The chromium six was deposited when the compressor station was using it to help cool the compressed gas and it eventually leaked into the ground water. After several years of studies and additional processes to perform a cleanup of that plume, the project is getting close to starting.

Documents related to the proposed project can be found at the Needles Branch Library, 1111 Bailey Ave. For more information visit www.dtsc-topock.com or contact Aaron Yue, DTSC Project Manager, at 714-484-5439 or send email to aaron.yue@dtsc.ca.gov.

WEATHER

Big surf pounds SoCal beaches

By Gregory J. Wilcox and Eric Bradley
Staff writers

CHUCK BENNETT — STAFF PHOTOGRAPHER

High waves pound Cabrillo Beach in San Pedro on Monday as area surfers converge to take advantage of the conditions.

Heavy surf with up to 10-foot sets pounded Southland beaches Monday as swells rolled in from an early winter storm in the Southern Hemisphere southeast of New Zealand, and rain is expected across the region later this week, according to the National Weather Service in Oxnard.

The high tide and strong surf flooded some areas of Seal Beach and prompted cruise operator Carnival to divert two ships from Long Beach because the ocean conditions could make it unsafe to keep gangways connected and potentially stress the vessel's mooring lines.

Carnival Imagination was sent Sunday to San Diego, according to the company.

Guests embarking or scheduled to sail on Imagination were transported to San Diego from Long Beach. The ship's scheduled visit to Catalina was canceled and its stay in Ensenada, Mexico, was extended by a day.

Carnival Inspiration conducted its home port turnaround operations Monday at the San Pedro cruise terminal facility at the Port of Los Angeles and will spend a day at sea before berthing in Catalina Wednesday and Ensenada Thursday.

Seal Beach lifeguards worked Monday morning to rearrange the sand to prevent a repeat of minor flooding that occurred when heavy surf combined with a high tide of 5.5 feet, authorities said.

The minor flooding occurred about 9:30 p.m. Sunday around the Seal Beach Pier at Tenth Street and Seal Way, said Seal Beach police Sgt. Ron Lavelle.

No damage was reported, Lavelle said. The water washed up over the sand to the boardwalk, past where a 20-foot winter sand berm was removed last month.

The high surf advisory will remain in effect until 11 p.m. today.

City News Service contributed to this report.

Crime and public safety

YUCAIPA

Man accused of killing stepson in court today

A Yucaipa man accused of fatally stabbing his stepson is scheduled to be in court today, according to San Bernardino County Sheriff's booking information.

David Terry Bryant, 44, was arrested Friday night in the 33800 block of Woody Lane on suspicion of murder for stabbing of Kyle Yarnell, 23, according to a sheriff's release.

Bryant and Yarnell were allegedly involved in a confrontation just before 10 p.m. Friday, which escalated into a physical fight, according to authorities. During the fight, Bryant allegedly stabbed Yarnell.

Paramedics drove Yarnell to the hospital where he was later pronounced dead.

Bryant is currently being held without bail at Central Detention Center in San Bernardino.

Anyone with information about this investigation can contact Detective Edward Bachman or Sgt. John Gaffney of the Sheriff's Homicide Detail at 909-387-3589. Callers who want to remain anonymous are asked to contact the We-Tip Hotline at 1-800-78-CRIME (27463) or you may leave information on the We-Tip website www.wetip.com.

ADELANTO

Five teens hurt, two critically in crash

Five teens were hurt, two seriously when they were ejected in a rollover crash in Adelanto early Monday morning following a short pursuit.

The five were driving erratically in an allegedly stolen vehicle, San Bernardino County sheriff's officials said.

A deputy first spotted the white Ford F-150 driving recklessly near Seneca Road and Aster Street, around 5:30 a.m., according to a release.

He tried to stop the truck, but the truck drove off.

The driver lost control near Aster Road and Mojave Drive causing the truck to roll, ejecting two people from the vehicle, officials said.

Two rescue helicopters landed at the Adelanto High School football field and flew two of the boys to Antelope Valley Hospital. Both are listed in critical condition.

A third teen was taken to Victor Valley Community Hospital and is listed in stable condition. The last two were treated at the scene by paramedics and released to their guardians, sheriff's officials said.

Investigators learned the truck had been reportedly stolen in Adelanto.

FONTANA

Man accused of indecent exposure

A man was arrested after allegedly exposing himself to two women in Fontana over the weekend.

Jorge Hercules, 52, of Fontana was arrested late Friday after he was identified by two victims, according to a police news release.

Two women were walking along Banana Avenue near Foothill Boulevard around 10:30 p.m. Friday when a man reportedly drove up to them in his vehicle, opened the passenger's door and allegedly began masterbating, according to a report.

The women say they yelled at him and he drove off, but they managed to get his license number.

The women called police who were able to arrest Hercules nearby.

He was positively identified by the women and arrested on suspicion of indecent exposure.

Anyone with information on this case is asked to contact the Fontana Police Department at 909-350-7740.

— Staff reports

Candidates

FROM PAGE 1

dire poverty. To be sure, he's a politician now. But not, he said, like the others.

"It's time for people to rise up and take the government back," said Carson, a favorite of the GOP's tea party wing. "The political class won't like me saying things like that. The political class comes from both parties."

Fiorina, former chief executive of Hewlett-Packard Co., chose social media and a nationally broadcast morning TV network show to launch her campaign. She is already laser-focused on Hillary Rodham Clinton. As the only woman in the GOP field, she sees herself as uniquely positioned to go after the dominant Democrat in the 2016 race.

"She is the personification of the professional political class," Fiorina said after releasing an announcement video that begins with an image of Clinton. Earlier, on ABC's "Good Morning America," Fiorina lashed out at Clinton for what she called a lack of transparency, including the use of a private email server while Clinton was secretary of state and foreign donations to her family's charitable foundation.

"I have a lot of admiration for Hillary Clinton, but she clearly is not trustworthy," Fiorina said.

Fiorina and Carson both begin the race as longshots in a campaign expected to feature several seasoned politicians, among them former Florida Gov. Jeb Bush, Wisconsin Gov. Scott Walker, Florida Sen. Marco Rubio and Texas Sen. Ted Cruz.

Today, former Arkansas Gov. Mike Huckabee is expected to announce an underdog campaign of his own, fueled by support from the GOP's religious conservative wing. Like Fiorina, Huckabee is expected to be a Clinton scold. He is announcing his candidacy in Hope, Ark., his hometown as well as former President Bill Clinton's.

In a field that could ultimately feature more than a dozen notable candidates, the Republican contest is considered wide open. It's also more diverse than it was four years ago.

Republicans acknowledge a pressing need to broaden the party's appeal beyond its traditional base of older white men. President Barack Obama won re-election in 2012 with the strong support of women and the ethnic minorities who are becoming a larger portion of the electorate.

Both Fiorina and Carson addressed the racial tension in Baltimore, among other American cities, after the recent death of Freddie Gray while in police custody. Six police officers face criminal charges related to the death.

"I think we were all relieved to see the six policemen involved in Baltimore charged," Fiorina said.

She said it is vital for all police officers and vehicles that transport prisoners to be equipped with cameras "for everyone's protection."

Carson was far less specific in his remarks, saying that the underlying issue "is that people are losing hope."

"So when an opportunity comes to loot, to riot, to get mine, they take it, not believing that there is a much better way," he said.

Carson rose from poverty and ultimately became the head of pediatric neurosurgery for close to three decades at Baltimore's Johns Hopkins Children's Center. He gained stature in conservative politics after condemning Obama's health care law in front of the president at the 2013 national prayer breakfast.

Yet he has sometimes struggled under the glare of national politics.

Carson once suggested Obama's health care law is the worst thing since slavery, compared present-day America to Nazi Germany, and described homosexuality as a personal choice.

Fiorina became a prominent figure in Republican politics in 2010, when she ran for a Senate seat in California and lost to incumbent Sen. Barbara Boxer by 10 points. She said little on Monday about her background as the head of Hewlett-Packard, a time marked by soaring revenue, a merger with Compaq, sinking stock prices and infighting on the board that resulted in her firing in 2005.

The Business Corner

Dow Jones	S&P 500	Nasdaq
18,070.40	2,114.49	5,016.93
+46.34	+6.20	+11.54

	Ex	Div	Yld	PE	Close	Chg	YTD%Chg
Amazon.com Inc	Nasd	...	...	...	423.04	+.17	+36.3
Amer States Water	NY	.85	2.2	25	39.01	+.41	+3.6
Bank of America	NY	.20	1.2	25	16.44	+.33	-8.1
Boeing Co	NY	3.64	2.5	18	144.02	-.65	+10.8
CVB Financial	Nasd	.48	3.1	18	15.67	+.14	-2.2
Edison Intl	NY	1.67	2.7	12	61.92	+.38	-5.4
Exxon Mobil Corp	NY	2.92	3.3	13	89.11	+.26	-3.6
Ford Motor	NY	.60	3.8	20	15.78	-.03	+1.8
Gen Electric	NY	.92	3.4	...	27.27	-.04	+7.9
Gen Growth Prop	NY	.68	2.5	26	27.51	-.40	-2.2
Gilead Sciences	Nasd	1.72	1.6	14	105.66	+.65	+12.1
JPMorgan Chase & Co	NY	1.60	2.5	12	64.72	+1.11	+4.1
KB Home	NY	.10	.7	16	14.80	+.03	-10.6
Kohls Corp	NY	1.80	2.5	17	73.13	+.04	+19.8
Kroger Co	NY	.74	1.1	20	70.01	-.12	+9.0
Lockheed Martin	NY	6.00	3.2	17	189.68	+.69	-1.5
Macy's Inc	NY	1.25	1.9	15	65.29	+.22	-.7
Mitsubishi UFJ Fncl	NY	...	...	...	7.14	+.04	+29.1
Molycorp Inc	NY	...	...	...	.89	-.01	+1.0
Northrop Grumman	NY	2.80	1.8	16	155.83	-.18	+5.7
Occid Petl	NY	2.88	3.6	14	80.03	-.47	-.7
PacWest Bancorp	Nasd	2.00	4.4	23	45.36	+.65	-.2
Pacific Premier Bncp	Nasd	...	...	17	15.62	-.07	-9.9
Pep Boys	NY	...	...	...	9.15	-.09	-6.8
Raytheon Co	NY	2.68	2.5	16	106.40	+1.32	-1.6
Rockwell Automation	NY	2.60	2.1	19	122.21	+.97	+9.9
Rockwell Collins	NY	1.32	1.4	20	97.61	-.06	+15.5
Sempra Energy	NY	2.80	2.6	23	107.81	+1.01	-3.2
Sthwest Gas	NY	1.62	2.9	18	55.21	+.26	-10.7
Starbucks Cp	Nasd	.64	1.3	30	50.45	+.16	+23.0
Tetra Tech	Nasd	.32	1.2	18	26.72	-.05	+.1
UPS class B	NY	2.92	2.9	30	101.43	+.05	-8.8
US Bancorp	NY	.98	2.3	14	43.54	+.63	-3.1
Verizon Comm	NY	2.20	4.4	22	50.52	+.11	+8.0
WalMart Strs	NY	1.96	2.5	16	79.18	+.58	-7.8
Wells Fargo & Co	NY	1.50	2.7	14	55.73	+.54	+1.7

State of California
Department of Toxic Substances Control

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Attend upcoming public meetings to learn more about the project and provide comments to help scope the environmental issues to be addressed in the Draft Subsequent Environmental Impact Report.

MEETING LOCATIONS

Needles
Tuesday, May 19, 2015, 5 to 7 p.m.
Needles Senior Citizens Center
1699 Bailey Ave.
Needles, CA 92363

Golden Shores
Wednesday, May 20, 2015, 5 to 7 p.m.
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WEATHER

Despite snowy forecast, Amgen Tour will go on

By Beatriz E. Valenzuela and Doug Saunders
Staff Writers

BIG BEAR LAKE » Despite the snow forecast for the Big Bear area on Friday, officials say the Amgen Tour of California Stage 6 time trial is still set to pedal it way through the area, though the weather is being watched.

Amgen communications director Michael Roth said officials are monitoring the weather pattern closely.

The incoming weather system is expected to bring rain and snow to the Inland Empire beginning Thursday evening, according to the National Weather Service.

Temperatures in the Big Bear area are expected to drop to the upper 20s Thursday night and dip to the low 30s on Friday.

The high temperatures for race day have been forecast to reach the low 40s. Meteorologists at the National Weather Service in San Diego say the rare cold front will bring wet, heavy snow to the mountain region in two waves beginning Thursday evening.

One wave is expected to bring 2 to 5 inches of snow in the Big Bear Lake area, and the second wave of the storm will peak around the start time of the race, meteorologist Brett Albright said.

But the dire predictions have not chilled enthusiasm.

"We're watching the weather very closely but (the race) is designed to take place to matter whether there is rain, wind, shine or snow as long as the snow doesn't stick to the asphalt," said Pam Scannell, executive director for the Big Bear Chamber of Commerce. "The show will go on."

Last week, a late-spring storm dropped several inches of snow in the Big Bear area, and Scannell said if this upcoming storm brings the same amount of white stuff with it, then racers should be fine.

"It didn't really stick, and the asphalt was still pretty warm," she explained.

Big Bear Lake is the host for the tour's sixth stage of the tour, which will feature both a professional men and women's time trial. There will be a Lifestyle Expo and beer garden taking place during the race.

She did say, however, that some of the race starting times may have to be adjusted but that had yet to be determined.

Start times can be checked on the Amgen website or by visiting bigbeartimetrial.com.

FORECAST FOR AMGEN STAGES

STAGE 5
SANTA CLARITA
Thursday
Afternoon showers
High: 63
Low: 48

STAGE 6
BIG BEAR LAKE
Thursday:
Afternoon showers/possible snow
High: 46
Low: 22

Friday (Actual stage):
Occasional snow, total 3 to 6 inches
High: 28
Low: 25 (potential record-tying low temperatures)

STAGE 7
ONTARIO
Saturday:
Partly sunny, cool
High: 69
Low: 53

MT. BALDY
High: 63
Low: 37

STAGE 8
LOS ANGELES
Sunday:
Sunny
High: 71
Low: 56

PASADENA
High: 69
Low: 52

Source: Accuweather.com

MICHEL NOLAN

Winter, in time for Mother's Day

My deck last Friday morning following a snowstorm to herald Mother's Day weekend.
PHOTO BY MICHEL NOLAN

Michel Nolan
Columnist

Winter finally came to the mountains on Friday.

It looked vaguely familiar — although I hadn't seen it for several years — all white and cold.

But the calendar said May 8 — Mother's Day weekend, actually.

My flower pots, already planted with brightly colored flowers and ferns, looked like large, whipped cream-covered desserts.

The barbecue cover was completely encased in snow — not good news with my family due Saturday for a grilled dinner and Mother's Day celebration.

I had forgotten the mountain mantra "Don't plant flowers before Mother's Day because of the Mother's Day snow."

With current dry conditions, I thought that could never happen — heck, we didn't have snow in deepest, darkest winter.

I did try to stay positive, at least for awhile, and enjoy the beauty of cedars and pines blanketed in white. The landscape was gorgeous, like a Christmas card.

It seems like the last three years, at 5,000-foot elevation anyway, winter just forgot about us. No nice snow-pack at Snow Valley, our closest ski resort, just north of Running Springs.

No snowdrifts piled against the door, no icy berms or long dagger-like icycles hanging from the roof.

I kinda missed it.

This year, once again, there was no late-night shoveling to dig a parking place for my car after work.

And it has been years since I called Darrell the Bobcat guy, who plowed out the front of the house.

One thing I did sort of miss — the sport of heaving plastic bags of groceries over the top of the berm, skimming them down to the front door.

That plan generally worked, except for the time a bottle of olive oil zoomed out of the bag through the front deck railing down to the snow below and laid there til the April thaw.

Another year, when the snow blocked the street to my house, I wrapped a rope around the box holding my new computer and dragged it down the street.

For many years, the snow would come in a series of storms — one right after the other.

Most of us living in the mountains could share the nostalgic stories of great snow adventures, fun exploits with saucers, bullets and toboggans, followed by mugs of hot chocolate.

I guess I did miss it.

I haven't missed power outages, though.

I remember one, heavy, wet snowfall about seven years ago, when tree limbs fell on power lines and left one entire side of the mountain without electricity.

First, let me say I am not a "wuss." Raised in Wisconsin, I understand that winters here — even in the mountains — are not really winters unless it's so cold your nostrils stick together and you can't blink..

Anyway, I was OK with the snow, and even when the power first went off I thought of it as an "adventure."

Using candles, flashlights and a camping lantern, I was able to grope through the house, upstairs and down.

I built a roaring fire, pulled up the rocking chair and envisioned the pioneers living like this — 24/7 (without expecting an Edison repair truck).

But darkness was one issue — cold was another. I could see my breath and the indoor temperature must have been below 40, the lowest reading on the thermostat gauge.

The power outage? It lasted 52 hours.

Now, those days are dim memories.

Friday's little snowstorm tugged at my heart a bit.

And the Mother's Day celebration? It was perfect. Most of the snow melted on Saturday and by Sunday, it was gorgeous and warm.

Michel Nolan appears in The Sun on Wednesdays, Fridays and Sundays. Reach her at michel.nolan@langnews.com or on Twitter @MichelNolan.

State of California
Department of Toxic Substances Control

Public Scoping Meetings

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DTSC determined that the preparation of a Subsequent Environmental Impact Report is required to evaluate potential environmental impacts resulting from design details of the selected remedy (In-situ Treatment with Freshwater Flushing) that were modified since the approval of the conceptual Groundwater Remediation Project in the 2011 Final Groundwater Remedy Environmental Impact Report (SCH No. 2008051003) and the 2013 Addendum to the Environmental Impact Report.

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Needles, CA 92363

Golden Shores
Wednesday, May 20, 2015, 5 to 7 p.m.
Golden Shores Community Center
13136 Golden Shores Parkway
Golden Shores, AZ 86436

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Department of Toxic Substances Control
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CIVIC NEWS

By: Don McWhirter

The Civic Association will go dark, except for the Burrito Breakfasts and Bingo, after the May 15 meeting. At this meeting we will be honoring Pearl and Clay Blackwelder for their 30 years of dedicated service to the community and especially to the Civic Association. We will be serving cake and coffee starting at 5 p.m. The public is invited to join us and show Pearl and Clay how much we all appreciate their hard work. They have decided it is time to turn in their keys and let someone else step in and help keep the show running. Please join us and give them the kind of celebration they deserve.

The first of four Burrito Breakfasts will take place in the North side of the center on May 2 from 7 to 9:30 a.m. Join us for the best burrito in town!

The next day, May 3, the Rt. 66 Fun Run will end at the Community Center. About 800 vintage vehicles will start arriving around 10 a.m. and continue until around 2 p.m. Stop by and check out the old vehicles and then have some lunch. Hamburgers and Hot Dogs with all the trimmings will be served. There will also be cold drinks and a full bar.

Bingo will continue through the summer. Join us every Tuesday at 1 p.m. Help keep Bingo strong; have some fun and who knows? You could win. We are air conditioned so come in out of the heat and join us for bingo and a snack from our famous snack bar.

See you at the Center.

HAVING FUN AT THE CENTER

EXERCISE, COFFEE CLUB, BINGO, CARDS, SR. LUNCH, BUSY FINGERS, SR. LUNCH, GAME NIGHT

CHECK YOUR CALENDAR IN THE TOPOCK TOPICS FOR TIMES AND DATES

Coming Soon!

The California Department of Toxic Substances Control (DTSC) plans to release a Notice of Preparation (NOP) of a Subsequent Environmental Impact Report for the **Topock Compressor Station Final Groundwater Remediation Project** in May 2015. Two public scoping meetings will be held from 5 to 7 p.m., on Tues., May 19, 2015 at the Senior Citizens Center in Needles, California; and Wed., May 20, 2015 at the Community Center in Golden Shores, Arizona.

Keep an eye out for additional information and the NOP in your mailboxes as well as the Golden Shores library in early May. Notices will be placed in the following newspapers: *Mohave Valley Daily News*, *Needles Desert Star* and *San Bernardino County Sun*.

A Subsequent Environmental Impact Report is being prepared because of changes to the project since the 2011 Groundwater Final Environmental Impact Report (SCH No. 2008051003) and the 2013 Addendum to the Environmental Impact Report.

For more information contact Aaron Yue, DTSC Project Manager, at (714) 484-5439 or aaron.yue@dtsc.ca.gov.

Appendix D

Scoping Meeting Fliers

State of California
Department of Toxic Substances Control

Public Scoping Meetings

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Attend upcoming public meetings to learn more about the project and provide comments to help scope the environmental issues to be addressed in the Draft Subsequent Environmental Impact Report.

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May 19, 2015
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Needles, CA 92363

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Wednesday,
May 20, 2015
5 to 7 p.m.
Golden Shores Community Center
13136 Golden Shores Parkway
Golden Shores, AZ 86436

Comments may be submitted at public meetings, mailed, faxed or emailed to:

Aaron Yue, Project Manager
Department of Toxic Substances Control
5796 Corporate Ave., Cypress, CA 90630
Fax: (714) 484-5329
Email: aaron.yue@dtsc.ca.gov

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State of California
Department of Toxic Substances Control

Tribal Focused Scoping Meeting

The California Department of Toxic Substances Control (DTSC) invites the public to provide comments on the Notice of Preparation for a **Draft Subsequent Environmental Impact Report for the Topock Compressor Station Final Groundwater Remediation Project**.

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Attend one of the upcoming scoping meetings to learn more about the project and provide comments to help scope the environmental issues to be addressed in the Draft Subsequent Environmental Impact Report. **The scoping meetings will be recorded by a court reporter so that all comments can be captured for consideration.**

TRIBAL FOCUSED SCOPING MEETING:

Needles
Tuesday, May 19, 2015
10 a.m. to 1 p.m.
Fort Mojave Indian Tribe Band Room
600 Merriman Ave.
Needles, CA 92363

PUBLIC SCOPING MEETINGS:

Needles
Tuesday, May 19, 2015
5 to 7 p.m.
Needles Senior Citizens Center
1699 Bailey Ave.
Needles, CA 92363

Golden Shores
Wednesday, May 20, 2015
5 to 7 p.m.
Golden Shores Community Center
13136 Golden Shores Parkway
Golden Shores, AZ 86436

A court reporter will be present at all meetings to record oral comments.

Comments may be submitted at scoping meetings, mailed, faxed or emailed to:

Aaron Yue, Project Manager
Department of Toxic Substances Control
5796 Corporate Ave., Cypress, CA 90630
Fax: (714) 484-5329
Email: aaron.yue@dtsc.ca.gov

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Appendix E

Scoping Meeting PowerPoint Presentation

California Environmental Protection Agency
Department of Toxic Substances Control

Subsequent Environmental Impact Report (SEIR)

for the Topock Compressor Station
Final Groundwater Remediation Project

Scoping Meeting

30-day Scoping Period:

May 5, 2015 – June 4, 2015

Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) is the state agency responsible for the investigation and cleanup of sites contaminated with hazardous substances in California

Project Team

- Karen Baker – DTSC Branch Chief
- Aaron Yue – DTSC Lead Project Manager
- Christopher Guerre – DTSC Project Geologist
- Jose Marcos – DTSC Project Geologist
- Stacey Lear – DTSC Tribal and Community Outreach
- Bobbette Biddulph & Sarah Spano – Consultants for DTSC
- Joan Isaacson & Emily Michaelson – Consultants for DTSC

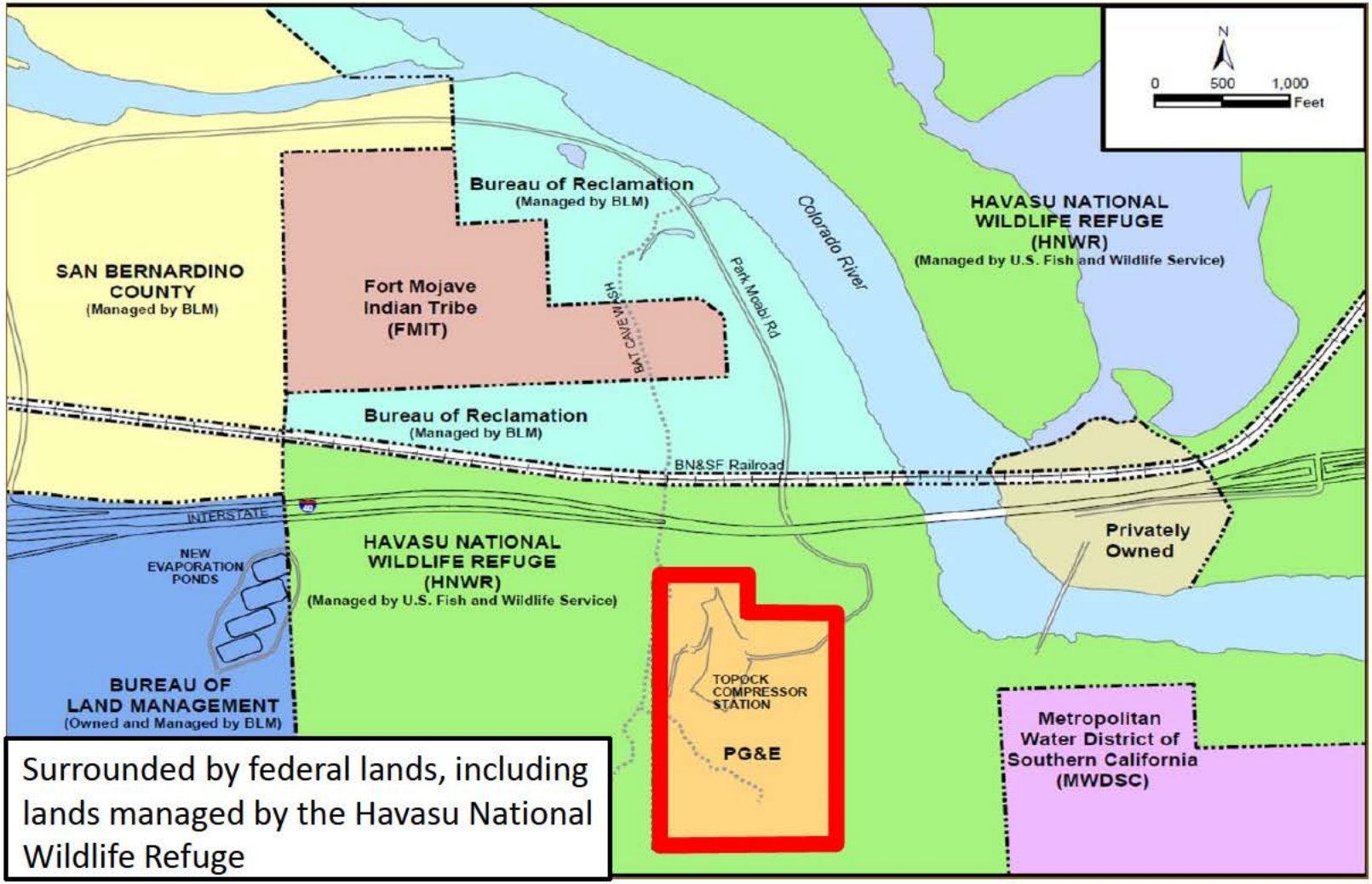
Purpose of the Public Scoping Meeting

- DTSC is holding this Public Scoping Meeting consistent with the California Environmental Quality Act (CEQA)
- DTSC requests your input on the “scope” of the Subsequent EIR for the Final Groundwater Remediation Project

Project Location

- 12 miles southeast of Needles, California
- Designated as a Traditional Cultural Property and has cultural and spiritual significance to Native American Tribes

Project Location



Surrounded by federal lands, including lands managed by the Havasu National Wildlife Refuge

PG&E Operational History

- PG&E owns approximately 66 acres of property
- The compressor station has operated since 1951
- PG&E compresses natural gas for delivery to Central and Northern California

PG&E Operational History

- Chromium additive historically used to prevent corrosion in equipment until 1985
- Discharge to Bat Cave Wash up to '70s resulted in hexavalent chromium contamination in groundwater
- Chemicals of concern based on historic operations include: metals, petroleum hydrocarbons, PCBs, dioxins, asbestos, SVOCs, VOCs

Project History

- PG&E signed a cleanup agreement with DTSC in 1996
- Interim cleanup measures began in 2004 to control groundwater contamination until a final remedy is in place
- Various groundwater cleanup technologies were evaluated by PG&E and a final remedy proposed to DTSC in Dec 2009
- DTSC conducted the required CEQA analysis for the potential environmental impacts of the project in 2010 based on the conceptual cleanup technologies evaluated by PG&E

Project History

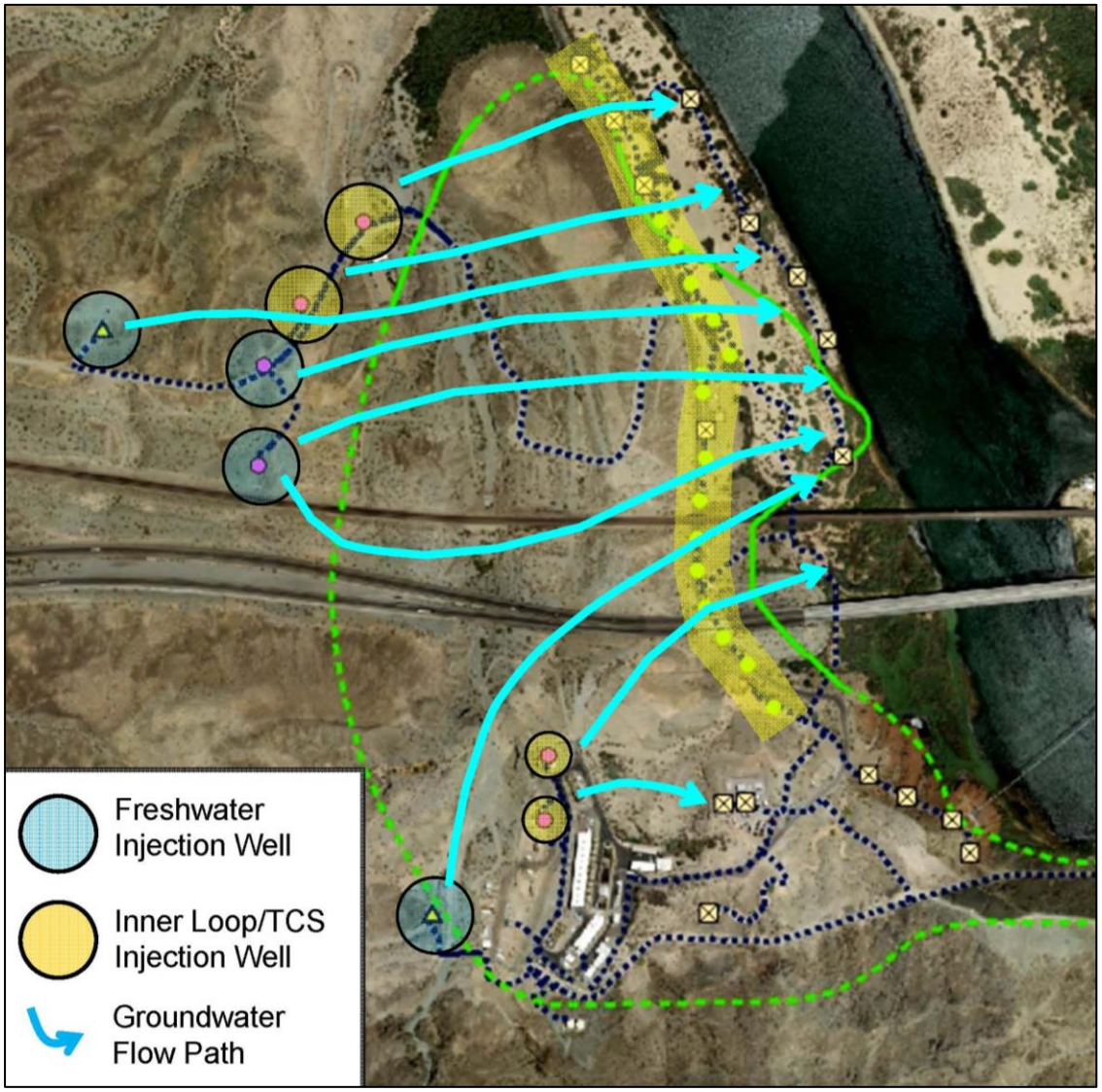
- In 2011 DTSC approved a final environmental impact report (FEIR) and selected “In-situ Treatment with Freshwater Flushing” as the final remedy recommended by PG&E
- The 2011 FEIR focused on program-level analysis of the type of potential remedy (i.e. conceptual design)
- PG&E has been developing the final design since the 2011 FEIR

Project History

- The 2011 FEIR indicated that future environmental review may be needed upon completion of final design:
  - "Following final design, an assessment of potential environmental impacts would be reviewed to ensure that the impacts would be consistent with the analysis presented in this EIR, or if additional analysis is required" (FEIR p. 3-12)

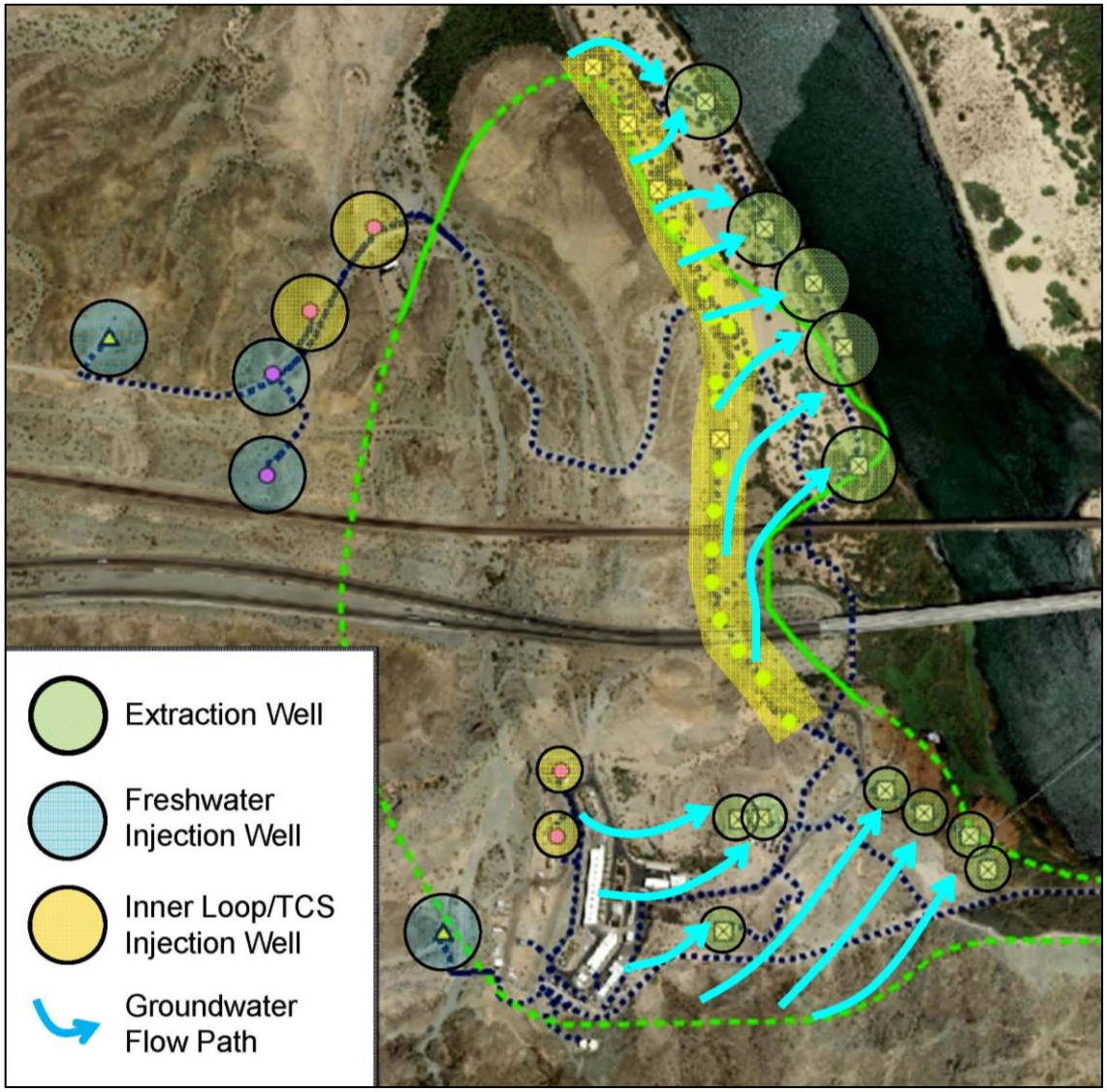
Final Remedy (not changed from FEIR)

Injection Component



Final Remedy (not changed from FEIR)

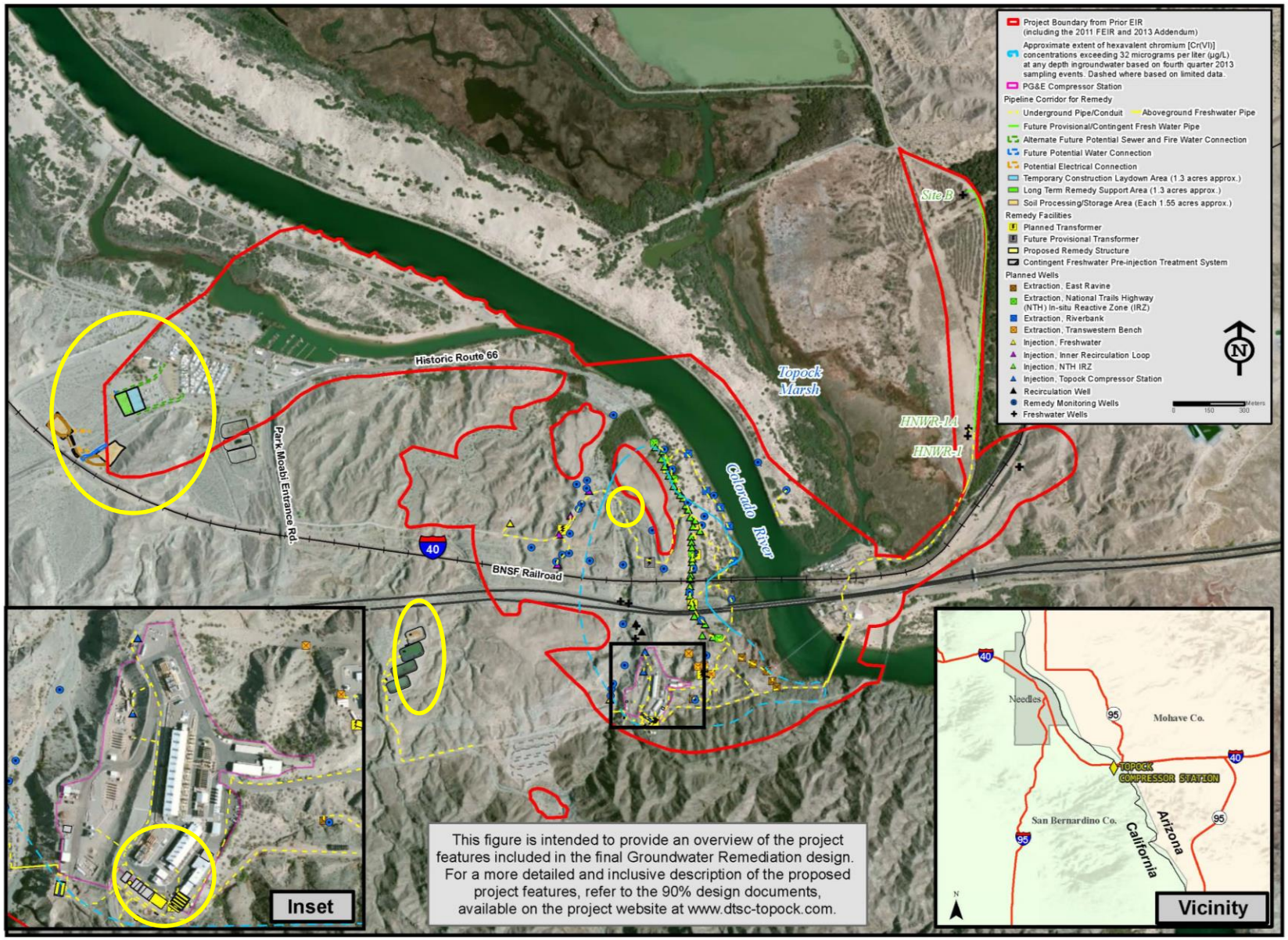
Extraction Component



Final Design

- The selected groundwater remedy remains the same as approved in 2011 – In-situ Treatment with Freshwater Flushing
- The Subsequent EIR will address new design details such as:
  - Use of freshwater from Arizona that contains elevated levels of naturally occurring arsenic requiring additional monitoring
  - Expansion of project area to include a construction headquarters and soil processing and storage near Moabi Regional Park and at the existing evaporation ponds
  - A water treatment plant with contingency to treat arsenic in freshwater
  - Specific design elements ranging from Bat Cave Wash crossing, pipeline routing to septic system for workers
  - An overall anticipated increase in the amount of ground disturbance

Final Design



Project History

Groundwater FEIR
Certified 2011

Groundwater FEIR Addendum for water source
Approved 2013

30% Design
Submitted 2011

60% Design
Submitted 2013

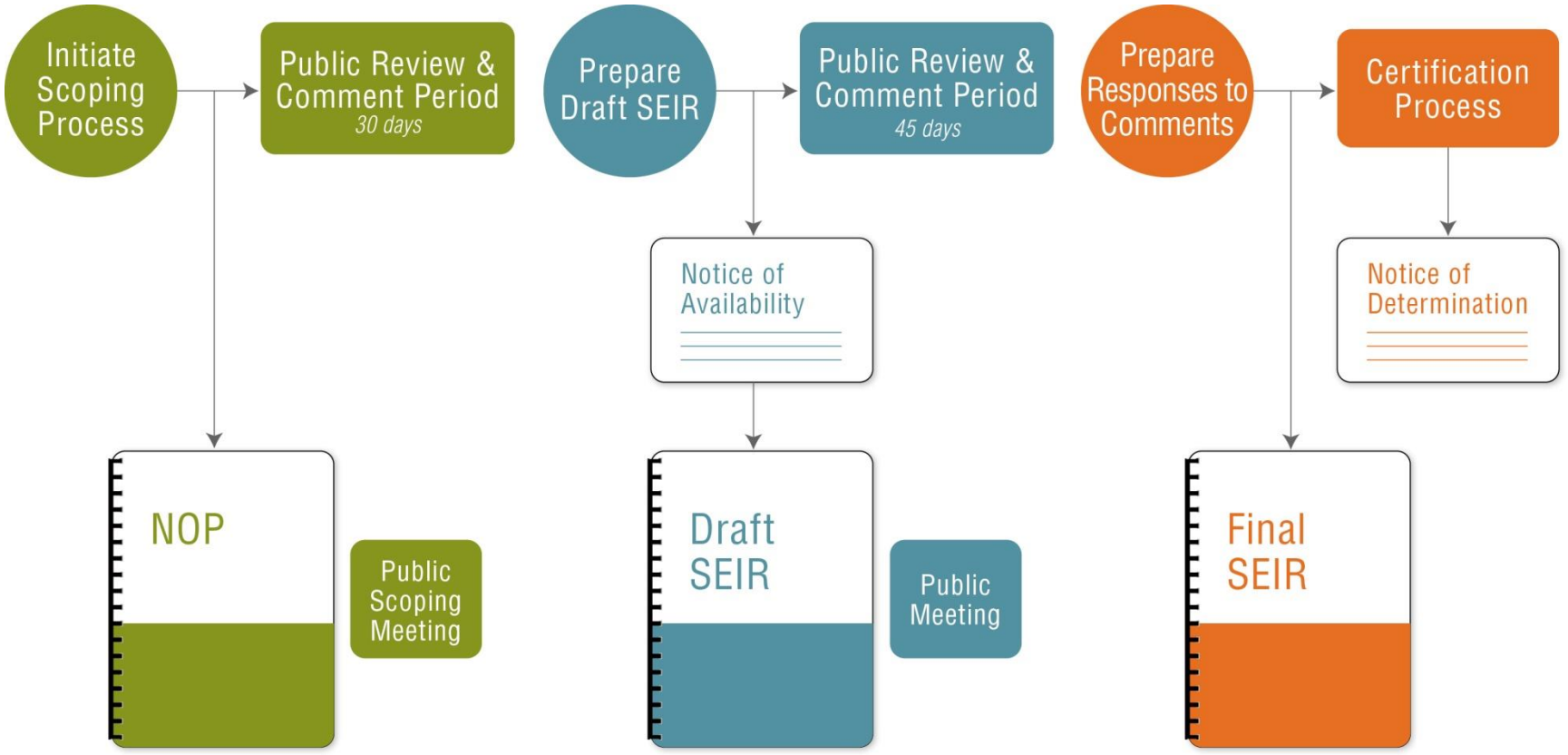
90% Design and Addendum
Submitted 2014 and 2015

Subsequent EIR
Spring 2015 – Fall 2016

Field Implementation
2016-2019

- All 30/60/90% Design documents have included extensive agency/stakeholder comment/response
- 90% Design – 7 month review

Subsequent EIR



Spring 2015 **Spring 2016** **Fall 2016**

Subsequent EIR

- The Subsequent EIR will focus on new design details not addressed in the 2011 FEIR

Subsequent EIR

- Information used in the Subsequent EIR will be obtained from many sources:
  - 90% Design Submittal for the Final Groundwater Remedy (2014)
  - 90% Design Addendum Submittal for the Final Groundwater Remedy (2015)
  - Additional design refinements developed in response to comments on the 90% Design
  - Certified Groundwater Remediation FEIR (2011)
  - Freshwater Addendum (2013)
  - Agency and public input
  - Tribal outreach and communication

Subsequent EIR

- Contents of the Subsequent EIR:
  - Summary
  - Introduction
  - Project Description
  - Environmental Analysis
  - Cumulative Analysis
  - Consideration of alternatives to reduce any new significant environmental impacts
- All contents of the Subsequent EIR will focus on the design details not addressed in the 2011 FEIR

Subsequent EIR

- DTSC has determined that new design details will require environmental analysis related to these focused resources areas:
  - Aesthetics
  - Air Quality/ Greenhouse Gas
  - Biological Resources
  - Cultural Resources
  - Hazards and Hazardous Materials
  - Hydrology and Water Quality
  - Noise
  - Utilities, Service Systems, and Energy

Providing Comments

Ways to submit comments:

- Verbally, at today's scoping meeting
- In writing, via comment card form (turn in today)
- In writing, via mail, fax, or email:

Mr. Aaron Yue, Project Manager
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Fax: (714) 484-5329
Email: Aaron.Yue@dtsc.ca.gov

All comments must be submitted to DTSC, postmarked or emailed, no later than June 4, 2015

Providing Comments

- DTSC is seeking input on any new environmental effects of the design details associated with the PG&E Topock groundwater cleanup

Information Repositories

- DTSC website: www.dtsc-topock.com
- Information Repositories:

Needles Branch Library
1111 Bailey Avenue
Needles, CA 92363

Chemehuevi Indian Reservation Environmental Protection Office
2000 Chemehuevi Trail
Havasu Lake, CA 92363

Golden Shores/Topock Station Library
13136 Golden Shores Parkway
Topock, AZ 86436

California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Colorado River Indian Tribes Public Library
Second Avenue and Mohave Road
Parker, AZ 85344

Parker Public Library
1001 Navajo Avenue
Parker, AZ 85344

Lake Havasu City Library
1770 McCulloch Boulevard
Lake Havasu City, AZ 86403

Providing Comments

- Verbal Comments during Public Scoping Meeting
  - Please complete a speaker card and give to staff
  - When it is your turn, a microphone will be brought to you
  - Clearly state and spell your first and last name for the record
  - State your comment (DTSC staff can read your comment if you do not want to speak)
  - Court Reporter will record the comments
  - Maximum of 5 minutes per speaker to give everyone an opportunity to speak
- Verbal Comments to Court Reporter at Station
- Written Comments by June 4, 2015
  - Submit comment form or letter either at public meeting or using mail, email, or fax

Appendix F

Scoping Meeting Sign-In Sheets

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Tribal Focused Scoping Meeting
Fort Mojave Indian Tribe Band Room – May 19, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Janice Hinkle	FMIT		janicehinkle@fortmojave.com	✓	
Charles Schlinger	TOPOCK TRC	CDE, 618 E. RT 66 FLAGSTAFF, AZ 86001	C.SCHLINGER@CDEINC.ORG	✓	
Leo Leonhart	FMIT	7400 N. Oracle #202 Tucson, AZ 85704	lleonhart@hargis.com		
Margaret Eggers	TRC	P.O. Box 4484 Oceanside CA 92052	MEggers@eggersenv.com		
Bob Prucha	TLC	PO Box 830 Golden CO 80402	prucha@integrated hydro.com		
Dawn Hubbs	Hualapai	PO Box 310 Peach Springs AZ 86434	dawn.hubbs1@gmail.com		

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Tribal Focused Scoping Meeting
Fort Mojave Indian Tribe Band Room – May 19, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Wm Wright	TRC	265 Ridge Rd Durango, Co 81303	wgwright@frontier.net	✓	
DAKEEmston		[redacted]			
Jill McCormick	Cocopah				
Charlotte Knox	FMIT	1905 Lambert Needles CA 92363	Charlotte.knox@fortmojave.com		
Angie Alvarado	FMIT	2600 Ridge Dr. Mohave Valley, AZ 86440			
Paul Jackson Jr	FMIT	1900 RACE ST. NEEDLES, CA. 92363	moniec@fmojave.com		

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Tribal Focused Scoping Meeting
Fort Mojave Indian Tribe Band Room – May 19, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Levi Evanston	FMIT.	1704 Davidson Ndls Ca. 92363	levievanston@fortmojave.com	✓	
[illegible]	FMIT	2935 Romes Circle Mohave Valley		✓	
Colleen Garcia	FMIT	86440	Colleengarcia@fortmojave.com		
Sandra Woods Bricker	Spouse of	?		✓	
FELTON BRICKER SR	FMIT	[redacted]	—	✓	

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Tribal Focused Scoping Meeting
Fort Mojave Indian Tribe Band Room – May 19, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Amanda Sansoucie	Chemehuevi	P.O. Box 1971 Havasu Lake, CA 92363	cit.enviroassistant@gmail.com	✓	
ERIC Rosenblum	TRC	PO Box 905 Nederland, Co 80466	ericrosenblum@hotmail.com	✓	
Edgar Castillo	Cocopah	14545	[redacted]		
LINDA OTERO	Fort Mojave Indian Tribe	P.O. Box 5990 Mohave Valley, AZ 86440	LINDA.OTERO@fortmojave.com		

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting
Needles Senior Citizens Center – May 19, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Zachary Lopez	Media (ZachNews)	P.O. Box 3221 Needles CA, 92363	news.zachnews@gmail.com		
Jennifer Denevan	Needles Desert Star newspaper	800 W Broadway	nwreporter@citlink.net		
ERIC Rosenbaum	TRC				
Wm Wright	TRC			✓	
Charlotte Knox	EMIT				
Jonna Rossiter	[redacted]				

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting
Needles Senior Citizens Center – May 19, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Ronda Fackrell		[redacted]			
Greg Mayfield					
Jim Schuler	Sen. Jean Fuller	[redacted]		X	
Jack Lindley	City of Needles Electric	[redacted]			

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting
Needles Senior Citizens Center – May 19, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Janice Hinkle	Ft. Mojave		[redacted]		

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting
Golden Shores Community Center – May 20, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Nichole Osuch	ADEQ	1110 W Washington St Phoenix, AZ 85007	osuch.nichole@azdeq.gov		
Phillip Smith	chemehuevi C.R.I.T	997 Smith Rd Needles, CA 92363	—		
Philip Perry		[redacted]			
Wm Finch					
Steve Moss	Mohave co. M	2369 Mohave Loop South Fort Mohave AZ	Steve.moss@mohavecounty.us		
Stacey Hewett	Resident	[redacted]			

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting
Golden Shores Community Center – May 20, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Charlotte Knox	FMIT	1905 Lambert Needles CA 92363	CharlotteKnox@FortMojave		
Danielle Taber	ADEQ	Phoenix, AZ			
Dolores Curington	Resident	[redacted]			
Polly Boccus	"	"			
Janice Hinkle	Ft. Mojave		janicehinkle@fortmojave.com	X	
Eric Rosenbaum	TRC	PO Box 905 Niederland, CO 80466			

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting
Golden Shores Community Center – May 20, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
Gina Russ					
Steve Vaughn					
Ola Sayyou	[redacted]				
Kathy Kennedy					
Lawanda Mcfadyen		[redacted]			
John McFadyen	[redacted]				

State of California
Department of Toxic Substances Control

Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting
Golden Shores Community Center – May 20, 2015

Name	Affiliation	Mailing Address	Email Address	Mailing List	
				Add	Remove
MIKE Exsted			[redacted]		

Appendix G

Scoping Meeting Handouts

Department of Toxic Substances Control

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Matthew Rodriguez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

NOTICE OF PREPARATION
FOR A SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

Date: May 5, 2015

To: State Clearinghouse
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

and

Responsible Agencies, Trustee Agencies, Federal Agencies, Native American Tribes, and Interested Organizations and Individuals

Subject: Notice of Preparation of a Subsequent Environmental Impact Report, SCH No. 2008051003 (Pub. Resources Code, § 21166; Cal. Code Regs., Tit. 14, § 15162 [CEQA Guidelines])

Lead Agency: California Department of Toxic Substances Control

Contact: Mr. Aaron Yue, Project Manager
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Phone: (714) 484-5439
Fax No.: (714) 484-5329
E-mail: aaron.yue@dtsc.ca.gov

Prepared by: Environmental Science Associates (ESA)
Addie Farrell, Project Manager
626 Wilshire Blvd., Ste. 1100
Los Angeles, CA 90017
Phone: (213) 599-4300

PROJECT TITLE

Subsequent Environmental Impact Report for the Topock Compressor Station Final Groundwater Remediation Project

PROJECT LOCATION

The Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Station) is situated in the Mojave Desert approximately 12 miles southeast of the city of Needles, California, and 1 mile southeast of Moabi Regional Park in California. The Station is one-half mile west of the community of Topock, Arizona,

which is situated directly across the Colorado River from the Station, and 4 miles south of Golden Shores, Arizona. The Station is one-half mile west of the Colorado River and south of Interstate 40 and occupies a portion of the 66.8 acres of land owned by PG&E (see inset of Figure 1). The area in which the Topock Compressor Station Final Groundwater Remediation Project (proposed project) activities could occur covers additional surrounding land owned and managed by a number of private entities and government agencies, including the Havasu National Wildlife Refuge managed by the U.S. Fish and Wildlife Service, lands managed by the U.S. Department of Interior, Bureau of Land Management, rights of way for the Burlington Northern Santa Fe Railroad and California Department of Transportation, and a portion of land owned by the Fort Mojave Indian Tribe. Project activities would occur almost entirely within the project site that was established in the 2011 *Final Environmental Impact Report for the Topock Compressor Station Groundwater Remediation Project* (Groundwater Remediation Project; Groundwater final environmental impact report [FEIR]), and the 2013 Addendum to the 2011 Groundwater FEIR, with the exception being an area near Park Moabi and the use of existing evaporation ponds permitted by the Regional Water Quality Control Board (see Figure 1).

INTRODUCTION AND PURPOSE OF THE NOTICE OF PREPARATION

The California Environmental Quality Act (CEQA) Guidelines Section 15162 provides that when an EIR has been certified for a project, a subsequent EIR (SEIR) shall not be prepared unless the lead agency determines that one or more of the following has occurred: (1) substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified effects; (2) substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or (3) new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete shows the project would result in one or more significant effects not discussed in the prior EIR, or that significant effects previously identified may be substantially more severe.

The California Department of Toxic Substances Control (DTSC) is the lead agency for the proposed Project. DTSC has determined that modifications to the Groundwater Remediation Project made during the remedy design process could trigger one or more of the three provisions above for requiring preparation of an SEIR. DTSC is required to follow the notice provisions for a Notice of Preparation (NOP) as provided in CEQA Guidelines Section 15087. This NOP serves that purpose.

PROJECT BACKGROUND

Groundwater beneath and near the Station has been contaminated by chemicals associated with historical wastewater discharge from Station operations related to compression of natural gas in areas known as Bat Cave Wash and East Ravine. The main contaminant of concern in groundwater is hexavalent chromium [Cr(VI)], which was used in the past as an additive to the cooling water used at the Station and is harmful to human health and ecological receptors in the environment. Other chemicals present in the groundwater include total chromium [Cr(T)], molybdenum, selenium, and nitrates.

The Groundwater Remediation Project, as analyzed and approved in the 2011 Groundwater FEIR and the 2013 Addendum to the EIR, involves manipulation of subsurface water flow to move a contaminated groundwater plume with Cr(VI) and other chemicals of potential concern (COPCs), originating from past operations at the Station, through a treatment zone. This treatment zone, or "in situ reactive zone (IRZ)," will be created by introducing a carbon substrate such as, but not limited to, ethanol, molasses, lactate, or whey to induce microbial growth, which in turn creates an environment where the Cr(VI) is reduced to less toxic trivalent chromium [Cr(III)] and precipitated.

The Groundwater FEIR was certified by DTSC on January 31, 2011 (SCH No. 2008051003); it considered the potentially significant adverse environmental impacts of adopting the preferred remedy, determined to be Alternative E—In Situ Treatment with Freshwater Flushing—through the *Final Groundwater Corrective Measures Study/Feasibility Study Report for SWMU 1/AOC 1 and AOC 10* process, completed in December 2009. The Groundwater FEIR focused its analysis on the potentially significant adverse environmental impacts of the type of selected remedy as opposed to the other alternative remedy methods considered, and explained that additional analysis may be required upon completion of the design phase for the precise facilities and their locations necessary for implementation. Although some project-specific information was discussed, the EIR mostly provided a general description of the infrastructure that would be used for the project, including IRZ wells, storage facilities, and extraction and injection wells. Relatedly, the Groundwater FEIR identified and considered the potential effects from a maximum number of wells, pipeline, footprint for tanks, control buildings, and related infrastructure anticipated at the time to be needed to construct and implement the final remedy. The exact location and specifics of these facilities was conceptual at that time.

In August 2013, DTSC adopted Addendum No. 1 to the Groundwater FEIR that evaluated Alternative Freshwater Source Evaluation Activities (DTSC 2013), which allowed for water sampling and drilling at two exploratory borehole sites (Site B and the HNWR-1 well) located outside the Groundwater EIR project boundary on the Arizona side of the Colorado River. The purpose was to identify water source of sufficient quantity and quality for the freshwater flushing component of the groundwater remedy.

In September 2014, PG&E released the *Basis of Design Report/Pre-Final (90%) Design Submittal for the Final Groundwater Remedy* (90% Design) at the Station. The 90% Design Report includes modifications to the Groundwater Remediation Project previously analyzed in the Groundwater FEIR. This SEIR will identify and consider the substantial changes to the Groundwater Remediation Project or new information, as those terms are defined in CEQA Guidelines Section 15162, that would likely result in one or more new significant and unavoidable adverse impacts, not previously identified, or that would result in a substantial increase in the severity of a previously identified significant effects over and above those impacts already previously considered.

PROJECT DESCRIPTION

The project evaluated in the SEIR will focus primarily on the modifications or changes to the Groundwater Remediation Project since the 2011 Groundwater FEIR and the 2013 Addendum to the EIR that were identified through completion of the *Basis of Design Report/Pre-Final (90%) Design Submittal for the Final Groundwater Remedy* (90% Design) (PG&E September 2014) and the *Supplemental Pre-Final (90%) Design Submittal for the Final Groundwater Remedy* (Supplemental 90% Design) (PG&E

February 2015). The SEIR will be prepared for purpose of DTSC's consideration of adoption of the Final Remedy Design. Project components not refined or modified in the 90% Design and Supplemental 90% Design are not analyzed again in this SEIR; the original analysis and mitigation measures for those components included in the Groundwater FEIR are still accurate and relevant, although they may be revised as part of the SEIR process. Some of the primary changes to the Groundwater Remediation Project that will be considered in the SEIR are as follows:

- Use of freshwater from Arizona that contains elevated levels of naturally occurring arsenic
- Expansion of project area to include various project elements such as a construction headquarters and soil processing and storage area near Moabi Regional Park
- An overall anticipated increase in the amount of ground disturbance that would be required for construction and installation of infrastructure needed for implementation of the final groundwater remedial system
- An increase in the amount of electricity that would be required to operate the groundwater remedial system
- A septic system and remedy-generated water polish system that were not originally anticipated in the 2011 Groundwater FEIR
- Specific design regarding a crossing of Bat Cave Wash

ENVIRONMENTAL EFFECTS TO BE EXAMINED IN THE SEIR

The purpose of an SEIR is to identify and consider any new or substantially more severe significant adverse impacts on the environment from the revisions to a previously approved project and to identify measures that can reduce, avoid, or mitigate significant adverse impacts. Based upon prior consultation with interested parties, comments received on the Groundwater FEIR, and the environmental assessments conducted in and around the site to date, DTSC has determined that the modifications to the proposed project as analyzed in the 2011 Groundwater FEIR and the 2013 Addendum may have new or substantially more severe significant impacts on the following resource areas:

- Aesthetics
- Air Quality/Greenhouse Gas
- Biological Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Utilities, Service Systems, and Energy

PROVIDING COMMENTS ON THE NOTICE OF PREPARATION

Responsible agencies, trustee agencies, federal agencies, Native American Tribes, and interested organizations and individuals are encouraged to submit comments regarding the scope and content of the environmental information to be contained in the draft SEIR for DTSC's consideration. DTSC requests comments on the NOP from agencies and interested parties within 30 days of issuing the NOP, as indicated in CEQA Guidelines Section 15082(b).

Comments on this NOP should be submitted as soon as possible and must be submitted to DTSC, postmarked or emailed, no later than June 4, 2015. Please send written comments to Mr. Aaron Yue,

DTSC Project Manager, at the address listed on page 1 of this NOP. When submitting comments, please identify a contact person to whom the answer to the questions will be presented.

Documents related to the proposed project are available for review at the project repositories listed below and on the internet at http://www.dtsc-topock.com/.

Needles Branch Library 1111 Bailey Avenue Needles, CA 92363 Chemehuevi Indian Reservation Environmental Protection Office 2000 Chemehuevi Trail Havasu Lake, CA 92363 Golden Shores/Topock Station Library 13136 Golden Shores Parkway Topock, AZ 86436 Lake Havasu City Library 1770 McCulloch Blvd. Lake Havasu City, AZ 86403	Colorado River Indian Tribes Library Second Avenue and Mohave Road Parker, AZ 85344 Parker Public Library 1001 Navajo Avenue Parker, AZ 85344 California Department of Toxic Substances Control 5796 Corporate Avenue Cypress, CA 90630 Monday–Friday: 9 a.m.–noon or 1 p.m.–4 p.m. Please call for an appointment at (714) 484-5337.

DTSC will host two scoping meetings to give the responsible agencies, trustee agencies, federal agencies, Native American Tribes, and interested organizations and individuals an opportunity to appear and comment on the scope and content of the draft SEIR. These scoping meetings will consist of introductions, a project overview, a CEQA process overview, and an opportunity for meeting participants to comment on the scope and content of the SEIR. A reasonable amount of time will be allotted to allow all participants who wish to provide oral comments the opportunity to do so. Written comments will also be accepted at the meetings. Scoping meetings have been scheduled at the following locations and times.

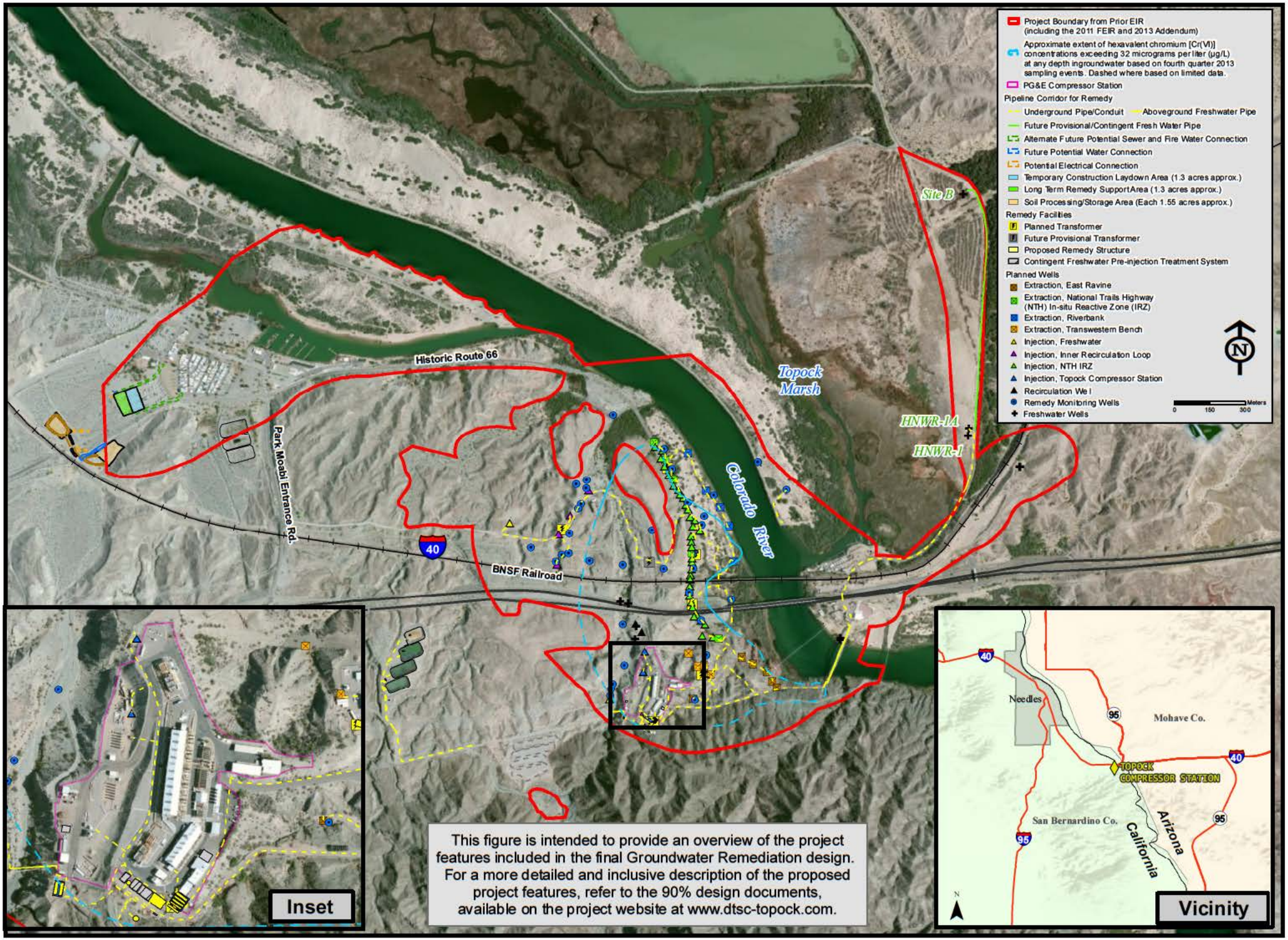
Public Scoping Meetings			
City	**Address**	**Date**	**Time**
Needles, CA	Needles Senior Center 1699 Bailey Avenue Needles, CA 92363	Tuesday, May 19, 2015	5:00–7:00 p.m.
Golden Shores, AZ	Golden Shores Community Center 13136 Golden Shores Parkway Golden Shores, AZ 86436	Wednesday, May 20, 2015	5:00–7:00 p.m.

CONTACT

If you have any questions or wish to discuss the project, please contact Aaron Yue, DTSC Project Manager, at (714) 484-5439 or email: aaron.yue@dtsc.ca.gov, or Stacey Lear, DTSC Public Participation Specialist, at (714) 484-5354 or email: stacey.lear@dtsc.ca.gov, or toll free at (800) 855-7100. For media inquiries, please contact Sandy Nax, DTSC Public Information Officer, at (916) 327-6114 or email: sandy.nax@dtsc.ca.gov.

INFORMATION FOR THE DISABLED AND HEARING IMPAIRED

The meeting rooms for the scoping meetings are accessible to people with disabilities. If translation services are needed or if additional accommodations for the disabled are needed, please notify Stacey Lear, DTSC Public Participation Specialist, at (714) 484-5354 or email: stacey.lear@dtsc.ca.gov no later than 10 working days before the meeting. TYY users may use the California Relay Service at 711 in state or 1-800-855-7100 outside California.



This figure is intended to provide an overview of the project features included in the final Groundwater Remediation design. For a more detailed and inclusive description of the proposed project features, refer to the 90% design documents, available on the project website at www.dtsc-topock.com.

Source: Esri, Google Earth, PG&E 2014

Notice of Preparation
Figure 1

COMMENT FORM

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you have any comments concerning the Notice of Preparation or the environmental issues to be addressed in the Subsequent Environmental Impact Report, please return at the scoping meeting or send to DTSC postmarked by **June 4, 2015**.

Comments (attach additional pages as needed):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

OPTIONAL:

Name: _____

Address: _____

City/State/Zip: _____

Phone/Email: _____

Affiliation (if any): _____

Please address all mailings to Aaron Yue, Project Manager, Department of Toxic Substances Control, 5796 Corporate Avenue, Cypress, CA 90630, fax: 714-484-5329, or email: aaron.yue@dtsc.ca.gov.

DTSC mailings are solely for the purpose of keeping persons informed of DTSC activities. Mailing lists are not routinely released to outside parties. However, they are considered public records, and if requested, may be subject to release.

Speaker #_____
(DTSC Use Only)

SPEAKER CARD

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* ☐ Present Your Comment or ☐ Have Your Comment Read

Date: _____

Name: _____ Affiliation: _____

Email Address or Phone Number: _____

Question/Comment: _____

_____

_____

_____

_____

Speaker #_____
(DTSC Use Only)

SPEAKER CARD

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* ☐ Present Your Comment or ☐ Have Your Comment Read

Date: _____

Name: _____ Affiliation: _____

Email Address or Phone Number: _____

Question/Comment: _____

_____

_____

_____

_____

Appendix H

NOP Comments Received

Appendix H-1

Letters/Emails

ARIZONA DEPARTMENT
OF
ENVIRONMENTAL QUALITY

Douglas A. Ducey
Governor

Henry R. Darwin
Director

Via U.S. Mail and E-Mail

June 12, 2015
VRP 15-242

Mr. Aaron Yue
Project Manager, Geological Services Branch
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630

Re: Review of Notice of Preparation for a Subsequent Environmental Impact Report
Topock Groundwater Site
Needles, California
VRP Site Code: 506252-01

Dear Mr. Yue,

The Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP) received the "Notice of Preparation for a Subsequent Environmental Impact Report (EIR)" as drafted by the California Department of Toxic Substances Control (DTSC) and appreciates the opportunity to comment on the proposed scope of the report.

The VRP acknowledges that the official comment period for this document ended on June 4, 2015. VRP wanted to acknowledge receipt and inform California DTSC that the VRP has no comments on the Subsequent EIR.

Although the VRP is associated with the Topock Compressor Station remediation project via the Volunteer, Pacific Gas and Electric Company, the VRP is adhering to the Notice of Preparation for a Subsequent Environmental Impact Report via mail on May 5, 2015 by submitting this letter directly to the DTSC. If you have any questions, please contact me at 602-771-4847, toll-free at 1-800-234-5677, or osuch.nichole@azdeq.gov.

Sincerely,

Nichole Osuch, Project Manager
Voluntary Remediation Program
Waste Programs Division

cc: Ms. Yvonne Meeks, Pacific Gas and Electric Company - Topock Project Manager

From:	Yue, Aaron@DTSC
To:	Addie Farrell; Bobbette Biddulph; Sarah Spano
Cc:	Baker, Karen@DTSC; Garza, Yolanda@DTSC; Guerre, Christopher@DTSC
Subject:	FW: Topock Compressor Groundwater Remediation Project
Date:	Wednesday, May 20, 2015 10:38:40 AM

From: Tang, Rena@DOT
Sent: Wednesday, May 20, 2015 9:47 AM
To: Yue, Aaron@DTSC
Subject: Topock Compressor Groundwater Remediation Project

Hi Aaron,

We received a notice regarding the Topock Compressor Station Final Groundwater Remediation Project (SCH 2008051003). Could I get more information about the project? My questions are:

- Will there be any oversize/overweight trucks added to the State Highway System as a result of the project?
- Is there a traffic impact analysis available for review?
- Will the project result in changes to drainage patterns? Is there a hydrology study for review?

Thank you,

Rena Tang
Transportation Planner

Caltrans District 8
Division of Planning
LD-IGR, Community & Regional Planning
464 West 4th Street, 6th Floor, MS 722
San Bernardino, CA 92401-1400
o: 909.806.3927
e: Rena.Tang@dot.ca.gov

Sarah Spano

From: Yue, Aaron@DTSC <Aaron.Yue@dtsc.ca.gov>
Sent: Monday, June 01, 2015 11:48 AM
To: Sarah Spano; Addie Farrell; Bobbette Biddulph
Cc: Garza, Yolanda@DTSC; Baker, Karen@DTSC; Guerre, Christopher@DTSC; PGEFile
Subject: FW: Topock Water Clean-up

[redacted]
Sent: Friday, May 29, 2015 12:28 PM
To: Yue, Aaron@DTSC
Subject: Topock Water Clean-up

Hello,

While I'm not a resident in the town of Topock, I am a resident of very nearby Topock Lake Ranchos in Mohave Valley, AZ, which is located approx. 10 miles NW of Topock, and adjacent to the tribal power plant on Courtwright Rd. I am aware of the news regarding the water concerns involving hexavalent chromium and the Topock water supply. I have some questions.

1. Which type of chromium plume is being or going to be cleaned-up? From what I understand, there are healthy and toxic versions of this substance. I was not going to assume that a clean-up effort would only be employed for the toxic type.

2. On our property, we have a well. Our well is approx. 98 feet deep. Are there measures I should be taking, not just for piece of mind and health, to check and test my water for contamination? If so, can you guide me toward an entity that will competently and officially perform the proper and necessary tests?

3. Is there **actually** hexavalent chromium currently in the water supply of Topock or any surrounding area?

4. What is the time table before all departments involved with the clean-up effort will be able to safely and actually state the the plume has been contained and neutralized?

Thank you for your time,

[redacted]

[redacted]

Fort Mojave Indian Tribe

TIMOTHY WILLIAMS - Chairman
SHAN LEWIS - Vice Chairman
COLLEEN GARCIA - Secretary
MARTHA McCORD - Council Member • NICHOLE GARCIA - Council Member
NORVIN McCORD SR. - Council Member • JOHNNY HEMMERS - Council Member
500 Merriman Avenue • Needles, CA 92363
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June 4, 2015

Mr. Aaron Yue, Project Manager
California Department of Toxics Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Re: Comments on NOP for Subsequent EIR (May 5, 2015)
and Summary of Modification Table between 2011 FEIR and 90% Design (May 2015)

Dear Mr. Yue,

The Fort Mojave Indian Tribe (FMIT or Tribe) appreciates the opportunity to provide comments on the Department of Toxic Substance's (DTSC's or Department's) Notice of Preparation (NOP) scoping for the Subsequent Environmental Impact Report (SEIR) for the Topock Compressor Station Final Groundwater Remediation Project.

The Fort Mojave Indian Tribe has been a participant in the Topock Project since 2004. We have actively participated in the original NOP and California Environmental Quality Act (CEQA) process for the Groundwater FEIR and Soils investigations associated with the remediation cleanup at the Topock Compressor Station. We have contributed numerous hours and staff time to provide thoughtful and respectful comments on both work plans and environmental documents, which we incorporate by reference. We have provided our Tribal cultural expertise, knowledge, and our continued practice of the Mojave religion and its perspectives of how the sacred area at Topock should be considered and treated by the regulatory agencies.

This may be one of the final opportunities under the CEQA to engage and ensure the agency considers and further guides the Final Remedy Basis of Design now and into the future with the knowledge that the Fort Mojave people will have to live with the decisions, numerous significant and irreversible impacts and the environmental effects from the Project footprint on our sacred area for generations to come. Our Tribal preferences remain unchanged over this last decade: avoid impacts, consider the setting, minimize intrusions, fully include the Tribe in decision making and field activities and accommodate Tribal beliefs and preferences wherever possible. We also ask that the Department review and consider the Tribe's prior comment letters and materials related to the 2011 Groundwater DEIR and FEIR, as they remain relevant in many respects today.

With those thoughts in mind, we offer the following comments on the NOP for the SEIR and Scoping Meetings, particularly the tribal meeting in Needles:

The Tribe was made aware that the agency was going to conduct an SEIR for the groundwater portion of the Topock Project during its meeting with Director Barbara Lee on April 13, 2015. The tribes requested that DTSC provide them a list of the changes from the original 2011 Groundwater FEIR to the 90% BOD as soon as possible, as the Department informed us that the NOP was to be issued on May 5, 2015, and that the Department was offering a meeting with the tribes on the SEIR. Scoping meeting dates were announced by Karen Baker at the CWG meeting held on April 15, 2015, the dates of May 19 (Needles) and May 20 (Golden Shores), and a meeting with the tribes at a date yet to be determined. Karen Baker mentioned that a comparison document would be provided to the Tribes and other stakeholders as it was being prepared by their consultant ESA.

An NOP Scoping meeting date was set for May 19, 2015, and held at the Fort Mojave Band Room, 500 Merriman Avenue, Needles, California. The scoping meeting was attended by the Fort Mojave, Hualapai, Chemehuevi and Cocopah -- tribes involved with the Topock Project. Information was provided during the scoping meeting by DTSC and, in addition, a document was sent to the stakeholders by Aaron Yue, DTSC on May 13, 2015 entitled "Topock Compressor Station Final Groundwater Remedy Project, 90% Design and Addendum – 2011 Final Environmental Impact Report (FEIR)/2013 Addendum Comparison table, Working Document – Subject to Revision (May 2015)".

Fort Mojave appreciates the additional information provided in the document. Would you please provide us the name of the individual, company or consultant that prepared the Table, and provide the tribes any future updates to the table? The information was useful and would have been more beneficial as an attachment to the NOP, as it would have allowed more detail to be commented on during the scoping meetings.

The Tribe is also concerned with the phrase in the table that it is "Subject to Revision (May 2015)." How can the SEIR document proceed without a full range of knowledge of the changes that may still occur up to and including the Final 100% BOD? How will those changes be considered in the SEIR, if we have a "running tab" of changes and potential impacts? Will the comment period be extended if there are changes to the table that might be potentially significant?

On March 20, 2015, the Tribe submitted its comments on the Pacific Gas & Electric Company ("PG&E") 90% Basis of Design ("BOD") document for the Topock Compressor Station groundwater remedy. One of the overarching issues raised in the comment letter from Tribal Chairman, Timothy Williams, was "The Placement of Monitor Wells in Arizona." Specifically, the Tribe objected to the proposed locations of monitor wells designated as MW-X and MW-Y in a named Mojave sacred place known as *Amut ahar*. As you are aware, the tribes have been working with the Arizona State Historic Preservation Office ("AZSHPO"), who in turn have approached the Bureau of Land Management ("BLM") with regard to this issue. Presently, the BLM has agreed to reopen the matter for reevaluation under the National Historic Preservation Act ("NHPA"), based on the tribes' claims.

The Tribe notes that, while the Department has endeavored to compile a comparative listing of the groundwater remedy design items that were included in the 2011 Groundwater FEIR against the current

design as presented in the 90% BOD document, there is no mention of the newly included monitor wells MW-X & MW-Y. Considering the issues that have been raised by the Tribe when Arizona wells were first proposed and the additional information submitted more recently, it is imperative that this matter be considered a significant cultural impact that must be assessed in the SEIR process under CEQA.

MW-X and MW-Y are undesired and appear unnecessary. The current technical basis for additional monitoring wells in Arizona and, their numbers, and locations is inadequate, particularly given the cultural importance of this area. With TRC support, the Tribe will be recommending a stepwise decision process on the consideration of wells to monitor the as yet unsubstantiated probability of contaminant migration under the Colorado River. If wells were to proceed on current basis, it could very well lead to misplaced wells that could then result in additional wells and additional impacts/effects on this sensitive place. Such analysis must then appear in the draft SEIR.

CEQA Guidelines Section 15083 relates to "Early Public Consultation." The Tribe is concerned that DTSC and the federal agencies are not sufficiently coordinating on the SEIR effort to ensure adequate public input. Although the Department provided a day's notice prior to the formal announcement that an SEIR would be done and offered to meet specifically with the Tribes involved with the Topock Project, the FMIT were concerned that key staff/consultants of the DTSC agency and the other lead regulatory agency (DOI) that should be specifically knowledgeable in the relevant subject matter were not in attendance to participate or hear comments made during the Scoping meetings.

The NOP also would have been more useful if it were more specific about the applicability of the three CEQA Guidelines section 15162 provisions triggering the subsequent EIR and the facts and circumstances of the Project changes to the groundwater remedy. For example, how did DTSC determine that an SEIR was the appropriate route to proceed with the "New Environmental Information" outlined in the 90% Design and Supplemental 90% Design? Was there an initial study prepared for the SEIR, and if so, can that document be provided to the Tribe as soon as possible, as requested at the CWG meeting? What potentially significant effects were not discussed in the previous EIR? How will those potentially significant effects be more severe -- in kind, scope or amount -- than shown in 2011 EIR? Can DTSC be more specific about the final design having "[a]n overall anticipated increase in the amount of ground disturbance"? The impacts of "Ground disturbance" in a sacred and environmentally sensitive area is not just about amount of the disturbance, but includes the location, cumulative impacts, etc. How might this finding of increased ground disturbance relate to DTSC's Findings of Fact and Statement of Overriding Consideration, January 31, 2011, Pages 41-79?

Please explain what Slide 20 of the DTSC Scoping PowerPoint means when it says that the SEIR will include "Consideration of alternatives to reduce any new significant environmental effects".

Your email regarding the Table of Changes mentioned that the content contained in the Table may "continue to evolve." What is DTSC's anticipated process for keeping the Tribe, and others, aware of the changes to the Table? Since things may "continue to evolve," will the SEIR compare the 90% BOD or the Final BOD with the 2011 FEIR conceptual project (NOP, page 3)? What may be the consequences of comparing something less than the final design? Could this trigger additional future environmental

review in order to consider potentially significant additional changes to the Project and its impacts? How would cumulative impacts be fully addressed?

Since DTSC recently issued a Partially Recirculated Draft Environmental Impact Report (PRDEIR) for the proposed soil investigation, specifically recirculating the Biological Resources section to evaluate potential environmental impacts to special status bat species and Nelson's bighorn sheep, as well as chub and sucker fish, southwestern flycatcher, sun cup etc., will DTSC be incorporating into the SEIR any of the recent biological studies and new information shown in the soil investigation PRDEIR? If so, how might this affect Project design and implementation?

The Tribe has provided many written comments and concerns regarding many documents related to the Topock Project -- the 2011 Groundwater FEIR, the Soils Investigation PRDEIR, the 30%, 60%, 90% and supplemental BOD, the Beale Slough ACEC, Topock Maze Loci A, B, and C, the Tribal Cultural Values Assessment (TCVA) report, the Department's Topock Cultural Area -- and the BLM determined and designated TCP that exists within and at the APE. FMIT remains concerned that archaeological/cultural site delineations must be finalized in consultation with the tribes prior to the release of the SDEIR so that avoidance of updated archaeological sites and newly recorded cultural materials can be assured, consistent with the 2011 Groundwater FEIR mitigation measures included in CUL-1a-10:

> *PG&E shall consider the location of Loci A, B, and C of the Topock Maze during the design and approval of the physical facilities necessary for the final remedy and is prohibited from creating any direct physical impact on the Topock Maze, as it is manifested archaeologically. Through the design, PG&E shall prevent all indirect (e.g., noise, aesthetics) impacts on the Topock Maze, to the maximum extent feasible as determined by DTSC.*

This consultation should also include (1) making sure there are NO direct impacts relative to any new archaeological/cultural surveys and their resultant reports and (2) taking into consideration the TCVA report provided by the affected Tribes participating in the Topock Project. Items appearing in the recent Table of Changes provided by DTSC, only referred to the Topock Compressor Station as being recommended eligible by PG&E to the National Register of Historic Places, not those areas that have since been identified as a result of the 2014 annual field verification and from the 2015 Moabi Regional Park survey. Perhaps, an independent, qualified and unbiased archaeological firm should perform an independent cultural survey to address the concerns that have been raised by the Tribe/tribes. This has been a consistent need raised by the Tribe for nearly a decade.

Relative to the proposed construction headquarters and Soil Processing and Storage Areas (DTSC Table Category 5), please explain what the "long term remedy support area" and "Operation and maintenance (O&M) support area for the lifetime of the groundwater remedy" mean, and what uses and facilities that might encompass over the life of the remedy? How can the tribes be assured the uses for this area will not morph or grow over time to create additional impacts? How will the Tribe's concerns be addressed in lease negotiations and terms? That should be defined in the draft SEIR, its conditions and the lease terms, each of which should be made available for tribal review and consideration.

What would be the source and purpose of the "import material" referenced here?

What does "Clean soil may also be used in this location as fill material, at the landowner's request" mean?

What would the source and use be of the water that would be transported to this area in tanks?

Category 8 regarding the Bat Cave Wash Crossing states, "The concrete roof of the culverts would act as a road, and would provide similar capacity as the existing road and nearby public road." PG&E's proposed box culvert crossing provides a more permanent and flood resistant crossing being that it was designed for the 25-year storm. The original road periodically flooded out in the past. The description seems to minimize the new feature and its impacts. Please address.

Relative to DTSC Table, Categories 9 and 10, the potential impacts associated with so-called "replacement" wells are not well-developed or disclosed. How will DTSC consider the impacts of "replacement" wells that are not within the same sized hole or in a different location from the well it is replacing? How many replacement wells are expected over the life of the remedy for each original well? Aren't such impacts additional to the original well and thereby create impacts of greater magnitude? Should not every well be considered as potentially needing replacement (one or more times over the life of the Project) so that the cumulative potential impact can be evaluated? Please explain clearly in the draft SEIR.

Please explain clearly and fully the sources of water, quantities expected to be used and water rights associated with all water related to the construction and operation of the final design for the life of the Project. Also, please explain clearly and fully the sources of electricity, quantities expected to be used and methods of supply related to the construction and operation of the final design for the life of the Project.

Finally, the Tribe reserves its right to provide additional comments once the transcripts from the scoping meetings have been received and through consultation moving forward.

In conclusion, the Tribe looks forward to seeing each of the above issues addressed in the draft SEIR. If PG&E is being provided administrative drafts of any portion of the draft SEIR, the Tribe respectfully requests to also receive those contemporaneously with PG&E, as well as copies of any PG&E comments submitted into the public record or agency possession. Please provide hard copies and a disc of the draft SEIR and its appendices to each the FMIT Cultural Department, Hargis + Associates, Inc., and Courtney Coyle.

The Fort Mojave Tribe is available for further discussion of the concerns identified in this comment letter and is available to meet with DTSC and its consultants. We request that DTSC consult with the Tribe to discuss proposed impact significance levels and how those impacts will be addressed sufficiently in advance of publication of the draft document.

Sincerely,

Timothy Williams, Chairman
Fort Mojave Tribal Council

CC: Linda Otero, ACS Director
Janice Hinkle, Project Manager FM
Nora McDowell, FM Consultant
Chris Harper, FM Archaeologist
Leo Leonhart, Technical Consultant
Courtney Ann Coyle, Legal Counsel
Steve McDonald, Legal counsel
Michael Sullivan, Technical Consultant
Pam Innis, DOI
Kim Liebhauser, BLM
Renee Kolvet, BLM
Susan Wilcox, DTSC
Brendan Greenaway, CASHPO
James Garrison, AZ SHPO
Nancy Brown, ACHP
Valerie Hauser, ACHP

AHAMAKAV CULTURAL SOCIETY

Fort Mojave Indian Tribe

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Phone (928) 768-4475 • Fax (928) 768-7996

June 4, 2015

Aaron Yue, Project Manager
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

RE: Comments on NOP for Subsequent Environmental Impact Report (SEIR) for the Topock Compressor Station Final Groundwater Remediation Project

Dear Mr. Yue,

As concerned residents and members of the Fort Mojave Indian Tribe, the surrounding Topock project areas and the Colorado River, represent a huge part of the sacred area known as Topock. Tribal Representatives and community members have attended and submitted comments on the NOP (Notice of Preparation) for the Groundwater DEIR/FEIR 2011 and Soils Investigation DEIR. Just recently, Tribal Representatives, staff and community members participated in the Scoping Meeting held at the Fort Mojave Band Room, Needles, California, on May 19, 2015.

As has been conveyed to the agencies for over a decade of tribal participation in the Topock CEQA process, the area at Topock is the traditional homeland of the AhaMakav "People of the river." We have lived here at this area since time immemorial. We, the Fort Mojave people grew up in the Needles, CA., and Mohave Valley, AZ. areas. We have witnessed the many changes to the environment due to Western migration and development. We have witnessed the land once known to us and our ancestors as ours, be slowly taken from under our ownership/stewardship and reverted to the States of California, Arizona and special interest groups. The traditional homeland and landscape so unique to our spiritual and religious cultural values and our way of life forever will be changed by the contamination and remedy clean up now present at Topock. This Cultural Landscape and Sacred area is known only to us and can never be replicated anywhere else, this is our spiritual connection area and the effects of the remedy project will have profound and significant impacts to the land, plants and wildlife who call Topock their home, we are all connected to them and them to us, we speak for the wildlife, plants, birds, tortoises, bighorn sheep, coyote and all things present within the Area of Potential Effect at Topock.

The following comments and concerns were expressed by representatives of the AhaMakav Cultural Society staff, and individual tribal members of the community:

- No more disturbance to our Sacred/Spiritual grounds
- No small amount of water can wash the Chromium out, it will take million, even billions of gallons of water over the project lifetime.
- We the Mojave people will be here forever this is our home and we do not want disturbance on our lands or the surrounding area at the Topock site.
- I work with children and I want them to be around to pass on our Culture.
- Concern regarding the number of existing and proposed wells and locations.
- What happens if the contaminated water breaks through into the river?
- We do not want our Spiritual and Cultural Lands disturbed, but to be avoided in the design implementation.
- Putting in new Mesquite trees at the Topock site would not be useable for FMIT.
- Our Culture is our life, who we are, and what this area is, "Pipa AhaMakav."
- Could you state for the record if you prepared an Initial Study related to the Subsequent EIR, if you did, could you provide it to the Tribe ASAP?
- Have you clarified on the record if the Subsequent EIR will compare to the 90% BOD or the Final BOD to the 2011 conceptual project (NOP, page 3)?
- Did you provide a comparison of the concept to the Final Project design as part of the NOP?
- Did you clarify on the record if you will be incorporating into the Groundwater Subsequent EIR any of the recent biological studies and new information shown in the Soil Investigation Partially Recirculated DEIR (specifically, re: bat, big horn sheep, chub and sucker fish, southwestern flycatcher, suncup, etc.)
- Our land is who we are, the clay we eat, the water we drink, and our travel into the next life. Our spiritual passing through the Maze areas.
- Tribal members ask that State, Federal agencies, Land Owners and Lessees consult and communicate with the Fort Mojave Tribe before any proposed ground disturbing activities take place and to have Ft. Mojave tribal monitors present.
- We revere the area at Topock, we value the quiet setting and solitude, the viewscape of the area from our Natural world view of the land, from our beginning at Avi Kwa Ame – Spirit Mountain to the end of our life's journey at Topock. The sense of place we know and are connected to at our sacred area.
- The need to restore the area of past, current and future disturbances to the land to natural conditions as soon as possible. Removal of the ground disturbing foreign elements that can't co-exist with this spiritual place of eternal rest and harmony.
- That promises and conditions of the final remedy need to be enforceable until the project is complete, then our sacred area can begin the process of healing for the next generations of the Mojave People.

We ask that the Department of Toxics Substance Control take into account the above comments that were made by the individual tribal community members and staff present at the Tribal Scoping meeting and during tribal consultation with Mojave tribal members whose Religious, Spiritual and Cultural Values will be adversely affected by the direct, indirect and cumulative impacts associated with the Final Topock remedy over the life of the project.

Sincerely,

Fort Mojave Tribal Members

1. Janice Hinkle
2. Paul Jackson Jr.
3.
4.
5.
6.
7.
8.
9.
10. Siena Courtwright
11. Wanda Jenkins
12.
13.
14.
15.
16.
17. Mike Upshaw

18. Jonathan
19.
20. Cheryl Thomas
21. Willie Rodriguez
22. Jamie Jackson
23. Cindy Russell
24. David A Jasso Jr
25. Delbert Holmes
26. MELVIN Holmes
27. Tommy A Tackett
28.
29.
30.
31. Michael Hills Jr.
32. Kayla Hills
33. Kylie Cameron
34.
35. Starla Shaffer
36. Corrine Shaffer
37.
38.
39.

40. T W Arias

41. Miranda Gomez

42. Jessica Mills

43. Krista Holmes

44. Linda Gutierrez

45. Monica Garcia

46.

47. Garcia

48. Jeannette Stillman Otero

49.

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53. Patricia Medrano

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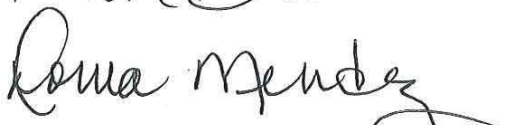
58. 

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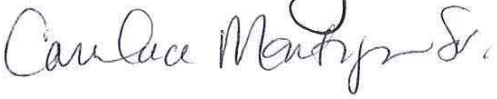
60. 

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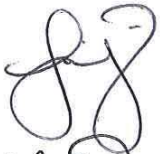
65. 

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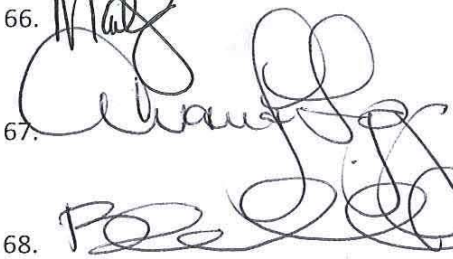
67. 

68. 

69. 

70. Rocco Jackson
71. Charlotte Jackson
72. Sharon Jackson
73. John Garcia III
74. Naomi Carter
75. NANCY SWICK
76. TOMMY JACKSON JR
77. Nina Jackson
78. Debbie Austin
79. Verona Slade
80. Connie Jackson
81. Crystal Evanston
82. Kelly Hills
83.

86. Kathy Williams

87. [illegible]

88. [illegible]

89. [illegible]

90. [illegible]

91. LaVerne Rodarte

92. [illegible]

93. [illegible]

94. B. Barrockman

95. S. Bricker

96. Terri L. Medrano

97. [illegible]

98. [illegible]

99. Manny Mills

100. Linda Otero

Hualapai Department of Cultural Resources
P.O. Box 310
Peach Springs, Arizona 86434
Office: 928.769.2223 FAX: 928.769.2235

VIA ELECTRONIC MAIL

May 29, 2015 HDCR File: 2015-916

Mr. Aaron Yue
California Department of
Toxic Substances Control
5796 Corporate Ave.
Cypress, CA 90630

Ms. Pamela Innis
U.S. Department of the Interior,
Office of Environmental Policy and Compliance
P.O. Box 25007 (D-108)
Denver Federal Center, Building 56
Denver, Colorado 80225

Reference: A) *Notice of Preparation for a Subsequent Environmental Impact Report (May 5, 2015);* B) the *90% and Addendum – 2011 Final Environmental Impact Report (FEIR)/2013 Addendum Comparison Table (May 2015);* C) the *Pacific Gas & Electric Company Topock Compressor Station Soil Investigation Project Partially Recirculated Draft EIR (SCH#2012111079, April 2015),* and D) *Hualapai Proposed Mitigation Measures*

Dear Mr. Yue, and Ms. Innis,

The Hualapai Tribe appreciates being able to comment on the *Notice of Preparation for a Subsequent Environmental Impact Report (May 5, 2015);*) the *90% and Addendum – 2011 Final Environmental Impact Report (FEIR)/2013 Addendum Comparison Table (May 2015*), and *Pacific Gas & Electric Company Topock Compressor Station Soil Investigation Project Partially Recirculated Draft EIR (SCH#2012111079, April 2015).*

The Hualapai considers the Topock Maze and surrounding landscape to be of great importance to Hualapai. The air, the earth's surface, and the subsurface of the landscape are all part of a sacred continuum. Wells, buried pipes, and soil samples are intrusions and desecrations, especially near

the Topock Maze. Regardless of the intrusions already carried out, the Hualapai have deep connections with the Colorado River and recognize that it is important to keep the river clean.

Regarding chromium contamination at the PG&E Topock Compressor Station, the preference of the Tribe would be no more drilling or intrusions into the landscape. However, this may not be possible given the current regulatory setting. Therefore, if the work must be done, the Tribe wants to protect cultural resources as much as possible. During on-the-ground activities, monitoring of cultural sites must be done, and a recognition of the importance of cultural sites must be emphasized. After the work has been completed, the landscape must be returned to its original condition.

A). Regarding the *Notice of Preparation (NOP) for the Subsequent Environmental Impact Report (SEIR), dated May 5, 2015:* We would like to understand the DTSC's explanations for the NOP for a SEIR. If we knew specifically, the Hualapai Tribe would then be better able to assist DTSC in the additional scoping process. We understand that the California Environmental Quality Act (CEQA) guidelines (§15162) provided a basis for DTSC's decision, however, in reviewing that section we would like a fuller explanation regarding §15162 (3 A-D), as to the following questions:

1. What are the "significant effects" not discussed in the previous EIR?

2. How will these "significant effects be more severe" than shown in the previous EIR? What are the specifics? Are culturally significant areas going to be destroyed? Are there going to be impacts to the areas known as the Maze (Loci A-C)? Is the area designated by the Tribes as an "Exclusion Zone," (TCVA February 2014), going to be impacted? If so, will those impacts destroy the area?

3. What mitigation measures specifically are now feasible that were not feasible in the originally accepted EIR? Did Pacific Gas & Electric (PG&E) object to proposed (not considered feasible, but now feasible) mitigations? Was PG&E allowed to comment on proposed draft mitigation measures in the original EIR? If so, Hualapai would like to comment on proposed draft mitigation measures.

4. Did PG&E specifically object to proposed mitigations that could have reduced significant effects on the environment?

5. Did DTSC officially prepare an Initial Study related to the SEIR? If so, Hualapai would appreciate receiving a copy.

6. How will the SEIR address project components in the 90% Design and the Supplemental 90% Design that "may be revised as part of the SEIR process?" (NOP May 5, 2015 page 4). If this is done, what are the specifics that will be revised and will Hualapai be informed prior to the revisions being made final?

7. Hualapai would appreciate DTSC requesting that site delineations be finalized regarding the Tribal Cultural Values Assessment (TCVA) prior to the SEIR being released. Avoidance is the best alternative. This is in consideration of the project's extending into Park Moabi; PG&E using staging areas (and work zones) despite expressed opposition from Hualapai and other interested tribes; and due to "new discoveries."

B). In reference to the *90% and Addendum – 2011 Final Environmental Impact Report (FEIR)/2013 Addendum Comparison Table (May 2015*), one of the items that has changed between 2011 and 2013 are Cultural Resources that "have since [been] identified as a result of the 2014 annual field verification and from the 2015 Moabi Regional Park survey." It would be more appropriate to also include, "and potential discoveries by Hualapai and other interested Tribes."

1. Will the comparison table be used as a basis of analysis? If so, will Hualapai and other interested Tribes be able to receive a draft copy of that completed table prior to the SEIR being finalized? Will PG&E also receive a copy?

2. Is PG&E receiving copies of draft SEIR documents? If so, please copy Hualapai and other interested Tribes.

C). Regarding *Pacific Gas & Electric Company Topock Compressor Station Soil Investigation Project Partially Recirculated Draft EIR (SCH#2012111079, April 2015).*

1. Is the biological finding described in the Soils Partially Recirculated Draft EIR being incorporated into the SEIR for Ground Water? This information is critical for analyzing cumulative environmental impacts and mitigation measures that are the results of the biological findings regarding culturally sensitive species considered sacred to Hualapai, in particular the Big Horn Sheep and Bat species.

2. Per the Notice of Availability, "As explained in the Recirculated Biological Resources section, after implementation of the EIR mitigation measures, all impacts would be reduced to a less than significant level." What determines a "less than significant level?" Who is making that determination? Will Hualapai and other interested Tribes provided the opportunity for input into determinations of significance?

3. Are both documents being subject to CEQA requirements in regards to §15064.7 *Thresholds of Significance?* In particular, are the two (Subsequent GWEIR, and Partially Soils) EIRs going to be held up to a tailored "threshold of significance that the agency uses in the determination of the significance of environmental effects…" or are the two documents going to be held up to CEQA's *Appendix G: Environmental Checklist Form*? If a tailored threshold of significance document, (§15064.7 (b)), is going to be incorporated, please provide or make available to Hualapai and other interested Tribes, the adopted ordinances, resolutions, rules or regulations developed "through a public review process" and that are to "be supported by substantial evidence."

D). Regarding mitigation during the Topock Remediation design, construction and decommissioning phases, to our knowledge, the Department of the Interior (DOI) has not put forth mitigations for the Topock Remediation Project. Why not? Why was the Federal agency not at the scoping meeting on May 19th 2015? A specific concern is how will mitigation measures not only be implemented, but how will quality control of the mitigation measures be over-seen?

CEQA[1] states (§15370 a-e) that Mitigation, are "*Methods or plans to reduce, offset, or eliminate adverse project impacts. Action taken to avoid, reduce the severity of, or eliminate an adverse impact."* can include any one or more of the following:

a). Avoiding the impact altogether by not taking a certain action or parts of an action.

b). Minimizing impacts by limiting the degree or magnitude of an action and its implementation.

c). Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.

d). Reducing or eliminating impacts over time by preservation and maintenance operations during the life of the action.

e). Compensating for the impact by replacing or providing substitute resources or environments.

As we have stated previously for several years, while the Topock Groundwater EIR considered a variety of mitigation measures without Tribal input, we do have at this time, an opportunity to express Tribal preferences during the SEIR for Groundwater and for the *Soil Investigation Project Partially Recirculated Draft EIR*. We can point out that DTSC in considering the GW mitigation measures, did so to the degree that the Topock GW remediation project may have reduced significant impacts while meeting the needs of PG&E's project objectives, but did not consider many proposed mitigation measures that would meet the needs of the Hualapai Tribe and other interested Tribes.

In this situation, Tribal concerns and requests for mitigation measures to meet the needs of a Tribal community in relation to preserving a cultural identity are linked spiritually and physically to the Topock area. Redress and compensation should be given to Tribes in the face of damaged cultural-spiritual resources. In the United Nations Declaration on the Rights of Indigenous Peoples, Article 8, states that "Indigenous peoples and individuals have the right not to be subjected to forced assimilation or destruction of their culture," and that compensation should be given in face of any action "which has the aim or effect of depriving them of their integrity as distinct peoples, or of their cultural values…". Compensation should include funding support for education and technical training for tribal members and have PG&E provide for full higher-education tribal scholarships (two per educational year per participating tribe) for biology and / or ethnobotanical degrees, archaeology, hydrogeology, and museum studies. There is no replacement possible for the loss of spiritual connectivity. The only way Tribes can maintain

[1] 2014 California Environmental Quality Act Statute and Guidelines

cultural integrity is through education programs that promote cultural identity and activities that engage tribal communities within their present-day lands and within ancestrally vested lands. We need to educate future generations now, as they will be the responsible entities having to live with the Topock legacy in the very near future.

From previous suggestions, the following mitigation proposals have not been accepted within either the Groundwater or Soils EIR. We would appreciated DTSC's consideration in accepting and implementing the following suggested mitigation measures during the course of review for both the SEIR and the partially released Soils EIR:

1. Physical disturbance within the Project area will occur to significant trails and will cut-off the ability of participating Tribes to travel physically and spiritually along these trails. Physical disturbance within and outside of the Project area will occur to significant intangible and tangible cultural resources including but not limited to, stone circles, rock cairns, stone scatters, tool refining stations, spiritual teaching areas, mineral resource areas etc. In consultation with participating Tribes, extant trails and the entire Topock Cultural Landscapes in Topock Cultural Landscapes should be field mapped, and documented by qualified Tribal cultural resource personnel in collaborative management with the BLM/DOI. Low-level aerial photography and video photography should be used to document trails that are within the APE and throughout the Topock Cultural Landscape. It appears from present information that certain trail corridors can be preserved, including routes to Spirit Mountain, Boundary Cone, and the Needles.

2. Provide financial support for Hualapai tribal interpretive centers on tribal lands that describe, educate, and engage tribal communities in disseminating and preserving traditional cultural identity through tribal languages and culture expressing past, present and future. Provide support through grants and phased funding, for tribal interpretive facilities/museums, language programs, healthy food systems (i.e. traditional ethnobotanical harvesting and cooking techniques) and archival research. Resulting programs could then be components for continued outreach, sensitivity training, and education to Hualapai community members, and stakeholder/agency staff by linking into cultural information at Topock. These programs would help Tribal members and others maintain the spiritual significance of this area through their own cultural traditional ties to the Topock area. Grants to be phased over life of the remediation project.

3. Continue on-going reasonable compensation for tribal participation in monitoring, attending meetings, and participating in project development, as with the present Consultative Work Group, Technical Work Group, Clearinghouse Task Force, and subcommittee involvement. Funding support to continue through the life of the remediation clean-up project, i.e. 50 years.

4. Create a trust fund for a Cultural Preserve at Topock. This would help in attempting to preserve the Topock Cultural Landscape in view of the encroaching Park Moabi tourist facility and the Topock Remediation Project. This is in consideration for future

generations. This project would be a strategic partnership and collaborative management process between the Tribes, PG&E, BLM, DOI, Havasu Wildlife and other stakeholders.

5. Funding for increased security measures around the Topock Cultural Landscape. This mitigation measure is due to tourism and increasing numbers of visitors to the Topock area.

6. Tribe's preference that avoidance and NOT data recovery or capping be used in this sacred cultural landscape. That the resources here are NOT mere archaeological sites of interest only to archaeologists.

7. Request that BLM and other agency land resources be cleaned-up. Garbage dumps need to be removed. This would be a beneficial healing for the entire Topock Cultural Landscape.

8. Fund co-management of the entire ACEC/Topock Cultural Landscape. Tribal and agency co-management and planning of the entire area through strategic partnerships and planning. It should be that tribal participation goes further into co-management of this area to meet the needs of future generations. The Colorado River Corridor is of upmost significance both spiritually and economically to all stake holders, including the public. Tribal input should not be relegated to lower level management plans, rather Tribes should be treated with equanimity regarding management plans for protecting and preserving this entire area.

9. Continue Funding for the Technical Review Committee through a minimum of fifty years after the Soils remediation Selection startup due to modeling adjustment data requirements.

10. Continue Funding for the Open Grant Funding for tribal Topock project management participation through a minimum of 50 years after the Soils remediation selection startup.

Thank you for consulting with the Hualapai Tribe on these matters. The Hualapai Department of Cultural Resources and the Hualapai Tribe appreciates the efforts by all parties to address our concerns. If you have any questions, or concerns, please do not hesitate to contact Dawn Hubbs, HDCR Program Manager, or myself at (928) 769-2223.

Sincerely,

Loretta Jackson-Kelly, Director
Tribal Historic Preservation Officer

Cc: Ms. Sherry J. Counts, Chairwoman, Hualapai Tribal Council
Dr. Carol Roland-Nawi, CA SHPO
Mr. Brandon Greenway, CASHPO
Mr. James Garrison, AZSHPO
Ms. Ann Howard, AZSHPO
Ms. Valerie Hauser, ACHP
Ms. Nancy Brown, ACHP
Ms. Karen Baker, DTSC

Sarah Spano

From: Yue, Aaron@DTSC <Aaron.Yue@dtsc.ca.gov>
Sent: Thursday, June 04, 2015 1:29 PM
To: Addie Crozier (acrozier@hualapai-nsn.gov); Sarah Spano
Cc: PGEFile; Garza, Yolanda@DTSC
Subject: FW: MWD Response: NOP SEIR for the Topock Compressor Station Final Groundwater Remediation Project

---

From: Koch,Bart [mailto:bkoch@mwdh2o.com]
Sent: Thursday, June 04, 2015 12:56 PM
To: Yue, Aaron@DTSC
Cc: Baker, Karen@DTSC; Lopez,Maria T; 'Eddie Rigdon, MWD (EddieARigdon@gmail.com)'; Eric Fordham; Teraoka,Jill C
Subject: MWD Response: NOP SEIR for the Topock Compressor Station Final Groundwater Remediation Project

Aaron

Metropolitan Water District of Southern California (Metropolitan) acknowledges receiving the Notice of Preparation for the Subsequent Environmental Impact Report (SEIR) for the Topock Compressor Station Final Groundwater Remediation Project. We understand that Department of Toxic Substances Control (DTSC), as the lead agency, has determined that a SEIR is required to address significant design changes that were not evaluated in the previous 2011 EIR. Metropolitan supports DTSC's approach to limiting the scope of the SEIR to addressing new design details. We are interested in this project moving forward without further delays to expeditiously remediate the chromium-6 contaminant plume and ensure protection of the Colorado River water quality.

Please continue to notify us throughout the SEIR development process.

Bart

Bart Koch
Safety and Environmental Services Section Manager
Metropolitan Water District
P.O. Box 54153
Los Angeles, CA 90054-0153
213-217-5646
909-921-4997 cell
213-576-5464 FAX

Mojave Desert Air Quality Management District
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • fax 760.245.2699
Visit our web site: http://www.mdaqmd.ca.gov
Eldon Heaston, Executive Director

May 7, 2015

Aaron Yue, Project Manager
Department of Toxic Substances Control
5796 Corporate Ave.
Cypress, CA 90630

Project: Topock Compressor Station Final Groundwater Remediation Project

Dear Mr. Yue:

The Mojave Desert Air Quality Management District (District) has reviewed the Notice of Preparation for a Subsequent Environmental Impact Report (SEIR) for the Topock Compressor Station Final Groundwater remediation Project.

The District has reviewed the NOP and concurs with the proposed analysis of air quality/greenhouse gas impacts associated with the proposed project. As the proposed selected remedy method (In-situ Treatment with Freshwater Flushing) may include additional remediation equipment, the District recommends the submission of applicable permit applications and the associated application and permit fees to the District as a condition of approval.

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (760) 245-1661, extension 6726, or Tracy Walters at extension 6122.

Sincerely,

Alan J. De Salvio
Deputy Director – Mojave Desert Operations

AJD/tw PG&E Topok SEIR

MOJAVE
air quality management district
DESERT

14306 Park Avenue
Victorville, CA 92392

neopost
05/11/20
US POS

DEPARTMENT OF TOXIC
SUBSTANCES CONTROL

MAY 13 2015

DATE RECEIVED
CYPRESS OFFICE

Delivered Via Email aaron.yue@dtsc.ca.gov

June 1, 2015

Mr. Aaron Yue, Project Manager
Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Re: PG&E-Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report

Dear Mr. Yue,

Pirate Cove Resort is the Sub Concessionaire for all of Moabi Regional Park, an 1,100 acre venue which provides over 100,000 families annually with the "great outdoor" boating, hiking, and camping experiences. It is also home to 105 occupied mobile homesites. Unfortunately, it is PG&E's immediate neighbor and the planned location for the long-term storage of Cr6 contaminated soil spoils which will result from PG&E's remediation work.

Not being the Master Concessionaire for Moabi, Pirate Cove was not in the "loop" of parties defining PG&E's remediation plan; rather, we were informed of the plan on January 7, 2015…only a few months ago! We were dumbfounded when representatives from PG&E, the Department of Interior and BLM (who manages the Moabi site for BOR and who, 51 years ago, leased the site to San Bernardino County, the Master Concessionaire for the Pirate Cove Sub Concession) "told" us they had finalized the Concept Plans and that construction documents were 90% complete for the remediation work which would commence prior to the year's end. Further, we were "told" that the Concept Plans would require the "taking" of (1) most of our improved and occupied 5+ acre Dry Storage lot for PG&E's construction headquarters and construction supply storage, (2) all of our newly improved 3 acre OHV Staging Area for a soils treatment site, and (3) shockingly, a 3 acre site immediately adjacent to Moabi's primary water well for the long-term storage of containers filled with the Cr6 contaminated soil spoils…containers that can leak, break and/or be vandalized! Also, please note, these sites are nor "near" Moabi Regional Park; rather, they are within the park boundaries and their use, as proposed on the PG&E Concept Plans, will cause calamitous economic impact to Moabi, the city of Needles and the surrounding areas (see below for more information on this subject).

Corporate Office
1100 London Bridge Rd. Suite G102, Lake Havasu City, AZ 86404 Ph: 928.453.6600 • 888.453.6600 Fax: 928.453.2233
www.PirateCoveResort.com

We found it unbelievable that this plan had been environmentally approved. The noise and air quality impact from the 24/7 truck and heavy equipment operation will alone provide a major deterrent to the park's family guests. But, how could a plan that has hundreds of truckloads of contaminated soil spewing particulates while passing directly through the entry of a public regional park and alongside a sizeable mobile home park be deemed environmentally neutral? And, more ludicrously, how could a plan that calls for the storage of Cr6 contaminated soils over the only potable aquifer within miles be deemed safe and sane?

Using National Trails Highway (Route 66) as a construction truck route will create a traffic hazard. It will pit trucks constantly crossing Moabi's entry road against RV driving and boat towing guests attempting to enter or leave the park. This route will be a traffic accident waiting to happen. To mitigate this traffic and air quality hazard, we suggest use of the existing dirt roadways that run around and through the remediation site to the top of Park Moabi Road and onto I-40. A soils treatment site created along this route would be closer to the remediation work where the treated soil will be needed for the infrastructure installation. And, this route will provide closer access to I-40 for the transport of the Cr6 contaminated soils to an alternate storage site. Four weeks ago, we met with Linda Otero, Director of the Fort Mojave Indian Tribe Cultural Society, and it was her suggestion to use the Needles Landfill as the storage site…it is only a few miles away and it has already been deemed contaminated due to earlier PG&E dumping of Cr6 soils at that site. The use of this storage site will relieve the concerns about contaminating the aquifer under Moabi as well as the concerns about the airborne spewing of contaminated soil particulates along Moabi's most guest-trafficked areas…the park and marina entry, general store and restaurant.

Another source of serious utility concern relates to electrical energy. Moabi and PG&E, as the sole users of electricity along the 12 mile feeder line provided by Needles Electric, have already tapped out that source…the line is old and under-powered. From what source will the electricity required for the remediation plan come? If the plan calls for it to come from Needles, PG&E must upgrade that utility's feeder line. Otherwise, PG&E must add additional generators for its power source. Note, PG&E's existing generators do not comply with EPA requirements…which is another air quality concern.

The following is from a letter addressed to San Bernardino County and which was also delivered to the other parties in the remediation plan defining "loop". It outlines the potential devastation and losses that will likely occur if the Moabi sites are used per the present PG&E Concept Plans.

> PG&E has developed a Concept Plan to remediate the Cr6 contamination at its Topock facility. Part of that plan is use of Pirate Cove (PC)/Moabi leasehold acreage for its construction headquarters and supply storage, soils treatment site and storage area for the Cr6 contaminated soil PG&E plans to remove from its remediation site. PG&E loves this plan…its problem is now PC/Moabi's problem.

PG&E completed numerous environmental studies in order to develop its remediation plan…too bad no one thought to complete an economic impact report. Once the public becomes aware of the Cr6 storage at PC/Moabi, visitors will dwindle and disappear. Would you want your families experiencing the great outdoors next to bins full of Cr6 contaminated soil (although the number of bins is "unknown", "100" bins has been referenced as an estimate)…bins which will be stored immediately adjacent to our main water well and over the only potable aquifer within miles…bins that can leak, break and/or be vandalized?

And, you can be certain the public will become aware. ABC, NBC, CBS, Fox, etc. will find it most interesting that PG&E transferred its Cr6 contaminated soil to a public park just so PG&E could save transportation costs!!! We can see the headlines…Who would have approved such an absurd plan and why??? Further, we can hear the uproar from 105 mobile home owners whose homesites will now be adjacent to the construction headquarters and the Cr6 contaminated soil storage area. Rest assured they will make the world aware of their mobile value losses!

Well, here's food for more thought. Attached is our "Recap of Payments Made to San Bernardino County & Needles Area (Local Economy)". The Recap evidences that PC has contributed in excess of $42M towards these economies…over $6M and 200+ jobs annually. Too bad PG&E will halt these meaningful contributions to those that truly need them…just so PG&E can save a relative pittance in transportation costs!

PG&E's "elephant in the room" is the planned storage of Cr6 contaminated soil on a public park for an "unknown number of years". If this provision of PG&E's remediation plan would be eliminated by the identification of an alternate storage site, although PC will suffer the economic losses described below, PC will accept PG&E's "taking" of leasehold acreage for the installation of its construction headquarters and uncontaminated soil treatment site providing PC is compensated for its losses due to this "taking".

BLM has already identified many other acceptable alternate storage sites. Of course, hauling to one of these alternate sites will increase PG&E's transportation costs; thus, PG&E's preference for the neighboring park site. However, not re-locating this storage site is an unacceptable penalty for the public and PC to pay; after all, it is PG&E's sole responsibility to remediate its Cr6 problem… not the publics or PC's!

Attached is an outline of the economic losses PC will suffer by PG&E's "taking" of portions of PC's leasehold. See the PG&E site plan attached for further clarification of its land use.

Reminder, PC has a $17M investment in Moabi.

Mr. Yue, we hope the above aptly describes our concerns regarding PG&E's Concept Plans; if implemented, Pirate Cove, Moabi and its guests will suffer significantly both environmentally and economically. Please take our concerns under serious consideration. And, do not hesitate to contact us should you have any questions or need further clarification.

Sincerely,

Maureen & Art Tate

Maureen & Art Tate
Owners

Appendix H-2

Scoping Meeting Comment and Speaker Cards

102

Speaker #_____
(DTSC Use Only)

SPEAKER CARD

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* ☐ Present Your Comment or ☐ Have Your Comment Read

Date: 5/19/2015

Name: Sandra Woods Bricker Affiliation: Spouse of Ft Mojave Tribal Member

Email Address or Phone Number: [redacted]

Question/Comment: re "natural" arsenic in AZ wells

Speaker #_____
(DTSC Use Only)

SPEAKER CARD

* 2 & 2

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* [X] Present Your Comment or [ ] Have Your Comment Read

Date: 5/19/2015

Name: Sandra Woods Bricker Affiliation: Spouse of Tribal Member

Email Address or Phone Number: [redacted]

Question/Comment: (a) flushing pressure gradient effect on ground surface i.e maze features on Fish & Game jurisdiction & Tribal jurisdiction. Are they monitored & if so how? what are findings? What are projections (b) with gradient changes with increase of wells?

Speaker #_____
(DTSC Use Only)

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Would you prefer to: *(Select One)* ☐ Present Your Comment or ☑ Have Your Comment Read

Date: MAY 19, 2015

Name: DAWN HUBBS Affiliation: HUALAPAI DEPT. CULTURAL RESOURCES

Email Address or Phone Number: [redacted]

Question/Comment: (REF: slide "Final Design" page & Scoping Meeting Presentation hand-out)
QUESTION: Map shows 4 yellow circled areas → Please explain to us why the EVAPORATION PONDS AREA & the area across from IM 3 are circled. We requested that no activities take place to the east of the evap PONDS; & NO STAGING ACROSS from IM-3. Thank you.

Speaker #_____
(DTSC Use Only)

SPEAKER CARD

#2 of 2

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
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Would you prefer to: *(Select One)* ☐ Present Your Comment or ☑ Have Your Comment Read

Date: MAY 19, 2015

Name: DAWN HUBBS Affiliation: HUALAPAI DEPT. CULTURAL RESOURCES

Email Address or Phone Number: [redacted]

Question/Comment: Ref 90% Design & Addendum - 2011 FINAL EIR (FEIR) 2013 Addendum Comparison Table

Question: (6. page 2) INCREASE IN SOIL DISTURBANCE

→ Why is there an increase (+14,700 cubic yards) in soil disturbance?

Previously estimates at 13,400 cubic yards. Now = 28,100 cubic yards, excluding drill cuttings

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Would you prefer to: *(Select One)* ☑ Present Your Comment or ☐ Have Your Comment Read

Date: 5/19/15

Name: Amanda Sansoucie Affiliation: Chemehuevi

Email Address or Phone Number: [redacted]

Question/Comment: Cr III can oxidize to Cr 6 in soils when exposed to soil-born Manganese (Mn III, IV) hydr(oxides) & also when soil pH is higher (6 to 7). How many tests have been done to determine levels of Mn & pH levels in the soil?

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Would you prefer to: *(Select One)* ☑ Present Your Comment or ☐ Have Your Comment Read

Date: 05-19-15

Name: Levi Evanston Affiliation: Ft Mojave

Email Address or Phone Number: _____

Question/Comment: _____

Speaker #_____
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Would you prefer to: *(Select One)* [X] Present Your Comment or [ ] Have Your Comment Read

Date: 5/19/15

Name: ANGIE ALVARADO Affiliation: _____

Email Address or Phone Number: _____

Question/Comment: _____

Speaker #_____
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Would you prefer to: *(Select One)* [X] Present Your Comment or [ ] Have Your Comment Read

Date: May 19, 2015

Name: Charlotte Kasa Affiliation: Fort Mojave Indian Tribe

Email Address or Phone Number: _____

Question/Comment: Our community has a high rate of cancer - Are there any studies or data of the community members exposure to this hexavalent chromium - Many community members have been in the areas of contamination that could be a factor to contract this illness -

History notes from community members that soils were dump in the Needles landfill, has there been any studies in this area -

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If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* ☑ Present Your Comment or ☐ Have Your Comment Read

Date: May 18, 2014

Name: LINDA OTERO Affiliation: Fort Mojave Indian Tribe

Email Address or Phone Number: [redacted]

Question/Comment: Cultural Setting as related to Mojave People

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Topock Compressor Station Final Groundwater Remediation Project
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Scoping Meeting

If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* ☐ Present Your Comment or ☐ Have Your Comment Read

Date: _____

Name: Fred Pacheco Sr Affiliation: _____

Email Address or Phone Number: _____

Question/Comment: _____

_____

_____

_____

_____

Speaker #_____
(DTSC Use Only)

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Topock Compressor Station Final Groundwater Remediation Project
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If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* [X] Present Your Comment or [ ] Have Your Comment Read

Date: 5-19-15

Name: RONALD VAN FLEET Affiliation: FMIT

Email Address or Phone Number: _____

Question/Comment: IS THE MESQUITE TREE PLANTING A LAST MINUTE DECISION? HAVE YOU TAKING OUT THE ANIMALS FROM THIS AREA.?

Speaker #_____
(DTSC Use Only)

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Would you prefer to: *(Select One)* [X] Present Your Comment or [X] Have Your Comment Read

Date: 5/19/15

Name: Leo Leonhart Affiliation: FMIT Consultant

Email Address or Phone Number: [redacted]

Question/Comment: Question: It seems that there may be design changes as a result of the SFTR review. Is it also possible that PG&E may independently propose design changes to DTSC during this time?

Speaker #_____
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Would you prefer to: *(Select One)* [x] Present Your Comment or [ ] Have Your Comment Read

Date: 5/19/15

Name: Colleen Garcia Affiliation: Ft Mojave

Email Address or Phone Number [redacted]

Question/Comment:

Speaker #_____
(DTSC Use Only)

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Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
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If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* [X] Present Your Comment or [ ] Have Your Comment Read

Date: 5/19/15

Name: Janice Hinkle Affiliation: Ft. Mojave Tribe

Email Address or Phone Number: [redacted]

Question/Comment: ① Could you state for the record if you prepared an initial study related to the Subsequent EIR. If you did. Could you provide it to the Tribes ASAP ② Have you clarified on the record if the Subsequent EIR will compare to the 90% BOD or the final BOD with the 2011 Conceptual project (NOP page 3)

(3) Did you provide a comparision of the concept to the final project design as part of the NOP

(4) Did you clarify on the record if it will be incorporating into the Groundwater subsequent EIR any of the recent biological studies and new information shown in the soil investigation Partially recirculated DEIR (specifically, re; bats, big horn sheep, Chub and Sucker fish, southwester flycatcher, Suncup, etc).

J. Hinkle (cont.)

COMMENT FORM

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you have any comments concerning the Notice of Preparation or the environmental issues to be addressed in the Subsequent Environmental Impact Report, please return at the scoping meeting or send to DTSC postmarked by **June 4, 2015**.

Comments (attach additional pages as needed):

This is a short brief on the need for PGE to work with the City of Needles, Ca Electric utility to power the new water treatment facility using power supplied by the City.

This would in a 12 month period of time lower the electric rates for all of our customers by as much as eight percent.

This would be caused by economy of scale for our small utility.

Half of our electric is hydro i.e clean.

We need your electric load.

OPTIONAL:

Name: Jack Lindley

Address: 817 third St

City/State/Zip: Needles, Ca 92363

Phone/Email: jwlindley@hotmail.com

Affiliation (if any): City of Needles electric Utility Supervisor.

Please address all mailings to Aaron Yue, Project Manager, Department of Toxic Substances Control, 5796 Corporate Avenue, Cypress, CA 90630, fax: 714-484-5329, or email: aaron.yue@dtsc.ca.gov.

DTSC mailings are solely for the purpose of keeping persons informed of DTSC activities. Mailing lists are not routinely released to outside parties. However, they are considered public records, and if requested, may be subject to release.

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Would you prefer to: *(Select One)* [X] Present Your Comment or [X] Have Your Comment Read

Date: 5-19-15

Name: Janice Hinkle Affiliation: Ft. Mojave

Email Address or Phone Number: [redacted]

Question/Comment: ① Argue the technical portion data is collected but not interpreted

COMMENT FORM

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you have any comments concerning the Notice of Preparation or the environmental issues to be addressed in the Subsequent Environmental Impact Report, please return at the scoping meeting or send to DTSC postmarked by **June 4, 2015**.

Comments (attach additional pages as needed):

I would like to again stress the safe keeping & undisturbing of Ft. Mojave Tribal land. This is our Spiritual & Cultural home we are the "Pipa AhaMakav" The people of the river.

OPTIONAL:

Name: Janice Hinkle

Address: [redacted]

City/State/Z

Phone/Ema

Affiliation (i

Please address all mailings to Aaron Yue, Project Manager, Department of Toxic Substances Control, 5796 Corporate Avenue, Cypress, CA 90630, fax: 714-484-5329, or email: aaron.yue@dtsc.ca.gov.

DTSC mailings are solely for the purpose of keeping persons informed of DTSC activities. Mailing lists are not routinely released to outside parties. However, they are considered public records, and if requested, may be subject to release.

Speaker # * (DTSC Use Only)

SPEAKER CARD

* Add to Public Record (5)

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* [X] Present Your Comment or [X] Have Your Comment Read

Date: 5-20-15

Name: PHILIP W. PERRY Affiliation: _____

Email Address or Phone Number: _____

Question/Comment: My question is about the Ffloride in the water ~~are~~ are they going to stop adding it to the water now that people know that it is poisoning us, if so when?

Speaker # 1
(DTSC Use Only)

SPEAKER CARD

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* [X] Present Your Comment or [ ] Have Your Comment Read

Date: 5/7/15

Name: Steve Moss Affiliation: Mohave County

Email Address or Phone Number: steve.moss@mohavecounty.us

Question/Comment: What is the likelihood that there will be additional addendums or supplemtals to this report, delaying the actual remediation?

5/20

Speaker # 1
(DTSC Use Only)

SPEAKER CARD

State of California
Department of Toxic Substances Control
Topock Compressor Station Final Groundwater Remediation Project
Subsequent Environmental Impact Report
Scoping Meeting

If you plan to ask a question or make a statement, please fill in the information below and submit the card when requested to do so. When speaking, please limit your comments to five minutes. Thank you.

Would you prefer to: *(Select One)* [X] Present Your Comment or [ ] Have Your Comment Read

Date: 5/20/15

Name: Stacey Hallett Affiliation: resident of Topock

Email [redacted]

Questi[redacted] up so many addendums at what point does it start & stop railroading, CA chromium % allowed? AZ % allowed? - Plume has 110% Section 13 - Topock residents @ .35 compared to CA .00201 %

- Osmosis don't work
- So putting same water back in ~~the~~ dirty pipeline - DOES NOTHING

- Section B - How deep is plume - how close to Indian Reservation

[redacted]

Appendix H-3

Transcripts of Verbal Comments from Scoping Meetings

PUBLIC SCOPING MEETING FOR THE

TOPOCK COMPRESSOR STATION

FINAL GROUNDWATER REMEDIATION PROJECT

REPORTER'S TRANSCRIPT OF PROCEEDINGS

Taken on Tuesday, May 19, 2015

At 600 Merriman Avenue

Fort Mojave Indian Tribe Band Room

Needles, California

At 10:29 a.m.

REPORTED BY: Eve K. Burton, RPR, CRR

AZ CR Certificate No. 50261 / CA CSR No. 12527

SCOPING MEETING SPEAKERS:

Joan Isaacson, Consultant for DTSC
Aaron Yue, DTSC Lead Project Manager
Bobbette Biddulph, Consultant for DTSC
Christopher Guerre, DTSC Project Geologist

PUBLIC COMMENTS:

Linda Otero
Charlotte Knox
Dawn Hubbs (comment read by Ms. Isaacson)
Amanda Sansoucie
Ronald Van Fleet
Janice Hinkle
Leo Leonhart
Felton Bricker
Colleen Garcia
Sandra Woods Bricker
Levi Evanston
Angie Alvarado

MS. ISAACSON: We are now ready to begin our presentation. This meeting is being conducted by the California Department of Toxic Substances Control, or DTSC for shorthand, as most of you know. And the purpose of this meeting is, it is a scoping meeting for the Subsequent Environmental Impact Report for the Topock Compressor Station Groundwater Remediation Project. We are in the middle of the scoping period for the Subsequent EIR, and the scoping period is between May 5th and June 4th.

We want to thank you for being here. We're really excited that we're finally -- we planned for, you know, a couple weeks in putting the meetings together, and we really appreciate it when you're here so that you can be a part of this process and provide input during the scoping process.

As many of you know, the California Department of Toxic Substances Control is the state agency that's responsible for the investigation and cleanup of sites that are contaminated with hazardous substances within California.

I'd like to introduce members of the project team who are here today for the scoping meeting: We have Karen Baker, who is the DTSC Branch Chief. Aaron Yue is the Lead Project Manager for DTSC. Christopher Guerre is

here. He's the project geologist for Topock working for DTSC. Jose Marcos is also a project geologist. Jose is outside taking care of something. Stacey Lear is here as well. She's public involvement and tribal outreach specialist for DTSC.

And then we have members of the consultant team: Bobbette Biddulph is a member of the consulting team, as well as Sarah Spano, who you might have met outside signing up. And my name is Joan Isaacson. I'm with the consultant team, as well as Emily Michaelson, and I'll be the facilitator for the meeting today.

So let's spend a minute talking about the purpose of this scoping meeting. Scoping -- this DTSC is holding the scoping meeting consistent with the California Environmental Quality Act, which is the state regulations that guide preparation and processing of Environmental Impact Reports, and we'll tell you more about that in a moment.

And particularly important is the second part of the stated purpose here, which is that DTSC is requesting your input on the scope of the Subsequent Environmental Impact Report for the Final Groundwater Remediation Project. So DTSC wants to hear from you on the types of issues and topics that should be addressed and considered in the Subsequent Environmental Impact

Report.

Now, I know many of you have been involved with Topock for a while and may have been involved in the process for the initial EIR on the Groundwater Remediation Project, and I just wanted to make an important note, and within this presentation you'll hear more about this, but DTSC -- I just want to make sure everyone understands the DTSC is not starting over again with a new EIR. DTSC has actually made a lot of really good progress with the groundwater cleanup, and this is a Subsequent EIR, so it's a different kind of EIR than the EIR that was done initially, and the focus of this EIR is going to be new details for the cleanup study itself.

There are various ways to submit comments during the scoping, and today you can submit comments verbally after the presentation, and that's the main reason we have the court reporter here, so that she can record verbal comments. You can submit comments in writing using the comment card. That's -- this is the comment card. It was at the registration table. And you can also submit other comments in writing after this meeting. All comments need to be submitted to DTSC by June 4th. That's the end of the scoping period, so that's a really important date to remember.

Okay. I think, with that, we'll ask members

of our project team to talk about the Topock project and the cleanup effort as well as the Subsequent EIR.

Aaron.

MR. YUE: Thank you, Joan.

(Court reporter asked for speakers to stand in a different location in order to hear them better.)

MR. YUE: Joan has introduced me already. My name is Aaron Yue, for those of you who are not familiar with the project. And obviously, within the members of the audience here, a lot of you are very familiar with the project, but I know of some who are not; so indulge me as I walk you through some of the project history as well as go over again a little bit of what the remedy is supposed to do.

So let's go back to the slide. So the PG&E project. The PG&E Topock Compressor Station itself is located about 12 miles southeast of Needles, California. We're in Needles. You know where we're at. And designated -- the particular area surrounding the PG&E Topock project has been designated as a cultural property, a traditional cultural property, by the federal government. It does have significant spiritual ties to the Native American tribes.

So here is a map of PG&E and their location.

I will use my handy-dandy laser pointer. And as you can see, the site is pretty much surrounded by land that's either owned by or managed by Bureau of Land Management, as well as the Havasu National Wildlife Refuge, which is managed by the Department of Fish and Wildlife Service -- U.S. Fish and Wildlife Service. There are other property owners, including a piece of land that's owned by the Fort Mojave Indian Tribe, as well as land that has been leased by the San Bernardino County managed by BLM. And so that's the setting for the project.

Operational history: PG&E actually owns -- as you can see from the last slide, owns approximately 66 acres of the property that is currently in the project. The compressor station started in about 1951, and the actual function of the compressor station is to transfer natural gas from Texas and deliver gas to users and customers in Central and Northern California.

Operational history of PG&E: PG&E did use hexavalent chromium as an additive in their compressing process, and mainly it's used to prevent corrosion in their equipment. They've used it since 1951 to 19- -- about early 1970s, and that was directly -- the wastewater was directly discharged in the Bat Cave Wash, which is a wash that's right next to, behind the compressor station, right about here. And the chemical concern from the

discharge obviously is hexavalent chromium, as well as other metals that are involved. They do have petroleum hydrocarbons, PCBs, dioxins, asbestos, semi-volatile organics and organic compounds.

Okay. So PG&E's history, the cleanup history: When PG&E discovered that there was hexavalent chromium contamination in groundwater, they signed up a cleanup agreement with our department back in 1996. And the department has been investigating the site and has been actively involved in trying to figure out how big the contamination is and what the problem is like.

In 2004, the department required PG&E to start up a series of what we call interim measures or interim actions to control the contamination and until the final remedy is actually in place.

There are various cleanup technologies that PG&E had evaluated in their document in 2009, and out of that, PG&E proposed a final solution to the hexavalent chromium problem. And DTSC subsequently did a required CEQA analysis for the potential environmental impact of that -- of those particular technologies back in 2010. And DTSC actually selected the final remedy as recommended by PG&E.

So in 2011, DTSC approved the Final Groundwater Environmental Impact Report, which is part of

the CEQA process. That's a document that evaluated the potential environmental impact of, I guess, undertaking that particular cleanup process. And also, the 2011, I guess, EIR focused mainly on the program-level analysis. In other words, it's a big picture. It's based on PG&E's conceptual design. And since then, PG&E has been developing the final design ever since we finalized the 2011 EIR.

So one of the key things to note for today is that, in the 2011 Final Environmental Impact Report, we actually did say, and specifically were very up-front about it, that we may actually need additional environmental review of the project upon completion of final design. And here is a -- it's a quote from the Final Environmental Impact Report: "Following final design, an assessment of potential environmental impacts would be reviewed to ensure that the impacts would be consistent with the analysis presented in this EIR, or if additional analysis is required." So that's why we're here.

Now, let me step you through quickly what the final remedy looks like. PG&E has not changed the final remedy, has not changed the final design. This slide represents some of the extraction wells that PG&E are intending to put into the site. And what PG&E would

do is, they are intending to put in a row of injection wells to put in a hydrocarbon substrate -- in this particular case, ethanol -- into the ground and to create a treatment zone or treatment wall, really, so that when contaminated groundwater flows through that, the hexavalent chromium will be naturally converted through the redox reaction as well as biological bacteria growth and that process, converting the hexavalent chromium, which is soluble in water, to a trivalent form, which is less soluble and less toxic. And in doing so, the chromium will actually drop out of the water phase and therefore -- thereby removing it from the water.

So let me go into the next. So as part of that, PG&E will be extracting water from the edge of the river and actually piping it back to the back of the plume so that we can actually move the contaminated water through the treatment zone. And as a way of controlling -- also, additional control, additional way of making sure that the water is moving in the direction that we want, PG&E will also be putting in Arizona water, fresh water, uncontaminated water, in the back of the plume to addition- -- to add additional push, if you will, of the contamination.

To note is that in the southern portion of the site, this is actually more of a bedrock area, which

is tight rocky formation, so the water wouldn't move in the same way or certainly wouldn't be as effective as just pumping and pushing. But PG&E -- what PG&E will be doing is, they're putting in some extractors to pump as much of the contamination out of that water as possible. This particular area has a relatively low amount of water or certainly it doesn't produce as much groundwater as in the -- this northern portion, which is where the main part of the plume is at. So from -- by doing that, they will also put the extracted water back into the -- back into this area, where the water will be amended with hydrocarbon and put back in the ground.

This particular remedy will use very little water. As you know, water is a precious resource right now, and actually it's always been a precious resource. And so this particular remedy and the strategy would use very little and waste very little water.

Okay. So again, to reiterate, the selected groundwater remedy remains the same. PG&E has not changed the final remedy, and we're not evaluating a new design in the Subsequent EIR, but the Subsequent EIR will -- what it will do is address new design details that have been put forward by PG&E in the process of designing the document -- or in designing the final remedy.

Some of those design changes -- and this is

not exhaustive -- would be use of the fresh water from Arizona. Now we know where the water is coming from. The water does contain elevated levels of arsenic which require additional monitoring. So that is something that we will evaluate in the EIR.

Expansion of project area to include additional infrastructures like the construction headquarters, soil processing and storage near Park Moabi area, as well as the use of existing permitted evaporation ponds. Those ponds are permitted through the regional water quality control board.

A water treatment plant with contingency to treat arsenic in fresh water. That is for polishing the water or cleaning up the -- making sure that the -- for example, the wells will not be plugged up and get fouled, what have you.

Specific design elements also range from Bat Cave Wash crossing, how PG&E will put pipelines through Bat Cave Wash to, you know, having additional septic systems while the construction and operation is taking place. All of that will be reviewed in final design.

Additionally, we will also -- we do anticipate an increase in the amount of ground disturbance as compared to our 2011 Final Environmental Impact Report.

So this is a figure that basically shows

where some of those additional infrastructures and additional project area will be. The red outline is the original project boundary as well as a sliver of land that has already been incorporated in the -- in an addendum to the Environmental Impact Report, so this is the existing project boundary. What -- PG&E in the final design would use additional areas outside of the project areas that we would actually have to evaluate in this particular Environmental Impact Report.

Finally, this is a good slide, good graphics, to really represent what has taken place since the certified Final EIR in 2011. As you can tell, PG&E did, at 2013, evaluate where this water is going to come from, and then there was a CEQA EIR Addendum that was done in 2013. And then since then, PG&E has stepped through multiple iterations of the groundwater design. And finally, we are, you know, looking at having the Subsequent EIR conducted between spring 2015 and fall of 2016.

With that, I am going to turn the presentation over to Bobbette, who is going to talk a little bit about the EIR.

MS. BIDDULPH: All right. Thank you, Aaron.

Well, I did want to stay on --

MR. VAN FLEET: Could I ask him some

questions, separate questions? No?

MS. BIDDULPH: I think what we'd like to do is --

Go ahead, Joan.

MS. ISAACSON: If it's all right, if we can go through the presentation first, and then we'll do questions afterwards.

MR. VAN FLEET: All right.

MS. ISAACSON: Okay. Thank you.

MS. BIDDULPH: So I did want to stay on this slide for just a moment and kind of reiterate, you know, where we are in the process and the work that has been done on the environmental analysis in the Groundwater EIR and the Groundwater EIR Addendum and really highlight that the intent of where we are in this process is to build upon the analysis that was completed in 2010 and '11, as well as 2013, to really complete that CEQA review process of the groundwater remedy.

So this slide actually goes into a little bit more detail and graphically shows the process that we anticipate for the Subsequent EIR, and it's very similar to the process that one might see for a standalone EIR, even though we are building upon that previous analysis. We're right in this stage of where we are holding a scoping process. The Notice of Preparation, which is this

document that was out on the sign-in table, was us kicking off that environmental review process and notifying you and agencies and others that we're starting this environmental process. So we're in the midst at this point of a 30-day comment period, and these scoping meetings are really part of that comment period. That's really our purpose here today is to hear from you, to hear your comments, and Joan has talked about some other ways that we can also gather your input and comments.

After that 30-day public comment period, then we'll move into doing the analysis that's a part of the Subsequent EIR. We'll work on that EIR, and that process will probably take us until about the spring of next year. And at that point, we will present the EIR, make it a public document, and that triggers then another public review and comment period. So at the time that that Draft EIR is issued, there will be another 45-day comment period where you'll have the opportunity to provide in writing comments on that document.

And then as we take those comments, we then move into the Final EIR process. CEQA, the California Environmental Quality Act, requires us to really consider those comments, to actually respond to those comments as part of the process, and to make any revisions to that draft document to then formulate the Final EIR. So once

we've done that, then DTSC will be able to make a final determination on the project.

So this is really, you know, one of a few different opportunities for you to comment on this final stage of the environmental review process.

And I think we've said this a few times, but I think it's worth emphasizing that our approach to the Subsequent EIR is to focus on new design details that have come out through that work that has really been completed since 2011 and to build off of that prior analysis.

Aaron did a really nice job of summarizing some of those additional design details that weren't necessarily anticipated or talked about in the original EIR. The board up here to the left also has a nice summary of that information, and as well, the Notice of Preparation also provides that type of listing.

And this slide talks a bit about the different information sources that we're going to be using in our analysis and in the Subsequent EIR. Of course, the 90% Design submittal from PG&E will be used. In addition, those previous environmental review documents. As well, there might be some additional design refinements developed in response to comments on the 90% Design. So this analysis is not only on the 90% Design, but it's intended to really address the whole of the design. And

as well, agency and public input -- this is one of those points for that public input -- and tribal outreach and communication, so a communication plan there.

So this slide provides kind of a summary of the table of contents of -- if you will, of the Subsequent EIR. And this looks very similar to a regular standalone EIR, so it really is that that format is very similar. It will look very similar to the original EIR, which, in fact, we have a copy sitting over on the desk, the table over there, if you want to take a look at that, just in terms of format. But I think, again, you know, that structure will remain the same, but the analysis would be more focused just on these design details that weren't previously addressed in that -- in that prior document.

So through our, DTSC's, preliminary review of the additional design details, these are the topics that we anticipate that Environmental Impact Report to include. And so those topics, those sections of the environmental analysis, at this point we anticipate them to include aesthetics, so that's visual resource issues; air quality and greenhouse gas; biological resources; cultural resources; hazards and hazardous materials; hydrology and water quality; noise; and utilities, service systems, and energy. So this is our initial thought on the topics that would be addressed, but of course, part of

this scoping input might refine that thinking or expand that thinking.

So this is really the purpose of today's meeting, is to get your comments, so I'm going to pass it over to Joan, and she'll tell you a little bit more about that process.

MS. ISAACSON: Thanks, Bobbette.

I've reviewed the slide at the beginning of the presentation, but it's so important I want to talk about it again. This identifies the different ways that you can provide input during the scoping process. So again, we'll be taking comments here today verbally in just a few minutes.

And, Emily, can you please grab a couple of speaker cards just in case people still need those.

MS. MICHAELSON: Sure.

MS. ISAACSON: You can also provide -- oh, Stacey has speaker cards as well.

Does anyone want to fill out a speaker card who hasn't done so yet? And we'll get those passed around. Just raise your hand. Stacey has them.

Okay. So we're going to take verbal comments here today at the scoping meeting. You can also fill out a comment form, which is a white -- it's a white paper about this size that was available at the

registration table. And you can also submit written comments after this meeting. But to be considered during this scoping process, they need to be turned in by June 4th. And of course, DTSC always welcomes inputs and comments, but for the comments to be included in the official scoping comments, they do need to be turned in by June 4th.

The type of input that DTSC is looking for, just to recap what you heard from Bobbette and Aaron, is they're looking for your input on the types of topics and issues to be considered in the Subsequent EIR.

DTSC has various information repositories located around the region, and all of the scoping materials are available in the repositories, if you are looking to get that information. But also, the materials are posted on the DTSC website that's been set up for Topock, and the website address is just listed at the top there. I'm sure most of you are already familiar with that.

Let's talk a minute about providing verbal comments here at this meeting. And again, we're asking that you fill out a speaker card, and it's just your name and contact information. And if you have completed speaker cards, if you can hand them to either Stacey there in the blue or Karen. They're going to collect the

speaker cards. And we will bring the microphone to you when it's your turn to speak. We're asking that tribal members be given an opportunity to speak first, and then we'll take comments from others here this morning.

When it's your turn, if you could please start by clearly stating your name. That's important for our court reporter because she's going to be typing in your name so that your name is right next to her transcription of your comments in her report.

And we're also asking that each speaker take about five minutes for your comments. And this just makes sure that everyone who wants to speak gets a chance to speak. After everyone has a chance, what we can do is, if someone still has more that they want to say, we can do another round and so that people can have a second chance if that first five minutes wasn't long enough. And Emily is going to just help me with managing the time a bit. And when we're about five minutes, she's going to hold up a yellow card that's a reminder to wrap up.

Okay. Anything else on the comment period?

And Stacey is going to help with the microphone.

Do we have any submitted speaker cards yet?

MS. LEAR: Are there any other public comment cards?

MS. ISAACSON: Would you like a card to fill out.

WOMAN IN THE AUDIENCE: No.

MS. ISAACSON: Okay.

MS. BAKER: I'll give these to you.

MS. ISAACSON: Perfect.

MS. LEAR: One more.

MS. ISAACSON: Our first speaker --

MS. BAKER: Start with that.

MS. ISAACSON: Our first speaker is going to be Linda Otero. And Stacey will bring the microphone over to you.

MS. OTERO: Actually, I wanted to be last so I could have extra minutes. Five minutes --

MS. ISAACSON: Well, after you go through five, after everyone has a turn, then we can come back.

MS. OTERO: Okay. My name is Linda Otero, L-I-N-D-A, O-T-E-R-O, Fort Mojave tribal member, Director of the Aha Macav Cultural Society.

The purpose of my statement was to share, as a part of this public scoping meeting, the Mojave cultural setting of this area. My guess is that that wasn't provided in this, given that this is a state presentation, but I wanted to make it as a record that the location of this project is in the cultural significant area of the

Mojave people. We have resided here from time beginning. It's a place of our -- speaks of our creation. It's important to us to still maintain it and the integrity and the religious placement of this for our future as well as understanding and respecting of our past. Today we are involved in this project because of the impact and the change to the environment, let alone the disruption to the significance of our religious ways in this place.

It is important to understand that we still maintain that response in relationship to a higher power and that our role and responsibility to maintain the placement of this area is important for us. It speaks of a higher order, versus what we have to do and identify it through a scoping meeting and a project Subsequent EIR process. No -- there is no level in which we can address fully in the capacity which identifies through this effort in some of these topics that relay that, but we have to interject in a level that tries to convey that importance of this area.

So in the higher order of our level of religious aspects to this place, it does not meet the level in which we can respond fully in an EIR document process, but yet, we are given this in order for us to participate. So not one category -- and most of the time, we are put in "Cultural Resources." That does not suffice

for how we are to convey that information. Not one category addresses all that, biological, in terms of the hydrology as well.

We are people of the river. Aha Macav is who we are. That river is our name place. All of the life beings of things that are of the natural setting is who we are. And so to try to explain that in five minutes is not going to be -- is not -- is not going to be able -- I'm not going to be able to convey that.

But on behalf of the tribe, in our role as the Aha Macav Cultural Society, we have been an integral part of this for the tribe to be the voice, to say what is necessary, and that's our duty and responsibility. And yet, how are those impacts going to be further defining the religious components of what we have to face? We're burdened with these things day in and day out, and it's not fair that we have to be addressing it that way.

So clearly, I want to state to the State and those who are developing this document to understand the depth of what we're dealing with here today. I don't know who is skilled in that level to convey that, in terms of the document in preparation for the EIR, but that's a necessary understanding as a part of what we're dealing with today. Just don't shortchange us on that level, because this is our being, our existence, and we need to

maintain it in that level for us to continue into the world that we know this of. But yet, what we're faced with time in and time out is municipal levels on how this is approached, and that's why we still, as the Fort Mojave Tribe, continue to voice those concerns.

And please consider that fully as you prepare this EIR, to understand that there's no way that we can change what has been given to us from our creation. No place can replace -- is another location for this area. So it just so happens that the setting is that. It's already in place that you have a project that we're addressing that has impacted and is continually changing that environmental setting for us. So consider that fully as you address all of these elements of the EIR, including environmental justice.

That's my statement for now.

MS. ISAACSON: Thank you very much.

Next is Charlotte Knox.

Sorry.

MS. KNOX: Can I read from my card?

MS. ISAACSON: Yes, of course.

MS. KNOX: Good morning. My name is Charlotte Knox, C-H-A-R-L-O-T-T-E, K-N-O-X; Fort Mojave Indian Tribe.

I do have a question here regarding the

chromium. Our community member has a high -- community member -- our community has a high rate of cancer. Are there any studies or data of the community members exposed to this hexavalent chromium? Many community members have been in the areas of the contamination that could be a factor to contracting this illness.

I also have history notes from community members that soils were dumped in the Needles Landfill. Has there been any studies in this area?

So a lot of our youth, young women, are contracting cancer, and we've just noticed it -- well, I have noticed it within the last ten years. So I'm not sure if that's a mitigating factor or what, but I really would like to have, you know, some type of study or something looked into that.

Also, the areas in which the biologicals that have been done, I pulled off the mission statement from the Fish and Wildlife, and in here it says, "Preserve, protect, enhance fish and wildlife, plants, and their habitat for the continuing benefit of the American people." We are both a leader and trusted partner in fish and wildlife conservation, known for our scientific excellence, stewardship of land and natural resources, dedicated professionals and commitment to public service.

So hopefully this mission does fall through

in helping protect our lands, because we've brought this before in our previous scoping meetings about our biologicals, but yet, nothing was done until now it's being brought up. You know, we're worried about our plants, our animals out in that area, so hopefully we can get some type of resolution on that. So thank you.

MS. ISAACSON: Charlotte, can I have your card back.

MS. KNOX: Oh.

MS. ISAACSON: Thank you.

So Dawn Hubbs submitted a card, but she checked off that she would like me to read the comment.

MR. YUE: Do you want to go on that side.

MS. ISAACSON: Oh. Yes. Thank you for the reminder.

This is in reference to the slide called Final Design on page 8 in the scoping meeting presentation handout. And she has a question: Map four -- the map shows four yellow circled areas. Please explain to us why the evaporation pond area and the area across from IM-3 are circled. We requested that no activity take place to the east of the evaporation ponds, no staging across from IM-3. Thank you.

MR. YUE: Do we -- do we -- I'll speak on that. I might as well.

Okay. The areas that I circled, it's simply because, at this point in time, in the 90% Design, PG&E is still proposing that those areas are used for a particular purpose. And I will address the most contentious area first, which is storage area 6 and 7. At this point, there are still additional dialogues. We are going through the response and comments as to whether or not this area will or will not be used for future activities. That -- we understand PG&E have put forth multiple options, and we're looking into that.

As far as the evaporation ponds, PG&E is using -- you'll recall, will be using evaporation ponds. They're actually putting in additional power and improving their evaporation ponds for the water, as well as some -- I guess a portion of it will be used for temporary storage of, I guess, either staging or storage of soils. I think it's more staging. So these are not areas -- or these -- the evaporation pond was not an area that has been addressed in the original EIR, and so we have to take a look at that and actually evaluate it in this particular version of the Subsequent EIR.

MS. ISAACSON: Dawn has another question. It's in reference to the 90% Design and Addendum, the 2011 Final EIR, and the 2013 Addendum comparison table. The question has to do with the increase in soil disturbance.

Here's the question: Why is there an increase plus 14,700 cubic yards in soil disturbance? Previous estimates have been at 13,400 cubic yards. Now 28,100 cubic yards excluding drill cuttings.

MR. YUE: Okay. I think that's actually -- this would be a better question to be discussed during either a technical work group as far as this project is concerned, but I will address that.

The -- at -- recall one of the slides that I talked about previously was that the 2011 EIR was formulated and evaluated conceptual design that was put forth by PG&E. At that particular time, we didn't know where the infrastructure was going to be at. We didn't know how much piping was going to be needed. So all of that is -- what we've evaluated was based on PG&E's best engineering estimate, and now we have much more specifics as far as what is necessary to make this project happen.

And so, as part of that, that's why we're here doing Subsequent EIRs, to take a look at, "Well, PG&E said this in 2011. Now we're here in 2015. What has changed in those four years?" You know, some of these design details are coming forward, and we recognize that there have been changes since 2011, so now we're going back and looking at the environmental impact that is now being proposed.

MS. ISAACSON: Thank you.

Next -- and I have to tell you, sometimes I am not good with last names, and I really apologize ahead of time. So next is Amanda --

MS. SANSOUCIE: Sansoucie.

MS. ISAACSON: -- Sansoucie.

AND so you're next, and Stacey will bring the microphone over to you.

MS. SANSOUCIE: Can I also use my card?

MS. ISAACSON: Oh, of course.

MS. SANSOUCIE: Thank you.

Okay. So my name is Amanda Sansoucie.

Do you need me to spell the last name?

THE COURT REPORTER: Please.

MS. SANSOUCIE: S-A-N-S-O-U-C-I-E.

My comment, slash, question was on the oxidation of chromium-3. So chromium-3 can oxidize to hexavalent chromium and vice versa -- they go back and forth -- in soils when exposed to soilborne manganese and also when the soil pH is higher, 6 to a 7. So I was wondering how many tests have been done to determine the levels of manganese in the soil and also the pH levels.

MR. YUE: I'm not sure if I can answer that here.

Chris, can you answer that question?

MR. GUERRE: There's been, with regards to groundwater, many analyses of manganese and pH. With regards to soils, we'll certainly be analyzing pH commonly for soils. And for both soils and groundwater, our pH's are typically alkaline, around 7 to 9 for pH. And I'm trying to recall -- manganese, we also -- I believe -- I don't want to commit to it, but I think we have significant data on manganese in soils as well.

MR. YUE: And we're collecting additional soil -- we're doing the soil investigation, I guess, in the future, shortly, hopefully, in the near future, so we're going to look at --

MR. GUERRE: There will be more data --

MR. YUE: Yeah.

MR. GUERRE: -- collected.

MS. SANSOUCIE: Okay.

MR. YUE: Next, we'll hear from Ronald Van Fleet.

MR. VAN FLEET: Right here. I don't think I need a microphone. I'm loud enough.

THE COURT REPORTER: I would prefer, because I can't see him.

MR. YUE: Yeah, it will help the court reporter.

MS. ISAACSON: It will help our court

reporter --

MR. VAN FLEET: Oh, the recorder, yeah. Okay.

MS. ISAACSON: -- to make sure she gets an accurate recording of the proceeding.

MR. VAN FLEET: Ronald Van Fleet. Fort Mojave. Is it on?

MS. ISAACSON: Yeah.

MR. VAN FLEET: Yeah, it's on.

MS. ISAACSON: It helps.

MR. VAN FLEET: My first question is, you came to Linda Otero's group, the cultural group, and there was a questionnaire -- a question. You wanted to put mesquite trees on top of the plateau there, and that was part of the remedy. And right away, I thought that's incompetent, you know. And over the years, since 2011, and, you know, that arsenic in the water, anywhere you go in the desert, you're going to get arsenic in the water.

And, you know, you started building, and you did -- you tore up pristine riverfront land. You already started the project, and you did not know where you were going. You started -- "Oh, we're going to have clowns dancing over here today." You know, "We changed our project a little bit." And it's incompetent. You're incompetent. You can't do the job.

What about the animals? We had a prayer service, and we always have a prayer service out at the Maze, and we witnessed a buck and two does and a -- well, a ram and three kids that came up out of the wash and went toward the mountains, and there was a coyote that came right to us in that area. And, you know, I said this since you guys started this project, and what about the animals? What are you going to do for the animals?

You know, those wild creatures, you know, you can't tame them. You can't, you know -- that's been their area for years. That's where -- it's where they go to the river to drink. And all of that falls in with the arsenic. You're going to put arsenic on top of the hexavalent chromium-6, and what does that make? Has that been tested before? Have you even tested this -- I know that you did it in Hinkley, but was that arsenic water also that you did that? Is this the first time you're going to test it on us here?

And I guess I speak for the rest of the tribes and the animals down the river. It's incompetent. You're incompetent. You know, you start building, and you don't know where you're going with the project. You know, you're dealing with people's lives, all the people down the river, all that water that goes to different projects, right? Salt River Project, the California canal that goes

to California. You're dealing with millions of people's lives, and you need -- you know what? You need to drop the hat and let somebody else pick it up. The government needs to put another people in charge that will know what to do scientifically, not, "Oh, let's flip a coin today, see which way we go." This is what is incompetent.

When there's a crazy person walking around, we have them committed because they can't take care of themselves. You can't take care of the project. You know, the first -- when the mesquite tree project came up, I said, "What? What's this? This is incompetent." Now that you introduce the arsenic. And you say small amounts of water, but you and I know that you got to flush those chemicals, and no small amount of water is going to do that. You haven't said how much small amount of water.

And I'm not dumb. We're not dumb. We're not crazy. But you're messing with people's lives, along with our animals, you know. So, you know, I was taught years ago there were a run -- when you take a project, when you're given -- would you lay down your life for that project? You know, and it's for other people's lives down the river that I speak. And I would say no. No arsenic in the water. You know, go test that somewhere else on somebody else, but not here on the Colorado River, not in Fort Mojave. No.

MS. ISAACSON: Thank you, Ronald.

Next is Janice Hinkle.

MS. HINKLE: Hello. My name is Janice Hinkle, J-A-N-I-C-E, H-I-N-K-L-E. Hinkle. And I represent the Fort Mojave Indian Tribe. A few of my comments and questions have been previously answered, but I'm going to go ahead and repeat them anyway.

My first one is, could you state for the record if you prepared an initial study related to the Subsequent EIR. If you did, could you provide it to the tribes as soon as possible.

Second, have you clarified on the record if the Subsequent EIR, when compared to the 90% BOD or the final BOD with the 2011 conceptual project NOP, page 3?

Did you provide a comparison of the concept to the final project design as part of the NOP?

4: Did you clarify on the record if it will be incorporating into the Groundwater Subsequent EIR -- Subsequent EIR any of the recent biological studies and new information shown in the soil investigation, partially recirculated DEIR, specifically the animals, the bats, bighorn sheep, chub and sucker fish and southwestern flycatcher and the simcoe [phonetic]?

And back on the east wall there, behind Aaron, we have a drawing of construction going on.

Basically it's like we will be the animals: Helpless.

If you can bring that forward.

And this is a drawing that Paul -- he's back here in the back. He drew that for us.

Thank you.

MS. BIDDULPH: So I'm going to run quickly through your questions. We'll answer them -- you know, I think we can run through them fairly quickly. I think I got them all.

So we will be doing a comparison of the final design to the 2011 EIR. That will be part of the Subsequent EIR process. So that analysis, the detailed analysis, will be included in the Subsequent EIR, so that initial study that you're referring to will be included in that Final EIR.

The Subsequent EIR will address the -- it will take information from the 90% Design, but then it will also address any other --

MS. ISAACSON: Excuse me, Bobbette.

MS. BIDDULPH: Yes.

MS. ISAACSON: We're going to give you a microphone.

MS. BIDDULPH: Oh, sorry. Thank you.

The Subsequent EIR will address the design changes or the design details that are in the 90% Design

as well as any further refinements that happen through the response-to-comment process. So it's a building process, and the intent is for the Subsequent EIR to address in whole the design details that have come out since the 2011 Final EIR.

The next question was whether the project has been -- was compared to the 2011 EIR in the Notice of Preparation. And the Notice of Preparation includes a preliminary identification of some of the design details that we know of at this juncture that will be analyzed in the Subsequent EIR. So, yes, that comparison was done, and a full comparison will be included in the Subsequent EIR.

And then the last question was about whether new studies that have come forth will be considered as part of the Subsequent EIR, and the answer is yes.

MS. ISAACSON: Next is Leo Leonhart.

Would you like to voice your comments?

Okay. Do you want your card back.

MR. LEONHART: Sure. For the moment.

Thanks.

I'm Leo Leonhart. The last name is spelled L-E-O-N-H-A-R-T. And I'm a consultant of the Fort Mojave Tribe.

And just kind of as a statement and then a

question: It seems like there will probably be design changes that result from this exercise you're going through, the FEIR, and then I'm wondering if it's also possible that PG&E may independently, on its own initiative, propose design changes to DTSC at this time, during this period of review. And get back to me if you want.

MR. YUE: I'll address that. Our intent is for the Environmental Impact -- this particular Subsequent Environmental Impact Report to be completed at the same time that the remedy design is also completed, so which means that any changes in the design would be vented through the normal process with the tribes, with other stakeholders, so you'll actually have an opportunity to see what those proposals are before we actually would finalize the EIR.

MR. LEONHART: Does that include PG&E's initiative --

MR. YUE: Yeah.

MR. LEONHART: -- if they were to come forth?

MR. YUE: Yes. If PG&E has a new proposal -- I mean, I don't think up to now they've proposed anything to us that has not been told to any of the work -- the consultative work group members or the

technical work group members, and certainly at the CTF meetings. So anything that PG&E puts forward that would be a change in the design, naturally that would be put forth to the stakeholders as well and the tribe.

MS. ISAACSON: Are there additional cards that have been filled out?

MR. BRICKER: I have a card, but I haven't filled it out because my questions are many, it's kind of like difficult to even make a question --

MS. ISAACSON: That's okay. As long as your name is on it.

MR. BRICKER: My name will be on it, yes.

MS. ISAACSON: All right. Put your name on it.

MR. BRICKER: I don't have a pencil to write it. That's how bad I am.

Thank you. Thank you. I came prepared, you see.

MS. ISAACSON: Perfect.

MR. BRICKER: Thank you.

MS. ISAACSON: So our next speaker -- and I'm sorry if I'm mispronouncing your name -- is Felton Bricker.

MR. BRICKER: Yeah.

MS. ISAACSON: If you could restate your

name and spell it for our court reporter first.

MR. BRICKER: Yeah. Can I stand over there and look at everybody else, so I'll see if they're listening or not.

My name is Felton Bricker, as you guys all know.

You know, Ron made a statement a while ago about the water being polluted and all that stuff. He's true about that. However, you've got to realize the gold-mining people have a law that won't quit. It's still in effect today. It's old, but it's still usable. So, you know, all that stuff that they're taking the gold out of the mine is being dumped in the river. And I don't know; for some reason, they're down at Silver Creek. That's in plain sight that you can see that flows directly to the river. They're not doing anything about that.

And back in the '30s, way back when, you know, they had a dump site right there next to -- right across from Turkey [phonetic] that ran all the way down to the ice plant, and Topock had been dumping things in that landfill for a long time. I was up in Barstow years ago, and my cousin had a big hole in her side from cancer. At that time, there was a place called Cavet [phonetic], south end of town, where I'm from, but also we migrated from across the river, Golden Shores. Good thing there's

nothing there except for what the gold miners are doing in that area. However, right at this point in time, the cancer that the people had was never clarified where it came from and how they got it. I too am a victim. I'm cured now, thanks to whomever, and I always wondered why, you know. And I think I know the answer right now.

I'm here to tell you, this is not working at all, period. You say you have something to cure it. I've yet to hear about it. I've yet to see it. I've yet to see it work.

I was up in Hinkley not long ago where I took some training in water. I am also -- had drilled water underground making wells and stuff of that nature. I'm well-qualified. However, my people don't see me as that individual that has that knowledge, so I don't say nothing, because until that time when they call, then I will say. I'm doing it today because I feel my obligation is there are not that many real Mojaves left. I just happen to be one, so I speak on behalf of my ancestors. My family has been chiefs at one point in time. With that thought in my head, maybe we'll listen. Maybe we'll start doing something and not take everything for granted that's going to happen without some kind of proof that it's going to work.

You tell us about it. We listen. But we

ask the question. We never get a correct answer. And that's typical. With us, the government and any of the people that are in the -- no respect to my religion. That's what it's all about. And that's who I am. That's about it.

But I have a lot of complaints, but I won't name them all, because -- do you want to hear them? You can watch me cry while I tell you the hardship that we have to go through.

Thank you.

MS. ISAACSON: The next speaker is Colleen Garcia.

(Court reporter clarification.)

MS. GARCIA: My name is Colleen Garcia. I'm a member of the Fort Mojave Indian Tribe. And I just wanted to reiterate the concerns of the Mojave people. I speak probably for some elders who probably were not able to make it today and our ancestors from way back.

You know, our people, Mojaves, Aha Macav, people of the river, that's who we are. Our creation story places us in this land. We've lived up along the river all the way until the end where -- where we're talking -- the place where we're talking about now. Before we wouldn't -- we wouldn't mention the area because it was just not something that we do. We wouldn't share

that information. But because of the contamination, because of what has happened out there, we've had to address it, we've had to speak about it.

And you guys will all be gone one of these days. You'll retire into your nice jobs, you know, your state employment retirement, and you're going to move on, but our people, we're going to be here forever, forever, from now on until forever. Our children, our grandchildren, our great-grandchildren will always be here at Fort Mojave. This is our land, and this is our area.

What has happened out there is a travesty, the contamination, and it has put us through a lot of heartache and lots of tears. Our elders cry when they talk about it. We have prayers up there every year, and we meet the animals out there, and they're talking to us. They're telling us, they're asking us for help.

And so we're -- we just want the State to know that they have to consider that. Always remember that, you know, when you're making your decisions about how -- how you're going to remedy this problem. Think about the Mojave people and who we are.

I had one question regarding the fresh water from Arizona that's going to come over and flush out. I guess my question was: Was that a permission from the State of Arizona that you got permission to do that?

And how much -- how much water is that going to impact, or how much -- you said it was very little, but it's -- fresh water is -- it's a -- you know, it's gold. I mean, we don't want to -- we don't ever want to contaminate fresh -- contaminate fresh water, but you guys are going to utilize fresh water now to flush out the contamination of that plume, so I don't know how it's going to really work.

Thank you.

MS. ISAACSON: Thank you.

MR. YUE: Yeah; thank you for that comment. And as I'm listening, I realize that there might be some misconception as to what I meant by "little." I'm not saying that very little water is going to be used for this remedy. Very little of it would actually be wasted. That is what I'm specifically saying.

The reason why I'm saying that is because the water that is coming from Arizona, if you think of the groundwater, it's all connected, right? It's connected from the Arizona side, the Colorado River, to California, you know, underneath land from California. State boundaries doesn't matter. It is really all water. And so when we're taking the Arizona water and we're putting it to the back of the plume, what we're doing is we're not contami- -- we're not contaminating that water, per se, as

much as we're using it to push the contamination.

So if you can think of it as when you're out gardening and you're using water to hose down your lawn or try to push some of the dirt, that's essentially what you're using and doing. It's really kind of using that water to kind of help the contamination to move through the treatment.

So the idea is, yes, there are arsenic that's higher than the California level, California maximum contaminant level for arsenic. The arsenic that's actually in Arizona, it's naturally there, so it is something that we're putting it back in the ground. The water is not wasted. In other words, it's not being trucked off and being, you know, dumped in the ocean or whatever it might be, and we're staying within this area where it actually was generated and actually is staying. So that's really what I meant by that.

One of your concerns is -- and I hear you from the back about the biological concerns, and that is one of the reasons why this project actually has taken many, many years. We're not jumping in, saying, "Okay. Let's just try this. Let's just try that." It is a very systematic approach. We're approaching it, saying, "What would this do if we do put this remedy in place? How it is im- -- how is it going to impact the people? How is it

going to impact the water? How is it going to impact the birds and the -- and the" -- you know, recently we talked about the bats. "How is that going to impact the bats?"

So we are trying to consider all of that. And there will be a study as part of the remedy to evaluate what potential impacts there would be to biological species out here at the site later on, and that is a technical review, and it's going to be based on the science of how much -- you know, the biological species that's going to be out there, how much of contamination time would it take, how much of it would actually start to show signs that it would hurt them. So we are considering all of that, just to let you know.

MS. ISAACSON: Aaron, one question that she asked was any coordination with the State of Arizona.

MR. YUE: Ah. Yes. That -- the -- Arizona is actually very aware of the water that's being used. And Arizona Department of Environmental Quality is definitely part of our decision process, and in fact, they're on the contact list and stakeholder list, so their input -- their input has always been considered.

The area that PG&E will be using to extract water is actually in the National -- the Havasu National Wildlife Refuge, and the federal government is actually sanctioning it and allowing that to take place.

MS. ISAACSON: Are there any more --

MS. HINKLE: I just had a response or an additional question.

MR. YUE: And if you could restate your name again.

MS. HINKLE: Janice Hinkle, H-I-N-K-L-E.

The chromium was identified years ago, but the animals were just being considered just recently, right? A few years ago?

MS. MICHAELSON: There's another microphone.

MR. YUE: Oh, good. Another microphone.

Yes and no. The contamination has been put there by PG&E ever since 1951. We can't -- essentially, it's impossible for us, as a state agency, to go back and change time. We can't, you know, undo what has been done by PG&E. All that we can do is take care of what we have now and the issue that is facing us.

Part of that is, we're looking at the contamination at least in the groundwater. That's why we're very careful about evaluating where the contamination is at, so that we can actually say whether or not there are issues above the water column, in other words, in the soils, which we're doing additional study on as well, and who is using the water that is contaminated. So that is the reason why we've actually spent many, many

years, essentially, trying to map out where the plume or the contamination is at underground.

As far as we know right now is that the --

Well, before I say that, there's also -- for the Fish and Wildlife Service, there is an agreement for PG&E to do biological assessment. So PG&E is actually out there looking for and actually trying to see what type of biological species are out there and trying to see what type of, you know, information they can gather from that. So that is an annual survey. It's actually probably more than an annual survey. So that information is available on the website. So, yes, we are concerned with biological species.

MS. BRICKER: In your re- --

My name is Sandra Woods Bricker, B-R-I-C-K-E-R.

And in your response, you said that the arsenic in the water on the Arizona side is natural in that water system, and I guess I would like you to explain what you mean by "natural." You mean -- and how do you determine that? Has that been there indefinitely, or could that have been deposited from the mines, or are you not saying that? In other words, it still may have been manmade and not naturally occurring, and I realize that how it got over there is not your issue, but you referred

to it as natural, so I think you do need to clarify.

MR. YUE: I'll let our hydrogeologist talk about it.

MR. GUERRE: Yeah, this is -- I guess I'll give you my name: Chris Guerre with DTSC, G-U-E-R-R-E.

Yes, with regards to -- let me try to point out that the well area over in Arizona, we have the HNWR-1 well down here. We also have a site B well up here. And we also have some wells that we looked at as part of our background study. We took a number over a large area -- from Needles down to this area, down to our site area, we looked at the variation in the amount of chromium, as well as other constituents, including arsenic. For this -- and the conclusion of that background study was that there are elevated levels of both chromium as well as arsenic in certain areas on the site or in the vicinity -- I should say the region.

And for this particular well, the HNWR-1 well, we don't know of any obvious sources of manmade contamination, and at this point it is assumed natural. Personally, whether it's come a significant distance from a mining operation, we don't know, but we don't believe so. Certainly, there's not enough data for us to make that conclusion.

MR. VAN FLEET: To the gentleman --

MS. ISAACSON: We're bringing a microphone right to you.

MR. VAN FLEET: My question is, how deep is the well?

THE COURT REPORTER: Who was that?

MS. ISAACSON: Can you please state your name for us, for our court reporter.

MR. VAN FLEET: Oh. Ronald Van Fleet, Fort Mojave.

MS. ISAACSON: Thank you.

MR. VAN FLEET: And my question is, how deep is the well?

MR. GUERRE: There's a couple of wells out there. I think they're both a couple hundred feet, but don't quote me on that. I think the boreholes originally went down to about 400 feet, but I -- yeah, they may be 285. I can't -- I can't remember the exact number. I'm saying around 200 feet.

MR. VAN FLEET: Okay. I was involved with Ward Valley, and in Ward Valley, which is 21 miles west of here, and at 100 feet, in the EIS report, I guess, they found tritium migration of nuclear radiation, so they couldn't really determine where -- how far down that radiation, from the fallout from the 1950s, when they were doing aboveground testing. And the radiation went down to

100 feet, but it was tritium, so, you know, tritium is like -- it's like a gas. It just -- it travels wherever, so it was on its way up, I guess. Anyway, and that was manmade, you know.

So the fallout, I'm sure, is all along the river. And my main concern is the arsenic, arsenic in the water. And the United States Government allowing this project to bring that arsenic over, that's crazy. That's crazy. That's like a death warrant, you know. They're -- it's like bringing smallpox in with blankets, you know, to the Native Americans. It's an insult.

I think there was an insult just the other day, right, on the news, when they went like this "Woo-woo-woo-woo," right?

It's an insult to Native Americans to bring arsenic into our water, poison our water systems. And as you said, you don't know where those leaks are going to be when it goes to the river. You're testing. You're still testing, and you haven't made your final report. You're going to change, and you're going to do this; you're going to do that. And again, to me, that's incompetent. You know, we need to know where you're at, what you're going to do, and what the effects are going to be. Not if. If this happens and if that happens. No, I don't believe that.

Thank you.

MS. ISAACSON: I think I saw someone filling out a card.

MR. GUERRE: Can I -- can I respond a little bit to that?

Go ahead. Finish up first.

MS. ISAACSON: Well, if you wanted to make a response, go ahead --

MR. GUERRE: Yeah.

MS. ISAACSON: -- and we'll take our next speaker.

MR. GUERRE: Okay. This is Chris Guerre again with DTSC. Is this working?

First, I understand your concern with the arsenic coming over. The agency was als- -- was very concerned with that issue, and it took a while to -- we went through a number of iterations on what to do with the arsenic. And another state agency weighed in. It's the regional water quality -- state water quality control board, and they allowed it, and it provided that we monitor its effect.

And so we will be -- with the proposed remedy as it is today, we will be monitoring that arsenic, and it's required extra wells to go in that the tribes don't want either. But we will monitor its effect to make

sure that the -- what has been modeled by PG&E and the extent of any arsenic that goes into the ground will be limited to a certain area that we will monitor for its duration. It will eventually go away, as predicted by the modeling that PG&E has provided us. So I just did want to mention that.

And going back to a previous comment on the arsenic: Is it natural or manmade as a contamination? I forgot to mention a significant report from the USGS that has identified naturally occurring arsenic in this vicinity and off to the east. And so there is a document provided by the United States Geological Survey that has studied naturally occurring arsenic in the area, and that's probably the main reason we do believe it's naturally occurring. I forgot to mention that significantly.

MR. BRICKER: Sir, I'd like to ask a question. It's not in the water, sir? The arsenic? Is that what you're saying?

MS. ISAACSON: Hold on. Excuse me. Can we --

MR. BRICKER: You --

MR. GUERRE: That's Felton.

MS. ISAACSON: Yes. Felton, can you do me a huge favor and speak into the microphone and say your name

one more time for our court reporter.

MR. BRICKER: Okay.

MS. ISAACSON: Thank you very much.

MR. BRICKER: You said that those --

First of all, let's get this straight, okay? The Creator -- the Creator said a long time ago the Grand Canyon would be the mixing spot for the people and the things that happen. Well, before there were dams -- excuse me -- the water came down. So did the sediment. So did everything that did come down was naturally formed by our Creator for us.

We use the mud for certain things. We eat the mud for a certain reason. I won't tell you what, but they are -- we, as Indians, that know that remember them days. There's not too many left from my time period that know anything about that. The old people talk to me about that. I grew up with old people, so the teaching I learned way back when is a little bit kind of like not believable, because they're sort of like a storybook being told. And if you're a storyteller or a teller of the truth, teller of what had happened, your name becomes a story. So that's --

THE COURT REPORTER: I can't hear.

MR. BRICKER: He knows what he's talking about. Listen to him. But today, because the kids have

gone to school, got educated, no longer look at that as truth, so it's a joke, big joke.

So if we refer to somebody as knowledgeable, he's an elder that grew up the old ways and know that, but when you talk to the younger generation, they too have gone to school and forgotten the ways of the Indian. They look forward to being better than.

Why is it that way? But they know how to play basketball. If they know how to play basketball and football, they should know teamwork, together, not separate, and who's going to be the grandstand player. That's what it's all about today, for me anyway.

One person's knowledge does not affect me. It only tells me he doesn't know as much as he thinks he does because he hasn't really sat down to talk to somebody. And I'm willing to do that if people will listen. But they're too busy, you know.

And right now I meant to ask the question: At the south end, like I said, where I grew up, where the sewer ponds are at now in Needles, there was a well. There is a well there that some of us people from the south end drew water from that well. And I understand two people besides myself had gotten it. In fact, a number of years -- I went away in '43 and came back in '50. I've been there ever since. I had a house over there. My

father did, anyway. I lived with him, but I wasn't a member of my father's wife, so therefore I was never welcome there. I lived with my aunt on the far end. I drank from that well. And all of my ice and stuff came from the ice plant I went and picked up.

But that's where I was at, and this is where I'm at, because I still believe the Creator made the mixture of water for us to drink and induced me to go down to the river -- and where we learned this, I don't know -- but to dig a hole next to the river, and the sand will filter out, and we drank it that way.

But that's it. I have a lot to say to you people. I have a lot of time now that I'm retired and they decided I'm too old to do anything, but if I -- so they let me go.

Thank you.

MS. LEAR: Thank you.

MS. ISAACSON: Next, we'll hear from Levi Evanston.

MR. EVANSTON: Good morning. My name is Levi Evanston, L-E-V-I, E-V-A-N-S-T-O-N. I'm a tribal member here with the Fort Mojave Indian Tribe. I'm a recreation director for the tribe. I work with kids.

I listen to my elder, Felton. He's my father-in-law. I listen to the council member, Colleen.

I listen to everybody. But when I listen to you, your guys's answers, your statements are just going in circles. You're not answering nobody. That's what I hear.

Like I said, I work with the kids. They're going to be here longer than I am. I work for the recreation department 18 years so far. I had a sister pass away by cancer, and that was not too long ago. She went on her journey.

You know, I just wanted to make the statement that when I listen to our people talk, you guys answer their questions. It doesn't sound like an answer. It's just like -- like you're going in circles, trying to put something up in the air which ain't there, you know. I listen to them. They're my elders. And you guys -- I don't know. The way you're talking about what's going on -- the remedy, the remedy, the remedy -- there ain't no remedy. There ain't no remedy.

Like Felton said, you guys do all your testing. That's not going to get right.

Like Ron said, same thing. It will never be the same.

You guys want to put wells, dig holes in the mountains, that's another thing. You guys are just creating something that shouldn't even be created. You guys should have left it alone. That's the way I feel.

That's from my heart as a tribal member.

Thank you.

MS. ISAACSON: Are there any other people who want to speak?

Oh, you haven't had a chance yet, right? So why don't we -- we'll take Angie Alvarado first, since she hasn't spoken yet, and then we'll come back to you. Is that all right?

MS. ALVARADO: Hello. My name is Angie Alvarado, A-N-G-I-E, A-L-V-A-R-A-D-O.

And I just want to say, this whole thing just -- it really hurts my heart, because since 2004 this whole thing started, and you're showing us maps and everything, and there was nothing there. I remember when Felton and I and a whole bunch of important people were out there at the Maze and they were saying that what they were going to do, but we didn't understand then. But now I see all the destruction that has been made, and like I say, it really hurts.

Felton did speak to them. There was a lot of very important people there. And he tried to explain to them that "You can't do this." But they didn't listen. They went ahead and they did what they had to do, what they say. But it seems like it doesn't even matter. The tribe tells them, "No, you can't do this," but they still

go on and do what they want to do, and it's just -- doesn't make sense sometimes, because there's wells all over the river there.

I know they're probably trying to protect the river for the users downstream, but maybe there's a lot of unnecessary things that they're doing, and they're just destroying everything out there.

Our elders, they hold that place as a significant area, and it's really something that we're going to pass down to our younger generation. But what are we going to pass down to them when the whole area is destroyed? It's just a mess out there, and it's going to keep on going like that for the next 30 years. And it's just heartbreaking, really. I don't know what we're going to tell the kids, the younger generation. It just is so upsetting sometimes.

I have really not said anything all this time. I work with Linda and Paul and some of the new members, Janice, and I just listen, because I'm not a very good speaker. But from my heart, it does hurt.

We've had a lot of deaths with cancer also in our tribe, and I'm sure the City of Needles has had the same. And it just -- I don't know what we're going to do now. It's just something that we have to keep on going and keep on top of, which I --

Linda is very knowledgeable about that and speaking things like that. And we had Nora here, Nora McDowell, but she is no longer here, and she's another one that was really adamant about things going on there.

And also, this arsenic that's going to be pumped from the Arizona side, is there a safe level? Is there a number that's safe? And if you guys know what it is, can you let us know? Because if it's higher than what it's supposed to be, maybe it shouldn't even be pumped over here to this side, because you're just adding more contamination to the area, and then there's probably going to be more destruction to the area there.

I just want to view my concerns on that. I don't know what else to say, because it's just -- it's just too much. Thank you.

MS. ISAACSON: Thank you.

I apologize. I have another card first --

MS. HINKLE: Okay.

MS. ISAACSON: -- from someone who hasn't spoken yet, Sandra Woods Bricker.

MS. BRICKER: I did speak before.

MS. ISAACSON: Oh, you did speak. Okay.

MS. BRICKER: It's a different topic.

MS. ISAACSON: Okay. We'll get to you next.

MS. HINKLE: This is Janice Hinkle again,

H-I-N-K-L-E, from Fort Mojave Indian Tribe.

The hydrologist there, he mentioned that the arsenic would be gone. I just want to clarify. Is it going to be gone in 30 years, as they are suspecting the chromium is?

And also, the flushing of the water, is there a reason why it has to be so close to the edge of the water there? Is it because of the slope? Or it just seems really dangerous to even want to suggest it being so close to the water on the edge.

MR. GUERRE: Yeah, I'm not tracking the -- clarify the "close to the edge" issue. Can we point to something?

THE COURT REPORTER: I can't hear her.

MS. ISAACSON: The court reporter can't hear her.

MS. HINKLE: Right there.

MR. GUERRE: Okay. Where is here?

MS. HINKLE: Right in that area. I'm not sure. I just know that the areas where you want to flush it -- where you want to flush it to, correct?

MR. GUERRE: Yeah, I'll go over that, that figure.

Okay. This is Chris Guerre speaking again.

So along the river's edge, groundwater is

actually being extracted, and we're trying to capture any -- any chromium that might leak through. Hopefully it doesn't. Hopefully it all reacts along this -- this is supposed to be a reactive barrier. Water goes through it. It's not truly a wall. Water passes through this area. Water is supposed to go from the left to the right, and it's supposed to -- the chromium that's inside the green blob is supposed to go through here.

And now I'm losing power. Let me try the other one.

So the contaminated water is supposed -- that's over in this area is supposed to go through -- it gets pushed by the fresh water that's injected over here in the blue circles. It gets pushed and it gets cleaned up ideally.

If any should leak through, you have extraction wells that's supposed to capture it so it doesn't continue on going -- you know, flow is going to be going this direction. So we don't want anything going out to Arizona. We don't want the plume to spread, the chromium plume.

Now, the arsenic that would be in the fresh water that gets injected into these wells, this well as well, and possibly these wells here, will be monitored and it's been bottled down, creates little arsenic zones

around the injection well. It's not too large. It's supposed to be about 225 feet around the main injector. Most of the water will be injected here, the highest flow rate. And we're going to monitor that to make sure it doesn't go all over the place.

And I think there was a question about what level are we looking at. It's the MCL of 10 parts per billion arsenic. So the level that's probably -- well, that's been tested over at the Arizona wells about 14 to 17 parts per billion arsenic, so it's a little above the MCL.

But we are concerned about it. We're definitely concerned about it. So it's supposed to remain in a small localized area, and then it's supposed -- we're supposed to monitor I think for -- they're proposing it's supposed to take about 10 years to go away, so it adds time to the remedy. It does add time. It is a -- we understand it's a big minus to have.

Do you want to add something?

THE COURT REPORTER: I can't hear her.

MR. GUERRE: If the arsenic goes above the projected levels that the current groundwater model shows, we'll start treating it. We'll start treating the arsenic. There's a contingency in the proposed remedy to clean up the arsenic before you inject. It, so if it goes

beyond what we -- what we think it should be doing and it gets larger than we think, then we will start cleaning it. That's built into the existing remedy.

MR. VAN FLEET: Why not clean it before you inject it?

MR. GUERRE: That could be considered. We will -- we'll take that into consideration.

MS. ISAACSON: Can you please repeat the comment.

MR. VAN FLEET: Yeah. Again, Ronald Van Fleet; Fort Mojave.

Why not clean the water, the arsenic out of the water, before you inject it.

And this is a Superfund project, right?

MR. YUE: No. No.

MR. GUERRE: I don't believe it is.

MR. YUE: No, it's not.

MR. VAN FLEET: It's not funded by the government, a Superfund?

MR. YUE: No, it's not.

MR. VAN FLEET: No. Well, yeah, so, you know, it costs money to clean the water. It costs money -- you've already got the pumping stations, the pipeline. The well is already drilled. And, you know, to go through with the project and then you get stopped

because there's arsenic in the water, then just clean the arsenic out of the water, you know.

MR. GUERRE: And I think we had originally considered that, but PG&E had really went to the state board and had got concurrence from the state board to allow a certain amount to -- is there a better way of saying that? That I think originally we wanted -- we were considering, yes, treat all the arsenic before it goes in, but the state board basically said, "No. We can have some impact, as long as it's manageable and it doesn't go beyond what's predicted to the model." And that's how we got to that point.

MR. VAN FLEET: Is that the truth, what you stated right there, that the state board said that you could do it, or is it PG&E asking the state board?

MR. YUE: I would say PG&E --

THE COURT REPORTER: I'm sorry; what's the answer, and from whom?

MR. VAN FLEET: Yeah, I don't think the state is going to come in and say, "Oh, by the way, you can have arsenic here."

MS. ISAACSON: Aaron, if you can reiterate into the microphone the answer and then come back over here.

MR. YUE: Yes. The question was, did the

state board say it's okay to put arsenic in the groundwater, or was it PG&E that asked the state board? And the answer is PG&E asked the state board.

What my understanding is, from the state board's response, was that they looked at the need to clean up the hexavalent chromium plume, and based on the weighing of how much arsenic would go in, whether or not there was going to be a long-term impact from the arsenic, they essentially decided that it's fine for PG&E to inject the water with the higher arsenic into the groundwater.

MS. ISAACSON: Stacey, we -- let's come back over here. You've been waiting so patiently. You, yes.

MS. BRICKER: I'm Sandra Woods Bricker, and I'm not a tribal member, but my spouse is. And I have been coming to these meetings for many years, and I have also heard the importance of the Maze, in the Maze area, the cultural aspects in the lives of the tribal members, and I believe that's probably for all tribal members, no matter what some of their -- how their beliefs may vary in some regards, but the Maze is very important.

And the reason I say this -- and I know it's not in my questions, but it's the basis of my questions. And this goes back -- I don't know if this has been a recent thing or not, but I know that in the early stages of this project, there were some concerns, and I still

have that concern, about the pressure gradient required to flush the system, because Leo Leonhart explained to us, I believe, some of the -- that there would be changes in the pressure gradient to push that water flow through.

And I believe my question at the time -- and it probably wasn't only my question -- but my concern was, is that -- what impact that change in the water flow pressure would make for the stability of the surrounding ground and how far that impact would be.

So I do not know at this point in time if -- how you're monitoring that impact, if it's being monitored at all and what the results are, so those are my questions.

And in my formal statement here on this card, my concern was how that might impact back up into the Maze section that's part of -- that's under the jurisdiction of Fish and Game -- I think that's California Fish and Game. And then also, there's part on the tribal jurisdiction land.

So I don't know the impact of that, also, but my understanding is, you want to add more wells. So the thought is, is that that might also increase the pressure of the water flow, so then it would be in addition of that, and what impact that would have on the stability of the surrounding ground. So over this area

that you're directly flushing, I don't know if you need to know what impact that has had on the ground-level surface, and I guess I would like some response on that.

And the reason it's important is because that could -- if there is significant shifts in that soil stability, that could impact the cultural features of the land that the Maze is on.

MR. YUE: I'll take a stab at it. I'm not a hydrogeologist, but I'll take a stab at it.

So the way it works right now is that, if you can think of the ground as a sponge, so -- and part of that sponge is already wet because it's got water in it. So what we're doing really is, when we're adding water into the ground, is essentially just changing, you know, how steep essentially that gradient is from one end of the sponge to the other. So if you think of it, as if you add more water on one side of the sponge, water is going to seep out through the other side.

So whether or not it's going to have any harm to the ground surface, we don't see it. We actually do not think that that is going to take place. And the reason why I can actually say that is because the river itself is bouncing pretty much up and down seasonally as well as daily, so it's going up 3, 4 feet, and so that change really is going through that area already.

MS. ISAACSON: Would anyone else like to speak?

MS. SANSOUCIE: Amanda Sansoucie.

This is kind of in response to your statement that you just made. You said the water is already fluctuating 3 or 4 feet. Well, if you're injecting more in there, that would make it fluctuate even more, so what are -- what's the course of action if you guys inject the nutrients in there at the same time there's already a natural fluctuation and it actually breaks through the river's natural barrier? What is the course of action if it actually gets into the river?

MR. YUE: The answer to that question, unfortunately, meant that we do have to put the wells in. I know I've been hearing it from the tribes for a while now that everything that we do out at this site, whether or not -- however many holes, our presence out there is disruptive. But yet, in order for us to make sure that the water is flowing the right direction, that there aren't any, you know, organic breakthrough or even pushing chromium beyond the area that we want it to, that meant really monitoring very, very carefully what is happening out there.

The good news to that is, most of the wells needed for that to take place, that type of monitoring --

the wells are already in place at this point in time.

Now, it doesn't help the tribes, I know, because those wells are in the ground. But the answer to that question is, we are going to be monitoring it very carefully. And if you go through the design document, PG&E laid out the periods as to when -- as soon as when they start up, how often, how frequent they're actually monitoring that water and what's in the water.

That's the most important part, is whether or not the organic is moving, you know, there's too much organic, too little organic, there's -- whether or not there's too much by-products like manganese that's moving or arsenic is moving, or whether or not the hexavalent chromium has been reduced. All of that really has to be just carefully looked at so that we're not essentially creating a worse problem, if you will.

MS. SANSOUCIE: And if it does break through?

MR. YUE: The question that was asked is if -- what happens if it does break through. The -- PG&E's response to that was, you see the extraction wells. The extraction wells by the river, it's sole purpose is to control any flow that's going towards the river. So if there is a potential for breakthrough, PG&E will have to stop the injection essentially, pump more from the river

and to adjust it so that there is less of a possibility that it's going to go past essentially the river -- if you think of the river going straight down or the edge of the river, that the contamination would go past that point.

Am I creating more of an issue?

MR. BRICKER: I think that most of the people that live right here in the village have known about these factors long before. Right behind here is a boat landing where the races used to go. They opened a channel over there to flush the water this way. In the meanwhile, they're dumping stuff up here also. And the whole idea about that, when they told the tribe, that this is going to work because they'll flush it out. No, it won't. They say every mile the water will be agitated, oxygen will get back in the water. It doesn't go all the way to the water. It just goes to the certain part of the motor, you know.

I've often thought about that. I've had classes in water, wastewater treatment, and stuff like that. That's what I do for a living at one point in time. Also drilling wells. So, you know, I'm listening to something I find really complicated, and I'm not fully understanding it yet. But you're talking to a group of us that need to sit down with you guys and talk business, because we need to know the whole story about how you

think it might work.

But like I said, some of these kids -- these people in here, my tribe, are young. They didn't know what was going on. I'm one of them, too, but the thing is, I learned it. I went to school for it. I'm qualified. Not anymore, because I don't have a license, but the fact is I still know it, will never forget it. And this is what I'm trying to teach, hopefully to we that don't understand, because there's terminology that I don't even know. I have to go read in a dictionary now.

But I appreciate the time to talk to you guys. You've always been good people and good listeners, but sometimes it's hard to explain the religious aspect of what the river really means to this tribe here. They're not the only people from here, but there are others out there in the world. So you see, we are big, but we are small. We're mean, but we're nice. Thank you.

MS. KNOX: Charlotte Knox, K-N-O-X. Fort Mojave Tribe.

I do have a question on the process of the extraction wells. Is it going to be one or two that are going to be started at first, or are they all going to be started up at once, or how is that process going to be done?

And also, the area where it has the bedrock,

what is going -- the process on that bedrock? Is it going to coincide with the same extraction wells up there, or are they all going to be started at once? And is arsenic well water going to be pushed into the bedrock area also?

Thank you.

MR. YUE: It would not be a good idea to start everything up all at once, just because you want to know what the influence is slowly. So you want to be able to say, "If I do this, what is the result of, you know, activity?" For example, if you're injecting here, you want to know what is happening to the water right next to it before you start something else up. So it will be a step-by-step approach, so hopefully, that -- you know, we definitely will be very careful how we start that up.

The question about the bedrock is that these -- because the bedrock is so tight, there's so little water in it, PG&E will be pretty much just extracting the water. I don't necessarily see that there is any flushing, per se, you know, by putting water into the bedrock and hoping that it will push contamination out of that. It's just -- it's very unlikely, so they will probably just be extracting the water.

And, Felton, to your point about, you know, not understanding, I know. This stuff is not easy. This is not easy to understand. You've got a great person

sitting right next to you, Leo right there. He can explain a lot of this to you, because that's -- you know, he is, yeah, Fort Mojave's consultant.

MR. BRICKER: He doesn't listen to me.

MR. LEONHART: I always listen to you.

MR. VAN FLEET: Ron Van Fleet. Again, Fort Mojave. I just said "again." That's all I said. Fort Mojave.

And you know that my grandfather, years ago, he told me a story -- well, it's not a story. It's a truth. He said, "Watch. Come here." And we went out in the desert. We went out by the river. We went out different places. And he said, "And look here. Watch." In this brush, this Cariso brush, there was a little field mouse, you know. Every year we'd watch. You know, sometimes he put his house way high next to the -- you know, the tree. And other years, he put his house way low, you know. And my grandfather said, you know, "He knows it's going to be a lot of moisture, a lot of rain this year. That's why that mouse puts his house high." And he says, "There's not going to be no moisture. You know, there may be one crop of mesquite beans." And he was true, you know.

And my son heard that, his grandson, you know. He told him, and, boy, every day -- every year,

he'd watch that mouse, you know. And he would tell, "And there's going to be three crops of mesquite beans this year, Dad."

And I go, "Oh, okay," you know.

And sometimes we move too fast, you know. We're like an instant -- an instant. We've got to have it now. You know, we're building now. We don't take the time to monitor these wells for a year, you know, and then see where you're going to be, you know, and then you can make an accurate choice, you know. But just jumping in and doing things, you can't -- you can't move like that, you know. And if you can do that, you can monitor wells, I'm sure you can clear the water.

MS. ISAACSON: Would anyone else like to speak?

MS. BRICKER: I guess my comments on my original question -- oh, I'm Sandra Woods Bricker. The -- the original question, I think, that was still on that precipitated some of this discussion was about the pressure gradients and the effect -- the effect on the Maze. And so I'm understanding that you don't think that it's going to have any effect, so there's no monitoring whatsoever going on for potential impact?

And then I'm -- as I'm looking at this map, I'm seeing that the wash area looks like it goes through

the soil under Bat Cave Wash. Is that correct? That's the wash right through there, right?

Yeah, so most of that plume is under the wash, and that's what's being flushed. So you would have impact geologically from other features, also. But I guess perhaps if you could -- in other words, surface water would affect -- rain would affect the impact on the wash area, per se, and probably other areas, also, besides the groundwater and the gradient pull.

MR. YUE: Okay. I'm trying to remember my thought.

So the first question was whether or not we've been monitoring the pressure gradient and whether or not there's an impact from that. The answer is: Yes, we have to understand what the pressure within the well is doing for the well itself, as well as how it impacts the remedy in terms of the water, how it's flowing, right? So that's the first thing.

The land-surface component is a little more tricky, because we're not always out there the same -- you know, we are not looking at the ground all the time, and we certainly don't want to be out there as often as -- I'm sure the tribes don't want us out there as well.

So the answer is, part of what we are doing is to ensure that the entire area are looked at from a

cultural perspective, cultural resources perspective, whether or not there are any changes to those cultural resources. That's part of our 2011 mitigation measure that's been established in the EIR.

So annually, PG&E and their consultants, as well as with invitation to the tribes, are out there looking at the cultural resource features to make sure that if there are any changes that those are noted.

Now, if there are surficial changes that impact the cultural resources, then we hope we will be able see that very, very quickly within that time period.

That is probably how -- in terms of the regional-area-wise, how we can actually establish whether or not there are any surficial adverse impacts, if you will. It's just by constantly monitoring, looking at the area to make sure that there aren't anything that are changing or anything that is, you know, adversely to impact.

As far as the wash is concerned and water flowing through that, yes, every year or every season, when there are -- there's rain and precipitation, there will be water and it's going to precipitate down towards the groundwater, and we understand that. How much of that will really impact the remedy, the answer is: Well, it's happening right now. And what we're doing is, because of

our series of monitoring, how often we've been monitoring, we're seeing that, really, to change the plume, as it stands right now, it's actually relatively slow. It's not really making a whole lot of impact.

Most of the water -- and again, I'm not a hydrogeologist. I'm just speaking as an engineer. Most of those rain events, it will be pretty much surface flow. The water is going to hit the ground and, instead of seeping a hundred feet into the ground, most of that will flow on top and kind of flow out in the wash.

So is that something that we need to consider as part of the design? I think, just by monitoring the remedy, we're taking care of that. You see what I'm saying? Because you know that the changes as it's happening when you're doing the monitoring. And if there are changes, that could be adjusted easily.

MS. BRICKER: I'm thinking about it. It's -- as you say, it has to process a bit here, but --

MR. LEONHART: Yeah, Leo Leonhart, Fort Mojave consultant.

I just wanted to add that -- maybe to help out what you're saying -- what -- the map that we're looking at at the present time is all the new infrastructure. There are a number of monitor wells, hundreds of them, that are shown on that map over there

that would be directed toward what you're talking about, the monitoring.

MR. YUE: Thank you, Leo.

MS. OTERO: Linda Otero.

I don't like to respond in the way of the viewpoint of -- well, it's difficult to respond in the way of viewpoint in response to some of the things that have been talked about of the project impacts, so it is with the viewing it from a perspective, as been said earlier by myself and others, of what this means for us as a people.

So as much as we hear of the scientific discoveries, data, information, and so forth, that's helpful to that extent, but there's also the knowledge base in which we do have with this area, as well as the water, as well as the land, as well as all of living beings. But we don't put it into categories or numbers or existence or feeding patterns and things of that nature. We just know it in the way of how we're given that knowledge base when we're ready to receive that. So here I am to switch over to try to understand it in this other world, given that our world will be disrupted by way of how we implement this project.

Right now, currently, in the natural sense of all things working, chrome-6 is being converted to chrome-3 in its natural way. There's a chemistry that's

been happening that's been created by all the elements that are underneath the river. So we know that, as Fort Mojave has stated that many times, that our approach to this remedy was of the natural attenuation, and that's happening right now. But we also know that there was a remedy selected and a preferred level that, you know, elevated to a quicker time frame to be cleaned up. So this is what we were addressing today.

But in the meantime, when this remedy was being created and designed, we see now, as of this Subsequent EIR approach today, there are additions that are being looked at, additions to the number of wells, additions to how this cleanup will be -- especially with the groundwater flush, so forth; although, this particular remedy identified the flushing mechanism, but now we're looking at where that source of water will come from, and all of a sudden, it has been noted that there is arsenic.

So then when the state board came, and it has been stated earlier that actually PG&E asked for this water, comes with it additional impacts as where you will place those wells. And as recent, in some of the defying -- identifying locations of wells has created impacts that were truly happening now, not as a project implementation, but as part of this project design. And that was devastating to know, because when we, early on,

talked about -- and prior to the remedy selection -- of upland and lowland wells and when they had pilot testing and so forth, we tried very much so to avoid the upland areas because of direct cultural materials in that way.

And now if we talk just physically, that's what it is, but then in the spiritual sense, in the landscape approach, it's much larger. But when we just talk about, you know, site specific, then you're looking at that narrow lens of how to evaluate that as well. That's not just the only way how we look at it either. But yet, when this design was developing into this movement for after 60 to 90%, there was wells that are identified which are now positioned right there in those color codes that had a direct impact.

And from my viewpoint and the tribe, to emphasize that with the other multiple agencies that -- I don't know if they're present today. I think that's part of the CEQA evaluation, to have other agencies who are a part of this project be present, but I don't know. I've been sitting up front, so I don't know who's all here in the back. But I just want to make a note that in this process as well requires other agencies to be here. So you hear the voices of what's being said during the scoping meeting, but nonetheless, you have multiple jurisdictions and responsibilities to the land, including

us as well, Fort Mojave.

And so to note that wells are being placed in a place -- in areas that are directly impacting cultural sites was -- is not acceptable. Don't evaluate it in a sense that what we will be running through in this process, because even with that, nothing comes near to how do we address that impact. But yet, the designed development of it will probably proceed, no doubt, and that's devastating.

Then how do you remedy that? How do you rectify that in that sense? That hurt, what you've been hearing today talked about. It's not translated into this process of the EIR mechanism. It is a different level. And that's what I want to see: How and who will be addressing it in that manner. I think you've heard it time in and time out today that we do need to sit down with the Department of Toxic Substance directly with the tribe. So we will be asking for a consultation based on this scoping meeting and the draft development of the EIR.

So be mindful of that, and it's heads-up. But yet, nonetheless, the level in which you've been hearing voiced by our people here, that this is not just another step process, from how this project has evolved from the first decision of the EIR, even from, you know, as time went by, defined in 2004, when the measures were

being placed.

We know the depth of what each detail has been about, not from the viewpoint of how -- for our people, because we have people that are consultants, and thank you for them. Thank them for allowing us to understand that, to peer through that lens of the science background level.

But for the people, that's what's not being conveyed, and be mindful strongly of how that will. I believe we've had the opportunity to meet with the director of the Department of Toxic Substance Control recently, a new one on board, and yet, feeling that there is that effort to really understand where we're coming from as well.

We've had many changes throughout this whole project, not only on the state side and the federal side, and each time we have to repeat over and over and educate others as they come on new, and it sometimes is like a broken record. When will they understand? When will they listen?

But I can understand the magnitude of the project, not only with Topock, but others within this state. But nonetheless, this is a unique location. It's not like any other cleanup site that you will have in the state of California. This place is different. Treat it

differently in that way in this evaluation of however it can be dealt with. It's not a simple thing, but yet elevate it to that. Thank you.

MS. KNOX: Charlotte Knox, Fort Mojave Indian Tribe.

I just want to make a statement. I was in one of the scoping meetings back -- I guess it was 2004, when they first brought the new designs in, and we made our comments there. And now to get -- to actually see where we're at now, it just -- everything just changed. You know, you added more. We don't want -- we've stated our comments. We don't want more wells. But then again, they kept coming and coming.

When is this going to stop? You know, when are you going to stop impacting our lands? There's got to be -- you don't -- haven't even started the full-blown remediation, but yet we see a full-blown impact. When are you going to take -- stop and take a look at that? Okay. Maybe this isn't working. What if something does happen? You know, what are your remedies for that? Something big, you know.

You know, PG&E -- I don't know if there's a study been done on their work- -- their employees there, but I've heard a lot of those employees have gotten sick. Is it because of the chromium? You know, what impacts do

they see or have had in their area? But yet, it's a company that continues to cause a lot of devastation, destruction. When is the state going to look at that and say stop? Does it have to be a big explosion like they did commit over in Northern California? You know, when is it going to stop?

We're trying to be here. We're trying to remedy -- look at the remediation you're doing. Why can't they take the water from their own water system, instead of going over to the Arizona side? Why do you have to get water from those wells on the Arizona side? We can't even do that for our tribe. We have to go to the Supreme Court, and yet, they still us, "No, you can't use that water for your use."

So when? That's all I'd like to know. When? Hopefully you can, or maybe we have to go to the President and say, "When is this going to stop?"

MS. ISAACSON: Would anyone else like to speak at the meeting today?

Okay. Can you put the slide back up, Emily, that has the information about how to provide comments.

There we go. I just -- I want to reiterate how to provide comments during the scoping period, because this input is extremely important for DTSC and the project team. So after today's meeting, you can submit written

comments, and they're to be sent to Aaron, and his contact information is here on this slide. And comments, written comments, need to be provided by June 4th.

Okay. We'll go ahead and wrap up. I think, on behalf of the project team, we want to thank you for being here and sharing your perspectives, your concerns, telling us your story. It's meant a lot to us. There has been very important input, and we appreciate that. So thank you, and have a good afternoon.

(The proceedings concluded at 12:45 p.m.)

CERTIFICATE OF REPORTER

State of Arizona)
) ss.
County of Mohave)

I, Eve K. Burton, RPR, CRR, certified court reporter in Arizona and California, do hereby certify that I took down in shorthand (stenotype) all of the proceedings had in the above-entitled matter at the time and place indicated, and that thereafter said shorthand notes were transcribed into typewriting at and under my direction and supervision, and the foregoing transcript constitutes a full, true, and accurate record of the proceedings had, all done to the best of my skill and ability.

In witness whereof, I have hereunto affixed my hand the 31st day of August, 2015.

Eve K. Burton, RPR, CRR,
AZ CR Certificate No. 50261
CA CSR No. 12527

PUBLIC SCOPING MEETING FOR THE

TOPOCK COMPRESSOR STATION

FINAL GROUNDWATER REMEDIATION PROJECT

REPORTER'S TRANSCRIPT OF PROCEEDINGS

Taken on Tuesday, May 19, 2015

At 1699 Bailey Avenue

Needles, California

At 5:31 p.m.

REPORTED BY: Eve K. Burton, RPR, CRR

AZ CR Certificate No. 50261 / CA CSR No. 12527

SCOPING MEETING SPEAKERS:

Joan Isaacson, Consultant for DTSC

Aaron Yue, DTSC Lead Project Manager

Bobbette Biddulph, Consultant for DTSC

PUBLIC COMMENTS:

Unidentified Woman in Audience

MS. ISAACSON: Good evening. Thank you for being here this evening. This meeting is being conducted by the California Department of Toxic Substances Control. And the purpose of this meeting is, it is an environmental scoping meeting for the Subsequent Environmental Impact Report that's being prepared for the Topock Compressor Station Final Groundwater Remedy -- Remediation Project.

An important part of the scoping process -- and we'll talk more about what the scoping process is, but I just want to call your attention to the 30-day scoping period, and DTSC is taking comments during the scoping period, and that scoping period ends on June 4th. The scoping meeting is being conducted as one way to solicit input and comments from the public during the scoping process.

A little bit about DTSC: The California Department of Toxic Substances Control, or DTSC for short, is a state agency responsible for the investigation and cleanup of sites contaminated with hazardous substances in California, and DTSC is the agency, the state agency, that is supervising cleanup for the State of California at the PG&E Compressor Station.

We have members of the project team who are involved in preparing plans and the environmental review for the cleanup project: We have Karen Baker here. She

is the DTSC Branch Chief. Aaron Yue is a DTSC Lead Project Manager. Christopher Guerre is one of DTSC's project geologists on the project. He's in the back. And then we have Jose Marcos, who is another DTSC project geologist. Stacey Lear is the DTSC public outreach and tribal outreach person on the team.

And we also have members of the consultant team here: We have Bobbette Biddulph on the consultant team, as well as Sarah Spano. And I'm Joan Isaacson. I'll be facilitating this meeting. And also, with me is Emily Michaelson.

So why is DTSC holding this meeting this evening? DTSC is holding this public scoping meeting to be consistent with the California Environmental Quality Act. That's the collection of State regulations that guide preparation of environmental review documents for projects. And DTSC is requesting your input on the scope of the Subsequent EIR that's being prepared. As part of that input, DTSC is looking for your ideas and comments and questions and concerns as they consider the type of analyses and the different topics to address in the Subsequent EIR.

During this scoping process, there are various ways that you can submit comment. This evening you'll be able to provide verbal comment, and you can also

fill out a comment form. It's a one-page --

Emily, can you hold up a copy for them.

MS. MICHAELSON: Sure.

MS. ISAACSON: That's the comment form, so you can complete that this evening and drop it off with one of us.

Another way to provide comment during the scoping process is to provide a letter or some other kind of written statement after the meeting. So after this meeting, you'll still have time to submit input, and it just needs to be submitted by June 4th in order to be included with all the other scoping comments that DTSC will be receiving.

First, we're going to hear from Aaron. He's going to tell us about the remediation project itself. And we'll then hear from Bobbette, who will talk about the Subsequent EIR and the process for preparing EIR, as well as how public input is considered in the EIR process.

And after they give their presentations, we'll then go into the verbal comment portion of the scoping meeting, and that will be your opportunity to provide your comments and input verbally. We have a court reporter here, who will be recording your input so that we can make sure that we accurate- -- have an accurate recording of your comments that you provide here this

evening.

MR. YUE: Thank you. Thank you, Joan. I'm holding quite a bit of stuff here.

All right. Let's try this. So, as Joan mentioned, my name is Aaron Yue. I am the Project Manager for the Department of Toxic Substances Control. And some of you here are familiar to me, so I recognize some of you, and I know that you know a little bit about the project. Certainly some of you know more than others. So indulge me in this next few minutes while I kind of go through some of the project history, some of the project -- you know, what the design actually looks like. And so I just want to orient, you know, participants here as to what the project is actually about.

So the PG&E Topock Compressor Station is actually located about 12 miles southeast of Needles, California, and it -- the area surrounding the Topock Compressor Station has actually been designated by the federal agency as a Traditional Cultural Property, and really that particular property has significant cultural/spiritual meaning to the Native American tribes.

As I mentioned, PG&E is a landholder in the area, and this particular slide demonstrates or shows that PG&E owns about 66 acres of land near the Colorado River, but then the site itself is actually surrounded by other

landowners, specifically the land that's owned by and managed by the U.S. Fish and Wildlife Service, the Hav- -- and it's actually part of the Havasu National Wildlife Refuge. Most of the other landowners are Bureau of Land Management and land that's actually owned by Bureau of Land Management but managed by BLM -- Bureau of Rec- -- Bureau of Reclamation managed by Bureau of Land Management. And there is also property that is leased by San Bernardino County from the Bureau of Land Management, as well as property that is actually owned by the Fort Mojave Indian Tribe.

I just mentioned that PG&E owns 66 acres of land. The compressor station actually operated since 1951. As part of their process, they compressed natural gas from Texas in the delivery -- as part of the delivery system to customers in Central and Northern California. So the gas is coming through Arizona and passing through this particular area. PG&E adds pressure to the gas and pushes the gas to Northern California. And there are other compressor stations along the way in California as well.

Operational history: PG&E did use hexavalent chromium as an additive historically at their site as a way of preventing corrosion in their equipment. They've been doing that since 1951. And predominantly,

they discharged the water that contained the hexavalent chromium into a wash behind the compressor station between 1951 and up to the '70s. They -- PG&E pretty much stopped using hexavalent chromium in 1985.

Other chemicals of concern that we're looking into at the site includes metals, petroleum hydrocarbins, petroleum, other type of PCBs, dioxins, asbestos, SVOCs or semi-volatile organics, and then organic -- or volatile organic compounds or VOCs.

Since 1996, PG&E signed an agreement with the Department of Toxic Substances Control to clean up the contamination at the site, and that came about when PG&E found groundwater contamination, and so they signed an agreement with the department to essentially start investigating and cleaning up the site.

In 2004, in the process of our investigation, DTSC required PG&E to begin a series of cleanup efforts to control the contamination until such time that the final remedy or final solution was found.

And at -- in about 2009, PG&E actually put forth a document that laid out a series of technologies that can nationally be used for this particular hexavalent chromium contamination. The technologies are evaluated, and PG&E recommended a remedy to the Department of Toxic Substances Control.

As part of that analysis, Department of Toxic Substances Control actually conducted a CEQA -- according to the CEQA guidelines, conducted an Environmental Impact Report or EIR. And that particular evaluation was based upon PG&E's conceptual design of that particular final remedy and the recommended remedy.

And in 2011, the Department of Toxic Substances Control finalized that particular Environmental Impact Report, and we actually adopted PG&E's recommended remedy, and I will go over that in a little bit.

The 2011 Final Environmental Impact Report did, as I mention, focus upon a program-level review. That's basically -- it's a higher level review. At that time it was -- PG&E had a concept of what they wanted to do, and based on that concept and based on the engineering evaluation that PG&E had done, we conducted that particular environmental analysis report. Since then, since 2011, PG&E has been working on the final remedy design.

Now, as I mentioned, the 2011 -- during 2011, the Department of Toxic Substances Control did certify the Final EIR, but what we did also envision is that there is a possibility that we will actually need to do further environmental analysis based on the final design that PG&E would put forth to the department, and

this is where we are actually at.

In 2011, we specifically said, "Following the final design, an assessment of potential environmental impacts would be reviewed to ensure that the impacts would be consistent with the analysis presented in" that particular document, the 2011 EIR, "or if additional analysis is required."

So we at that time had envisioned that, if things change or there were some things that we did not capture in 2011, that we would actually come back out and do additional environmental assessment.

So at this time I want to kind of switch gear a little bit and give you a quick review of what the final remedy actually looked like and what it's supposed to do. So in this particular slide, it demonstrates a series of injection wells that PG&E will be putting in along the National Trails Highway.

And by the way, there is a physical model in the back so that you can see it three-dimensionally.

So what PG&E is proposing to do is, for these injection wells, they will put into or inject into them ethanol -- alcohol, essentially -- to stimulate the growth of natural bacterias and also as a way of creating a treatment zone so that when contamination, specifically groundwater contaminated with hexavalent chromium, passes

through this particular zone, that the hex-chrome will be converted to a trivalent form, which is actually less soluble and actually less toxic, and what it would do is actually, once it's converted, due to redox chemistry, it will actually fall out of the groundwater, so it will actually fall out of the water phase and thereby clean up the water.

So at the same time, PG&E will also do injection of water into the back of the plume. This is the plume outline, the hexavalent plume outline. And this is demonstrated on the next slide.

UNIDENTIFIED WOMAN IN AUDIENCE: Did you know there's a fault line right there from San Andreas to break off? So drilling holes would be really a stupid idea right next to the river, and I disagree with the plan right there.

MS. ISAACSON: If we can hold off until --

UNIDENTIFIED WOMAN IN AUDIENCE: Well, I've got to go, but this is bullshit. You guys are just feeding us all bullshit. Nothing gets rid of that crap. We all die. So I don't see how you guys can smile while you're telling us a bunch of that bullshit. It's just beyond me.

MR. YUE: Sorry for that.

UNIDENTIFIED WOMAN IN AUDIENCE: It's

bullshit.

(Whereupon, the unidentified female speaker exits the meeting room.)

MR. YUE: Okay. I will continue.

PG&E will be putting water in the back of the plume essentially to kind of push the contamination through the treatment zone in this particular area. And remember that PG&E will be actually extracting water by the -- by the river so that it is creating a circle of water where the contamination would go through this treatment area.

Now, down towards the south of the plume area, this is actually kind of bedrock, and yes, there is a fracture, a fault fracture, in the bedrock area. It is not an active fault, as the woman depicted a little earlier. But this is bedrock. It's very, very tight. It has very little water in it. So what PG&E will be doing is, they will put in a series of extraction wells to pump out as much of the contaminated water as possible. That particular water will be put back into the back of the plume amended with ethanol, again, to utilize the bacteria to reduce the hexavalent chromium and convert that into trivalent as well. But the majority of the work down in the south portion really is about just pumping out the contaminated water and protecting the Colorado River.

So the final design, as I mentioned, that was the PG&E's proposal back in 2010, and it was adopted. And the department and PG&E at this point has not changed that final design. We're not evaluating a different remedy. What we will be doing in this Subsequent EIR -- why are we doing -- why are we coming out? It's because there are different information -- additional information that we've learned through the process of designing the remedy.

So some of those I highlighted here: Is that they will be using -- PG&E will be using water from Arizona, and that particular water does have arsenic concentration that is slightly above the California State standard, and so we will be evaluating the use of that water. And one of the keys to utilizing that water, as has been approved by the State water board, is that we will have to do additional monitoring, so that is another area that we're evaluating.

The expansion of project area to include construction headquarters, soil processing/storage area near the parking lobby at the -- and also at the existing water -- existing evaporation ponds.

If you look at the map, existing evaporation ponds are there. PG&E is already using it to handle some of their water. Basically, it allows natural evaporation

of that water. That -- those ponds are permitted through the regional water quality control board. PG&E is proposing to improve some of that so that some of the water that they use could also go into ponds.

Okay. Finally -- well, not finally. Another component is that there is a water treatment plant that is being proposed, and there is a contingency to also treat arsenic in the fresh water in the event that, when we monitor the site, that the arsenic is not, I guess, managed the way that we would like it to be or that it is not controlled as PG&E's modeling has demonstrated. So that is a contingency.

There are other specific design elements that have not been considered in the 2011 Environmental Impact Report that will -- that we will also capture in the Subsequent EIR. One of those, for example, would be how PG&E will be bringing the pipeline across the Bat Cave Wash and, you know, to additional pipeline routing of where the pipeline is going to go around the site. The other thing would be like a septic system for the workers during the time when the remedy is operating or being constructed.

This particular map, and the yellow circle that is taking place is really to show where the new -- some of those new infrastructures, some of those new

designs, are taking place. The red outline that you see here is the original project area that has been evaluated in the 2011 Final EIR as well as the 2013 Addendums for fresh water use. And here, clearly PG&E is using, like I mentioned, existing ponds, a portion of the Fort Mojave area that is outside of our regional project area, so -- and also, again, PG&E is proposing additional treatment, a water treatment system on-site as well. So it is just demonstrating that some of the activities are going to be outside of our original EIR that has been evaluated, and therefore, we're back out here doing additional evaluation.

And this particular slide is a graphical representation of kind of the timeline since the Final EIR has been certified in 2011. As you can see, again, I mentioned that there was an EIR Addendum that was approved and adopted in 2013 for PG&E to evaluate the fresh water source that they would be using to push the plume. And since then, also, that PG&E has conducted three iterative evaluation of the design, and with each iteration there are more and more details that is, you know, being planned. And this particular point, as the 90% has been submitted, and information about the final design is pretty much close to completion. This is the reason why we are out here with a Subsequent EIR, to, again, evaluate

details that have not been evaluated in the 2011 report.

So with that, I am going to invite Bobbette to come up to talk a little bit about the Subsequent Environmental Impact Report.

MS. BIDDULPH: Thank you, Aaron.

MR. YUE: You want the pointer?

MS. BIDDULPH: You know I like my tools here.

So I did want to spend a little bit of time on this particular slide to talk a little bit first about that 2011 Environmental Impact Report or EIR. We'll probably use both terms. And that was -- as Aaron mentioned, it was certified or approved in 2011.

In that environmental analysis, DTSC looked at the full range of environmental issue areas, and so what that document really did is, it presented an analysis of what the conceptual design would be anticipated -- what impacts would be anticipated to the environment with the implementation of that conceptual design.

And I just wanted to point out that that document is actually sitting on the back table. There's two volumes to that document. It's a pretty extensive analysis, but I wanted to kind of get that primer of what that original document did, because we are really going to be building upon that analysis. And if you're interested

in taking a look at that document, it is available on DTSC's website for the project, which is referenced on many of the handout materials that you have here, as well as the information repositories, and so it is available to look at and read at the Needles Public Library here in town.

So, as Aaron mentioned, you know, a lot of work has been done through this process, and we're at this stage where now we're really needing to think again about our environmental analysis and make sure that we've done a complete analysis now that we know more of those design details.

So this graphic shows just a representation of what the Subsequent EIR process will look like. And it's very similar -- in fact, it's -- process-wise, it's exactly the same as what is required for a standalone EIR. So that process that we went through in 2010 and 2011, this process that we're kicking off now will be very similar to that process. There's really three main components of that process, and each of those components have an opportunity for public input and comment.

So the first part of the process is where we're at today, which is known as the scoping process, where we say, "Okay. We've -- DTSC has decided that we need to prepare this analysis." We issue a Notice of

Preparation or NOP to identify that that analysis is going to take place and then hold public scoping meetings, one of which is tonight.

And the public then has 30 days at the point of that NOP to review the Notice of Preparation and all of the materials that are available at this point and provide your comments to DTSC. And what we're really looking for is your ideas and thoughts about what our analysis in the Subsequent EIR should cover. So what environmental issue areas should we be addressing? What are the environmental questions that you want answered by that analysis?

We'll take that input -- it can be really helpful for us to make sure we're not missing anything in our thoughts about what should be addressed in the analysis. We'll take all of that input, and then we'll start to prepare the environmental analysis or the Subsequent EIR.

That will take a little while. We've got, you know, some work to do. And our anticipation is that it will be -- that draft environmental analysis or Environmental Impact Report will be issued or published in the spring of next year, so about, you know, a year from now.

At that time, when that document is issued, we will be holding another series of public meetings to

gather input similar to this meeting. And I should say that the public will have -- the public and agency, interested parties, will have 45 days to make comments on that draft analysis or that Draft Subsequent EIR.

So once we get -- once that 45 days has ended and we get all of your comments on that analysis, then the next step will be to move it into the Final Environmental Impact Report stage, and that's when we look at all those comments. And in fact, the California Environmental Quality Act actually requires us to respond to each and every one of those comments, specifically focusing on the comments that are related to the environmental analysis contained in the document.

So we'll look at those comments, and we'll maybe make revisions to the analysis, if we missed something or mischaracterized something or we find an error, or we'll provide additional information to answer your questions on the analysis. And all of that documentation then finds its way into the final document, the Final Subsequent Environmental Impact Report. And that document then would be circulated again to the public. And after that process is complete, then DTSC can determine whether or not they would like to approve this project to move forward.

And Aaron touched on this, but it's a really

important component. We've kind of talked about it, but I want to, again, make it very clear. We don't want to, you know, reinvent the wheel, if you will. We don't want to redo analyses. We really want to build off of the analysis that's already been completed, so we're going to be focusing on the design details that brought forth some design components or details that we didn't previously know about back in 2011.

So this slide summarizes the different bodies of information and the sources of information that we'll use to conduct that analysis in the Subsequent EIR:

The design submittal from PG&E, and as well, we will be looking at other information that PG&E has submitted, specifically an addendum. And we may also be looking at some additional design refinements from PG&E that happened post the 90% Design, so in between the 90% Design and the actual final proposed project.

As I mentioned, we'll be building off of those prior environmental documents, these bullets here, and then -- and then getting your input, agency and public input, as well as making sure that we've done our jobs to hear from -- from the tribes through outreach and communication.

This slide summarizes the contents of the Environmental Impact Report, the Subsequent Environmental

Impact Report. The organization of that document will be very similar to the organization of any Environmental Impact Report, but what will be different is that the contents within these -- these sections will be focused on those design components that are named.

And based upon a preliminary review of the design details, we have initially determined that these sections, these environmental -- these particular environmental analyses will be included in the Subsequent EIR. So specifically, we will be looking at aesthetics, air quality and greenhouse gas, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, and utilities, service systems, and energy.

Now, there might be other issue areas that those design details -- that we need to think about, and that, again, is the reason we're holding these scoping meetings and looking for additional input, is to hear from you whether or not there are things that perhaps we have missed or haven't thought of fully.

So again, this is really your opportunity to provide comments, one of your opportunities, I should say. That's what this process is about. And we've got a variety of ways that those -- those comments can be submitted. And I'll turn it over to Joan to go over those

in more detail.

MS. ISAACSON: Thanks, Bobbette.

Thank you to Aaron too.

To recap how you can provide comments over the scoping period, you can provide verbal comments here this evening, and our court reporter will be recording those comments and making a transcription. You can fill out a comment form. And then after the meeting this evening, you could actually attend another scoping meeting tomorrow evening, if you are so interested, but also know that you can submit written comments, and those need to be submitted to DTSC by June 4th.

And a note again about the types of input DTSC is specifically seeking from the public during scoping is your input, your ideas, and your questions that you think should be considered in the Subsequent Environmental Impact Report.

There are various ways to review the scoping materials with Subsequent EIR as well as many, many other reports and documents that have been prepared for the PG&E Compressor Station. They are on the website, and the address is listed here at the top of the slide, and there are also various information repositories around the region that service many libraries for the many documents related to this project.

We're going to in a minute start the verbal comment portion of this scoping meeting. We ask that you complete a speaker card, and it's a blue --

If you can help me. Hold up --

It's a blue card, and Stacey has -- in the back, she has cards if you need one to fill out.

When it is your turn to speak, we'll bring a microphone to you, and before giving your comments and your input, we ask that you state your name and then spell it, so that the court reporter knows that she is accurately recording your name. We also ask that you limit your comments to about five minutes. And then once everyone has a chance to provide input, if people want to speak again, then we can certainly do that. And Emily is going to help keep track of time. She has a yellow sign that she'll hold up when you have about 30 minutes left -- or, 30 seconds left. I'll keep that up there, just for information on how to provide comments.

Do we have any completed speaker cards?

Is anyone wanting to make verbal comment at this meeting, at this scoping meeting?

Okay. So what we'll do is, we'll go ahead and wrap up this portion of the meeting. The project team will be here as we clean up, and so we'll be here to take your comment forms. If you fill out a comment form, just

pass it to one of us, and we'll take that for you.

Well, thank you very much for being here this evening. We appreciate it. And have a good night.

(The proceedings concluded at 6:07 p.m.)

CERTIFICATE OF REPORTER

State of Arizona)
) ss.
County of Mohave)

I, Eve K. Burton, RPR, CRR, certified court reporter in Arizona and California, do hereby certify that I took down in shorthand (stenotype) all of the proceedings had in the above-entitled matter at the time and place indicated, and that thereafter said shorthand notes were transcribed into typewriting at and under my direction and supervision, and the foregoing transcript constitutes a full, true, and accurate record of the proceedings had, all done to the best of my skill and ability.

In witness whereof, I have hereunto affixed my hand the 29th day of June, 2015.

Eve K. Burton, RPR, CRR,
AZ CR Certificate No. 50261
CA CSR No. 12527

PUBLIC SCOPING MEETING FOR THE

TOPOCK COMPRESSOR STATION

FINAL GROUNDWATER REMEDIATION PROJECT

REPORTER'S TRANSCRIPT OF PROCEEDINGS

Taken on Wednesday, May 20, 2015

At 3136 Golden Shores Parkway, Community Center

Golden Shores, Arizona

At 5:30 p.m.

REPORTED BY: JULIETTE L. VIDAURRI CCR, RPR
AZ CR #50359/CA CSR #11081/NV CCR #748

SCOPING MEETING SPEAKERS:

Joan Isaacson, Consultant for DTSC

Aaron Yue, DTSC Lead Project Manager

Bobbette Biddulph, Consultant for DTSC

PUBLIC COMMENTS:

Stacey Hewlett

Steve Moss

MS. ISAACSON: Good evening, everyone. We're going to start the next phase of this meeting. Thank you for being here.

This meeting is being conducted by the California Department of Toxic Substances Control, which often is referred to as DTSC, and the purpose of this meeting is -- it is a scoping meeting that's being conducted for the Subsequent Environmental Impact Report that's being prepared by DTSC, and this supplemental -- or this Subsequent EIR is covering the Groundwater Remediation Project for the Topock Compressor Station.

The scoping process is a 30-day period where the public is invited to provide comments and input on the types of topics to be addressed in the Subsequent EIR.

And the dates here are important. The scoping period ends on June 4th, and that's the deadline for submitting comments as part of this scoping process, and we'll talk about all these things and give you more information, so I just wanted to give you a quick overview on that.

As many of you know, the California Department of Toxic Substances Control is the state agency that is responsible for investigation and cleanup of sites contaminated with hazardous substances in California and

that includes the Topock Compressor Station.

We have members of the project team here today that I want to introduce you to. Karen Baker is the DTSC branch chief, and we have Aaron Yue who is the project manager for the Topock Compressor Station. He also works for DTSC. Chris Guerre is here as well as Jose Marcos. They are project geologists who work for DTSC and focus on this project. Stacey Lear also is here from DTSC. She is a public involvement specialist and also does tribal outreach.

We have members of the consultant team as well; Bobbette Biddulph and Sarah Spano are with the consultant team working on the Subsequent EIR, and Emily Michaelson is here, and I'm Joan Isaacson and we are consultants helping out with the community outreach portion of the project.

To tell you more about the purpose of this meeting, DTSC is conducting this meeting to be consistent with the California Environmental Quality Act. It's called CEQA for shorthand, and the Subsequent Environmental Impact Report that is being prepared is guided by the California Environmental Quality Act.

DTSC is requesting your input on this scope of the Subsequent Environmental Impact Report, again, looking for your input on the topics and issues that should be addressed in this environmental document.

Now I know many of you have been involved in

the -- in this process with DTSC, as they have done various studies and environmental processes, and probably some of you were involved in providing input on the initial EIR that was prepared for the Groundwater Remediation Project and that EIR was certified in 2011.

So I want you all to know that this is not a brand new EIR process. It really is building on that EIR that's certified in 2011. That's why it's called the Subsequent EIR. DTSC is making a lot of progress right now and is moving to this next phase that's necessitated for environmental review as part of the process.

During the scoping there are several ways to provide comments, and one of the ways to provide comments is to provide verbal comments here at this meeting and still give you the opportunity to do so after several presentations are made.

You can also provide comments using a comment form and it looks like this. We have them at the registration table in the front, and you can fill this out today and turn it in or you can take this home with you and fill it in and send it back.

And the other way for you to provide comment is to write a letter or an email and submit it, and it just needs to be received by that June 4th deadline, and you will send it directly to Aaron Yue, the project manager, at this

contact information that is listed here.

I think we'll now go to our presentations, and Aaron's going to go first. He's going to be giving you a review of the Topock project and DTSC's involvement, and then Bobbette is going to give you a review of the Subsequent EIR; what it is, what's going to be covered, and how your input is important for that process.

MR. YUE: Thank you, Joan.

So as Joan mentioned, my name is Aaron Yue. I am the project manager overseeing PG&E Topock environmental investigation and cleanup. I do work for the California State of -- well, California State and the Department of Toxic Substances Control.

So what I am going to do -- I know some of you have been following this project for a while, so you know and you understand the project while some of you may not. So indulge me and, you know, in the next few minutes I will give you a bit of background about the project, about PG&E's operation -- operational history, as well as explain a little bit about what that final remedy or the final cleanup plan looks like.

So PG&E. To start, PG&E is located about 12 miles southeast of Needles, California, and the yellow area is PG&E and Golden Shores is right here.

Right around the PG&E Topock area, that particular

area, um, is a sensitive area. It has cultural and spiritual significance to the Native American tribes. In fact, it has actually been designated by the federal government as a traditional cultural property for the Native American tribes.

This map is a ownership map that depicts the various land ownerships that surrounds PG&E Topock compressor station. PG&E is right there. And as you can see or not see -- I think you have some handouts also -- PG&E is surrounded by the Havasu National Wildlife Refuge, which is managed by the U.S. Fish and Wildlife Service, and the other landowners, um, consist of mainly federal agencies. Bureau of Reclamation, they own land up here north of I-40, um, and they also have leased a portion of land to San Bernardino County, which is managed by the Bureau of Land Management.

Some of you may know Park Moabi area. That's over on this side, um, as well as some private land owners including Fort Mojave Indian Tribe that owns a portion of land here, this piece of land, and the Metropolitan Water District.

So with that understanding, PG&E has actually been at their location since 1951. They do own about 66 acres of land.

The compressor station -- the main function of the

compressor station is really to transmit natural gas from Texas and push gas to Northern California -- Central and Northern California to consumers, and along the way there are other compressor station that basically add pressure to move the gas along, and the gas passes through California and it goes into Washington.

Operational history. PG&E did use hexavalent chromium as an additive to prevent corrosion since 1951. Since the beginning of the compressor station. They've actually used and discharged, meaning disposed of the waste water in a wash that's behind the compressor station right over here, um, and actually -- sorry -- down here. A little too high -- and they've been -- that was the operational practice from 1951 to about 1970.

After 1970 they started treating the water and then injecting it into the ground, and finally they stopped using hexavalent chromium in 1985.

Some of the other -- aside from hexavalent chromium, some of the other chemicals of concern at the site includes not only metals, but petroleum hydrocarbons, PCBs, dioxins, um, asbestos, um, semi-volatile organic compounds and also organic compounds.

So the project history. When did we get involved. When PG&E found out that there was hexavalent chromium contamination groundwater, they did sign up a voluntary

cleanup agreement with the department. That was in 1996.

Since then we've been investigating the site. We want to be sure we know exactly what the contamination looked like or how bad the contamination is.

In 2004 DTSC as a state agency required PG&E to actually begin a cleanup measure to control the contamination to prevent it from moving and causing a worse problem, and that was done essentially by extracting water from the ground and cleaning it up in a small treatment plant, and then the clean water was put back into the ground.

So since then, aside from the interim cleanup, we actually have had PG&E evaluate various cleanup technologies; how to do the final cleanup.

And in 2009 PG&E gave us a report with various technologies that's been evaluated, and they recommended to the state agency as well as the federal agency one particular cleanup proposal.

In 2010 the Department, as a requirement of the California Environmental Quality Act, that's the California law that requires an agency, before we actually adopt or approve of the project, that we go out to the public and let people know, solicit, you know, comments or thoughts from the general public.

In 2010 we did put together or begin to put

together the Environmental Impact Report, and that report ultimately was finalized and certified in 2011. At the same time we also adopted PG&E's recommended cleanup option, which was freshwater flush and in-situ cleanup, and I will explain a little bit about that in just a moment.

PG&E from 2011 until now has really been trying to design that particular system, and the 2011 Final EIR focused -- at that time we only had PG&E's conceptual design. So we did an analysis -- an environmental impact analysis based on PG&E's conceptual design, and that's important because we know that even at that time that when PG&E actually finally complete their design that there may be changes. There may be some things that was not studied at the time.

So even in the 2011 report we put in this particular statement that says, "Following final design, an assessment of potential environmental impacts would be reviewed to ensure that the impacts would be consistent with the analysis presented in this EIR or if additional analysis is required."

That basically says we don't know everything at the time, but when we do know more, we will let people know and do an additional evaluation.

So now let me kind of in a quick synopsis tell you a little bit about the cleanup that PG&E had proposed and

that the agency has adopted.

So here we have an outline of the plume in green, and what PG&E is proposing to do is they are proposing to extract or pull water from the ground by the Colorado River and also down here in the southern portion -- I will talk a little bit more about that in a little bit.

The water they pull out of the ground, they will actually in turn put back into the back, but that's not the important part.

The important part is really this particular line that's in yellow. This is along the National Trails Highway. What they're intending to do is to inject ethanol, an alcohol essentially, into the subsurface allowing the bacteria to grow; and as part of that bacteria grows, they will actually take up some of the oxygen in the subsurface. And in doing so, the hexavalent chromium in the ground will actually convert to a trivalent form, which is actually less toxic and actually not really stable in water. So it actually likes to fall out of water when it's combined with other minerals in the ground. So that's one way of actually getting rid of the hexavalent chromium.

So -- but in order for the water to actually go through this treatment zone, PG&E need to push the contamination through this area. So what they're doing -- that is the reason why they are actually extracting the

water, putting it in the back, and also taking water from Arizona and putting it in the back of the plume so it's just corralling, pushing the water gently through this particular treatment zone; and in doing so, the hexavalent chromium would be changed or removed.

So down here in the southern portion. This is really more into the bedrock. That's kind of the mountain hard rock. So there's very little water that's in it, and it's very, very tight so water doesn't flow that well. So if you tried to flush it, it probably wouldn't do a whole lot.

So what PG&E is proposing to do is really just to keep pumping the water to keep any contamination that's in this area from moving any further. So they are just taking it out of the ground, and the water that they take out they will put back into the system so it's recirculating the water; and when they put it in ground, they are also putting in ethanol; again, creating that treatment and so that the hexavalent chromium will be changing.

So this is the injection component, as I mentioned, the fresh water, as well as the recirculated water from wells that is extracted from near the Colorado River. So it's creating a cycle. So that's basically the design, the final design.

So here what we're doing is coming out to talk a

little bit about what we did learn since 2011 as part of the design. One of the keys is that the selected final remedy that we've adopted and PG&E is designing that hasn't changed it is still the same design, but we just know more details about it.

So what type of details would that be? So here's some of the things that actually came out or have been modified since 2011. For example, it would be the use of the fresh water is now we know is from Arizona, but in the water actually contains a little more arsenic than the receiving water in California. So there's a difference between the California water where they're putting it in versus where they're getting the water from, and that difference requires us to evaluate whether or not that's going to impact California water or not. So that's one of the areas we are looking at as far as the environmental study.

Expansion of the project area, um, and in 2011 we actually put our map suggesting where PG&E's treatment is going to be, and, you know, we've been bound by this particular area. What we know now is that PG&E would need additional areas or certainly have activity outside that project area. So we're making an evaluation based on that as well.

Part of that is, for example, like having a

headquarter -- construction headquarters and also soil processing and storage of soils that's -- you know, excavated from the ground and what have you near the Park Moabi area and as well as using an existing set of evaporation ponds. That's over in the California side. Those ponds are currently being used for PG&E to essentially evaporate some of their operational water that's been coming out of their station, and those ponds are actually permitted and monitored by the California Regional Water Quality Control Board. So it is -- those are permitted ponds.

A water treatment system and plant that will take care of the water that's been removed as part of their conditioning. Once in a while they need to make sure that in order for that particular system to work that the wells are maintained. And so while they are maintained wells, we have to pull water out. They may have to add some acid in it to just to kind of wash the screen. So all of that water that's being pulled out of the well needs to go and essentially be treated or cleaned up before it can be put back into the ground.

So -- and there's also a contingency of treating arsenic in the water that's coming from Arizona, if in fact that is necessary.

So the California State Board when they told PG&E that they could inject the water that has a different

concentration into the ground, they did set a monitoring parameter that basically says, you know, if you see arsenic within a hundred feet, you would do this. If you see arsenic from this injection point, 225 feet from the well, you're not going to inject any more. So that is the contingency that's in place.

There are additional design elements that came forth in the design, such as, like how will PG&E put the pipeline across Bat Cave Wash. We have to kind of evaluate that.

Um, you know, the other part would be where are they putting the pipe in the ground. Is it above ground? Is it below ground? Are there -- at the time of the 2011 EIR we didn't know how the piping was going to be designed. So now we do know more specifics so we want to make sure that we kind of take a look at that and make sure that we are in agreement and that environmentally there is no additional adverse impact.

To even septic systems for workers. Basically during construction there's an operation. There's going to be additional support for people, and the septic system is important.

And, finally, we just know there's going to be an additional increase in amount of ground disturbance. As I mentioned earlier, the area is sacred and sensitive to

Native American tribes, and we want to make sure that while there's more ground disturbance, that we evaluate what that would be and what type of adverse impact that would be culturally and noise and what have you.

So that's -- that's basically the synopsis of some of the samples of what additional things we will be looking at in the Subsequent EIR.

What this particular figure is -- is denoting is really, I guess, highlighting what I've just said a little earlier. For example, that PG&E will be using an additional area outside of the red line, which is the project area being anticipated in the 2011 EIR, and they will be using a little bit of the Park Moabi area outside of the original project -- proposed project area. They will be using the ponds there, and here on the PG&E Topock site. They will be putting in their groundwater -- I mean, their water treatment system and conditioning system.

So essentially this is kind of, I guess, a figure just depicting what I just said.

In this particular slide -- this is a really good slide to kind of provide a little bit of graphical or graphically depicting what has been happening since 2011.

Um, we certified -- as I mentioned, we certified that the Groundwater Final EIR in 2011, and in 2013 PG&E says, gosh, we know we are going to need water where we

going to do that. So we did an EIR Addendum. We evaluated what that would look like if PG&E was to select a well in Arizona. So we did an environmental impact analysis based on that, and then the -- PG&E did do three iterations of designs. With each iteration there are more and more details that actually came out from that.

So now we are essentially at the 90%, and we know that here we are doing a Subsequent Environmental Impact Report, and it should be between now until May of 2015 we anticipate this process to end, and Bobbette will talk a little bit more about that, and then hopefully the Field Implementation would be around 2016-2019.

So Bobbette.

MS. BIDDULPH: Great. Thanks. Thanks, Aaron.

So I'm going to stick on this slide for just a little bit and talk a bit about that previous Environmental Impact Report. Um, it's a lot of information and a lot of analysis that we completed back in 2011. These are actually the documents here.

So the point of that is that we are not starting from scratch. Our work that we're kicking off at this point really builds upon that and only opens up new issues or new information that has been provided through the design process that Aaron talked about.

So this graphic here shows a bit about what that

Subsequent Environmental Impact Report process will look like, and it's really showing that we have three points at which there will be an opportunity for public input. So in the three different colors here -- and we're just at that green stage here, um, where we're initiating that process of asking for your input on what environmental topics, issues, concerns that you might have to help us understand all the items that we should be addressing in that subsequent analysis.

And, again, those would be issues that we haven't previously addressed, but we can be the judge of that. So, you know, if you can provide those questions to us, that's really what we're looking for at tonight's meeting and through writing of letters to Aaron and submitting your comments.

Once we get that input within that 30-days comment period, we will move on to the blue portion of this slide where we'll start our analysis, and, again, that's focusing on these new elements or these design details.

That's -- when we've done with that analysis, we will publish a Draft Subsequent Environmental Report. Um, that will be a document that probably will be smaller than these because of that focus, but that will be circulated and available to you all for review; and if you are interested in providing comments on that document, we are also very

interested in having those comments, and we will be also doing public meetings at that juncture as well. That will probably be in the Spring of 2016, so early next year.

Once we get your comments on that draft document, all the comments that we've received, we'll take a look at those comments and respond to them. We might provide a written response to answer a question that was presented or there might also be changes that you find we should make to that draft analysis that we prepared that -- to really address your comments if new issues or questions require that type of revision.

And once we've gone through that process, then we will publish the Final Subsequent Environmental Impact Report. We are looking for that to be complete in the fall of 2016.

And we said this a few different times, but I just want to reiterate it. We do have a great board in the back that summarizes what those different -- different design details that we're aware of that the analysis will focus on, and as well as the Notice of Preparation that was handed out when you came into the room I think provides a really nice summary of how this process fits within the context of the larger project and what are some of the focus design details that we will be looking at.

When we're doing our analysis in the Subsequent

EIR, we're going to be using a lot of different information sources. Many of the documents that Aaron described, the design packages that PG&E has put together, will be part of that analysis as well as the previous Environmental Impact Report and then your input, other agency's input to our work as well as tribal outreach and communication.

And this slide just provides a summary of kind of what that document will look like, what the major components of the Subsequent EIR will include.

Actually, this table of contents is very similar to a standalone Environmental Impact Report, but what you'll find is that in the environmental analysis we might be a little bit more focused on just this specific elements of the project where we have more information or detail.

So preliminarily we anticipate that that environmental analysis section of the report will include these topics, but we're still refining that list through the input we get from you as well as from different agencies will help us determine what our final listing of the analysis topics will be.

But at this point we're looking at aesthetics. Some of the visual impacts of the -- the activities related to those design details.

Air quality and greenhouse gas. I know some of you that I talked to earlier before the meeting started was

particularly concerned about the dust, and so that -- this would be an area where that will be addressed.

Biological resources is something that we will look at; cultural resources, hazardous materials and hazards, hydrology and water quality, noise, and then lastly utilities, services systems, and energy.

We will be look at how much electricity and energy that these design implements will be using as they've been refined through the process.

So this is my last slide, but I really wanted to reiterate as part of this that we want to hear from you. That's what -- a big part of this meeting was about. We really enjoy talking with you about the project and the process of answering your questions, and now it's your turn to really provide those questions to us so that we can make sure -- and comments to us so that we can make sure to address those in the analysis and do a really thorough job.

MS. ISAACSON: Thanks to both of you for the presentations.

And, um, to recap the how to provide comments because that is an important part of this process. You give them verbally today, and we have a court reporter here who's going to record and prepare a transcription of your comments so we can make sure that our record of what you said really is complete.

You can fill out a comment form. Drop that in today or mail it in later or you can submit a letter later on after this meeting. And, um, remember that all comments need to be received by DTSC by June 4th.

Let me tell you a little bit now about the verbal comment period that we are going to start up here in a moment.

Sorry. I forgot about this slide. This slide shows where you can find the documents related to the Subsequent EIR process as well as other documents pertaining to the cleanup effort and other environmental analysis.

The website is a great place to go to find documents. Everything is posted there. And if you're looking for hard copies, check out the information repositories that are listed. They are sprinkled around the region; and just like the website, they are posted there, but the repositories you can actually find all of the actual hard copy documents.

Now I am going to tell you little bit more about the verbal comment session. We have speaker cards that we would like you to complete if you would like to speak during this portion of the meeting, and you can fill this out and turn it in to Stacey or Sarah in the back. And when it is your turn, we are going to bring the microphone to you.

We ask that you first give your name and spell it

so that our court reporter gets that into her record and then provide your input. We're asking that you limit your comments to five minutes, and Emily will be helping to keep track of time. She will give you a yellow indicator when you have about 30 minutes or 30 seconds -- you have about 30 seconds left so you can wrap up.

Because this is a scoping meeting, we will be listening and recording your comments. The project team will not be providing responses right now. Those responses will be found in the Subsequent Draft EIR when it comes out for public review. So this really is a listening session for the project team to hear your input.

Okay. I think I've covered all of the points on this.

And do we have speaker cards, Stacey?

MS. SPANO: I have one.

MS. ISAACSON: You have one.

MS. SPANO: Do we have any more?

MS. ISAACSON: Would anybody like a blank speaker card to fill out?

(One hand raised.)

MS. ISAACSON: Stacey's going to help with the microphone. Somebody pass that microphone to her.

This one is louder. Sorry. I'm going to hold it far away from me.

Our first speaker is Stacey Hewlett.

MS. HEWLETT: Hello. My name is Stacey Hewlett, S-t-a-c-e-y H-e-w-l-e-t-t.

So I have a couple of, um, so you're saying that you take our comments. We barely have any comments --

UNIDENTIFIED SPEAKER: We can't hear you back here.

MS. HEWLETT: Okay. We only have -- you say you are going to take our comments and you will address them. Is that all you will be required to file on the report or are you going to have other questions? It seems like, you know, you are going to take the minimal and answer that. That's my question for one.

One is when the oxygen goes into the water to fix it, I mean, you are still in the same pipeline just like the oxygen. All that stuff doesn't go away. The oxygen does take the stuff away? What does it take away? It doesn't sequester everything. That's my concern.

You are doing osmosis. It goes back and forth kind of like putting your dirty water back into the pipeline or if the pipes are dirty from that. Does the pipe hold the chromium as well? That's my concern.

Sorry. Could I see the blue --

MS. SPANO: The card itself?

MS. HEWLETT: Yeah, the card itself.

And then also the chromium and the arsenic, percentages to California are zero -- .0001, the requirement, is that for California? And I know Arizona has .35 or whatever requirement. Now, I know that the plume is at a hundred and ten percent. Where we're showing the blue area we are at .35. So my concern is where you going to fix it? Are you fixing it to California requirements or to Arizona, which is none? Let's be frank.

And then we started in 2009, and are you hypothesizing -- summarizing, hypothesizing? Sometimes I kind of feel like this is going to be done in 2019 when we had starting in 2009, and you are still looking for my comments, my concern. I'll be dead, you know.

Okay. Um, okay. And then Section B is Topock residents; correct? And how far -- the Section B is where we live actually. How far does the plume underneath go? How deep does it go? Because I know that I'm right against the Havasu water, and I know that wells don't have to go that deep to get water there.

So you show over here how deep it goes, but how deep does it go right into me? I need to know that because you got -- I mean, it's sitting -- it's been sitting -- you know, because we know that now like they require -- like dirt moving, it's required. Let's be frank. So how much goes it go down and how much closer are we seven years ago,

I mean.

And then I know that now the required -- that the dirt be also whatever. There is dust. It is required -- there is chromium everywhere. It is very close to the lake --

THE COURT REPORTER: I can't hear. You have to speak into the microphone.

MS. HEWLETT: Sorry. That was too loud.

Um, that's it. I'm just worried about you put the water back into the bad pipeline. Chromium that is obviously been sitting there. You are going to put it back in. You do osmosis, do some work.

Let's be frank, people here in the valley. How do you take it out, put it back, take it out, put it back in. Well, I mean, that sounds like to me just put a filter on a drain for a fish tank. I just don't know what that's going to handle.

And then the plumes. It's just sitting water out there. You know, with the plume out, now we can't drink water out of plastic. I think it's a lot of concern and stuff, environmental back and forth and everything, and I think just that you should have nailed it down by now. I don't know.

All right. Thank you.

MS. ISAACSON: Do we have speaker cards?

MR. MOSS: What is the likelihood --

MS. ISAACSON: Excuse me, sir. Can you please state your name.

MR. MOSS: I do apologize.

My name is Steve Moss. I'm a resident here in Arizona.

What is the likelihood that there will be additional addendums or supplements to the process that we're doing now which would further delay the actual remediation of the water?

Thank you.

MS. ISAACSON: Would anyone like to provide verbal comment? And if you want to write something down, I can read it for you.

(No response.)

MS. ISAACSON: We can go ahead and wrap up the meeting if, um, no one else wants to provide verbal comment.

We would really appreciate it, though, if you have input if you can take a moment to write it down on a comment form before you leave so that we can put that into -- into our process. We really appreciate that.

And with that, we will thank you for attending this meeting this evening. We really appreciate it, and please continue to watch for more updates, announcements

from DTSC, and we hope to see you back when we are here doing public meetings when the draft is out for the Final EIR review.

Thank you very much.

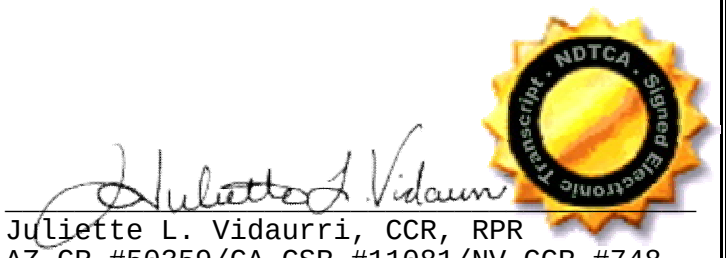
(The proceedings concluded at 6:12 p.m.)

CERTIFICATION OF REPORTER

STATE OF ARIZONA)
)
COUNTY OF MOHAVE)

I, Juliette L. Vidaurri, CR, CSR, do hereby certify that I took down in shorthand (stenotype) all of the proceedings had in the above-entitled matter at the time and place indicated, and that thereafter said shorthand notes were transcribed into typewriting at and under my direction and supervision, and the foregoing transcript constitutes a full, true, and accurate record of the proceedings had.

In witness whereof, I have hereunto affixed my hand the 30th day of May, 2015.



Juliette L. Vidaurri, CCR, RPR
AZ CR #50359/CA CSR #11081/NV CCR #748

APPENDIX TRA

Traffic Impact Analysis Report

TRAFFIC IMPACT ANALYSIS REPORT

PG&E Topock Compressor Station

City of Needles, California

Prepared For:

Ms. Addie Farrell
ESA | Community Development
626 Wilshire Blvd Suite 1100
Los Angeles, CA 90017

Prepared By:
LIN Consulting, Inc.
21660 Copley Drive, Suite 270
Diamond Bar, CA 91765

May 19, 2016

LIN Consulting, Inc.
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May 19, 2016

Ms. Addie Farrell
ESA | Community Development
626 Wilshire Blvd Suite 1100
Los Angeles, CA 90017

Subject: PG&E Topock Compressor Station - City of Needles, CA
Groundwater Remediation Project, Traffic Impact Analysis Report

Dear Ms. Farrell:

LIN Consulting is pleased to submit the Traffic Impact Analysis Report for the proposed Groundwater Remediation Project for the PG&E Topock Compressor Station, located in the City of Needles, California. The report addresses the impact of the proposed project on the intersections of Park Moabi Road with Eastbound and Westbound Needles (Interstate 40) Freeway On and Off Ramps and Park Moabi Roadway segment just north and south of Needles (Interstate 40) Freeway.

Based on our review the project has no significant impact for existing (year 2016) and project construction year (year 2020).

If further assistance or information is required, please feel free to contact us.

Sincerely,

LIN Consulting, Inc.

A California Corporation

Ray Kommidi, P.E., T.E.
Senior Project Manager

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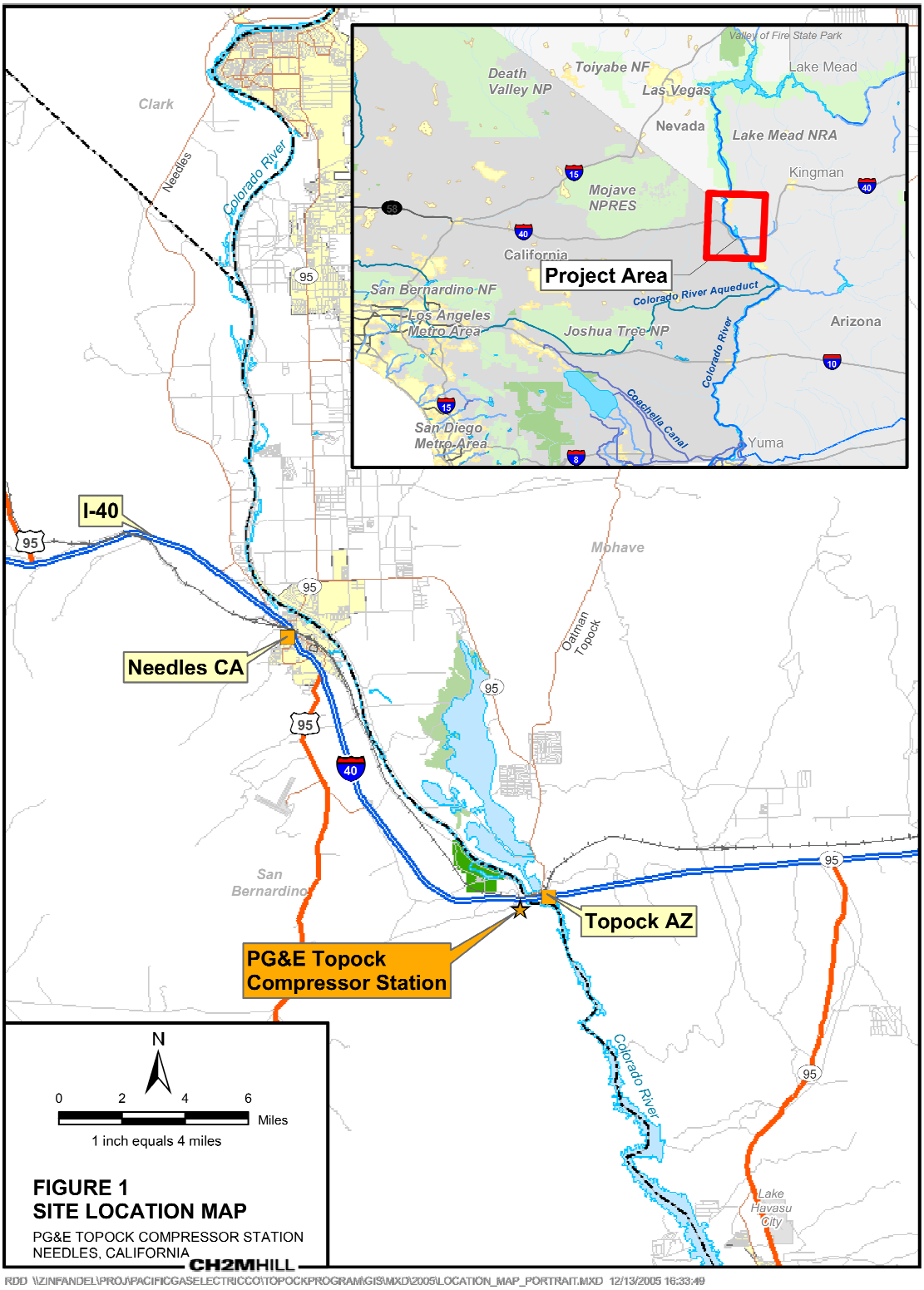
INTRODUCTION

The purpose of this traffic impact study is to identify potential traffic impacts of the proposed Final Groundwater Remediation Project at the PG&E Topock Compressor Station (Station) located in San Bernardino County, California. The Station is located approximately 12 miles southeast of the City of Needles, California and one-half mile west of the community of Topock, Arizona (See Exhibit A).This traffic impact study identifies current (2016) traffic conditions in the project area, provides project-related traffic volumes at the study area intersections, and includes a quantified intersection Level of Service (LOS) analysis. This traffic impact study analyzes the study area for the following scenarios:

1. Existing (Year 2016) Traffic Conditions
2. Existing (Year 2016) Plus Project Traffic Conditions
3. Construction Year (Year 2020) Without Project Traffic Conditions
4. Construction Year (Year 2020) Plus Project Traffic Conditions

Traffic impacts were previously determined to be less than significant in the *Topock Compressor Station Groundwater Remediation Project Final Environmental Impact Report* (Groundwater FEIR), certified in January 2011, which evaluated at a programmatic level, environmental impacts associated with implementing a preferred groundwater remedy (see pages 4.10-12 through 4.10-23). This traffic impact study is based on the Final Groundwater Remedy Design presented in the *Basis of Design Report/Final (100%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California* (Final Remedy Design; CH2M Hill 2015a) and the *Construction/Remedial Action Work Plan for the Final Groundwater Remedy* (C/RAWP; CH2M Hill 2015b), which includes project-level information regarding the construction, operation and maintenance, and decommissioning phases of the project. The purpose of this study is to confirm whether the traffic conclusions identified in the 2011 Groundwater FEIR are still appropriate, given the updated baseline condition and new project information that is available.



Source: http://www.dtsc-topock.com/

EXHIBIT A

LIN Consulting, Inc. Traffic, Civil, and Electrical Consulting Engineers	PG&E TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT TRAFFIC IMPACT STUDY	PROJECT LOCATION MAP

EXISTING CONDITIONS

Study Area Street System

The project area is located approximately 12 miles southeast of the City of Needles, California, and 1 mile southeast of the Moabi Regional Park in California. The Station is one-half mile west of the community of Topock, Arizona, which is situated directly across the Colorado River and 5 miles south of Golden Shores, Arizona. The area is relatively unpopulated, rural, and undeveloped desert land. Primary traffic generators are the Station itself, residential uses at Park Moabi, users of Pirate Cove (largely seasonal), and general pass through traffic from the major highway system.

Access to the project area has not changed since 2011. Regional access to the project area is provided by the Park Moabi Road interchange with the Interstate 40 freeway. Paved road access is provided by Park Moabi Road and National Trails Highway.

Interstate 40 is a major east-west highway. Its western terminus is at its junction with Interstate 15 (I-15) in Barstow, California, and its eastern terminus is in Wilmington, North Carolina. Much of the western portion of I-40, from Oklahoma City to Barstow, parallels Historic Route 66. I-40 has two lanes in each direction in the project area, with a posted speed limit of 70 miles per hour (mph) for passenger vehicles and 55 mph for heavy vehicles or passenger vehicles with trailers.

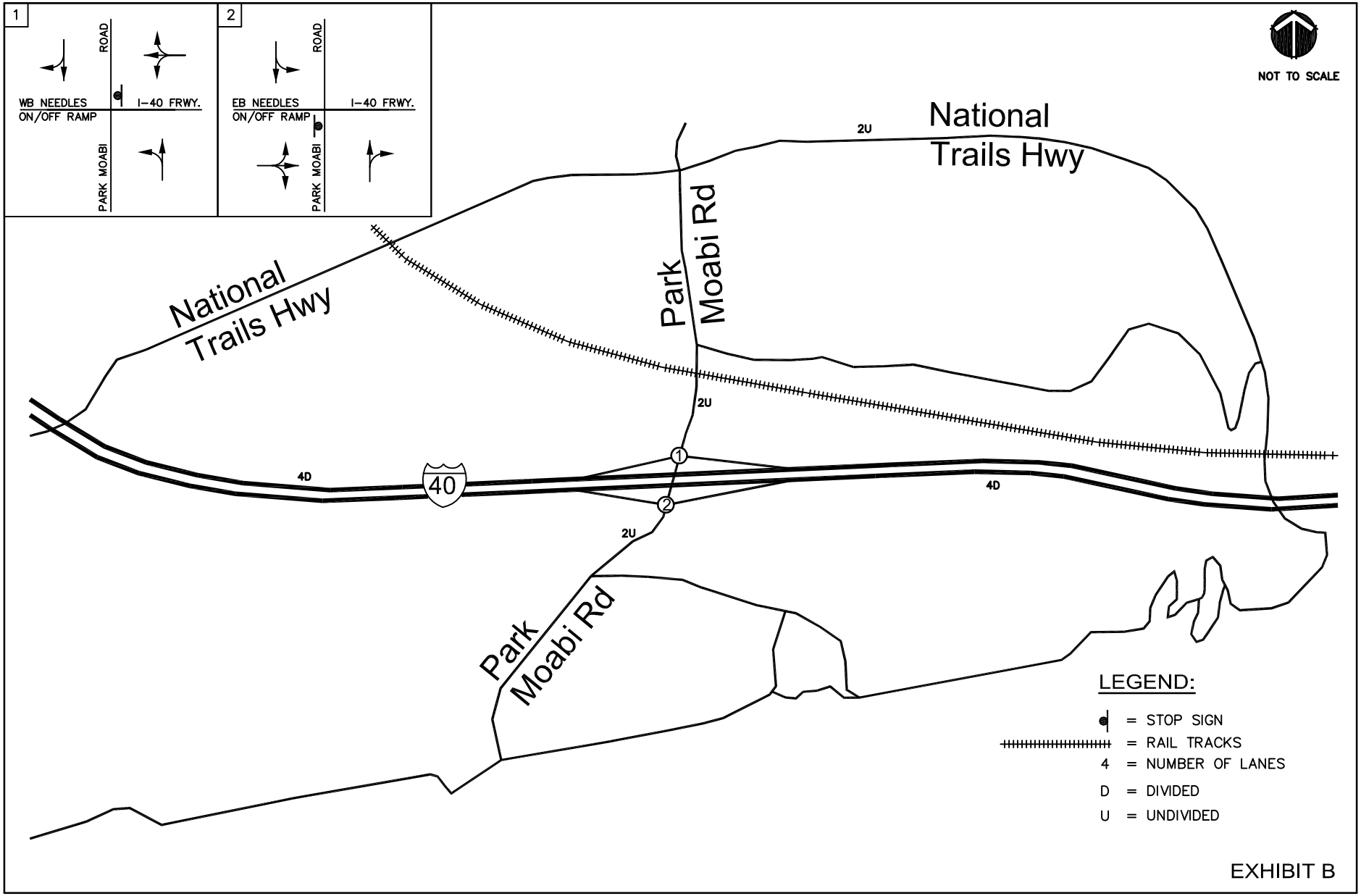
National Trails Highway formerly known as both Historic Route 66 and California State Highway 58 has one lane in each direction in the project area. The pavement is in generally poor condition in the project area.

Park Moabi Road is a two-lane paved facility in the project area, with one travel lane in each direction.

Intersection of Park Moabi Road and Westbound I-40 On and Off Ramps -
Park Moabi Road has one lane in the northbound and southbound direction. Westbound I-40 Off-Ramp has one approach lane. This is an un-signalized intersection with stop control on the off-ramp.

Intersection of Park Moabi Road and Eastbound I-40 On and Off Ramps -
Park Moabi Road has one lane in the northbound and southbound direction. Eastbound I-40 Off-Ramp has one approach lane. This is an un-signalized intersection with stop control on the off-ramp.

The existing number of travel lanes and intersections controls is shown on Exhibit B.



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	PG&E TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT TRAFFIC IMPACT STUDY	EXISTING STUDY AREA

Existing Turning Movement Counts

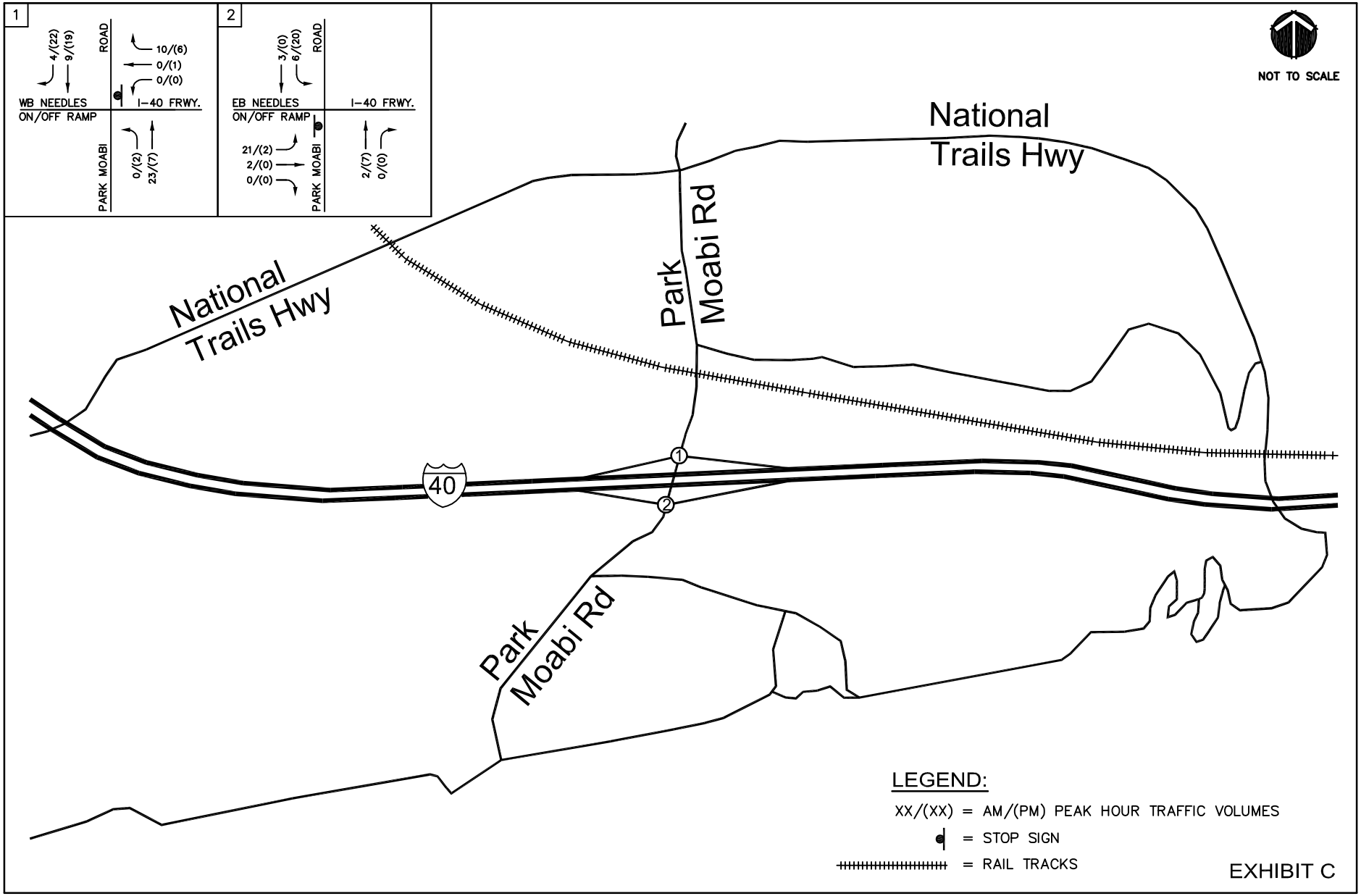
Turning movements were performed at the study area intersections during weekday AM (7 AM to 9 AM) and PM (4 PM to 6 PM) peak hours on Tuesday April 5th, 2016 (See Exhibit C). Traffic count data are provided in Appendix A. These turning movement counts compare favorably to the counts used in the 2011 report, with a small increase in the number of trips observed on Park Moabi Road.

Existing Average Daily Traffic (ADT)

A 24-hour tube count was performed on Park Moabi Road north and south of Needles (Interstate 40) Freeway on Tuesday, April 5th, 2016. Table 1 shows the summary of ADT counts for the two locations. Traffic count data in 15-minute increments for the 24-hour tube counts are provided in Appendix A. These ADT counts compare favorably to the 2011 report with a small increase in the ADT south of the I-40 freeway on Park Moabi Road.

Table 1. Summary of ADT Counts

Direction	North of I-40	South of I-40
Northbound	352	64
Southbound	360	62
Total	712	126



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	PG&E TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT TRAFFIC IMPACT STUDY	EXISTING (YEAR 2016) TRAFFIC VOLUMES

TRIP GENERATION

Trip generation represents the amount of traffic that is produced by or attracted to a project. The proposed Groundwater Remediation Project includes mobilization, construction, operation and maintenance, and decommissioning activities. Table 2 shows the number of trips generated by each phase of the work plan estimated based on the information provided by Environmental Science Associates (ESA) and the PG&E team (See Appendix B). The traffic generated by each phase of the work plan is determined based on the following assumptions made by LIN Consulting:

1. Each worker drives one vehicle (no carpooling) to and from the project area each day (five day work week). No mid-day trips were used in the traffic operation analysis.
2. All workers and heavy vehicles would arrive during morning (7-9 AM) peak period and depart during evening (4-6 PM) peak period.
3. A Passenger Car Equivalent (PCE) factor of 3.0 is applied to all heavy vehicles trips. The PCE factor is based on Topock Compressor Station Final Remedy FEIR prepared by AECOM. The PCE was applied to each truck trip shown in the Trip Generation table in Appendix B and then added to the total trips for that peak hour. For example, one truck trip equals three passenger car or worker trips for this analysis.

Table 2. Trip Generation by Phase

Phase	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Pre-Construction/Mobilization	86	0	0	83
Phase 1 Construction Including Functional Testing	46	0	0	37
Start-up of NTH IRZ	1	0	0	1
O&M Activities	18	0	0	9
Phase 2 Construction	49	0	0	40
Start-up of remaining system	1	0	0	1
O&M Activities	18	0	0	9
Decommissioning and Removal of IM3	9	0	0	9
Decommissioning and Removal of Remedy	21	0	0	15

A PCE factor of 3.0 is applied to all heavy vehicles trips

Construction is anticipated to begin in July 2017 (SEIR Project Description Section 3.7.1). The traffic assumptions for the maximum work period include the following simultaneous phases occurring at the same time: Phase 2 construction, decommissioning and removal of IM-3, and O&M activities. Phase 2 construction and the decommissioning and removal of IM-3 are expected to overlap in Quarter 12 of the proposed project (C/RAWP Figure 3.3-1). Operation and Maintenance activities are expected to begin within 1 to 3 years of the beginning of remedy start up, so it is assumed operation and maintenance of Phase 1 construction would be occurring at the time of the overlap described previously (SEIR Project Description, Section 3.7.3). Given the July 2017 anticipated start date, all three phases would overlap in the summer of 2020, which would be considered the maximum work period for traffic analysis.

The strategy implemented in this report to only analyze the maximum work period is satisfactory because it represents the maximum amount of traffic added by the project to the existing roadway network. All other phases of the project will have lower traffic volumes resulting in reduced impacts to the existing roadway network and intersections. This study presents only the analysis results for the largest amount of project traffic added to the network at any given time during the project.

Table 3 shows the number of trips generated by the maximum work scenario during weekday AM and PM peak hours based on the above combination of phases.

Table 3. Project Trip Generation – Maximum Work Period

Trips Generated By	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Phase 2 Construction	49	0	0	40
Decommissioning and Removal of IM3	9	0	0	9
O&M Activities	18	0	0	9
Total	76	0	0	58

A PCE factor of 3.0 is applied to all heavy vehicles trips

Based on the maximum work scenario, the proposed project is projected to generate 76 inbound vehicle trip ends and zero (0) outbound vehicle trip ends during the weekday AM peak hour and zero (0) inbound vehicle trip ends and 58 outbound vehicle trip ends during the weekday PM peak hour.

TRIP DISTRIBUTION

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of surrounding residential, commercial and recreational opportunities and the proximity to the regional freeway system. This study separates the trip distribution into two parts, freeway trips and project site trips, for the purpose of determining the most accurate distribution percentages. The trip distribution on the I-40 freeway was based on the January 2011 FEIR, and is appropriate for this analysis as these determining factors (geography, surrounding residential/commercial centers) have not changed. Based on review of this information, it is estimated that the following distributions would occur:

- To/from the west (i.e., Barstow, CA) on I-40 = 60%
- To/from the east (i.e., Kingman and Lake Havasu City, AZ) on I-40 = 40%

The trip distribution within the project site area was also estimated based on the January 2011 FEIR. Based on that document, the following trip distribution would occur at the project site:

- To/from north of I-40 = 75%
- To/from south of I-40 = 25%

The trip distribution pattern is graphically depicted on Exhibit D.

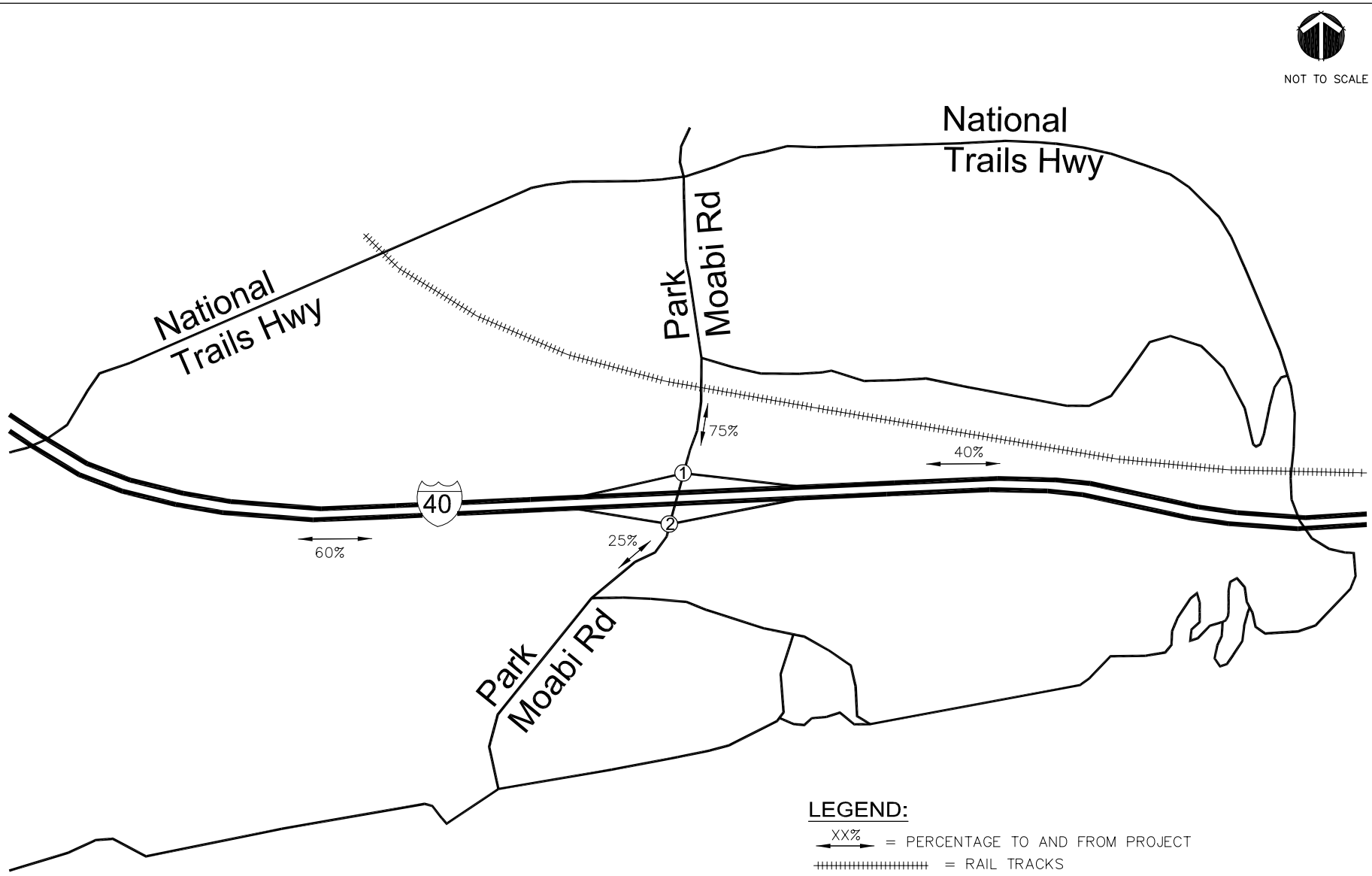
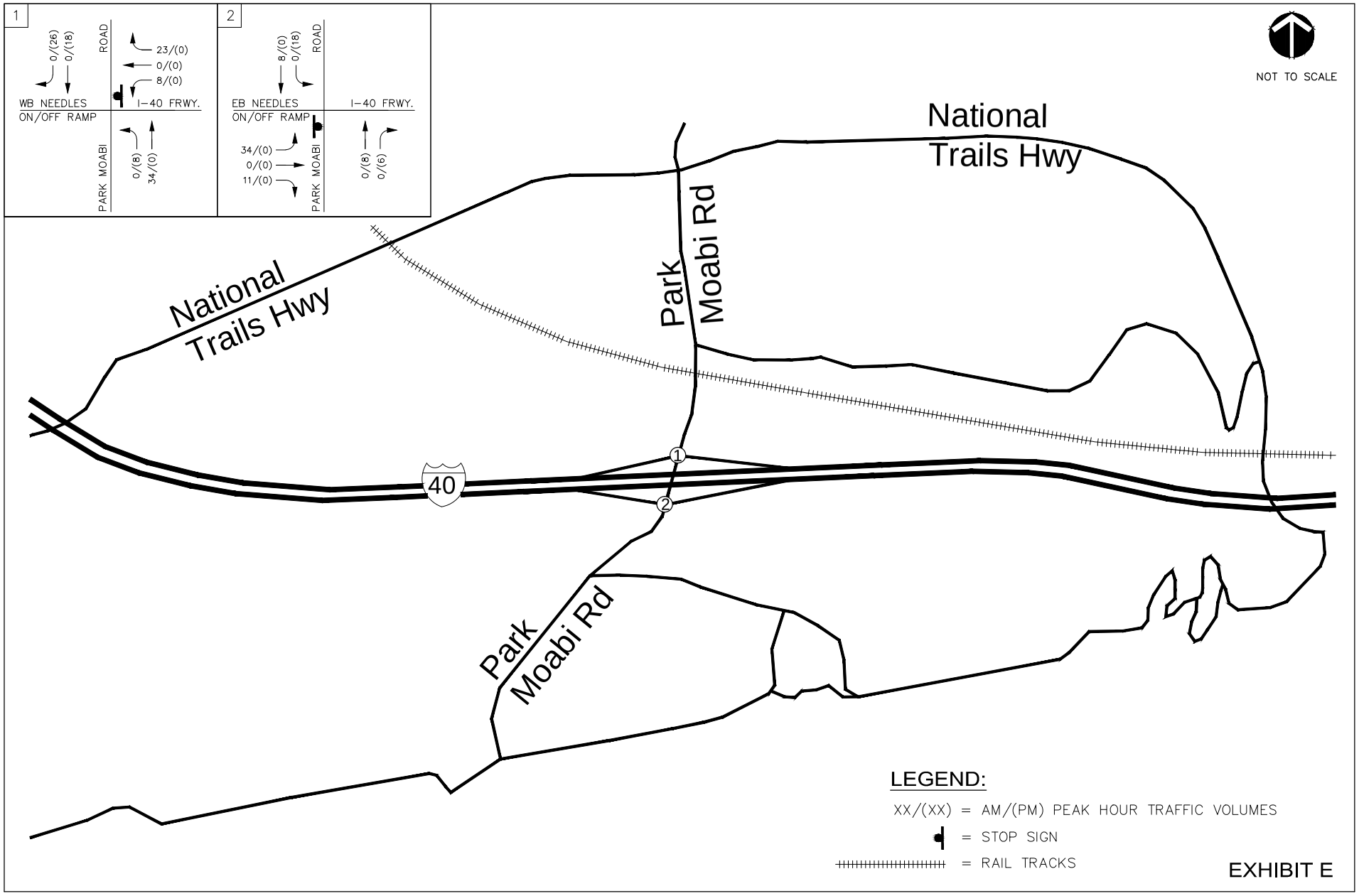


EXHIBIT D

LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	PG&E TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT TRAFFIC IMPACT STUDY	PROJECT TRIP DISTRIBUTION

TRAFFIC ASSIGNMENT

The assignment of traffic from the site to the adjoining roadway system is based upon the site's trip generation, trip distribution, and existing arterial highway and local street systems. Based on the identified project trip generation and distribution, project related weekday AM and PM peak hour turning movement volumes are shown on Exhibit E.



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	PG&E TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT TRAFFIC IMPACT STUDY	PROJECT TRAFFIC VOLUMES

LEVEL OF SERVICE CRITERIA

Level of Service for Un-Signalized Intersection

The study area intersection analysis is conducted in accordance with the methodologies prescribed in the Highway Capacity Manual (HCM) 2000. Level of Service (LOS) for a Two-Way-Stop-Control intersection is determined by the minor movement with the highest delay. LOS is not defined for the intersection as a whole. Table 4 shows classification of LOS based on control delay for un-signalized intersections.

The LOS analysis at the existing un-signalized intersections was conducted using TRAFFIX software. TRAFFIX software program determines the LOS based on the Year 2000 Highway Capacity Manual (HCM) as listed in Table 4.

Table 4. Level of Service for Two-Way-Stop-Control Intersections

Level of Service (LOS)	Average Control Delay (Seconds/Vehicle)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Source – HCM 2000

Level of Service Criteria for Roadway Segments

The LOS of the roadway segments is performed using volume-to-capacity (V/C) ratios. For roadway segments, the existing roadway segment volumes were compared to roadway segment capacities identified in the San Bernardino County General Plan based upon its functional classification. "Roadway Daily Volume Thresholds," of the 2007 County General Plan, LOS C in the Desert Region of the county has a volume threshold of 7,000 Average Daily Traffic (ADT).

EXISTING (YEAR 2016) TRAFFIC CONDITIONS

Existing Intersection Level of Service

The LOS for the study area intersections under Existing (Year 2016) Traffic Conditions is shown in Table 5. All the study area intersections operate at a LOS "A" during the AM and PM peak hours for a weekday. The LOS analysis work sheets for Existing (Year 2016) Traffic Conditions are included in Appendix C.

Table 5. Existing (Year 2016) Traffic Conditions

Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
	LOS	Delay	LOS	Delay
Park Moabi Road and WB I-40 Fwy On/Off Ramps	A	8.4	A	8.5
Park Moabi Road and EB I-40 Fwy On/Off Ramps	A	8.7	A	8.8

LOS - Level of Service, Delay – Average Control Delay in Seconds per Vehicle

Existing Roadway Segment Analysis

As shown in Table 6, the ADT volumes on Park Moabi Road are well below the County's threshold of 7,000 ADT. Therefore, roadway segments in the project vicinity are assumed to operate well above the acceptable LOS C.

Table 6. Existing (Year 2016) Roadway Segment Analysis

Direction	North of Needles (I-40) Freeway	South of Needles (I-40) Freeway
Northbound	352	64
Southbound	360	62
Total ADT	712	126
LOS "C" Capacity	7,000	7,000

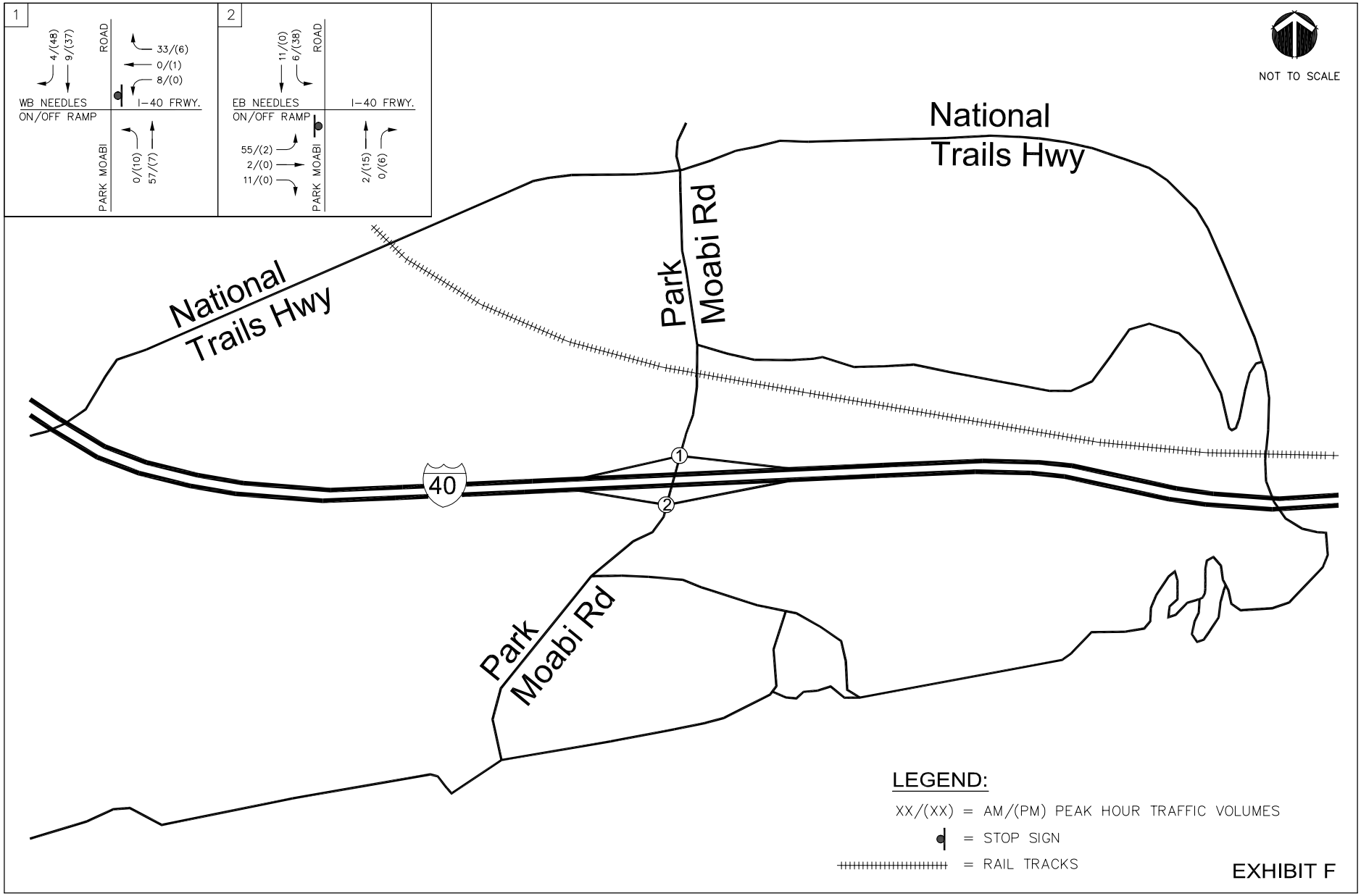
EXISTING (YEAR 2016) PLUS PROJECT TRAFFIC CONDITIONS

Intersection LOS for Existing (Year 2016) Plus Project Traffic Conditions have been calculated and shown in Table 7. The study area intersections operate at LOS "A" during weekday AM and PM peak hours. Existing (Year 2016) Plus Project Traffic Conditions LOS analysis calculation worksheets are included in Appendix D. Existing (Year 2016) Plus Project Traffic Conditions Weekday AM and PM peak hour turning movement volumes are shown on Exhibit F.

Table 7. Existing (Year 2016) Plus Project Traffic Conditions

Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
	LOS	Delay	LOS	Delay
Park Moabi Road and WB I-40 Fwy On/Off Ramps	A	8.8	A	8.6
Park Moabi Road and EB I-40 Fwy On/Off Ramps	A	8.9	A	9.1

LOS - Level of Service, Delay – Average Control Delay in Seconds per Vehicle



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	PG&E TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT TRAFFIC IMPACT STUDY	EXISTING (YEAR 2016) + PROJECT TRAFFIC VOLUMES

CONSTRUCTION YEAR (YEAR 2020) WITHOUT PROJECT TRAFFIC CONDITIONS

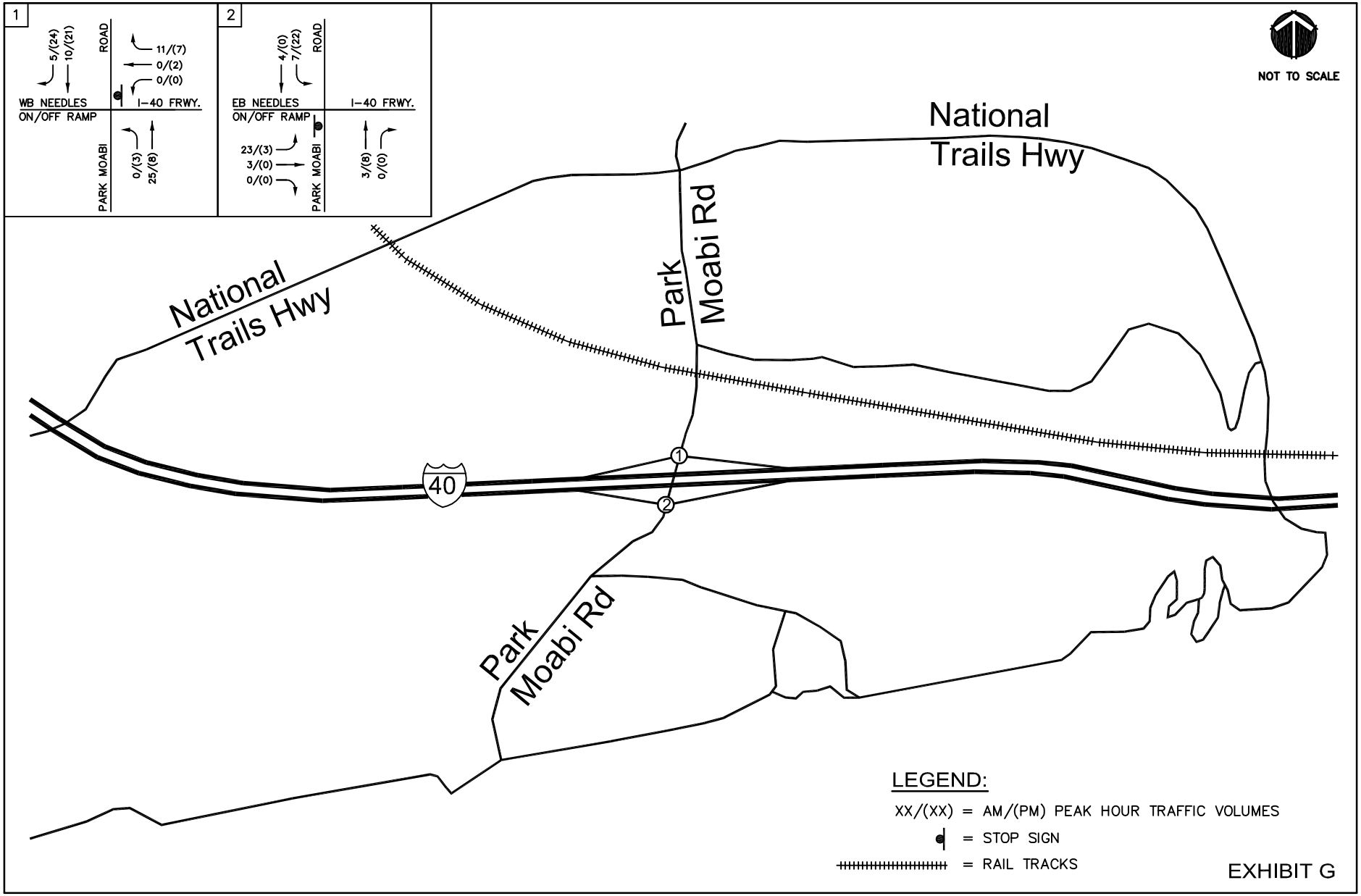
To assess future traffic conditions, existing traffic is combined with ambient growth. This traffic analysis contains estimated regional growth based upon the ambient growth rate of 1.7% per year for 4 years. The ambient growth rate of 1.7% is based upon the East Valley Average Traffic Volume Expansion Factors provided by the County of San Bernardino Traffic Planning and Research Section. The intersection turning movement volumes for Construction Year (Year 2020) Traffic Conditions without the project during weekday AM and PM peak hours are shown on Exhibit G.

Table 8 shows the Intersection LOS for Construction Year (Year 2020) Without Project Traffic Conditions. The study area intersections operate LOS "A" during weekday AM and PM peak hours. Construction Year (Year 2020) Without Project Traffic Conditions LOS analysis calculation worksheets are included in Appendix E.

Table 8. Construction Year (Year 2020) Without Project Traffic Conditions

Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
	LOS	Delay	LOS	Delay
Park Moabi Road and WB I-40 Fwy On/Off Ramps	A	8.5	A	8.6
Park Moabi Road and EB I-40 Fwy On/Off Ramps	A	8.8	A	8.8

LOS - Level of Service, Delay – Average Control Delay in Seconds per Vehicle



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	PG&E TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT TRAFFIC IMPACT STUDY	YEAR 2020 TRAFFIC VOLUMES

CONSTRUCTION YEAR (YEAR 2020) PLUS PROJECT TRAFFIC CONDITIONS

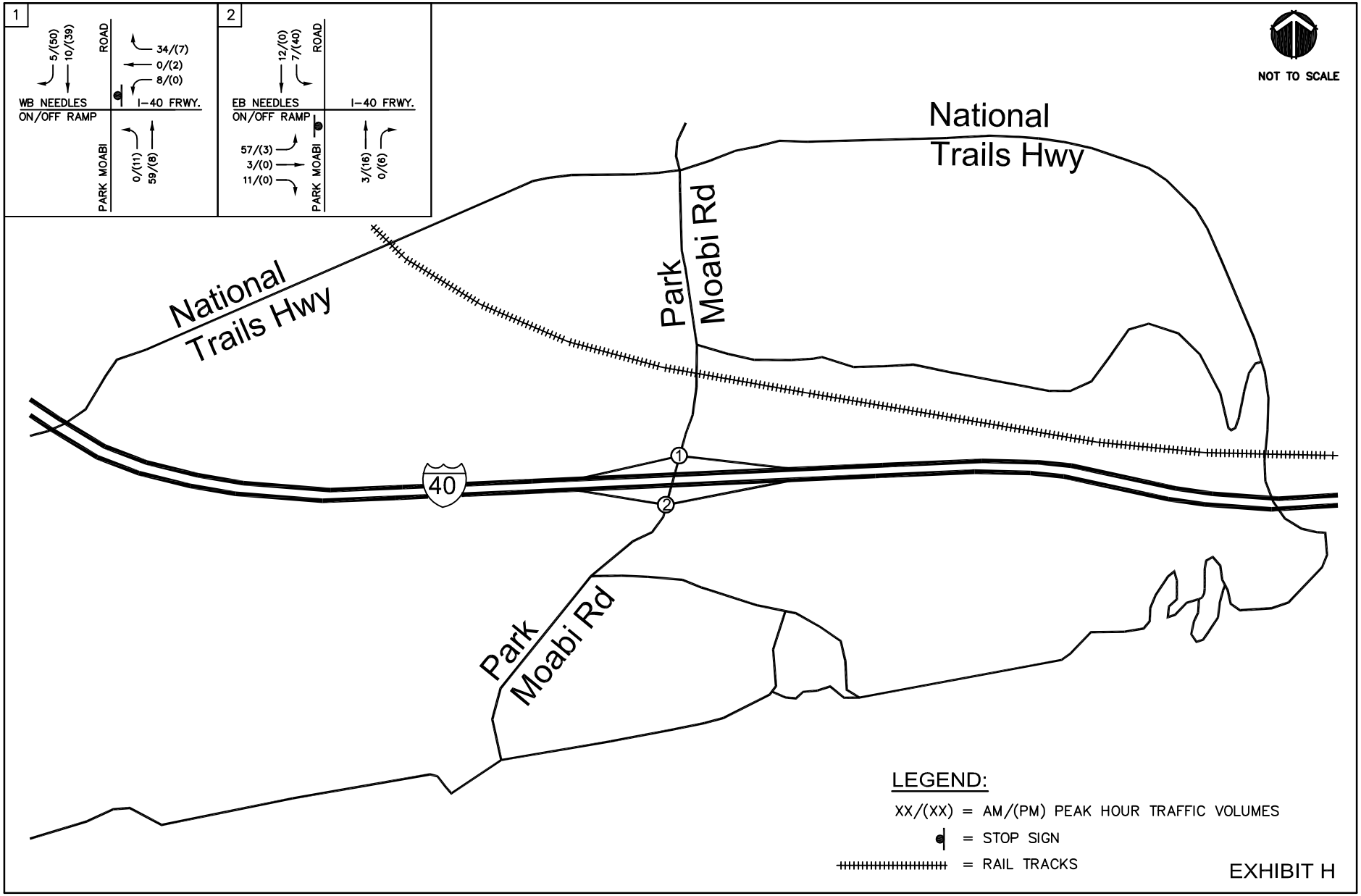
The intersection turning movement volumes for Construction Year (Year 2020) Plus Project Traffic Conditions during weekday AM and PM peak hours are shown on Exhibit H.

Table 9 shows the Intersection LOS for Construction Year (Year 2020) Plus Project Traffic Conditions. The study area intersections operate LOS "A" during weekday AM and PM peak hours. Construction Year (Year 2020) Plus Project Traffic Conditions LOS analysis calculation worksheets are included in Appendix F.

Table 9. Construction Year (Year 2020) Plus Project Traffic Conditions

Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
	LOS	Delay	LOS	Delay
Park Moabi Road and WB I-40 Fwy On/Off Ramps	A	8.8	A	8.7
Park Moabi Road and EB I-40 Fwy On/Off Ramps	A	8.9	A	9.1

LOS - Level of Service, Delay – Average Control Delay in Seconds per Vehicle



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	PG&E TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT TRAFFIC IMPACT STUDY	YEAR 2020 + PROJECT TRAFFIC VOLUMES

SIGNIFICANT TRANSPORTATION IMPACT

Based on Appendix G of The California Environmental Quality Act (CEQA) Guidelines presented in the Groundwater FEIR, the proposed project would have a significant impact related to transportation if it would:

1. Degrade a roadway segment currently operating at an acceptable LOS C or better to LOS D, E, or F or add traffic to a roadway segment operating at an unacceptable level;
2. Degrade an un-signalized intersection currently operating at an unacceptable LOS C or better to LOS D, E, or F or add traffic to a roadway segment operating at an unacceptable level;
3. Substantially increased hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses; or
4. Conflict with adopted policies, plans, or programs supporting alternative transportation.

Table 10 and 11 show the change in LOS and Average Control delay due to project traffic in year 2016 and 2020, respectively. This study assumes that all other years of the project duration, there would be less traffic volumes and therefore better LOS results. Tables 10 and 11 only present the maximum work period traffic volumes and the resulting LOS. There would be no change in the LOS using the maximum work period traffic volumes.

Table 10. Change in LOS and Avg Control Delay – Year 2016

Intersection	Year 2016 Without Project LOS/Avg Control Delay		Year 2016 With Project LOS/Avg Control Delay	
	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour
Park Moabi Road and WB I-40 Fwy On/Off Ramps	A/8.4	A/8.5	A/8.8	A/8.6
Park Moabi Road and EB I-40 Fwy On/Off Ramps	A/8.7	A/8.8	A/8.9	A/9.1

LOS – Level of Service

Table 11. Change in LOS and Avg Control Delay – Year 2020

Intersection	Year 2020 Without Project LOS/Avg Control Delay		Year 2020 With Project LOS/Avg Control Delay	
	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday AM Peak Hour	Weekday PM Peak Hour
Park Moabi Road and WB I-40 Fwy On/Off Ramps	A/8.5	A/8.6	A/8.8	A/8.7
Park Moabi Road and EB I-40 Fwy On/Off Ramps	A/8.8	A/8.8	A/8.9	A/9.1

LOS – Level of Service

MITIGATION MEASURES

Based on the quantified assessment contained herein, the proposed project traffic for the existing (year 2016) and construction year (Year 2020) will not have any significant impacts on the study area intersections and the Park Moabi roadway segment, therefore no mitigation is necessary.

APPENDICES

APPENDIX A
TRAFFIC COUNT DATA

ITM Peak Hour Summary

Prepared by:

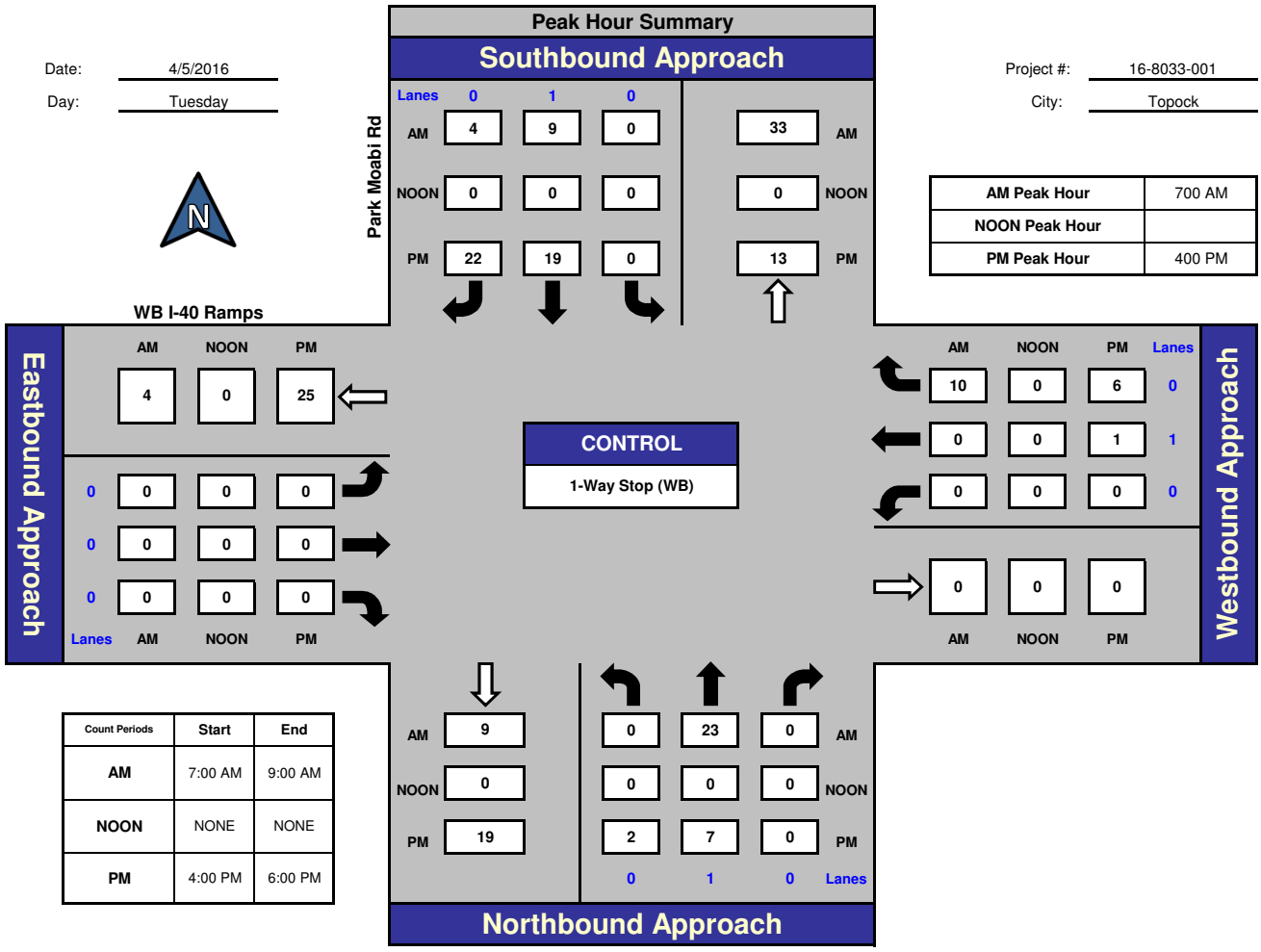
National Data & Surveying Services

Park Moabi Rd and WB I-40 Ramps , Topock

Date: 4/5/2016
Day: Tuesday

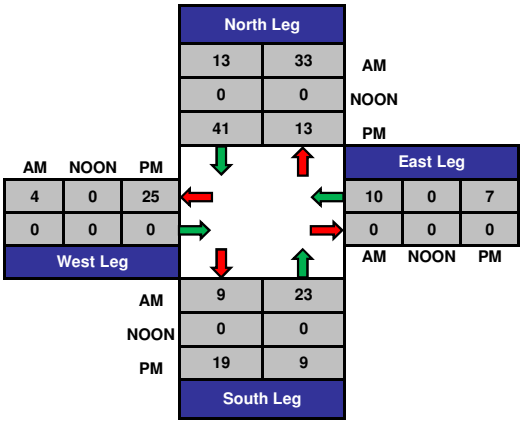
Project #: 16-8033-001
City: Topock

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	400 PM

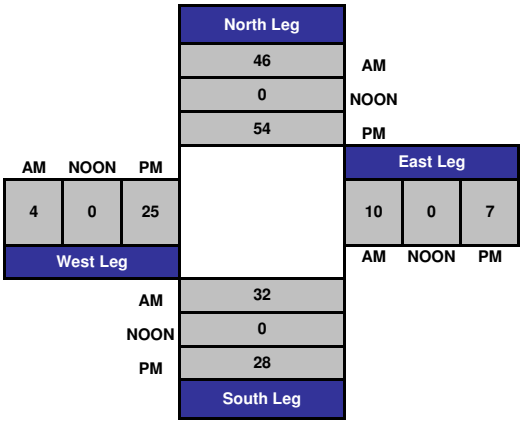


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-8033-001 **Day:** Tuesday

City: Topock **Date:** 4/5/2016

AM

NS/EW Streets:	Park Moabi Rd			Park Moabi Rd			WB I-40 Ramps			WB I-40 Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	1	0	
7:00 AM	0	7	0	0	1	1	0	0	0	0	0	3	12
7:15 AM	0	1	0	0	3	0	0	0	0	0	0	4	8
7:30 AM	0	10	0	0	4	2	0	0	0	0	0	2	18
7:45 AM	0	5	0	0	1	1	0	0	0	0	0	1	8
8:00 AM	1	2	0	0	3	1	0	0	0	1	0	3	11
8:15 AM	0	0	0	0	3	3	0	0	0	0	0	0	6
8:30 AM	0	1	0	0	4	2	0	0	0	0	0	4	11
8:45 AM	0	5	0	0	3	0	0	0	0	1	0	2	11
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	31	0	0	22	10	0	0	0	2	0	19	85
APPROACH %'s :	3.13%	96.88%	0.00%	0.00%	68.75%	31.25%	#DIV/0!	#DIV/0!	#DIV/0!	9.52%	0.00%	90.48%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	23	0	0	9	4	0	0	0	0	0	10	46
PEAK HR FACTOR :		0.575			0.542			0.000			0.625		0.639

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-8033-001 **Day:** Tuesday

City: Topock **Date:** 4/5/2016

PM

NS/EW Streets:	Park Moabi Rd			Park Moabi Rd			WB I-40 Ramps			WB I-40 Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	1	0	
4:00 PM	2	3	0	0	4	6	0	0	0	0	0	1	16
4:15 PM	0	1	0	0	9	12	0	0	0	0	1	2	25
4:30 PM	0	1	0	0	5	1	0	0	0	0	0	3	10
4:45 PM	0	2	0	0	1	3	0	0	0	0	0	0	6
5:00 PM	0	5	0	0	4	4	0	0	0	0	0	0	13
5:15 PM	0	2	0	0	6	2	0	0	0	0	0	1	11
5:30 PM	0	2	0	0	3	5	0	0	0	0	1	1	12
5:45 PM	0	1	0	0	3	2	0	0	0	0	0	1	7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	17	0	0	35	35	0	0	0	0	2	9	100
APPROACH %'s :	10.53%	89.47%	0.00%	0.00%	50.00%	50.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	18.18%	81.82%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	2	7	0	0	19	22	0	0	0	0	1	6	57
PEAK HR FACTOR :		0.450			0.488			0.000			0.583		0.570

CONTROL : 1-Way Stop (WB)

ITM Peak Hour Summary

Prepared by:

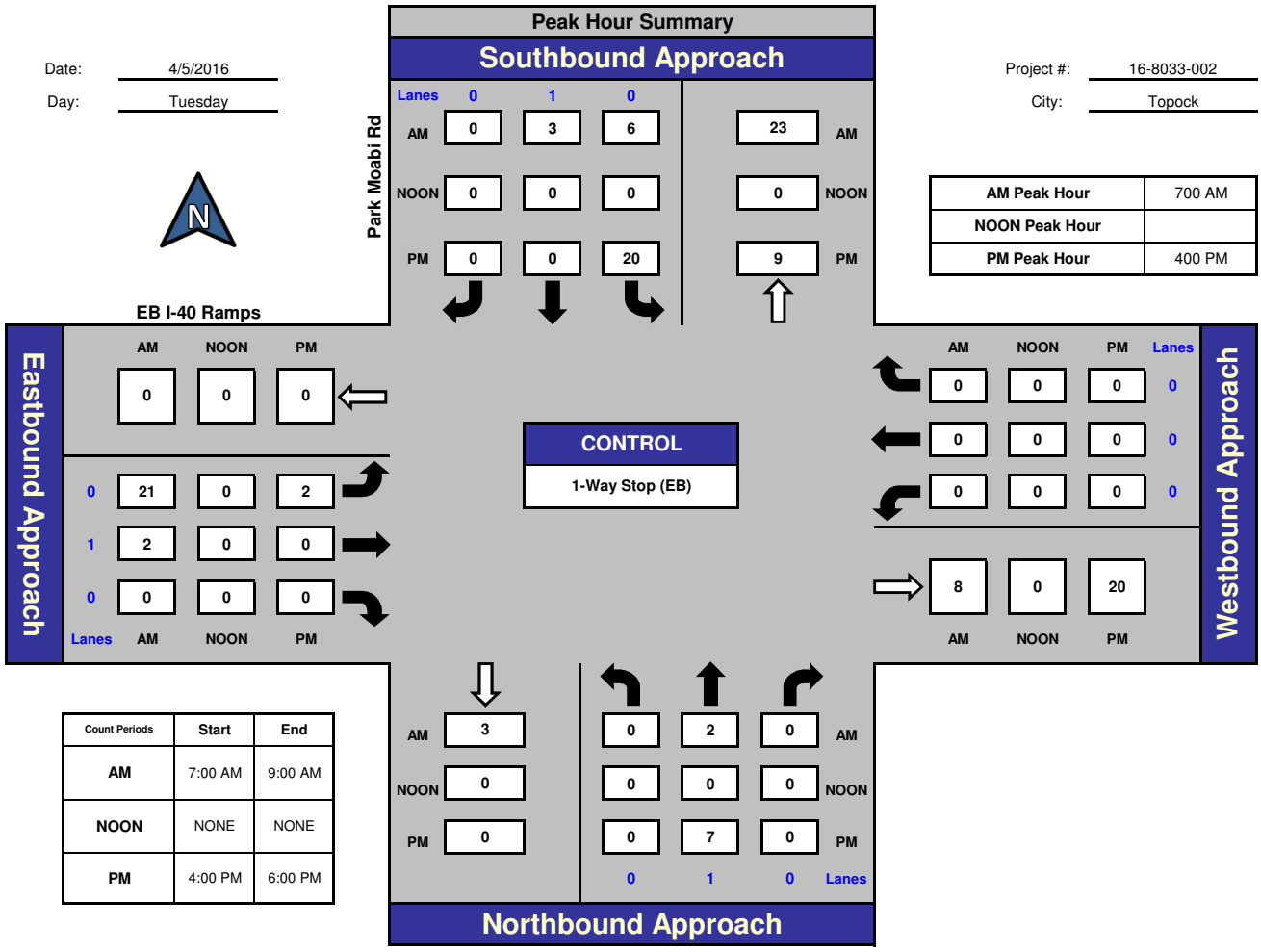
National Data & Surveying Services

Park Moabi Rd and EB I-40 Ramps , Topock

Date: 4/5/2016
Day: Tuesday

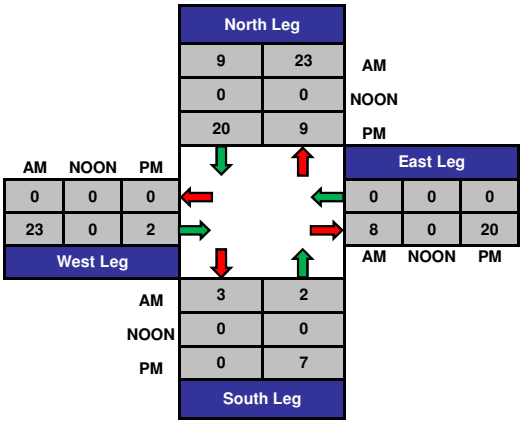
Project #: 16-8033-002
City: Topock

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	400 PM

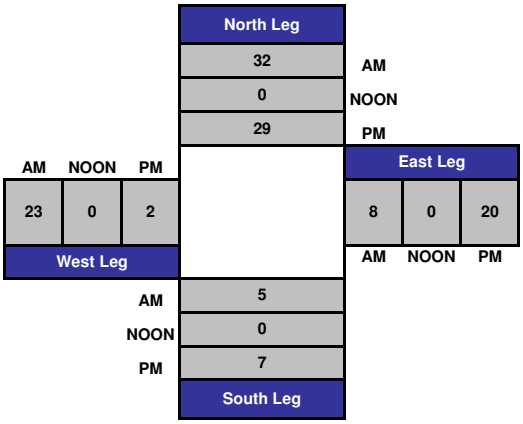


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-8033-002 **Day:** Tuesday

City: Topock **Date:** 4/5/2016

AM

NS/EW Streets:	Park Moabi Rd			Park Moabi Rd			EB I-40 Ramps			EB I-40 Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
7:00 AM	0	1	0	0	1	0	6	1	0	0	0	0	9
7:15 AM	0	0	0	1	2	0	1	0	0	0	0	0	4
7:30 AM	0	0	0	4	0	0	11	0	0	0	0	0	15
7:45 AM	0	1	0	1	0	0	3	1	0	0	0	0	6
8:00 AM	0	2	0	2	1	0	1	0	1	0	0	0	7
8:15 AM	0	0	0	3	1	0	0	0	0	0	0	0	4
8:30 AM	0	0	0	3	1	0	1	0	0	0	0	0	5
8:45 AM	0	0	0	2	2	0	5	1	0	0	0	0	10
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	0	16	8	0	28	3	1	0	0	0	60
APPROACH %'s :	0.00%	100.00%	0.00%	66.67%	33.33%	0.00%	87.50%	9.38%	3.13%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	2	0	6	3	0	21	2	0	0	0	0	34
PEAK HR FACTOR :		0.500			0.563			0.523			0.000		0.567

CONTROL : 1-Way Stop (EB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-8033-002 **Day:** Tuesday

City: Topock **Date:** 4/5/2016

PM

NS/EW Streets:	Park Moabi Rd			Park Moabi Rd			EB I-40 Ramps			EB I-40 Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
4:00 PM	0	5	0	5	0	0	1	0	0	0	0	0	11
4:15 PM	0	0	0	8	0	0	0	0	0	0	0	0	8
4:30 PM	0	0	0	6	0	0	1	0	0	0	0	0	7
4:45 PM	0	2	0	1	0	0	0	0	0	0	0	0	3
5:00 PM	0	1	0	4	0	0	4	0	0	0	0	0	9
5:15 PM	0	0	0	5	0	0	2	0	0	0	0	0	7
5:30 PM	0	0	0	1	3	0	2	0	0	0	0	0	6
5:45 PM	0	0	0	3	0	0	1	1	0	0	0	0	5
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	8	0	33	3	0	11	1	0	0	0	0	56
APPROACH %'s :	0.00%	100.00%	0.00%	91.67%	8.33%	0.00%	91.67%	8.33%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	0	7	0	20	0	0	2	0	0	0	0	0	29
PEAK HR FACTOR :		0.350			0.625			0.500			0.000		0.659

CONTROL : 1-Way Stop (EB)

Prepared by NDS/ATD

VOLUME

Park Moabi Rd N/O I-40

Day: Tuesday
Date: 4/5/2016

City: Topock
Project #: AZ16_8034_001

DAILY TOTALS	NB	SB	EB	WB	Total
	352	360	0	0	712

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0	
00:15	0		0						0	
00:30	0		0						0	
00:45	0		0						0	
01:00	0		0						0	
01:15	0		0						0	
01:30	0		0						0	
01:45	0		0						0	
02:00	0		0						0	
02:15	0		0						0	
02:30	0		0						0	
02:45	0		0						0	
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	0		0						0	
04:15	0		0						0	
04:30	0		0						0	
04:45	0		0						0	
05:00	0		0						0	
05:15	3		0						3	
05:30	3		0						3	
05:45	7	13	4	4					11	17
06:00	7		4						11	
06:15	24		3						27	
06:30	24		3						27	
06:45	11	66	0	10					11	76
07:00	11		0						11	
07:15	2		3						5	
07:30	15		8						23	
07:45	6	34	1	12					7	46
08:00	3		4						7	
08:15	1		9						10	
08:30	5		3						8	
08:45	7	16	4	20					11	36
09:00	10		5						15	
09:15	7		3						10	
09:30	9		9						18	
09:45	4	30	10	27					14	57
10:00	6		1						7	
10:15	10		6						16	
10:30	8		6						14	
10:45	7	31	8	21					15	52
11:00	15		6						21	
11:15	2		16						18	
11:30	5		7						12	
11:45	5	27	5	34					10	61
TOTALS		217		128						**345**
SPLIT %		62.9%		37.1%						**48.5%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	8		8						16	
12:15	5		0						5	
12:30	12		6						18	
12:45	1	26	9	23					10	49
13:00	7		1						8	
13:15	2		6						8	
13:30	5		10						15	
13:45	5	19	4	21					9	40
14:00	4		6						10	
14:15	5		5						10	
14:30	4		10						14	
14:45	8	21	6	27					14	48
15:00	3		11						14	
15:15	5		15						20	
15:30	8		15						23	
15:45	6	22	12	53					18	75
16:00	4		10						14	
16:15	3		19						22	
16:30	2		8						10	
16:45	3	12	2	39					5	51
17:00	5		10						15	
17:15	2		7						9	
17:30	3		7						10	
17:45	3	13	8	32					11	45
18:00	1		6						7	
18:15	4		6						10	
18:30	2		2						4	
18:45	0	7	4	18					4	25
19:00	0		4						4	
19:15	1		2						3	
19:30	1		3						4	
19:45	2	4	1	10					3	14
20:00	4		3						7	
20:15	2		2						4	
20:30	0		0						0	
20:45	1	7	0	5					1	12
21:00	0		2						2	
21:15	0		0						0	
21:30	1		0						1	
21:45	2	3	0	2					2	5
22:00	1		0						1	
22:15	0		1						1	
22:30	0		1						1	
22:45	0	1	0	2					0	3
23:00	0		0						0	
23:15	0		0						0	
23:30	0		0						0	
23:45	0		0						0	
TOTALS		135		232						**367**
SPLIT %		36.8%		63.2%						**51.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	352	360	0	0	712

AM Peak Hour	06:15	10:45			**05:45**
AM Pk Volume	70	37			**76**
Pk Hr Factor	0.729	0.578			**0.704**
7 - 9 Volume	50	32	0	0	**82**
7 - 9 Peak Hour	07:00	07:30			**07:30**
7 - 9 Pk Volume	34	22	0	0	**47**
Pk Hr Factor	0.567	0.611	0.000	0.000	**0.511**

PM Peak Hour	12:00	15:30			**15:30**
PM Pk Volume	26	56			**77**
Pk Hr Factor	0.542	0.737			**0.837**
4 - 6 Volume	25	71	0	0	**96**
4 - 6 Peak Hour	16:15	16:00			**16:15**
4 - 6 Pk Volume	13	39	0	0	**52**
Pk Hr Factor	0.650	0.513	0.000	0.000	**0.591**

Prepared by NDS/ATD

VOLUME

Park Moabi Rd S/O I-40

Day: Tuesday
Date: 4/5/2016

City: Topock
Project #: AZ16_8034_002

DAILY TOTALS	NB	SB	EB	WB	Total
	64	62	0	0	126

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0	
00:15	0		0						0	
00:30	0		0						0	
00:45	0		0						0	
01:00	0		0						0	
01:15	0		0						0	
01:30	0		0						0	
01:45	0		0						0	
02:00	0		0						0	
02:15	0		0						0	
02:30	0		0						0	
02:45	0		0						0	
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	0		0						0	
04:15	0		0						0	
04:30	0		0						0	
04:45	0		0						0	
05:00	0		0						0	
05:15	0		1						1	
05:30	1		2						3	
05:45	0	1	10	13					10	14
06:00	1		1						2	
06:15	5		0						5	
06:30	2		3						5	
06:45	4	12	0	4					4	16
07:00	1		0						1	
07:15	0		2						2	
07:30	0		1						1	
07:45	1	2	0	3					1	5
08:00	2		2						4	
08:15	0		0						0	
08:30	0		2						2	
08:45	0	2	2	6					2	8
09:00	2		2						4	
09:15	2		2						4	
09:30	1		1						2	
09:45	0	5	0	5					0	10
10:00	1		0						1	
10:15	0		2						2	
10:30	0		1						1	
10:45	1	2	1	4					2	6
11:00	5		0						5	
11:15	0		0						0	
11:30	0		2						2	
11:45	2	7	1	3					3	10
TOTALS		31		38						**69**
SPLIT %		44.9%		55.1%						**54.8%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	0		0						0	
12:15	1		0						1	
12:30	3		0						3	
12:45	0	4	0						0	4
13:00	0		2						2	
13:15	0		2						2	
13:30	4		1						5	
13:45	4	8	0	5					4	13
14:00	0		3						3	
14:15	3		3						6	
14:30	1		0						1	
14:45	0	4	0	6					0	10
15:00	0		1						1	
15:15	1		0						1	
15:30	0		1						1	
15:45	0	1	1	3					1	4
16:00	5		0						5	
16:15	0		0						0	
16:30	2		0						2	
16:45	0	7	0						0	7
17:00	1		0						1	
17:15	0		0						0	
17:30	0		3						3	
17:45	0	1	0	3					0	4
18:00	0		0						0	
18:15	0		0						0	
18:30	0		0						0	
18:45	0		0						0	
19:00	0		2						2	
19:15	0		0						0	
19:30	0		0						0	
19:45	0		0	2					0	2
20:00	4		5						9	
20:15	0		0						0	
20:30	0		0						0	
20:45	0	4	0	5					0	9
21:00	0		0						0	
21:15	0		0						0	
21:30	0		0						0	
21:45	0		0						0	
22:00	1		0						1	
22:15	0		0						0	
22:30	0		0						0	
22:45	0	1	0						0	1
23:00	0		0						0	
23:15	0		0						0	
23:30	3		0						3	
23:45	0	3	0						0	3
TOTALS		33		24						**57**
SPLIT %		57.9%		42.1%						**45.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	64	62	0	0	126

AM Peak Hour	06:00	05:15			**05:45**
AM Pk Volume	12	14			**22**
Pk Hr Factor	0.600	0.350			**0.550**
7 - 9 Volume	4	9	0	0	**13**
7 - 9 Peak Hour	07:15	08:00			**07:15**
7 - 9 Pk Volume	3	6	0	0	**8**
Pk Hr Factor	0.375	0.750	0.000	0.000	**0.500**

PM Peak Hour	13:30	13:30			**13:30**
PM Pk Volume	11	7			**18**
Pk Hr Factor	0.688	0.583			**0.750**
4 - 6 Volume	8	3	0	0	**11**
4 - 6 Peak Hour	16:00	16:45			**16:00**
4 - 6 Pk Volume	7	3	0	0	**7**
Pk Hr Factor	0.350	0.250	0.000	0.000	**0.350**

APPENDIX B
TOPOCK GROUNDWATER REMEDIATION
TRIP GENERATION TABLE

Project Phase	Estimated Duration	Estimated Number of Workers, Trucks, and Vehicles	LCI Interpretation of Peak Hour Trips	AM Peak Hour Trips	PM Peak Hour Trips	LCI Interpretation of ADT Trips	ADT
Pre-Construction/Mobilization Phase	4 months	Estimated 80 workers travel to/from work site each work day (data proved by client); 6 trucks per day	80 trips to site each morning and 80 trips leaving site each afternoon; also assuming trips to/from site taken at lunch; 2 truck trips (20%) AM and 1 truck trip (5%) PM	82	81	Workers = 80 X 2 daily trips; Delivery Trucks = 6 per day	166
Total				82	81		166
Phase 1 Construction including Functional Testing[1]	19 months of construction, including functional testing	For construction activities, during a maximum work week, there would be approximately 168 workers, 115 delivery truck trips to/from work site, and 560 worker vehicle trips to/from work site.[2]	Assuming a 5 day week there are approximately 112 (560/5) worker vehicle trips to/from site each day and 23 (115/5) delivery truck trips each day. Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 20% AM and 5% PM for delivery truck trips; 28 + 5 trips for AM; 28 + 2 for PM	33	30	Workers = 112 daily trips Delivery Trucks = 23 daily trips	135
		For functional testing, there would be 12 additional vehicles (4 technicians, 4 instrumentation specialists, 4 engineers).	Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 3 AM and 3 PM trips	3	3	12 X 2 daily trips	24
Total				36	33		159
Start-up and O&M of NTH IRZ[2]	30 years for O&M	For O&M activities under worst case scenario (i.e., including future provisional wells and contingent systems), on a peak day there would be approximately 24 vehicles (# of max vehicles per week in Item 3 divided by 5) and 20 trucks (# of max deliveries/ pickups per year in Item 3 divided by 40 and multiply by 2).	Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips, 20% AM and 5 % PM for delivery trucks; 6 + 4 AM and 6 + 1 PM trips	10	7	Workers = 24 X 2 daily trips Delivery Trucks = 20 X 2 daily trips	98
	12 months for startup	For start-up, on a peak day there would be approximately 2 or 3 additional vehicles (1 operator, 1 or 2 engineers).	Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 1 AM and 1 PM trips	1	1	3 X 2 daily trips	6
Total				11	8		104
Phase 2 Construction	12 months of construction, including functional testing	For construction activities, during a maximum work week, there would be approximately 181 workers, 105 delivery truck trips to/from work site, and 603 worker vehicle trips to/from work site.[2]	Assuming a 5 day week there are approximately 121 (603/5) worker vehicle trips to/from site each day and 21 (105/5) delivery truck trips. Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 20% AM and 5% PM for delivery truck trips; 31 + 5 trips for AM; 31 + 2 for PM	36	33	Workers = 121 daily trips Delivery Trucks = 21 daily trips	142
		For functional testing, there would be approximately 12 additional vehicles (4 technicians, 4 instrumentation specialists, 4 engineers).	Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 3 AM and 3 PM trips	3	3	12 X 2 Trips	24
Total				39	36		166
Start-up and O&M of remaining system	30 years for O&M	For O&M activities under worst case scenario (i.e., including future provisional wells and contingent systems), on a peak day there would be approximately 24 vehicles (# of max vehicles per week in Item 3 divided by 5) and 20 trucks (# of max deliveries/pickups per year in Item 3 divided by 40 and multiply by 2).	Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips, 20% AM and 5 % PM for delivery trucks; 6 + 4 AM and 6 + 1 PM trips	10	7	Workers = 24 X 2 Trips = 48 Delivery Trucks = 20 X 2 Trips = 40	98
	12 months for startup	For start-up, on a peak day there would be approximately 2 or 3 additional vehicles (1 operator, 1 or 2 engineers).	Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 1 AM and 1 PM trips	1	1	3 X 2 Trips	6
Total				11	8		104
Decommissioning and Removal of IM3	15 months	For IM-3 decommissioning activities, during a maximum work week, there would be approximately 33 workers, 25 delivery truck trips to/from work site, and 117 worker vehicle trips to/from work site.	Assuming a 5 day week there are approximately 24 (117/5) worker vehicle trips to/from site each day and 5 delivery truck trips. Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 20% AM and 5% PM for delivery truck trips; 6 + 1 trips for AM; 6 + 1 for PM	7	7	Workers = 24 daily trips Delivery Trucks = 5 daily trips	29
Decommissioning and Removal of Remedy	to be determined	For remedy decommissioning activities, during a maximum work week, there would be approximately 69 workers, 75 delivery truck trips to/from work site and 240 worker vehicle trips to/from work site.	Assuming a 5 day week there are approximately 48 (240/5) worker vehicle trips to/from site each day and 15 delivery truck trips. Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 20% AM and 5% PM for delivery truck trips; 12 + 3 trips for AM; 12 + 1 for PM	15	13	Workers = 48 daily trips Delivery Trucks = 15 daily trips	63

[1] These project phases are illustrated in the *Basis of Design Report/ Final (100%) Design Submittal for the Final Groundwater Remedy* (Final Design; PG&E, November 2015), Figure ES-2.

[2] Basis for vehicle trip counts:

Daily trips per vehicle: 1 morning, 1 lunch, 1 back from lunch, 1 pm	2	daily round trips per car
Assumed carpool rate for trips to/from work area	3	persons per car
Assumed number of equipment/materials deliveries per day	1	daily round trips per site
IDW Management soil transfer trips per day	2	daily round trips per crew

Worst Case Scenario*

Phase 2 Construction	12 months of construction, including functional testing	For construction activities, during a maximum work week, there would be approximately 181 workers, 105 delivery truck trips to/from work site, and 603 worker vehicle trips to/from work site.[2]	Assuming a 5 day week there are approximately 121 (603/5) worker vehicle trips to/from site each day and 21 (105/5) delivery truck trips. Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 20% AM and 5% PM for delivery truck trips; 31 + 5 trips for AM; 31 + 2 for PM	36	33	Workers = 121 X 2 Trips = 242 Delivery Trucks = 21 X 2 Trips = 42	142
		For functional testing, there would be approximately 12 additional vehicles (4 technicians, 4 instrumentation specialists, 4 engineers).	Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 3 AM and 3 PM trips	3	3	12 X 2 Trips	24
Decommissioning and Removal of IM3	15 months	For IM-3 decommissioning activities, during a maximum work week, there would be approximately 33 workers, 25 delivery truck trips to/from work site, and 117 worker vehicle trips to/from work site.	Assuming a 5 day week there are approximately 24 (117/5) worker vehicle trips to/from site each day and 5 delivery truck trips. Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips; 20% AM and 5% PM for delivery truck trips; 6 + 1 trips for AM; 6 + 1 for PM	7	7	Workers = 24 daily trips Delivery Trucks = 5 daily trips	29
O&M Acitivties	30 years for O&M	For O&M activities under worst case scenario (i.e., including future provisional wells and contingent systems), on a peak day there would be approximately 24 vehicles (# of max vehicles per week in Item 3 divided by 5) and 20 trucks (# of max deliveries/pickups per year in Item 3 divided by 40 and multiply by 2).	Using the assumptions provided by PG&E team, 25% AM and 25% PM for worker trips, 20% AM and 5 % PM for delivery trucks; 6 + 4 AM and 6 + 1 PM trips	10	7	Workers = 24 X 2 Trips = 48 Delivery Trucks = 20 X 2 Trips = 40	98
Total				56	50		293

* the Worst Case Scenario consists of the Phase 2 Construction stage, the decommissioning and removal of IM3, and adding the O&M activities assuming O&M will continue throughout the project once Phase 1 Construction is complete. This scenario provides the largest traffic generation for the project schedule.

APPENDIX C
EXISTING (YEAR 2016) TRAFFIC CONDITIONS
LOS ANALYSIS CALCULATION WORKSHEETS

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Existing_Year 2016_AM Peak Hour]

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: A[8.4]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	0	0 0 0	0	1
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	23	0	0	9	4	0	0	0	0	0	10
Growth Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	23	0	0	9	4	0	0	0	0	0	10
User Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92 0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	25	0	0	10	4	0	0	0	0	0	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	25	0	0	10	4	0	0	0	0	0	11
Critical Gap Module:												
Critical Gp:	xxxxx xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx		6.2
FollowUpTim:	xxxxx xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx		3.3
Capacity Module:												
Cnflict Vol:	xxxx xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx		25
Potent Cap.:	xxxx xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx		1057
Move Cap.:	xxxx xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx		1057
Volume/Cap:	xxxx xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.01
Level Of Service Module:												
2Way95thQ:	xxxx xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx		0.0
Control Del:	xxxxx xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx		8.4
LOS by Move:	*	*	*	*	*	*	*	*	*	*		A
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx		xxxxxx			xxxxxx			8.4			
ApproachLOS:	*		*			*			A			

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Existing_Year 2016_PM Peak Hour]

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: A[8.5]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0		0 0 0 1 0			0 0 0 0 0			0 0 0 1 0		
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	2	7	0	0	19	22	0	0	0	0	1	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	7	0	0	19	22	0	0	0	0	1	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	2	8	0	0	21	24	0	0	0	0	1	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	8	0	0	21	24	0	0	0	0	1	7
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3
Capacity Module:												
Cnflict Vol:	45	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	57	8
Potent Cap.:	1577	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	838	1080
Move Cap.:	1577	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	837	1080
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1037
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0
Shrd ConDel:	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.5
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	A
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.5		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Existing_Year 2016_AM Peak Hour]

Average Delay (sec/veh): 7.2 Worst Case Level Of Service: A[8.7]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1 0 0			0 1 0 0 0			0 1 0 0 0			0 0 0 0 0		
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	2	0	6	3	0	21	2	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2	0	6	3	0	21	2	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	2	0	7	3	0	23	2	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	2	0	7	3	0	23	2	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.4	6.5	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	2	xxxx	xxxxx	18	18	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1633	xxxx	xxxxx	1004	879	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1633	xxxx	xxxxx	1001	876	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.02	0.00	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	989	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.7			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Existing_Year 2016_PM Peak Hour]

Average Delay (sec/veh): 5.6 Worst Case Level Of Service: A[8.8]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	1 0	0	0 0	1 0	0	0 0	0 0	0	0 0
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	0	7	0	20	0	0	2	0	0	0	0	0
Growth Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Initial Bse:	0	7	0	20	0	0	2	0	0	0	0	0
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Adj:	0.92 0.92	0.92		0.92 0.92	0.92		0.92 0.92	0.92		0.92 0.92	0.92	
PHF Volume:	0	8	0	22	0	0	2	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	8	0	22	0	0	2	0	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx xxxx xxxxx			4.1 xxxx xxxxx			6.4 xxxx xxxxx			xxxxx xxxx xxxxx		
FollowUpTim:	xxxxx xxxx xxxxx			2.2 xxxx xxxxx			3.5 xxxx xxxxx			xxxxx xxxx xxxxx		
Capacity Module:												
Cnflict Vol:	xxxx xxxx xxxxx			8 xxxx xxxxx			51 xxxx xxxxx			xxxx xxxx xxxxx		
Potent Cap.:	xxxx xxxx xxxxx			1626 xxxx xxxxx			963 xxxx xxxxx			xxxx xxxx xxxxx		
Move Cap.:	xxxx xxxx xxxxx			1626 xxxx xxxxx			953 xxxx xxxxx			xxxx xxxx xxxxx		
Volume/Cap:	xxxx xxxx xxxx			0.01 xxxx xxxx			0.00 xxxx xxxx			xxxx xxxx xxxx		
Level Of Service Module:												
2Way95thQ:	xxxx xxxx xxxxx			0.0 xxxx xxxxx			0.0 xxxx xxxxx			xxxx xxxx xxxxx		
Control Del:	xxxxx xxxx xxxxx			7.2 xxxx xxxxx			8.8 xxxx xxxxx			xxxxx xxxx xxxxx		
LOS by Move:	*	*	*	A	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx xxxxx			xxxx xxxx xxxxx			xxxx xxxx xxxxx			xxxx xxxx xxxxx		
SharedQueue:	xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx		
Shrd ConDel:	xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx		
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.8			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

APPENDIX D

EXISTING (YEAR 2016)

PLUS PROJECT TRAFFIC CONDITIONS

LOS ANALYSIS CALCULATION WORKSHEETS

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Year 2016 + Project_AM Peak Hour]

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: A[8.8]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	0	0 0 1!	0	0
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	57	0	0	9	4	0	0	0	8	0	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	57	0	0	9	4	0	0	0	8	0	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	62	0	0	10	4	0	0	0	9	0	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	62	0	0	10	4	0	0	0	9	0	36
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	74	76	62
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	935	818	1009
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	935	818	1009
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	993	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	8.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.8		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Year 2016 + Project_PM Peak Hour]

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: A[8.6]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0	0	0 0	0 1	0	0 0	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	10	7	0	0	37	48	0	0	0	0	1	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	7	0	0	37	48	0	0	0	0	1	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	11	8	0	0	40	52	0	0	0	0	1	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	11	8	0	0	40	52	0	0	0	0	1	7
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3
Capacity Module:												
Cnflict Vol:	92	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	122	8
Potent Cap.:	1515	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	772	1080
Move Cap.:	1515	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	767	1080
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1021
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0
Shrd ConDel:	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.6
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	A
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.6		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Year 2016 + Project_AM Peak Hour]

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[8.9]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 1	0	0 0	0 0 1!	0	0	0 0	0	0 0
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	2	0	6	11	0	55	2	11	0	0	0
Growth Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	2	0	6	11	0	55	2	11	0	0	0
User Adj:	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92 0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	2	0	7	12	0	60	2	12	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	2	0	7	12	0	60	2	12	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx xxxx xxxxx			4.1	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx xxxx xxxxx			2.2	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx xxxx xxxxx			2	xxxx	xxxxx	27	27	12	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx xxxx xxxxx			1633	xxxx	xxxxx	993	870	1075	xxxx	xxxx	xxxxx
Move Cap.:	xxxx xxxx xxxxx			1633	xxxx	xxxxx	990	866	1075	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx xxxx	xxxx		0.00	xxxx	xxxx	0.06	0.00	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx xxxx xxxxx			0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx xxxx xxxxx			7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx xxxxx			xxxx	xxxx	xxxxx	xxxx	999	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx xxxx xxxxx			0.0	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx xxxx xxxxx			7.2	xxxx	xxxxx	xxxxx	8.9	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.9			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Year 2016 + Project_PM Peak Hour]

Average Delay (sec/veh): 4.8 Worst Case Level Of Service: A[9.1]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			1 0 0 0 0			1 0 0 0 0			0 0 0 0 0		
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	0	15	6	38	0	0	2	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	15	6	38	0	0	2	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	16	7	41	0	0	2	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	16	7	41	0	0	2	0	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	23	xxxx	xxxxx	102	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1606	xxxx	xxxxx	901	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1606	xxxx	xxxxx	883	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.3	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.1			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

APPENDIX E

CONSTRUCTION YEAR (YEAR 2020)

WITHOUT PROJECT TRAFFIC CONDITIONS

LOS ANALYSIS CALCULATION WORKSHEETS

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Year 2020 AM Peak Hour]

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: A[8.5]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0 0		0 0 0	1 0		0 0 0	0 0		0 0 0	0 1	
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	25	0	0	10	5	0	0	0	0	0	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	25	0	0	10	5	0	0	0	0	0	11
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	27	0	0	11	5	0	0	0	0	0	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	27	0	0	11	5	0	0	0	0	0	12
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	27
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1054
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1054
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.5
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	A
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.5		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Year 2020 PM Peak Hour]

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: A[8.6]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0		0 0 0 1	0		0 0 0	0 0		0 0 0 1	0	
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	3	8	0	0	21	24	0	0	0	0	2	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	8	0	0	21	24	0	0	0	0	2	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	3	9	0	0	23	26	0	0	0	0	2	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	9	0	0	23	26	0	0	0	0	2	8
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3
Capacity Module:												
Cnflict Vol:	49	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	64	9
Potent Cap.:	1571	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	830	1079
Move Cap.:	1571	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	829	1079
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1011
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0
Shrd ConDel:	7.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.6
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	A
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.6		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Year 2020 AM Peak Hour]

Average Delay (sec/veh): 7.0 Worst Case Level Of Service: A[8.8]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 1	0	0 0	0 1	0	0 0	0 0	0	0 0
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	3	0	7	4	0	23	3	0	0	0	0
Growth Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Initial Bse:	0	3	0	7	4	0	23	3	0	0	0	0
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Adj:	0.92 0.92	0.92		0.92 0.92	0.92		0.92 0.92	0.92		0.92 0.92	0.92	
PHF Volume:	0	3	0	8	4	0	25	3	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	3	0	8	4	0	25	3	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx xxxx xxxxx			4.1 xxxx xxxxx			6.4 6.5 xxxxx xxxxx xxxx xxxxx					
FollowUpTim:	xxxxx xxxx xxxxx			2.2 xxxx xxxxx			3.5 4.0 xxxxx xxxxx xxxx xxxxx					
Capacity Module:												
Cnflict Vol:	xxxx xxxx xxxxx			3 xxxx xxxxx			23 23 xxxxx xxxx xxxx xxxxx					
Potent Cap.:	xxxx xxxx xxxxx			1632 xxxx xxxxx			999 875 xxxxx xxxx xxxx xxxxx					
Move Cap.:	xxxx xxxx xxxxx			1632 xxxx xxxxx			995 871 xxxxx xxxx xxxx xxxxx					
Volume/Cap:	xxxx xxxx xxxx			0.00 xxxx xxxx			0.03 0.00 xxxx xxxx xxxx xxxx					
Level Of Service Module:												
2Way95thQ:	xxxx xxxx xxxxx			0.0 xxxx xxxxx			xxxx xxxx xxxxx xxxx xxxx xxxxx					
Control Del:	xxxxx xxxx xxxxx			7.2 xxxx xxxxx			xxxxx xxxx xxxxx xxxxx xxxx xxxxx					
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx xxxxx			xxxx xxxx xxxxx			979 xxxx xxxxx xxxx xxxx xxxxx					
SharedQueue:	xxxxx xxxx xxxxx			0.0 xxxx xxxxx			0.1 xxxx xxxxx xxxxx xxxx xxxxx					
Shrd ConDel:	xxxxx xxxx xxxxx			7.2 xxxx xxxxx			8.8 xxxx xxxxx xxxxx xxxx xxxxx					
Shared LOS:	*	*	*	A	*	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.8			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Year 2020 PM Peak Hour]

Average Delay (sec/veh): 5.6 Worst Case Level Of Service: A[8.8]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	1 0	0	0 0	1 0	0	0 0	0 0	0	0 0
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	0	8	0	22	0	0	3	0	0	0	0	0
Growth Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Initial Bse:	0	8	0	22	0	0	3	0	0	0	0	0
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Adj:	0.92 0.92	0.92		0.92 0.92	0.92		0.92 0.92	0.92		0.92 0.92	0.92	
PHF Volume:	0	9	0	24	0	0	3	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	9	0	24	0	0	3	0	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx xxxx xxxxx			4.1 xxxx xxxxx			6.4 xxxx xxxxx			xxxxx xxxx xxxxx		
FollowUpTim:	xxxxx xxxx xxxxx			2.2 xxxx xxxxx			3.5 xxxx xxxxx			xxxxx xxxx xxxxx		
Capacity Module:												
Cnflict Vol:	xxxx xxxx xxxxx			9 xxxx xxxxx			57 xxxx xxxxx			xxxx xxxx xxxxx		
Potent Cap.:	xxxx xxxx xxxxx			1625 xxxx xxxxx			956 xxxx xxxxx			xxxx xxxx xxxxx		
Move Cap.:	xxxx xxxx xxxxx			1625 xxxx xxxxx			945 xxxx xxxxx			xxxx xxxx xxxxx		
Volume/Cap:	xxxx xxxx xxxx			0.01 xxxx xxxx			0.00 xxxx xxxx			xxxx xxxx xxxx		
Level Of Service Module:												
2Way95thQ:	xxxx xxxx xxxxx			0.0 xxxx xxxxx			0.0 xxxx xxxxx			xxxx xxxx xxxxx		
Control Del:	xxxxx xxxx xxxxx			7.2 xxxx xxxxx			8.8 xxxx xxxxx			xxxxx xxxx xxxxx		
LOS by Move:	*	*	*	A	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx xxxxx			xxxx xxxx xxxxx			xxxx xxxx xxxxx			xxxx xxxx xxxxx		
SharedQueue:	xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx		
Shrd ConDel:	xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx		
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.8			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

APPENDIX F

CONSTRUCTION YEAR (YEAR 2020) PLUS PROJECT TRAFFIC CONDITIONS LOS ANALYSIS CALCULATION WORKSHEETS

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Year 2020 + Project AM Peak Hour]

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: A[8.8]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	0	0 0 1!	0	0
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	59	0	0	10	5	0	0	0	8	0	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	59	0	0	10	5	0	0	0	8	0	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	64	0	0	11	5	0	0	0	9	0	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	64	0	0	11	5	0	0	0	9	0	37
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	78	80	64
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	930	814	1006
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	930	814	1006
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	990	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	8.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.8		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Year 2020 + Project PM Peak Hour]

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: A[8.7]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0		0 0 0 1	0		0 0 0	0 0		0 0 0 1	0	
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	11	8	0	0	39	50	0	0	0	0	2	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	8	0	0	39	50	0	0	0	0	2	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	12	9	0	0	42	54	0	0	0	0	2	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	12	9	0	0	42	54	0	0	0	0	2	8
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3
Capacity Module:												
Cnflict Vol:	97	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	129	9
Potent Cap.:	1509	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	765	1079
Move Cap.:	1509	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	759	1079
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	987
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0
Shrd ConDel:	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.7
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	A
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.7		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Year 2020 + Project AM Peak Hour]

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[8.9]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 1	0	0 0	0 0	1! 0	0	0 0	0	0 0
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	3	0	7	12	0	57	3	11	0	0	0
Growth Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Initial Bse:	0	3	0	7	12	0	57	3	11	0	0	0
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Adj:	0.92 0.92	0.92		0.92 0.92	0.92		0.92 0.92	0.92		0.92 0.92	0.92	
PHF Volume:	0	3	0	8	13	0	62	3	12	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	3	0	8	13	0	62	3	12	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx xxxx xxxxx			4.1 xxxx xxxxx			6.4 6.5		6.2	xxxxx xxxx xxxxx		
FollowUpTim:	xxxxx xxxx xxxxx			2.2 xxxx xxxxx			3.5 4.0		3.3	xxxxx xxxx xxxxx		
Capacity Module:												
Cnflict Vol:	xxxx xxxx xxxxx			3 xxxx xxxxx			32 32		13	xxxx xxxx xxxxx		
Potent Cap.:	xxxx xxxx xxxxx			1632 xxxx xxxxx			987 865		1073	xxxx xxxx xxxxx		
Move Cap.:	xxxx xxxx xxxxx			1632 xxxx xxxxx			984 861		1073	xxxx xxxx xxxxx		
Volume/Cap:	xxxx xxxx xxxx			0.00 xxxx xxxx			0.06 0.00		0.01	xxxx xxxx xxxx		
Level Of Service Module:												
2Way95thQ:	xxxx xxxx xxxxx			0.0 xxxx xxxxx			xxxx xxxx xxxxx			xxxx xxxx xxxxx		
Control Del:	xxxxx xxxx xxxxx			7.2 xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx		
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx xxxxx			xxxx xxxx xxxxx			xxxx 991 xxxxx			xxxx xxxx xxxxx		
SharedQueue:	xxxxx xxxx xxxxx			0.0 xxxx xxxxx			xxxxx 0.3 xxxxx			xxxxx xxxx xxxxx		
Shrd ConDel:	xxxxx xxxx xxxxx			7.2 xxxx xxxxx			xxxxx 8.9 xxxxx			xxxxx xxxx xxxxx		
Shared LOS:	*	*	*	A	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.9			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Year 2020 + Project PM Peak Hour]

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: A[9.1]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			1 0 0 0 0			1 0 0 0 0			0 0 0 0 0		
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	0	16	6	40	0	0	3	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	16	6	40	0	0	3	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	17	7	43	0	0	3	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	17	7	43	0	0	3	0	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	24	xxxx	xxxxx	108	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1604	xxxx	xxxxx	895	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1604	xxxx	xxxxx	876	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.3	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.1			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Year 2017 + Project_AM Peak Hour]

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: A[8.8]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 0 0	1	0	0 0 0	0	0	0 0 1!	0	0
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	58	0	0	10	5	0	0	0	8	0	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	58	0	0	10	5	0	0	0	8	0	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	63	0	0	11	5	0	0	0	9	0	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	63	0	0	11	5	0	0	0	9	0	37
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	77	79	63
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	931	815	1007
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	931	815	1007
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	0.00	0.04
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	992	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	8.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.8		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 [Year 2017 + Project_PM Peak Hour]

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: A[8.7]

Street Name:	Park Moabi Road						Westbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0		0 0 0 1	0		0 0 0	0 0		0 0 0 1	0	
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	11	8	0	0	38	49	0	0	0	0	2	7
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	8	0	0	38	49	0	0	0	0	2	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	12	9	0	0	41	53	0	0	0	0	2	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	12	9	0	0	41	53	0	0	0	0	2	8
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.0	3.3
Capacity Module:												
Cnflict Vol:	95	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	127	9
Potent Cap.:	1512	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	767	1079
Move Cap.:	1512	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	761	1079
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	987
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.0
Shrd ConDel:	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.7
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	A
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.7		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Year 2017 + Project_AM Peak Hour]

Average Delay (sec/veh): 7.3 Worst Case Level Of Service: A[8.9]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1	0	0	0 1	0	0 0	0 0 1!	0	0	0 0 0	0	0
Volume Module: >> Count Date: 5 Apr 2016 << AM Peak Hour												
Base Vol:	0	3	0	7	12	0	56	3	11	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	3	0	7	12	0	56	3	11	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	3	0	8	13	0	61	3	12	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	3	0	8	13	0	61	3	12	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	3	xxxx	xxxxx	32	32	13	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1632	xxxx	xxxxx	987	865	1073	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1632	xxxx	xxxxx	984	861	1073	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.06	0.00	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	991	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	8.9	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.9			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 [Year 2017 + Project_PM Peak Hour]

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: A[9.1]

Street Name:	Park Moabi Road						Eastbound I-40 Freeway On/Off Ram					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			1 0 0 0 0			1 0 0 0 0			0 0 0 0 0		
Volume Module: >> Count Date: 18 Jun 2013 << PM Peak Hour												
Base Vol:	0	16	6	39	0	0	3	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	16	6	39	0	0	3	0	0	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	17	7	42	0	0	3	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	17	7	42	0	0	3	0	0	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	24	xxxx	xxxxx	105	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1604	xxxx	xxxxx	897	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1604	xxxx	xxxxx	879	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.3	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.1			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

APPENDIX WAT

2013 Water Board Memorandum

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

TO: Stewart Black
Deputy Director
Brownfields and Environmental Restoration Program
California Department of Toxic Substances Control
P.O. Box 806, MS 11A
Sacramento, CA 95812

FROM: Jonathan S. Bishop
Chief Deputy Director
EXECUTIVE OFFICE

DATE: November 20, 2013

SUBJECT: TOPOCK COMPRESSOR STATION: REMEDY REQUIREMENTS ASSOCIATED WITH INJECTION OF GROUNDWATER CONTAINING NATURALLY OCCURRING ARSENIC

The California Department of Toxic Substances Control (DTSC) is the lead state agency overseeing the soil and groundwater investigation and cleanup surrounding the Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Topock Site). DTSC has been working with PG&E on the selected groundwater remedy at the Topock Site. The selected groundwater remedy, as more fully described below, involves injecting water to flush the hexavalent chromium plume through an In-situ Reactive Zone (IRZ) in conjunction with institutional controls and monitored natural attention.

As part of completing the remedial design, PG&E has asked the State Water Resources Control Board (State Water Board) whether, and under what circumstances, groundwater pumped from a nearby groundwater basin that contains naturally occurring arsenic at levels above the applicable groundwater water quality objective of 10 parts per billion (ppb) may be injected as part of the groundwater remedy into a receiving groundwater basin with arsenic levels below the 10 ppb water quality objective. If injection of the groundwater with arsenic concentrations above 10 ppb is allowed, DTSC has asked the State Water Board what conditions would govern injection and the remedy.

Short Answer
In appropriate circumstances and with appropriate conditions, groundwater containing naturally occurring levels of arsenic above the applicable water quality objective may be injected into a groundwater basin in order to implement a groundwater flushing remedy. The selected

groundwater remedy described below satisfies those circumstances, and subject to the conditions described below, the injection may proceed. However, the applicable or relevant and appropriate requirement (ARAR) for arsenic will still be the 10 ppb water quality objective and the arsenic water quality objective in the receiving groundwater must be met within the earlier of (i) 20 years after achieving the remedial action objective for chromium or (ii) 20 years after ceasing injection of the water containing naturally occurring arsenic at concentrations above the water quality objective.

The foregoing does not mean, however, that non-native groundwater must meet the water quality objective for arsenic at the time of injection. Instead, if treatment or blending of the arsenic-containing water is not desirable for cultural or economic reasons, then compliance with the water quality objective in the receiving groundwater may be achieved through processes such as dispersion, diffusion, and adsorption, so long as compliance with the water quality objective (i) occurs in a reasonable period of time and (ii) does not impact existing or probable future beneficial uses *within* the arsenic plume resulting from the injected, non-native groundwater.

Selected Groundwater Remedy
DTSC has identified the preferred groundwater remedy as Alternative E, "In-Situ Treatment with Freshwater Flushing." DTSC selected this remedy in its Groundwater Remedy Statement of Basis. Likewise, the U.S. Department of the Interior simultaneously selected this preferred remedy in its Record of Decision for the CERCLA Remedial Action addressing groundwater contamination, which is being conducted concurrently due to contamination having impacted federal lands. As described in the Statement of Basis, Alternative E involves flushing to push the hexavalent chromium plume through an IRZ located along National Trails Highway.

The freshwater flushing would be accomplished through a combination of freshwater injection and treated groundwater reinjection (see below) in wells upgradient of the hexavalent chromium plume. This selected alternative would also include using extraction wells near the Colorado River shoreline to capture the plume, accelerate cleanup of the floodplain, and draw the groundwater with elevated hexavalent chromium through the treatment zone. Additional extraction wells would be located in an area northeast of the Topock Compressor Station where the flushing efficiency from injection wells alone is relatively poor. Groundwater extracted from the near-river wells and wells northeast of the Topock Compressor Station would then be treated with a carbon food source to reduce hexavalent chromium concentrations to a maximum of 32 ppb, the remediation target background level, and the water would then be reinjected upgradient of the hexavalent chromium plume. Institutional controls would also be imposed to restrict surface land uses and prevent the use of groundwater. Finally, monitored natural attenuation would be utilized as a long-term component to address residual hexavalent chromium that may remain in recalcitrant portions of the aquifer after in-situ treatment.

Havasu National Wildlife Refuge-1 (HNWR-1) Well
PG&E has evaluated a number of potential supplies of freshwater. While some of the effort continues, PG&E's current question arises in the context of the HNWR-1 well. This existing water supply well is located on the Arizona side of the Colorado River. When used in combination with the treated groundwater, the HNWR-1 well appears to be productive enough to generate sufficient quantities of water to operate the injection flushing system contemplated by the groundwater remedy. However, the HNWR-1 well contains arsenic concentrations of

about 15 ppb, which is above the water quality objective of 10 ppb and which is also higher than the naturally occurring levels of arsenic in the receiving groundwater basin.

Remedy Requirements
Groundwater containing naturally occurring levels of arsenic above the applicable water quality objective of 10 ppb from the HNWR-1[1] well may be injected into the groundwater basin at the Topock Site since the injection of substantial quantities of water are necessary, based on modeling results, to effectively move the hexavalent chromium plume towards the IRZ in a reasonable period of time. While it is preferred that a supply well be used that contains arsenic concentrations below the water quality objective to ensure immediate compliance with the Colorado River Basin Water Board's Basin Plan arsenic water quality objective, if such a well is not available and treatment is not desirable for cultural or economic reasons, then the need for timely cleanup of the hexavalent chromium plume to protect public health and the environment becomes the paramount, and overriding, reason to allow the use of the HNWR-1 well in these fact-specific and limited circumstances.

Allowing the use of this well does not jeopardize compliance with other legal requirements. In particular, the ARAR for arsenic will still be the 10 ppb water quality objective, and the water quality objective in the receiving groundwater must be met within the earlier of (i) 20 years after achieving the remedial action objective for chromium or (ii) 20 years after ceasing injection of the water containing naturally occurring arsenic at concentrations above the water quality objective. PG&E's consultants, through modeling, have predicted that dispersion, diffusion, and adsorption will occur when this flushing remedy is implemented, resulting in compliance with the 10 ppb arsenic water quality objective within a reasonable period of time. Further, because of institutional controls contemplated by the remedy, no water supply wells are anticipated within the injection zone or resulting arsenic plume, so injected, non-native groundwater will not impact probable future beneficial uses within the arsenic plume.

Therefore, with respect to the remedy at the Topock Site, and subject to the following limitations, the State Water Board concludes that groundwater from the HNWR-1 well, despite temporarily exceeding the water quality objective for arsenic, may be injected at the Topock Site to ensure timely and effective implementation of the in-situ flushing remedy in order to protect public health and the environment.

- This conclusion is based on modeling that shows the limited spatial and temporal extent of the injected groundwater arsenic plume. Current modeling projects that any exceedance of the arsenic water quality objective will be limited to 150 feet radially away from the injection well locations. Monitoring wells must be established to confirm this modeling prediction. If the leading edge of the arsenic plume extends more than 150 feet away from the injection well locations, PG&E must immediately re-assess its modeling calculations and quickly identify interim actions it can take to limit the migration of the arsenic plume. These interim actions may include triggering activation of the

[1] As discussed below, PG&E is evaluating other potential water supply well sources on the Arizona side of the Colorado River. Even if those other sources do not provide a superior water quality to HNWR-1, but are instead used because they provide a more sustainable source of injection water, the conclusions expressed in this letter for HNWR-1 would be equally applicable to those other Arizona sources.

contingency plan for arsenic pretreatment PG&E was directed by DTSC to include in its 60 percent groundwater remedy design. In the event the arsenic plume exceeding the water quality objective extends 225 feet from any of the points of injection, then PG&E shall immediately cease further injection of untreated water from the HNWR-1 well and DTSC should either (i) require pretreatment to remove arsenic prior to injection or (ii) require another source of freshwater in order to meet the water quality objective.

- This conclusion is further based on the absence of any existing or probable future drinking water use downgradient of the injection wells within the modeled arsenic plume. DTSC's selected remedy contemplates restrictions on drinking water and irrigation supply wells within the hexavalent chromium plume. Federal land managers have established, and will maintain until groundwater ARARs are achieved, similar institutional controls for lands under their jurisdiction. Comparable restrictions should apply to the modeled arsenic plume. Nonetheless, in the unlikely event that a drinking water well is developed near the injection well locations, the injection shall be managed to assure full compliance with water quality objectives at the monitored drinking water well. This will require further modeling to account for the capture zone of any newly developed drinking water well.

- This conclusion is further based on existing modeling showing that the arsenic concentration in the groundwater impacted by the injection will return to natural background levels within 20 years after ceasing injection of water containing the naturally occurring arsenic. This is a reasonable period of time given the other factors identified in this letter.

- Finally, this conclusion is based on existing data and analyses concerning the lack of readily available potable water for direct injection. PG&E, under DTSC's direction, is continuing to evaluate alternative sources of freshwater that could be directly injected in immediate compliance with the arsenic water quality objective or at arsenic levels below HNWR-1 levels. While most of the freshwater source alternatives have been eliminated based on production quantities, cost, or cultural issues, PG&E and DTSC are investigating one additional well location within the Havasu National Wildlife Refuge in Arizona (Site B) and also evaluating deeper wells in the immediate vicinity of the HNWR-1 well. That investigation is on-going, and PG&E will be providing the water quality and quantity results in a formal report in the near future. If those results show that the Site B well or the deeper wells tested in the immediate vicinity of HNWR-1 can produce water of a superior quality to HNWR-1, those wells should be developed and used for the Topock remedy instead of HNWR-1.

cc: Next Page

cc: Karen Baker, CEG, CHG
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APPENDIX WETLAND

Wetlands and Waters of the United States, Final Delineation for the Topock Compressor Station Groundwater Remediation Project, San Bernardino County, California

Topock Project Executive Abstract

Document Title:

Wetlands and Waters of the United States, Final Delineation for the Topock Compressor Station Groundwater Remediation Project (PGE20130822A)

Submitting Agency: DTSC, DOI

Final Document? ☒ Yes ☐ No

Date of Document: April 18, 2014

Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) – PG&E

Priority Status: ☐ HIGH ☐ MED ☒ LOW
Is this time critical? ☐ Yes ☒ No

Type of Document:
☐ Draft ☒ Report ☐ Letter ☐ Memo

☐ Other / Explain:

Action Required:
☒ Information Only ☐ Review & Comment
Return to: _____

By Date:_____
☐ Other / Explain:

What does this information pertain to?
☐ Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA)
☐ RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment)
☐ Corrective Measures Study (CMS)/Feasibility Study (FS)
Corrective Measures Implementation (CMI)/Remedial Action
☒ California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)
☐ Interim Measures
☐ Other / Explain:

Is this a Regulatory Requirement?
☒ Yes
☐ No
If no, why is the document needed?

What is the consequence of NOT doing this item? What is the consequence of DOING this item?
This report complies with the EIR mitigation measure BIO-1. If this work was not performed, it would constitute a non-compliance with the EIR mitigation measure BIO-1.

Other Justification/s:
☐ Permit ☐ Other / Explain:

Brief Summary of attached document:

The Final Environmental Impact Report (EIR) for the Topock Compressor Station Groundwater Remediation Project prescribes mitigation measures to reduce impacts associated with the groundwater cleanup. Mitigation measures for biological impacts included BIO-1, which requires a field survey for delineation of Wetlands and Waters of the United States (U.S.), and for use in remedy design planning to be protective of jurisdictional waters and wetlands and associated habitat. The field work was performed in February and December 2012. This report presents the results of the field survey and detailed maps showing the delineation and classification of riverine and palustrine wetlands, as well as other information such as field data sheets, soil logs and transect notes; other water level, soil and botanical data reviewed with the survey; and photographs. This delineation was submitted in August 2013 for review by the California Department of Toxic Substances Control (DTSC) and the U.S. Department of the Interior. The DTSC and DOI had no comments, and this delineation is now submitted as final.

Written by: PG&E

Recommendations:
This report is for your information only.

How is this information related to the Final Remedy or Regulatory Requirements:

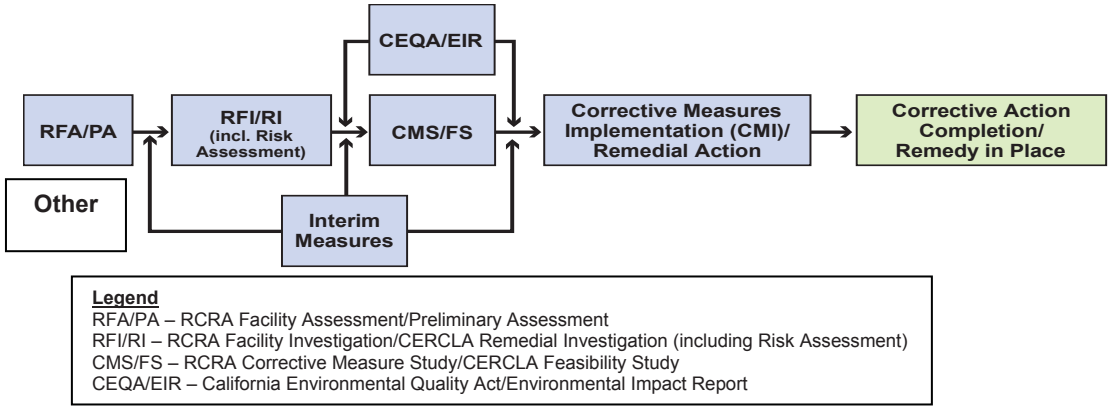
This report presents data collected for use with the remedy design. The Wetlands and Waters of the U.S. Final Delineation Report complies with EIR mitigation measure BIO-1.

Other requirements of this information?

None.

Related Reports and Documents:

Click any boxes in the Regulatory Road Map (below) to be linked to the Documents Library on the DTSC Topock Web Site (www.dtsc-topock.com).



Legend
RFA/PA – RCRA Facility Assessment/Preliminary Assessment
RFI/RI – RCRA Facility Investigation/CERCLA Remedial Investigation (including Risk Assessment)
CMS/FS – RCRA Corrective Measure Study/CERCLA Feasibility Study
CEQA/EIR – California Environmental Quality Act/Environmental Impact Report

Version 9

Pacific Gas and Electric Company

Yvonne J. Meeks
Manager

Environmental Remediation

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April 18, 2014

Mr. Aaron Yue
Project Manager
California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630

Subject: *Wetlands and Waters of the United States, Final Delineation for the Topock Compressor Station Groundwater Remediation Project, San Bernardino County, California* (Document ID: PGE20130822A)

Dear Mr. Yue:

Enclosed is the *Wetlands and Waters of the United States, Final Delineation for the Topock Compressor Station Groundwater Remediation Project, San Bernardino County, California*. This report complies with EIR mitigation measure BIO-1 (excerpt below), and will be used in groundwater remedy design.

"Before any ground-disturbing project activities begin in areas that contain potentially jurisdictional wetlands, the wetland delineation findings shall be documented in a detailed report and submitted to USACE for verification as part of the formal Section 404 wetland delineation process and to DTSC."

Please note that in a letter dated July 10, 2013, the USACE confirmed that a Section 404 permit is not required for the Topock remediation project because the site is exempted under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121(e)(1). The USACE also confirmed that it will not verify a jurisdictional delineation for this action because a permit is not required. Therefore, PG&E is not submitting this report to the USACE.

This delineation was submitted in August 2013 for review by the California Department of Toxic Substances Control (DTSC) and the U.S. Department of the Interior. The DTSC and DOI had no comments, and this delineation is now submitted as final.

Please contact me at (805) 234-2257 or Virginia Strohl at (559) 263-7417 if you have any questions on the delineation.

Sincerely,

Yvonne Meeks
Topock Project Manager

Enclosure
Wetlands and Waters of the United States, Final Delineation for the Topock Compressor Station Groundwater Remediation Project, San Bernardino County, California

cc: Karen Baker/DTSC
Pam Innis/DOI

Wetlands and Waters of the United States, Final Delineation for the Topock Compressor Station Groundwater Remediation Project San Bernardino County, California

Prepared for

Pacific Gas and Electric Company

April 18, 2014

Contents

Appendices

Acronyms and Abbreviations

°F	degrees Fahrenheit
BNSF	Burlington Northern-Santa Fe
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CWA	Clean Water Act
DTSC	California Department of Toxic Substances Control
EM	Emergent
FACW	facultative wetland
FEIR	Final Environmental Impact Report
GPS	Global Positioning System
HUC	Hydrologic Unit Code
I-40	Interstate 40
msl	mean sea level
NHD	National Hydrologic Dataset
NRCS	Natural Resources Conservation Service
OBL	obligate
P	Palustrine
PEMC	Palustrine Emergent Seasonally Flooded
PEMH	Palustrine Emergent Permanently Flooded
PG&E	Pacific Gas and Electric
PSSA	Palustrine Scrub-Shrub Temporarily Flooded
PSSB	Palustrine Scrub-Shrub Saturated
PUBHx	Palustrine Unconsolidated Bottom Permanently Flooded Excavated
R	Riverine
RCRA	Resource Conservation and Recovery Act
R2UB2	Riverine Lower Perennial Unconsolidated Bottom Sand
R2UB2x	Riverine Lower Perennial Unconsolidated Bottom Sand Excavated
R4SB3A	Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded
SS	Scrub-Shrub
UB	Unconsolidated Bottom
U.S.	United States

USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

SECTION 1

Introduction

This report presents the results of a wetland and waters delineation for the Pacific Gas and Electric (PG&E) Topock Compressor Station Groundwater Remediation Project in San Bernardino County, California. Wetlands and other waters are ecological habitats protected under the federal Clean Water Act (CWA). Activities that discharge dredged or fill materials into waters of the United States (U.S.), including wetlands, typically must be authorized by the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA. Additionally, any structures or fill material placed within a navigable water of the U.S. generally require authorization from the USACE under Section 10 of the Rivers and Harbors Act. Activities implemented for the Topock groundwater remediation on-site, however, are part of a CERCLA response action, and as such are covered under the permit exemption codified in Section 121(e)(1) of CERCLA. CERCLA Section 121(e)(1) provides that: "No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on-site where such remedial action is selected and carried out in compliance with this section." 42 U.S.C. § 9621(e)(1). Due to the application of the permit exception, PG&E is not required to comply with the administrative or procedural elements (e.g., preparing and submitting permit applications and obtaining permits) of applicable law, but must comply with the substantive requirements of such laws. Further, the USACE's Nationwide Permit 38 states that "Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act." Accordingly, here, the USACE has confirmed in a letter dated July 10, 2013 that no permit is required from the USACE. The USACE has also stated that it will therefore not verify the wetland and waters delineation contained herein (G. Salas USACE, e-mail communication to V. Nez PG&E, July 12, 2013 – included in Appendix A).

A general description of the project location and environmental setting are provided below. Survey methods and results are provided in Sections 2 and 3, respectively.

1.1 Project Description

In December 1951, the Topock Compressor Station began operations to compress natural gas supplied from the southwestern U.S. for transport through pipelines to PG&E's service territory in central and northern California. The compressor station is still active and is anticipated to remain active into the foreseeable future. The operations at the compressor station consist of six major activities: water conditioning; compressing natural gas; cooling compressed natural gas and compressor lubricating oil; wastewater treatment; facility and equipment maintenance; and miscellaneous operations.

In 1996, PG&E entered into a Corrective Action Consent Agreement with the California Department of Toxic Substances Control (DTSC) to oversee the investigation and remediation of the Topock Compressor Station site under California state law. DTSC is the California state lead agency authorized to direct investigative activities in the action area in accordance with the Resource Conservation and Recovery Act (RCRA). In July 2005, PG&E and the Federal Agencies entered into an Administrative Consent Agreement under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). DTSC issued a Final Environmental Impact Report (FEIR) for the project in January 2011. In 2012, PG&E and the United States executed a Consent Decree ("CD") for the Remedial Design/Remedial Action and it was lodged with the U.S. District Court for the Central District of California in January 2013. The CD will be effective upon approval by the court.

The purpose of this wetlands delineation is to determine the presence of and map the extent of wetlands and other waters of the U.S. located within the EIR project area and additional study areas identified on Figure 1-2 (Wetlands Delineation Study Area). PG& E will take appropriate and practical steps to avoid and/or minimize impacts to these areas, consistent with Section 404 of the CWA. Under the CERCLA exception no federal permit is required from the USACE; however, PG&E is obligated to comply with any substantive elements that would normally be required by the permit.

This report is also submitted to DTSC in satisfaction of Final EIR (FEIR) mitigation measure BIO-1.

BIO-1 requires that:

> "If during the design process it is shown that complete avoidance of habitats under USACE jurisdiction is not feasible, the Section 404 permitting process shall be completed, or the substantive equivalent per CERCLA Section 121(e)(1). In either event, the acreage of affected jurisdictional habitat shall be replaced and/or rehabilitated to ensure 'no-net-loss' Before any ground-disturbing project activities begin in areas that contain potentially jurisdictional wetlands, the wetland delineation findings shall be documented in a detailed report and submitted to USACE for verification as part of the formal Section 404 wetland delineation process and to DTSC. For all jurisdictional areas that cannot be avoided as described above, authorization for fill of wetlands and alteration of waters of the United States shall be secured from USACE through the Section 404 permitting process before project implementation. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods agreeable to USACE and consistent with applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented.
>
> Alternatively, if USACE declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, the substantive equivalent of the Section 404 permitting process shall be complied with by ensuring that the acreage of jurisdictional wetland affected is be replaced on a "no-net-loss" basis in accordance with the substantive provisions of USACE regulations. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods consistent with USACE methods, and consistent with the purpose and intent of applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented. In any event, a report shall be submitted to DTSC to document compliance with these mandates."

Based on the application of the CERCLA permit exemption and the plain language of BIO-1, because the USACE has determined that no Section 404 permit is required and consistent with USACE direction, PG&E is not seeking verification from the USACE for the wetlands and waters of the U.S. delineation contained in this report. Rather, PG&E assumes that the jurisdictional waters and wetlands delineated in the report, and identified as such in Figures 1-3 through 3-8, are all jurisdictional waters under Section 404 of the CWA.

1.2 Project Location and Land Use

The Topock Compressor Station is located near the California and Arizona border in eastern San Bernardino County, approximately 12 miles southeast of the city of Needles, California (Figure 1-1). Topock, Arizona is located approximately one-half mile to the east of the compressor station. Access to the compressor station is from the Park Moabi Road exit off of Interstate 40 (I-40). At Moabi Regional Park, the roadway connects to National Trails Highway, which extends eastward and then southward for approximately two miles along the Colorado River to the Topock Compressor Station.

For the purposes of this wetland delineation, the 1,169-acre wetland delineation survey area includes the following sites (Figure 1-2):

- The 780-acre project area covered in the EIR
- 389 acres evaluated for three potential locations of freshwater well sites in Arizona: Site A (93.5 acres), Site B and an existing location of a Havasu National Wildlife Refuge well site (182.7 acres), and Site C (112.8 acres). Site B is still under consideration for a freshwater well site, while Sites A and C have been eliminated from consideration. The U.S. Department of Interior ("DOI"), in a letter to PG&E dated March 26, 2013, determined that elimination of Sites A and A-Alt was in the best interests of the Havasu National Wildlife Refuge. Additionally, per a December 31, 2012 letter from DTSC to PG&E, DTSC determined that Site C would not be approved due in part to the proximity of Site C to culturally sensitive areas and a BLM-designated Area of Critical Environmental Concern.

The survey area is located on the Whale Mountain and Topock U.S. Geological Survey (USGS) Quadrangles. In California the survey area occurs in Sections 5, 6, 7, 8 and 9 of Township 07 north, Range 24 east; Section 1 of Township 07 north, Range 23 east; and Section 36 of Township 08 north, Range 23 east. In Arizona, the survey area occurs in Sections 34 and 35 of Township 16 north, Range 21 west; and in Section 2 of Township 15 north, Range 21 west. The Topock Compressor Station is located at 34.7143 degrees north latitude and 114.4930 degrees west longitude.

Land use in the survey area is primarily open space, with several prominent exceptions. I-40 and the Burlington Northern-Santa Fe (BNSF) railway roughly bisect the southern part of the survey area in an east-west direction. On the Arizona side, Highway 95 roughly bisects the survey area from north to south. The compressor station, a pipeline metering station, and other developed facilities associated with remedial and investigative measures are located in the southern portion of the survey area. Moabi Regional Park and the Pirate Cove Resort and Marina are located in the western portion of the survey area. These developed areas include numerous mobile home sites, boat docks, parking areas, campgrounds and other associated buildings, facilities, and infrastructure. The Topock Marina and private residences are located on the Arizona side of the river, near the BNSF railway and I-40 bridges. Various unpaved roadways as well as gas transmission pipelines traverse the survey area; these are primarily sub-surface pipelines, with occasional above-ground segments (e.g., to bridge ravines or the river).

Land ownership in the survey area includes parcels owned by PG&E, as well as lands owned and/or managed by federal and local government agencies that include the Bureau of Land Management, the U.S. Fish and Wildlife Service (Havasu National Wildlife Refuge), the U.S. Bureau of Reclamation and San Bernardino County; lands owned by the Fort Mojave Indian Tribe; BNSF; California Department of Transportation; and privately owned parcels.

1.3 Environmental Setting

Most of the survey area is located in the Piute Valley-Sacramento Mountains ecological subsection of Mojave Desert Ecological Section (Miles and Goudey 1998). Approximately half of the subsection is characterized by steep mountains, moderately sloping piedmonts and alluvial fans, and half of the subsection is characterized by alluvial plains and a nearly level basin floor (Miles and Goudey 1998). The survey area is located in the U.S. Department of Agriculture's (USDA) Land Resource Region D – Western Range and Irrigated Region (Natural Resources Conservation Service [NRCS] 2006a). This is the largest of the Land Resource Regions and includes the semi-desert plateaus, plains, basins and mountains from southeastern Oregon to the Mexico border throughout eastern California and extends eastward into southwestern Texas and northward into Wyoming.

Locally, the survey area is characterized by rocky slopes, moderately to deeply-dissected alluvial terraces, gently sloped sand dunes comprised of dredge river sands and the nearly level basin and terraces east of the Topock Marsh. Topography in the survey area ranges from approximately 455 feet above mean sea level (msl) along the Colorado River to over 800 feet above msl to the south and southwest. The following sections provide additional information on the terrestrial vegetation, climate, hydrology, geology, and soils.

1.3.1 Terrestrial Vegetation and Land Cover Types

Approximately 14 percent of the survey area is characterized by developed and landscaped areas. Four terrestrial plant community types, including creosote bush scrub, tamarisk thickets, blue palo verde woodlands and arrow weed thickets account for nearly 64 percent of the terrestrial land cover types. Open water associated with the Colorado River and Park Moabi Slough account for approximately 10 percent of survey area. Approximately 4 percent of the survey area includes a part of the Havasu National Wildlife Refuge that burned during a 2008 wildfire. In 2011, the U.S. Fish and Wildlife Service cleared this area of dead trees and woody debris and the area was essentially devoid of vegetation at the time of the 2012 survey. The remaining land cover is comprised of various natural vegetation communities that collectively make up less than 8 percent of the total land cover. Descriptions of the four primary terrestrial vegetation communities in the survey area are provided in the following sections. A vegetation map of the survey area is provided in Appendix A).

1.3.1.1 Creosote Bush Scrub

The most common and widespread plant community in the survey area is creosote bush scrub. This vegetation type is characterized by widely-spaced creosote bush (*Larrea tridentata*) with associated species such as allscale saltbush (*Atriplex polycarpa*), white bur-sage (*Ambrosia dumosa*), white rhatany (*Krameria bicolor*), brittlebush (*Encelia farinosa*), beavertail (*Opuntia basilaris* var*. basilaris*), silver cholla (*Cylindropuntia echinocarpa*), and desert trumpet (*Eriogonum inflatum*)*.* Creosote brush scrub occurs throughout the dissected alluvial terraces in the survey area.

1.3.1.2 Tamarisk Thicket

Tamarisk thicket is primarily found on the sandy terraces along the Colorado River and Park Moabi Slough as well as along the east side of Highway 95. This vegetation type is also found near the terminus of the larger ephemeral washes in the dissected terraces south of the National Trails Highway. Vegetation is characterized by open to dense stands of the non-native and invasive saltcedar (*Tamarix ramosissima*) and/or athel (*Tamarix aphylla*), which occur as monocultures in many locations. In other areas associated trees and shrubs include honey mesquite (*Prosopis glandulosa* var*. torreyana*), screw bean (*Prosopis pubescens*), blue palo verde (*Parkinsonia florida*), and arrow-weed (*Pluchea sericea*). Herbaceous vegetation is absent with in dense tree/shrub stands. Scattered species such as fan-leaf tiquilia (*Tiquilia plicata*), Spanish needle (*Palafoxia arida*) and *Cryptantha* spp. are commonly found in the understory of more open tree/shrub stands.

1.3.1.3 Blue Palo Verde Woodland

Blue palo verde woodland occurs along the edges and channel bottoms of the ephemeral washes in the dissected terraces in the southern and western parts of the survey area and is also found on the low sandy hills at the northern end of the survey area along the Highway 95. Total vegetation cover is generally low, but species diversity is relatively high as compared to the other vegetation types in the area. Blue palo verde is the dominant tree with scattered saltcedar, athel, and smoke tree (*Psorothamnus spinosus*) also present in some areas. Associated shrubs include catclaw (*Senegalia greggii*), Anderson's box-thorn (*Lycium andersonii*), brittlebush, sweetbush (*Bebbia juncea* var*. aspera*), cheesebush (*Ambrosia salsola*), trailing townula (*Funastrum hirtellum*), desert lavender (*Hyptis emoryi*), white bur-sage, white rhatany, and creosote bush. Common herbaceous species include spurge (*Chamaesyce* spp.), small-flowered California poppy (*Eschscholzia minutiflora*), Emory's rock daisy (*Perityle emoryi*), Spanish needle, and Arizona lupine (*Lupinus arizonicus*).

1.3.1.4 Arrow-Weed Thicket

Arrow-weed thicket is found on the low sandy terraces along the Colorado River and Park Moabi Slough. Arrow-weed is the sole dominate shrub species occurring in open sandy areas, with widely scattered shrubs to dense, nearly impenetrable stands. Occasional associated species include saltcedar, smoke tree, honey mesquite, brittlebush, allscale saltbush and broom baccharis (*Baccharis sarothroides*). Scattered herbaceous vegetation in the more open areas includes fan-leaf tiquilia, Spanish needle, *Cryptantha* spp., and Mediterranean grass (*Schismus barbatus*).

1.3.2 Climate and Hydrology

Regional climate data was obtained from Needles Airport, located approximately 7.5 miles northwest of the survey area. Average monthly temperatures range from a low of 42 degrees Fahrenheit (°F) in December and January to a high of 109°F in July. Average annual precipitation is 4.5 inches with rainfall occurring during summer thunderstorms between July and September and winter rains between January and March. Very little rainfall occurs in May and June. The growing season, defined as having a 50-percent probability of temperatures at or above 32°F, extends throughout the year for a total of 365 days (NRCS 2002).

The majority of the survey area is located within the Havasu – Mohave Lakes Watershed (Hydrologic Unit Code [HUC] 15030101). Most of the survey area, including the areas to the north and west of the compressor station, is located within Bat Cave Wash – Colorado River Subwatershed, which encompasses approximately 35 square miles in California and Arizona. A small portion of the survey area to the south and east of the compressor station is in the Mohave Wash – Colorado River Subwatershed which encompasses approximately 56 square miles in California and Arizona. The area along Highway 95 is located in the Sacramento Wash Watershed (HUC 15030103)

which has a total drainage area of 1,290 square miles, extending north and west of Kingman, Arizona and south in the vicinity of Lake Havasu City, Arizona. This part of the survey area is located in the Powel Peak – Sacramento Wash Subwatershed, which has a drainage area of approximately 44 square miles.

The Colorado River, located approximately 1,300 feet east of the compressor station, is the primary water feature in the survey area. Within the survey area, the river is approximately 435 to 740 feet wide with an average depth of 9 feet. Flows in this area are regulated by upstream releases from the Davis Dam, approximately 41 river miles upstream of the survey area. Water levels often fluctuate 2 to 3 feet daily and by as much as 5 feet seasonally, with the highest flows generally occurring in the summer months. The Topock Marsh is located northeast of the survey area within the Havasu National Wildlife Refuge. On the California side of the Colorado River, the local surface water drainage flows toward the river from the south and west towards the lower elevations to the north and east. On the Arizona side of the river, surface water drainage gradients flow from east to west with water draining directly into either the Topock Marsh or the Colorado River.

1.3.3 Geology and Soils

The survey area is located in the Basin and Range geomorphic province which is characterized by parallel fault-block mountains and alluvial valleys. The majority of the survey area is located on a north sloping piedmont characterized by deeply dissected terraces with steep canyon walls. These terraces are composed of Tertiary and Quaternary alluvium and surficial deposits consisting of moderately consolidated sandy gravel and silty-clayey gravel. The terraces along the Colorado River are comprised of Quaternary and recent floodplain deposits. The older fluvial deposits in this area consist primarily of sand and gravel (ranging in size from pebble to cobble), with fine grained sand and silt/clay also present in some areas. Younger deposits consist of sandy gravel, gravelly sand, and well-sorted fine sand and silt/clay. Most of the fluvial deposits north of I-40 and the BNSF railroad have been covered with dredged sands. The Chemehuevi Mountains, located south of the compressor station, are comprised of Miocene Age sedimentary and volcanic rocks including Metadiorite, Gneiss, and Granitics.

No published soil survey is available for the California side of the survey area. General soils types in this area were inferred based on information provided in the FEIR and the *Soil Survey of Mohave County, Arizona, Southern Part* (NRCS 2006b). Lower elevation areas within the survey area are likely characterized by soils belonging to the Gilman Series where higher elevations are likely characterized by Calvista Soils. The dredged sands on the terraces along the Colorado River are likely part of the Lagunita Series. Mapped soil types in the survey area in Arizona include: Carrizo Family very gravelly loamy sand, Coolidge-Denure Families Complex, Gunsight very gravelly sandy loam, Huevi very gravelly loam, Lagunita sand and Rositas Family superstition and torriorthents soils (NRCS 2006). General information on soil characteristics was obtained from *Soil Survey of Mohave County, Arizona, Southern Part* (NRCS 2006b) and the NRCS (2012) *Official Soil Series Descriptions.* General soil descriptions are provided below. All soil colors are for moist soils. Soils maps and detailed descriptions are provided in Appendix B.

1.3.3.1 Gilman Series

The Gilman series includes very deep, well drained soils that formed in stratified stream alluvium. These soils occur on nearly level flood plains and alluvial fans. In a typical profile the surface is a brown (10 YR 4/3), moderately alkaline (pH 8.0) loam to a depth of 13 inches. From 13 to 28 inches the soil is a brown (10 YR 4/3), moderately alkaline (pH 8.0), very fine sandy loam. These soils have slow runoff and moderate permeability.

1.3.3.2 Calvista Series

Soils in the Calvista series include well drained, shallow soils formed from granitic rock sources. These soils occur on mountain ridges with slopes up to 30 percent. In a typical profile the surface is a brown (10 YR 5/3), moderately alkaline (pH 8.0) sandy loam to a depth of 7 inches. From 7 to 16 inches the soil is a yellowish brown (10 YR 5/4), moderately alkaline (pH 8.4) heavy sandy loam. Hard granitic rock is encountered below 16 inches. These soils have medium to rapid runoff and moderately rapid permeability.

1.3.3.3 Lagunita Series

The Lagunita series includes very deep, excessively drained soils that formed in stratified stream alluvium from mixed sources. These soils are found on level to slightly sloped floodplains. In a typical profile the surface is a dark brown (10 YR 3/3), moderately alkaline (pH 8.0) loamy sand. Between 8 and 30 inches the soil is a brown

(10 YR 3/3), moderately alkaline (pH 8.2), weakly stratified loamy sand. These soils have low runoff and rapid permeability.

1.3.3.4 Carrizo Series

Carrizo soils are very deep, excessively drained soils that formed in mixed igneous alluvium. These soils are found on floodplains, fan piedmonts and basin floors. In a typical profile the surface is covered with approximately 70 percent gravel and around 10 percent mixed cobbles and stones. The surface layer is a brown (10 YR 4/3), moderately alkaline (pH 8.0), extremely gravelly sand to a depth of 2 inches. From 2 to 60 inches the soil is a pale brown (10 YR 6/3), moderately alkaline (pH 8.4) extremely to very gravelly coarse sand. These soils have negligible to low runoff and high saturated hydraulic conductivity.

1.3.3.5 Coolidge Series

Coolidge soils are very deep, well drained soils derived from fan and stream alluvium. These soils occur on stream and fan terraces and relict basin floors. In a typical profile the surface is a light yellowish brown (10 YR 4/3), moderately alkaline (pH 8.2), sandy loam to a depth of 13 inches. From 13 to 24 inches the soil is a dark yellowish brown (10 YR 4/4), moderately alkaline (pH 8.2), sandy loam. The soils have very low to medium runoff and moderately rapid permeability.

1.3.3.6 Denure Series

Denure soils are very deep, somewhat excessively drained soils found on relict basin floors, stream terraces and fan terraces. These soils formed in material derived from fan or stream alluvium. In a typical profile the A horizon is only one inch thick and is brown (7.5 YR 4/3), slightly alkaline (pH7.6) gravelly sandy loam. The B horizon (1 to 30 inches) consists of a brown (7.5 YR 4/4) gravelly sandy loam. Soil in the upper part of the B horizon are slightly alkaline (pH 7.6) but become moderately alkaline (pH 8.2) below 12 inches. Gravel makes up between 20 and 30 percent of the profile in the upper 30 inches. The soils have medium runoff where they occur on moderate to gentle slopes and very low to low runoff on nearly level slopes. Permeability is moderately rapid.

1.3.3.7 Gunsight Series

Gunsight soils occur on fan and stream terraces were they formed in alluvium derived from mixed sources. These soils are very deep, somewhat excessively drained and strongly calcareous. In a typical profile the surface is a brown (10 YR 4/4), moderately alkaline (pH 8.2) very gravelly loam to a depth of 2 inches. From 2 to 60 inches the soil is a pinkish gray (7.5YR 5/2 and brown (7.5 YR 5/4) very to extremely gravelly loam. Soils are moderately alkaline (pH 8.2-8.3) in the upper 10 inches but are strongly alkaline (pH 8.5) between 10 and 18 inches. Gravel comprises between 40 to 70 percent of the profile. These soils have very low to high runoff and moderate to moderately rapid permeability.

1.3.3.8 Huevi Series

These soils are found on fan remnants and fan terraces. This series consists of very deep, well drained soils that formed in mixed gravelly alluvium. In a typical profile the surface is a strongly alkaline (pH 8.5) extremely gravelly sandy loam to a depth of 5 inches. From 5 to 18 inches the soils is a brown (10 YR 4/3), moderately alkaline (pH 8.4) very gravelly sandy loam. Below 18 inches the soil is a brown (10 YR 4/3) extremely cobbly coarse sandy loam to a depth of 60 inches. These soils have low to high runoff and moderate to moderately rapid permeability.

1.3.3.9 Rositas Series

The Rositas series includes very deep, somewhat excessively drained soils formed in sandy eolian material. These soils are found on dunes and sand sheets. In a typical profile the soil is a strong brown (7.5 YR 5/6), moderately alkaline (pH 8.0) fine sand to a depth of 60 inches. These soils have negligible to low runoff and rapid permeability.

SECTION 2

Methods

A wetland delineation was completed for the 780-acre EIR project area by Wetland Ecologist Russell Huddleston and Botanist Dr. Kim Steiner between February 13 and 17, 2012. Additional wetland delineation surveys of the 182.7 acres along Highway 95 that include the existing Havasu National Wildlife Refuge well site and proposed new freshwater well location B, were completed by Mr. Huddleston and Biologist Melissa Fowler on July 16 and 17, 2012. Wetland delineation surveys for the 93.5-acre formerly proposed well site A and 112.8 –acre formerly proposed well site C were completed by Mr. Huddleston on December 12 and 13, 2012. The wetland delineation survey area is shown in Figure 1-2.

The purpose of the wetland delineation surveys was to determine the geographical boundaries of wetlands and other non-wetland waters of the U.S. within the 1,169-acre wetland delineation survey area. Wetland maps prepared in 2005 as part of the draft Environmental Impact Report and detailed vegetation mapping of the EIR project area completed in 2010 were used as a basis for this report. The 2005 wetlands and ephemeral wash polygon data was loaded onto a Trimble® Global Positioning System (GPS) device that was used throughout the delineation. High resolution aerial photograph base maps, showing the previously mapped boundaries, were also utilized during the survey. The primary focus of the field delineation was to confirm and update the 2005 wetland maps, provide additional documentation based on the 2008 USACE Arid Region Supplement to the Corps Wetland Delineation Manual, as well as to identify and map wetland and waters in the added study area (Figure 1-2). The following sections describe the pre-field investigations, field sampling procedures, methods used to delineate the wetlands boundaries, and wetland classification.

2.1 Pre-field Investigation

In addition to the Hydrologic and Wetland Resources Sections of the Draft and Final Environmental Impact Reports, other relevant information pertaining to site conditions, wetlands and other water resources were reviewed prior to conducting the wetland delineation surveys. The following materials (provided in the appendices as indicated) were included in this data review:

- Existing vegetation map of the EIR project area (A complete vegetation map of the wetland delineation survey area is included in Appendix A)
- Arizona soil maps and descriptions (Appendix B)
- Historical aerial photographs and information on dredging history (Appendix C)
- USGS river gauge (09423550) at the Topock Marsh inlet near Needles, California (Appendix D)
- Information from on-site ground water monitoring wells and surface water elevation data from the Final EIR (Appendix E)
- National Wetlands Inventory maps (Appendix F)
- National Hydrologic Data Set maps (Appendix G)
- USGS Topock and Whale Mountain topographic quadrangle maps (Appendix H)

2.2 Wetlands Delineation

The wetlands delineation methodology, described in this report, followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). This included consideration of potential "vernal pools, grassy playas, seeps, springs, and riparian wetlands associated with ephemeral, intermittent, and perennial streams and rivers." Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008) at 14.

A total of 37 sample points (Figures 3-1 through 3-8) were established to characterize wetland areas, adjacent uplands, and the terraces along the Colorado River, Park Moabi Slough and Topock Marsh. To the extent possible, at least one sample point was taken from within each wetland area, and one sample point was taken in the adjacent upland habitat. In a few locations, steep topography or dense vegetation prevented the establishment of sample points. Seven broad transects were established along the low terraces along Colorado River and Park Moabi Slough and three transects were established east of the Topock Marsh. Transects were distributed in such a way as to include at least one sample point in each vegetation type present on the lower terraces.

At each sample location information on vegetation, soil, and hydrology indicators was recorded on a wetland determination data sheet. Wetland determination data sheets are provided in Appendix I. Patches of emergent vegetation such as southern cattail (*Typha domingensis*), common reed (*Phragmites australis*), giant reed (*Arundo donax*) and southern bulrush (*Schoenoplectus californicus*) growing below the ordinary high water mark along the shoreline of the Colorado River and Park Moabi Slough were characterized and mapped from a boat. No sample points were taken in these locations. Representative site photographs are included in Appendix J.

The following sections provide additional details on the field methods used during the wetlands delineation.

2.2.1 Vegetation

At each sample point, plant species were identified and the percent cover was visually estimated and recorded. Herbaceous vegetation was sampled in an approximately 5-foot radius around the sample point. Trees and shrubs around each sample point were recorded in a 30-foot and 10-foot radius, respectively. Taxonomic designations follow *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). The wetland indicator status was determined using the *North American Digital Flora: National Wetland Plant List, version 2.4.0* (Lichvar and Kartesz 2009). Dominant species included the most abundant species whose cumulative cover accounted for at least 50 percent of the total cover, and any single species that accounted for at least 20 percent of the total vegetative cover. Strata with less than 5 percent total cover were not included in the dominance test. A list of plant species observed in the survey area is included in Appendix K.

2.2.2 Soils

Descriptions of soils were made by examining soil pits excavated using a 3-inch diameter hand auger and/ or a shovel. Test pits were generally excavated to a depth of at least 24 inches; however, in a few locations the depth of excavation was limited by large cobbles and gravels. At each sample point, soil morphological features such as texture, color, and redoximorphic features (if present) were noted. Soil texture was estimated in the field by feel (Thien 1979), and moist soil colors were determined using Munsell® color charts. Chemical dyes including Bromthymol Blue and Thymol Blue were used to determine soil pH at some sample locations. In areas where no hydric soil indicators were observed, hydric conditions were assumed to be present where the following conditions existed:

- Dominant vegetation was composed entirely of obligate (OBL) and facultative wetland (FACW) plant species as indicated on the *North American Digital Flora: National Wetland Plant List, version 2.4.0* (Lichvar and Kartesz 2009)
- There was evidence of seasonal wetland hydrology
- There was a noticeable difference between the vegetation and/or topographic position of the wetland area and the adjacent upland habitat

2.2.3 Hydrology

The presence of wetland hydrology was determined based on field observations or other indicators of surface water, shallow ground water or saturated soils. Surface and ground water elevations recorded during periods of peak flows (May-July) of the Colorado River from on-site gauges and existing monitoring wells were also used to determine the presence or absence of wetland hydrology (Appendix E). Seasonal rainfall, site drainage, landscape position, and general site topography were also taken into consideration while making wetland hydrology determinations.

2.2.4 Wetland Boundary Determination and Mapping

Wetland boundaries were determined in the field based on observations of hydrophytic vegetation, the presence of wetland hydrology or hydrology indicators, and site topography. Soil characteristics were generally not useful in differentiating the wetlands boundaries. A Trimble® GPS unit with the 2005 wetlands boundaries loaded as a background file and 2005 wetlands maps overlaid on high resolution aerial photographs were used in the field to confirm or update the wetlands boundaries. To the extent possible, changes and additions to wetlands boundaries were mapped with the GPS unit and where access was limited, the boundaries were noted on the aerial photograph base maps and later digitized.

2.2.5 Delineation of Non-wetland Waters of the United States

Non-wetland water of the U.S. include such features as rivers, streams, lakes, ponds and ephemeral washes and drainages that are tributary to or have a significant nexus to traditional navigable waters. In the absence of adjacent wetlands, the jurisdiction of the USACE extends to the limits of the ordinary high-water mark, which is defined as “the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 CFR 328.3 [e]). The OHWM serves as the lateral limit of jurisdiction in a non-navigable tributary where there are no adjacent wetlands. 33 CFR 328.4(c).

The limits of the ordinary high water for the Colorado River and Park Moabi Slough were determined based on information from the USGS river gauge near the inlet of the Topock Marsh (Appendix D), surface water elevation data collected from near the I-40 bridge (Appendix E), and field observations of high water marks such as water staining, erosional cut banks and drift debris deposits.

The previously mapped extent of the ephemeral washes and drainages in the survey area were verified and amended as needed by walking the channel bed and noting the characteristics of the feature such as substrate, in channel and adjacent vegetation, and evidence of flows on the active floodplain. In addition, hydrologic modifications such as culverts, impoundments and dams were also recorded and mapped. As with the wetland features, the limits of the previously mapped drainages were loaded onto the Trimble® GPS and included on aerial photograph base maps. In the added survey areas (former Sites A and C, and Site B) and where changes or modifications to the existing data were necessary the channels were mapped using the GPS unit or the revisions were noted on the high resolution aerial photographs and later digitized.

Additional information to support the delineated boundaries of the ephemeral washes was also collected following the methods and procedures described in *A Field Guide to Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008) and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010).

A total of 23 transects (Figures 3-1 through 3-8) were established perpendicular to the flow direction of the channel in the larger ephemeral washes. The hydrogeomorphic floodplain units (low flow channels, active floodplain and low terrace) along each transect (if present) were characterized to determine the extent of the ordinary high water mark. Field observations included sediment size, indicators of flow events such as drift and debris deposits, scouring, mud cracks, defined bed and bank, and the presence or absence of vegetation. The ordinary high water mark was then determined based on the lateral extent of the active floodplain representative of low to moderate flow events that are expected to occur every five to ten years. Transect data sheets are provided in Appendix L. Due to unsafe conditions such as potential flash floods associated with winter storms, no transects were established at former potential well Sites A and C, however, the general channel characteristics and vegetation of these areas were noted at the time of the survey. Sites A and C have been dropped from consideration and will not be impacted by the remediation project.

An additional 34 sample locations (Figures 3-1 through 3-8) were recorded in smaller tributary drainages to the larger washes. These smaller drainage features are generally characterized by a single, relatively narrow low-flow channel confined by relatively steep side slopes, and therefore full transects were not established. However,

similar data on the channel substrate and evidence of flow and vegetation was collected at each sample location. Tributary feature sample point data sheets are also provided in Appendix M.

2.3 Classification

Classification of wetlands and other waters identified during the wetland delineation survey follow the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). This classification methodology was developed by the U.S. Fish and Wildlife Service as part of the National Wetland Inventory program and is the Federal standard used for wetland classification (61 Federal Register 39465). The hierarchical classification includes systems, subsystems, and classes to generally categorize aquatic habitats. Modifiers are used to denote specific water regimes and/or highly altered areas (excavated or impounded wetlands). Additional details on the classification of wetlands identified in the survey area are provided in the following section.

SECTION 3

Results

3.1 Field Conditions

With the exception of recent routine maintenance in a flood control channel through Park Moabi conducted by San Bernardino County and not associated with this project, no significant recent disturbance was observed in the 780-acre EIR project area during the February 2012 field survey. Total rainfall recorded at an onsite weather station between July 2011 and January of 2012 was 2.2 inches. This represents approximately 70 percent of the average rainfall (3.1 inches) for this same period based on long-term records from the Needles Airport, located approximately 7.5 miles northwest of the survey area (WRCC 2012). Average flows in the Colorado River as measured at the USGS Gauge station at the Topock Marsh inlet were 40 cubic feet per second (cfs), which is typical for this time of year (Appendix D). Based on rainfall records from the Needles Airport, as well as observations from onsite staff, the last significant storm event prior to the February 2012 survey that resulted in substantial flows in the ephemeral washes occurred in early 2010, when over 2.6 inches of rainfall (over half the total annual average) fell over a 3-day period from January 19 through January 21.

Both disturbance history and rainfall conditions were significant prior to the July 2012 delineation of the 182.7-acre area along Highway 95 in Arizona (Site B). In October of 2008, a wildfire burned 240 acres of dense tamarisk in the Havasu National Wildlife Refuge on the west side of the highway in this area. After the fire, the U.S. Fish and Wildlife Service began clearing the area of dead trees, logs and woody debris. In the spring of 2011, a portion of the burn area was planted with a variety of native trees, shrubs, and grasses. At the time of the July 2012 delineation, most of the burned area west of the highway was devoid of vegetation, with the exception of the revegetation area planted in 2011.

Immediately prior to the July 2012 delineation, significant rainfall was recorded in the regional vicinity that affected conditions in the Sacramento Wash. Between July 12 and July 14, 2012 a total of 1.08 inches of rainfall was recorded in Lake Havasu City, Arizona and a total of 1.60 inches of precipitation was measured in Kingman, Arizona. These summer rainstorms resulted in high flows within the Sacramento Wash and short duration flooding in some areas of east of the Topock Marsh. Storm water flow in the Sacramento Wash was high enough to cause flooding and deposition of a large amount of sand along a section of Highway 95, temporarily closing the roadway in this area.

Widespread winter rain storms occurred on December 13, 2012 (0.4 inches of precipitation reported at the Needles Airport on this date) resulting in potentially unsafe working conditions in the desert washes. Therefore no transects were established in the additional areas for former potential freshwater well sites A and C, but the general channel characteristics and vegetation in these areas was noted at the time of the survey.

3.2 Wetlands and Waters

Wetlands and other waters identified in the survey area include Riverine and Palustrine wetlands as defined by the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). As shown in Table 3-1 below, a total of 185.66 acres of Riverine wetlands and 15.55 acres of Palustrine wetlands are present in the survey area. Figures 3-1 through 3-8, included at the end of this document, show the extent of wetlands and other waters identified in the survey area as well as sample point and transect locations based on Cowardin et al. (1979). Apart from the classification of wetland types described above, the terms “waters of the U.S.” and “wetlands” have specific regulatory definitions under the CWA. Section 328.3 (a) of the CWA’s implementing regulations defines waters of the U.S. as:

“(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purpose by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.

(8) Waters of the United States do not include prior converted cropland."

Wetlands are defined as areas that are "inundated by surface water or groundwater with a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (Title 40 Code of Federal Regulations [CFR], Section 230.3, and Title 33 CFR, Section 328.3(b).

Wetlands are distinguished from other waters of the U.S. by the following environmental characteristics:

- **Vegetation.** The prevalent vegetation consists of plants that are typically adapted to areas with saturated soil conditions. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic conditions.
- **Hydric Soil.** Hydric soil is a term used to describe a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part (NRCS, 2010).
- **Hydrology**. The area is inundated either permanently or periodically at mean water depths less than 6.6 feet, or the soil is saturated to the surface for at least 5 percent of the growing season or more.

Wetlands and other waters are identified in Table 3-1 and Figure 3-9 shows the extent of jurisdictional wetlands and other non-wetland waters of the U.S. within the limits of the survey area. General descriptions of these wetlands and other waters of the U.S. are provided in the following sections. As discussed further in Section 3.4 below, PG&E assumes in this wetlands delineation that all of the wetlands and other waters delineated in the report, and identified as such in Figures 1-3 through 3-8, are jurisdictional waters under Section 404 of the CWA, with the exception of discontinuous ephemeral drainages.

TABLE 3-1
Summary of Wetland and Other Waters identified in the Survey Area
Wetland Delineation for the PG&E Topock Compressor Station

Feature ID	Acreage	Wetlands or Other Waters of the U.S.
Riverine Wetlands		
R2UB2 – Colorado River	88.79	Other Waters of the U.S
R2UB2x – Park Moabi Slough	29.52	Other Waters of the U.S
R4SB3A – Ephemeral Washes / Drainages	56.36	Other Waters of the U.S
R4SB4A – Sacramento Wash	10.63	Other Waters of the U.S
R4SB4A – Discontinuous Ephemeral Drainages	0.36	Non-Jurisdictional (Isolated)
Total Riverine Wetlands	*185.66*	

TABLE 3-1
Summary of Wetland and Other Waters identified in the Survey Area
Wetland Delineation for the PG&E Topock Compressor Station

Feature ID	Acreage	Wetlands or Other Waters of the U.S.
Total Other Waters of the U.S	*185.30*	
Palustrine Wetlands		
PEMH – Shore Zone Wetlands; Topock Marsh; Pond		
EM-1	0.105	Wetland
EM-2	0.432	Wetland
EM-3	0.074	Wetland
EM-4	0.053	Wetland
EM-6	0.691	Wetland
EM-7	0.018	Wetland
EM-8	0.037	Wetland
EM-9	0.135	Wetland
EM-10	0.029	Wetland
EM-11	0.035	Wetland
EM-12	0.034	Wetland
EM-13	0.146	Wetland
EM-14	0.113	Wetland
EM-15	0.272	Wetland
EM-18	0.018	Wetland
Total PEMH Wetlands	**2.192**	
PEMC – Adjacent Wetlands		
EM-05	0.134	Wetland
EM-15	0.073	Wetland
EM-17	2.179	Wetland
Total PEMC Wetlands	**2.386**	
PSSB – Adjacent Wetlands	0.120	Wetland
PSSA – Scrub-Shrub Wetlands Associated with Washes		Wetland
SS-1	1.307	Wetland
SS-2	2.872	Wetland
SS-3	4.966	Wetland
Total PSSA Wetlands	**9.145**	
PUBHx – Park Moabi Pond: P-1	**0.109**	Other Waters of the U.S
Total Palustrine Wetlands	*13.832*	
Total Jurisdictional Wetlands	*13.723*	
Total Jurisdictional Other Waters of the U.S.	*.109*	

TABLE 3-1
Summary of Wetland and Other Waters identified in the Survey Area
Wetland Delineation for the PG&E Topock Compressor Station

Feature ID	Acreage	Wetlands or Other Waters of the U.S.

Notes:
R2UB2 = Riverine Lower Perennial Unconsolidated Bottom Sand
R2UB2x = Riverine Lower Perennial Unconsolidated Bottom Sand Excavated
R4SB3A = Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded
R4SB4A = Riverine Intermittent Stream Bed Sand Temporarily Flooded
PEMC = Palustrine Emergent Seasonally Flooded
PEMH = Palustrine, Emergent, Permanently Flooded
PSSA = Palustrine Scrub-Shrub Temporarily Flooded
PSSB = Palustrine Scrub-Shrub Saturated
PUBHx = Palustrine Unconsolidated Bottom Permanently Flooded Excavated

3.2.1 Riverine Features

The Riverine (R) system includes all wetlands that are contained within a channel, with the exception of channelized wetlands dominated by over 30 percent cover of trees, shrubs, or persistent emergent vegetation and channels containing ocean-derived salts in excess of 0.5 parts per thousand (Cowardin et al. 1979). Under this system, a channel is defined as “an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of water” (Cowardin et al. 1979). Riverine subsystems identified in the survey area include Lower Perennial and Intermittent. The Lower Perennial subsystem includes non-tidal, low gradient rivers and streams with slow water velocity, sandy or muddy substrates and at least some water flow throughout the year. Lower Perennial Riverine features identified in the survey area include the Colorado River and Park Moabi Slough. The Intermittent subsystem includes channels that contain flowing water for only part of the year. Intermittent Riverine features identified in the survey area include the Sacramento Wash, Bat Cave Wash, and other ephemeral washes, as well as drainages occurring throughout the dissected terraces in the survey area. Both the Colorado River and Park Moabi Slough were considered to be traditional navigable waters based on the use of these water features by recreational boating including by the Pirate’s Cove and the Topock Marina (USACE, 2007). Ephemeral washes that are direct tributaries to Colorado River or the Topock Marsh were considered to be non-wetland waters of the United States (Table 1).

3.2.1.1 Colorado River (R2UB2)

The Colorado River is the primary surface water feature in the survey area and is classified as a Riverine, Lower Perennial channel with an Unconsolidated Bottom comprised predominantly of sand (R2UB2). The Colorado River flows approximately 6,400 feet through the central part of the survey area (Figure 1-2). Upstream of the I-40 Bridge, the river channel ranges from approximately 600 to 740 feet wide. Downstream of the bridge, the river traverses the exposed bedrock of the Chemehuevi Mountains, and the channel width narrows to approximately 435 feet.

Significant changes to the Colorado River hydraulic regime in the vicinity of the survey area occurred after construction of Hoover Dam and Parker Dam. With the completion of Hoover Dam in 1936, annual spring floods and associated scouring events ended. With the closure of Parker Dam in 1938, and subsequent filling of Lake Havasu, the Colorado River channel between Needles and Topock rapidly aggraded (Metzger and Loeltz 1973). By 1944, the aggradation of the river channel caused elevated groundwater levels and flooding in low-lying areas. In response to this condition, the U.S. Bureau of Reclamation conducted extensive dredging of the river channel to maintain channel geometry and reduce flooding. A summary of historical dredging and channel modification in this area is provided in Appendix C.

The flow of the Colorado River is dynamic, fluctuating seasonally and daily as a result of upstream flow regulation from the Davis Dam, located approximately 41 river miles upstream of the survey area. Data from the USGS river gauge at the Topock Marsh inlet shows that average flows in this section of the river ranges from a low of 14 cfs in January to a high of 99 cfs in June (Figure 3-10). Daily surface water elevation data for the Colorado River has been

measured near the I-40 Bridge since the middle of June 2003 as part of the ongoing monitoring program at the compressor station (Appendix D). The average water level elevation recorded for this period was 454.9 feet above msl, with a minimum of 450.6 feet above msl and a maximum of 458.7 feet above msl. The ordinary high water level, based on the peak discharge periods between June and July, is 457.0 feet above msl. In addition to the gauge data, other evidence of ordinary high water observed during the field survey included water marks on bridge piers and rip-rap within and along the channel, scouring along the banks and debris deposits.

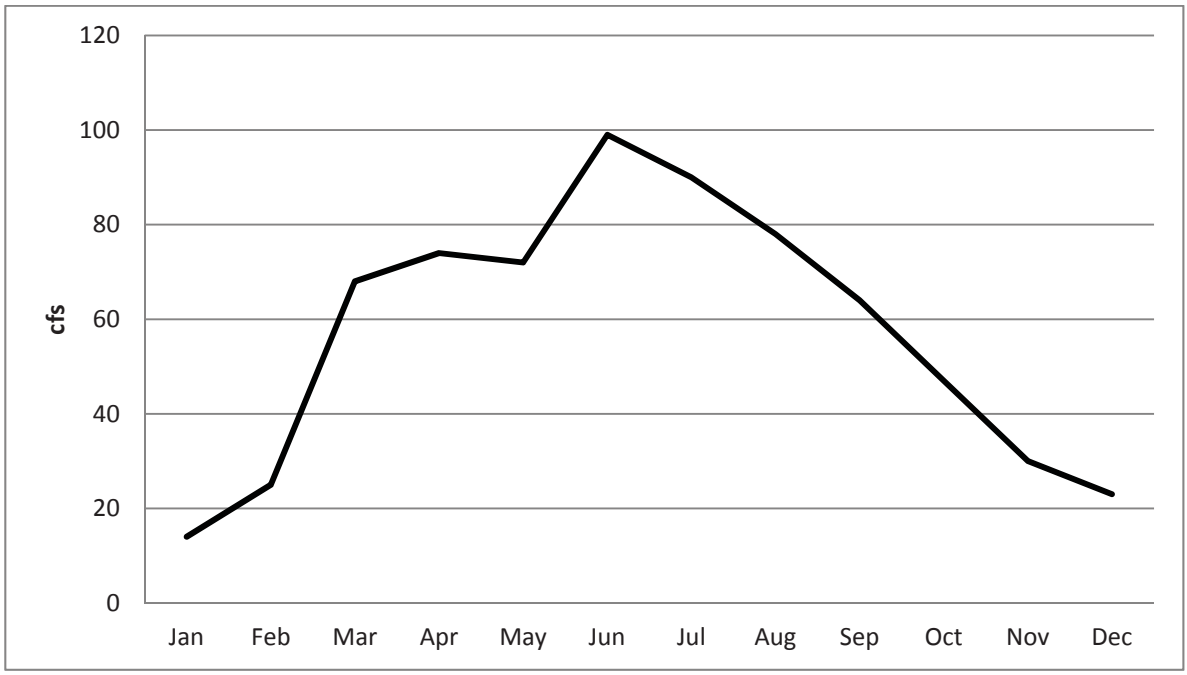

Figure 3-10. Average flow rate (cfs) for the Colorado River as measured at the USGS River Gauge (09423550) at the Topock Marsh Inlet near Needles, California between January 1967 and September 2011.

The channel banks along the Arizona side of the river north of the Topock Marina are characterized by steep slopes that have been armored with large boulders. The elevation at the top of the bank is approximately 466 feet above msl. The banks along the inlet to the Topock Marina are characterized by narrow sandy beaches and eroded sandy banks at elevations ranging from around 460 to 463 feet above msl. Low sandy beaches are also present along the Arizona side of the river south of the Topock Marina and the BNSF railroad bridge. Steep sandy banks with dense vegetation are present along most of the channel on the California side of the river, with narrow sandy beaches occurring in scattered locations. Along the California side of the channel north of the Park Moabi inlet/slough (outside of the survey area), the banks have been modified by constructed elevated campgrounds and low sandy beaches.

Within the survey area, patches of emergent vegetation including southern cattail, southern bulrush, common reed and giant reed occur in scattered locations along edges of the river. Wetland features associated with the "shore zone" are considered separately from the Riverine system (Cowardin et al., 1979) and are described under Palustrine wetlands below.

This section of the Colorado River is a traditional navigable water body, and, because the state line between California and Arizona is located near the center of the river it is also an interstate water body. Interstate commerce associated with the river includes recreational boating, camping and fishing.

3.2.1.2 Park Moabi Slough (R2UB2x)

Park Moabi Slough is classified as a Riverine, Lower Perennial channel with an Unconsolidated Bottom comprised predominantly of Sand. Because the slough (in its current configuration) was created by major dredging activities done by the Bureau of Reclamation in 1965, it is assigned a modifier to indicate that the channel was excavated (R2UB2x). The historical photographs indicate that much of the present shoreline, bank stabilization, and sand

dune features in the Park Moabi area were completed during in the mid 1960's (Appendix C). Within the survey area, most of the northern banks of the slough are characterized by open sandy beaches that are routinely maintained as part of the park. Vegetated areas along the north shoreline are limited to the low terrace at the western edge of the survey area. On the west side of the survey area, the south banks of the slough are characterized by developed beaches, vacation cabins, boat docks and boat ramps associated with the Pirates Cove Resort and Park Moabi. East of the developed areas, the south shore of the slough are characterized by relatively steep sandy and rocky banks with dense vegetation.

As with the main channel of the Colorado River, patches of emergent vegetation occur in some locations along the edges of the slough. These features are described below under Palustrine wetlands.

Park Moabi slough is a direct tributary to the Colorado River and is also used for interstate commerce including recreational boating and fishing.

3.2.1.3 Ephemeral Drainages and Washes North and West of the Compressor Station (R4SB3A)

The alluvial terraces located along the south side of the Colorado River and north of the Chemehuevi Mountains are characterized by numerous incised drainage channels and ephemeral washes. These features are classified as Riverine, Intermittent Stream Bed channels with a Cobble-Gravel substrate that are Temporarily Flooded (R4SB3A).

One of the largest ephemeral drainages in the survey area is Bat Cave Wash, a primarily north-south trending channel immediately west of the Topock Compressor Station. Bat Cave Wash is shown as an intermittent blue line stream on the USGS Topock topographic quadrangle map and is also included as an intermittent stream in the National Hydrologic Dataset (NHD) (Appendices G and H respectively). Large volume surface flows are generally infrequent and occur only briefly in response to high intensity rainfall events. Bat Cave Wash is a tributary of the Colorado River. Storm water flows are conveyed directly into the river under a bridge along the National Trails Highway. Within the survey area the upper part of Bat Cave Wash is confined by steep rocky slopes and has an approximately 30-foot wide gravel-cobble floodplain. Vegetation in the upper reaches is sparse consisting of scattered shrubs such as Anderson's box-thorn, catclaw and desert lavender. As the wash continues down slope, the channel broadens to over 190 feet wide in some areas and multiple low flow channels are present throughout the active floodplain. Vegetation cover also increases down slope with blue palo verde and saltcedar trees scattered throughout the active floodplain. Other common shrubs on or immediately adjacent to the active floodplain include brittlebush, creosote bush, white bur-sage, sweetbush and white rhatany. Total vegetative cover throughout most of the wash is less than 30 percent, with the exception of a dense stand of saltcedar present at the northern end of the wash, just south of the National Trails Highway. Evidence of an ordinary high water mark, observed during the survey, included a defined bed and bank, drift/debris deposits, scouring, sand/silt deposits, and mud cracks.

A second large ephemeral wash is present to the west of Bat Cave Wash. There is no blue line stream indicated on the USGS Topock quadrangle map in this area nor is there any mapped feature in the NHD at this location. The active floodplain of this channel ranges from approximately 100 feet to 240 feet wide and is characterized by a sandy-pebble-cobble substrate with multiple low flow channels. Scattered perennial vegetation throughout the channel includes blue palo verde, catclaw, Anderson's box-thorn, sweetbush, creosote bush, white rhatany and cheesebush. Similar to Bat Cave Wash, there is a dense thicket of saltcedar and honey mesquite at the northern (down slope) end of the wash feature. Evidence of flow observed in this area included a defined bed and bank, scouring, drift/debris deposits, benches and sand/silt deposits. A large earthen dam has been constructed near the downstream terminus of this feature and there is no longer a direct hydrologic connection to the Colorado River. A perennial pond is located immediately north of the dam that is connected to a small wetland adjacent to the Colorado River via a large culvert that passes under the National Trails Highway. This pond and the adjacent wetland are described in more detail below under Palustrine wetlands.

There are several additional smaller, incised tributary drainages that flow directly into either Bat Cave Wash or the western wash system within the survey area. These channels are characterized by a single low flow channel and

generally have sandy-gravel, cobble or rocky substrates. Most of the low flow channels are devoid of vegetation or have only sparse scattered herbaceous species such as spurge, Spanish needle, ovate plantain (*Plantago ovata*) and needle grama (*Bouteloua aristidoides var. aristidoides*). Common trees and shrubs along the lower slopes and channel edges in these areas include blue palo verde, catclaw, Anderson's box-thorn, creosote bush, white bur-sage, white rhatany, and sweetbush.

3.2.1.4 Park Moabi Drainages (R4SB3A)

Three ephemeral drainages are present in the western part of the survey area, originating south of the developed portion of Moabi Regional Park. Two of these drainages are shown as un-named blue line streams of the USGS Whale Mountain Topographic quadrangle map and are include as intermittent streams in the NHD (Appendix G and H respectively). These ephemeral channels are characterized by relatively steep vertical side banks and sand-pebble-cobble beds that are largely devoid of vegetation. These drainages are also classified as Riverine, Intermittent Stream Beds characterized by a cobble gravel substrate that are temporarily flooded (R4SB3A). Scattered blue palo verde trees and occasional shrubs such as cheesebush, brittlebush, and creosote bush are present along the edges and side slopes of the channels. Evidence of flow observed during the survey included drift/debris deposits, mud cracks, scouring, and cut banks. All three channels flow into a broad retention basin located on the south side of the National Trails Highway, west of Park Moabi Road. There are six 48-inch diameter culverts in the northeast corner of the retention basin that convey flows under the National Trails Highway into a broad U-shaped, routinely maintained, storm water channel in the developed area of the park. At the time of the survey the sandy-gravel substrate of the storm water channel was devoid of vegetation and due to recent maintenance activities. At the north end of the u-shaped channel there is a 24-inch-diameter culvert under a paved road that drains into a low topographic swale characterized by upland vegetation. The swale feature continues to the north where storm water flows are discharged into Park Moabi Slough near the southwest corner of the Pirate Cove Marina.

3.2.1.5 Sacramento Wash (R4SB4A)

The Sacramento Wash is located at near the northern end of the survey area east of the Topock Marsh. Within the survey area Highway 95 bisects the wash with an at-grade crossing. The Sacramento wash is shown as a blue line stream on the Topock USGS 7.5minute quadrangle and as an intermittent stream in the National Hydrologic Dataset (NHD) (Appendices G and H respectively).Within the survey area the Sacramento Wash is a broad, open sandy channel that is largely confined within constructed levees. The channel ranges from approximately 50 to 70 feet wide and has a flat, generally uniform bed that lacks well defined low flow channels. There are minor benches and terraces along the channel in a few locations, but there is no active floodplain outside of the channel as a result of the constructed levees along this section of the wash. On the east side of Highway 95, the channel is devoid of vegetation with extensive athel tamarisk thickets present along both sides of the wash. On the west side of the road, the wash continues to flow through a channel confined by levees for approximately 950 feet where it then broadens out along the floodplain adjacent to the Topock Marsh just west of the survey area. Some blue palo verde trees are present along the levees on the west side of the road and a few small trees and shrubs including saltcedar, smoke tree, bush seepweed (*Suaeda nigra*) and creosote bush occur within the wash channel. Prior to a large wildfire in October of 2008, dense tamarisk thickets were also present along both sides of the wash in this area. As a result of the significant rainfall immediately prior to the July 2012 surveys, evidence of recent flow including debris, flow lines, cracked soils, water marks and in some cases moist to saturated soil were noted throughout the channel. The Sacramento Wash has a large and generally unaltered watershed, and as a result significant flows and flooding of the highway area are relatively common in this area when heavy rainstorms occur in the region (Personal Communication with B. Collom, July 2012).

3.2.1.6 Ephemeral Drainages at former Well Site C

Former freshwater well site C is located on the southwest side of the Colorado River just north of the Park Moabi Campground. Most of the site is characterized by highly dissected terraces composed of Tertiary and Quaternary alluvium and surficial deposits consisting of moderately consolidated sandy gravel and silty-clayey gravel. A portion of the site is located on the low terrace along the Colorado River that is comprised of Quaternary and recent floodplain deposits. The majority of the vegetation in this area is characterized by open creosote bush

shrubs with areas of dense saltcedar along the low terrace adjacent to the Colorado River. The natural hydrology of the area has been significantly altered by a large railroad berm that is present along the southwestern edge of the former Site C area. Water flows in this area are channeled under a large wooden railroad trestle at the southwestern former Site C boundary. On the northeast side of the trestle the wash broadens out into a wide floodplain characterized by multiple low flow channels. Near the northeastern corner of former Site C the wash is confined by a large roadway berm that has been partially reinforced with concrete. There is a narrow area where the road dips down allowing flows to continue to the east, where the floodplain quickly broadens out and eventually becomes unconfined sheet flow through dense saltcedar, eventually discharging into the Colorado River. This large wash is shown as a blue line stream on the Whale Mountain USGS topographic quadrangle map and is also included in the NHD as an ephemeral stream. A smaller wash feature is also present along the northern border of the site, but appears to have a smaller watershed as a result of the railroad berm. This small wash is not shown as a blue line stream on the USGS topographic map, nor is it included in the NHD; however, it exhibits a defined channel with an active floodplain, contains typical wash vegetation and is a direct tributary to the Colorado River.

The vegetation associated with the larger wash features is notably different that the surrounding creosote bush scrub and saltcedar thickets. Within the active floodplain areas the vegetation is characterized by native species such as blue palo verde and cheesebush with scattered catclaw, smoke tree, sweetbush, and desert lavender. Some creosote bush is also present. Herbaceous vegetation was largely absent at the time of the survey with the exception of scattered spurge.

3.2.2 Palustrine Wetlands

Wetlands classified as part of the Palustrine (P) system are nontidal, freshwater wetlands that are vegetated with over 30 percent cover of trees, shrubs, herbaceous vegetation or mosses, and lichens. Also included are wetlands lacking such vegetation but with all of the following four characteristics: 1) the total area is less than 20 acres; 2) there are no active wave-formed or bedrock shoreline features; 3) water depth in the deepest part of basin is less than 6 feet at low water; and 4) salinity due to ocean-derived salts is less than 0.5 parts per thousand (Cowardin et al., 1979). Palustrine wetlands identified in the survey area fall into three Classes: Emergent (EM), Scrub-Shrub (SS), and Unconsolidated Bottom (UB). The Emergent Class includes wetlands that are characterized by erect, rooted, herbaceous plants adapted to grow under flooded and/or saturated conditions. The Scrub-Shrub Class includes wetlands that are characterized by trees and shrubs less than 20 feet tall. Unconsolidated Bottom wetlands have sand, silt or mud substrates and less that 30 percent vegetative cover. Water regimes of the Palustrine wetlands identified in the survey area include permanently flooded and seasonally flooded. Permanently flooded wetlands have water covering the land surface throughout the year. Seasonally flooded wetlands have surface water present for extended periods of the year and when surface water is absent, the water table is often near the land surface. With the exception of the constructed pond in Park Moabi, all of the Palustrine wetlands identified in the survey area were considered to meet the wetland criteria for hydrophytic vegetation, hydric soils and wetland hydrology. These areas were all located either within or immediately adjacent to the Colorado River, Park Moabi Slough or other non-wetland waters of the U.S. identified in the survey area. Descriptions of the Palustrine wetlands are provided in the following sections.

3.2.2.1 Shore Zone Emergent Wetlands (PEMH)

Shore zone emergent wetlands include scattered patches of southern cattail, southern bulrush, common reed and giant reed growing along the edges of the Colorado River and Park Moabi Slough, below the ordinary high water line. As previously noted these wetlands are classified separately from the open water Riverine wetlands in which they occur (Cowardin et al., 1979). All of the shore zone wetlands in the survey area are classified as Palustrine Emergent Permanently Flooded (PEMH) wetlands. These wetlands are most common along the southern banks of the Park Moabi Slough, but are also found along the north banks of the slough in the western most part of the survey area. Shore zone wetlands are less common along the Colorado River and occur in scattered locations along the south/west bank as well as in the vicinity of the Topock Marina. Also included are areas with California bulrush along the outlet of Bat Cave Wash and areas with broad-leaved cattail (*Typha latifolia*) in the outlet of the East Ravine near the southern boundary of the survey area.

3.2.2.2 Adjacent Emergent Wetlands (PEMC and PSSB)

Adjacent emergent wetlands include wetland features that are immediately adjacent to the Colorado River or Park Moabi Slough, but occur above the ordinary high water and inland of the shore zone wetlands. Four adjacent wetland areas were identified in the survey area.

The first and largest adjacent wetland (EM-17) is located on the south side of the I-40 Bridge on the west side of the Colorado River. This wetland is characterized by a dense monoculture of common reed. The surface soil in this area is a brown (10 YR 4/3) sand mixed with organic material to a depth of 6 inches. From 6 to 10 inches the soil is a dark grayish brown (10 YR 4/2) sand underlain by a brown (10 YR 5/3) sand to a depth of 21 inches. At the time of the survey saturated soils and ground water were present at a depth of 8 inches. Based on the location and elevation of this wetland surface water is likely present in the summer months (May-July) during higher flow levels and therefore this feature was classified as a Palustrine Emergent Seasonally flooded (PEMC) wetland.

The second adjacent wetland (EM-15a) is on the east side of the Colorado River, north of the Topock Marina. This wetland is characterized by a strip of emergent wetland immediately above the shore line and also includes a narrow band of low trees and shrubs (SS-4) further inland. Emergent vegetation is characterized by iris-leaved rush (*Juncus xiphioides*), dallis grass (*Paspalum dilatatum*), and marsh pennywort (*Hydrocotyle verticillata*) with scattered common reed and southern bulrush. The surface soil in this area is a dark grayish brown (10 YR 4/2) silt loam with approximately 5 percent dark reddish brown (5 YR 3/4) concentrations to a depth of 8 inches. From 8 to 24 inches the soil is a brown (10 YR 5/3) sandy loam with grayish brown (10 YR 5/2) ped surfaces and approximately 2 percent yellowish brown (10 YR 5/4) concentrations in the matrix. A shallow water table and saturated soils were present at 12 inches below ground surface at the time of the February 2012 survey. This area appears to be just above the ordinary high water elevation of the river. Given the low topographic position this area is likely subject to some flooding during higher flows and appears to have saturated conditions in the upper part of the soil for most of the year. This narrow strip was classified as a Palustrine, Emergent Seasonally Flooded Wetland (PEMC). Immediately inland the vegetation is characterized by small saltcedar trees and shrubs, arrow-weed, broom baccharis and scattered narrow-leaved willow (*Salix exigua*). Herbaceous vegetation in this area is limited to sparse common reed. Soils in this area are the same as in the emergent wetland area and a shallow water table was encountered at a depth of 15 inches below the ground surface during the February 2012 survey. This wetland area was classified as a Palustrine Scrub-Shrub Saturated wetland (PSSB).

The third adjacent wetland (EM-5) is on the south bank of the Colorado River, approximately 600 feet downstream of the confluences of the Park Moabi Slough and the Colorado River. This low depressional area is filled with dense growth of southern cattail. Soil in this area is a yellowish brown (10 YR 5/4) sandy loam to a depth of 24 inches. No redoximorphic features were observed. At the time of the February 2012 survey, shallow groundwater and saturated soils were present at a depth of 10 inches below the ground surface. A culvert connects this area to a pond on the south side of the National Trails Highway. Given the low topographic position, hydrologic connection to the pond south of the road, and shallow ground water noted at the time of the survey, it is likely that this area is subject to shallow seasonal flooding for part of the year. This feature was classified as a Palustrine, Emergent, Seasonally Flooded wetland (PEMC).

The fourth adjacent wetland (EM-20) occurs on the north side of Park Moabi Slough to the northwest of the Moabi Regional Park parking area and boat ramp. This wetland is located on the landward side of shore zone and is characterized by Iris leaved rush, marsh pennywort, and dallis grass with scattered southern cattail. The surface soil is a very dark grayish brown (10 YR 3/2) sandy loam to a depth of 2 inches. From 2 to 20 inches the soil is a brown (10 YR 3/2) sand. No redoximorphic features were evident. Shallow ground water and saturated soils were encountered at 11 inches below the ground surface in this area during the February 2012 survey. This wetland area appears to be located just above the ordinary high water level, but it is at a low enough elevation that some flooding likely occurs during periods of higher flows and the surface soils are presumably saturated for extended periods during the growing season. This feature was classified as a Palustrine, Emergent Seasonally Flooded wetland (PEMC).

3.2.2.3 Topock Marsh (PEMH)

The survey area includes a small piece of the Topock Marsh on the north side of Highway 95 in Arizona. In this location the marsh is characterized by dense growth of southern bulrush. The surface soil is a dark grayish brown (10 YR 4/2) silty clay loam to depth of 2 inches underlain by a dark gray (10 YR 4/1) silty clay. No redoximorphic features were observed. Surface water to a depth of 7 inches was present at the sample location at the time of the February 2012 survey. This part of the Topock Marsh was classified as a Palustrine Emergent Permanently Flooded wetland (PEMH).

3.2.2.4 Pond (PEMH)

There is a pond on the south side of the National Trails Highway approximately 800 feet southeast of the confluence of Park Moabi Slough and the Colorado River. An earthen dam separates the pond from the ephemeral wash system that extends to the south. The pond is connected to an adjacent emergent wetland on the north side of the National Trails Highway via a large culvert. The southern half of the pond is characterized by dense growth of southern cattail, while the northern part is open water. Several feet of water was observed in the pond during both the February and July 2012 surveys. A beaver lodge is present near the center of the pond at the edge of the cattails. This area was classified as a Palustrine, Emergent, Permanently Flooded wetland (PEMH).

3.2.2.5 Scrub-Shrub Wetlands Associated with Ephemeral Washes (PSSA)

Dense thickets of saltcedar are present at the northern ends of larger ephemeral washes south of the National Trails Highway. As previously noted, there is a dense thicket of saltcedar at the northern end of Bat Cave Wash and a dense thicket of saltcedar intermixed with honey mesquite present at the terminus of the ephemeral wash system west of Bat Cave Wash. Sample points were not collected in these locations due to density of the vegetation; however, flooding was observed in the saltcedar area in Bat Cave Wash following the January 2010 storm event (Personal Communication with B. Collom, 2012). While these areas are part of the ephemeral wash system they are considered Palustrine Scrub-Shrub Temporarily Flooded (PSSA) wetlands because vegetative cover exceeds 30 percent.

The storm water impoundment area in the western part of the survey area, south of Moabi Regional Park, also supports relatively dense saltcedar and blue palo verde with scattered creosote bush and brittlebush. This feature collects water from three ephemeral drainages south of Moabi Regional Park. Evidence of flooding observed in this area during the survey included drainage patterns, drift deposits, large mud cracks and extensive debris at the 48-inch diameter culverts in the northeast corner. This area was also classified as a Palustrine Scrub-Shrub Temporarily Flooded (PSSA) wetland.

3.2.2.6 Park Moabi Pond (PUBHx)

There is a pond in the northeast corner of Moabi Regional Park between the boat ramp and the Pirate Cove Marina. The small pond is square in shape and was created as part of a water-supply project, but is located immediately adjacent to Park Moabi Slough. With the exception of sparse southern bulrush the pond is characterized by open water with saltcedar, honey mesquite and arrow-weed surrounding the pond. This feature was classified as a Palustrine Unconsolidated Bottom Permanently Flooded (PUBHx) wetland that has been excavated. Due to the lack of vegetation this feature was considered to be a non-wetland waters of the U.S.

3.3 Non-Jurisdictional Features

Several sample points were established along the lower terraces adjacent to the Colorado River, Park Moabi Slough and east of the Topock Marsh. Vegetation in these areas is characterized by saltcedar, athel, and arrow-weed with honey mesquite, desert smoke tree and broom baccharis are also present in some areas. While some of these species may occur in wetlands, many of them are also phreatophytes, capable of tapping into ground water as much as 20 feet below the ground surface. The low terraces along the Colorado River and Park Moabi Slough north of the I-40 Bridge are characterized by sand deposits from the extensive dredging of the river from the late-1940s through the mid-1960s (Appendix C). In addition, flows in this section of the Colorado River are highly regulated by releases from upstream dams including the Hoover Dam and the Davis Dam, and natural

flooding no longer occurs along this reach of the river. Based on data collected at the sample point locations s and field observations the features described below were all considered not to be wetlands or other waters of the U.S.

Two sample points (SP-10 and SP-13) were taken south of the I-40 Bridge on what appears to be the natural floodplain surface of the Colorado River. Vegetation in these areas is characterized by saltcedar, screw bean, and arrow-weed with scattered broom baccharis and sparse common reed. At SP-10, the soil is a yellowish brown (10 YR 5/4) sand intermixed with gravels and cobbles. This location is above the elevation of the ordinary high water level in the river and there was no evidence to suggest shallow soil saturation or surface inundation in this area. At the nearby sample point SP-13 the surface soil is a dark yellowish brown (10 YR 4/4) sand mixed with gravel and cobbles to a depth of 10 inches. Below 10 inches the soil is a yellowish brown (10 YR 5/4) sand to a depth of at least 50 inches. While soil moisture notably increased with depth in this area, there was no evidence of saturation or a shallow water table in the upper 4 feet at this location.

Several sample locations were located on the adjacent low terraces north of the I-40 Bridge along the Colorado River and Park Moabi Slough. In these areas, dredged river sands have been piled over the natural stream terraces. Vegetation is characterized by open to dense stands of saltcedar and arrow-weed with occasional honey mesquite and desert smoke tree also present in a few locations. Soils consist of dark yellowish brown (10 YR 4/4) to light yellowish brown (10 YR 6/4) sand. No saturated soils or shallow ground water was evident in the upper 2 feet in any of the soil sample points taken in these areas. Ground water elevations, measured in several monitoring wells scattered throughout the low terraces along the Colorado River, indicate that the ground water elevation during periods of peak flow (May – July) ranges from approximately 2.5 to 7 feet below the ground surface (Appendix E). This shallow ground water is well within reach of the deep rooted trees and shrubs that are characteristic of this area, but not shallow enough to meet the criteria for wetland hydrology, which requires a shallow water table to be within 12 inches of the soil surface (USACE 2008).

Seven sample points were taken along the low terrace east of the Topock Marsh. Four sample points were established on the west side of the Highway 95. One sample point was established in an area characterized by big saltbush (*Atriplex lentiformis*) scrub and one sample point was established in the area that was burned in the 2008 wildfire that was recently planted with native trees, shrubs and grasses including screw bean, four-wing saltbush (*Atriplex canescens*) and alkali sacaton (*Sporobolus airoides*). Two sample points were established in areas formerly characterized by saltcedar and athel that were cleared following the 2008 wildfire, but were not yet re-vegetated. Three sample points were established on the east side of the highway including one in an area with bush seepweed, and two in the athel tamarisk thicket. Soil in all of these areas consisted of brown (10 YR 5/3, 10 YR 4/3) to yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 4/4) sand. Soils in this area ranged from moderately alkaline (pH 8.2) to very strongly alkaline (pH 9.6). Evidence of flooding as a result of the significant precipitation immediately prior to the July 2012 field surveys was noted in some parts of the cleared area west of the highway, but there was no evidence of prolonged surface inundation or shallow groundwater (within 24 inches of the surface) at any of the sample locations in this area.

Two low, open sandy ephemeral drainages are present in the area east of the Oatman-Topock Highway. Both of the drainages flow through semi-circular culverts under the BNSF railroad just east of the survey area. These two drainages are characterized by low sandy substrates that lack defined channel banks. Both of the drainages are devoid of vegetation and exhibited evidence of recent flows including sediment deposits, debris lines and scouring at the time of the July 2012 survey. Unlike the Sacramento Wash, these smaller drainages dissipate into sheet flow on the east side of the highway and have no apparent hydrologic connection to the Topock Marsh.

A number of small erosional features are present in the survey area at former potential freshwater well site C that were likely formed prior to the construction of the railroad and roadway berms. These features all occur within the creosote bush scrub habitat and lack most of the plant species typically found in the larger washes. None of these features are shown as blue line streams on the USGS topographic maps or in the National Hydrologic Dataset. In general these features are only moderate to weakly expressed and were not considered to be waters of the U.S.

3.4 Jurisdictional Determination

The EPA and USACE 2008 Guidance Document "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States" ("2008 Rapanos Guidance") was also followed in this wetlands delineation. Following the 2006 *Rapanos* decision, the agencies have identified three categories of waters and wetlands over which the agencies will assert jurisdiction either categorically or on a case by case basis. These three categories are: (1) traditional navigable waters and their adjacent wetlands; (2) relatively permanent non-navigable tributaries of traditional navigable waters and wetlands that directly abut such tributaries with a continuous surface connection with such tributaries; and (3) on a case by case basis, the following waters that have a significant nexus with a traditional navigable water: (a) non-navigable tributaries that are not relatively permanent; (b) wetlands adjacent to non-navigable tributaries that are not relatively permanent; and (c) wetlands adjacent to, but not directly abutting, a relatively permanent tributary. A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary, including consideration of hydrologic and ecologic factors, to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters. Generally, the agencies will not assert jurisdiction over swales, erosional features and ditches that do not carry a relatively permanent flow of water. This guidance was taken into account when determining the potential jurisdictional status of wetlands and other waters of the United States in Table 3-1.

The USACE regulates the discharge of dredged and/or fill material (concrete, riprap, soil, cement block, gravel, sand, etc.) into waters of the U.S. including adjacent wetlands under Section 404 of the Clean Water Act. Additionally any work and/or structures placed in or affecting (above, over, under) a navigable water of the U.S. (e.g., the Colorado River, its impoundments, sloughs, backwaters, old channels, oxbows, etc.) typically requires a permit under Section 10 of the River and Harbor Act of 1899. Because of the application here of the CERCLA Section 121(e)(1) permit exemption, the USACE has confirmed in a letter dated July 10, 2013 that no Section 404 permit or authorization is required from the USACE. Because no Section 404 permit is required from the USACE, the USACE has confirmed it will not verify the wetland and waters delineation contained herein (Appendix A). Therefore PG&E will assume that all of the waters and wetlands delineated in the report, and identified as such in Figures 1-3 through 3-8, are all jurisdictional waters under Section 404 of the CWA, except for the identified discontinuous ephemeral drainages.

The EIR also requires that: "…the acreage of jurisdictional wetland affected is be replaced on a "no-net-loss" basis in accordance with the substantive provisions of USACE regulations. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods consistent with USACE methods, and consistent with the purpose and intent of applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented. In any event, a report shall be submitted to DTSC to document compliance with these mandates." Based on the data provided in this delineation report there are a total of 13.723 acres of jurisdictional wetlands within the survey area (Table 3-1). The wetland areas within the survey area are shown in Figure 3-9.

SECTION 4

References

Baldwin, Bruce G., Douglas H. Goldman, David J. Keil, and Robert Patterson (eds.). 2012. *The Jepson Manual: Vascular Plants of California*. Berkeley: University of California Press.

Curtis and Lichvar. 2010. *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.* ERDC/CRREL TN-10-1. US Army Corps of Engineers Research and Development Center, Cold regions Research and Engineering Laboratory.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. USFWS/OBS-79/31. U.S. Fish and Wildlife Service, Biological Services Program. 103 pp.

Environmental Laboratory. 1987. *Corps of Engineers Wetland Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. http://www.wetlands.com/regs/tlpge02e.htm.

Lichvar, Robert W. and John T. Kartesz. 2009. *North American Digital Flora: National Wetland Plant List, version 2.4.0* (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.

Lichvar, R. W. and S.M. McColley. 2008. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.* ERDC/CRREL TR-08-12. US Army Corps of Engineers Research and Development Center, Cold regions Research and Engineering Laboratory.

Metzger, D.G. and O.J. Loeltz. 1973. “Geohydrology of the Needles Area, Arizona, California, Nevada.” United States Geological Survey Professional Paper 486-J.

Miles, Scott, and Charles Goudey, eds. 1998. *Ecological Subregions of California*. United States Department of Agriculture, Forest Service. Pacific Southwest Division. R5-EM-TP-005-Net. San Francisco.

NRCS (Natural Resource Conservation Service). 2002. *Climate Analysis for Wetlands for San Bernardino County, California* (WETS Tables). United States Department of Agriculture. http://www.wcc.nrcs.usda.gov/climate/wetlands.html.

NRCS (Natural Resource Conservation Service). 2006a. Land Resource Regions and Major Land Resource Areas

of the United States, the Caribbean, and the Pacific Basin. United States Department of Agriculture Handbook 296. Available on line at: http://soils.usda.gov/survey/geography/mlra/

NRCS (Natural Resource Conservation Service). 2006b. *Soil Survey of Mohave County, Arizona, Southern Part.* Available on line at: http://soils.usda.gov/survey/online_surveys/arizona/

NRCS (Natural Resource Conservation Service). 2012. *Official Soil Series Descriptions.* http://soils.usda.gov/technical/classification/osd/index.html.

NRCS (Natural Resource Conservation Service). 2010. *Field Indicators of Hydric Soils in the United States.* Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.), in cooperation with the National Technical Committee for Hydric Soils. Available on lie at: http://soils.usda.gov/use/hydric/

Russell Huddleston. 2012. Personal communication with Barry Collom on February 13, 2012.

Russell Huddleston. 2012. Personal communication with Barry Collom on July 17, 2012

Thien, Steve. 1979. A Flow Diagram for Teaching Texture-by-Feel Analysis. *Journal of Agronomic Education*. Vol. 8. pp. 54–55.

USACE (U.S. Army Corps of Engineers). 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. U.S. Army Corps of Engineers Engineer Research and

Development Center, Vicksburg, Mississippi. http://www.usace.army.mil/CECW/Documents/cecwo/reg/trel08-28.pdf.

USACE. 2007. *Legal Definition of "Traditional Navigable Waters"*. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. Appendix D. Available on line at: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/RelatedResources/CWAGuidance.aspx

Western Region Climate Center (WRCC). 2012. Climate summary for the Needles FAA Airport, California (0416118). Available on line at: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?caneed+sca

Figures

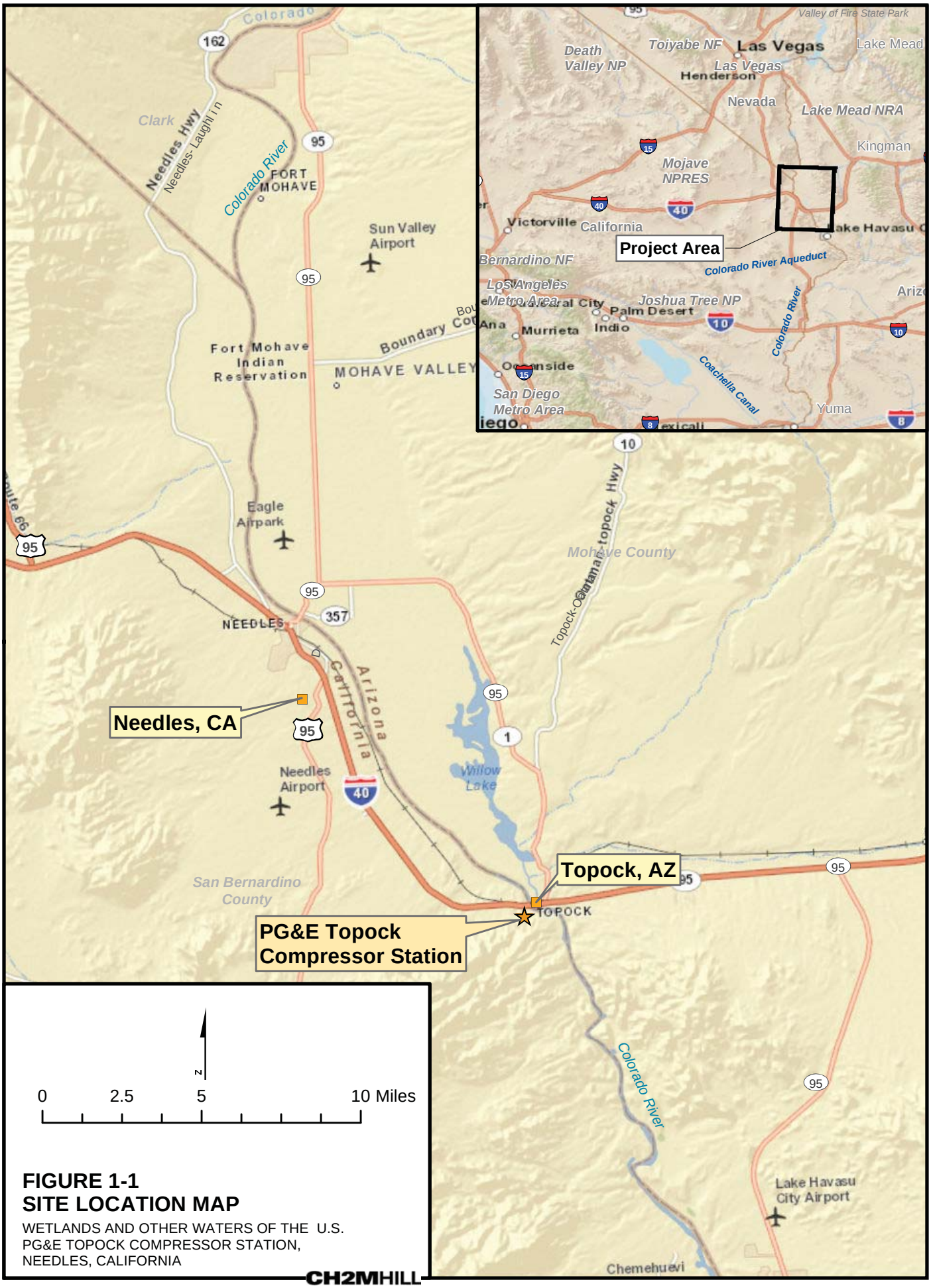

FIGURE 1-1
SITE LOCATION MAP

WETLANDS AND OTHER WATERS OF THE U.S.
PG&E TOPOCK COMPRESSOR STATION,
NEEDLES, CALIFORNIA

CH2MHILL

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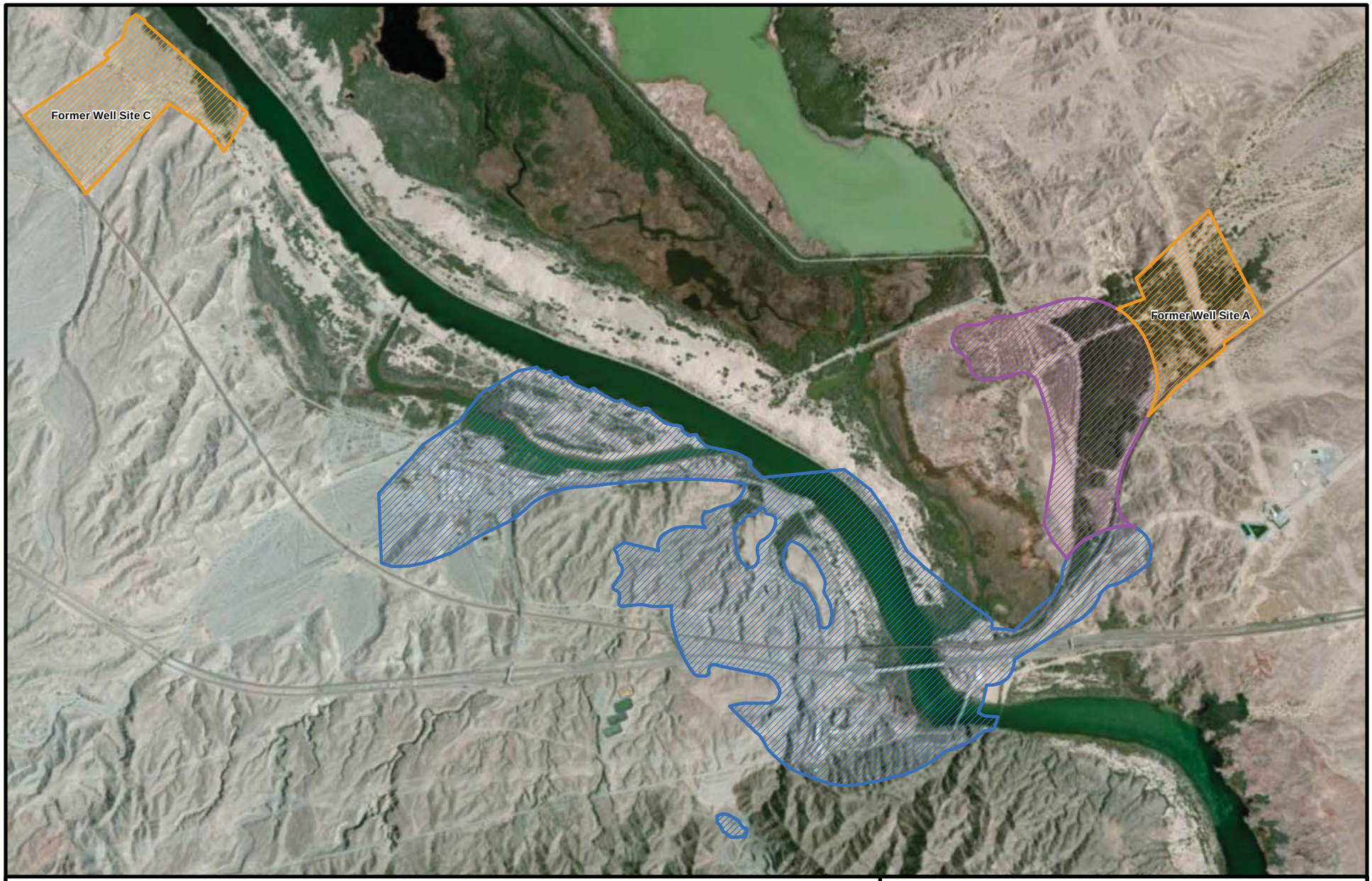

LEGEND

- EIR Project Area and Wetlands Delineation Area (780 Acres)
- Additional Wetlands Delineation Area - Well Site B (183 Acres)
- Former Potential Freshwater Well Sites (206 Acres)

N

0 1,500 3,000 Feet

FIGURE 1-2
WETLANDS DELINEATION STUDY AREA
Wetlands and Other Waters of the U.S.
PG&E Topock Compressor Station
Needles, California

CH2MHILL

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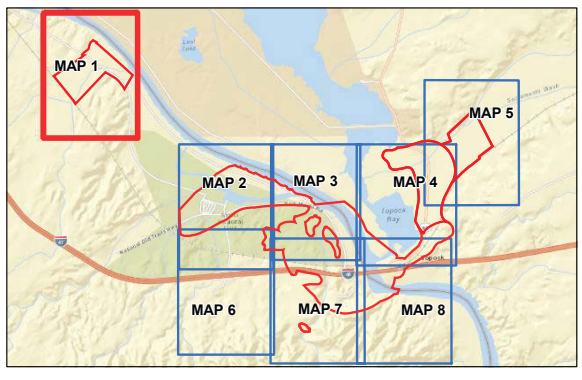
LEGEND

- Sample Point
- Tributary Sample Point
- Wetland Delineation Boundary
- Culvert
- Survey Transects

Water Types

- Erosional Feature
- Riverine Intermittent Stream Bed Sand Temporarily Flooded (R4SB4A)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Palustrine Scrub-Shrub Temporarily Flooded (PSSA)
- Palustrine Unconsolidated Bottom Permanently Flooded Excavated (PUBHx)
- Palustrine, Emergent, Permanently Flooded (PEMH)
- Palustrine, Emergent, Seasonally Flooded (PEMC)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Riverine Lower Perennial Unconsolidated Bottom Sand Excavated (R2UB2x)
- Riverine Lower Perennial Unconsolidated Bottom Sand (R2UB2)

Source:
Wetland Delineation Completed March 13-17, 2012
R. Huddleston and K. Steiner.
Update Completed July16-17, 2012
R. Huddleston and M. Fowler.
Update Completed December 12-13, 2012
R. Huddleston.



N

0 140 280 560 Feet

FIGURE 3-1
WETLANDS AND OTHER WATERS OF THE U.S.
MAP 1 OF 8

PG&E Topock Compressor Station
Needles, California

CH2MHILL

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SP-4
SP-3
Park Moabi Campground
SP-5
EM-20
SP-1
SP-2
EM-1
EM-2
SP-6
SP-7
EM-3
P-1
EM-4
Park Moabi
24" CMP
SP-21
Pirate Cove
National Trails Highway
Transect 18
6 48" CMPS
Transect 14
Transect 15
SS-1
Transect 13
TB-30
Transect 17
Transect 16
Park Moabi Road
Transect 11
Transect 10
4 48" CMPs
Union Pacific Railroad

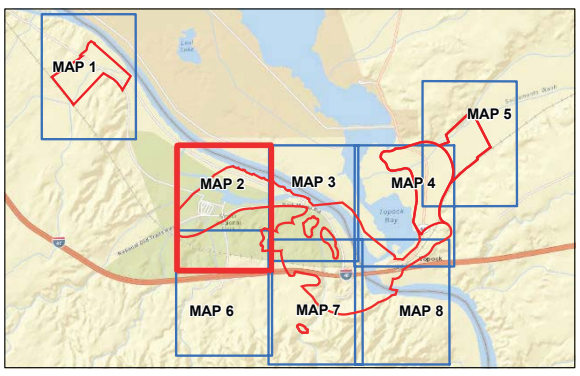
LEGEND

- Sample Point
- Tributary Sample Point
- Wetland Delineation Boundary
- Culvert
- Survey Transects

Water Types

- Erosional Feature
- Riverine Intermittent Stream Bed Sand Temporarily Flooded (R4SB4A)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Palustrine Scrub-Shrub Temporarily Flooded (PSSA)
- Palustrine Unconsolidated Bottom Permanently Flooded Excavated (PUBHx)
- Palustrine, Emergent, Permanently Flooded (PEMH)
- Palustrine, Emergent, Seasonally Flooded (PEMC)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Riverine Lower Perennial Unconsolidated Bottom Sand Excavated (R2UB2x)
- Riverine Lower Perennial Unconsolidated Bottom Sand (R2UB2)

Source:
Wetland Delineation Completed March 13-17, 2012
R. Huddleston and K. Steiner.
Update Completed July16-17, 2012
R. Huddleston and M. Fowler.
Update Completed December 12-13, 2012
R. Huddleston.



N

0 140 280 560 Feet

FIGURE 3-2
WETLANDS AND OTHER WATERS OF THE U.S.
MAP 2 OF 8

PG&E Topock Compressor Station
Needles, California

CH2MHILL

Path: D:\Projects\Topock\MapFiles\2013\PBA\Wetlands\Wetlands022013.mxd Date Saved: 8/12/2013 3:49:21 PM

Park Moabi Campground
National Trails Highway
EM-22
EM-21
SP-20
SP-18
SP-19
EM-8
EM-9
SS-2
Transect 7
Transect 8
Transect 9
TB-19
TB-20
TB-18
TB-11
TB-21
TB-10
TB-22
TB-24
Transect 5
TB-17
TB-12
TB-5
24" CMP
4 48" Culverts
TB-16
TB-9
IM-3
TB-7
TB-23
TB-13
Transect 6
TB-8
2 48" CMP
36" CMP
36" CMP
48" CMP
TB-6
TB-4
Transect 3
TB-15
TB-14
SS-3
Transect 4
EM-7
EM-8
EM-9
EM-10
EM-11
SP-31
SP-16
SP-17
SP-15
SP-14
EM-12
MW-20

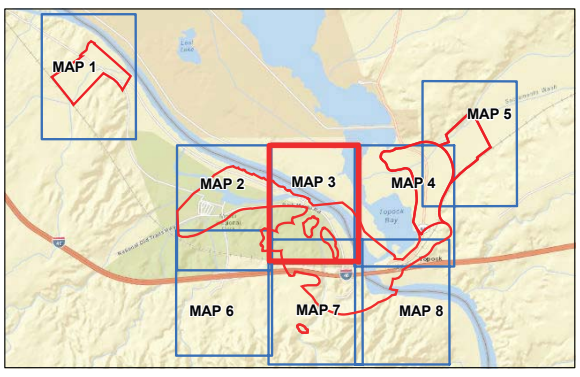
LEGEND

- Sample Point
- Tributary Sample Point
- Wetland Delineation Boundary
- Culvert
- Survey Transects

Water Types

- Erosional Feature
- Riverine Intermittent Stream Bed Sand Temporarily Flooded (R4SB4A)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Palustrine Scrub-Shrub Temporarily Flooded (PSSA)
- Palustrine Unconsolidated Bottom Permanently Flooded Excavated (PUBHx)
- Palustrine, Emergent, Permanently Flooded (PEMH)
- Palustrine, Emergent, Seasonally Flooded (PEMC)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Riverine Lower Perennial Unconsolidated Bottom Sand Excavated (R2UB2x)
- Riverine Lower Perennial Unconsolidated Bottom Sand (R2UB2)

Source:
Wetland Delineation Completed March 13-17, 2012
R. Huddleston and K. Steiner.
Update Completed July16-17, 2012
R. Huddleston and M. Fowler.
Update Completed December 12-13, 2012
R. Huddleston.



N

0 135 270 540 Feet

FIGURE 3-3
WETLANDS AND OTHER WATERS OF THE U.S.
MAP 3 OF 8

PG&E Topock Compressor Station
Needles, California

CH2MHILL

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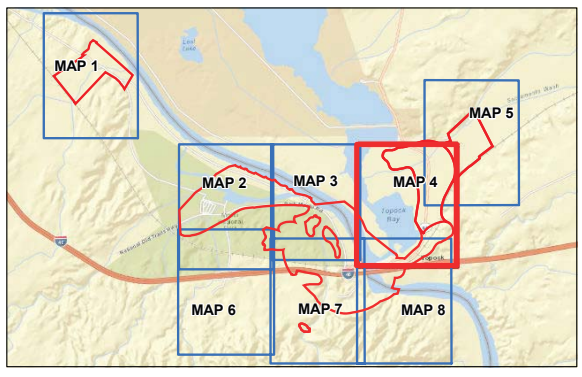
LEGEND

- Sample Point
- Tributary Sample Point
- Wetland Delineation Boundary
- Culvert
- Survey Transects

Water Types

- Erosional Feature
- Riverine Intermittent Stream Bed Sand Temporarily Flooded (R4SB4A)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Palustrine Scrub-Shrub Temporarily Flooded (PSSA)
- Palustrine Unconsolidated Bottom Permanently Flooded Excavated (PUBHx)
- Palustrine, Emergent, Permanently Flooded (PEMH)
- Palustrine, Emergent, Seasonally Flooded (PEMC)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Riverine Lower Perennial Unconsolidated Bottom Sand Excavated (R2UB2x)
- Riverine Lower Perennial Unconsolidated Bottom Sand (R2UB2)

Source:
Wetland Delineation Completed March 13-17, 2012
R. Huddleston and K. Steiner.
Update Completed July16-17, 2012
R. Huddleston and M. Fowler.
Update Completed December 12-13, 2012
R. Huddleston.



N

0 150 300 600 Feet

FIGURE 3-4
WETLANDS AND OTHER WATERS OF THE U.S.
MAP 4 OF 8

PG&E Topock Compressor Station
Needles, California

CH2MHILL

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Transect 19
SP-37
Transect 21
Transect 20
SP-36
Transect 23
8" Culvert

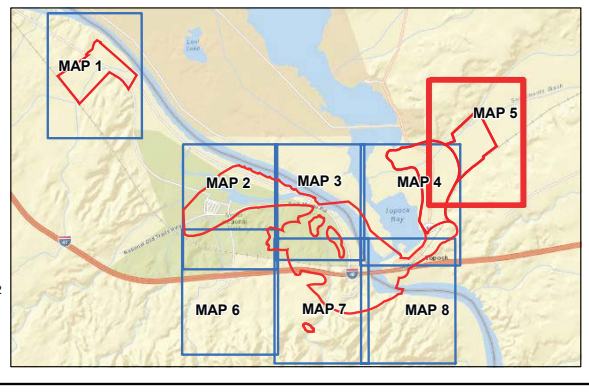
LEGEND

- Sample Point
- Tributary Sample Point
- Wetland Delineation Boundary
- Culvert
- Survey Transects

Water Types

- Erosional Feature
- Riverine Intermittent Stream Bed Sand Temporarily Flooded (R4SB4A)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Palustrine Scrub-Shrub Temporarily Flooded (PSSA)
- Palustrine Unconsolidated Bottom Permanently Flooded Excavated (PUBHx)
- Palustrine, Emergent, Permanently Flooded (PEMH)
- Palustrine, Emergent, Seasonally Flooded (PEMC)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Riverine Lower Perennial Unconsolidated Bottom Sand Excavated (R2UB2x)
- Riverine Lower Perennial Unconsolidated Bottom Sand (R2UB2)

Source:
Wetland Delineation Completed March 13-17, 2012
R. Huddleston and K. Steiner.
Update Completed July16-17, 2012
R. Huddleston and M. Fowler.
Update Completed December 12-13, 2012
R. Huddleston.



N

0 140 280 560 Feet

FIGURE 3-5
WETLANDS AND OTHER WATERS OF THE U.S.
MAP 5 OF 8

PG&E Topock Compressor Station
Needles, California

CH2MHILL

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Transect 16
Park Moabi Road
Transect 11
Transect 10
4 48" CMPs
Union Pacific Railroad
Interstate 40

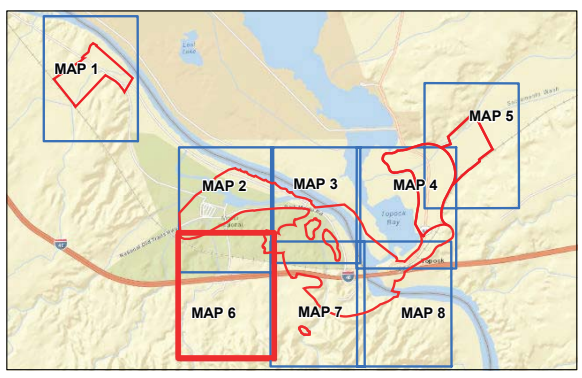
LEGEND

- Sample Point
- Tributary Sample Point
- Wetland Delineation Boundary
- Culvert
- Survey Transects

Water Types

- Erosional Feature
- Riverine Intermittent Stream Bed Sand Temporarily Flooded (R4SB4A)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Palustrine Scrub-Shrub Temporarily Flooded (PSSA)
- Palustrine Unconsolidated Bottom Permanently Flooded Excavated (PUBHx)
- Palustrine, Emergent, Permanently Flooded (PEMH)
- Palustrine, Emergent, Seasonally Flooded (PEMC)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Riverine Lower Perennial Unconsolidated Bottom Sand Excavated (R2UB2x)
- Riverine Lower Perennial Unconsolidated Bottom Sand (R2UB2)

Source:
Wetland Delineation Completed March 13-17, 2012
R. Huddleston and K. Steiner.
Update Completed July16-17, 2012
R. Huddleston and M. Fowler.
Update Completed December 12-13, 2012
R. Huddleston.



N

0 145 290 580 Feet

FIGURE 3-6
WETLANDS AND OTHER WATERS OF THE U.S.
MAP 6 OF 8
PG&E Topock Compressor Station
Needles, California

CH2MHILL

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Transect 5
TB-12
TB-5
24" CMP
4 48" Culverts
TB-16
TB-9
IM-3
TB-7
TB-23
TB-13
SP-15
TB-8
Transect 6
2 48" CMP
36" CMP
36" CMP
48" CMP
TB-6
TB-4
EM-12
SP-14
Transect 3
MW-20
TB-15
TB-14
SP-12
SP-11
22' Concrete Underpass
National Trails Highway
Interstate 40
4 10' Box Culverts
TB-3
SP-8
SP-9
EM-17
Transect 12
TB-2
TB-31
TB-27
TB-28
48" Culvert
TB-26
Transect 2
TB-29
PG&E
Topock
Compressor Station
TB-1
Transect 1
TB-25

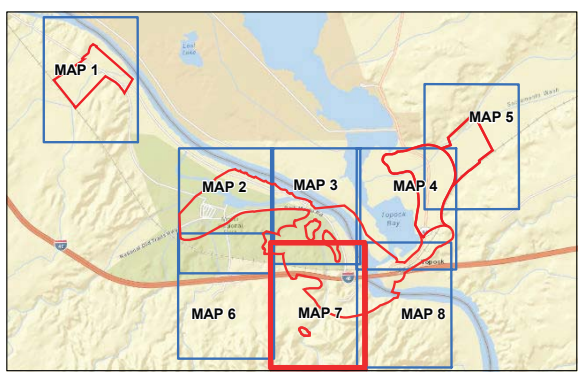
LEGEND

- Sample Point
- Tributary Sample Point
- Wetland Delineation Boundary
- Culvert
- Survey Transects

Water Types

- Erosional Feature
- Riverine Intermittent Stream Bed Sand Temporarily Flooded (R4SB4A)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Palustrine Scrub-Shrub Temporarily Flooded (PSSA)
- Palustrine Unconsolidated Bottom Permanently Flooded Excavated (PUBHx)
- Palustrine, Emergent, Permanently Flooded (PEMH)
- Palustrine, Emergent, Seasonally Flooded (PEMC)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Riverine Lower Perennial Unconsolidated Bottom Sand Excavated (R2UB2x)
- Riverine Lower Perennial Unconsolidated Bottom Sand (R2UB2)

Source:
Wetland Delineation Completed March 13-17, 2012
R. Huddleston and K. Steiner.
Update Completed July16-17, 2012
R. Huddleston and M. Fowler.
Update Completed December 12-13, 2012
R. Huddleston.



N

0 140 280 560 Feet

FIGURE 3-7
WETLANDS AND OTHER WATERS OF THE U.S.
MAP 7 OF 8

PG&E Topock Compressor Station
Needles, California

CH2MHILL

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SP-29
EM-12
SP-25
EM-14
SS-1
SP-27
SP-26
SP-28
EM-16a
EM-19
EM-13
SP-22
SP-24
State Route 95
Topock Marina
SP-12
SP-11
Union Pacific Railroad
Interstate 40
SP-10
SP-13
EM-17
EM-15
TB-31
48" Culvert
EM-16
TB-33
EM-18
36" Culvert
36" Culvert
TB-32

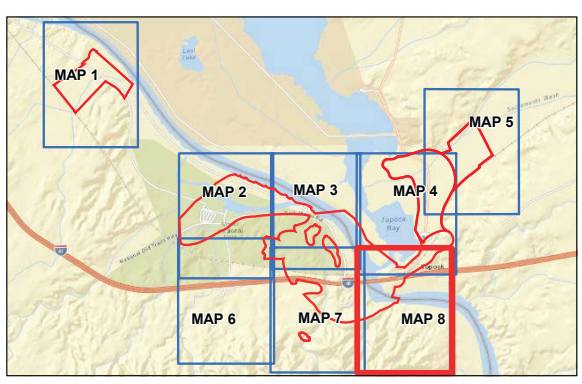
LEGEND

- Sample Point
- Tributary Sample Point
- Wetland Delineation Boundary
- Culvert
- Survey Transects

Water Types

- Erosional Feature
- Riverine Intermittent Stream Bed Sand Temporarily Flooded (R4SB4A)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Palustrine Scrub-Shrub Temporarily Flooded (PSSA)
- Palustrine Unconsolidated Bottom Permanently Flooded Excavated (PUBHx)
- Palustrine, Emergent, Permanently Flooded (PEMH)
- Palustrine, Emergent, Seasonally Flooded (PEMC)
- Riverine Intermittent Stream Bed Cobble-Gravel Temporarily Flooded (R4SB3A)
- Riverine Lower Perennial Unconsolidated Bottom Sand Excavated (R2UB2x)
- Riverine Lower Perennial Unconsolidated Bottom Sand (R2UB2)

Source:
Wetland Delineation Completed March 13-17, 2012
R. Huddleston and K. Steiner.
Update Completed July16-17, 2012
R. Huddleston and M. Fowler.
Update Completed December 12-13, 2012
R. Huddleston.



N

0 140 280 560 Feet

FIGURE 3-8
WETLANDS AND OTHER WATERS OF THE U.S.
MAP 8 OF 8

PG&E Topock Compressor Station
Needles, California

CH2MHILL

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LEGEND

- Wetlands Survey Area Boundary
- EIR Project Boundary
- Wetlands
- Non-Wetland Waters

N

0 750 1,500 3,000 Feet

FIGURE 3-9
CLEAN WATER ACT WETLANDS AND OTHER NON-WETLAND WATERS
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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Appendix A
Letter and E-mail from Gerry Salas, Regulatory Division of the U.S. Army Corps of Engineers

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

July 10, 2013

REPLY TO
ATTENTION OF
Regulatory Division

Yvonne Meeks
Environmental Remediation
Pacific Gas and Electric Company
6588 Ontario Rd
San Luis Obispo, CA 93405

Dear Ms. Meeks:

I am responding to your request (File No. SPL-2013-00476) dated February 12, 2013, for clarification on whether a Department of the Army Permit is required for the Topock Remediation Project, located near the city of Needles, San Bernardino County, California.

By this letter, the Corps verifies, although this activity may qualify for Nationwide Permit 38 (*Cleanup of Hazardous and Toxic Waste*), activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act. The attached U.S. Department of the Interior Memorandum dated November 16, 2007 verifies CERCLA applies to the Topock site. Therefore, a Section 404 permit is not required for the Topock Remediation Project.

If you have any questions, please contact me at 213-452-3417 or via e-mail at Gerardo.Salas@usace.army.mil. Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Gerardo Salas
Project Manager
L.A. & San Bernardino Section
North Coast Branch
Regulatory Division

Enclosure

United States Department of the Interior

OFFICE OF THE SOLICITOR

MEMORANDUM

TO: Kris Doebbler
Remedial Project Manager, PG&E Topock CERCLA Site

FROM: Melissa Derwart
Attorney-Advisor, Office of the Solicitor

RE: CERCLA Permit Exemption

DATE: November 16, 2007

Per your request, the following memorandum is provided to describe the scope and effect of the permit exemption codified in Section 121(e)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"). The Administrative Consent Agreement ("Consent Agreement"), executed July 11, 2005, between the United States Department of the Interior, the Bureau of Land Management, the U.S. Fish and Wildlife Service, the Bureau of Reclamation (collectively, the "Federal Agencies"), and Pacific Gas & Electric Company ("PG&E") expressly provides that any response action conducted at the PG&E Topock CERCLA Site (the "Site"), including studies, shall be subject to the permit exemption in CERCLA Section 121(e).[1] This memorandum provides further guidance on the language and purpose of the permit exemption and its applicability to the Site.

CERCLA Permit Exemption - Section 121(e)(1)

CERCLA Section 121(e)(1) provides that: "No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely on-site, where such remedial action is selected and carried out in compliance with this section."[2] This

[1] *See* Consent Agreement, Section XI (Other Applicable Laws).
[2] 42 U.S.C. §9621(e)(1).

provision, applies to all administrative requirements, whether or not they are actually styled as "permits." In other words, Section 121(e)'s permit exemption relieves a party from the permitting process, or any other administrative or procedural requirements (e.g. requirements for preparing and submitting permit applications). Any substantive elements that would be required by the permit, however, must still be attained.[3]

The permit exemption was developed by the U.S. Environmental Protection Agency ("EPA") in promulgating the National Contingency Plan ("NCP"), and subsequently codified by Congress in amendments to CERCLA, to ensure that CERCLA response actions "proceed in an expeditious manner, free from potentially lengthy delays associated with the permit process."[4] The rationale for the permit exemption, as articulated by EPA, is that procedural and administrative requirements typically required by a permit process should not be required during a CERCLA response action because "CERCLA and the NCP already provide a procedural blueprint" for a CERCLA response.[5] Therefore, exempting CERCLA response actions from external permitting processes would preclude delay, cost increases, and duplication, making the response process far more efficient.

When determining the applicability of the permit exemption, there are two threshold elements. First, there must be a "qualifying action," which is defined as any CERCLA response action "...conducted by a lead agency or by a potentially responsible person or other person under an order or consent decree..."[6] Second, the permit exemption applies only to the portion of the removal or remedial action which is conducted entirely "on-site." The NCP defines "on-site" as "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action."[7] EPA guidance and the NCP preamble further explains that "areal" refers to surface areas, the air above the site, the soil, and any groundwater plume that are to be remediated.[8]

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[3] *See In the Matter of U.S. Department of Energy Hanford Nuclear Reservation*, Determination Regarding CERCLA and RCRA Jurisdictional Relationship, EPA ALJ Opinion, February 9, 2000.
[4] EPA Guidance Document, *RCRA, Superfund & EPCRA Hotline Training Module; Introduction to Applicable or Relevant and Appropriate Requirements*, EPA540-R-98-020, June 1998.
[5] *Id.*
[6] EPA Guidance Document, *Permits and Permit "Equivalency" Processes for CERCLA On-Site Response Actions*, OSWER Directive 9355.7-03, February 19, 1992.
[7] *Id.*; 40 CFR § 300.400(e)(1).
[8] *See* EPA Guidance, *Permits and Permit "Equivalency"*; *See also*, 55 FR 8689, March 8, 1990.

Applicability to the Topock Site

The Consent Agreement provides for PG&E to perform both a Remedial Investigation and a Feasibility Study in a manner consistent with CERCLA and the NCP, and subject to the oversight of the Federal Agencies. Therefore, all activities conducted by PG&E pursuant to the Consent Agreement at the Site are qualifying actions to which the permit exemption applies.

In addition, the Consent Agreement defines the Site as "all areas where hazardous substances released at or from the Compressor Station have come to be located, including areas where hazardous substances are discovered in the course of performing the Work."[9] Hence, any response action performed within the boundaries of the Site, or areas in very close proximity to the Site that are necessary for implementation of the response action, are subject to the permit exemption. Response actions include, but are not limited to, groundwater pump and treat measures, in situ treatment, the collection and analysis of samples, and any other soil or groundwater investigation or cleanup.

I hope that this memorandum clarifies the scope and effect of the CERCLA permit exemption and its applicability to the Topock CERCLA Site. Please do not hesitate to contact me if you need any more information.

[9] Consent Agreement, Section VII (Definitions). "Work" is defined in the Consent Agreement as "all response actions and corrective actions associated with releases of hazardous substances at the Site performed by PG&E, including all activities to be performed by PG&E as described in Article IX (Work to Be Performed) and all activities conducted by PG&E pursuant to the CACA.

Appendix B
Detailed Site Vegetation Map

2008 Burn Area

Refference:

[1] Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California vegetation, 2nd ed. California Native Plant Society, Sacramento, CA.

Aerial Image Source:

Toponex Inc. aerial flyover, conducted August 2011

LEGEND

Project Area

Vegetation Types

- Desert Lilly
- Allscale Scrub (MCV2[1]: Allscale scrub) [1]
- Arrow Weed (MCV2: Arrow weed thickets)[2]
- Athel Tamarisk (MCV2: Tamarisk thickets)[3]
- Blue Paloverde (MCV2: Blue palo verde-Ironwood woodland)[4]
- Blue Paloverde/Catclaw Acacia (MCV2: Blue palo verde-Ironwood woodland)[5]
- Blue Paloverde/Honey Mesquite (MCV2: Blue palo verde woodland)[6]
- Broad-leaved Cattail (MCV2: Cattail marshes)[7]
- California Bullrush (MCV2: California bulrush marsh)[8]
- Catclaw Acacia (MCV2: Catclaw acacia thorn scrub)[9]
- Common Reed (MCV2: Common reed marshes)[10]
- Creosote bush scrub (MCV2:Creosote bush scrub)[11]
- Creosote Bush/Cattle Saltbush (MCV2: Allscale scrub)[12]
- Desert Smoke Tree (MCV2: Blue palo verde-Ironwood woodland)[13]
- Developed/Disturbed[14]
- Giant Reed (MCV2:Giant reed breaks)[15]
- Hillside Paloverde (MCV2: Foothill palo verde desert scrub)[16]
- Honey Mesquite (MCV2: Mesquite bosque)[17]
- Landscaped[18]
- Open Water [19]
- Quailbush Scrub (MCV2: Quailbush scrub)[20]
- Salt Cedar (MCV2: Tamarisk thickets)[21]
- Salt Cedar/Arrow Weed (MCV2: Tamarisk/Arrow weed thickets)[22]
- Salt Cedar/Athel Tamarisk (MCV2: Tamarisk thickets)[23]
- Salt Cedar/Honey Mesquite (MCV2: Tamarisk thickets/Mesquite bosque)[24]
- Salt Cedar/Honey Mesquite/Blue Paloverde (MCV2: Tamarisk thickets/Mesquite bosque/Blue palo verde-Ironwood woodland)[25]
- Salt Cedar/Screwbean Mesquite (MCV2: Tamarisk thickets/ Screwbean mesquite bosque)[26]
- Screwbean Mesquite (MCV2: Screwbean mesquite bosque)[27]
- Wetland [28]

FIGURE B-1
VEGETATION COMMUNITIES IN PROJECT AREA

FLORISTIC SURVEY
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

Path: D:\Projects\Topock\MapFiles\2013\Vegetation\Floristic\VegCommunities_11X17.mxd Date Saved: 8/12/2013 3:30:53 PM

Appendix C
Soil Maps and Descriptions

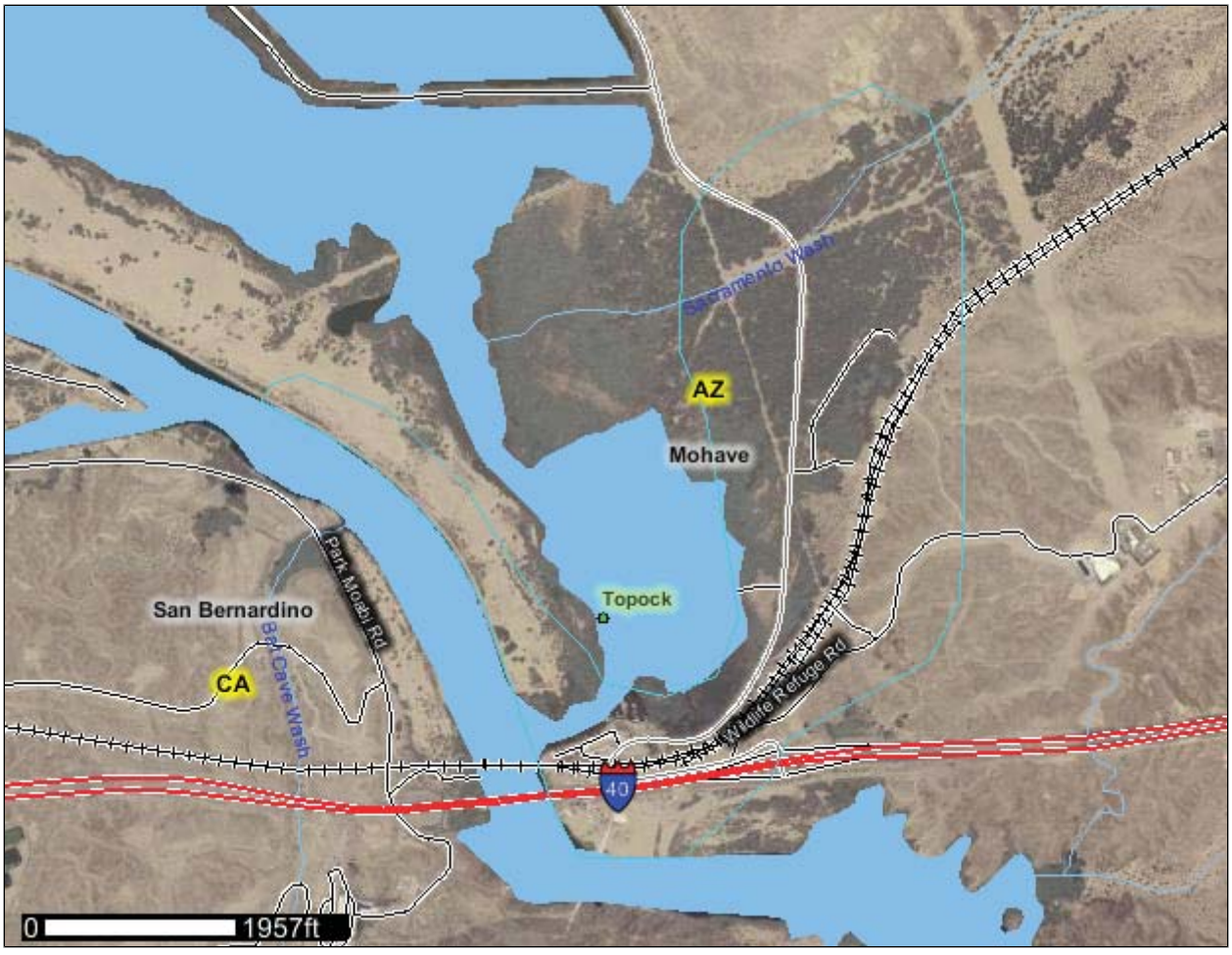
United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mohave County, Arizona, Southern Part

Mojave County, Arizona



August 15, 2012

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:17,100 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 11N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mohave County, Arizona, Southern Part
Survey Area Data: Version 9, Sep 12, 2008

Date(s) aerial images were photographed: 6/9/2007

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Mohave County, Arizona, Southern Part (AZ627)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
19	Carrizo family very gravelly loamy sand, 1 to 3 percent slopes	28.8	6.1%
39	Coolidge-Denure families complex, 1 to 7 percent slopes	24.0	5.1%
57	Gunsight very gravelly sandy loam, 10 to 40 percent slopes	130.6	27.7%
61	Huevi very gravelly loam, 10 to 40 percent slopes	1.1	0.2%
71	Lagunita sand, 0 to 1 percent slopes	206.1	43.7%
79	Marshes	13.6	2.9%
108	Rositas family, superstition and torriorthents soils, 1 to 60 percent slopes	59.4	12.6%
127	Water	7.9	1.7%
Totals for Area of Interest		**471.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially

where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mohave County, Arizona, Southern Part

19—Carrizo family very gravelly loamy sand, 1 to 3 percent slopes

Map Unit Setting

Elevation: 500 to 1,800 feet
Mean annual precipitation: 3 to 7 inches
Mean annual air temperature: 70 to 74 degrees F
Frost-free period: 250 to 325 days

Map Unit Composition

Carrizo family and similar soils: 75 percent

Description of Carrizo Family

Setting

Landform: Flood plains, alluvial fans
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very low (about 2.1 inches)

Interpretive groups

Land capability (nonirrigated): 7c
Ecological site: Sandy Wash 3-7" p.z. (R040XD416AZ)

Typical profile

0 to 1 inches: Very gravelly loamy sand
1 to 9 inches: Loamy sand
9 to 60 inches: Very gravelly coarse sand

39—Coolidge-Denure families complex, 1 to 7 percent slopes

Map Unit Setting

Elevation: 500 to 1,200 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 70 to 74 degrees F

Frost-free period: 250 to 325 days

Map Unit Composition

Coolidge family and similar soils: 40 percent
Denure family and similar soils: 35 percent

Description of Coolidge Family

Setting

Landform: Stream terraces, fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from mixed

Properties and qualities

Slope: 1 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water capacity: Low (about 4.7 inches)

Interpretive groups

Land capability (nonirrigated): 7c
Ecological site: Limy Fan 3-6" p.z. (R030XA105AZ)

Typical profile

0 to 2 inches: Gravelly loam
2 to 8 inches: Gravelly sandy loam
8 to 29 inches: Sandy loam
29 to 41 inches: Sandy loam
41 to 60 inches: Gravelly sand

Description of Denure Family

Setting

Landform: Stream terraces, fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from mixed

Properties and qualities

Slope: 1 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent

Available water capacity: Low (about 4.8 inches)

Interpretive groups

Land capability (nonirrigated): 7c
Ecological site: Limy Fan 3-6" p.z. (R030XA105AZ)

Typical profile

0 to 1 inches: Very gravelly loamy sand
1 to 11 inches: Loamy sand
11 to 60 inches: Sandy loam

57—Gunsight very gravelly sandy loam, 10 to 40 percent slopes

Map Unit Setting

Elevation: 460 to 2,400 feet
Mean annual precipitation: 3 to 7 inches
Mean annual air temperature: 70 to 74 degrees F
Frost-free period: 250 to 325 days

Map Unit Composition

Gunsight and similar soils: 85 percent

Description of Gunsight

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from mixed

Properties and qualities

Slope: 10 to 40 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 6.0 inches)

Interpretive groups

Land capability (nonirrigated): 7c
Ecological site: Limy Slopes 3-7" p.z. (R040XD408AZ)

Typical profile

0 to 3 inches: Very gravelly sandy loam
3 to 6 inches: Very gravelly sandy loam
6 to 28 inches: Extremely gravelly sandy loam

28 to 50 inches: Extremely gravelly coarse sandy loam
50 to 60 inches: Extremely gravelly loamy sand

61—Huevi very gravelly loam, 10 to 40 percent slopes

Map Unit Setting

Elevation: 600 to 2,400 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 70 to 74 degrees F
Frost-free period: 250 to 325 days

Map Unit Composition

Huevi and similar soils: 85 percent

Description of Huevi

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from mixed

Properties and qualities

Slope: 10 to 40 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water capacity: Very low (about 3.0 inches)

Interpretive groups

Land capability (nonirrigated): 7c
Ecological site: Limy Slopes 3-6" p.z. (R030XA107AZ)

Typical profile

0 to 2 inches: Very gravelly loam
2 to 9 inches: Very gravelly sandy loam
9 to 27 inches: Very gravelly sandy loam
27 to 40 inches: Extremely gravelly sandy loam
40 to 60 inches: Very gravelly loamy sand

71—Lagunita sand, 0 to 1 percent slopes

Map Unit Setting

Elevation: 500 to 700 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 70 to 74 degrees F
Frost-free period: 250 to 325 days

Map Unit Composition

Lagunita and similar soils: 85 percent

Description of Lagunita

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Other vegetative classification: unassigned (041XC320AZ)

Typical profile

0 to 2 inches: Sand
2 to 60 inches: Loamy sand

79—Marshes

Map Unit Composition

Marshes: 100 percent

Description of Marshes

Properties and qualities

Frequency of ponding: Frequent

108—Rositas family, superstition and torriorthents soils, 1 to 60 percent slopes

Map Unit Setting

Elevation: 450 to 950 feet
Mean annual precipitation: 3 to 7 inches
Mean annual air temperature: 70 to 74 degrees F
Frost-free period: 250 to 325 days

Map Unit Composition

Rositas family and similar soils: 40 percent
Torriorthents and similar soils: 25 percent
Superstition and similar soils: 25 percent

Description of Rositas Family

Setting

Landform: Sand sheets, dunes
Landform position (two-dimensional): Backslope, summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian sands derived from mixed

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)
Available water capacity: Low (about 4.0 inches)

Interpretive groups

Land capability (nonirrigated): 7c
Ecological site: Deep Sand 3-7" p.z. (R040XD423AZ)

Typical profile

0 to 17 inches: Fine sand
17 to 60 inches: Sand

Description of Superstition

Setting

Landform: Sand sheets

Landform position (two-dimensional): Summit, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Eolian sands derived from mixed

Properties and qualities

Slope: 1 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 3.6 inches)

Interpretive groups

Land capability (nonirrigated): 7c
Ecological site: Limy Fan 3-7" p.z. Sandy (R040XD406AZ)

Typical profile

0 to 1 inches: Gravelly fine sand
1 to 7 inches: Fine sand
7 to 60 inches: Fine sand

Description of Torriorthents

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Lacustrine deposits

Properties and qualities

Slope: 25 to 60 percent
Depth to restrictive feature: 4 to 60 inches to lithic bedrock
Drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability (nonirrigated): 7c

127—Water

Map Unit Composition

Water: 100 percent

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://soils.usda.gov/

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://soils.usda.gov/

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://soils.usda.gov/

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.glti.nrcs.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://soils.usda.gov/

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.

LOCATION CALVISTA CA

Established Series
Rev. GAW/LCL/JJJ
01/2003

CALVISTA SERIES

The Calvista series consists of shallow, well drained soils that formed in material from granitic rock that has seams of calcite. Calvista soils are on mountains ridges on slopes of 2 to 30 percent slopes. The mean annual precipitation is about 6 inches and the mean annual air temperature is about 65 degrees F.

TAXONOMIC CLASS: Loamy, mixed, superactive, thermic Lithic Haplocalcids

TYPICAL PEDON: Calvista sandy loam - native desert vegetation. (Colors are for dry soil unless otherwise noted)

A1--0 to 3 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine roots; many very fine interstitial, common very fine tubular pores; noncalcareous; moderately alkaline (pH 8.0); abrupt smooth boundary. (3 to 4 inches thick)

A2--3 to 7 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky, nonplastic; common very fine roots; many very fine interstitial, common very fine tubular pores; noncalcareous; moderately alkaline (pH 8.0); clear smooth boundary. (4 to 5 inches thick)

Bk--7 to 16 inches; light yellowish brown (10YR 6/4) heavy sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; common very fine, few very fine roots; many very fine interstitial, common very fine and fine tubular pores; spots of lime in soft masses; disseminated lime, slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (7 to 11 inches thick)

R--16 to 17 inches; hard (slightly weathered upper 1/2 inch) granitic rock that has seams of calcite. Some places in the weathered rock and fracture joints there are a few moderately thick, reddish brown clay films in pores and as bridges.

TYPE LOCATION: Los Angeles County, California; 200 feet west and 790 feet north of the SE corner of sec. 24, SE 1/4 SE 1/4, T. 7 N., R. 8 W., near San Bernardino County Line.

RANGE IN CHARACTERISTICS: Hard rock occurs at a depth of 14 to 20 inches. Gravel and coarser rock fragments are present, but do not exceed 35 percent by volume in the soil mantle. The mean soil temperature is about 65 degrees F. The soils are usually dry throughout the year and are moist for less than 60 days in the winter and spring of most years. All horizons are weakly expressed; there is little difference between horizons labeled A1, AC or C. They are brown, yellowish brown, pale brown, and light yellowish brown in 10YR hue (5/3, 5/4, 6/3, 6/4). The lower part of the profile tends to have chroma of 4. Textures are sandy loam or coarse sandy loam. Structure is weak or the soils are massive. The upper horizons are noncalcareous and mildly alkaline to moderately alkaline. All pedons are calcareous below 10 inches. The amount of lime ranges widely. Some segregations are present, but

amounts of calcium carbonate are less than 15 percent.

COMPETING SERIES: These are the Cieneba, Courthouse, Gaviota, Hi Vista, Tidwell, and Tollhouse series. Courthouse soils have 5YR to 10R hue. Cieneba soils are shallow but lack hard rock. Gaviota soils are continuously moist for more than 90 days in the winter and spring. Hi Vista soils have B2t horizons. Tidwell soils are calcareous in the upper part and lack secondary lime segregations in the lower part of the profile. Tollhouse soils have mollic epipedons and a mean soil temperature below 59 degrees F.

GEOGRAPHIC SETTING: Calvista soils are on gentle to steep slopes on low mountains, ridges, buttes, and domes in the deserts of southern California at elevations of 1,000 to 4,000 feet. The soils formed in residuum from granite and other closely related rocks. Rock outcrops may be present. The climate is arid. Precipitation is about 4 to 8 inches. There are very infrequent summer thunder showers and gentler rains of longer duration in winter. The mean temperature is about 62 to 67 degrees F, the average July temperature is about 80 to 84 degrees F, the average January temperature is about 45 to 48 degrees F. Frost-free season is 210 to 240 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Adelanto, Arizo, Cajon soils and the competing Hi Vista soils. Adelanto, Arizo, and Cajon soils are deep alluvial soils and lack a lithic contact.

DRAINAGE AND PERMEABILITY: Well drained; medium to rapid runoff; moderately rapid permeability.

USE AND VEGETATION: Used mainly for desert range; small areas used for homesites. Native vegetation is creosotebush, Mormon tea, very small amounts of perennial grasses, and annual grasses and forbs.

DISTRIBUTION AND EXTENT: Desert mountains of Southern California in MLRA 30 and possibly adjacent portions of Arizona and Nevada. The series is not extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Los Angeles County, California, 1971.

REMARKS: The Calvista soils were formerly classified as Lithosols. Series reclassified on September, 1994. The activity class was added to the classification in January of 2003. Competing series were not checked at that time. - ET

Last revised by the state on 7/72.

National Cooperative Soil Survey
U.S.A.

LOCATION CARRIZO CA+AZ NV

Established Series
Rev. LJL/PBF/CAH/ET
05/2012

CARRIZO SERIES

The Carrizo series consists of very deep, excessively drained soils formed in mixed igneous alluvium. Carrizo soils are on numerous landforms on flood plains, fan piedmonts and bolson floors. Slopes range from 0 to 15 percent. The mean annual precipitation is about 100 millimeters (4 inches) and the mean annual air temperature is about 21.5 degrees C (71 degrees F).

TAXONOMIC CLASS: Sandy-skeletal, mixed, hyperthermic Typic Torriorthents

TYPICAL PEDON: Carrizo extremely gravelly sand, rangeland and wildlife habitat. (Colors are for dry soil unless otherwise noted.) The soil surface is covered by approximately 70 percent gravel, 6 percent cobbles and 4 percent stones.

A -- 0 to 5 centimeters (0 to 2 inches); pale brown (10YR 6/3) extremely gravelly sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 55 percent gravel, 6 percent cobbles and 4 percent stones; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (2.5 to 10 centimeters thick)

C -- 5 to 152 centimeters (2 to 60 inches); pale brown (10YR 6/3) stratified extremely gravelly and very gravelly coarse sand, brown (10YR 4/3) moist; massive to single grain; soft, slightly hard, or loose, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine and few fine and medium interstitial pores; averages 55 percent gravel, 10 percent cobbles and 5 percent stones; very slightly effervescent and slightly effervescent; moderately alkaline (pH 8.4) and slightly alkaline (pH 7.8).

TYPE LOCATION: San Bernardino County, California; approximately 18.5 kilometers (11.5 miles) southwest of Amboy; about 610 meters (2,000 feet) south and 305 meters (1,000 feet) west of the NE corner of section 18, T. 4 N., R. 11 E., San Bernardino Base and Meridian; USGS Lead Mountain Northeast, CA 7.5 minute topographic quadrangle; 34 degrees, 26 minutes, 11.1 seconds north latitude and 115 degrees, 51 minutes, 47.8 seconds west longitude; UTM 11S, 0604440e 3810938n (DTM: NAD83).

RANGE IN CHARACTERISTICS:

Soil moisture control section: usually dry, moist in some parts for short periods during winter and early spring and for 10 to 20 days cumulative between July and September following convection storms. The soils have a typic-aridic soil moisture regime.

Soil temperature: 22 to 25 degrees C (72 to 77 degrees F).
Surface rock fragments: 25 to 100 percent, with 25 to 95 percent gravel, 0 to 40 percent cobbles, 0 to 25 percent stones and 0 to 2 percent boulders.

Control section
Rock fragments: averages 35 to 80 percent, gravel, cobbles and stones.
Clay content: averages 0 to 8 percent.
Effervescence: noneffervescent through violently effervescent.
Reaction: slightly acid through strongly alkaline.

A horizon

Hue: 7.5YR, 10YR or 2.5Y.
Value: 4 to 7 dry, 2 to 6 moist.
Chroma: 2 to 6 dry, 2 to 4 moist.
Clay content: 1 to 10 percent.
Texture of the fine earth: sand, loamy sand, sandy loam or fine sandy loam.
Rock fragments: 5 to 65 percent, with 5 to 65 percent gravel, 0 to 25 percent cobbles and 0 to 5 percent stones.
Effervescence: noneffervescent through violently effervescent.
Reaction: slightly acid through strongly alkaline.

C horizons

Hue: 7.5YR, 10YR or 2.5Y.
Value: 4 to 7 dry, 2 to 6 moist.
Chroma: 2 to 6 dry, 2 to 4 moist.
Clay content: averages 0 to 8 percent, ranges from 0 to 12 percent.
Texture of the fine earth: coarse sand, sand, loamy coarse sand or loamy sand. Some pedons have thin strata of fine sand, loamy fine sand or sandy loam.
Rock fragments: 10 to 85 percent, with 10 to 80 percent gravel with more than 50 percent as medium or coarse-sized, 0 to 25 percent cobbles and 0 to 10 percent stones.
Effervescence: noneffervescent through violently effervescent.
Reaction: slightly acid through strongly alkaline.
Silica: 0 to 25 percent as films on rock fragments.

COMPETING SERIES: These are the Carrwash (NV), Chemwash (CA), Goldenhills (CA) and Rizzo (CA) series. Carrwash and Chemwash soils are dominated by 2 to 5 millimeter (fine) gravel. Chemwash and Rizzo soils have mean annual soil temperatures that average greater than 25 degrees C, do not receive appreciable summer precipitation, and are generally dry throughout the moisture control section for most of the year. Goldenhills soils are formed in colluvium and residuum, have a surface C horizon with more than 80 percent rock cover, and are deep to a lithic contact.

GEOGRAPHIC SETTING: Carrizo soils are on numerous landforms on flood plains, fan piedmonts and bolson floors. Slopes range from 0 to 15 percent. The soils formed in mixed igneous alluvium. Elevations are -82 to 793 meters (-270 to 2,600 feet). The climate is arid with hot, dry summers and warm, moist winters. Precipitation is greatest in the winter with a lesser secondary peak in the summer. The mean annual precipitation is 75 to 125 millimeters (3 to 5 inches); mean January temperature is 12 degrees C (53 degrees F); mean July temperature is 35 degrees C (95 degrees F); mean annual air temperature is 20 to 23 degrees C (68 to 73.5 degrees F), and the frost-free season is 300 to 340 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Bristolake, Clegorpass, Heleweiser,

Pintobasin, and Riverbend soils. Bristolake soils are on nearby fan skirts and lower fan aprons, have a sandy particle size control section and are slightly saline with an SAR of 5 to 13 in the control section. Clegorpass and Heleweiser soils are on nearby fan remnants and have loamy-skeletal particle size control sections. In addition, Clegorpass soils have an argillic horizon and Heleweiser soils have a calcic horizon. Pintobasin soils are on similar landscape positions and are sandy throughout the particle size control section. Riverbend soils are on more stable landforms and have a calcic horizon.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Excessively drained; negligible to low runoff; high saturated hydraulic conductivity.

USE AND VEGETATION: These soils are used for rangeland, recreation and wildlife habitat. Present vegetation is creosote bush, burrobush, burrobrush and range ratany.

DISTRIBUTION AND EXTENT: Mojave Desert of southeastern California, western Arizona, and southern Nevada; MLRA 30. These soils are extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California.

SERIES ESTABLISHED: Imperial County (El Centro Area), California; 1918.

REMARKS: The type location was relocated in 2006 to the Marine Corps Air Ground Combat Center, Twentynine Palms, California to better represent the series concept. The series has been overused throughout the Southwestern deserts including areas with precipitation ranging from 2 to 12 inches. Soils with extreme aridic moisture regimes should consider using the Rizzo series proposed for use in the Lower Colorado Desert (MLRA 31) with a moisture control section that is typically dry throughout for most of the year. New series should be proposed for the high precipitation zones. Use in MLRA 40 should also be reevaluated.

Diagnostic horizons and features in this pedon include:
Ochric epipedon - from a depth of 0 to 18 centimeters (A and part of the C horizons).
Particle size control section - from a depth of 25 to 100 centimeters (part of the C horizon).

National Cooperative Soil Survey
U.S.A.

LOCATION COOLIDGE AZ

Established Series
Rev. MHL/FOY/MB
04/2009

COOLIDGE SERIES

The Coolidge series consists of very deep, well drained soils formed in fan or stream alluvium. Coolidge soils are on fan terraces, stream terraces or relict basin floors. Slopes are 0 to 5 percent. The mean annual precipitation is about 7 inches and the mean annual air temperature is about 72 degrees F.

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, hyperthermic Typic Haplocalcids

TYPICAL PEDON: Coolidge sandy loam - cultivated. (Colors are for dry soil unless otherwise noted.)

Ap--0 to 13 inches; light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine tubular pores; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (6 to 14 inches thick)

Bk1--13 to 24 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine tubular pores; many fine irregular calcium carbonate filaments; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (8 to 16 inches thick)

Bk2--24 to 42 inches; pale brown (10YR 6/3) sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many fine tubular pores; many soft calcium carbonate filaments and masses; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (10 to 30 inches thick)

Bk3--42 to 60 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; very hard, very friable, slightly sticky and slightly plastic; few medium tubular pores; 5 percent gravel; many fine soft calcium carbonate filaments and masses; violently effervescent; moderately alkaline (pH 8.4).

TYPE LOCATION: Maricopa County, Arizona; 900 feet west and 2,600 feet north of the northeast corner of section 8, T. 1 N., R. 2 W., latitude 33 degrees, 26 minutes, 33 seconds N., longitude 112 degrees, 28 minutes, 54 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during July - September and December - February. Driest during May and June. Typic aridic soil moisture regime.

Soil Temperature - 72 to 80 degrees F.

Rock fragments - Averages less than 15 percent in the particle size control section; but can have up to 35 percent in any one horizon

Depth to calcic horizon - 14 to 40 inches

Calcium carbonate equivalent - ranges from 6 to about 25 percent; as segregated soft masses or concretions. Some horizons have calcium carbonate filaments and coatings on ped or rock faces. All horizons contain disseminated calcium carbonate.

A horizon
Hue: 10YR, 7.5YR
Value: 5, 6 or 7 dry, 3, 4 or 5 moist
Chroma: 2, 3, 4 or 6, dry or moist
Organic matter: less than 1 percent

B horizon
Hue: 10YR, 7.5YR, 5YR
Value: 5, 6, 7 or 8 dry, 3, 4, 5 or 6 moist
Chroma: 2, 3, 4 or 6, dry or moist
Texture: Sandy loam, fine sandy loam; some pedons have thin (1/4 to 1 inch thick) strata of finer or coarser soil material in the control section

COMPETING SERIES: These are the Aco (CA), Garywash (T)(CA), Laveen (AZ), Rillito (AZ), and Toltec (AZ) series. Aco and Garywash soils are moist in some part of the soil moisture control section for less than 20 days cumulative between July and September. Aco soils have fine sand below the particle-size control section. Garywash soils have secondary accumulations of silica and gypsum in the control section. Laveen soils are loam and very fine sandy loam in the particle-size control section. Rillito soils have 15 to 35 percent gravel. Toltec soils have a calcic horizon that consists of a disintegrated hardpan.

GEOGRAPHIC SETTING: Coolidge soils are on fan terraces, stream terraces or relict basin floors and have slopes of 0 to 5 percent. Elevation ranges from 300 to 1,900 feet. These soils formed in stratified stream or fan alluvium from mixed sources. The climate is hot arid continental. The mean annual precipitation is 3 to 10 inches. Mean annual air temperature ranges from 68 to 74 degrees F. The frost-free period is 240 to 325 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Antho, Denure, Mohall and competing Rillito soils. Antho soils do not have calcic horizons. Denure soils have cambic horizons. Mohall soils are fine-loamy and have argillic horizons.

DRAINAGE AND PERMEABILITY: Well drained; very low to medium runoff; moderately rapid permeability.

USE AND VEGETATION: These soils are used for livestock grazing, wildlife habitat and irrigated cropland. Present vegetation is cacti, creosotebush, mesquite, triangleleaf bursage, annual weeds and grasses.

DISTRIBUTION AND EXTENT: Southern Arizona. The series is extensive. Total extent is about 102,000 acres. MLRA is 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Pinal County, Arizona; Casa Grande Area soil survey; 1936.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon - the zone from 0 to 13 inches (Ap horizon)

Calcic horizon - the zone from 13 to 60 inches (Bk1, Bk2, Bk3 horizons)

Classified according to Soil Taxonomy, Second Edition, 1999; Keys to Soil Taxonomy, Tenth Edition, 2006.

Revised for the correlation of AZ661, 12/2008, WWJ.

National Cooperative Soil Survey
U.S.A.

LOCATION DENURE AZ

Established Series
Rev. WWJ/JDP
04/2009

DENURE SERIES

The Denure series consists of very deep, somewhat excessively drained soils formed in fan or stream alluvium. Denure soils are on relict basin floors, stream terraces or fan terraces and have slopes of 0 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual air temperature is about 70 degrees F.

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, hyperthermic Typic Haplocambids

TYPICAL PEDON: Denure gravelly sandy loam - rangeland. (Colors are for dry soil unless otherwise noted.)

A--0 to 1 inch; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common fine irregular pores; 30 percent gravel; noneffervescent; slightly alkaline (pH 7.6), abrupt smooth boundary. (1 to 4 inches thick)

Bw--1 to 12 inches; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine irregular pores; 20 percent gravel; noneffervescent; slightly alkaline (pH 7.6); clear wavy boundary. (9 to 14 inches thick)

Bk--12 to 30 inches; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine irregular pores, a few thin patchy calcium carbonate coats on sand grains and in pores; 25 percent gravel; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (1 to 19 inches thick)

C--30 to 60 inches; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 5/4) moist; massive; soft, very friable; nonsticky and nonplastic; few very fine irregular pores; 20 percent gravel; strongly effervescent; moderately alkaline.

TYPE LOCATION: Maricopa County, Arizona; 750 feet south and 1350 feet east of the northwest corner of section 33, T. 5 N., R. 2 W. Latitude of 33 degrees, 44 minutes, 11 seconds N, Longitude of 112 degrees, 28 minutes, 38 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during July September and December - February. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature - 72 degrees F. or more at a depth of 20 inches

Rock fragments - 5 to 35 percent (weighted average for the particle-size control section). Some undisturbed areas have a weak desert pavement.

Calcium carbonate - Noneffervescent or slightly effervescent in the A and B horizons; slightly to violently effervescent in the lower B and C horizons. Calcium carbonate is disseminated and occurs as soft masses or coatings on gravel in the Bk horizon. Typically the calcium carbonate equivalent is less than 5 percent, however, when greater than 5 percent occurs the horizon is either to thin or to deep to be diagnostic in the classification of the profile.

Reaction - Neutral through moderately alkaline

Sodium adsorption ratio - Usually less than 4, but ranges to 13 in some pedons

Electrical conductivity (dS/m) - Usually less than 4, but ranges up to 50 in some pedons

A horizon
Hue: 10YR, 7.5YR
Value: 5, 6 or 7 dry, 4 or 5 moist
Chroma: 3, 4 or 6, dry or moist
Organic matter content: less than 1 percent

Bw horizon
Hue: 10YR, 7.5YR
Value: 4, 5 or 6 dry, 4 or 5 moist
Chroma: 3, 4 or 6, dry or moist
Texture: coarse sandy loam, sandy loam, fine sandy loam; can have some minor strata of coarser or finer textures
Rock fragments: 5 to 75 percent gravel in any one subhorizon
Structure: weak or moderate subangular blocky; massive in a few pedons

C horizon
Hue: 7.5YR, 10YR
Value: 4, 5, 6 or 7 dry, 4, 5 or 6 moist
Chroma: 3, 4 or 6, dry or moist
Texture: sandy loam, coarse sandy loam; can have some minor strata of finer or coarser textures
Rock fragments: 5 to 75 percent gravel in any one subhorizon

A buried Bt horizon is present in some areas at depths greater than 40 inches

COMPETING SERIES: These are the Dateland (AZ), and Pahaka (AZ) series. Dateland soils are dominantly medium textured (loam and very fine sandy loam) in the control section. Pahaka soils have a buried argillic horizon at depths of 20 to 40 inches.

GEOGRAPHIC SETTING: Denure soils are on stream terraces, fan terraces or relict basin floors. Slopes are dominantly less than 3 percent but range up to 8 percent. These soils formed in stratified stream or fan alluvium from acid and basic igneous rock and eolian deposits. Elevation is 500 to 2200 feet. The climate is hot, arid continental. The mean annual precipitation is 2 to 10 inches occurring as gentle winter rains and erratic high intensity summer thunderstorms. The mean annual air temperature is 68 to 74 degrees F. The frost-free period is 240 to 325 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the competing Dateland and the Antho, Gilman, and Momoli soils. Antho and Gilman soils do not have cambic horizons. Momoli soils are loamy-skeletal.

DRAINAGE AND PERMEABILITY: Somewhat excessively drained; runoff is medium on the gentle slopes and very low and low on nearly level slopes; moderately rapid permeability.

USE AND VEGETATION: Most areas are used for livestock grazing and wildlife habitat. Some areas are now being irrigated and used to grow citrus, cotton, alfalfa, and small grains. Vegetation is creosotebush, white bursage, annual forbs and grasses.

DISTRIBUTION AND EXTENT: Southern Arizona. The series is extensive. Total extent is about 392,000 acres. MLRA is 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Maricopa County, Arizona; Soil survey of Aguila-Carefree Area, Parts of Maricopa and Pinal Counties; 1982.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon - the zone from 0 to 1 inch (A horizon)

Cambic horizon - the zone from 1 to 12 inches (Bw horizon)

The type location was moved from the Gila BendAjo Area to the present location in the Aguila-Carefree Area in 1983. The present type location better typifies the concept of the series and the distinction between it and the competing Dateland series.

The name is from the old DeNure Ranch near Gila Bend.

Classified according Soil Taxonomy, Second Edition, 1999; Keys to Soil Taxonomy, Tenth Edition, 2006.

Revised for the correlation of AZ661, 12/2008, WWJ

National Cooperative Soil Survey
U.S.A.

LOCATION GILMAN AZ

Established Series
Rev. MSJ/YHH
04/2009

GILMAN SERIES

The Gilman series consists of very deep, well drained soils that formed in stratified stream alluvium. Gilman soils are on flood plains and alluvial fans and have slopes of 0 to 3 percent. The mean annual precipitation is about 7 inches and the mean annual air temperature is about 71 degrees F.

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, calcareous, hyperthermic Typic Torrifluvents

TYPICAL PEDON: Gilman loam - cultivated. (Colors are for dry soil unless otherwise noted.)

Ap--0 to 13 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few fine and medium roots; few fine tubular and common fine irregular pores; common fine and very fine mica flakes; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (6 to 18 inches thick)

C1--13 to 28 inches; pale brown (10YR 6/3) stratified very fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and slightly plastic; common fine and few medium roots; few fine tubular and common fine irregular pores; common to many fine and very fine mica flakes; few fine gravel; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary. (8 to 40 inches)

C2--28 to 60 inches; brown (10YR 5/3) stratified very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and slightly plastic; few fine roots; few fine tubular and common fine and very fine irregular pores; common fine and very fine mica flakes; few fine gravel; strongly effervescent; moderately alkaline (pH 8.2).

TYPE LOCATION: Maricopa County, Arizona; 2,500 feet south and 1,270 feet east of the northwest corner of section 10, T. 2 S., R. 7 E. Latitude of 33 degrees, 16 minutes, 14 seconds N., Longitude of 111 degrees, 37 minutes, 50 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during July-September and December-February. Driest during May and June. Typic aridic soil moisture regime.

Rock fragments - Less than 35 percent gravel

Reaction - Neutral to very strongly alkaline

Salinity- Nonsaline to strongly saline

SAR- Usually is less than 4, but ranges up to 15 in some pedons

A horizon
Hue: 10YR, 7.5YR
Value: 4 through 7 dry, 3, 4, 5 or 6 moist
Chroma: 2, 3, 4 or 6 dry, 2, 3, 4 or 5 moist
Texture: loamy sand to clay
Organic matter: less than 1 percent; decreases irregularly with depth
Calcium Carbonate: noneffervescent to strongly effervescent

C horizon
Hue: 10YR, 7.5YR
Value: 3, 4, 5, 6 or 7 dry, 3, 4, 5 or 6 moist
Chroma: 2, 3, 4 or 6 dry, 2 through 6 moist
Texture: loam, very fine sandy loam, silt loam; some have minor strata of finer or coarser textures.
Calcium Carbonate: slightly to violently effervescent; disseminated or mycelia-like filaments.
Buried horizons: buried argillic horizons occur below 40 inches in some pedons

COMPETING SERIES: These are the Antho (AZ) and Maripo (AZ) series. Antho soils have moderately coarse textured (sandy loam and fine sandy loam) C horizons. Maripo soils are underlain by sand at 20 to 40 inches.

GEOGRAPHIC SETTING: The Gilman soils are on flood plains and alluvial fans and have slopes of 0 to 3 percent. Elevations are 75 to 2500 feet. The soil formed in stratified stream alluvium from mixed sources. The mean annual precipitation is 2 to 10 inches. Mean annual air temperature is 70 to 76 degrees F. Frost-free period is about 240 to 350 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the competing Antho soils and the similar Carrizo, Glenbar, Mohall, Pimer and Vint soils. Carrizo soils are skeletal. Glenbar soils are fine-silty. Mohall soils have argillic horizons. Pimer soils are fine-silty and have more than 1 percent organic matter. Vint soils are sandy.

DRAINAGE AND PERMEABILITY: Well drained; slow runoff; moderate permeability.

USE AND VEGETATION: Used for livestock grazing and irrigated cropland. Under cultivation, Gilman soils are used for growing alfalfa, cotton, grains, sugar beets and truck crops such as melons, lettuce, onion, carrots, broccoli and potatoes. Native vegetation is mesquite, catclaw, creosotebush, arrowweed and saltbush. Cottonwoods, willows and salt cedar grow in open areas.

DISTRIBUTION AND EXTENT: Southern Arizona. Gilman soils are extensive. Total extent is about 409,000 acres. MLRA is 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Gila River Project, Soil Conservation Service, Arizona; 1936.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Entisol feature - the absence of diagnostic subsurface horizons

Classified according to Soil Taxonomy, Second Edition, 1999; Keys to Soil Taxonomy, Tenth Edition, 2006.

Revised for the correlation of AZ661, 01/2009, WWJ

National Cooperative Soil Survey
U.S.A.

LOCATION GUNSIGHT AZ

Established Series
Rev. EGC/MSJ/YHH
04/2009

GUNSIGHT SERIES

The Gunsight series consists of very deep, somewhat excessively drained, strongly calcareous soils that formed in alluvium from mixed sources. Gunsight soils are on fan terraces or stream terraces and have slopes of 0 to 60 percent. The mean annual precipitation is about 7 inches. Mean annual air temperature is about 71 degrees F.

TAXONOMIC CLASS: Loamy-skeletal, mixed, superactive, hyperthermic Typic Haplocalcids

TYPICAL PEDON: Gunsight very gravelly loam - rangeland. (Colors are for dry soil unless otherwise noted.) 50 to 60 percent of surface is covered with gravel.

A--0 to 2 inches; light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/4) moist; weak medium platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and fine irregular pores; 50 percent gravel; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (2 to 4 inches thick)

Bw--2 to 10 inches; pink (7.5YR 7/4) very gravelly loam, brown (7.5YR 5/4) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few fine and medium roots; common very fine irregular pores; 50 percent gravel; violently effervescent; few fine calcium carbonate filaments; moderately alkaline (pH 8.3); clear wavy boundary. (8 to 16 inches thick)

Bk1--10 to 18 inches; white (N 8/) and pinkish gray (7.5YR 7/2) extremely gravelly loam, pinkish gray (7.5YR 7/2) and brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common very fine irregular pores; 70 percent calcium carbonate coated gravel; violently effervescent; many large calcium carbonate masses; strongly alkaline (pH 8.5); gradual wavy boundary. (6 to 10 inches thick)

Bk2--18 to 32 inches; pinkish white (7.5YR 8/2), pinkish gray (7.5YR 7/2) and pink (7.5YR 7/4) extremely gravelly sandy loam, pinkish gray (7.5YR 7/2) and brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky and moderately plastic; few very fine roots; common very fine irregular pores; 75 percent calcium carbonate coated gravel; violently effervescent; many large calcium carbonate masses; moderately alkaline (pH 8.3); gradual wavy boundary. (12 to 20 inches thick)

Bk3--32 to 60 inches; pinkish white (7.5YR 8/2), pinkish gray (7.5YR 7/2) and pink (7.5YR 7/4) very gravelly loam, pinkish gray (7.5YR 7/2) and brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky and moderately plastic; common very fine irregular pores; 40 percent calcium carbonate coated gravel; violently effervescent; many large calcium carbonate masses; moderately alkaline (pH 8.3).

TYPE LOCATION: Pima County, Arizona; Organ Pipe Cactus National Monument Area; 2,640 feet south and 1,400 feet east of the northwest corner of section 1, T. 18 S., R. 5 W. Latitude of 31 degrees, 53 minutes, 17 seconds N., Longitude of 112 degrees, 44 minutes, 21 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during July-September and December-February. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature - 72 to 78 degrees F.

Depth to calcic horizon - 3 to 20 inches

Calcium Carbonate - More than 15 percent calcium carbonate equivalent in the calcic horizon. Occurs as small to large masses or nodules; weakly to strongly cemented in some pedons.

Rock fragments - Averages more than 35 percent in the control section. Some subhorizons have as much as 80 percent. Predominantly 1/2 to 3 inches in diameter. Some areas have a desert pavement with a moderate patina.

Reaction - Moderately or strongly alkaline

Sodicity- Nonsodic to strongly sodic

Texture- Fine sandy loam, sandy loam, loam in the particle-size control section. A few thin strata of less gravelly material occur in some pedons. Averages less than 18 percent clay.

A horizon
Hue: 7.5YR, 10YR
Value: 6, 7 or 8 dry, 4 or 5 moist
Chroma: 2 through 6, dry or moist

Bw horizon
Hue: 7.5YR, 10YR
Value: 5, 6 or 7 dry, 4 or 5 moist
Chroma: 3 or 4, dry or moist

Bk horizon
Hue: 7.5YR, 10YR
Value: 5 through 8 dry, 4 through 8 moist
Chroma: 2 through 4, dry or moist

COMPETING SERIES: These are the Chemehuevi (CA), Heleweiser (NV), Oldswede (T)(CA), and Supplymine (T)(CA) series. Chemehuevi soils have less than 15 percent calcium carbonate equivalent in the upper part of the calcic horizon and have secondary accumulations of silica and gypsum in the lower part of the calcic horizon. Heleweiser soils have gypsum in the lower part of the profile. Oldswede and Supplymine do not have OSDs and cannot be competed.

GEOGRAPHIC SETTING: Gunsight soils are on stream terraces or fan terraces. They formed in stratified alluvium from mixed sources. Slopes are dominantly 1 to 25 percent, but range from 0 to 60 percent. Elevations are 400 to 2600 feet. The climate is hot, arid and continental. Mean annual precipitation is 2 to 10 inches occurring as summer thunderstorms and gentle winter rains. Mean annual air temperature is 68 to 76 degrees F. The frost-free period is about 240 to 350 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Chuckawalla, Cipriano, Ebon, Harqua, Tremant and the similar Rillito soils. Chuckawalla, Ebon, Harqua and Tremant soils have argillic horizons. Cipriano soils have a duripan. Rillito soils have 15 to 35 percent gravel.

DRAINAGE AND PERMEABILITY: Somewhat excessively drained; very low to high runoff; moderate or moderately rapid permeability.

USE AND VEGETATION: Used for livestock grazing and recreation. The vegetation is creosotebush, ocotillo, paloverde, saguaro, cholla, and triangle bursage.

DISTRIBUTION AND EXTENT: Southwest and south central Arizona. The series is extensive. Total extent is about 585,000 acres. MLRA is 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Pima County, Arizona; Soil Survey of Organ Pipe Cactus-Cabeza Prieta Area, Arizona, Parts of Pima and Yuma Counties, 1971.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon - the zone from 0 to 2 inches (A horizon)

Calcic horizon - the zone from 10 to 40 inches (Bk1, Bk2, Bk3 horizons)

Classified according to Soil Taxonomy, Second Edition, 1999; Keys to Soil Taxonomy, Tenth Edition, 2006.

Revised for the correlation of AZ661, 2/2009, WWJ

National Cooperative Soil Survey
U.S.A.

LOCATION HUEVI NV AZ

Established Series
Rev. DJM/LJL/RLB/ET
05/2006

HUEVI SERIES

The Huevi series consist of very deep, well drained soils that formed in mixed gravelly alluvium. The Huevi series are on fan remnants, ballenas and fan terraces. Slope ranges from 1 to 70 percent. The mean annual precipitation is about 5 inches and the mean annual air temperature is about 72 degrees F.

TAXONOMIC CLASS: Loamy-skeletal, mixed, superactive, hyperthermic Durinodic Haplocalcids

TYPICAL PEDON: Huevi extremely gravelly sandy loam, rangeland and wildlife habitat. (Colors are for dry soil unless otherwise noted.) The soil surface is covered by approximately 60 percent pebbles and 15 percent cobbles.

A--0 to 5 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 4/3) moist; weak thick platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 60 percent pebbles and 15 percent cobbles; strongly effervescent; strongly alkaline (pH 8.5); clear smooth boundary. (2 to 6 inches thick)

Bkq--5 to 18 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium roots; many very fine and fine interstitial and few fine tubular pores; common medium calcium carbonate and silica coats on the bottom of rock fragments; common medium calcium carbonate occurring as concretions and soft masses; 50 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (6 to 15 inches thick)

2Bqk--18 to 60 inches; very pale brown (10YR 7/3) extremely cobbly coarse sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine through medium roots; common fine interstitial pores; 40 percent discontinuously weakly silica and calcium carbonate cemented with common medium strongly silica and calcium carbonate cemented masses occurring as lenses and concretions that are brittle when moist; common coarse silica and calcium carbonate coats and pendants on the bottom of rock fragments; 35 percent pebbles and 40 percent cobbles; violently effervescent; moderately alkaline (pH 8.4).

TYPE LOCATION: Clark County, Nevada; located in Cottonwood Valley, Lake Mead National Recreation Area; approximately 1.3 miles southeast of the Nine Mile Basin road turn off, along the powerline road; about 2,480 feet north and 2,330 feet west of the southeast corner of section 36, T. 29 S., R. 65 E.; USGS Spirit Mountain NW, NV 7.5 minute topographic quadrangle; 35 degrees, 22 minutes, and 35 seconds north latitude, 114 degrees, 40 minutes, and 55 seconds west longitude; UTM 11s, 710573e, 3917251n; NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Usually dry, moist in some part during winter and spring and intermittingly moist in the upper part following summer convection storms; typic aridic soil moisture regime.

Soil temperature - 72 to 78 degrees F.

Depth to calcic horizon - 2 to 6 inches.

Depth to duric feature - 8 to 21 inches.

Control section - Clay content: 8 to 18 percent.

Rock fragments: 35 to 80 percent gravel and cobbles.

Calcium carbonate equivalent in the less than 20 millimeter fraction: 15 to 35 percent.

A horizon - Hue: 10YR or 7.5YR

Value: 5 to 7 dry, 4 or 5 moist.

Chroma: 2 to 6 dry, 3 or 4 moist

Bkq horizon - Hue: 10YR or 7.5YR

Value: 6 or 7 dry, 4 to 6 moist.

Chroma: 2 to 6 dry, 3 or 4 moist

Texture: Sandy loam, fine sandy loam, loam.

Consistence: Soft or slightly hard, very friable or friable.

Structure: Massive or subangular blocky.

2Bqk horizon - Hue: 10YR or 7.5YR

Value: 6 to 8 dry, 4 to 6 moist.

Chroma: 2 to 6 dry or moist

Texture: Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam.

Consistence: Slightly hard through hard, friable or firm.

Structure: Massive or platy.

Cementation: Discontinuously weakly cemented silica and calcium carbonate, with 20 to 50 percent strong silica and calcium carbonate cementation occurring as concretions, durinodes, or lenses within the matrix. These are hard or very hard when dry, very firm when moist, brittle, and does not slake in dilute hydrochloric acid.

COMPETING SERIES: There are no competing series.

GEOGRAPHIC SETTING: Huevi soils are on fan remnants, ballenas and fan terraces. These soils

formed in mixed gravelly alluvium. Slope ranges from 1 to 70 percent. The elevations are 480 to 3,000 feet. The climate is low-latitude desert, with mild winters and very hot summers. Precipitation is greatest in the winter with a lesser secondary peak in summer, typical of the Mojave Desert.. The mean annual precipitation is 3 to 7 inches; the mean annual air temperature is 70 to 78 degrees F., and the frost free season is 240 to 365 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Carrizo, Cipriano, and Riverbend series. Carrizo soils lack a calcic horizon and have a sandy-skeletal particle-size control section. Cipriano soils have a duripan at depths of less than 20 inches. Riverbend soils have a sandy-skeletal particle-size control section and lack a silica cemented horizon.

DRAINAGE AND PERMEABILITY: Well drained; low through high runoff; moderate or moderately rapid permeability.

USE AND VEGETATION: These soils are used for rangeland and wildlife habitat. The present vegetation is mainly creosote bush, range ratany, and various annuals.

DISTRIBUTION AND EXTENT: Mojave Desert of southern Nevada and northwestern Arizona; MLRA 30. These soils are extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Mohave County, Arizona; Soil survey of the Shivwits Area, Arizona, Part of Mohave County; 1994.

REMARKS: Classified according to Keys to Soil Taxonomy Ninth Edition, 2003.

Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon - 0 to 5 inches (A horizon)

Calcic horizon - 5 to 18 inches (Bkq horizon)

Duric feature - 18 to 60 inches (2Bqk horizon)

Particle-size control section - 10 to 40 inches (Bkq and 2Bqk horizons)

National Cooperative Soil Survey
U.S.A.

LOCATION LAGUNITA AZ

Established Series
Rev. RLB/HEJ/PDC/RKS/HCD
10/2006

LAGUNITA SERIES

The Lagunita series consists of very deep, excessively drained soils that formed in stratified stream alluvium from mixed sources. Lagunita soils are on flood plains and generally have slopes of 0 to 3 percent, but range to 5 percent. The mean annual precipitation is about 4 inches and the mean annual air temperature is about 72 degrees F.

TAXONOMIC CLASS: Mixed, hyperthermic Typic Torripsamments

TYPICAL PEDON: Lagunita loamy sand - desert. (Colors are for dry soil unless otherwise noted.)

A--0 to 8 inches; pale brown (10YR 6/3) loamy sand, dark brown (10YR 3/3) moist; single grain; loose, dry and moist; many very fine roots; many very fine irregular pores; few very fine black sandy biotite flakes in thin strata; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary. (4 to 12 inches thick)

C1--8 to 30 inches; pale brown (10YR 6/3) weakly stratified loamy sand, brown (10YR 4/3) moist; single grain; loose, dry and moist; many very fine and fine roots; many very fine irregular pores; many very fine black sandy biotite flakes in thin strata; slightly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary. (15 to 25 inches thick)

C2--30 to 60 inches; pale brown (10YR 6/3) weakly stratified loamy sand, brown (10YR 4/3) moist; single grain; loose dry and moist; many very fine roots; many very fine irregular pores; many very fine black sandy biotite flakes in thin strata; slightly effervescent; moderately alkaline (pH 8.2).

TYPE LOCATION: Yuma County, Arizona; 1,000 feet south and 2,200 feet east of the southeast corner of section 24, R. 17 W., R. 8 S.

RANGE IN CHARACTERISTICS:

Soil moisture - Usually dry, intermittently moist in some part of the soil moisture control section during July - September and December - February. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature - 72 to 77 degrees F.

Rock fragments - Mainly less than 15 percent gravel by volume.

Organic matter content - Less than 1 percent decreasing irregularly with depth.

Calcium carbonate - Noneffervescent to violently effervescent. Calcium carbonate is disseminated; less than 5 percent calcium carbonate equivalent.

Salinity- Slightly to strongly saline

Reaction - Slightly or moderately alkaline

A horizon
Hue: 10YR, 7.5YR
Value: 5, 6 or 7 dry, 3, 4 or 5 moist
Chroma: 3 or 4, dry or moist

C horizon
Hue: 10YR, 7.5YR
Value: 5, 6 or 7 dry, 4, 5 or 6 moist
Chroma: 2, 3, 4 or 5 dry, 3 or 4 moist
Texture: Stratified loamy sand, sand, coarse sand, and loamy coarse sand

COMPETING SERIES: These are the Carsitas (CA), Myoma (CA), Pintobasin (T)(CA), and Rositas (CA) series. Carsitas soils average 15 to 35 percent coarse fragments in the control section. Myoma soils have hue of 10YR or yellower and are not subject to flooding. Pintobasin soils average more than 15 percent rock fragments, dominantly gravel, in the control section and are slightly acid to neutral throughout. Rositas soils have less than 15 percent coarse and very coarse sand and are on sand dunes.

GEOGRAPHIC SETTING: Lagunita soils are on flood plains and generally have slopes of 0 to 3 percent, but range to include 5 percent. They formed in stratified stream alluvium from mixed sources. Elevations are 75 to 1,400 feet. The climate is hot, arid and continental. Mean annual precipitation is 2 to 10 inches, which occurs as summer thunderstorms and as gentle winter rains. Mean annual air temperature ranges 69 to 76 degrees F. Frost-free period is about 240 to 325 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are Glenbar, Indio and Ripley soils. Glenbar soils have a fine-silty control section. Indio soils have a coarse-silty control section. Ripley soils have a coarse-silty over sandy control section.

DRAINAGE AND PERMEABILITY: Excessively drained; low runoff; rapid permeability.

USE AND VEGETATION: Used mainly for livestock grazing and wildlife habitat, but citrus, alfalfa and small grains are grown under irrigation in some areas. The vegetation is mainly fourwing saltbush, mesquite, creosotebush, globe mallow and sand verbena.

DISTRIBUTION AND EXTENT: Southern Arizona. The soils are moderately extensive. MLRA is 31 and 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Yuma County (Yuma-Wellton Area), Arizona; 1978.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

This soil does not have stratification with soil material finer than loamy sand.

Classified according to Keys to Soil Taxonomy, Ninth Edition, 2003.

National Cooperative Soil Survey
U.S.A.

LOCATION ROSITAS CA AZ NV

Established Series
Rev. RPZ/LAB/PDC/ET
03/2006

ROSITAS SERIES

The Rositas series consists of very deep, somewhat excessively drained soils formed in sandy eolian material. Rositas soils are on dunes and sand sheets. Slope ranges from 0 to 30 percent with hummocky or dune micro relief. Mean annual precipitation is about 4 inches and the mean annual air temperature is about 72 degrees F.

TAXONOMIC CLASS: Mixed, hyperthermic Typic Torripsamments

TYPICAL PEDON: Rositas fine sand - rangeland and wildlife habitat. (Colors are for dry soil unless otherwise noted.)

C1--0 to 9 inches; reddish yellow (7.5YR 7/6) fine sand, strong brown (7.5YR 5/6) moist; single grained; loose, nonsticky and nonplastic; common fine and medium roots; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (4 to 10 inches thick)

C2--9 to 60 inches; reddish yellow (7.5YR 7/6) fine sand, strong brown (7.5YR 5/6) moist; single grained; loose, nonsticky and nonplastic; few fine roots; strongly effervescent; moderately alkaline (pH 8.0).

TYPE LOCATION: Imperial County, California; about 17 miles east of Holtville; about 4,000 feet west, 300 feet south of the main entrance to Imperial Irrigation District, Experiment Farm No. 2; NW 1/4 of section 5, T.17 S., R.19 E.

RANGE IN CHARACTERISTICS:

Soil moisture: The soil is usually dry and is not moist for as long as 60 consecutive days. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature: 72 to 80 degrees F.

Organic matter: less than 0.5 percent and decreases regularly with depth

Control section Rock fragments: 0 to 5 percent fine gravel.

Clay content: 0 to 10 percent.

Effervescence: Slightly effervescent to strongly effervescent.

C1 horizon - Hue: 10YR, 7.5YR, 5YR

Value: 5 through 7, dry or moist

Chroma: 2 through 7, dry or moist

Rock fragments: 0 to 35 percent.

Other features: Some pedons are noneffervescent.

C2 horizon(s) - Hue: 10YR, 7.5YR, 5YR

Value: 5 through 7, dry or moist

Chroma: 2 through 7, dry or moist

Texture: Sand, loamy sand, fine sand, loamy fine sand. The 10 to 40 inch control section has less than 15 percent coarse and very coarse sand.

Salinity: 0 to 8 decisiemens/meter

Sodium adsorption ratio: 0 to 90

Reaction: Neutral to very strongly alkaline

Other features: Some pedons have few soft masses of calciumcarbonate.

COMPETING SERIES: These are the Carsitas (CA), Lagunita (AZ), Myoma (CA), and Pintobasin (CA) series. Carsitas soils have more than 15 percent rock fragments and are stratified. Lagunita soils are stratified, have an irregular decrease in organic carbon and are subject to flooding. Myoma soils have hue of 2.5Y or yellower throughout. Pintobasin soils are noneffervescent or very slightly effervescent in the particle-size control section and formed from mixed alluvium.

GEOGRAPHIC SETTING: Rositas soils are on dunes and sand sheets. Slope ranges from 0 to 30 percent. These soils formed in sandy eolian material. Elevations are 270 feet below sea level to 2000 feet. The climate is low-latitude desert, with mild winters and very hot summers. Precipitation is greatest in the winter with lesser secondary peak in the summer. The mean annual precipitation is 0 to 8 inches. The mean January temperature is about 53 degrees F., mean July temperature is 92 degrees F., and the mean annual air temperature is 70 to 77 degrees F. The frost-free period is about 250 to 365 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Aco, Holtville, Imperial, Meloland, Niland, and Vint series. Aco soils are sandy loam in the control section. Holtville soils are clayey in the upper part of the control section. Imperial soils are fine textured throughout the control section. Meloland soils are sandy loam in the upper part and fine in the lower part of the control section. Niland soils are fine textured in the lower part of the control section. Vint soils have an irregular decrease in organic carbon.

DRAINAGE AND PERMEABILITY: Somewhat excessively drained; negligible to low runoff; rapid permeability.

USE AND VEGETATION: Rositas soils are used for rangeland and wildlife habitat, and growing citrus fruits, grapes, alfalfa, and truck crops. Present vegetation is creosotebush, white bursage, desert buckwheat and mesquite.

DISTRIBUTION AND EXTENT: Southern California, southwestern Arizona and southern Nevada. Rositas soils are extensive in MLRAs 30 and 31 and are mapped in MLRA 40 within the Sonoran Desert.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Imperial County (El Centro Area), California; 1918.

Remarks: Diagnostic horizons and features recognized in this pedon are:

Entisol feature - The absence of diagnostic subsurface horizons

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National Cooperative Soil Survey
U.S.A.

LOCATION CALVISTA CA

Established Series
Rev. GAW/LCL/JJJ
01/2003

CALVISTA SERIES

The Calvista series consists of shallow, well drained soils that formed in material from granitic rock that has seams of calcite. Calvista soils are on mountains ridges on slopes of 2 to 30 percent slopes. The mean annual precipitation is about 6 inches and the mean annual air temperature is about 65 degrees F.

TAXONOMIC CLASS: Loamy, mixed, superactive, thermic Lithic Haplocalcids

TYPICAL PEDON: Calvista sandy loam - native desert vegetation. (Colors are for dry soil unless otherwise noted)

A1--0 to 3 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine roots; many very fine interstitial, common very fine tubular pores; noncalcareous; moderately alkaline (pH 8.0); abrupt smooth boundary. (3 to 4 inches thick)

A2--3 to 7 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky, nonplastic; common very fine roots; many very fine interstitial, common very fine tubular pores; noncalcareous; moderately alkaline (pH 8.0); clear smooth boundary. (4 to 5 inches thick)

Bk--7 to 16 inches; light yellowish brown (10YR 6/4) heavy sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; common very fine, few very fine roots; many very fine interstitial, common very fine and fine tubular pores; spots of lime in soft masses; disseminated lime, slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary. (7 to 11 inches thick)

R--16 to 17 inches; hard (slightly weathered upper 1/2 inch) granitic rock that has seams of calcite. Some places in the weathered rock and fracture joints there are a few moderately thick, reddish brown clay films in pores and as bridges.

TYPE LOCATION: Los Angeles County, California; 200 feet west and 790 feet north of the SE corner of sec. 24, SE 1/4 SE 1/4, T. 7 N., R. 8 W., near San Bernardino County Line.

RANGE IN CHARACTERISTICS: Hard rock occurs at a depth of 14 to 20 inches. Gravel and coarser rock fragments are present, but do not exceed 35 percent by volume in the soil mantle. The mean soil temperature is about 65 degrees F. The soils are usually dry throughout the year and are moist for less than 60 days in the winter and spring of most years. All horizons are weakly expressed; there is little difference between horizons labeled A1, AC or C. They are brown, yellowish brown, pale brown, and light yellowish brown in 10YR hue (5/3, 5/4, 6/3, 6/4). The lower part of the profile tends to have chroma of 4. Textures are sandy loam or coarse sandy loam. Structure is weak or the soils are massive. The upper horizons are noncalcareous and mildly alkaline to moderately alkaline. All pedons are calcareous below 10 inches. The amount of lime ranges widely. Some segregations are present, but

amounts of calcium carbonate are less than 15 percent.

COMPETING SERIES: These are the Cieneba, Courthouse, Gaviota, Hi Vista, Tidwell, and Tollhouse series. Courthouse soils have 5YR to 10R hue. Cieneba soils are shallow but lack hard rock. Gaviota soils are continuously moist for more than 90 days in the winter and spring. Hi Vista soils have B2t horizons. Tidwell soils are calcareous in the upper part and lack secondary lime segregations in the lower part of the profile. Tollhouse soils have mollic epipedons and a mean soil temperature below 59 degrees F.

GEOGRAPHIC SETTING: Calvista soils are on gentle to steep slopes on low mountains, ridges, buttes, and domes in the deserts of southern California at elevations of 1,000 to 4,000 feet. The soils formed in residuum from granite and other closely related rocks. Rock outcrops may be present. The climate is arid. Precipitation is about 4 to 8 inches. There are very infrequent summer thunder showers and gentler rains of longer duration in winter. The mean temperature is about 62 to 67 degrees F, the average July temperature is about 80 to 84 degrees F, the average January temperature is about 45 to 48 degrees F. Frost-free season is 210 to 240 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Adelanto, Arizo, Cajon soils and the competing Hi Vista soils. Adelanto, Arizo, and Cajon soils are deep alluvial soils and lack a lithic contact.

DRAINAGE AND PERMEABILITY: Well drained; medium to rapid runoff; moderately rapid permeability.

USE AND VEGETATION: Used mainly for desert range; small areas used for homesites. Native vegetation is creosotebush, Mormon tea, very small amounts of perennial grasses, and annual grasses and forbs.

DISTRIBUTION AND EXTENT: Desert mountains of Southern California in MLRA 30 and possibly adjacent portions of Arizona and Nevada. The series is not extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Los Angeles County, California, 1971.

REMARKS: The Calvista soils were formerly classified as Lithosols. Series reclassified on September, 1994. The activity class was added to the classification in January of 2003. Competing series were not checked at that time. - ET

Last revised by the state on 7/72.

National Cooperative Soil Survey
U.S.A.

LOCATION CARRIZO CA+AZ NV

Established Series
Rev. LJL/PBF/CAH/ET
05/2012

CARRIZO SERIES

The Carrizo series consists of very deep, excessively drained soils formed in mixed igneous alluvium. Carrizo soils are on numerous landforms on flood plains, fan piedmonts and bolson floors. Slopes range from 0 to 15 percent. The mean annual precipitation is about 100 millimeters (4 inches) and the mean annual air temperature is about 21.5 degrees C (71 degrees F).

TAXONOMIC CLASS: Sandy-skeletal, mixed, hyperthermic Typic Torriorthents

TYPICAL PEDON: Carrizo extremely gravelly sand, rangeland and wildlife habitat. (Colors are for dry soil unless otherwise noted.) The soil surface is covered by approximately 70 percent gravel, 6 percent cobbles and 4 percent stones.

A -- 0 to 5 centimeters (0 to 2 inches); pale brown (10YR 6/3) extremely gravelly sand, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few very fine roots; common very fine interstitial pores; 55 percent gravel, 6 percent cobbles and 4 percent stones; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary. (2.5 to 10 centimeters thick)

C -- 5 to 152 centimeters (2 to 60 inches); pale brown (10YR 6/3) stratified extremely gravelly and very gravelly coarse sand, brown (10YR 4/3) moist; massive to single grain; soft, slightly hard, or loose, very friable, nonsticky and nonplastic; common very fine and few fine roots; many very fine and few fine and medium interstitial pores; averages 55 percent gravel, 10 percent cobbles and 5 percent stones; very slightly effervescent and slightly effervescent; moderately alkaline (pH 8.4) and slightly alkaline (pH 7.8).

TYPE LOCATION: San Bernardino County, California; approximately 18.5 kilometers (11.5 miles) southwest of Amboy; about 610 meters (2,000 feet) south and 305 meters (1,000 feet) west of the NE corner of section 18, T. 4 N., R. 11 E., San Bernardino Base and Meridian; USGS Lead Mountain Northeast, CA 7.5 minute topographic quadrangle; 34 degrees, 26 minutes, 11.1 seconds north latitude and 115 degrees, 51 minutes, 47.8 seconds west longitude; UTM 11S, 0604440e 3810938n (DTM: NAD83).

RANGE IN CHARACTERISTICS:

Soil moisture control section: usually dry, moist in some parts for short periods during winter and early spring and for 10 to 20 days cumulative between July and September following convection storms. The soils have a typic-aridic soil moisture regime.

Soil temperature: 22 to 25 degrees C (72 to 77 degrees F).
Surface rock fragments: 25 to 100 percent, with 25 to 95 percent gravel, 0 to 40 percent cobbles, 0 to 25 percent stones and 0 to 2 percent boulders.

Control section
Rock fragments: averages 35 to 80 percent, gravel, cobbles and stones.
Clay content: averages 0 to 8 percent.
Effervescence: noneffervescent through violently effervescent.
Reaction: slightly acid through strongly alkaline.

A horizon

Hue: 7.5YR, 10YR or 2.5Y.
Value: 4 to 7 dry, 2 to 6 moist.
Chroma: 2 to 6 dry, 2 to 4 moist.
Clay content: 1 to 10 percent.
Texture of the fine earth: sand, loamy sand, sandy loam or fine sandy loam.
Rock fragments: 5 to 65 percent, with 5 to 65 percent gravel, 0 to 25 percent cobbles and 0 to 5 percent stones.
Effervescence: noneffervescent through violently effervescent.
Reaction: slightly acid through strongly alkaline.

C horizons

Hue: 7.5YR, 10YR or 2.5Y.
Value: 4 to 7 dry, 2 to 6 moist.
Chroma: 2 to 6 dry, 2 to 4 moist.
Clay content: averages 0 to 8 percent, ranges from 0 to 12 percent.
Texture of the fine earth: coarse sand, sand, loamy coarse sand or loamy sand. Some pedons have thin strata of fine sand, loamy fine sand or sandy loam.
Rock fragments: 10 to 85 percent, with 10 to 80 percent gravel with more than 50 percent as medium or coarse-sized, 0 to 25 percent cobbles and 0 to 10 percent stones.
Effervescence: noneffervescent through violently effervescent.
Reaction: slightly acid through strongly alkaline.
Silica: 0 to 25 percent as films on rock fragments.

COMPETING SERIES: These are the Carrwash (NV), Chemwash (CA), Goldenhills (CA) and Rizzo (CA) series. Carrwash and Chemwash soils are dominated by 2 to 5 millimeter (fine) gravel. Chemwash and Rizzo soils have mean annual soil temperatures that average greater than 25 degrees C, do not receive appreciable summer precipitation, and are generally dry throughout the moisture control section for most of the year. Goldenhills soils are formed in colluvium and residuum, have a surface C horizon with more than 80 percent rock cover, and are deep to a lithic contact.

GEOGRAPHIC SETTING: Carrizo soils are on numerous landforms on flood plains, fan piedmonts and bolson floors. Slopes range from 0 to 15 percent. The soils formed in mixed igneous alluvium. Elevations are -82 to 793 meters (-270 to 2,600 feet). The climate is arid with hot, dry summers and warm, moist winters. Precipitation is greatest in the winter with a lesser secondary peak in the summer. The mean annual precipitation is 75 to 125 millimeters (3 to 5 inches); mean January temperature is 12 degrees C (53 degrees F); mean July temperature is 35 degrees C (95 degrees F); mean annual air temperature is 20 to 23 degrees C (68 to 73.5 degrees F), and the frost-free season is 300 to 340 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Bristolake, Clegorpass, Heleweiser,

Pintobasin, and Riverbend soils. Bristolake soils are on nearby fan skirts and lower fan aprons, have a sandy particle size control section and are slightly saline with an SAR of 5 to 13 in the control section. Clegorpass and Heleweiser soils are on nearby fan remnants and have loamy-skeletal particle size control sections. In addition, Clegorpass soils have an argillic horizon and Heleweiser soils have a calcic horizon. Pintobasin soils are on similar landscape positions and are sandy throughout the particle size control section. Riverbend soils are on more stable landforms and have a calcic horizon.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Excessively drained; negligible to low runoff; high saturated hydraulic conductivity.

USE AND VEGETATION: These soils are used for rangeland, recreation and wildlife habitat. Present vegetation is creosote bush, burrobush, burrobrush and range ratany.

DISTRIBUTION AND EXTENT: Mojave Desert of southeastern California, western Arizona, and southern Nevada; MLRA 30. These soils are extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California.

SERIES ESTABLISHED: Imperial County (El Centro Area), California; 1918.

REMARKS: The type location was relocated in 2006 to the Marine Corps Air Ground Combat Center, Twentynine Palms, California to better represent the series concept. The series has been overused throughout the Southwestern deserts including areas with precipitation ranging from 2 to 12 inches. Soils with extreme aridic moisture regimes should consider using the Rizzo series proposed for use in the Lower Colorado Desert (MLRA 31) with a moisture control section that is typically dry throughout for most of the year. New series should be proposed for the high precipitation zones. Use in MLRA 40 should also be reevaluated.

Diagnostic horizons and features in this pedon include:
Ochric epipedon - from a depth of 0 to 18 centimeters (A and part of the C horizons).
Particle size control section - from a depth of 25 to 100 centimeters (part of the C horizon).

National Cooperative Soil Survey
U.S.A.

LOCATION COOLIDGE AZ

Established Series
Rev. MHL/FOY/MB
04/2009

COOLIDGE SERIES

The Coolidge series consists of very deep, well drained soils formed in fan or stream alluvium. Coolidge soils are on fan terraces, stream terraces or relict basin floors. Slopes are 0 to 5 percent. The mean annual precipitation is about 7 inches and the mean annual air temperature is about 72 degrees F.

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, hyperthermic Typic Haplocalcids

TYPICAL PEDON: Coolidge sandy loam - cultivated. (Colors are for dry soil unless otherwise noted.)

Ap--0 to 13 inches; light yellowish brown (10YR 6/4) sandy loam, brown (10YR 4/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine tubular pores; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (6 to 14 inches thick)

Bk1--13 to 24 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; few fine tubular pores; many fine irregular calcium carbonate filaments; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (8 to 16 inches thick)

Bk2--24 to 42 inches; pale brown (10YR 6/3) sandy loam, yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; many fine tubular pores; many soft calcium carbonate filaments and masses; violently effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary. (10 to 30 inches thick)

Bk3--42 to 60 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 5/3) moist; massive; very hard, very friable, slightly sticky and slightly plastic; few medium tubular pores; 5 percent gravel; many fine soft calcium carbonate filaments and masses; violently effervescent; moderately alkaline (pH 8.4).

TYPE LOCATION: Maricopa County, Arizona; 900 feet west and 2,600 feet north of the northeast corner of section 8, T. 1 N., R. 2 W., latitude 33 degrees, 26 minutes, 33 seconds N., longitude 112 degrees, 28 minutes, 54 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during July - September and December - February. Driest during May and June. Typic aridic soil moisture regime.

Soil Temperature - 72 to 80 degrees F.

Rock fragments - Averages less than 15 percent in the particle size control section; but can have up to 35 percent in any one horizon

Depth to calcic horizon - 14 to 40 inches

Calcium carbonate equivalent - ranges from 6 to about 25 percent; as segregated soft masses or concretions. Some horizons have calcium carbonate filaments and coatings on ped or rock faces. All horizons contain disseminated calcium carbonate.

A horizon
Hue: 10YR, 7.5YR
Value: 5, 6 or 7 dry, 3, 4 or 5 moist
Chroma: 2, 3, 4 or 6, dry or moist
Organic matter: less than 1 percent

B horizon
Hue: 10YR, 7.5YR, 5YR
Value: 5, 6, 7 or 8 dry, 3, 4, 5 or 6 moist
Chroma: 2, 3, 4 or 6, dry or moist
Texture: Sandy loam, fine sandy loam; some pedons have thin (1/4 to 1 inch thick) strata of finer or coarser soil material in the control section

COMPETING SERIES: These are the Aco (CA), Garywash (T)(CA), Laveen (AZ), Rillito (AZ), and Toltec (AZ) series. Aco and Garywash soils are moist in some part of the soil moisture control section for less than 20 days cumulative between July and September. Aco soils have fine sand below the particle-size control section. Garywash soils have secondary accumulations of silica and gypsum in the control section. Laveen soils are loam and very fine sandy loam in the particle-size control section. Rillito soils have 15 to 35 percent gravel. Toltec soils have a calcic horizon that consists of a disintegrated hardpan.

GEOGRAPHIC SETTING: Coolidge soils are on fan terraces, stream terraces or relict basin floors and have slopes of 0 to 5 percent. Elevation ranges from 300 to 1,900 feet. These soils formed in stratified stream or fan alluvium from mixed sources. The climate is hot arid continental. The mean annual precipitation is 3 to 10 inches. Mean annual air temperature ranges from 68 to 74 degrees F. The frost-free period is 240 to 325 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Antho, Denure, Mohall and competing Rillito soils. Antho soils do not have calcic horizons. Denure soils have cambic horizons. Mohall soils are fine-loamy and have argillic horizons.

DRAINAGE AND PERMEABILITY: Well drained; very low to medium runoff; moderately rapid permeability.

USE AND VEGETATION: These soils are used for livestock grazing, wildlife habitat and irrigated cropland. Present vegetation is cacti, creosotebush, mesquite, triangleleaf bursage, annual weeds and grasses.

DISTRIBUTION AND EXTENT: Southern Arizona. The series is extensive. Total extent is about 102,000 acres. MLRA is 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Pinal County, Arizona; Casa Grande Area soil survey; 1936.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon - the zone from 0 to 13 inches (Ap horizon)

Calcic horizon - the zone from 13 to 60 inches (Bk1, Bk2, Bk3 horizons)

Classified according to Soil Taxonomy, Second Edition, 1999; Keys to Soil Taxonomy, Tenth Edition, 2006.

Revised for the correlation of AZ661, 12/2008, WWJ.

National Cooperative Soil Survey
U.S.A.

LOCATION DENURE AZ

Established Series
Rev. WWJ/JDP
04/2009

DENURE SERIES

The Denure series consists of very deep, somewhat excessively drained soils formed in fan or stream alluvium. Denure soils are on relict basin floors, stream terraces or fan terraces and have slopes of 0 to 8 percent. The mean annual precipitation is about 6 inches and the mean annual air temperature is about 70 degrees F.

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, hyperthermic Typic Haplocambids

TYPICAL PEDON: Denure gravelly sandy loam - rangeland. (Colors are for dry soil unless otherwise noted.)

A--0 to 1 inch; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/3) moist; moderate fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common fine irregular pores; 30 percent gravel; noneffervescent; slightly alkaline (pH 7.6), abrupt smooth boundary. (1 to 4 inches thick)

Bw--1 to 12 inches; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine irregular pores; 20 percent gravel; noneffervescent; slightly alkaline (pH 7.6); clear wavy boundary. (9 to 14 inches thick)

Bk--12 to 30 inches; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; few very fine irregular pores, a few thin patchy calcium carbonate coats on sand grains and in pores; 25 percent gravel; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary. (1 to 19 inches thick)

C--30 to 60 inches; light brown (7.5YR 6/4) gravelly sandy loam, brown (7.5YR 5/4) moist; massive; soft, very friable; nonsticky and nonplastic; few very fine irregular pores; 20 percent gravel; strongly effervescent; moderately alkaline.

TYPE LOCATION: Maricopa County, Arizona; 750 feet south and 1350 feet east of the northwest corner of section 33, T. 5 N., R. 2 W. Latitude of 33 degrees, 44 minutes, 11 seconds N, Longitude of 112 degrees, 28 minutes, 38 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during July September and December - February. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature - 72 degrees F. or more at a depth of 20 inches

Rock fragments - 5 to 35 percent (weighted average for the particle-size control section). Some undisturbed areas have a weak desert pavement.

Calcium carbonate - Noneffervescent or slightly effervescent in the A and B horizons; slightly to violently effervescent in the lower B and C horizons. Calcium carbonate is disseminated and occurs as soft masses or coatings on gravel in the Bk horizon. Typically the calcium carbonate equivalent is less than 5 percent, however, when greater than 5 percent occurs the horizon is either to thin or to deep to be diagnostic in the classification of the profile.

Reaction - Neutral through moderately alkaline

Sodium adsorption ratio - Usually less than 4, but ranges to 13 in some pedons

Electrical conductivity (dS/m) - Usually less than 4, but ranges up to 50 in some pedons

A horizon
Hue: 10YR, 7.5YR
Value: 5, 6 or 7 dry, 4 or 5 moist
Chroma: 3, 4 or 6, dry or moist
Organic matter content: less than 1 percent

Bw horizon
Hue: 10YR, 7.5YR
Value: 4, 5 or 6 dry, 4 or 5 moist
Chroma: 3, 4 or 6, dry or moist
Texture: coarse sandy loam, sandy loam, fine sandy loam; can have some minor strata of coarser or finer textures
Rock fragments: 5 to 75 percent gravel in any one subhorizon
Structure: weak or moderate subangular blocky; massive in a few pedons

C horizon
Hue: 7.5YR, 10YR
Value: 4, 5, 6 or 7 dry, 4, 5 or 6 moist
Chroma: 3, 4 or 6, dry or moist
Texture: sandy loam, coarse sandy loam; can have some minor strata of finer or coarser textures
Rock fragments: 5 to 75 percent gravel in any one subhorizon

A buried Bt horizon is present in some areas at depths greater than 40 inches

COMPETING SERIES: These are the Dateland (AZ), and Pahaka (AZ) series. Dateland soils are dominantly medium textured (loam and very fine sandy loam) in the control section. Pahaka soils have a buried argillic horizon at depths of 20 to 40 inches.

GEOGRAPHIC SETTING: Denure soils are on stream terraces, fan terraces or relict basin floors. Slopes are dominantly less than 3 percent but range up to 8 percent. These soils formed in stratified stream or fan alluvium from acid and basic igneous rock and eolian deposits. Elevation is 500 to 2200 feet. The climate is hot, arid continental. The mean annual precipitation is 2 to 10 inches occurring as gentle winter rains and erratic high intensity summer thunderstorms. The mean annual air temperature is 68 to 74 degrees F. The frost-free period is 240 to 325 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the competing Dateland and the Antho, Gilman, and Momoli soils. Antho and Gilman soils do not have cambic horizons. Momoli soils are loamy-skeletal.

DRAINAGE AND PERMEABILITY: Somewhat excessively drained; runoff is medium on the gentle slopes and very low and low on nearly level slopes; moderately rapid permeability.

USE AND VEGETATION: Most areas are used for livestock grazing and wildlife habitat. Some areas are now being irrigated and used to grow citrus, cotton, alfalfa, and small grains. Vegetation is creosotebush, white bursage, annual forbs and grasses.

DISTRIBUTION AND EXTENT: Southern Arizona. The series is extensive. Total extent is about 392,000 acres. MLRA is 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Maricopa County, Arizona; Soil survey of Aguila-Carefree Area, Parts of Maricopa and Pinal Counties; 1982.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon - the zone from 0 to 1 inch (A horizon)

Cambic horizon - the zone from 1 to 12 inches (Bw horizon)

The type location was moved from the Gila BendAjo Area to the present location in the Aguila-Carefree Area in 1983. The present type location better typifies the concept of the series and the distinction between it and the competing Dateland series.

The name is from the old DeNure Ranch near Gila Bend.

Classified according Soil Taxonomy, Second Edition, 1999; Keys to Soil Taxonomy, Tenth Edition, 2006.

Revised for the correlation of AZ661, 12/2008, WWJ

National Cooperative Soil Survey
U.S.A.

LOCATION GILMAN AZ

Established Series
Rev. MSJ/YHH
04/2009

GILMAN SERIES

The Gilman series consists of very deep, well drained soils that formed in stratified stream alluvium. Gilman soils are on flood plains and alluvial fans and have slopes of 0 to 3 percent. The mean annual precipitation is about 7 inches and the mean annual air temperature is about 71 degrees F.

TAXONOMIC CLASS: Coarse-loamy, mixed, superactive, calcareous, hyperthermic Typic Torrifluvents

TYPICAL PEDON: Gilman loam - cultivated. (Colors are for dry soil unless otherwise noted.)

Ap--0 to 13 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few fine and medium roots; few fine tubular and common fine irregular pores; common fine and very fine mica flakes; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (6 to 18 inches thick)

C1--13 to 28 inches; pale brown (10YR 6/3) stratified very fine sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and slightly plastic; common fine and few medium roots; few fine tubular and common fine irregular pores; common to many fine and very fine mica flakes; few fine gravel; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary. (8 to 40 inches)

C2--28 to 60 inches; brown (10YR 5/3) stratified very fine sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and slightly plastic; few fine roots; few fine tubular and common fine and very fine irregular pores; common fine and very fine mica flakes; few fine gravel; strongly effervescent; moderately alkaline (pH 8.2).

TYPE LOCATION: Maricopa County, Arizona; 2,500 feet south and 1,270 feet east of the northwest corner of section 10, T. 2 S., R. 7 E. Latitude of 33 degrees, 16 minutes, 14 seconds N., Longitude of 111 degrees, 37 minutes, 50 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during July-September and December-February. Driest during May and June. Typic aridic soil moisture regime.

Rock fragments - Less than 35 percent gravel

Reaction - Neutral to very strongly alkaline

Salinity- Nonsaline to strongly saline

SAR- Usually is less than 4, but ranges up to 15 in some pedons

A horizon
Hue: 10YR, 7.5YR
Value: 4 through 7 dry, 3, 4, 5 or 6 moist
Chroma: 2, 3, 4 or 6 dry, 2, 3, 4 or 5 moist
Texture: loamy sand to clay
Organic matter: less than 1 percent; decreases irregularly with depth
Calcium Carbonate: noneffervescent to strongly effervescent

C horizon
Hue: 10YR, 7.5YR
Value: 3, 4, 5, 6 or 7 dry, 3, 4, 5 or 6 moist
Chroma: 2, 3, 4 or 6 dry, 2 through 6 moist
Texture: loam, very fine sandy loam, silt loam; some have minor strata of finer or coarser textures.
Calcium Carbonate: slightly to violently effervescent; disseminated or mycelia-like filaments.
Buried horizons: buried argillic horizons occur below 40 inches in some pedons

COMPETING SERIES: These are the Antho (AZ) and Maripo (AZ) series. Antho soils have moderately coarse textured (sandy loam and fine sandy loam) C horizons. Maripo soils are underlain by sand at 20 to 40 inches.

GEOGRAPHIC SETTING: The Gilman soils are on flood plains and alluvial fans and have slopes of 0 to 3 percent. Elevations are 75 to 2500 feet. The soil formed in stratified stream alluvium from mixed sources. The mean annual precipitation is 2 to 10 inches. Mean annual air temperature is 70 to 76 degrees F. Frost-free period is about 240 to 350 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the competing Antho soils and the similar Carrizo, Glenbar, Mohall, Pimer and Vint soils. Carrizo soils are skeletal. Glenbar soils are fine-silty. Mohall soils have argillic horizons. Pimer soils are fine-silty and have more than 1 percent organic matter. Vint soils are sandy.

DRAINAGE AND PERMEABILITY: Well drained; slow runoff; moderate permeability.

USE AND VEGETATION: Used for livestock grazing and irrigated cropland. Under cultivation, Gilman soils are used for growing alfalfa, cotton, grains, sugar beets and truck crops such as melons, lettuce, onion, carrots, broccoli and potatoes. Native vegetation is mesquite, catclaw, creosotebush, arrowweed and saltbush. Cottonwoods, willows and salt cedar grow in open areas.

DISTRIBUTION AND EXTENT: Southern Arizona. Gilman soils are extensive. Total extent is about 409,000 acres. MLRA is 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Gila River Project, Soil Conservation Service, Arizona; 1936.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Entisol feature - the absence of diagnostic subsurface horizons

Classified according to Soil Taxonomy, Second Edition, 1999; Keys to Soil Taxonomy, Tenth Edition, 2006.

Revised for the correlation of AZ661, 01/2009, WWJ

National Cooperative Soil Survey
U.S.A.

LOCATION GUNSIGHT AZ

Established Series
Rev. EGC/MSJ/YHH
04/2009

GUNSIGHT SERIES

The Gunsight series consists of very deep, somewhat excessively drained, strongly calcareous soils that formed in alluvium from mixed sources. Gunsight soils are on fan terraces or stream terraces and have slopes of 0 to 60 percent. The mean annual precipitation is about 7 inches. Mean annual air temperature is about 71 degrees F.

TAXONOMIC CLASS: Loamy-skeletal, mixed, superactive, hyperthermic Typic Haplocalcids

TYPICAL PEDON: Gunsight very gravelly loam - rangeland. (Colors are for dry soil unless otherwise noted.) 50 to 60 percent of surface is covered with gravel.

A--0 to 2 inches; light brown (7.5YR 6/4) very gravelly loam, brown (7.5YR 4/4) moist; weak medium platy structure; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; many very fine and fine irregular pores; 50 percent gravel; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary. (2 to 4 inches thick)

Bw--2 to 10 inches; pink (7.5YR 7/4) very gravelly loam, brown (7.5YR 5/4) moist; massive; slightly hard, friable, nonsticky and slightly plastic; few fine and medium roots; common very fine irregular pores; 50 percent gravel; violently effervescent; few fine calcium carbonate filaments; moderately alkaline (pH 8.3); clear wavy boundary. (8 to 16 inches thick)

Bk1--10 to 18 inches; white (N 8/) and pinkish gray (7.5YR 7/2) extremely gravelly loam, pinkish gray (7.5YR 7/2) and brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky and slightly plastic; few fine and medium roots; common very fine irregular pores; 70 percent calcium carbonate coated gravel; violently effervescent; many large calcium carbonate masses; strongly alkaline (pH 8.5); gradual wavy boundary. (6 to 10 inches thick)

Bk2--18 to 32 inches; pinkish white (7.5YR 8/2), pinkish gray (7.5YR 7/2) and pink (7.5YR 7/4) extremely gravelly sandy loam, pinkish gray (7.5YR 7/2) and brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky and moderately plastic; few very fine roots; common very fine irregular pores; 75 percent calcium carbonate coated gravel; violently effervescent; many large calcium carbonate masses; moderately alkaline (pH 8.3); gradual wavy boundary. (12 to 20 inches thick)

Bk3--32 to 60 inches; pinkish white (7.5YR 8/2), pinkish gray (7.5YR 7/2) and pink (7.5YR 7/4) very gravelly loam, pinkish gray (7.5YR 7/2) and brown (7.5YR 5/4) moist; massive; hard, friable, slightly sticky and moderately plastic; common very fine irregular pores; 40 percent calcium carbonate coated gravel; violently effervescent; many large calcium carbonate masses; moderately alkaline (pH 8.3).

TYPE LOCATION: Pima County, Arizona; Organ Pipe Cactus National Monument Area; 2,640 feet south and 1,400 feet east of the northwest corner of section 1, T. 18 S., R. 5 W. Latitude of 31 degrees, 53 minutes, 17 seconds N., Longitude of 112 degrees, 44 minutes, 21 seconds W., NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during July-September and December-February. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature - 72 to 78 degrees F.

Depth to calcic horizon - 3 to 20 inches

Calcium Carbonate - More than 15 percent calcium carbonate equivalent in the calcic horizon. Occurs as small to large masses or nodules; weakly to strongly cemented in some pedons.

Rock fragments - Averages more than 35 percent in the control section. Some subhorizons have as much as 80 percent. Predominantly 1/2 to 3 inches in diameter. Some areas have a desert pavement with a moderate patina.

Reaction - Moderately or strongly alkaline

Sodicity- Nonsodic to strongly sodic

Texture- Fine sandy loam, sandy loam, loam in the particle-size control section. A few thin strata of less gravelly material occur in some pedons. Averages less than 18 percent clay.

A horizon
Hue: 7.5YR, 10YR
Value: 6, 7 or 8 dry, 4 or 5 moist
Chroma: 2 through 6, dry or moist

Bw horizon
Hue: 7.5YR, 10YR
Value: 5, 6 or 7 dry, 4 or 5 moist
Chroma: 3 or 4, dry or moist

Bk horizon
Hue: 7.5YR, 10YR
Value: 5 through 8 dry, 4 through 8 moist
Chroma: 2 through 4, dry or moist

COMPETING SERIES: These are the Chemehuevi (CA), Heleweiser (NV), Oldswede (T)(CA), and Supplymine (T)(CA) series. Chemehuevi soils have less than 15 percent calcium carbonate equivalent in the upper part of the calcic horizon and have secondary accumulations of silica and gypsum in the lower part of the calcic horizon. Heleweiser soils have gypsum in the lower part of the profile. Oldswede and Supplymine do not have OSDs and cannot be competed.

GEOGRAPHIC SETTING: Gunsight soils are on stream terraces or fan terraces. They formed in stratified alluvium from mixed sources. Slopes are dominantly 1 to 25 percent, but range from 0 to 60 percent. Elevations are 400 to 2600 feet. The climate is hot, arid and continental. Mean annual precipitation is 2 to 10 inches occurring as summer thunderstorms and gentle winter rains. Mean annual air temperature is 68 to 76 degrees F. The frost-free period is about 240 to 350 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Chuckawalla, Cipriano, Ebon, Harqua, Tremant and the similar Rillito soils. Chuckawalla, Ebon, Harqua and Tremant soils have argillic horizons. Cipriano soils have a duripan. Rillito soils have 15 to 35 percent gravel.

DRAINAGE AND PERMEABILITY: Somewhat excessively drained; very low to high runoff; moderate or moderately rapid permeability.

USE AND VEGETATION: Used for livestock grazing and recreation. The vegetation is creosotebush, ocotillo, paloverde, saguaro, cholla, and triangle bursage.

DISTRIBUTION AND EXTENT: Southwest and south central Arizona. The series is extensive. Total extent is about 585,000 acres. MLRA is 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Pima County, Arizona; Soil Survey of Organ Pipe Cactus-Cabeza Prieta Area, Arizona, Parts of Pima and Yuma Counties, 1971.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon - the zone from 0 to 2 inches (A horizon)

Calcic horizon - the zone from 10 to 40 inches (Bk1, Bk2, Bk3 horizons)

Classified according to Soil Taxonomy, Second Edition, 1999; Keys to Soil Taxonomy, Tenth Edition, 2006.

Revised for the correlation of AZ661, 2/2009, WWJ

National Cooperative Soil Survey
U.S.A.

LOCATION HUEVI NV AZ

Established Series
Rev. DJM/LJL/RLB/ET
05/2006

HUEVI SERIES

The Huevi series consist of very deep, well drained soils that formed in mixed gravelly alluvium. The Huevi series are on fan remnants, ballenas and fan terraces. Slope ranges from 1 to 70 percent. The mean annual precipitation is about 5 inches and the mean annual air temperature is about 72 degrees F.

TAXONOMIC CLASS: Loamy-skeletal, mixed, superactive, hyperthermic Durinodic Haplocalcids

TYPICAL PEDON: Huevi extremely gravelly sandy loam, rangeland and wildlife habitat. (Colors are for dry soil unless otherwise noted.) The soil surface is covered by approximately 60 percent pebbles and 15 percent cobbles.

A--0 to 5 inches; pale brown (10YR 6/3) extremely gravelly sandy loam, brown (10YR 4/3) moist; weak thick platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many very fine and fine interstitial pores; 60 percent pebbles and 15 percent cobbles; strongly effervescent; strongly alkaline (pH 8.5); clear smooth boundary. (2 to 6 inches thick)

Bkq--5 to 18 inches; pale brown (10YR 6/3) very gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, nonsticky and nonplastic; many very fine and fine and few medium roots; many very fine and fine interstitial and few fine tubular pores; common medium calcium carbonate and silica coats on the bottom of rock fragments; common medium calcium carbonate occurring as concretions and soft masses; 50 percent pebbles and 5 percent cobbles; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary. (6 to 15 inches thick)

2Bqk--18 to 60 inches; very pale brown (10YR 7/3) extremely cobbly coarse sandy loam, brown (10YR 4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine through medium roots; common fine interstitial pores; 40 percent discontinuously weakly silica and calcium carbonate cemented with common medium strongly silica and calcium carbonate cemented masses occurring as lenses and concretions that are brittle when moist; common coarse silica and calcium carbonate coats and pendants on the bottom of rock fragments; 35 percent pebbles and 40 percent cobbles; violently effervescent; moderately alkaline (pH 8.4).

TYPE LOCATION: Clark County, Nevada; located in Cottonwood Valley, Lake Mead National Recreation Area; approximately 1.3 miles southeast of the Nine Mile Basin road turn off, along the powerline road; about 2,480 feet north and 2,330 feet west of the southeast corner of section 36, T. 29 S., R. 65 E.; USGS Spirit Mountain NW, NV 7.5 minute topographic quadrangle; 35 degrees, 22 minutes, and 35 seconds north latitude, 114 degrees, 40 minutes, and 55 seconds west longitude; UTM 11s, 710573e, 3917251n; NAD 83.

RANGE IN CHARACTERISTICS:

Soil moisture - Usually dry, moist in some part during winter and spring and intermittingly moist in the upper part following summer convection storms; typic aridic soil moisture regime.

Soil temperature - 72 to 78 degrees F.

Depth to calcic horizon - 2 to 6 inches.

Depth to duric feature - 8 to 21 inches.

Control section - Clay content: 8 to 18 percent.

Rock fragments: 35 to 80 percent gravel and cobbles.

Calcium carbonate equivalent in the less than 20 millimeter fraction: 15 to 35 percent.

A horizon - Hue: 10YR or 7.5YR

Value: 5 to 7 dry, 4 or 5 moist.

Chroma: 2 to 6 dry, 3 or 4 moist

Bkq horizon - Hue: 10YR or 7.5YR

Value: 6 or 7 dry, 4 to 6 moist.

Chroma: 2 to 6 dry, 3 or 4 moist

Texture: Sandy loam, fine sandy loam, loam.

Consistence: Soft or slightly hard, very friable or friable.

Structure: Massive or subangular blocky.

2Bqk horizon - Hue: 10YR or 7.5YR

Value: 6 to 8 dry, 4 to 6 moist.

Chroma: 2 to 6 dry or moist

Texture: Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam.

Consistence: Slightly hard through hard, friable or firm.

Structure: Massive or platy.

Cementation: Discontinuously weakly cemented silica and calcium carbonate, with 20 to 50 percent strong silica and calcium carbonate cementation occurring as concretions, durinodes, or lenses within the matrix. These are hard or very hard when dry, very firm when moist, brittle, and does not slake in dilute hydrochloric acid.

COMPETING SERIES: There are no competing series.

GEOGRAPHIC SETTING: Huevi soils are on fan remnants, ballenas and fan terraces. These soils

formed in mixed gravelly alluvium. Slope ranges from 1 to 70 percent. The elevations are 480 to 3,000 feet. The climate is low-latitude desert, with mild winters and very hot summers. Precipitation is greatest in the winter with a lesser secondary peak in summer, typical of the Mojave Desert.. The mean annual precipitation is 3 to 7 inches; the mean annual air temperature is 70 to 78 degrees F., and the frost free season is 240 to 365 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Carrizo, Cipriano, and Riverbend series. Carrizo soils lack a calcic horizon and have a sandy-skeletal particle-size control section. Cipriano soils have a duripan at depths of less than 20 inches. Riverbend soils have a sandy-skeletal particle-size control section and lack a silica cemented horizon.

DRAINAGE AND PERMEABILITY: Well drained; low through high runoff; moderate or moderately rapid permeability.

USE AND VEGETATION: These soils are used for rangeland and wildlife habitat. The present vegetation is mainly creosote bush, range ratany, and various annuals.

DISTRIBUTION AND EXTENT: Mojave Desert of southern Nevada and northwestern Arizona; MLRA 30. These soils are extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Mohave County, Arizona; Soil survey of the Shivwits Area, Arizona, Part of Mohave County; 1994.

REMARKS: Classified according to Keys to Soil Taxonomy Ninth Edition, 2003.

Diagnostic horizons and features recognized in this pedon are:

Ochric epipedon - 0 to 5 inches (A horizon)

Calcic horizon - 5 to 18 inches (Bkq horizon)

Duric feature - 18 to 60 inches (2Bqk horizon)

Particle-size control section - 10 to 40 inches (Bkq and 2Bqk horizons)

National Cooperative Soil Survey
U.S.A.

LOCATION LAGUNITA AZ

Established Series
Rev. RLB/HEJ/PDC/RKS/HCD
10/2006

LAGUNITA SERIES

The Lagunita series consists of very deep, excessively drained soils that formed in stratified stream alluvium from mixed sources. Lagunita soils are on flood plains and generally have slopes of 0 to 3 percent, but range to 5 percent. The mean annual precipitation is about 4 inches and the mean annual air temperature is about 72 degrees F.

TAXONOMIC CLASS: Mixed, hyperthermic Typic Torripsamments

TYPICAL PEDON: Lagunita loamy sand - desert. (Colors are for dry soil unless otherwise noted.)

A--0 to 8 inches; pale brown (10YR 6/3) loamy sand, dark brown (10YR 3/3) moist; single grain; loose, dry and moist; many very fine roots; many very fine irregular pores; few very fine black sandy biotite flakes in thin strata; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary. (4 to 12 inches thick)

C1--8 to 30 inches; pale brown (10YR 6/3) weakly stratified loamy sand, brown (10YR 4/3) moist; single grain; loose, dry and moist; many very fine and fine roots; many very fine irregular pores; many very fine black sandy biotite flakes in thin strata; slightly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary. (15 to 25 inches thick)

C2--30 to 60 inches; pale brown (10YR 6/3) weakly stratified loamy sand, brown (10YR 4/3) moist; single grain; loose dry and moist; many very fine roots; many very fine irregular pores; many very fine black sandy biotite flakes in thin strata; slightly effervescent; moderately alkaline (pH 8.2).

TYPE LOCATION: Yuma County, Arizona; 1,000 feet south and 2,200 feet east of the southeast corner of section 24, R. 17 W., R. 8 S.

RANGE IN CHARACTERISTICS:

Soil moisture - Usually dry, intermittently moist in some part of the soil moisture control section during July - September and December - February. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature - 72 to 77 degrees F.

Rock fragments - Mainly less than 15 percent gravel by volume.

Organic matter content - Less than 1 percent decreasing irregularly with depth.

Calcium carbonate - Noneffervescent to violently effervescent. Calcium carbonate is disseminated; less than 5 percent calcium carbonate equivalent.

Salinity- Slightly to strongly saline

Reaction - Slightly or moderately alkaline

A horizon
Hue: 10YR, 7.5YR
Value: 5, 6 or 7 dry, 3, 4 or 5 moist
Chroma: 3 or 4, dry or moist

C horizon
Hue: 10YR, 7.5YR
Value: 5, 6 or 7 dry, 4, 5 or 6 moist
Chroma: 2, 3, 4 or 5 dry, 3 or 4 moist
Texture: Stratified loamy sand, sand, coarse sand, and loamy coarse sand

COMPETING SERIES: These are the Carsitas (CA), Myoma (CA), Pintobasin (T)(CA), and Rositas (CA) series. Carsitas soils average 15 to 35 percent coarse fragments in the control section. Myoma soils have hue of 10YR or yellower and are not subject to flooding. Pintobasin soils average more than 15 percent rock fragments, dominantly gravel, in the control section and are slightly acid to neutral throughout. Rositas soils have less than 15 percent coarse and very coarse sand and are on sand dunes.

GEOGRAPHIC SETTING: Lagunita soils are on flood plains and generally have slopes of 0 to 3 percent, but range to include 5 percent. They formed in stratified stream alluvium from mixed sources. Elevations are 75 to 1,400 feet. The climate is hot, arid and continental. Mean annual precipitation is 2 to 10 inches, which occurs as summer thunderstorms and as gentle winter rains. Mean annual air temperature ranges 69 to 76 degrees F. Frost-free period is about 240 to 325 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are Glenbar, Indio and Ripley soils. Glenbar soils have a fine-silty control section. Indio soils have a coarse-silty control section. Ripley soils have a coarse-silty over sandy control section.

DRAINAGE AND PERMEABILITY: Excessively drained; low runoff; rapid permeability.

USE AND VEGETATION: Used mainly for livestock grazing and wildlife habitat, but citrus, alfalfa and small grains are grown under irrigation in some areas. The vegetation is mainly fourwing saltbush, mesquite, creosotebush, globe mallow and sand verbena.

DISTRIBUTION AND EXTENT: Southern Arizona. The soils are moderately extensive. MLRA is 31 and 40.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Phoenix, Arizona

SERIES ESTABLISHED: Yuma County (Yuma-Wellton Area), Arizona; 1978.

REMARKS: Diagnostic horizons and features recognized in this pedon are:

This soil does not have stratification with soil material finer than loamy sand.

Classified according to Keys to Soil Taxonomy, Ninth Edition, 2003.

National Cooperative Soil Survey
U.S.A.

LOCATION ROSITAS CA AZ NV

Established Series
Rev. RPZ/LAB/PDC/ET
03/2006

ROSITAS SERIES

The Rositas series consists of very deep, somewhat excessively drained soils formed in sandy eolian material. Rositas soils are on dunes and sand sheets. Slope ranges from 0 to 30 percent with hummocky or dune micro relief. Mean annual precipitation is about 4 inches and the mean annual air temperature is about 72 degrees F.

TAXONOMIC CLASS: Mixed, hyperthermic Typic Torripsamments

TYPICAL PEDON: Rositas fine sand - rangeland and wildlife habitat. (Colors are for dry soil unless otherwise noted.)

C1--0 to 9 inches; reddish yellow (7.5YR 7/6) fine sand, strong brown (7.5YR 5/6) moist; single grained; loose, nonsticky and nonplastic; common fine and medium roots; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary. (4 to 10 inches thick)

C2--9 to 60 inches; reddish yellow (7.5YR 7/6) fine sand, strong brown (7.5YR 5/6) moist; single grained; loose, nonsticky and nonplastic; few fine roots; strongly effervescent; moderately alkaline (pH 8.0).

TYPE LOCATION: Imperial County, California; about 17 miles east of Holtville; about 4,000 feet west, 300 feet south of the main entrance to Imperial Irrigation District, Experiment Farm No. 2; NW 1/4 of section 5, T.17 S., R.19 E.

RANGE IN CHARACTERISTICS:

Soil moisture: The soil is usually dry and is not moist for as long as 60 consecutive days. Driest during May and June. Typic aridic soil moisture regime.

Soil temperature: 72 to 80 degrees F.

Organic matter: less than 0.5 percent and decreases regularly with depth

Control section Rock fragments: 0 to 5 percent fine gravel.

Clay content: 0 to 10 percent.

Effervescence: Slightly effervescent to strongly effervescent.

C1 horizon - Hue: 10YR, 7.5YR, 5YR

Value: 5 through 7, dry or moist

Chroma: 2 through 7, dry or moist

Rock fragments: 0 to 35 percent.

Other features: Some pedons are noneffervescent.

C2 horizon(s) - Hue: 10YR, 7.5YR, 5YR

Value: 5 through 7, dry or moist

Chroma: 2 through 7, dry or moist

Texture: Sand, loamy sand, fine sand, loamy fine sand. The 10 to 40 inch control section has less than 15 percent coarse and very coarse sand.

Salinity: 0 to 8 decisiemens/meter

Sodium adsorption ratio: 0 to 90

Reaction: Neutral to very strongly alkaline

Other features: Some pedons have few soft masses of calciumcarbonate.

COMPETING SERIES: These are the Carsitas (CA), Lagunita (AZ), Myoma (CA), and Pintobasin (CA) series. Carsitas soils have more than 15 percent rock fragments and are stratified. Lagunita soils are stratified, have an irregular decrease in organic carbon and are subject to flooding. Myoma soils have hue of 2.5Y or yellower throughout. Pintobasin soils are noneffervescent or very slightly effervescent in the particle-size control section and formed from mixed alluvium.

GEOGRAPHIC SETTING: Rositas soils are on dunes and sand sheets. Slope ranges from 0 to 30 percent. These soils formed in sandy eolian material. Elevations are 270 feet below sea level to 2000 feet. The climate is low-latitude desert, with mild winters and very hot summers. Precipitation is greatest in the winter with lesser secondary peak in the summer. The mean annual precipitation is 0 to 8 inches. The mean January temperature is about 53 degrees F., mean July temperature is 92 degrees F., and the mean annual air temperature is 70 to 77 degrees F. The frost-free period is about 250 to 365 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Aco, Holtville, Imperial, Meloland, Niland, and Vint series. Aco soils are sandy loam in the control section. Holtville soils are clayey in the upper part of the control section. Imperial soils are fine textured throughout the control section. Meloland soils are sandy loam in the upper part and fine in the lower part of the control section. Niland soils are fine textured in the lower part of the control section. Vint soils have an irregular decrease in organic carbon.

DRAINAGE AND PERMEABILITY: Somewhat excessively drained; negligible to low runoff; rapid permeability.

USE AND VEGETATION: Rositas soils are used for rangeland and wildlife habitat, and growing citrus fruits, grapes, alfalfa, and truck crops. Present vegetation is creosotebush, white bursage, desert buckwheat and mesquite.

DISTRIBUTION AND EXTENT: Southern California, southwestern Arizona and southern Nevada. Rositas soils are extensive in MLRAs 30 and 31 and are mapped in MLRA 40 within the Sonoran Desert.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: Imperial County (El Centro Area), California; 1918.

Remarks: Diagnostic horizons and features recognized in this pedon are:

Entisol feature - The absence of diagnostic subsurface horizons

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National Cooperative Soil Survey
U.S.A.

Appendix D
Dredging History and Historical Aerial Photographs

Historical Records on Colorado River Dredging and Channel Modifications

The following information is taken from Pacific Gas and Electric Companies *Final RCRA Facility Investigation/Remedial Investigation (RFI/RI), PG&E Topock Compressor Station, Needles, California Volume 2 Addendum Report* June 29, 2009. Appendix A1 - selected historical aerial and land-based photographs and drawing of the historic dredging are included following the summary text.

In June 2008, additional information was obtained from the Bureau of Reclamation (BOR) files on dredging of the Colorado River and historical channel improvements that occurred in the vicinity of the study area. The historical records were obtained through a Freedom of Information Act request.

Historical Records on Colorado River Dredging and Channel Modifications

The documents obtained included historical reports, photographs (aerial and land-based), drawings, river gauging data, and other operation records from BOR's Boulder City area office files for the time period from 1944 through 1968. The purpose of this records search was to obtain additional detail on the dredging and bank stabilization operations along the Colorado River channel and shoreline that could have bearing on the surface water and sediment characterization in the RFI/RI. Selected photographic records and drawings relevant to this document review are included following the summary text.

1944 through 1948

The BOR records from 1944 through 1948 document the emergency relief measures that were undertaken in the Needles area to address the aggradation of the Colorado River channel and groundwater level rise due to the closing of Parker Dam and subsequent filling of Lake Havasu. An existing levee near Needles, California was raised and extended. These modifications were considered temporary protection for Needles until Colorado River dredging and channelization could begin. The levee in the Needles area was also rip-rapped in 1948 as a further measure of protection.

1949 through 1953

On January 31, 1949, the BOR initiated dredging of the Colorado River channel from Needles to Topock, Arizona using "The Colorado" dredge. The primary channelization excavation work was completed by April 1951, and maintenance dredging continued through January 1953. During this period, 15,546,000 cubic yards of dredging material were removed from the Needles to Topock channel, according to the BOR Region 3 Reports on River Control Work and Investigations. The total dredging volume was based on the monthly operations records in the BOR reports. The dredge material was used to construct the bank line and levees

on this section of the river, and additional material was placed at two sites immediately downstream of Topock (designated Spoil Sites 1 and 2).

1953 through 1961

Once channelization of the Needles to Topock river section was complete, BOR dredging operations commenced in 1953 directly upstream of Needles (Big Bend to Needles section). The purpose of the upstream dredging was to protect the channelization downstream by preventing sediments in the Big Bend to Needles section from moving downstream. This excavation was completed in July 1960. Maintenance dredging of the river channel in the Topock area continued in 1961.

1965 through 1968

The BOR records indicate that major dredging was performed in 1965 to produce the side channel and slough at San Bernardino County's Park Moabi, as shown in Figure 2-1. Historical photographs indicate that much of the present shoreline, bank stabilization, and sand dune area features in the Park Moabi area were completed during this period. In 1965, BOR initiated development of an active water management system for the Topock Marsh for the Havasu National Wildlife Refuge (HNWR). By 1966, a dike and inlet channel were constructed to divert Colorado River flow into Topock Marsh. A small inlet canal and control structure was constructed by dewatering the area and excavating materials from the current inlet. Jetties were constructed upstream of the inlet to form a narrower channel, and to cause the water to scour the sand bar at the entrance to the inlet. Levee systems were also constructed along the Colorado River shoreline during this time period.

In summary, the historical BOR photographs and operations records provide a more complete chronology of the dredging and channel improvements that were completed in the Park Moabi-Topock site area. The overall dredging and channelization work resulted in lower water surface elevations of the Colorado River near Needles, as well as reduction of sediment flows to Lake Havasu downstream of the Topock area. Channel capacity in this section of the river now averages approximately 15,000 cubic feet per second (cfs), with a levee system designed for up to 50,000 cfs.

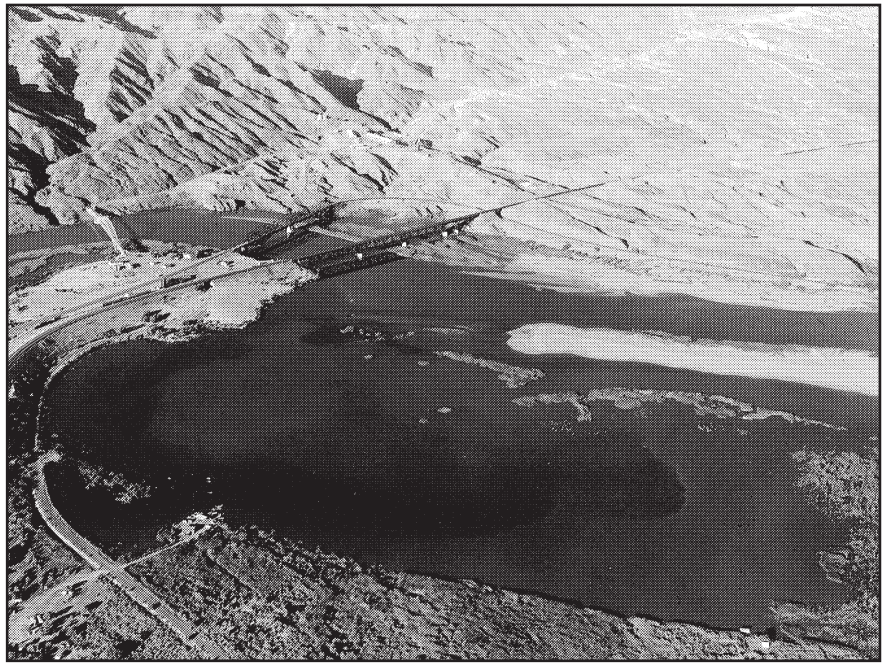
P423-306-1299A. Jetties constructed on Arizona bank at 300′ and 500′ intervals from Sta. 38-00 to Sta. 67-00. Jan. 31, 1956. Photo by H.B. Burress.

Aerial view of the Colorado River.
P423-306-1334A – CRFW&LS – Sta. 60-100. August 1956.

APPENDIX D-1
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

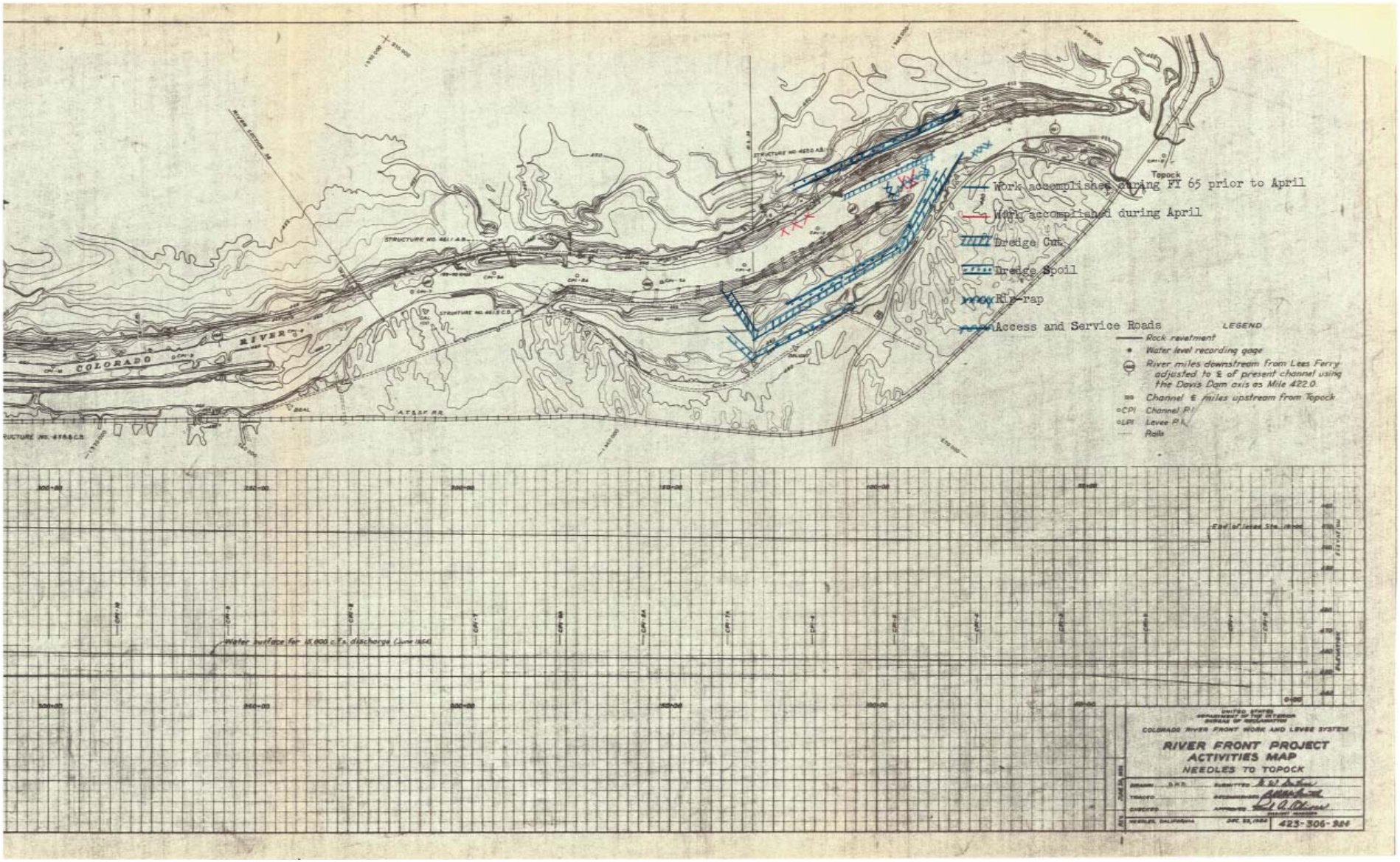


P423-306-371A-CRFW&LS – Topock Bridges. August 1956.

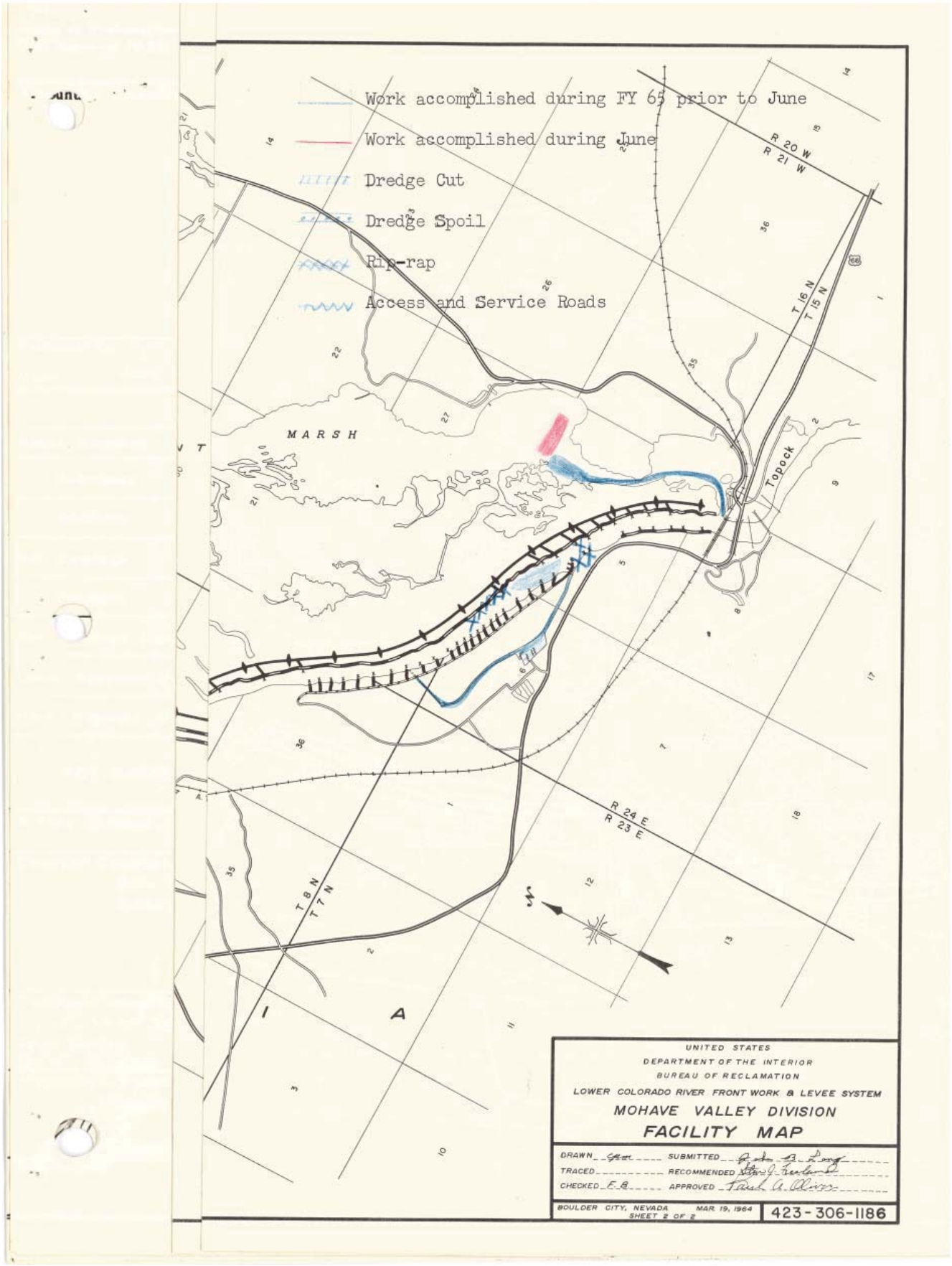
300-4385A. Colorado River Front Work & Levee System.
Photograph of highway bridge across Colorado River near Topock, California, 1962.
Bureau photo by R.C. Middleton.

APPENDIX D-2
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

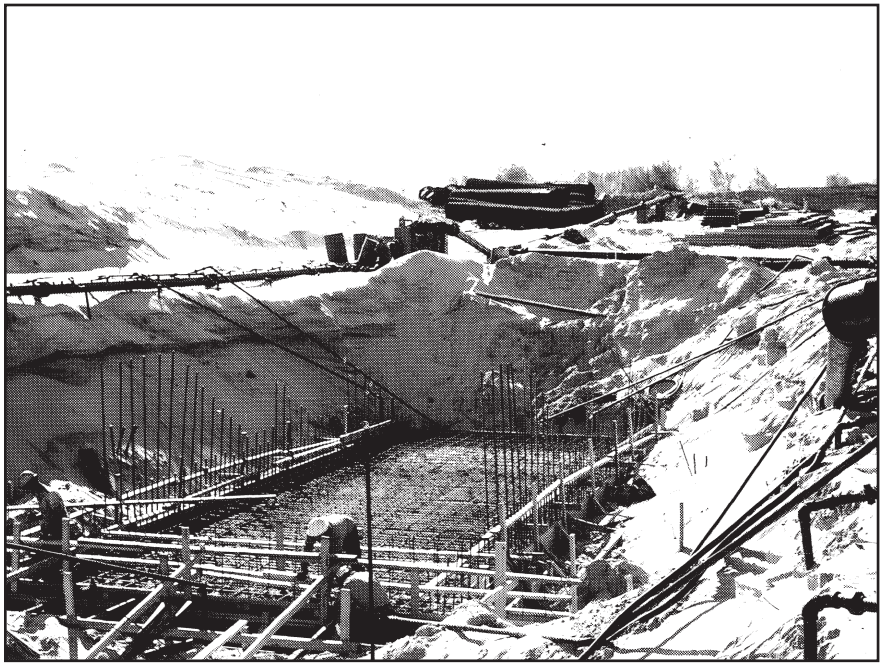
RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA



APPENDIX D-3
COLORADO RIVER FRONT ACTIVITIES MAP, APRIL 1965



APPENDIX D-4
COLORADO RIVER FRONT ACTIVITIES MAP, JUNE 1965

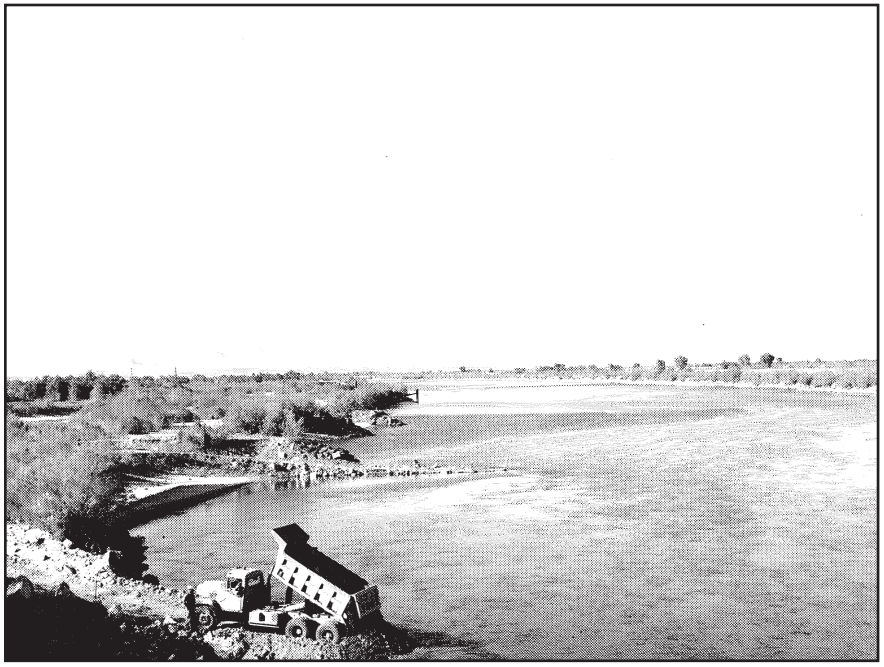


P423-306-4347 NA. Colorado River Front Work and Levee System, Region 3. Topock Marsh Development. Specifications No. 300C-232. Contractor's forces placing reinforcing steel in floor of inlet structure. 11/29/65. Bureau of Reclamation photo by Fred Burley.

APPENDIX D-5
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

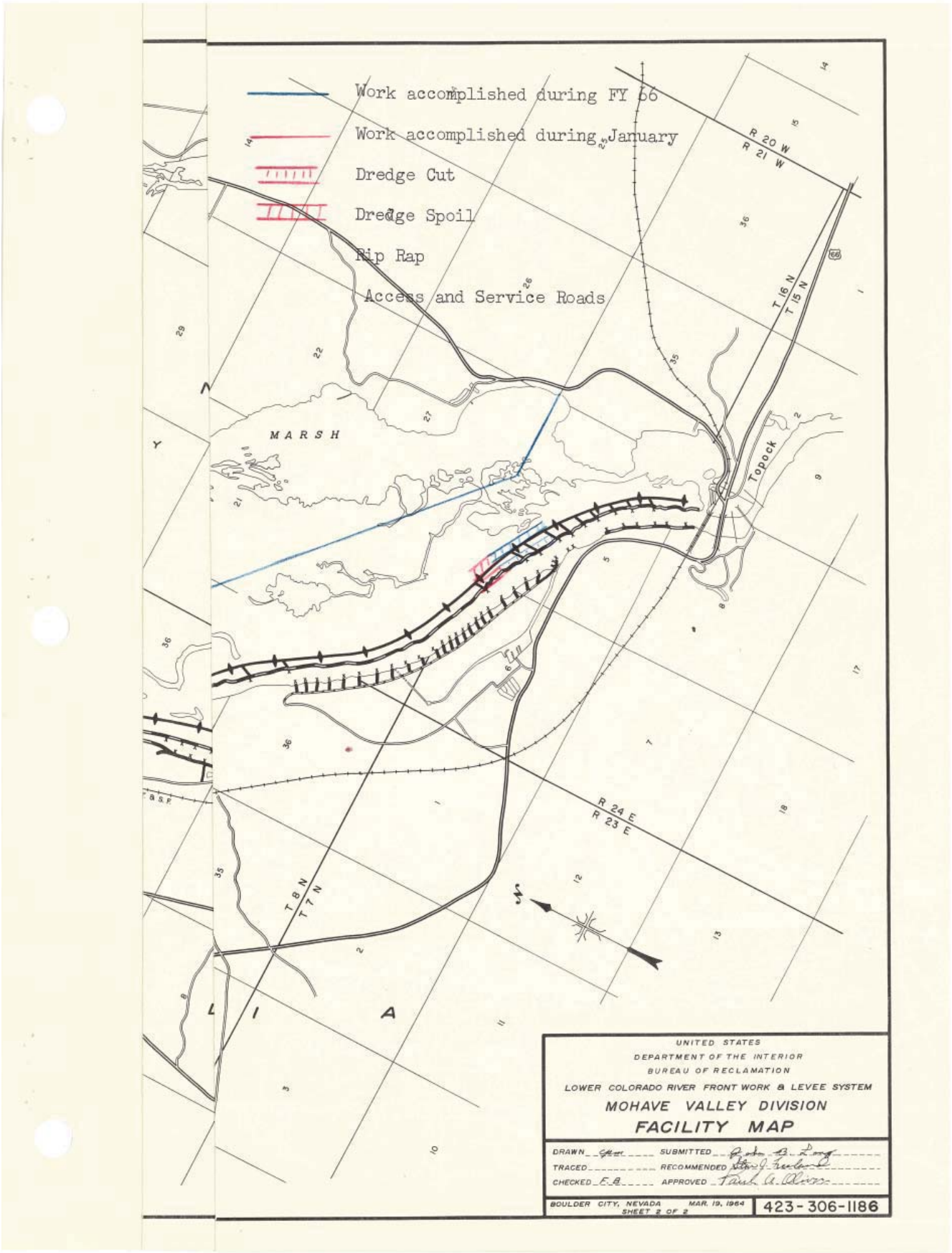


P423-306-4340 NA. Colorado River Front Work and Levee System, Region 3. Needles to Topock Division. Government forces constructing jetty to narrow the width of channel. The channel was narrowed to cause the water to scour sand bar at entrance to Topock Marsh inlet channel structure. Truck at Station 558, California bank. 12/1/65. Bureau of Reclamation photo by Fred Burley.

APPENDIX D-6
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

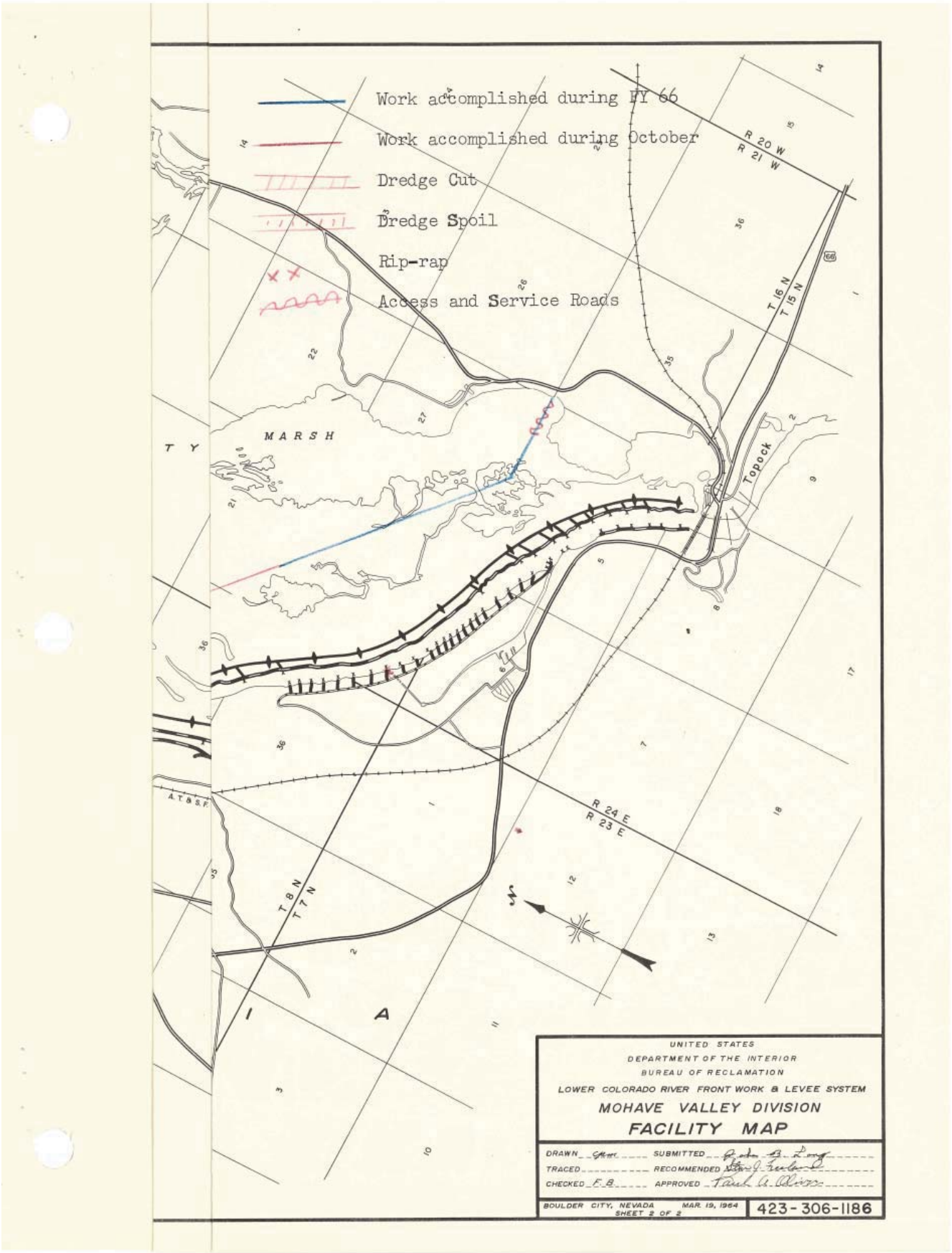
RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

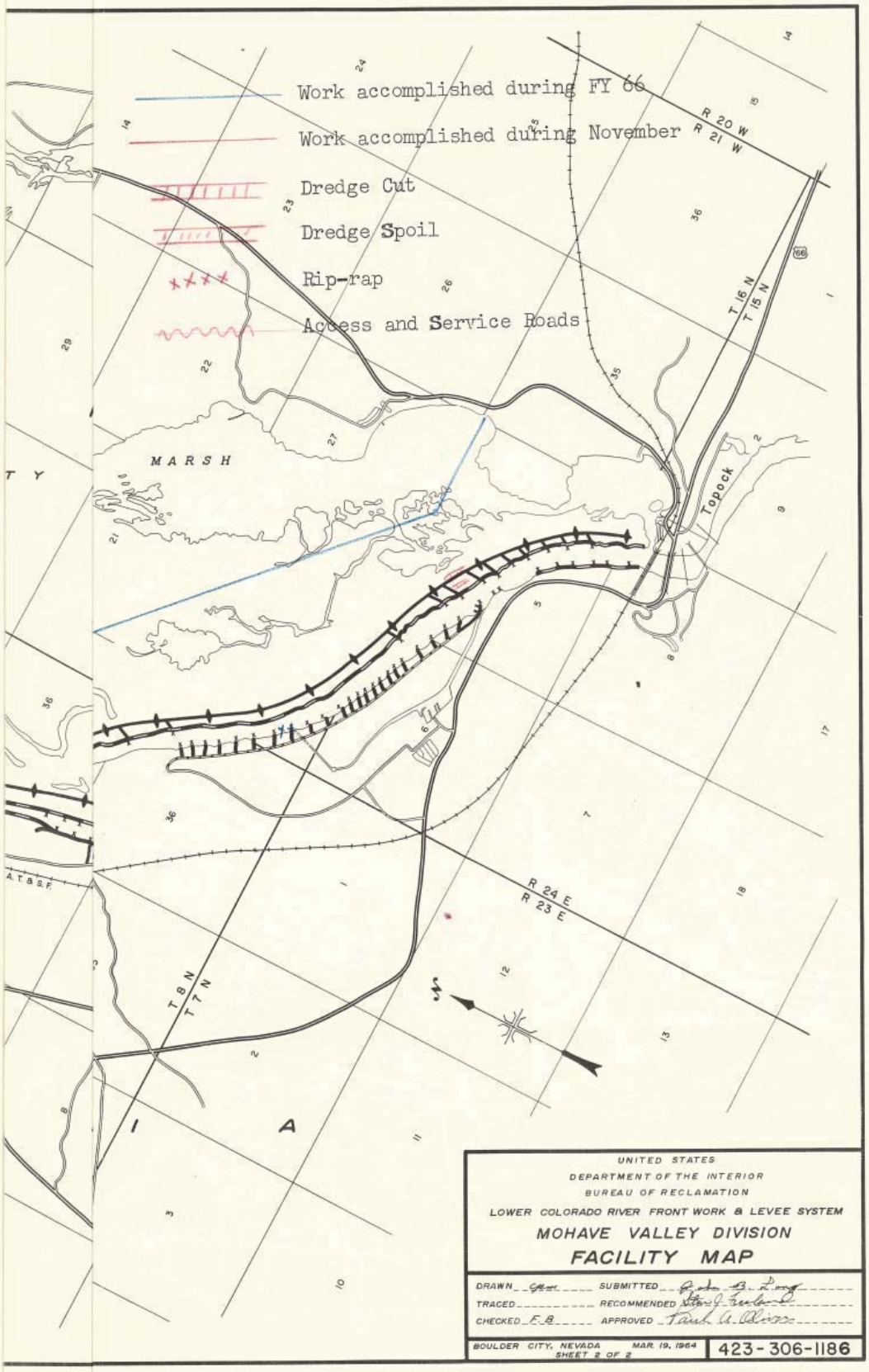


APPENDIX D-7
COLORADO RIVER FRONT ACTIVITIES MAP, JANUARY 1966

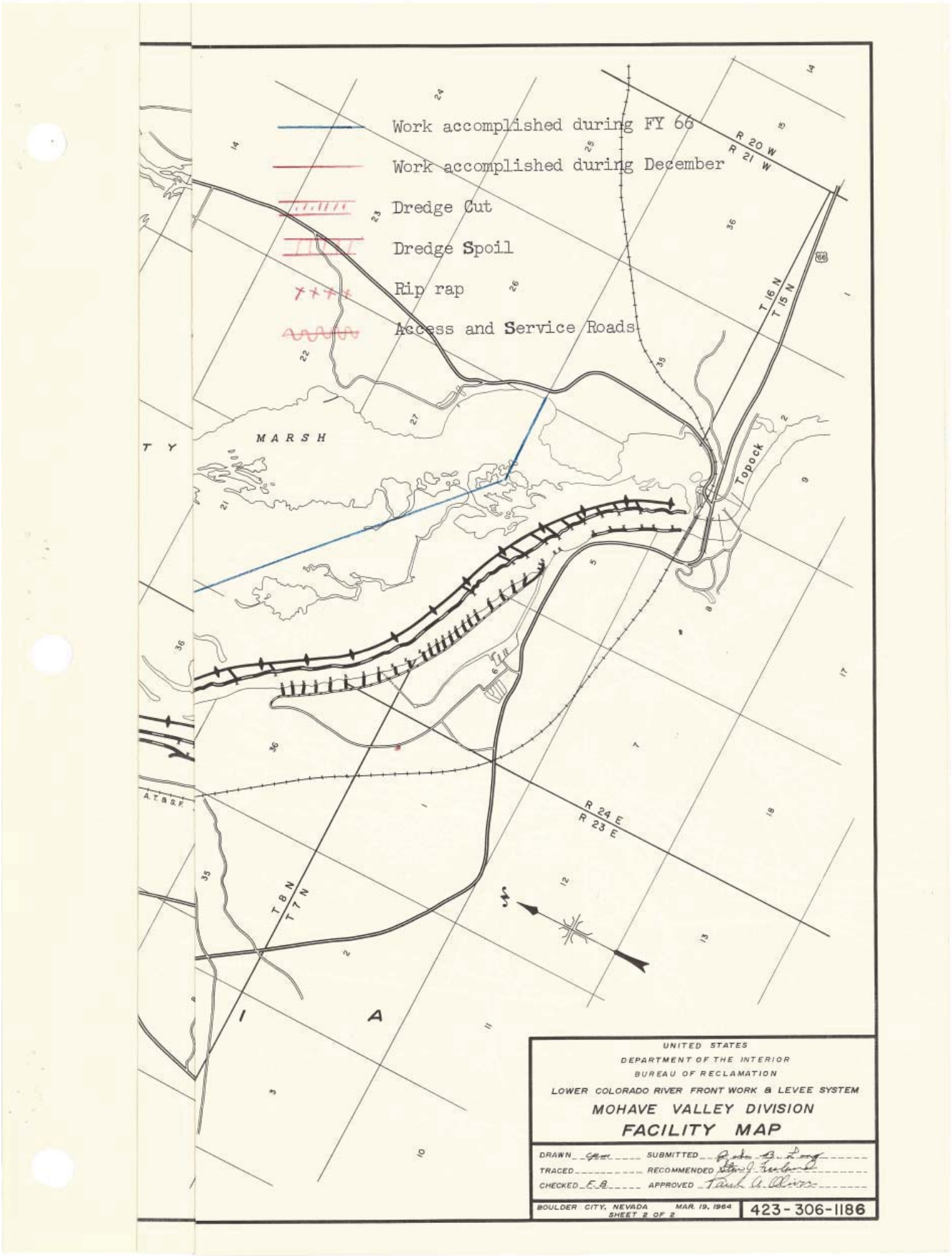
APPENDIX D-8
COLORADO RIVER FRONT ACTIVITIES MAP, AUGUST 1966



APPENDIX D-9
COLORADO RIVER FRONT ACTIVITIES MAP, OCTOBER 1966



APPENDIX D-10
COLORADO RIVER FRONT ACTIVITIES MAP, NOVEMBER 1966



APPENDIX D-11
COLORADO RIVER FRONT ACTIVITIES MAP, DECEMBER 1966

P423-300-7748 NA Topock Gorge Division – Colorado River Front Work & Levee System, Arizona-California. Looking upstream at Spoil Site No. 1 (south of U.S. 66). Spoil will be placed here to provide an access site for recreation and wildlife use. The Bureau of Reclamation will provide a parking lot, boat ramp, restroom facilities, and landscape the site for day-use. 2/29/68 Bureau of Reclamation photo by Al R. Jonez.

APPENDIX D-12
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

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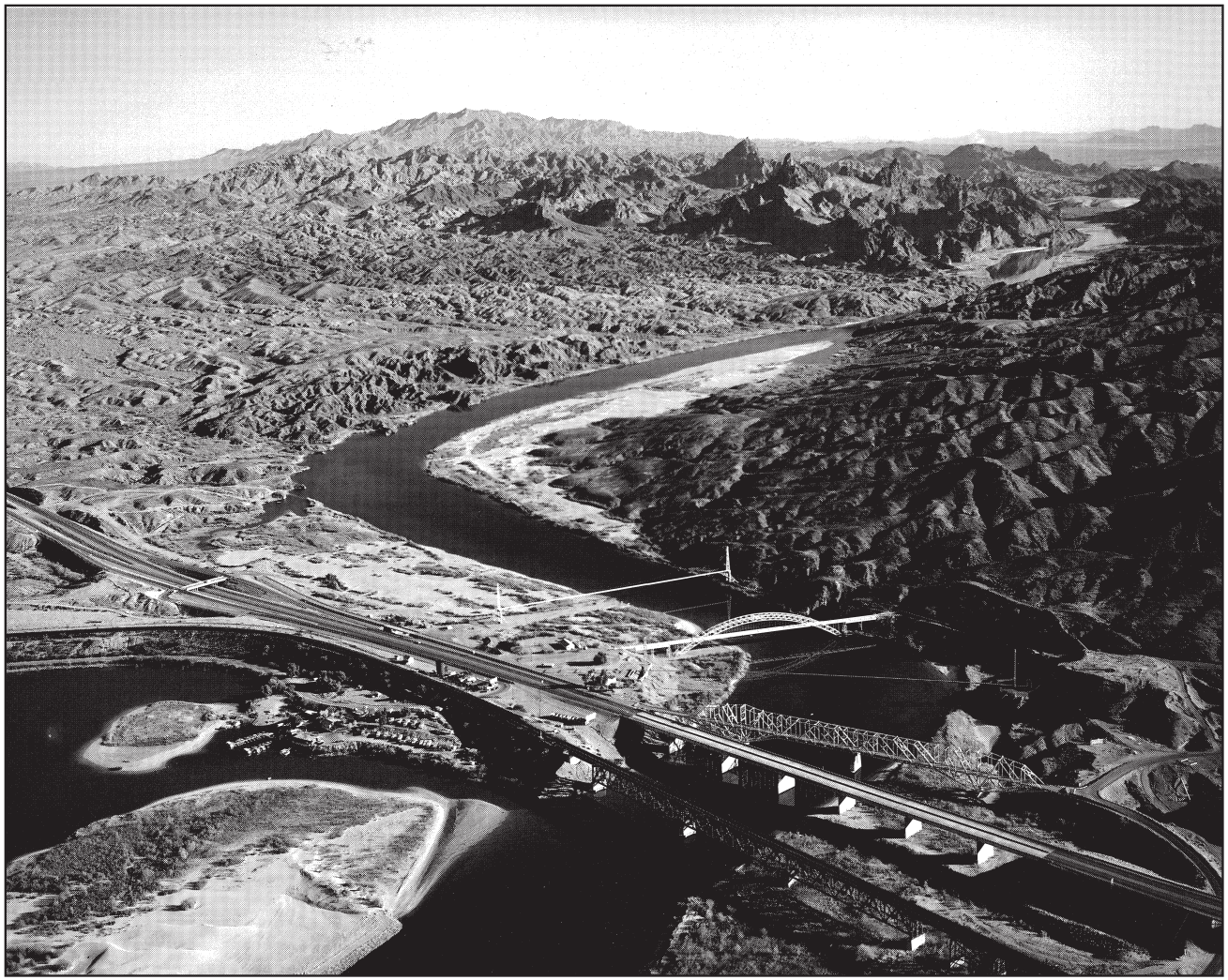
P423-300-7747 NA Topock Gorge Division – Colorado River Front Work & Levee System, Arizona-California. Looking north at the Topock Ridge which is the start of the Division. Spoil placed on Spoil Site No. 2 on the left, will be landscaped and planted for recreation day-use this spring. Topock Marsh can be seen in the distance (River Mile 465). 2/29/68 Bureau of Reclamation photo by Al R. Jonez.

APPENDIX D-13
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL



P423-300-8736 NA Mohave Valley Division – Colorado River Front Work & Levee System, Arizona-California. Looking downstream at the end of the Mohave Division and the starting point for the Topock Gorge Division. The bridge crossing the Colorado River at Topock, Arizona, is the dividing point. Golden Shores concession can be seen in the bay on the left before the bridge. Sediment removed from the first 1.7 mile section of the Topock Gorge Division can be seen on the two areas downstream from the bridge. River Mile 463.8 is at the bottom of the photograph. 1/6/69 Bureau of Reclamation photo by E. E. Hertzog.

APPENDIX D-14
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
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NEEDLES, CALIFORNIA

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P423-300-8735 NA Mohave Valley Division – Colorado River Front Work & Levee System, Arizona-California. Looking upstream at the Park Moabi Marina complex operated by the County of San Bernardino. The Reclamation withdrawn lands are leased to the county for park and recreation purposes. River Mile 462.5 is at the bottom of the photograph. 1/6/69 Bureau of Reclamation photo by E. E. Hertzog.

APPENDIX D-15
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

P423-300-8737 NA Topock Gorge Division – Colorado River Front Work & Levee System, Arizona-California. Looking upstream at the start of the Topock Gorge Division area. Portions of this section have been dredged prior to the time that Secretary of the Interior, Stewart Udall, suspended all work in the Topock Gorge Division pending a revaluation of the dredging program. River Mile 465 is at the bottom of the photograph. 1/6/69 Bureau of Reclamation photo by E. E. Hertzog.

APPENDIX D-16
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

P423-300-8734 NA Mohave Valley Division – Colorado River Front Work & Levee System, Arizona-California. Looking upstream in the river section opposite the inlet to Park Moabi Marina. The lake on the right is called Lost Lake. The sandy areas are a by-product of several years settling basin dredging in this section. Part of the sediment moving downstream in the Mohave Division was removed at this location before it moved on into the Topock Gorge Division. River Mile 462 is at the bottom of the photograph. 1/6/69 Bureau of Reclamation photo by E. E. Hertzog.

APPENDIX D-17
PHOTOS OF THE COLORADO RIVER TAKEN DURING CHANNEL IMPROVEMENTS, 1956 – 1969

RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

Appendix E
USGS River Gauge (09423550) at the Topock Marsh Inlet Near Needles, California

USGS Surface-Water Monthly Statistics for the Nation

The statistics generated from this site are based on approved daily-mean data and may not match those published by the USGS in official publications. The user is responsible for assessment and use of statistics from this site. For more details on why the statistics may not match, click here.

USGS 09423550 TOPOCK MARSH INLET NEAR NEEDLES, CA

Available data for this site | Time-series: Monthly statistics | GO

Mohave County, Arizona
Hydrologic Unit Code 15030101
Latitude 34°50'10", Longitude 114°35'03" NAD27
Gage datum 400 feet above NGVD29

Output formats
HTML table of all data
Tab-separated data
Reselect output format

00060, Discharge, cubic feet per second,												
YEAR	Monthly mean in cfs (Calculation Period: 1967-01-01 -> 2011-09-30)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1967	77.3	61.9	128.6	121.5	113.8	125.0	126.0	119.1	89.1	87.6	56.2	22.4
1968	84.9	126.6	159.5	156.9	158.5	153.2	188.6	185.4	168.0	120.7	94.8	71.3
1969	5.00	0.000	1.30	27.0	56.5	59.3	108.9	133.4	74.7	11.2	66.2	93.4
1970	0.000	1.80	55.0	29.6	30.0	51.2	88.3	105.4	164.2	138.3	56.4	0.000
1971	5.68	9.40	52.3	54.3	34.5	86.1	66.9	67.8	80.7	62.3	28.4	66.3
1972	0.000	0.000	18.7	43.1	50.7	102.0	108.5	61.4	58.4	56.7	83.3	102.9
1973	26.4	0.000	24.6	26.7	55.0	148.1	89.2	84.2	101.1	101.1	71.1	16.9
1974	0.000	0.000	29.1	56.8	49.4	58.6	48.2	45.9	105.9	91.4	33.2	63.4
1975	0.000	0.000	46.0	57.9	56.1	88.2	108.4	75.5	89.4	60.1	42.5	47.3
1976	0.000	0.000	155.5	14.7	53.4	166.2	29.8	111.4	53.3	51.3	13.6	41.9
1977	0.000	0.000	122.9	16.4	33.4	85.5	67.0	85.9	91.4	73.5	19.2	34.2
1978	0.613	0.000	99.5	20.4	64.7	105.5	56.1	110.2	68.5	30.2	20.7	25.0
1979	2.65	38.0	77.5	74.4	46.0	89.3	98.1	60.3	54.7	84.9	44.5	25.6
1980	15.0	20.8	79.5	60.6	72.2	84.2	70.8	116.9	70.5	28.6	26.9	14.5

1981	8.35	56.2	72.3	40.5	78.7	106.7	76.0	121.5	69.1	17.8	8.55	6.23
1982	18.6	69.0	84.9	72.3	50.8	116.9	130.7	70.9	44.1	25.4	4.97	10.4
1983	99.1	20.5	20.5	43.1	70.4	105.5	0.000	0.000	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1985	0.000	0.000	0.000	0.000	0.000	18.4	49.2	43.9	54.3	19.6	29.1	34.0
1986	38.9	30.3	26.3	20.9	21.0	77.7	107.0	12.1	50.6	119.5	92.7	35.3
1987	2.74	8.93	47.1	60.7	59.2	97.7	109.5	108.4	39.3	19.5	15.4	59.9
1988	60.6	0.000	54.4	83.0	51.4	98.3	97.9	72.0	59.8	31.9	20.6	14.6
1989	11.2	37.5	96.5	95.1	57.5	103.6	123.9	95.9	64.3	21.3	4.80	0.000
1990	0.000	38.4	95.7	86.6	68.1	80.6	82.3	68.8	53.2	30.2	18.9	10.3
1991	8.86	31.3	53.5	96.3	78.9	99.0	114.9	79.0	43.8	23.5	14.0	10.3
1992	1.84	29.4	21.3	50.6	94.7	70.0	95.1	42.3	21.7	25.6	5.40	22.9
1993	0.377	0.000	0.000	0.000	36.7	178.1	156.6	122.5	76.4	68.4	41.0	0.000
1994	0.000	0.000	60.7	154.4	130.6	161.8	151.9	139.7	91.0	100.6	85.3	14.4
1995	0.778	42.7	155.9	193.2	147.5	160.0	111.6	91.9	55.1	42.3	9.53	12.1
1996	12.0	21.7	94.8	115.2	83.7	92.0	126.1	112.1	64.9	24.6	3.73	8.60
1997	3.92	127.8	95.6	79.4	82.5	147.1	139.4	124.6	65.9	63.3	49.4	5.34
1998	31.2	27.4	100.1	83.3	131.2	127.0	141.8	89.8	105.5	58.1	36.3	13.5
1999	4.59	6.23	97.6	110.3	94.7	121.4	83.4	69.9	76.4	30.5	43.0	4.96
2000	0.894	3.44	50.3	73.3	100.9	120.9	101.4	70.1	40.8	58.5	26.4	27.1
2001	20.8	71.4	65.8	117.4	93.5	115.9	37.7	32.4	47.7	24.4	18.5	13.6
2002	23.6	85.4	89.9	63.6	75.5	115.4	114.1	92.3	64.7	24.4	12.7	6.44
2003	14.6	25.4	114.4	106.9	101.6	96.2	86.9	51.8	39.4	54.6	21.5	21.7
2004	16.6	37.3	105.8	118.7	111.7	110.5	86.8	61.9	66.0	41.6	34.4	36.3
2005	0.155	6.81	9.74	116.7	102.4	97.6	93.5	44.2	59.7	42.3	23.4	1.00
2006	12.5	24.8	61.6	115.7	104.6	92.8	63.7	45.9	35.4	23.1	3.14	3.43
2007	6.51	30.7	71.7	107.8	95.6	93.8	90.4	58.5	46.5	21.3	3.15	0.000
2008	0.000	13.8	85.8	129.6	98.8	94.8	69.2	55.7	33.5	12.4	10.9	0.008
2009	16.4	28.4	109.1	121.4	69.5	56.8	61.2	53.4	49.2	14.6	13.1	4.19
2010	2.03	8.20	64.9	84.9	81.4	87.4	83.0	62.3	60.5	42.5	5.90	1.81
2011	0.333	2.94	11.2	9.27	4.69	7.91	25.7	53.0	45.3			
Mean of monthly Discharge	14	25	68	74	72	99	90	78	64	47	30	23

** No Incomplete data have been used for statistical calculation

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help

Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Surface Water data for USA: USGS Surface-Water Monthly Statistics
URL: http://waterdata.usgs.gov/nwis/monthly?

Page Contact Information: Arizona Water Data Support Team
Page Last Modified: 2012-02-29 17:39:19 EST
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Appendix F
Information from on Site Ground Water Monitoring Wells and Surface Water Elevation Data

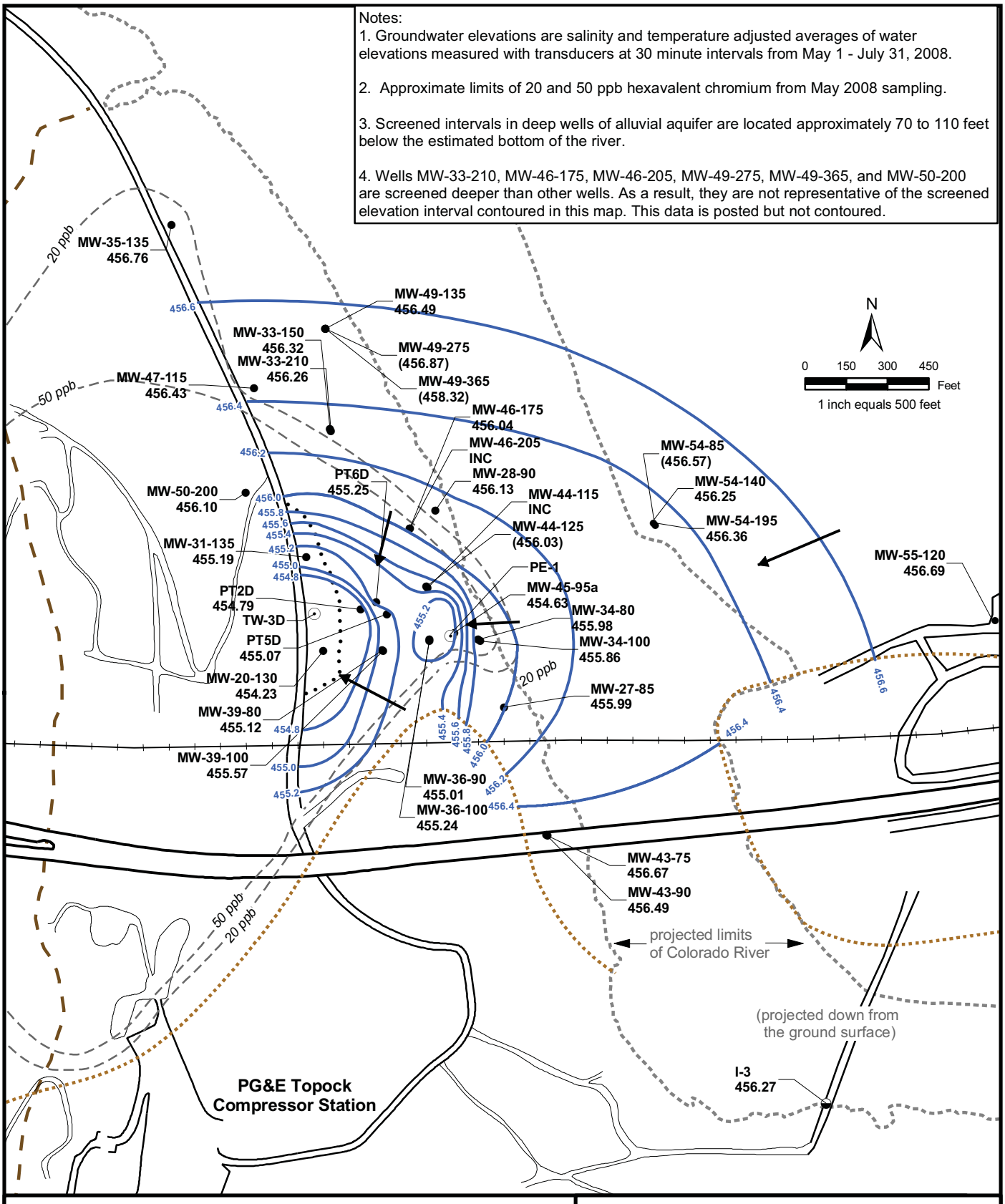

FIGURE F-1
AVERAGE GROUNDWATER ELEVATIONS DEEP WELLS MAY THROUGH JULY 2008

RCRA FACILITY INVESTIGATION/REMEDIAL INVESTIGATION REPORT (VOLUME 2 ADDENDUM)
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

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RFI_AVERAGE_GROUNDWATER_LA_0808.PDF PJOYCE1 9/3/2008 11:33:31

Ground Water Levels from Selected Monitoring Wells and Colorado River Surface Elevations

Table F-1.
Selected monitoring well data on ground water elevations collected between May 1 and July 31, 2008

Monitoring Well	Surface Elevation at Monitoring Well (Feet)	Average Ground Water Elevation (Feet)	Depth to Ground Water Below Surface (Feet)
MW-20-130	499.1	454.23	44.87
MW-27-85	458.4	455.99	2.41
MW-28-90	464.9	456.13	8.77
MW-31-135	495.1	455.19	39.91
MW33-150	485	456.32	28.68
MW-33-210	485	456.26	28.74
MW-34-100	458.9	455.86	3.04
MW-34-80	459.1	455.98	3.12
MW-35-135	481.2	456.76	24.44
MW-36-100	466.8	455.24	11.56
MW-36-90	466.7	455.01	11.69
MW-39-100	465.3	455.57	9.73
MW-39-80	465.1	455.12	9.98
MW-43-75	462.7	456.67	6.03
MW-43-90	459.9	456.49	3.41
MW-44-125	470.7	456.03	14.67
MW-45-95A	466.6	454.63	11.97
MW-46-175	480.8	456.04	24.76
MW-47-115	482.6	456.43	26.17
MW-49-135	482.6	456.49	26.11
MW-49-275	482.6	456.87	25.73
MW-49-365	482.6	458.32	24.28
MW-54-140	466.4	456.25	10.15
MW-54-195	466.3	456.36	9.94
MW-54-85	466.4	456.57	9.83
MW-55-120	463.6	456.69	6.91

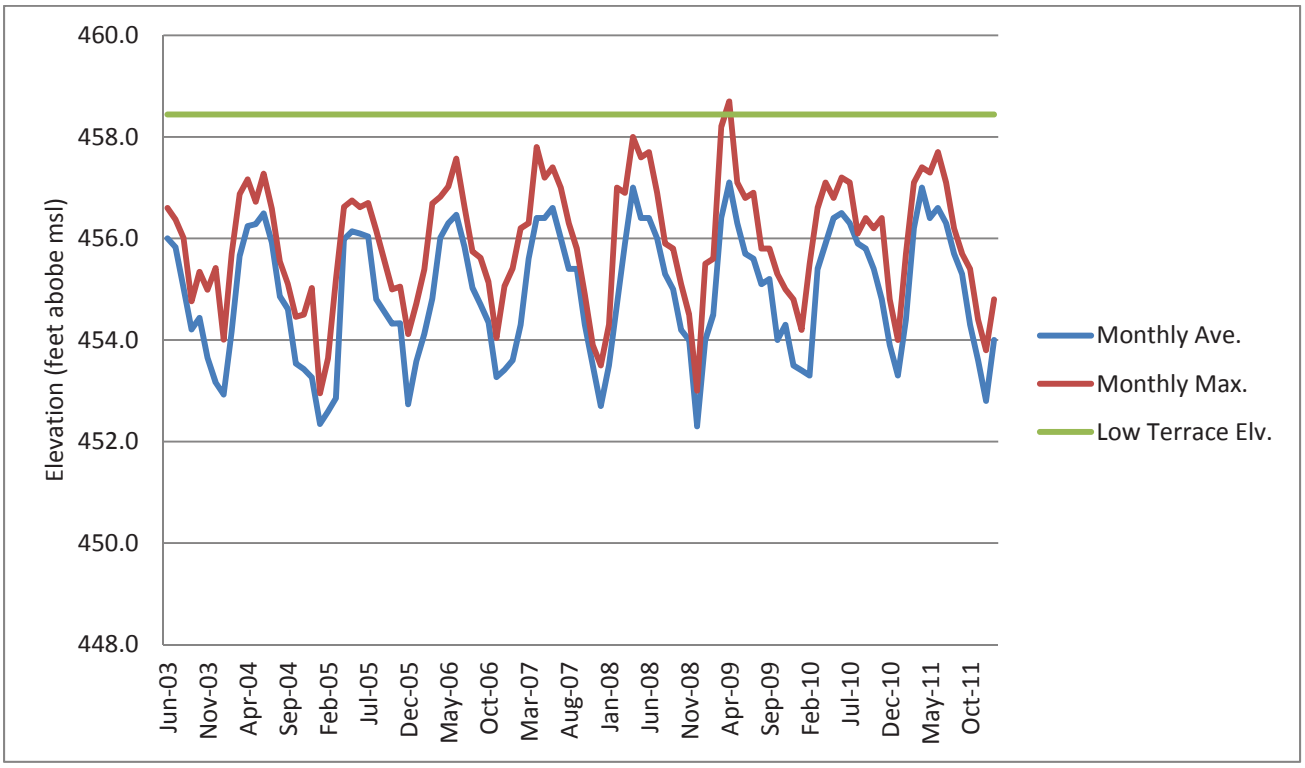


Figure F-2. Colorado River surface water elevations measured at I-3 between June 2003 and January 2012. The low terrace elevation of 458.4 represents the lowest topographic position along the Colorado River. The mean high water mark as determined by water elevations measured during peak flows during the summer months is 457.0 feet.

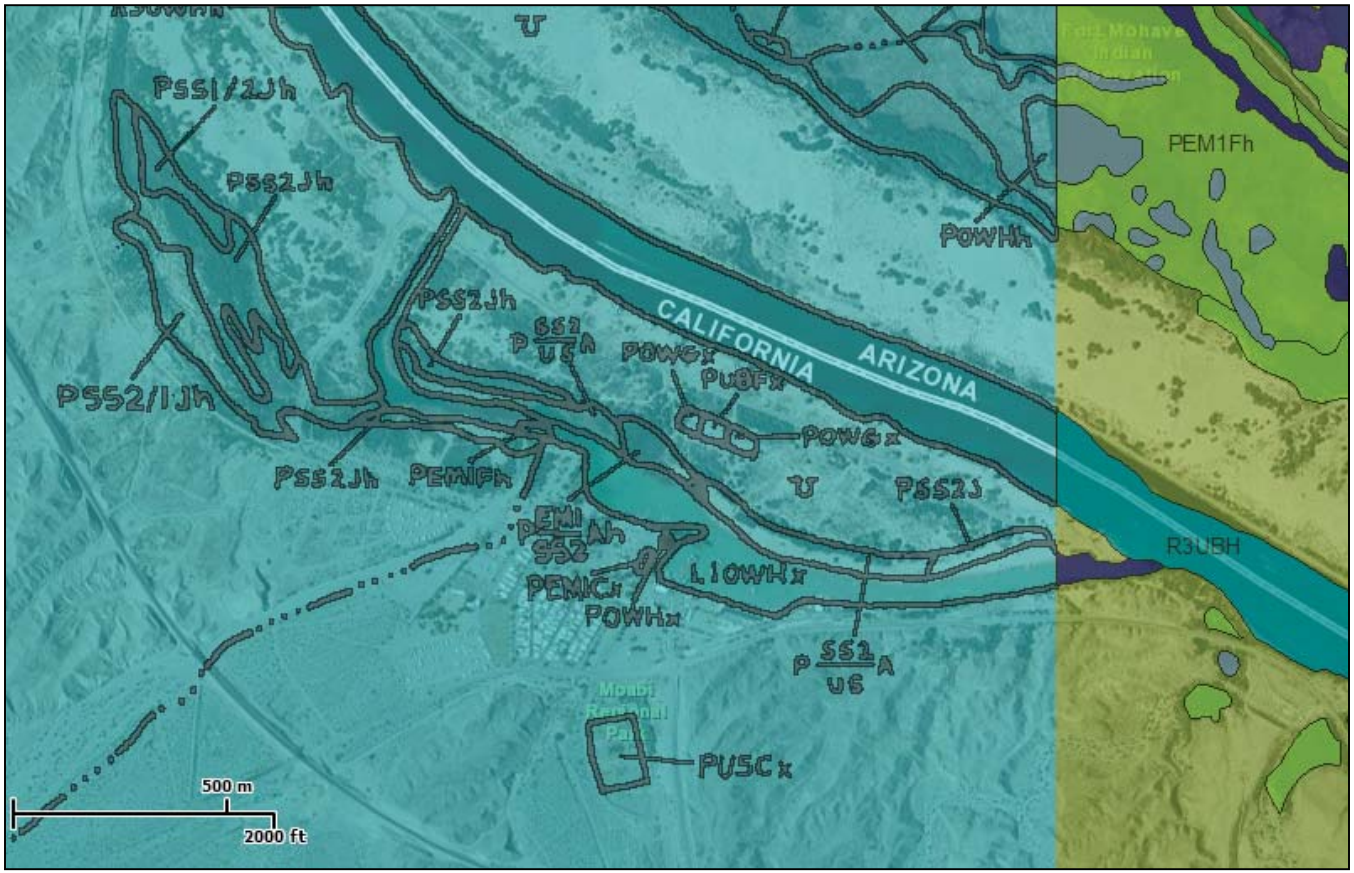
Appendix G
National Wetlands Inventory Maps

U.S. Fish and Wildlife Service

National Wetlands Inventory

Park Moabi

Feb 12, 2012



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Status

- Digital
- Scan
- Non-Digital
- No Data

User Remarks:

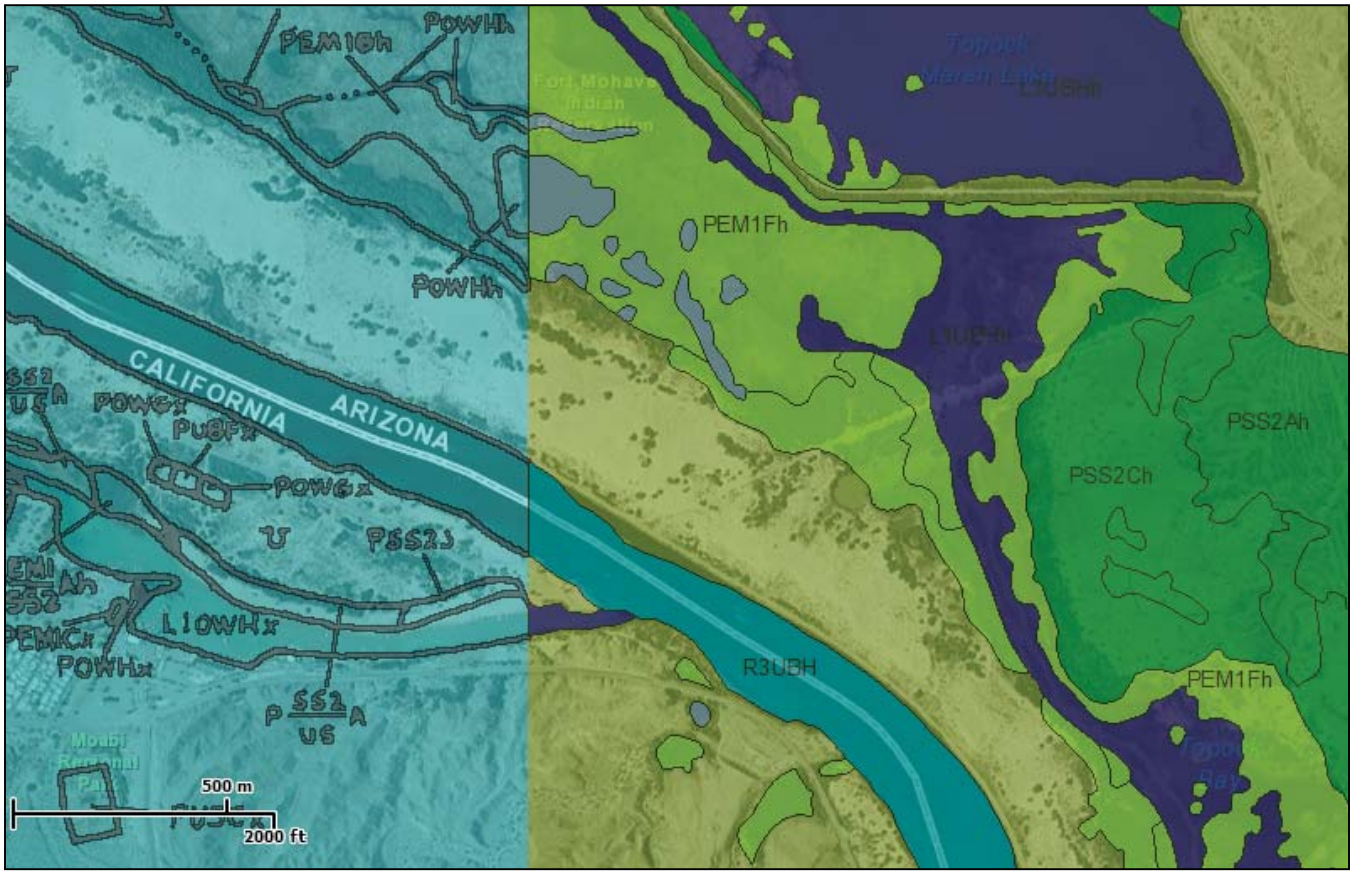
Topock

U.S. Fish and Wildlife Service

National Wetlands Inventory

Topock

Feb 12, 2012



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Status

- Digital
- Scan
- Non-Digital
- No Data

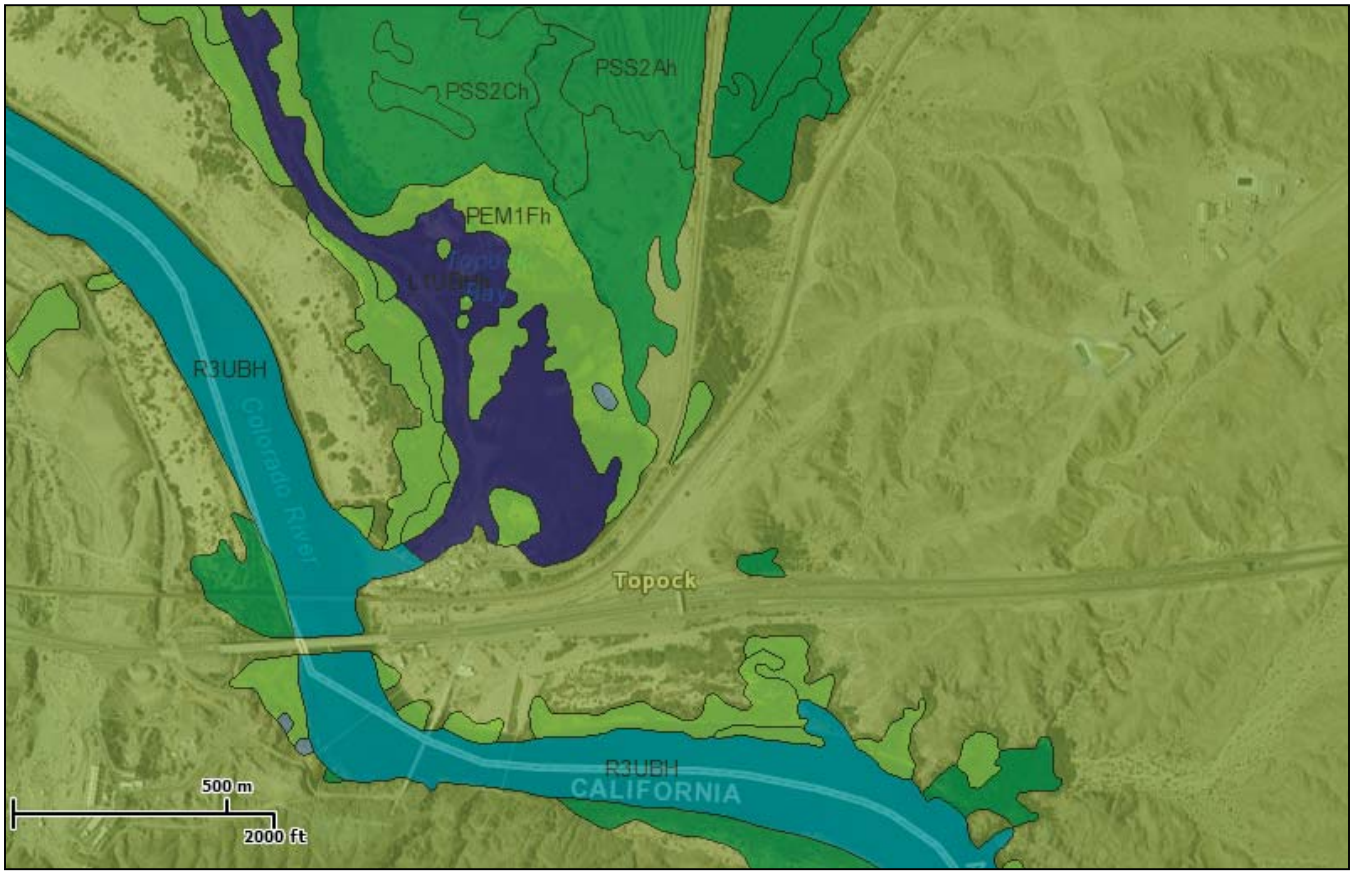
User Remarks:

U.S. Fish and Wildlife Service

National Wetlands Inventory

Topock

Feb 12, 2012



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Status

- Digital
- Scan
- Non-Digital
- No Data

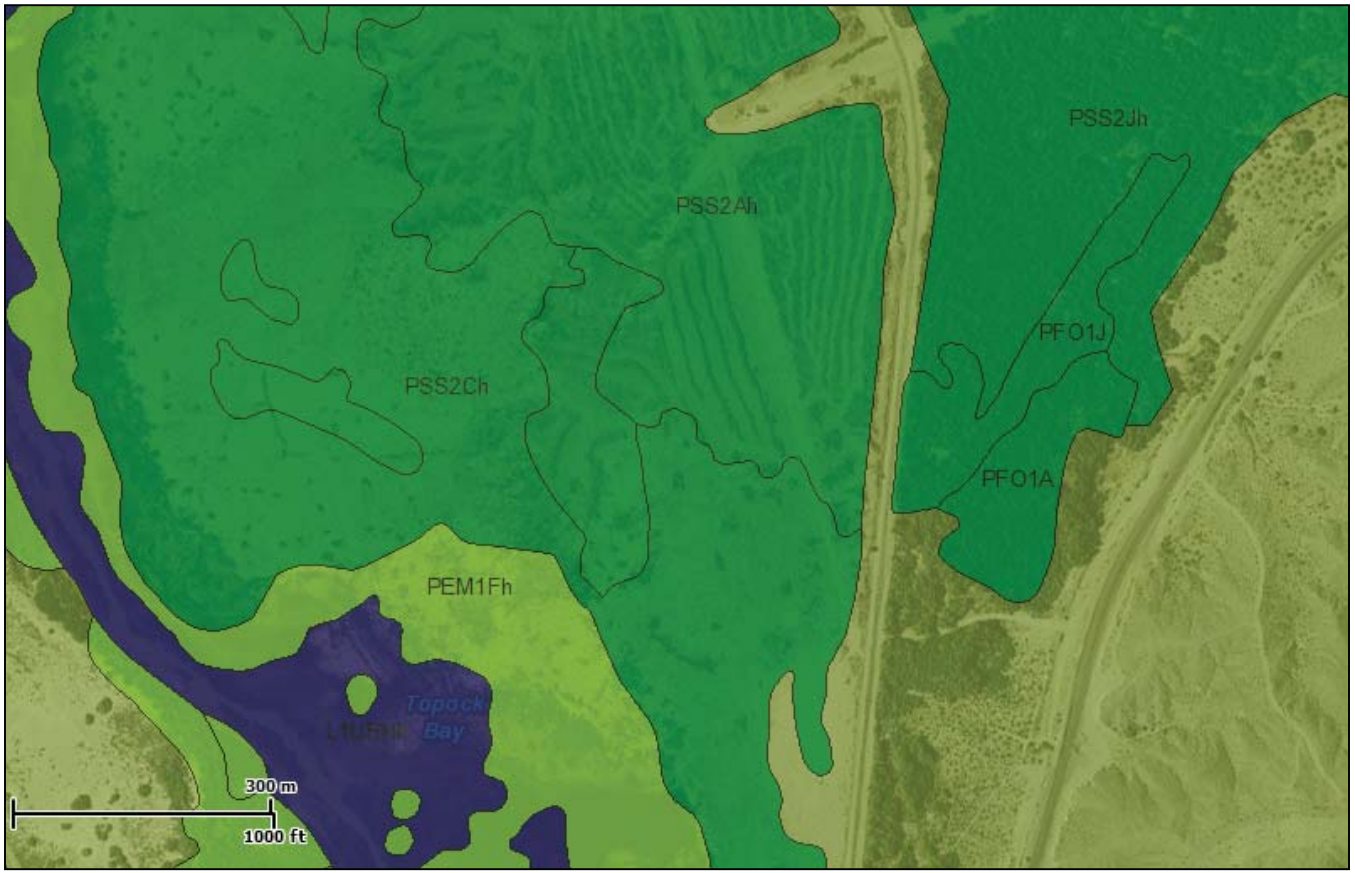
User Remarks:

U.S. Fish and Wildlife Service

National Wetlands Inventory

Topock

Aug 17, 2012



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Status

- Digital
- Scan
- Non-Digital
- No Data

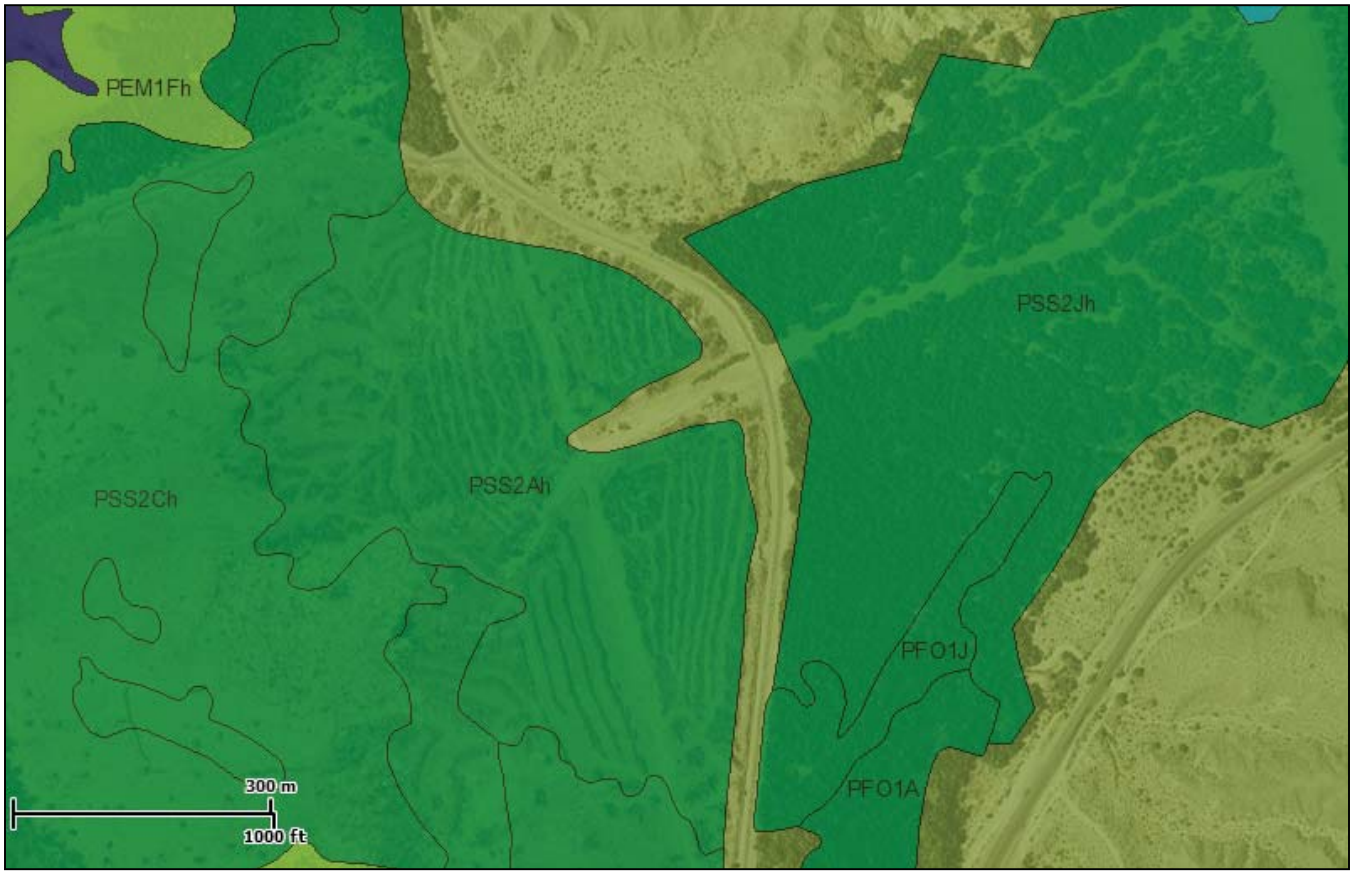
User Remarks:

U.S. Fish and Wildlife Service

National Wetlands Inventory

Topock

Aug 17, 2012



Wetlands

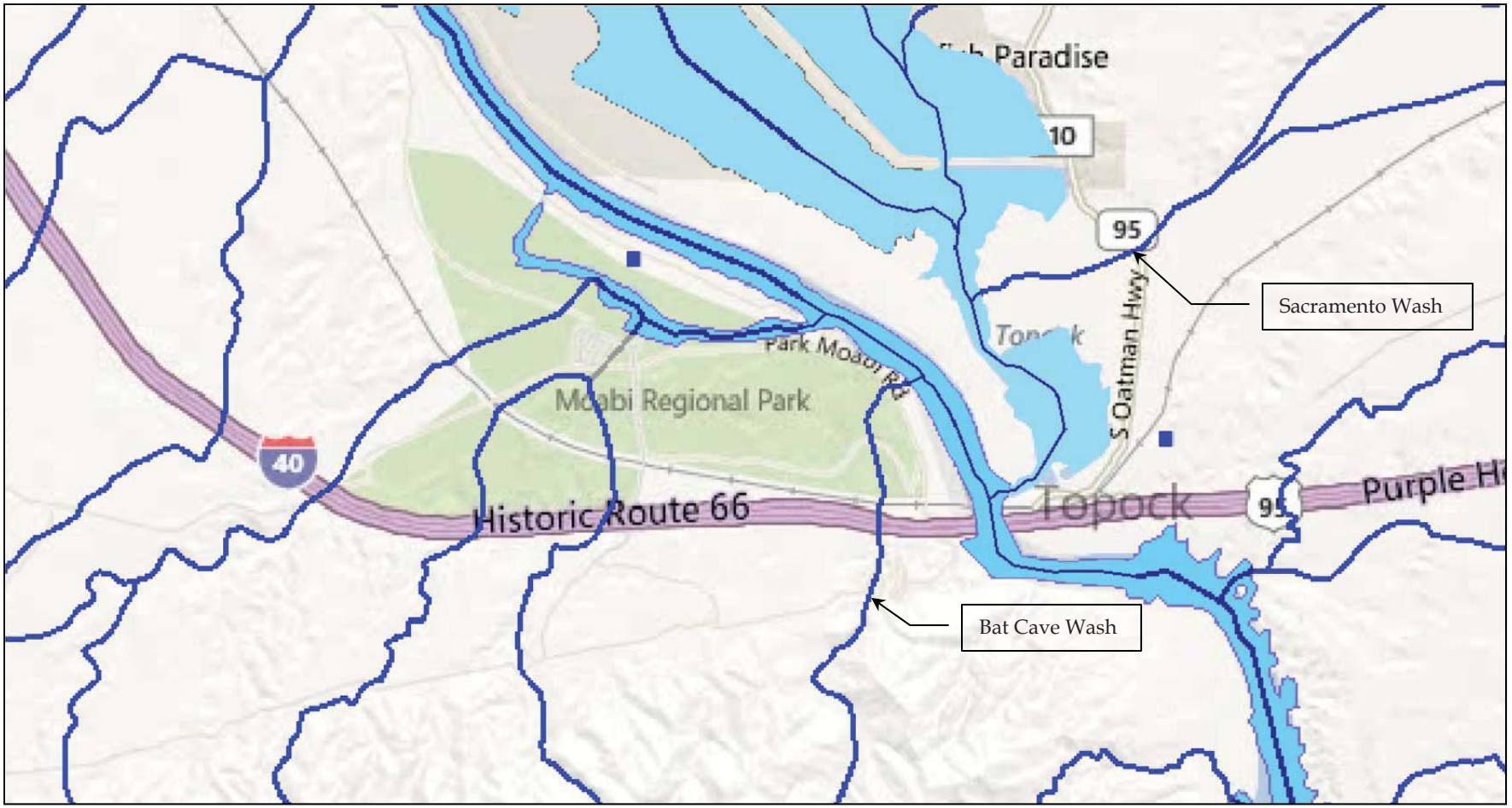
- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Status

- Digital
- Scan
- Non-Digital
- No Data

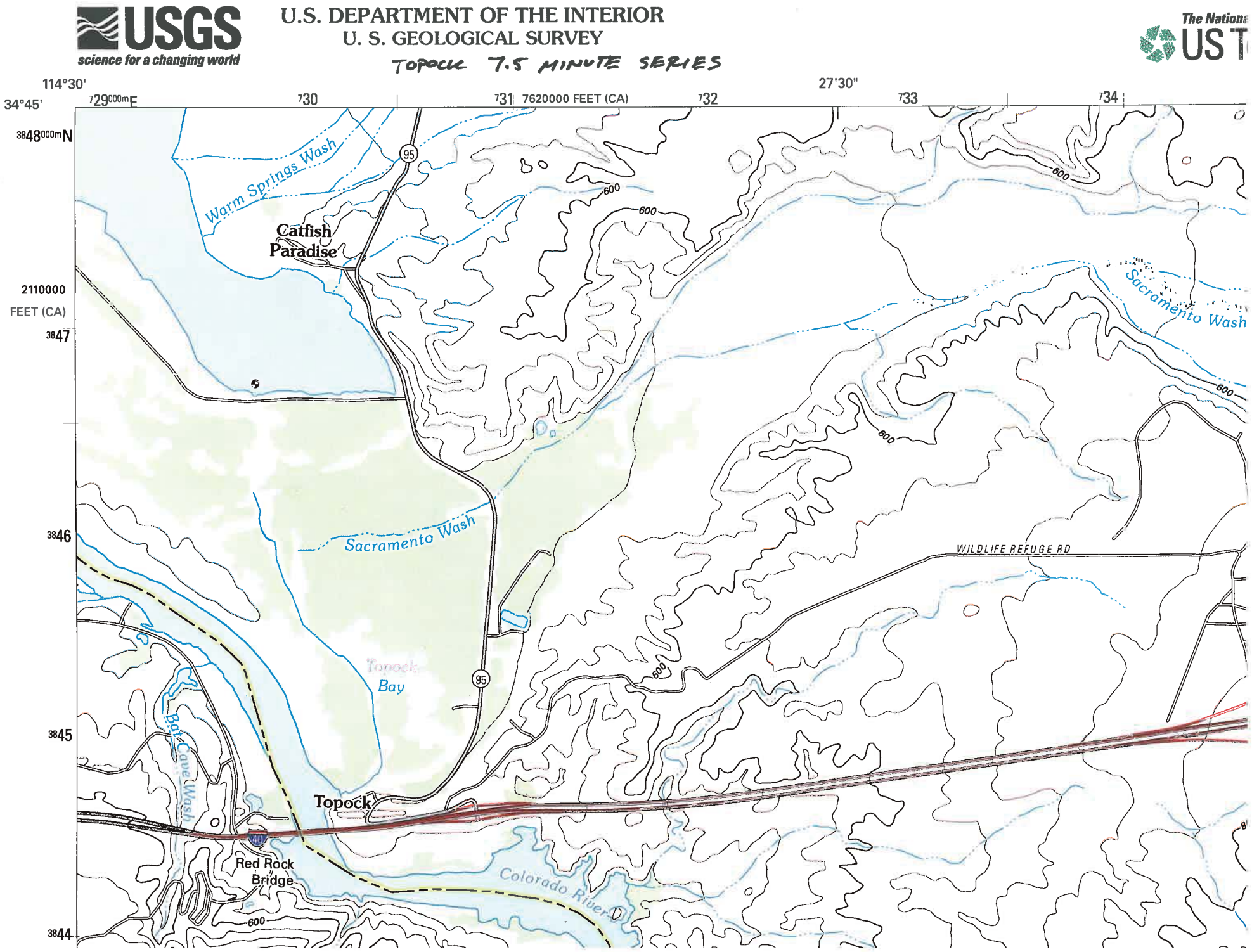
User Remarks:

Appendix H
National Hydrologic Data Set Maps

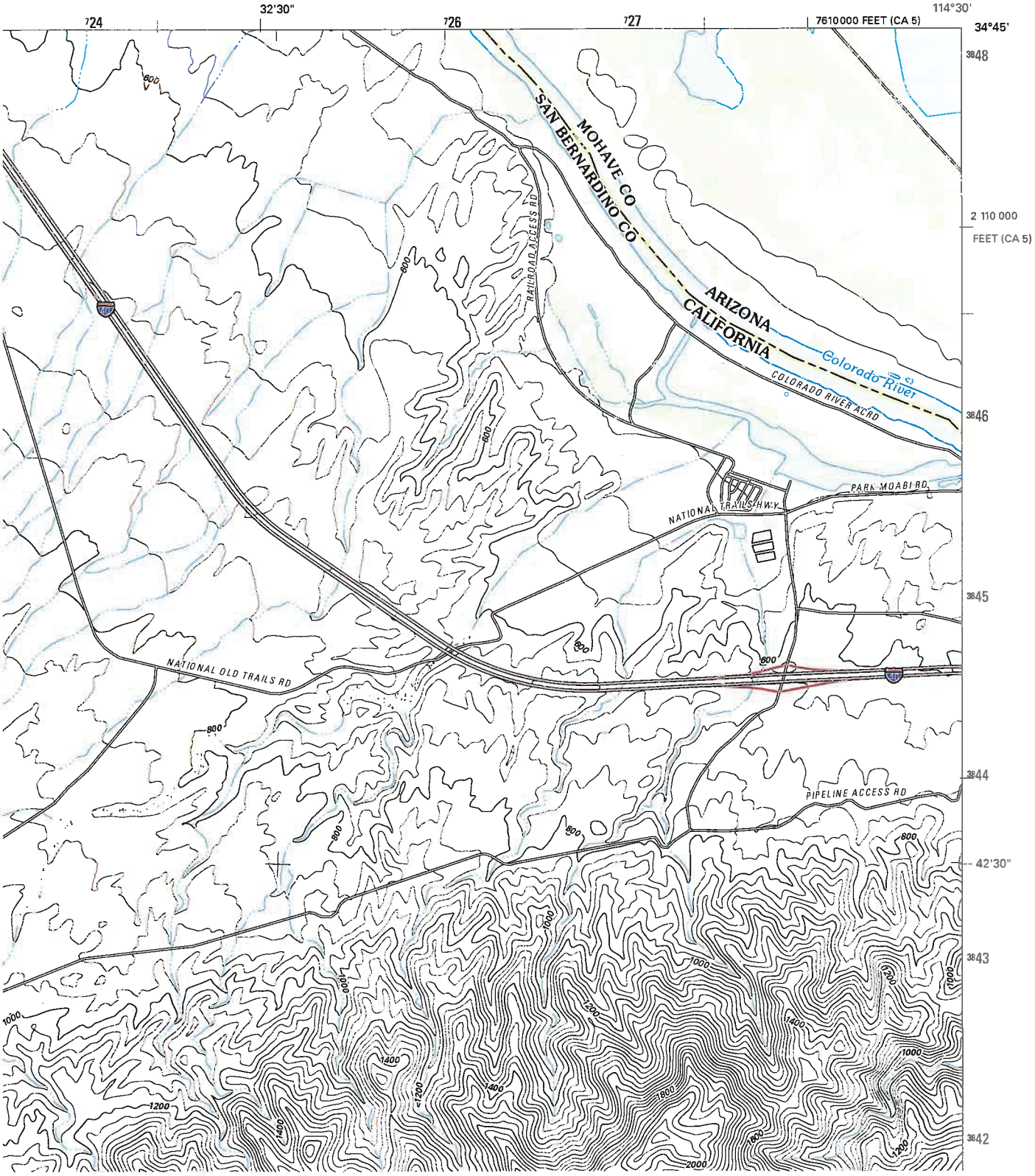


National Hydrography Dataset (NHD) – Map information from the U.S. Environmental Protection Agency: *My WATERS Mapper*
Available at: http://map24.epa.gov/mwm/mwm.html?fromUrl=/

Appendix I
USGS Topock and Whale Mountain Topographic Quadrangle Maps


USGS
science for a changing world
U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY
TOPOCK 7.5 MINUTE SERIES
The Nation
US T
114°30'
27'30"
34°45'
729000mE
730
731
7620000 FEET (CA)
732
733
734
3848000mN
2110000
FEET (CA)
3847
3846
3845
3844
Warm Springs Wash
Catfish
Paradise
95
600
Sacramento Wash
WILDLIFE REFUGE RD
Topock
Bay
Bat Cave Wash
Topock
Red Rock
Bridge
Colorado River

WHALE MOUNTAIN QUADRANGLE
CALIFORNIA-ARIZONA
7.5-MINUTE SERIES



Appendix J
Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-1

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 06 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.730156 Long: -114.510884 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PEM1/SS2Ah

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Low terrace on the north side of Park Moabi Slough, northwest of the Park Moabi boat ramp. Adjacent to a shore zone wetland.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	5	Y	FAC
2.			
3.			
4.			
Total Cover:	5		
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Juncus torreyi*	50	Y	FACW
2. *Hydrocotyle verticillata*	30	Y	OBL
3. *Paspalum dilatatum*	10		FAC
4. *Typha domingensis*	5		OBL
5. *Pluchea odorata*	5		OBL
6. *Eustoma exaltatum*	<1		OBL
7.			
8.			
Total Cover:	100		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:	
OBL species	40	×1 =	40
FACW species	50	×2 =	100
FAC species	15	×3 =	45
FACU species		×4 =	
UPL species		×5 =	
Column Totals:	105 (A)		185 (B)

Prevalence Index = B/A = 1.76

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

XX Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Scattered *Salix exigua* also present in this area. Towards the river *Typha* becomes more abundant in the shore zone wetland,below the ordinary high water level of the slough. Most of the plants were senescent at the time of the survey.

SOIL

Sampling Point SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-2	10 YR 3/2	100	--	--	--	--	SL	Many fine roots
2-20	10 YR 5/3	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks: No reaction to alpha alpha-dipyrdyl; soil pH ~7.4
No Hydric soil indicators observed, but area is characterized by abundant FACW and OBL vegetation and has ground water present at a depth of 11 inches during relatively low flow conditions in the river. During peak summer flows (May-July) this area is likely saturated to the surface and/or inundated for prolonged periods of time; therefore hydric conditions are assumed present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 11

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 11

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh Iinlet near Needles, CA

Remarks: Shallow water table encountered during relatively low river flows. Low terrace along Park Moabi Slough that is likely subject to saturation and flooding during higher flows.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-2

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 06 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.730210 Long: -114.510722 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PEM1/SS2Ah

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes**	**No** X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks: Low terrace on the north side of Park Moabi Slough, northwest of the Park Moabi boat ramp. Adjacent to fringe and shore zone wetlands.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Pluchea sericea*	30	Y	FACW
2. *Baccharis sarothroides*	10	Y	FACU
3. *Tamarix ramosissima* (=*T. chinensis*)	<1		FAC
4.			
5.			
Total Cover:	40+		
Herb Stratum			
1. *Paspalum dilatatum*	2		FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	2		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 57+ % Cover of Biotic Crust N/AA

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:		Multiply By:	
OBL species		×1 =		
FACW species	30	×2 =	60	
FAC species	2	×3 =	6	
FACU species	10	×4 =	40	
UPL species		×5 =		
Column Totals:	42	(A)	106	(B)

Prevalence Index = B/A = 2.52**

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0*

___ Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** XX*

Remarks: **Prevalance index is below 3 but no indicators of hydric soil or wetland hydrology were evident at this sample location. Therefore the prevalence index criteria are not met. *Pluchea sericea* is a ruderal phreatophyte that is likely utilizing shallow ground water and soil moisture and is not considered to be present due to prolonged surface saturation or inundation. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/4	100	--	--	--	--	S	Fine to medium roots

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) -Colorado RRiver Topock Marshlinlet near Needles, CA

Remarks: Soil was moist at depth of 20 inches below ground surface at the time of the survey, but there was no evidence of saturation or a shallow water table in the upper 24 inches at this location. Sample point is located on a low terrace above the ordinary high water level of Park Moabi Slough.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-3

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 06 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.730820 Long: -114.509796 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes**	**No** X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks: Low terrace between Park Moabi Slough and the Colorado River, south of the Park Moabi camping area.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Pluchea sericea*	15	Y	FACW
2. *Psorothamnus spinosus*	5	Y	NL
3.			
4.			
5.			
Total Cover:	20		
Herb Stratum			
1. *Tiquilia plicata*	15	Y	NL
2. *Cryptantha angustifolia*	<1		NL
3. *Schismus barbatus*	<1		NL
4.			
5.			
6.			
7.			
8.			
Total Cover:	15		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 65 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:	
OBL species		×1 =	
FACW species	15	×2 =	30
FAC species		×3 =	
FACU species		×4 =	
UPL species	20	×5 =	100
Column Totals:	35 (A)		130 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0*
- Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks: Relatively sparse vegetation in this area of the terrace, consisting of scattered shrubs and herbaceous species. *Pluchea sericea* is a ruderal phreatophyte that is likely using shallow ground water and soil moisture and is not considered to be present due to prolonged surface saturation or inundation. Understory herbacesous plants are all upland species.

SOIL

Sampling Point SP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/3-6/3	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this location are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: USGS River Gauge (09423550) -Colorado River Topock Marsh inlet near Needles, CAU

Remarks: Sample point is located on a low terrace above the ordinary high water level of Park Moabi Slough and the Colorado River. No evidence of saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-4

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 06 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.731043 Long: -114.509487 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace between Park Moabi Slough and the Colorado River, south of the Park Moabi camping area.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	20	Y	FAC
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	30	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	30		
Herb Stratum			
1. *Tiquilia plicata*	<1		NL
2. *Cryptantha angustifolia*	<1		NL
3. *Schismus barbatus*	<1		NL
4. *Palafoxia arida*	<1		NL
5.			
6.			
7.			
8.			
Total Cover:	<4		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum ~50 % Cover of Biotic Crust N/AA

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:	
OBL species		×1 =	
FACW species	30	×2 =	60
FAC species	20	×3 =	60
FACU species		×4 =	
UPL species		×5 =	
Column Totals:	50 (A)	120	(B)

Prevalence Index = B/A = 2.4*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: Much of the *Pluchea* in this area is in poor condition or dead. Both *Tamarix* and *Pluchea sericea* are phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *Prevalence index criteria not met due to lack of hydric soil and hydrology indicators. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List

SOIL

Sampling Point SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/3	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Terrace above the ordinary high water level of Park Moabi Slough and the Colorado River;;no evidence to suggest prolonged saturation or inundation occur in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-5

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 06 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.730181 Long: -114.506341 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace between the Colorado River Park Moabi Slough, south of the Park Moabi camping area.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	50	Y	FAC
2.			
3.			
4.			
Total Cover:	50		
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust N/AA

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species		×2 =
FAC species	50	×3 = 150
FACU species		×4 =
UPL species		×5 =
Column Totals:	50 (A)	150 (B)

Prevalence Index = B/A = 3.0*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: Vegetation in this area is comprised of scattered *Tamarix* trees only with no herbaceous or shrubs understory. *Tamarix* is a deep rooted phreatophyte that is likley utilizing shallow ground water in this location. *Prevalence index is not met in this area due to lack of hydric soil and wetland hydrology indicators. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/4	100	--	--	--	--	LFS	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock MarshInlet near Needles, CA

Remarks: Terrace above the ordinary high water level of Park Moabi Slough and the Colorado River. No indication of prolonged saturation or inundation at this location.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-6

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 06 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.729356 Long: -114.507466 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace between Park Moabi Slough and the Colorado River, south of the Park Moabi camping area.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Pluchea sericea*	40	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	40		
Herb Stratum			
1. *Cryptantha angustifolia*	<1		NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	<1		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust N/A/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	40	×2 = 80
FAC species		×3 =
FACU species		×4 =
UPL species		×5 =
Column Totals:	40 (A)	80 (B)

Prevalence Index = B/A = 2.00**

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Lots of dead *Pluchea* in this area and overall the vegetation is in poor condition. *No hydric soil or wetland hydrology indicators were evident at this location, therefore the prevalence index criteria are not met. *Pluchea sericea* is a ruderal phreatophyte that is likely exploiting shallow ground water and soil moisture and is not considered to be present due to prolonged surface saturation or inundation.

SOIL

Sampling Point SP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-5	10 YR 5/3	100	--	--	--	--	SIC	
5-24	10 YR 5/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sediments – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock MarshInlet near Needles, CA

Remarks: Terrace above the ordinary high water level of Park Moabi Slough and the Colorado River. No evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-7

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 06 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.728898 Long: -114.507931 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace between Park Moabi Slough and the Colorado River, north of the Pirate Cove marina.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	25	Y	FAC
2.			
3.			
4.			
Total Cover:	25		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	30	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	30		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:	Multiply By:
OBL species	×1 =
FACW species 30	×2 = 60
FAC species 25	×3 = 75
FACU species	×4 =
UPL species	×5 =
Column Totals: 55 (A)	135 (B)

Prevalence Index = B/A = 2.45*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: Both *Tamarix and Pluchea sericea* are ruderal phreatophytes that are likely exploiting shallow ground water and soil moisture; they are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators are present, therefore the prevalance index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List

SOIL

Sampling Point SP-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/3-6/3	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest that hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock MarshInlet near Needles, CA

Remarks: Terrace above the ordinary high water level of Park Moabi Slough and the Colorado River. No evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-8

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 08 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Low Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.716436 Long: -114.488999 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Low terrace along the Colorado River, south of the I-40 Bridge on the west side of the channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Phragmites australis*	100	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	100		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	100	×2 = 200
FAC species		×3 =
FACU species		×4 =
UPL species		×5 =
Column Totals:	100 (A)	200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Dense monoculture of *Phragmites* in this area – to the north, along the shoreline of the river there is a small band of *Arundo donax* (FACW) also present within the wetland area.

SOIL

Sampling Point SP-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-6	10 YR 4/3	100	--	--	--	--	S	Mixture of sand and organic material
6-10	10 YR 4/2	100	--	--	--	--	S	
10-21	10 YR 5/3	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks: Soils in this area appear to be part of the natural floodplain (dredged sands typically occur to the north of IInterstate 40 bridge in this area). No redoximorphic features or other hydric soil indicators were observed at this location; however, based on topographic position, abundance of FACW vegetation and the presence of wetland hydrology, hydric conditions are assumed to be present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	___
Water Table Present?	Yes	X	No	___	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	8

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: USGS River Gauge (09423550) -Colorado River Topock Marsh inlet near Needles, CA

Remarks: Low depressional area on terrace adjacent to the Colorado River. Shallow water table was present at the time of the surveys during relatively low river flows; the water table is likely higher during peak flows (May and July) resulting in shallow saturation and/or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/14/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-9

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 08 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.716429 Long: -114.489100 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: Terrace along the Colorado River, south of the I-40 Bridge on the west side of the channel. This sample point is located approximately 3 feet above the edge of a low depressional area with dense *Phragmites*.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	25	Y	FAC
2.			
3.			
4.			
Total Cover:	25		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	70	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	70		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	70	×2 = 140
FAC species	25	×3 = 75
FACU species		×4 =
UPL species		×5 =
Column Totals:	95 (A)	215 (B)

Prevalence Index = B/A = 2.26*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: Both *Tamarix* and *Pluchea sericea* are ruderal phreatophytes that are likely exploiting shallow ground water and soil moisture and they are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators are present, therefore the prevalance index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-12	10 YR 5/4	97	--	--	--	--	S	Mixed sand with gravel and cobble
	2.5 Y 3/4	2						
	5Y 5/8	1						

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soil in this area appears to be natural river floodplain deposits (dredged sands typically occur north of the Interstate 40 bridge in this area). No evidence suggesting hydric conditions are present at this location. Hard packed sand and large cobbles precluded excavation deeper than 12 inches at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >12

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >12

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River and approximately 3 feet above the adjacent wetland; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-10

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 08 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.717022 Long: -114.488207 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PEM1AA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: Terrace along the Colorado River, immediately south of the I-40 Bridge on the west side of the channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	40	Y	FAC
2. *Prosopis glandulosa*	25		UPL
3.			
4.			
Total Cover:	65		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	20	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	20		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:		Multiply By:	
OBL species		×1 =	
FACW species	20	×2 =	40
FAC species	40	×3 =	120
FACU species		×4 =	
UPL species	25	×5 =	125
Column Totals:	85 (A)		285 (B)

Prevalence Index = B/A = 3.35

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: DDense vegetative cover in this area - no herbaceous understory present. Both *Tamarix* and *Pluchea sericea* are ruderal phreatophytes that are likely exploiting shallow ground water and soil moisture and they are not considered to be present due to prolonged surface saturation or inundation. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-12	10 YR 4/4	100	--	--	--	--	S	Mixed sand with gravel and cobble

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soil in this area appears to be natural river floodplain deposits (dredged sands typically occur north of the Interstate 40 bridge in this area). No evidence to suggest hydric conditions are present at this location. Hard packed sand and large cobbles precluded excavation deeper than 12 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >12

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >12

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-11

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 08 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.718588 Long: -114.488747 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PSS2/EM1CC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Terrace along the west side of the Colorado River, jjust north of the BNSF railroad tracks.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prosopis pubescens*	30	Y	FAC
2. *Tamarix ramosissima* (=*T. chinensis*)	10	Y	FAC
3.			
4.			
Total Cover:	40		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	50	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	50		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:	Multiply By:
OBL species	×1 =
FACW species 50	×2 = 100
FAC species 40	×3 = 120
FACU species	×4 =
UPL species	×5 =
Column Totals: 90 (A)	220 (B)

Prevalence Index = B/A = 2.44**

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Both *Tamarix* and *Pluchea sericea* are ruderal phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location, therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List

SOIL

Sampling Point SP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[a]	Loc[b]	Texture	Remarks
0-28	7.5 YR 6/4	98	7.5 YR 5/8	2	C	M	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand. AA few concentrations are present, but the matrix color does not meet any of the hydric indicators and there is no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >28

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >28

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located on a terrace above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-12

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 08 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.718536 Long: -114.489370 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PSS2/EM1CC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: Terrace along the west side of the Colorado River, north of the BNSF railroad tracks.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	40	Y	FAC
2.			
3.			
4.			
Total Cover:	40		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	25	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	25		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	25	×2 = 50
FAC species	40	×3 = 120
FACU species		×4 =
UPL species		×5 =
Column Totals:	65 (A)	170 (B)

Prevalence Index = B/A = 2.61*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: Both *Tamarix* and *Pluchea sericea* are ruderal phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location, therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List

SOIL

Sampling Point SP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[a]	Loc[b]	Texture	Remarks
0-12	10YR 4/4	98	7.5 YR 4/6	2	C	M	S	
12-25	10 YR 5/4	98	7.5 YR 4/6	2	C	M	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand. A few concemtrations are present,,but the matrix soil color does not meet the criteria for hydric soil; no evidence to suggest that hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >25

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >25

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point is located on a low terrace above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-13

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 08 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.716692 Long: -114.488091 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PEM1AA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace on the west side of the Colorado River, south of Interstate 40.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	20	Y	FAC
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	30	Y	FACW
2. *Baccharis sarothroides*	2		FACU
3.			
4.			
5.			
Total Cover:	32		
Herb Stratum			
1. *Phragmites australis*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	5		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 43 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	35	×2 = 70
FAC species	20	×3 = 60
FACU species	2	×4 = 8
UPL species		×5 =
Column Totals:	57 (A)	138 (B)

Prevalence Index = B/A = 2.42*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: Both *Tamarix* and *Pluchea sericea* are phreatophyte that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location; therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-10	10YR 4/4	100	--	--	-	--	S	Some cobble and gravel
10-50	10 YR 5/4	95%	7.5 YR 5/8	5	C	M	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soil at this location appears to be derived from natural floodplain deposits (dredged sands typically occur north of Interstae 40 in this area). There are some concentrations are present below 10 inches, but the soil matrix color does not meet the hydric soil criteria and there is no evidence to suggest that hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >50

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >50

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River; soil moisture increased with depth but no saturated soils or shallow ground water were encountered in the upper 50 inches. There is no evidence to suggest prolonged saturation or inundation occurs in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-14

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 08 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.720001 Long: -114.490691 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Terrace along the west side of the Colorado River,,north of monitoring well 20 (MW-20).

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	15	Y	FAC
2.			
3.			
4.			
Total Cover:	15		
Sapling/Shrub Stratum			
1. *Tamarix ramosissima* (=*T. chinensis*)	35	Y	FAC
2.			
3.			
4.			
5.			
Total Cover:	35		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species		×2 =
FAC species	50	×3 = 150
FACU species		×4 =
UPL species		×5 =
Column Totals:	50 (A)	250 (B)

Prevalence Index = B/A = 3.0*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: V*Tamarix* is a phreatophyte that is likely exploiting shallow ground water and soil moisture and is not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location; therefore the prevalence index criteria are not met. T*amarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-15

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 08 07N 24 E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.720703 Long: -114.489792 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace along the west side of the Colorado River northeast of monitoring well 20 (MW-20).

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Pluchea serecia*	70	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	70		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:	Multiply By:	
OBL species	×1 =	
FACW species 70	×2 =	140
FAC species	×3 =	
FACU species	×4 =	
UPL species	×5 =	
Column Totals: 70 (A)		140 (B)

Prevalence Index = B/A = 2.0*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Lots of dead *Pluchea* stems in this area. *Pluchea sericea* is a ruderal phreatophyte that is likely exploiting shallow ground water and soil moisture and is not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location, therefore the prevalence index criteria are not met.

SOIL

Sampling Point SP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-30	10 YR 5/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >30

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >30

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-16

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 05 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.722714 Long: -114.490796 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace along the west side of the Colorado River northeast of monitoring well 20 (MW-20) and south of the mouth of Bat Cave Wash.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Pluchea sericea*	70	Y	FACW
2. *Tamarix ramossissima* (= *T. chinensis*)	10		FAC
3.			
4.			
5.			
Total Cover:	80		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	70	×2 = 140
FAC species	10	×3 = 30
FACU species		×4 =
UPL species		×5 =
Column Totals:	80 (A)	170 (B)

Prevalence Index = B/A = 2.13*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Both *Tamarix* and *Pluchea sericea* are ruderal phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location, therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-22	10 YR 5/4	100	--	--	--	--	S	
22-24+	10 YR 5/4	100	--	--	--	--	S	Mixed gravels present

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: USGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-17

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 05 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.722246 Long: -114.491816 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Terrace along the west side of the Colorado River between the mouth of Bat Cave Wash and monitoring well 20 (MW-20)

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	20	Y	FAC
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1. *Tamarix ramosissima* (=*T. chinensis*)	40	Y	FAC
2.			
3.			
4.			
5.			
Total Cover:	40		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species		×2 =
FAC species	60	×3 = 180
FACU species		×4 =
UPL species		×5 =
Column Totals:	60 (A)	180 (B)

Prevalence Index = B/A = 3.0*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: *Tamarix* is a phreatophyte that is likely exploiting shallow ground water and soil moisture and is not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location; therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 6/3+	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-18

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 05 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.726751 Long: -114.496245 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: PEM1FF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Low depressional basin located on terrace along the west side of the Colorado River, south of the mouth of Park Moabi Slough. This low area is hydrologically connected to a pond on the south side of the National Trails Highway via a culvert. This wetland is located immediately adjacent to the Colorado River, but there is no apparent direct surface water connection between the wetland and the river.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Typha domingensis*	100	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:		Multiply By:	
OBL species	100	×1 =	100	
FACW species		×2 =		
FAC species		×3 =		
FACU species		×4 =		
UPL species		×5 =		
Column Totals:	100	(A)	100	(B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Dense monoculture of *Typha* in throughout the low basin.

SOIL

Sampling Point SP-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/4	100	--	--	--	--	SL	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks: Soils in this area are derived from dredged river sands. No redoximorphic features were evident in the uper part of the soil in this area; hydric conditions are assumed present based on the abundance of obligate wetland vegetation, topographic position and presence of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	
Water Table Present?	Yes	X	No	___	Depth (inches):	10
Saturation Present? (includes capillary fringe)	Yes	X	No	___	Depth (inches):	10

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: This low basin is connected via a large metal culvert to a perennial pond on the south side of the National Trails Highway. Likley a direct ground water connection between this low area and the Colorado River but there is no apparent direct surface water connection with the river. This area is likley saturated to the surface and/or inundated during periods of high flows (May-July).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-19

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 05 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.726741 Long: -114.496191 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: NoneF

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Adjacent to depressional basin on a low terrace along the west side of the Colorado River between Park Moabi Slough and Bat Cave Wash

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	20	Y	FAC
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	50	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	50		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:	Multiply By:
OBL species	×1 =
FACW species 50	×2 = 100
FAC species 20	×3 = 60
FACU species	×4 =
UPL species	×5 =
Column Totals: 70 (A)	160 (B)

Prevalence Index = B/A = 2.29**

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: *Both *Tamarix* and *Pluchea sericea* are ruderal phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location, therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	7.5 YR 5/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located about 2 feet above the low depressional area and is above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/16/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-20

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 05 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.727439 Long: -114.496798 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X X	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: Terrace along the west side of the Colorado River,,just to the southest of the mouth of Park Moabi Slough.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prosopis glandulosa*	20	Y	UPL
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	35	Y	FACW
2. *Tamarix ramosissima* (=*T. chinensis*)	5		FAC
3. *Baccharis sarothroides*	2		FACU
4.			
5.			
Total Cover:	42		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 38 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:		Multiply By:	
OBL species		×1 =	
FACW species	35	×2 =	70
FAC species	5	×3 =	15
FACU species	2	×4 =	8
UPL species	20	×5 =	100
Column Totals:	62 (A)		193 (B)

Prevalence Index = B/A = 3.11

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0*
- Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** XX

Remarks: *Pluchea sericea* and *Tamarix* are ruderal phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: San Bernardino County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: CA Sampling Point: SP-21

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 06 07N 24E (San Bernardino Meridian)

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.726894 Long: -114.505480 Datum: WGS 1984

Soil Map Unit Name: No NRCS Mapped Soils NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace along the south side of Park Moabi Slough, east of the Pirate Cove Resort. Sample point is located near road where there appears to be some dumping of soils and debris.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prosopis glandulosa*	15	Y	UPL
2.			
3.			
4.			
Total Cover:	15		
Sapling/Shrub Stratum			
1. *Tamarix ramosissima* (=*T. chinensis*)	5	Y	FAC
2.			
3.			
4.			
5.			
Total Cover:	5		
Herb Stratum			
1. *Suaeda nigra* =	20	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species	20	×1 = 20
FACW species		×2 =
FAC species	5	×3 = 15
FACU species		×4 =
UPL species	15	×5 = 75
Column Totals:	40 (A)	110 (B)

Prevalence Index = B/A = 2.75**

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes X No X

Remarks: *Suadea* is often associated with moderately to strongly alkaline soils and its presence and abundance in this area may be a reflection of edaphic,rather than hydrologic environmental conditions. *Tamarix* is a phreatophyte that is likely exploiting shallow ground water and soil moisture and is not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location; therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/4	100	--	--	--	--	S	Mixed with angular gravel

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand and possibly other fill material. No evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of Park Moabi Slough and there is no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-22

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 02 15N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.719145 Long: -114.480713 Datum: WGS 1984

Soil Map Unit Name: Marshes NWI classification: L1UBHh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil X , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Sample point taken at the southern edge of theTopock Marsh, north of Highway 95, east of the Topock Marina.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Schoenoplectus californicus*	100	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:		Multiply By:	
OBL species	100	×1 =	100	
FACW species		×2 =		
FAC species		×3 =		
FACU species		×4 =		
UPL species		×5 =		
Column Totals:	100	(A)	100	(B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: VVegetation in this area is characterized by a dense monoculture of *Schoenoplectus californicus*. Most of the plants were scenescent at the time of the survey.

SOIL

Sampling Point SP-22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-2	10 YR 4/2	100	--	--	--	--	SICL	Saturated/Flooded
2-12	10 YR 4/1	100	--	--	--	--	SiC	Saturated/Flooded

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- X Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks: No hydric soil indicators are present at this location;,however,, hydric conditions are presumed present based on the abundance of obligate wetland vegetation, topographic position and presnece of wetland hydrology.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 7

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: This area was flooded at the time of the survey during relatively low flows in the river. The Topock Marsh has a direct surface water connection with the Colorado River.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-24

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 02 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.719091 Long: -114.480063 Datum: WGS 1984

Soil Map Unit Name: GGunsight very gravelly loam 10-40 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No XX	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: Roadway fill slope along the north side of Highway 95, just outside the southern edge of the Topock Marsh, east of the Topock Marina.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Pluchea sericea*	30	Y	FACW
2. *Baccharis sarothroides*	10	Y	FACUU
3. *Tamarix ramosissima* (=*T. chinensis*)	10	Y	FAC
4.			
5.			
Total Cover:	50		
Herb Stratum			
1. *Cynodon dactylon*	20	Y	FACUU
2. *Chenopodium album*	<1		FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:		Multiply By:	
OBL species		×1 =	
FACW species	30	×2 =	60
FAC species	10	×3 =	30
FACU species	30	×4 =	120
UPL species		×5 =	V
Column Totals:	70 (A)		210 (B)

Prevalence Index = B/A = 3.00*

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0*

___ Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** X X

Remarks: Narrow band of vegetaion along the road shoulder and the topock marsh.

*No hydric soil or wetland hydrology indicators were evident at this location, therefore the prevalence index criteria are not met.

Tamarix ramosissima is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Roadway fill slope above the marsh, no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point is approximately 3 feet above the marsh; no evidence that this area is subject to prolonged saturation or flooding.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-23

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 35 15N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.722811 Long: -114.478670 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X , Soil , or Hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes No XX

Are Vegetation , Soil XX , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Area was previously characterized by dense *Tamarix* but was burned in a 2008 wildfire. After the fire the US Fish and Wildlife Service cleared the dead trees and woody debris as part a habitat improvement and revegetation program for this part of the Lake Havasu National Wildlife Refuge. DDebris removal and re-planting of some of the burn area occurred in 2011.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Atriplex lentiformis*	40	Y	FAC
2.			
3.			
4.			
5.			
Total Cover:	40		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species		×2 =
FAC species	40	×3 = 120
FACU species		×4 =
UPL species		×5 =
Column Totals:	40 (A)	120 (B)

Prevalence Index = B/A = 3.0**

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: *Atriplex lentiformis* is a species that is often associated with saline and alkaline soils and its presence here may be more indicative of edaphic rather than hydrologic conditions. **No hydric soil or wetland hydrology indicators were evident at this location; therefore the prevalence index criteria are not met.

SOIL

Sampling Point SP-23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10 YR 5/4	100	--	--	--	--	S	pH 8.6
24-35	10 YR 4/3	95%	7.5 YR 4/6	5%	C	M	SCL	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: No hydric soil indicators were evident at this location in the upper 24 inches of the soils;; some redoximorphic features are present below 24 inches. Soils at this location are strongly alkaline and are considered problematic; however, there is no evidence to suggest the presence of surface saturation or inundation long enough to result in anaerobic conditions in the upper part of the soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >35

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >35

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: No evidence of prolonged inundation or shallow ground water (with the upper 35 inches).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-25

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 03 15N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.719890 Long: -114.486341 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-3 percent slopes NWI classification: PEM1F

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Terrace along the east side of the Colorado River,, north of the Topock Marina.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (= *T. chinensis*)	20	Y	FAC
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1. *Tamarix ramosissima* (= *T. chinensis*)	30	Y	FAC
2. *Pluchea sericea*	10	Y	FFACW
3.			
4.			
5.			
Total Cover:	40		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 40% % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	10	×2 = 20
FAC species	50	×3 = 150
FACU species		×4 =
UPL species		×5 =
Column Totals:	60 (A)	170 (B)

Prevalence Index = B/A = 2.83*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: Both *Tamarix* and *Pluchea sericea* are phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location; therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-25

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-50	10 YR 6/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >50

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >50

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Soil moisture increases with depth but no evidence of saturation at depth of 50 inches below the ground surface. Sample point is above the ordinary high water level of the river.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-26

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 03 15N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.719346 Long: -114.485083 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-3 percent slopes NWI classification: PEM1/SS2A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Low terrace along the eastern side of the Colorado River, just north of the Topock Marina, along outlet from the Topock Marsh. Narrow fringe wetland along the waters edge.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. *Juncus torreyi*	60	Y	FACW
2. *Paspalum dilatatum*	20	Y	FAC
3. *Hydrocotyle verticillata*	10		OBL
4. *Phragmites australis*	5		FACW
5. *Schoenoplectus californicus*	3		OBL
6. *Pluchea odorata*	2		FACW
7.			
8.			
Total Cover:	100		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:		Multiply By:	
OBL species	13	×1 =	13
FACW species	67	×2 =	134
FAC species	20	×3 =	60
FACU species		×4 =	
UPL species		×5 =	
Column Totals:	100 (A)		207 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Narrow band of herbaceous wetland on low terrace - between patches of shoreline wetland characterized by *Schoenoplectus californicus* and scrub-shrub wetland area further up on the terrace.

SOIL

Sampling Point SP-26

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[a]	Loc[b]	Texture	Remarks
0-8	10 YR 4/2	95	5 YR 3/4	5%	C	M	SIL	
8-24	10 YR 5/3	90%	10 YR 5/4	2%	C	M	SL	
	10 YR 5/2	8%						ped surfaces

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks: Low chroma matrix with redox concentrations in the upper 8 inches of the profile at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 12

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample location is immediately adjacent to the Topock Marsh outlet into the Colorado River. Shallow water table was present during a time of lower river flows. Prolonged saturation and flooding are likley common in this area during periods of higher flows (May-July).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-27

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 03 15N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.719303 Long: -114.485018 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-3 percent slopes NWI classification: PEM1/SS2A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation X , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes XX*	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks: Low terrace along the north side of the outlet of the Topock Marsh into the Colorado River,, north of the Topock Marina and immediately adjacent to narrow fringe wetland. *

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	20	Y	FAC
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	25	Y	FACW
2. *Baccharis sarothroides*	15	Y	FACUCU
3. *Tamarix ramosissima* (=*T. chinensis*)	10		FAC
4. *Salix exigua*	5		FACW
5.			
Total Cover:	55		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:		Multiply By:	
OBL species		×1 =	
FACW species	30	×2 =	60
FAC species	30	×3 =	90
FACU species	15	×4 =	60
UPL species		×5 =	
Column Totals:	75 (A)		210 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** XX* **No**

Remarks: *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-27

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[a]	Loc[b]	Texture	Remarks
0-8	10 YR 4/2	95	5 YR 3/4	5%	C	M	SIL	
8-24	10 YR 5/3	98%	10 YR 5/4	2%	C	M	SL	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X **No** ___

Remarks: ASoil at this location has a low chroma matrixxwith approximately 5 percent redox concentrations in the upper part.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes X No ___ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 15

Wetland Hydrology Present? Yes X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Shallow ground water was present at the time of the survey during realtively low flows. Ground water levels are likely closer to the surface in this area during periods of higher flows (May-July); however, this are is slightly higher in elevation than the adjacent fringe wetland it is likley only saturated near the surface during high flows and may be infrequantly flooded.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: MojaveCounty Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-28

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 03 15N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.719291 Long: -114.485317 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-3 percent slopes NWI classification: PEM1/SS2A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Terrace along the east side of the Colorado River,,north of the Topock Marina.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	20	Y	FAC
2. *Prosopis glandulosa*	10	Y	UPL
3.			
4.			
Total Cover:	30		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	35	Y	FACW
2. *Tamarix ramosissima* (=*T. chinensis*)	5		FAC
3.			
4.			
5.			
Total Cover:	40		
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	35	×2 = 70
FAC species	25	×3 = 75
FACU species		×4 =
UPL species	10	×5 = 50
Column Totals:	70 (A)	195 (B)

Prevalence Index = B/A = 2.79*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No** X

Remarks: Both *Tamarix* and *Pluchea sericea* are phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location; therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-28

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-26	10 YR 6/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >36

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >36

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-29

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 34 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.721081 Long: -114.485903 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-1 percernt slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No XX	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: Low terrace along the east side of the Colorado River,, north of the Topock Marina.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	20	Y	FAC
2.			
3.			
4.			
Total Cover:	20		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	15	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	15		
Herb Stratum			
1. *Cryptantha angustifolia*	5	Y	NL
2. *Tiquilia plicata*	5	Y	NL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	15	×2 = 30
FAC species	20	×3 = 60
FACU species		×4 =
UPL species	10	×5 = 50
Column Totals:	45 (A)	140 (B)

Prevalence Index = B/A = 3.11

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0*
- Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** X X

Remarks: Both *Tamarix* and *Pluchea sericea* are phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-29

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-26	10 YR 5/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point is located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-30

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 34 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.723277 Long: -114.488108 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-3 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No X	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Low terrace along the east side of the Colorado River,, north of the Topock Marina

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix ramosissima* (=*T. chinensis*)	25	Y	FAC
2.			
3.			
4.			
Total Cover:	25		
Sapling/Shrub Stratum			
1. *Pluchea sericea*	30	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	30		
Herb Stratum			
1. *Cryptantha angustifolia*.	5	.	NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	<5		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	30	×2 = 60
FAC species	25	×3 = 75
FACU species		×4 =
UPL species	5	×5 = 25
Column Totals:	60 (A)	160 (B)

Prevalence Index = B/A = 2.67*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Many dead *Pluchea* stems in this area. Both *Tamarix* and *Pluchea sericea* are phreatophytes that are likely exploiting shallow ground water and soil moisture and are not considered to be present due to prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were evident at this location; therefore the prevalence index criteria are not met. *Tamarix ramosissima* is considered a synonym of *T. chinensis* by the North America Digital Flora: National Wetland Plant List

SOIL

Sampling Point SP-30

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-28	10 YR 6/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >28

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >28

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point is located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave County Date: 2/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-31

Investigator(s): Russell Huddleston and Kim Steiner Section, Township, Range: 34 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2 %

Subregion (LRR): D-Western Range and Irrigated Region Lat: 34.725209 Long: -114.489746 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-3 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes**	**No** X
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X			

Remarks: Low terrace along the east side of the Colorado River, across the river from the outlet of Bat Cave Wash.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Pluchea sericea*	20	Y	FACW
2.			
3.			
4.			
5.			
Total Cover:	20		
Herb Stratum			
1. *Cryptantha angustifolia*	5	Y	NL
2. *Tiquilia plicata*	5	Y	NL
3. *Schismus barbatus*	5	Y	NL
4.			
5.			
6.			
7.			
8.			
Total Cover:	15		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum ~75% % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species	20	×2 = 40
FAC species		×3 =
FACU species		×4 =
UPL species	15	×5 = 75
Column Totals:	35 (A)	85 (B)

Prevalence Index = B/A = 3.28*

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0*

___ Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks: *Pluchea sericea* is a ruderal phreatophyte that is likely exploiting shallow ground water and soil moisture and is not considered to be present due to prolonged surface saturation or inundation. *Herbaceous understory consists entirely of upland species in this area.

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SOIL

Sampling Point SP-31

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-28	10 YR 6/4	100	--	--	--	--	S	

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are derived from dredged river sand – no evidence to suggest that hydric conditions are present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >28

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >28

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: UUSGS River Gauge (09423550) - Colorado River Topock Marsh inlet near Needles, CA

Remarks: Sample point is located above the ordinary high water elevation of the Colorado River; no evidence of prolonged saturation or inundation in this area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave Date: 7/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-32

Investigator(s): Russell Huddleston and Melissa Fowler Section, Township, Range: 35 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%

Subregion (LRR): D- Western Range and Irrigated Lat: 34.732306 Long: -114.480818 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-1 percent slopes NWI classification: PSS2Ah

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil X, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: This area was formerly a dense tamarisk thicket that burned in an October 2008 wildfire. Dead trees and woody debris have been cleared from this area by the US Fish and Wildlife Service as part of the habitat improvement and revegetation program for this part of the Havasu National Wildlife Refuge. Significant summer rainfall occurred in the region resulting in over an inch of precipitation immediately prior to the survey. Summer thunderstorms are common and considered typical for this time of year.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species that are OBL, FACW, or FAC: (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species		×2 =
FAC species		×3 =
FACU species		×4 =
UPL species		×5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0*

___ Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks: All of the dead *Tamarix* trees and most of the woody debris has been removed from this area, but there are a few scattered piles of woody debris remaining in this area. No vegetation was present at the time of the survey.

SOIL

Sampling Point SP-32

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-18	10YR 4/3	100	--	--	--	--	S	Soil pH = 8.2
18-24	10 YR 4/3	99	7.5 YR 3/4	1	C	M	LS	Soil pH = 8.4

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are moderately alkaline and are considered to be problematic; however, there is no evidence to suggest that the soils in this location are subject to prolonged saturation or inundation that would result in anaerobic conditions in the upper part.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Some evidence of short duration surface flooding in this area as a result of recent, high intensity rainstorms (over an inch of precipitation immediately preceding the survey). No surface ponding, or saturated soils were evident at this location three days after significant rainfall and high flows in the Sacramento Wash.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave Date: 7/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-33

Investigator(s): Russell Huddleston and Melissa Fowler Section, Township, Range: 35 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%

Subregion (LRR): D- Western Range and Irrigated Lat: 34.729312 Long: -114.478384 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-1 percent slopes NWI classification: PSS2Ah

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil X, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: Area was formerly a dense tamarisk thicket that was burned in an October 2008 wildfire. Dead trees and woody debris were cleared by the US Fish and Wildlife Service as part of the habitat improvement and revegetation program in this area of the Havasu National Wildlife Refuge. Significant summer rainfall occurred in the region resulting in over an inch of precipitation immediately prior to the survey.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species that are OBL, FACW, or FAC: (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species		×2 =
FAC species		×3 =
FACU species		×4 =
UPL species		×5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0*
- Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks: The burned tamarisk has been removed from this area and wood chips have been spread across the surface of the soils in this area. No vegetation present at the sample location. Most of the burn area has been cleared and is devoid of vegetation with the exception of sparsely scattered *Tamarix aphylla* seedlings and scattered *Salsola tragus.*

SOIL

Sampling Point SP-33

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10YR 4/3	100	--	--	--	--	LFS	Soil pH = 8.2

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are moderately alkaline and are considered problematic; however, there is no evidence to suggest that the soils in this location are subject to prolonged saturation or inundation that would result in anaerobic conditions in the upper part.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Some evidence of short duration surface flooding in this area as a result of recent, high intensity rainstorms (over an inch of precipitation immediately preceding the survey). However, no surface ponding or saturated soils evident in the upper 24 inches at this location three days after significant rainfall and high flows in the Sacramento Wash.
Summer thunderstorms are common and considered typical for this time of year.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave Date: 7/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-34

Investigator(s): Russell Huddleston and Melissa Fowler Section, Township, Range: 35 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%

Subregion (LRR): D- Western Range and Irrigated Lat: 34.725211 Long: -114.478169 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil X, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X		
Wetland Hydrology Present?	Yes	No X		

Remarks: Area was formerly a dense tamarisk thicket that was burned in an October 2008 wildfire. Dead trees and woody debris have been cleared by the US Fish and Wildlife Service (Havasu National Wildlife Refuge). This sample location is in an area that has been planted with native vegetation and regularly irrigated. Significant summer rainfall occurred in the region resulting in over an inch of precipitation immediately prior to the survey. Summer thunderstorms are common and considered typical for this time of year.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Atriplex canescens*	25	Y	NL
2. *Prosopis pubescens*	15	Y	FAC
3.			
4.			
5.			
Total Cover:	40		
Herb Stratum			
1. *Dysphania ambrosioides* (= *Chenopodium*)	15	Y	NL
2. *Sporobolus airoides*	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	20		
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:	
OBL species		×1 =	
FACW species		×2 =	
FAC species	20	×3 =	60
FACU species		×4 =	
UPL species	40	×5 =	200
Column Totals:	60 (A)		260 (B)

Prevalence Index = B/A = 4.33

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0*
- Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** **No** X

Remarks: Most of the vegetation in this area was planted by the US Fish and Wildlife Service in the Spring of 2011.

SOIL

Sampling Point SP-34

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10YR 5/3	100	--	--	--	--	S	Soil pH = 8.3 to 8.4

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are moderately alkaline and are considered problematic; however, there is no evidence to suggest that the soils in this location are subject to prolonged saturation or inundation that would result in anaerobic conditions in the upper part. Slight increase in soil pH with depth in this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No evidence of flooding or saturation in this area despite recent, high intensity rainstorms (over an inch of precipitation immediately preceding the survey). No wet or saturated soils evident in the upper 24 inches at this location three days following significant rainfall and high flows in the Sacramento Wash.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave Date: 7/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-35

Investigator(s): Russell Huddleston and Melissa Fowler Section, Township, Range: 35 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%

Subregion (LRR): D- Western Range and Irrigated Lat: 34.725272 Long: -114.477274 Datum: WGS 1984

Soil Map Unit Name: Lagunita sand 0-1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil X , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Sample point taken in bush seepweed community at the edge of dense tamarisk thicket between Highway 95 and the BNSF railroad tracks. There was a significant amount of summer rainfall (over an inch of precipitation) immediately prior to the survey. Summer thunderstorms are common and considered typical for this time of year.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix aphylla*	10	Y	FAC
2. *Tamarix ramosissima* (=*T. chinensis*)	5	Y	FAC
3.			
4.			
Total Cover:	15		
Sapling/Shrub Stratum			
1. *Suaeda nigra* (=*S. moquinii*)	15	Y	OBL
2. *Ambrosia dumosa*	1		NL
3.			
4.			
5.			
Total Cover:	16		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum ~70 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species	15	×1 = 15
FACW species		×2 =
FAC species	15	×3 = 45
FACU species		×4 =
UPL species	1	×5 = 5
Column Totals:	31 (A)	65 (B)

Prevalence Index = B/A = 2.10*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Relatively sparse vegetation in this area; sample point taken at edge of tamarisk thicket. *Tamarix aphylla* and *T. ramosissima* are both phreatophytes as well as salt tolerant species. *Suaeda nigra* is commonly associated with alkaline soils and its presence may have more to do with edaphic rather than hydrologic conditions in this area. *No hydric soil or wetland hydrology indicators were observed at this location.

Tamarix ramosissima is considered a synonym of T. chinensis by the North America Digital Flora: National Wetland Plant List.

SOIL

Sampling Point SP-35

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10YR 4/4	100	--	--	--	--	S	Soil pH = 8.3 to 9.6

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area range from moderately alkaline near the surface to very strong alkaline in the lower part. Alkaline soils are considered problematic; however, there is no evidence to suggest that the soils in this location are subject to prolonged saturation or inundation that would result in anaerobic conditions in the upper part.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No evidence of flooding or saturation in this area despite recent, high intensity rainstorms (over an inch of precipitation immediately preceding the survey). No surface ponding, wet or saturated soils were evident in the upper 24 inches at this location three days after significant rainfall and high flows in the Sacramento Wash.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave Date: 7/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-36

Investigator(s): Russell Huddleston and Melissa Fowler Section, Township, Range: 35 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%

Subregion (LRR): D- Western Range and Irrigated Lat: 34.729458 Long: -114.473959 Datum: WGS 1984

Soil Map Unit Name: Rositas Family, superstition and torriorthents soils 1-3 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil X , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Sample point taken at the edge of dense athel tamarisk thicket, west of the BNSF railroad near large culvert and discontinuous drainage channel. A significant amount of summer rainfall occurred in the region (over an inch of precipitation) immediately prior to the survey. Summer thunderstorms are common and considered typical for this time of year.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix aphylla*	40	Y	FAC
2.			
3.			
4.			
Total Cover:	40		
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover Of:	Multiply By:	
OBL species	×1 =	
FACW species	×2 =	
FAC species 40	×3 =	120
FACU species	×4 =	
UPL species	×5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = 3.0*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Dense athel tamarisk thicket – *Tamarix aphylla* is a phreatophyte capable of extracting deep groundwater and its presence and abundance at this location were not considered indicative of prolonged surface saturation or inundation. * No hydric soil or wetland hydrology indicators were observed at this location.

SOIL

Sampling Point SP-36

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-24	10YR 5/3+	100	--	--	--	--	S	Soil pH = 8.0 – 8.2
		1						

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are moderately alkaline and were considered problematic; however, there is no evidence to suggest that the soils in this location are subject to prolonged saturation or inundation that would result in anaerobic conditions in the upper part.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No evidence of flooding or saturation in this area despite recent, high intensity rainstorms (over an inch of precipitation immediately preceding the survey). No wet or saturated soils evident in the upper 24 inches at this location three days after significant rainfall and high flows in the Sacramento Wash.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Topock Compressor Station City/County: Mojave Date: 7/17/2012

Applicant/Owner: Pacific Gas and Electric Company State: AZ Sampling Point: SP-37

Investigator(s): Russell Huddleston and Melissa Fowler Section, Township, Range: 35 16N 21W

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0-2%

Subregion (LRR): D- Western Range and Irrigated Lat: 34.733517 Long: -114.475477 Datum: WGS 1984

Soil Map Unit Name: Carrizo Family very gravelly loamy sand 1-3 percent slopes NWI classification: PSS2Jh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil X , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Sample point taken at the edge of dense athel tamarisk thicket north of the Sacramento Wash. Significant summer rainfall occurred in the region resulting in over an inch of precipitation immediately prior to the survey. Summer thunderstorms are common and considered typical for this time of year.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tamarix aphylla*	50	Y	FAC
2.			
3.			
4.			
Total Cover:	50		
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1. None			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust N/A

Dominance Test worksheet:

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

	Total % Cover Of:	Multiply By:
OBL species		×1 =
FACW species		×2 =
FAC species	50	×3 = 150
FACU species		×4 =
UPL species		×5 =
Column Totals:	50 (A)	150 (B)

Prevalence Index = B/A = 3.0*

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

Prevalence Index is ≤3.0*

Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation* (Explain)

* Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** X **No**

Remarks: Dense athel tamarisk thicket – *Tamarix aphylla* is a phreatophyte capable of extracting deep groundwater and its presence and abundance at this location were not considered to be indicative of prolonged surface saturation or inundation. *No hydric soil or wetland hydrology indicators were observed at this location.

SOIL

Sampling Point SP-36

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[a]	Redox Features Loc[b]	Texture	Remarks
0-13	10YR 5/4	100	--	--	--	--	S	Soil pH = 9.2
13-24	10 YR 5/3	100	--	--	--	--	S	Soil pH = 9.2

[a] Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [b] Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[c]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[c] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ **No** X

Remarks: Soils in this area are strongly alkaline and are considered problematic; however, there is no evidence to suggest that the soils in this location are subject to prolonged saturation or inundation that would result in anaerobic conditions in the upper part.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (two or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >24

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >24

Wetland Hydrology Present? Yes ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No evidence of flooding or saturation in this area despite recent, high intensity rainstorms (over an inch of precipitation immediately preceding the survey). No wet or saturated soils were evident in the upper 24 inches at this location three days after significant rainfall and high flows in the nearby drainage channel and the Sacramento Wash.

Appendix K
Representative Site Photographs

Colorado River (R2UB2), looking north

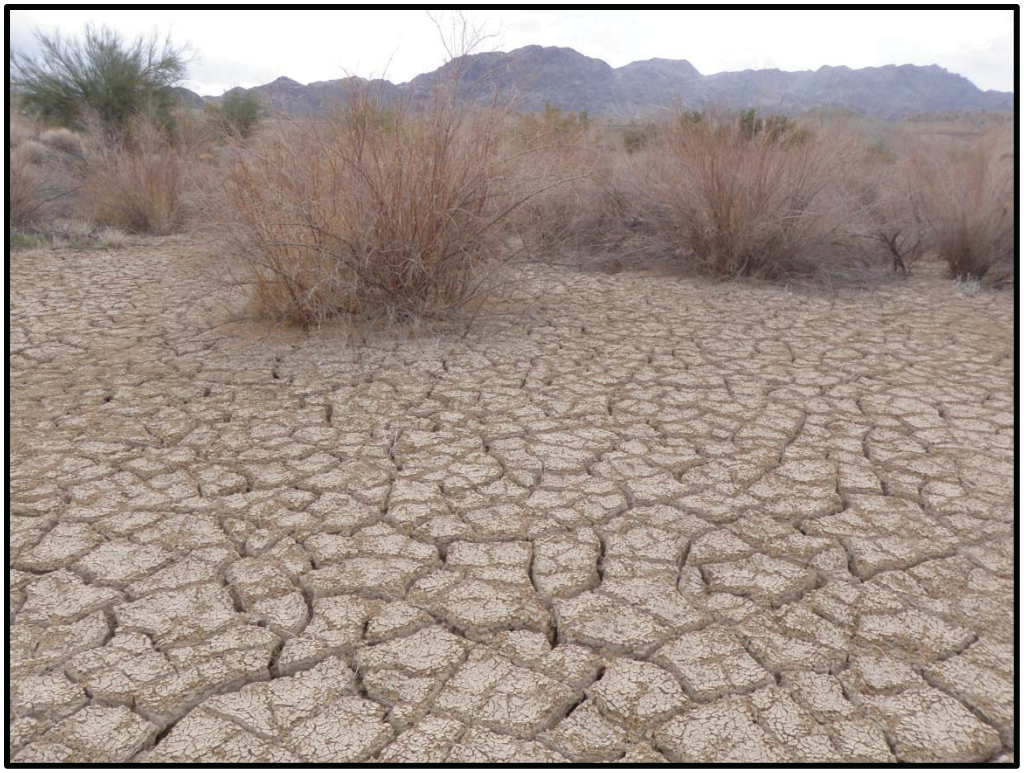
Park Moabi Slough (R2UB2x), Looking west from the confluence with the Colorado River

Bat Cave Wash (R4SB3A)

Unnamed Wash to the west of Bat Cave Wash (R4SB3A)

Typical Small Tributary Drainage (R4SB3A)

Representative Wash south of Park Moabi (R4SB3A)



Soil Cracks in Detention Basin area South of Park Moabi (PSSA)

Shore Zone Wetland (PEMH)

Adjacent Wetland (PEMC)

Topock Marsh (PEMH)

Pond (PEMH)

Earthen dam on south side of the pond

Saltcedar and Honey Mesquite at north end of ephemeral wash (PSSA)

Park Moabi Pond (PUBHx)

Scattered (poor condition) arrow weed on low terrace along the Colorado River

Arrow weed, salt cedar and honey mesquite – low terrace along the Colorado River

Sacramento Wash (R4SB3A) after significant rainfall in July 2012

Former athel tamarisk area on the Havasu National Wildlife Refuge south of the Sacramento Wash, burned in 2008 wildfire and cleared by the US Fish and Wildlife Service

Appendix L
Plant Species List

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
GYMNOSPERMS			
EPHEDRACEAE	**ephedra family**		
Ephedra nevadensis	Nevada ephedra	Shrub	NL
ANGIOSPERMS-DICOTS			
AIZOACEAE	**iceplant family**		
Sesuvium verrucosum	western sea-purslane	Herb	FACW
Trianthema portulacastrum	horse-purslane	Herb	FAC
AMARANTHACEAE	**amaranth family**		
Amaranthus fimbriatus	fringed amaranth	Herb	NL
Tidestromia suffruticosa var. oblongifolia (=*Tidestromia oblongifolia*)	honeysweet	Herb	NL
APOCYNACEAE	**dogbane family**		
Asclepias albicans	white-stemmed milkweed	Shrub	NL
Asclepias subulata	rush milkweed	Shrub	NL
Funastrum hirtellum	trailing townula	Vine	NL
Nerium oleander[3]	common oleander	Shrub	NL
ARALIACEAE	**ginseng family**		
Hydrocotyle verticillata	marsh pennywort	Herb	OBL
ASTERACEAE	**sunflower family**		
Adenophyllum porophylloides	San Felipe dyssodia	Shrub	NL
Ambrosia dumosa	white bur-sage	Shrub	NL
Ambrosia salsola (=*Hymenoclea salsola*)	cheesebush	Shrub	NL
Atrichoseris platyphylla	gravel-ghost	Herb	NL
Baccharis sarothroides	broom baccharis	Shrub	FACU
Bebbia juncea var. *aspera*	sweetbush	Shrub	NL
Calycoseris wrightii	white tackstem	Herb	NL
Chaenactis carphoclinia	pebble pincushion	Herb	NL
Chaenactis stevioides	desert pincushion	Herb	NL
Encelia farinosa	brittlebush	Shrub	NL
Encelia farinosa x frutescens	brittlebush hybrid	Shrub	NL

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
Encelia frutescens	button brittlebush	Shrub	NL
Eriophyllum lanosum (=*Antheropeas lanosum*)	white woolly sunflower	Herb	NL
Geraea canescens	desert-sunflower	Herb	NL
Lactuca serriola	prickly lettuce	Herb	FACU
Malacothrix glabrata	desert dandelion	Herb	NL
Monoptilon bellioides	desert star	Herb	NL
Palafoxia arida	Spanish needle	Herb	NL
Pectis papposa var. *papposa*	chinch-weed	Herb	NL
Perityle emoryi	Emory's rock daisy	Herb	NL
Peucephyllum schottii	pygmy-cedar	Shrub	NL
Pluchea odorata var. *odorata*	saltmarsh fleabane	Herb	FACW
Pluchea sericea	arrow-weed	Shrub	FACW
Porophyllum gracile	slender poreleaf	Shrub	NL
Pseudognaphalium luteoalbum	cudweed	Herb	FAC
Pulicaria paludosa	false-fleabane	Herb	FAC
Rafinesquia neomexicana	desert chicory	Herb	NL
Senecio mohavensis	Mojave ragwort	Herb	NL
Sonchus asper	prickly sowthistle	Herb	FAC
Stephanomeria pauciflora	wire-lettuce	Shrub	NL
Stylocline micropoides	desert neststraw	Herb	NL
Trichoptilium incisum	yellowdome	Herb	NL
Xanthisma spinulosum var. *gooddingii* (=*Machaeranthera pinnatifida*)	spiny goldenweed	Shrub	NL
Xanthium strumarium	common cocklebur	Herb	FAC
BORAGINACEAE	**borage family**		
Amsinckia tessellata	desert fiddleneck	Herb	NL
Cryptantha angustifolia	narrow-leaved cryptantha	Herb	NL
Cryptantha barbigera var. *barbigera*	bearded cryptantha	Herb	NL
Cryptantha inaequata	Panamint cryptantha	Herb	NL
Cryptantha maritima	Guadalupe cryptantha	Herb	NL
Cryptantha micrantha var. *micrantha*	red-root cryptantha	Herb	NL

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
Cryptantha nevadensis var. *rigida*	rigid cryptantha	Herb	NL
Cryptantha pterocarya var. *pterocarya*	winged-nut cryptantha	Herb	NL
Heliotropium curassavicum var. *oculatum*	alkali heliotrope	Herb	FACU
Pectocarya heterocarpa	mixed-nut pectocarya	Herb	NL
Pectocarya platycarpa	wide-toothed pectocarya	Herb	NL
Pectocarya recurvata	arched-nut pectocarya	Herb	NL
Phacelia crenulata ssp. *ambigua*	notch-leaved phacelia	Herb	NL
Phacelia distans	distant phacelia	Herb	OBL
Phacelia pedicellata	pedicellate phacelia	Herb	NL
Tiquilia plicata	fan-leaved tiquilia	Herb	NL
BRASSICACEAE	**mustard family**		
Brassica tournefortii	Saharan mustard	Herb	NL
Caulanthus lasiophyllus (=*Guillenia lasiophylla*)	California mustard	Herb	NL
Descurainia pinnata	pinnate tansy mustard	Herb	NL
Dithyrea californica	California spectacle pod	Herb	NL
Draba cuneifolia	wedge-leaved draba	Herb	NL
Lepidium lasiocarpum ssp. *lasiocarpum*	shaggyfruit pepperweed	Herb	NL
Sisymbrium orientale	oriental hedge-mustard	Herb	NL
CACTACEAE	**cactus family**		
Cylindropuntia acanthocarpa var. *coloradensis*	buckhorn cholla	Shrub	NL
Cylindropuntia bigelovii	teddy-bear cholla	Shrub	NL
Cylindropuntia echinocarpa	silver cholla	Shrub	NL
Ferocactus cylindraceus	California barrel cactus	Shrub	NL
Mammillaria tetrancistra	corkseed mammillaria	Shrub	NL
Opuntia basilaris var. *basilaris*	beavertail	Shrub	NL
CARYOPHYLLACEAE	**pink family**		
Achyronychia cooperi	onyx flower	Herb	NL
CHENOPODIACEAE	**goosefoot family**		
Atriplex canescens[4]	four-wing saltbush	Shrub	UPL
Atriplex elegans var. *elegans*	wheelscale	Herb	UPL

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
Atriplex fruticulosa	ballscale	Herb	FACW
Atriplex hymenelytra	desert-holly	Shrub	NL
Atriplex lentiformis	big saltbush, quailbush	Shrub	FAC
Atriplex polycarpa	allscale saltbush, cattle saltbush	Shrub	FACU
Chenopodium album	lamb's quarters	Herb	FACU
Dysphania ambrosioides (=*Chenopodium ambrosioides*)	Mexican tea	Herb	NL
Salsola tragus	Russian thistle	Herb	FACU
Suaeda nigra (=*Suaeda moquinii*)	bush seepweed	Shrub	OBL
CUCURBITACEAE	**gourd family**		
Cucurbita palmata	coyote melon	Vine	NL
EUPHORBIACEAE	**spurge family**		
Chamaesyce micromera	desert spurge	Herb	NL
Chamaesyce polycarpa	small-seeded spurge	Herb	NL
Chamaesyce setiloba	Yuma spurge	Herb	NL
Ditaxis neomexicana (=*Argythamnia neomexicana*)	common ditaxis	Herb	NL
Stillingia paucidentata	Mojave toothleaf	Herb	NL
FABACEAE	**legume family**		
Acmispon maritimus var. *maritimus* (=*Lotus salsuginosus* var. *salsuginosus*)	coastal bird's foot trefoil	Herb	NL
Acmispon strigosus (=*Lotus strigosus*)	strigose bird's foot trefoil	Herb	NL
Dalea mollis	hairy indigo-pea	Herb	NL
Dalea mollissima	downy dalea	Herb	NL
Lupinus arizonicus	Arizona lupine	Herb	NL
Marina parryi	Parry's marina	Herb	NL
Parkinsonia aculeata	Mexican palo verde	Tree / Shrub	FAC
Parkinsonia florida	blue palo verde	Tree / Shrub	UPL
Parkinsonia microphylla	little-leaved palo verde, hillside palo verde	Tree / Shrub	NL
Prosopis glandulosa var. *torreyana*	honey mesquite	Tree / Shrub	UPL
Prosopis pubescens	screw bean	Tree / Shrub	FAC

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
Psorothamnus spinosus	smoke tree	Tree / Shrub	NL
Senegalia greggii (=*Acacia greggii*)	catclaw	Tree / Shrub	FACU
FOUQUIERIACEAE	**ocotillo family**		
Fouquieria splendens ssp. *splendens*	ocotillo	Shrub	NL
GENTIANACEAE	**gentian family**		
Eustoma exaltatum ssp. *exaltatum*	catchfly gentian	Herb	OBL
GERANIACEAE	**geranium family**		
Erodium cicutarium	redstem filaree	Herb	NL
Erodium texanum	Texas filaree	Herb	NL
KRAMERIACEAE	**rhatany family**		
Krameria bicolor	white rhatany	Shrub	NL
Krameria erecta	Pima rhatany	Shrub	NL
LAMIACEAE	**mint family**		
Hyptis emoryi	desert lavender	Shrub	NL
Salvia columbariae	chia	Herb	NL
Scutellaria mexicana (=*Salazaria mexicana*)	bladder-sage	Shrub	NL
LOASACEAE	**loasa family**		
Eucnide urens	rock-nettle	Shrub	NL
Mentzelia albicaulis	white-stemmed blazing star	Herb	NL
Mentzelia involucrata	white-bracted mentzelia	Herb	NL
Mentzelia tricuspis	spiny-hair blazing star	Herb	NL
MALVACEAE	**mallow family**		
Hibiscus denudatus	pale face	Shrub	NL
Malva parviflora	cheeseweed	Herb	NL
Sphaeralcea ambigua var. *ambigua*	apricot mallow	Herb	NL
Sphaeralcea emoryi	Emory's globemallow	Herb	NL
MYRTACEAE	**myrtle family**		
Eucalyptus sp.[3]	eucalyptus	Tree	---
NYCTAGINACEAE	**four o'clock family**		
Abronia villosa	sand verbena	Herb	NL

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
Allionia incarnata var. *incarnata*	trailing windmills	Herb	NL
Boerhavia coccinea	scarlet spiderling	Herb	NL
Boerhavia wrightii	Wright's spiderling	Herb	NL
Mirabilis laevis var. *retrorsa* (=*Mirabilis bigelovii* var. *retrorsa*)	retrorse desert four-o'clock	Herb	NL
ONAGRACEAE	**evening-primrose family**		
Chylismia arenaria (=*Camissonia arenaria*)	mousetail suncup	Herb	NL
Chylismia brevipes (=*Camissonia brevipes*)	golden suncup	Herb	NL
Chylismia multijuga[5] (=*Oenothera multijuga*)	multi-paired suncup	Herb	NL
Eremothera boothii ssp. *condensata* (=*Camissonia boothii* ssp. *condensata*)	Booth's shreading suncup	Herb	NL
Eremothera refracta (=*Camissonia refracta*)	narrow-leaf suncup	Herb	NL
Oenothera deltoides ssp. *deltoides*	devil's lantern	Herb	NL
PAPAVERACEAE	**poppy family**		
Eschscholzia minutiflora	small-flowered California poppy	Herb	NL
PHRYMACEAE	**lopseed family**		
Mimulus bigelovii	Bigelow's monkeyflower	Herb	NL
PLANTAGINACEAE	**plantain family**		
Mohavea confertiflora	ghost flower	Herb	NL
Plantago ovata	ovate plantain	Herb	FACU
POLEMONIACEAE	**phlox family**		
Gilia scopulorum	rock gilia	Herb	NL
Langloisia setosissima ssp. *setosissima*	bristly langloisia	Herb	NL
POLYGONACEAE	**buckwheat family**		
Chorizanthe brevicornu var. *brevicornu*	brittle spineflower	Herb	NL
Chorizanthe corrugata	wrinkled spineflower	Herb	NL
Chorizanthe rigida	devil's spineflower	Herb	NL
Eriogonum deflexum var. *deflexum*	flat-topped skeletonweed	Herb	NL
Eriogonum inflatum	desert trumpet	Herb	NL

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
Eriogonum thomasii	Thomas' wild buckwheat	Herb	NL
Eriogonum trichopes	little desert trumpet	Herb	NL
Polygonum argyrocoleon	Persian knotweed	Herb	FAC
RESEDACEAE	**mignonette family**		
Oligomeris linifolia	linear-leaved oligomeris	Herb	NL
RUBIACEAE	**madder family**		
Galium angustifolium	narrowly leaved bedstraw	Herb	NL
SALICACEAE	**willow family**		
Salix exigua	narrow-leaved willow	Shrub	FACW
Salix gooddingii	Goodding's black willow	Tree	FACW
Populus fremontii ssp. *fremontii* (=*Populus deltoides* ssp. *fremontii*)[6]	Fremont cottonwood	Tree	FAC
SOLANACEAE	**nightshade family**		
Datura wrightii	jimson weed	Herb	UPL
Lycium andersonii	Anderson's box-thorn	Shrub	NL
Nicotiana obtusifolia	desert tobacco	Herb	FACU
Physalis crassifolia	thick-leaf ground-cherry	Herb	NL
TAMARICACEAE	**tamarisk family**		
Tamarix ramosissima (=*Tamarix chinensis*)[6]	saltcedar	Tree / Shrub	FAC
Tamarix aphylla	athel	Tree	FAC
URTICACEAE	**nettle family**		
Parietaria hespera var. *hespera*	western pellitory	Herb	FACU
VERBENACEAE	**vervain family**		
Phyla nodiflora	turkey-tangle frog-fruit	Herb	FACW
VISCACEAE	**mistletoe family**		
Phoradendron californicum	desert mistletoe	Shrub	NL
ZYGOPHYLLACEAE	**caltrop family**		
Fagonia laevis	smooth-stemmed fagonia	Shrub	NL
Kallstroemia californica	California kallstroemia	Herb	NL
Larrea tridentata	creosote bush	Shrub	NL

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
Tribulus terrestris	puncture vine	Herb	NL
MONOCOTS			
AGAVACEAE	**century plant family**		
Hesperocallis undulata	desert lily	Herb	NL
ARECACEAE	**palm family**		
Washingtonia filifera[3]	California fan palm	Tree	FACW
Washingtonia robusta[3]	Mexican fan palm	Tree	NL
CYPERACEAE	**sedge family**		
Cyperus eragrostis	tall flat sedge	Herb	FACW
Eleocharis geniculata	geniculate spikerush	Herb	OBL
Schoenoplectus californicus	southern bulrush	Herb	OBL
JUNCACEAE	**rush family**		
Juncus xiphioides	iris-leaved rush	Herb	OBL
Juncus torreyi	Torrey's rush	Herb	FACW
POACEAE	**grass family**		
Andropogon glomeratus ssp. *scabriglumis*	southwestern bushy bluestem	Herb	FACW
Aristida adscensionis	sixweeks three-awn	Herb	NL
Aristida purpurea var. *wrightii*	Wright three-awn	Herb	NL
Arundo donax	giant reed	Shrub	FACW
Bouteloua aristidoides var. *aristidoides*	needle grama	Herb	NL
Bouteloua barbata var. *barbata*	sixweeks grama	Herb	NL
Bromus arizonicus	Arizona brome	Herb	NL
Bromus catharticus var. *catharticus*	rescue grass	Herb	NL
Bromus madritensis ssp. *rubens*	red brome	Herb	NL
Cynodon dactylon	Bermuda grass	Herb	FACU
Distichlis spicata	salt grass	Herb	FAC
Dasyochloa pulchella (=*Erioneuron pulchellum*)	fluff grass	Herb	NL
Festuca myuros (=*Vulpia myuros*)[6]	rattail sixweeks grass	Herb	FACU
Festuca octoflora (=*Vulpia octoflora*)[6]	sixweeks grass	Herb	UPL

APPENDIX K
Vascular Plant Species Observed at the Topock Compressor Station

Scientific name[1]	Common name	Stratum	Indicator Status[2]
Hilaria jamesii[4] (=*Pleuraphis jamesii*)	galleta	Herb	NL
Hilaria rigida (=*Pleuraphis rigida*)	big galleta	Herb	NL
Hordeum murinum ssp. *glaucum*	smooth barley	Herb	FACU
Muhlenbergia microsperma	littleseed muhly	Herb	NL
Paspalum dilatatum	dallis grass	Herb	FAC
Pennisetum setaceum	crimson fountain grass	Herb	NL
Phalaris minor	little-seeded canary grass	Herb	NL
Phragmites australis	common reed	Shrub	FACW
Schismus barbatus	Mediterranean grass	Herb	NL
Setaria parviflora (=*Setaria gracilis*)	knotroot bristle grass	Herb	NL
Sporobolus airoides[4]	alkali sacaton	Herb	FAC
Triticum aestivum	wheat	Herb	NL
TYPHACEAE	**cattail family**		
Typha latifolia	broad-leaved cattail	Herb	OBL
Typha domingensis	southern cattail	Herb	OBL

Notes:
[1] Scientific names follow *The Jepson Manual: Vascular Plants of California* (Baldwin et al., 2012).
[2] Wetland indicator status determined using: *North American Digital Flora: National Wetland Plant List, version 2.4.0* (Lichvar, Robert W. and John T. Kartesz. 2009).
[3] Cultivated landscape tree or shrub
[4] Plant species is included in the Lake Havasu National Wildlife Refuge revegetation area but was not observed anywhere else within the project area.
[5]Species not known to occur in California – Taxonomy from *Flora of Arizona, 2nd Edition* (Kearney and Peebles, 1960).
[6]Nomenclature used in the *North American Digital Flora: National Wetland Plant List, version 2.4.0* differs from nomenclature of *The Jepson Manual.*

Status Codes:
NL Not Listed (assumed to be a non-wetland species)
FACU Facultative Upland (67 to 99 percent probability of occurrence in non-wetlands)
FAC Facultative (equally likely to occur in wetlands and non-wetlands)
FACW Facultative Wetland (67 to 99 percent probability of occurrence in wetlands)
OBL Obligate (99 percent probability of occurrence in wetlands)
UPL Upland ((99 percent probability of occurrence in non-wetlands)

Appendix M
Ephemeral and Intermittent Stream Data Sheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/13/2012 | **Time:** 9:44 AM
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: BAT CAVE WASH T-1 | **Photo begin file#:** 349 | **Photo end file#:** 350
Investigator(s): R. HUDDLESTON, K STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-1

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.712847 -114.495345

Potential anthropogenic influences on the channel system: DOWN STREAM CULVERTS - THIS TRANSECT NO UPSTREAM INFLUENCES

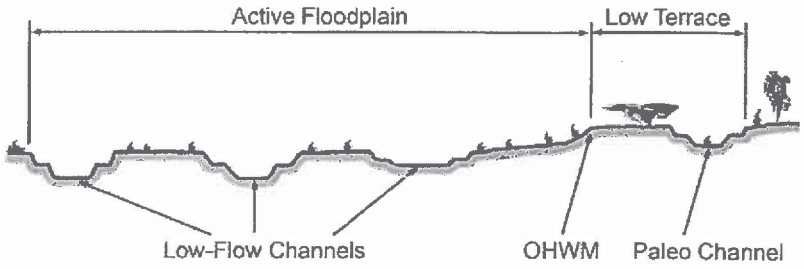
Brief site description: CONFINED CHANNEL - STEEP ROCKY SIDE SLOPES - SPARSE VEGETATION WITHIN CHANNEL ROCKY SUBSTRATE

Checklist of resources (if available):

- [✓] Aerial photography
  Dates:
- [✓] Topographic maps
- [✓] Geologic maps
- [✓] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [✓] Existing delineation(s) for site
- [✓] Global positioning system (GPS)
- [ ] Other studies

- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

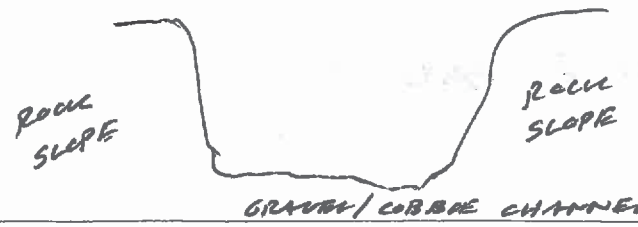


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [✓] GPS 2005
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-1 **Date:** 2/13/2012 **Time:** 9:44 AM

Cross section drawing:



STEEP VERTICAL BANKS ALONG SIDES OF THE CHANNEL - NO LOW TERRACE

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: ROCKY CHANNEL - VERY SPARSE VEGETATION NO CLEARLY DEFINED LOW FLOW CHANNELS PRESENT AT THIS LOCATION; NO LOW TERRACE - STEEP SIDE SLOPES - TRANSECT 29.3 FT

Floodplain unit:

☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: _____ % Tree: _____ % Shrub: 5 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SPARSE SHRUBS IN THIS AREA INCLUDE LYCIUM ANDERSONII, ACACIA GREGGII AND HYPTIS EMORYI

HERBS INCLUDE: ESCHSCHOLZIA MINUTIFLORA, PERITYLE EMORYI, CRYPTANTHA SP., ERIOGONUM SP.

Project ID: TOPOCK Cross section ID: T-1 Date: 2/13/2012 Time: 9:44AM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

NONE PRESENT

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

NONE PRESENT

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/13/2012 | **Time:** 10:27
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: BAT CAVE WASH T-2 | **Photo begin file#:** 355 | **Photo end file#:** 356
Investigator(s): R. HUDDLESTON, K. STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-2

Projection: NAD 83 | **Datum:** WGS 84
Coordinates: 34.715214 | -114.494446

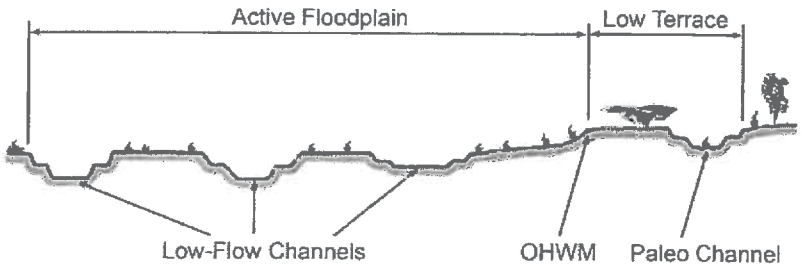
Potential anthropogenic influences on the channel system: UNPAVED ROADS IN ADJACENT AREAS

Brief site description: BROAD CHANNEL WITH MULTIPLE LOW FLOW CHANNELS STEEP SIDE SLOPES - SPARSE VEGETATION WITHIN THE ACTIVE FLOODPLAIN AREA

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [x] Topographic maps
- [x] Geologic maps
- [x] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [x] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

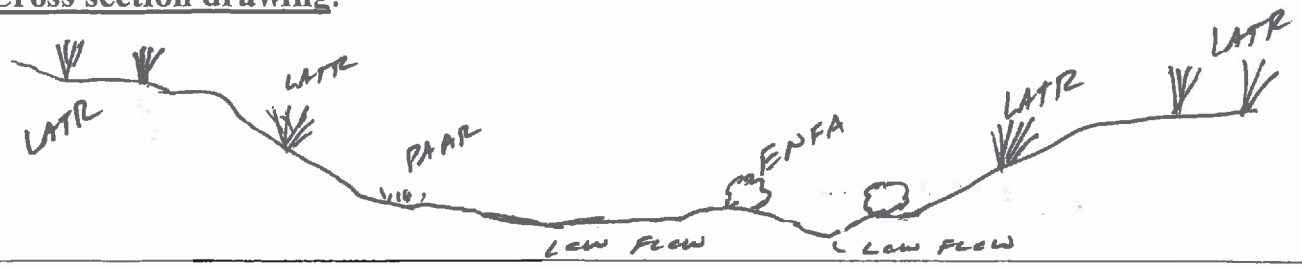


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [x] GPS 2005
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-2 **Date:** 2/13/2012 **Time:** 10:27

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: ROCKY CHANNEL - PEBBLE - COBBLE - SOMEWHAT STEEP SLOPES; MULTIPLE LOW FLOW CHANNELS

Floodplain unit:

☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: 15 % Tree: ____ % Shrub: 5 % Herb: 10 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SPARSE SHRUBS MOSTLY ENCELIA FARINOSA SMALL ACACIA GREGGII

HERBS: PALAFOXIA ARIDA, PERITYLE EMORYI LUPINUS ARIZONICUS, CHAMAESYCE SP.

Project ID: TOPOCK **Cross section ID:** T-2 **Date:** 2/13/2012 **Time:** 10:27

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND-PEBBLE

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: 22 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: - SPARSE PALAFOXIA ARIDA - FINER SUBSTRATE IN THIS AREA - MORE SAND RELATIVE TO ACTIVE FLOODPLAIN

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE-COBBLE

Total veg cover: 10 % Tree: _____ % Shrub: 8 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: VEGETATION MOSTLY LARREA TRIDENTA WITH SPARSE CHAMAESYCE SP.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/13/2012 | **Time:** 11:30 AM
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: BAT CAVE WASH T-3 | **Photo begin file#:** 368US | **Photo end file#:** 369 DS
Investigator(s):

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-3

Projection: NAD83 **Datum:** WGS 84
Coordinates: 34.719864 -114.494431

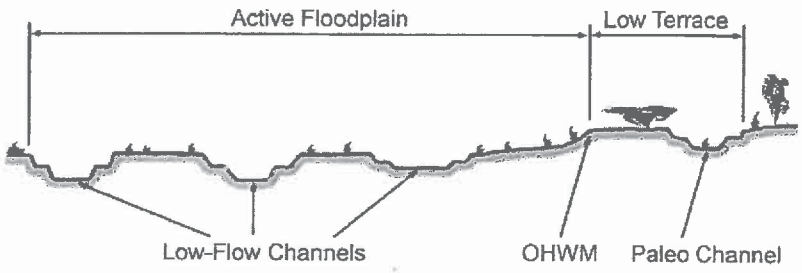
Potential anthropogenic influences on the channel system: UPSTREAM CULVERTS - THIS PORTION OF THE WASH USED AS AN ACCESS ROAD

Brief site description: BROAD WASH WITH STEEP SIDE SLOPES - SPARSE VEGETATION WITHIN THE CHANNEL - GENERALLY FLAT UNIFORM BED IN THIS AREA

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [x] Topographic maps
- [x] Geologic maps
- [x] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

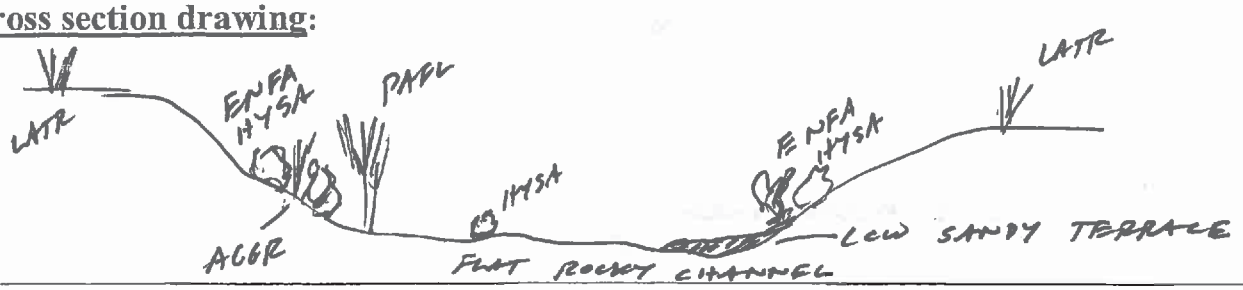


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [x] GPS 2005
   - [ ] Other:

Project ID: TOPOCC **Cross section ID:** T-3 **Date:** 2/13/2012 **Time:** 11:30 AM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- [X] Change in average sediment texture
- [X] Change in vegetation species
- [X] Change in vegetation cover
- [X] Break in bank slope
- [X] Other: DRIFT DEPOSITS
- [ ] Other: _____

Comments: - SPARSE VEGETATION IN ACTIVE FLOODPLAIN DEFINED BANKS, DRIFT DEPOSITS - SOME SANDY DEPOSITS ALONG EDGES OF THE CHANNEL

Floodplain unit:

- [ ] Low-Flow Channel
- [X] Active Floodplain
- [X] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: _____% Tree: _____% Shrub: 5 % Herb: _____%

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments: SPARSE SHRUBS - LARREA TRIDENTATA WITH SCATTERED CHAMAESYCE

Project ID: TOPOCK **Cross section ID:** T- 3 **Date:** 2/13/2012 **Time:** 11:30AM

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND - PEBBLE - COBBLE

Total veg cover: _____ % Tree: _____ % Shrub: 10 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: - SPARSE SHRUBS - EDGES OF THE CHANNEL ENCELIA FARINOSA, HYMENOCLEA SALSOLA - YOUNG ACACIA GREGGII

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: _____ % Tree: _____ % Shrub: 2 % Herb: 5 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SPARSE ANNUALS: LUPINUS ARIZONICUS, PALAFOXIA ARIDA, CHAMAESYCE SP. AND PHACELIA CRENULATA SHRUBS - VERY SPARSE - HYMENOCLEA SALSOLA

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/13/2012 | **Time:** 1:00 PM
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: BAT CAVE WASH T-4 | **Photo begin file#:** 377 US | **Photo end file#:** 378 DS
Investigator(s): R. HUDDLESTON, K STEINER

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: T-4

Projection: NAD83 **Datum:** WGS 84
Coordinates: 34. 722826 -114. 495210

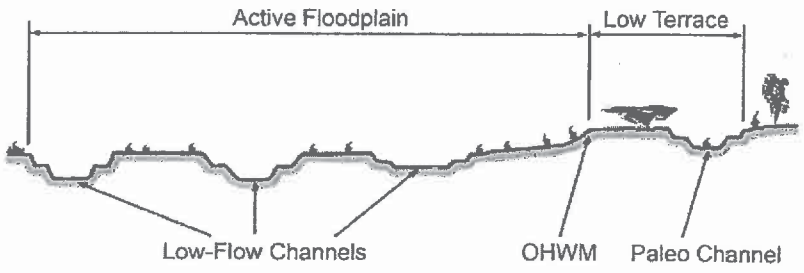
Potential anthropogenic influences on the channel system: CULVERTS UPSTREAM OF THIS TRANSECT, TERRACE ON WEST SIDE - POSSIBLE GRAVEL EXCAVATION? - SEVERAL LOW MOUNDS / LOW AREAS

Brief site description: BROAD WASH WITH MULTIPLE LOW FLOW CHANNELS INTERMIXED WITH IN CHANNEL BARS - SCATTERED VEGETATION THROUGHOUT THE ACTIVE FLOODPLAIN

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☑ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

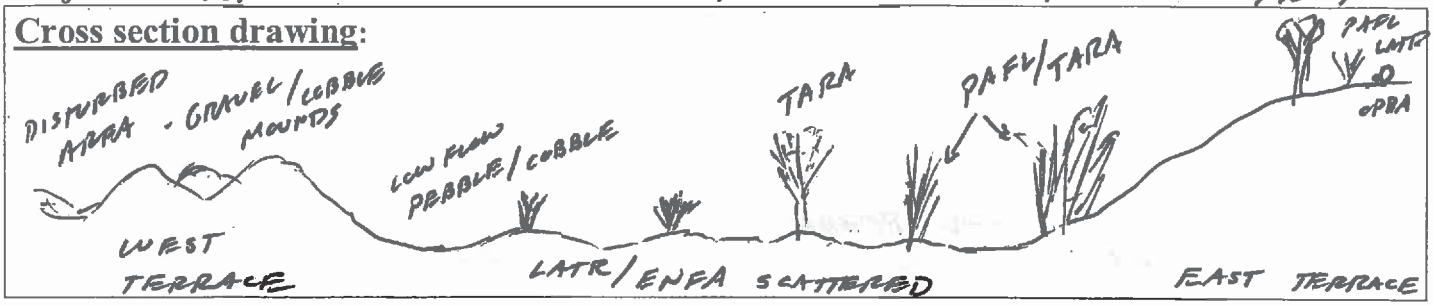


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☑ GPS 2005 DATA
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Topock **Cross section ID:** T-4 **Date:** 2/13/2012 **Time:** 1:00 PM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: DEBRIS/DRIFT DEPOSITS
- ☐ Other: _____

Comments: TRANSECT 191.7 FT - PEBBLE/COBBLE CHANNEL WITH SCATTERED VEGETATION MULTIPLE LOW FLOW CHANNELS THROUGHOUT THE ACTIVE FLOODPLAIN

Floodplain unit:

☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: 30 % Tree: 15 % Shrub: 15 % Herb: 21 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: SCOURING
- ☒ Other: SEDIMENT DEPOSITS
- ☐ Other: _____

Comments:

MULTIPLE LOW FLOW SCOUR CHANNELS PRESENT THROUGHOUT THIS AREA - SCATTERED VEGETATION ON LOW TERRACES WITHIN THE ACTIVE FLOODPLAIN INCLUDING SHRUBS AND MATURE TREES

Project ID: TOPOCK Cross section ID: T-4 Date: 2/13/2012 Time: 1:00PM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND - PEBBLE

Total veg cover: 45 % Tree: 0 % Shrub: 0 % Herb: 45 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: SCOURING
- ☒ Other: ABSENCE OF VEGETATION
- ☐ Other: _____

Comments:

SPARSE PALAFOXIA ARIDA

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: 30 % Tree: 10 % Shrub: 20 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

PARKINSONIA FLORIDA
LARREA TRIDENTATA
OPUNTIA BASILARIS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/14/2012 | **Time:** 9:00 AM
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: | **Photo begin file#:** 359, 360 US | **Photo end file#:** 361 DS
Investigator(s): R. HUDDLESTON, K STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-5

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.722014 -114.501232

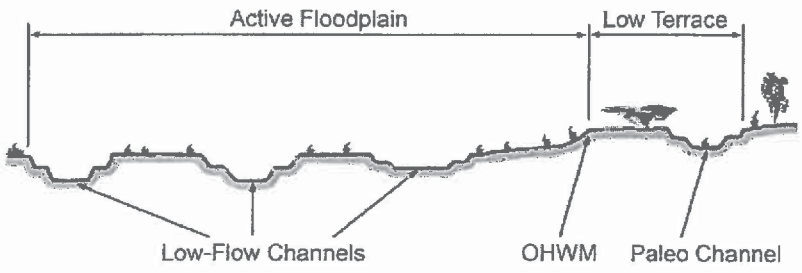
Potential anthropogenic influences on the channel system: - BNSF RR TRACKS UPSTREAM ROADWAY AND 6 48"-DIAMETER CULVERTS DOWNSTREAM

Brief site description: BROAD CHANNEL WITH MULTIPLE LOW FLOW CHANNELS, SCATTERED VEGETATION THROUGHOUT THE FLOODPLAIN

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [X] Geologic maps
- [X] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [X] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

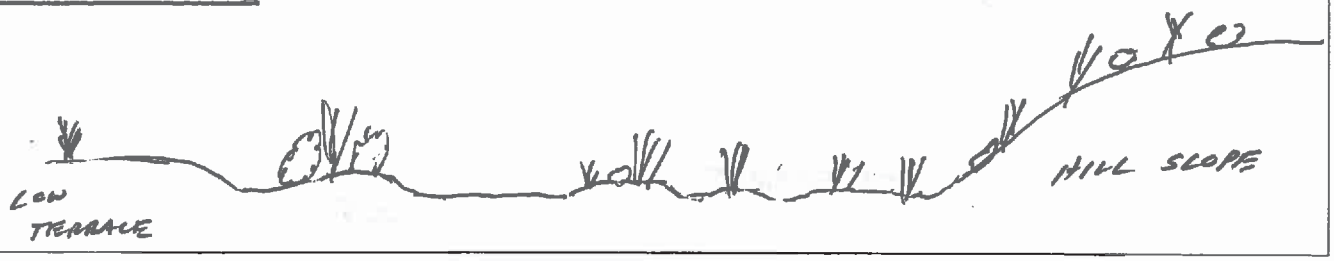


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [X] GPS 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-5 **Date:** 2/14/2012 **Time:** 9:00 AM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: WIDE, GENERALLY FLAT ROCKY FLOODPLAIN WITH MULTIPLE LOW FLOW CHANNELS, SCATTERED WASH AND UPLAND VEGETATION PRESENT

Floodplain unit:

☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE-COBBLE

Total veg cover: _____ % Tree: _____ % Shrub: 10 % Herb: <5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: SCOUR CHANNELS
- ☐ Other: _____
- ☐ Other: _____

Comments: SHRUBS WITHIN THE ACTIVE FLOODPLAIN INCLUDE LARREA TRIDENTATA, AMBROSIA DUMOSA, KRAMERIA GRAYI, BEBBIA JUNCEA AND ACACIA GREGGII.
HERBS - MOSTLY CHAMAESYCE SP.

Project ID: TOPOCK **Cross section ID:** T-5 **Date:** 2/14/2012 **Time:** 9:00 AM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND-PEBBLE

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: 25 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SCOUR CHANNELS WITH SOME SAND - MUCH LESS VEGETATION - SPARSE ANNUALS AND SOME CHAMAESYCE.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE -COBBLE

Total veg cover: _____ % Tree: _____ % Shrub: 5 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: PEBBLE -COBBLE SUBSTRATE, SLIGHTLY HIGHER TOPOGRAPHY - SPARSE SHRUBS - LARREA TRIDENTATA AND KRAMERIA GRAYI

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: P G & E TOPOCK	**Date:** 2/14/2012	**Time:** 9:22 AM
Project Number:	**Town:** NEEDLES	**State:** CA
Stream:	**Photo begin file#:** 362-US	**Photo end file#:** 363-DS
Investigator(s): R. HUDDLESTON, K. STEINER		

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-6

Projection: NAD 83 **Datum:** WGS 84

Coordinates: 34.720675 -114.501088

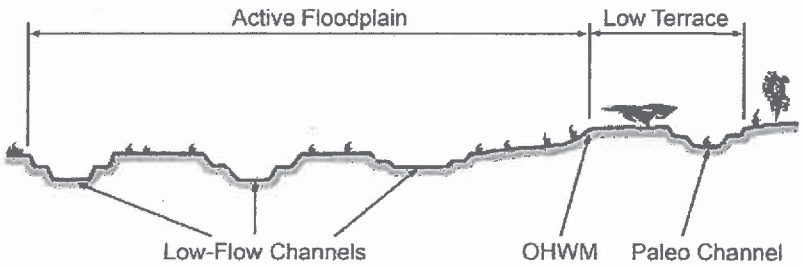
Potential anthropogenic influences on the channel system: LOW WASH IN THIS AREA HAS AN UNIMPROVED ROADWAY PRESENT, CULVERTS PRESENT UPSTREAM OF THIS TRANSECT

Brief site description: - SOMEWHAT OF A CONFINED FLOODPLAIN - STEEP ADJACENT HILL SLOPES - MULTIPLE LOW FLOW CHANNELS SCATTERED MATURE UPLAND SHRUBS PRESENT

Checklist of resources (if available):

- [x] Aerial photography
  - Dates:
- [x] Topographic maps
- [x] Geologic maps
- [x] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  - Gage number:
  - Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-6 **Date:** 2/14/2012 **Time:** 9:22AM

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: ROCKY - GRAVEL-COBBLE CHANNEL WITH SCATTERED VEGETATION, MULTIPLE LOW FLOW CHANNELS, ROADWAY THROUGH THE WASH IN THIS AREA

SOME DRIFT/DEBRIS AND SANDY DEPOSITS - 45' WIDE

Floodplain unit:

☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: ~15 % Tree: 5 % Shrub: 10 % Herb: <5 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: SAND DEPOSITS
- ☐ Other: _____
- ☐ Other: _____

Comments: SOME LARGE LARREA TRIDENTATA PRESENT WITHIN THE ACTIVE FLOODPLAIN - OTHER SHRUBS INCLUDE: HYMENOCLEA SALSOLA AND BEBBIA JUNCEA - SCATTERED ACACIA GREGGII AND PARKINSONIA FLORIDA. HERBS - LUPINUS ARIZONICUS AND PALAFOXIA ARIDA AND CHAMAESYCE

Project ID: Topock **Cross section ID:** T-6 **Date:** 2/14/2012 **Time:** 9:22AM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND-PEBBLE

Total veg cover: <1 % Tree: ____% Shrub: ____% Herb: <1 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: SCOUR CHANNELS
- ☐ Other: _____
- ☐ Other: _____

Comments: VERY SPARSE ANNUALS - LUPINUS ARIZONICUS AND PALAFOXIA ARIDA. - SUBSTRATE INCLUDES MORE FINE MATERIALS, SOME DRIFT DEPOSITS ON SHRUBS IMMEDIATELY ADJACENT TO LOW FLOW CHANNELS

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE-COBBLE

Total veg cover: 5 % Tree: ____% Shrub: ~5 % Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: VEGETATION MOSTLY SPARSE LARREA TRIDENTATA AND AMBROSIA DUMOSA

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/14/2012 | **Time:** 11:10
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: | **Photo begin file#:** 383 | **Photo end file#:** 390
Investigator(s): R. HUDDLESTON, K. STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-7

Projection: NAD83 **Datum:** WGS 84
Coordinates: 34.724877 -114.497954

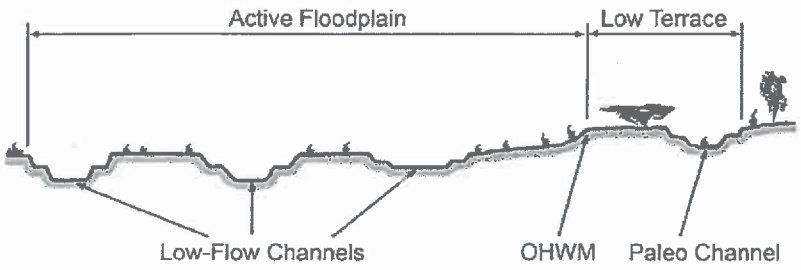
Potential anthropogenic influences on the channel system: EARTHEN DAM UPSTREAM OF THIS TRANSECT

Brief site description: - BROAD CHANNEL IN CONFINED BED - STEEP SLOPES ADJACENT TO THE ACTIVE FLOODPLAIN - MULTIPLE LOW FLOW CHANNELS AMONG VEGETATION

Checklist of resources (if available):

- [✓] Aerial photography
  Dates:
- [✓] Topographic maps
- [✓] Geologic maps
- [✓] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [✓] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [✓] GPS 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-7 **Date:** 2/14/2012 **Time:** 11:10 AM

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: DRIFT / DEBRIS
- ☒ Other: SOIL CRACKS

Comments: BROAD CHANNEL ~260 ft WIDE WITHIN STEEP CONFINED WASH - RELATIVELY DENSE VEGETATION THROUGHOUT W/ MULTIPLE LOW FLOW CHANNELS PRESENT

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND - PEBBLE W/ SOME COBBLE

Total veg cover ~35 % Tree: 15 % Shrub: 20 % Herb: 25 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: SILT DEPOSITS
- ☒ Other: SCOURING
- ☐ Other: _____

Comments: SEVERAL LARGE PARKINSONIA FLORIDA TREES IN THIS AREA - SHRUBS INCLUDE - LARREA TRIDENTATA, LYCIUM ANDERSONII, ATRIPLEX POLYCARPA AND HYMENOCLEA SALSOLA - SPARSE HERBS - MOSTLY CHAMAESYCE SP.

Project ID: TOPOCK **Cross section ID:** T-7 **Date:** 2/14/2012 **Time:** 11:10

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: MOSTLY SAND

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: SCOURING
- ☒ Other: SILT DEPOSITS
- ☐ Other: _____

Comments: - LOW FLOW CHANNELS THROUGHOUT THE ACTIVE FLOODPLAIN - DEVOID OF VEGETATION SANDY WITH SOME COBBLE / PEBBLES - IN SOME AREAS LOW FLOW CHANNELS MORE ROCKY WITH SAND DEPOSITS ON ADJACENT FLOODPLAIN

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: POSE TOPOCK | **Date:** 2/14/2012 | **Time:** 11:50 AM
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: | **Photo begin file#:** 392 | **Photo end file#:** 398
Investigator(s): R. HUDDLESTON, K. STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-8

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.724004 -114.499416

Potential anthropogenic influences on the channel system: -EARTHEN DAM AT DOWNSTREAM PART OF THE WASH -SOUTH OF NATIONAL TRAILS HWY

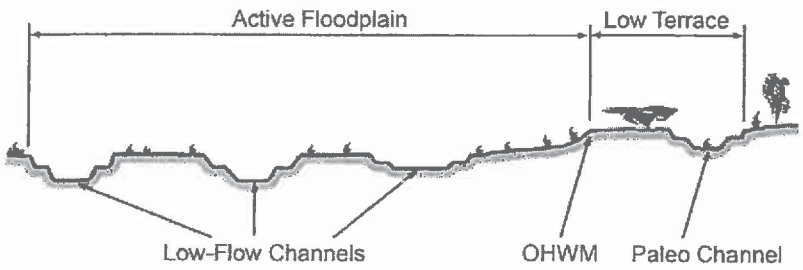
Brief site description: BROAD ACTIVE FLOOD PLAIN WITH SCATTERED VEGETATION THROUGHOUT - SANDY - GRAVEL - COBBLE SUBSTRATE MULTIPLE LOW FLOW CHANNELS

Checklist of resources (if available):

- [✓] Aerial photography
  Dates:
- [✓] Topographic maps
- [✓] Geologic maps
- [✓] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [✓] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies

- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [✓] GPS -2005
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-8 **Date:** 2/14/2012 **Time:** 11:50AM

Cross section drawing:

OHWM

HIGHER VEGETATION DENSITY AND DIVERSITY ON ACTIVE FLOOD PLAIN RELATIVE TO LOW TERRACE AND HILL SLOPES

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: BROAD FLAT CHANNEL WITH SANDY-GRAVEL COBBLE SUBSTRATE - SCATTERED VEGETATION THROUGHOUT THE CHANNEL, LOW FLAT TERRACE ON EAST SIDE - CHANNEL BOUNDED BY STEEP ROCKY SLOPES

Floodplain unit:

- [ ] Low-Flow Channel
- [x] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE-COBBLE

Total veg cover: 20 % Tree: 5 % Shrub: 15 % Herb: 45 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [x] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: SIDELVING
- [x] Other: SCOURING
- [ ] Other: _____

Comments: VEGETATION IN CHANNEL INCLUDES PARKINSONIA FLORIDA, ACACIA GREGGII, HYPTIS EMORYI, LYCIUM ANDERSONII, BEBBIA JUNCEA HYMENOCLEA SALSOLA, LARREA TRIDENTATA, AND KRAMERIA GRAYI

- SPARSE HERBS - CHAMAESYCE, ARISTIDA, CRYPTANTHA

Project ID: TOPOCK **Cross section ID:** T-8 **Date:** 2/14/2012 **Time:** 11:50 AM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND - PEBBLE

Total veg cover: <5 % Tree: ____ % Shrub: ____ % Herb: <5 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: SCOURING
- ☐ Other: _____
- ☐ Other: _____

Comments: SPARSE ANNUALS - BUT MOSTLY UNVEGETATED GENERALLY FINER SUBSTRATES RELATIVE TO ADJACENT AREAS ON THE ACTIVE FLOODPLAIN

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: ____ % Tree: ____ % Shrub: 10 % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SCATTERED LARREA TRIDENTATA ON LOW TERRACE AND ADJACENT ROCKY SLOPES - LOWER DIVERSITY / COVER THAN ON THE ACTIVE FLOODPLAIN

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/14/2012 | **Time:** 12:15 PM
Project Number: | **Town:** NEEDLES, CA | **State:** CA
Stream: | **Photo begin file#:** 401 | **Photo end file#:** 405 408
Investigator(s): R. HUDDLESTON, K. STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-9

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.723215 -114.501475

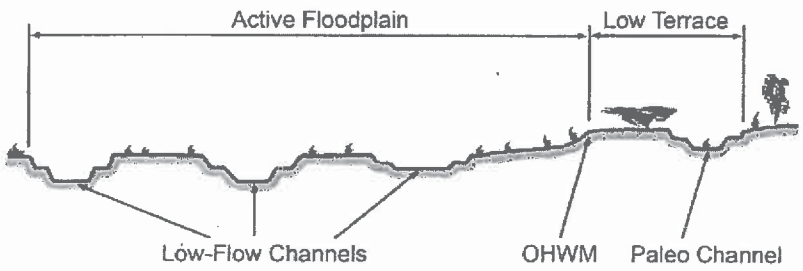
Potential anthropogenic influences on the channel system: DOWN STREAM EARTHEN DAM SOUTH OF THE NATIONAL TRAILS HIGHWAY

Brief site description: BROAD SANDY-COBBLE-GRAVEL CHANNEL WITH SCATTERED TREES AND SHRUBS, MULTIPLE LOW FLOW CHANNELS GENERALLY BOUNDED BY STEEP SLOPES

Checklist of resources (if available):

- [✓] Aerial photography
  Dates:
- [✓] Topographic maps
- [✓] Geologic maps
- [✓] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [✓] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

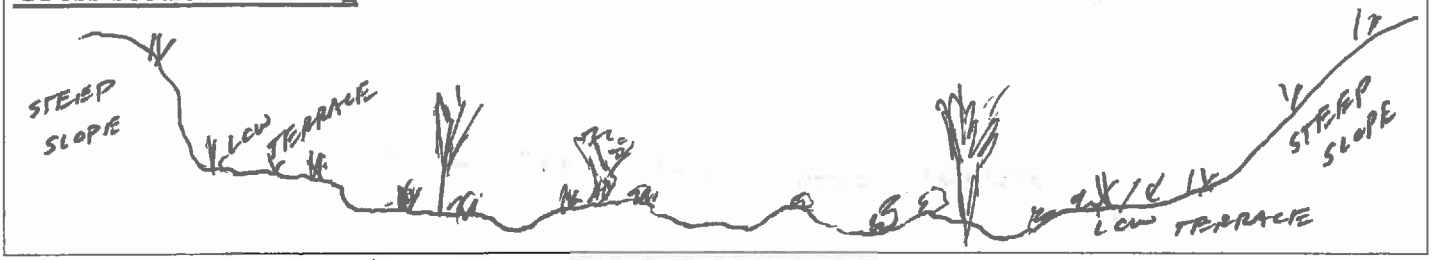


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [✓] GPS 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-9 **Date:** 2/14/2012 **Time:** 12:15 PM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: BROAD LOW CHANNEL - SANDY - GRAVEL - COBBLE SUBSTRATE, MULTIPLE LOW FLOW CHANNELS - HIGHER DENSITY AND DIVERSITY OF VEGETATION IN THE CHANNEL RELATIVE TO LOW TERRACES / HILL SLOPES

Floodplain unit:

☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - GRAVEL

Total veg cover: 15 % Tree: 5 % Shrub: 10 % Herb: 25 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: SCOURING
- ☐ Other: _____
- ☐ Other: _____

Comments: VEGETATION THROUGHOUT THE CHANNEL IN THIS AREA INCLUDES MATURE PARKINSONIA FLORIDA, WITH SHRUBS SUCH AS HYMENOCLEA SALSOLA, HYPTIS GRAYI, LYCIUM ANDERSONII AND SCATTERED LARREA TRIDENTATA

Project ID: Topock Cross section ID: T-9 Date: 2/14/2012 Time: 12:15 PM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE / SAND - SOME MORE COBBLE

Total veg cover: <5 % Tree: ____ % Shrub: ____ % Herb: <5 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: SECURING
- ☐ Other: _____
- ☐ Other: _____

Comments: MOST LOW FLOW CHANNELS DEVOID OF VEGETATION - OCCASSIONAL HERBACEOUS SPECIES SOME LOW FLOW CHANNELS W/ DEFINED BANKS OTHERS MORE SWALE-LIKE

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: ____ % Tree: ____ % Shrub: 5 % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SCATTERED LARREA TRIDENTATA OVERALL LOWER VEGETATION COVER / DIVERSITY RELATIVE TO ACTIVE FLOODPLAIN

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PGE TOPOCK	**Date:** 2/14/2012	**Time:** 2:15 PM
Project Number:	**Town:** NEEDLES	**State:** CA
Stream:	**Photo begin file#:** 424	**Photo end file#:** 432
Investigator(s): R. HUDDLESTON, K. STEINER		

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-10

Projection: NAD 83 **Datum:** WGS 84

Coordinates: 34.721640 -114.504236

Potential anthropogenic influences on the channel system:

4- 48" CULVERTS UPSTREAM OF TRANSECT

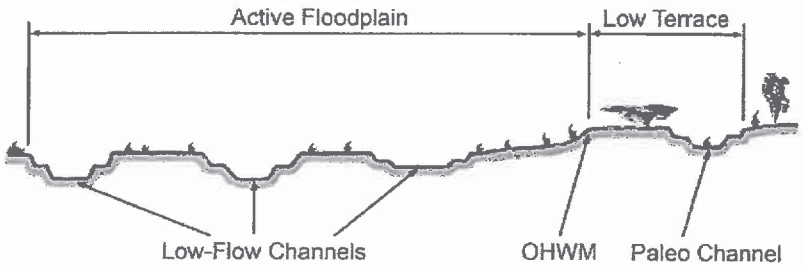
EARTHEN DAM AT DOWNSTREAM TERMINUS

Brief site description: BROAD CHANNEL WITHIN DEFINED BANKS - MULTIPLE LOW FLOW CHANNELS, SCATTERED VEGETATION IS PRESENT THROUGHOUT THE ACTIVE FLOODPLAIN

Checklist of resources (if available):

- [x] Aerial photography
  - Dates:
- [x] Topographic maps
- [x] Geologic maps
- [x] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  - Gage number:
  - Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

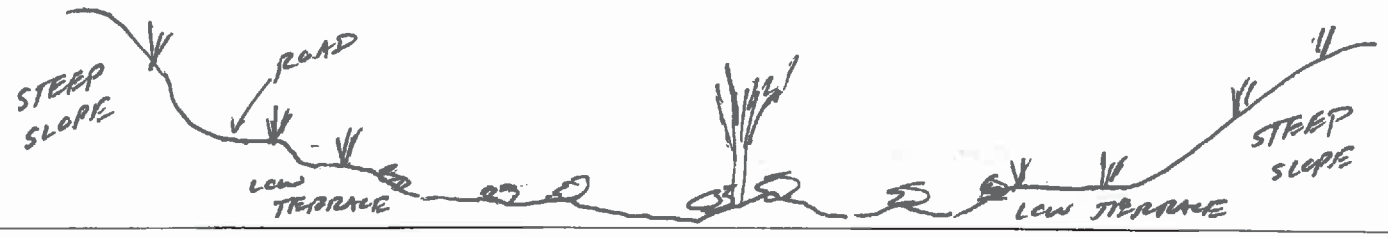


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-10 **Date:** 2/14/2012 **Time:** 2:15 PM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: BROAD LOW CHANNEL WITH GRAVEL - COBBLE SUBSTRATE SCATTERED TREES AND SHRUBS PRESENT THROUGHOUT, MULTIPLE LOW FLOW CHANNELS - HIGHER DENSITY / DIVERSITY OF VEGETATION IN THE CHANNEL

Floodplain unit:

☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE-GRAVEL

Total veg cover: 10 % Tree: 3 % Shrub: 7 % Herb: < 2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: SCOURING
- ☐ Other: _____
- ☐ Other: _____

Comments: BROAD FLOODPLAIN W/ SCATTERED PARKINSONIA FLORIDA, ACACIA GREGGII, HYMENOCLEA SALSOLA, BEBBIA JUNCEA STREPHANOMERIA PAUCIFLORA, SARCOSTEMMA HIRTELLUM

HERBS: MOSTLY CHAMAESYCE SP.

Project ID: TOPOCK **Cross section ID:** T-16 **Date:** 2/14/2012 **Time:** 2:15 PM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: FINE-MED PEBBLE

Total veg cover: <1 % Tree: ____% Shrub: ____% Herb: <1 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: SCOURING
- ☐ Other: _____
- ☐ Other: _____

Comments: LOW SCOUR CHANNELS, GENERALLY DEVOID OF VEGETATION - OCCASSIONAL CHAMAESYCE SP. - MOST HAVE CHANGE IN SUBSTRATE TO MORE FINES RELATIVE TO ACTIVE FLOODPLAIN

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE-COBBLE

Total veg cover: ____% Tree: ____% Shrub: 5 % Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: LOW TERRACE AND ADJACENT STEEP SLOPES HAVE ROCKY - COBBLE SUBSTRATE WITH SPARSE SCATTERED LARREA TRIDENTA - LOWER COVER AND DIVERSITY OF PLANTS THAN ON ACTIVE FLOODPLAIN

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PGE TOPOCK	**Date:** 2/14/2012	**Time:** 2:35 PM
Project Number:	**Town:** NEEDLES	**State:** CA
Stream:	**Photo begin file#:** 434	**Photo end file#:** 443
Investigator(s): R. HUDDLESTON, K. STEINER		

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: T-11

Projection: NAD 83 **Datum:** WGS84

Coordinates: 34.723188 -114.503157

Potential anthropogenic influences on the channel system:

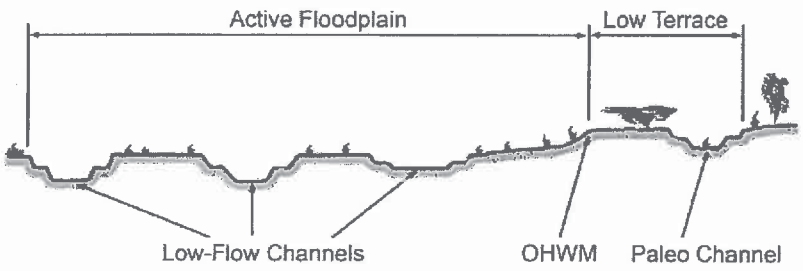
4 - 48"-DIAMETER CULVERTS UPSTREAM
EARTHEN DAM AT DOWNSTREAM END OF THE WASH

Brief site description: BROAD FLOODPLAIN WITH MULTIPLE LOW FLOW CHANNELS, SCATTERED TREES AND SHRUBS PRESENT
FINE PEBBLE TO COBBLE SUBSTRATE

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☑ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

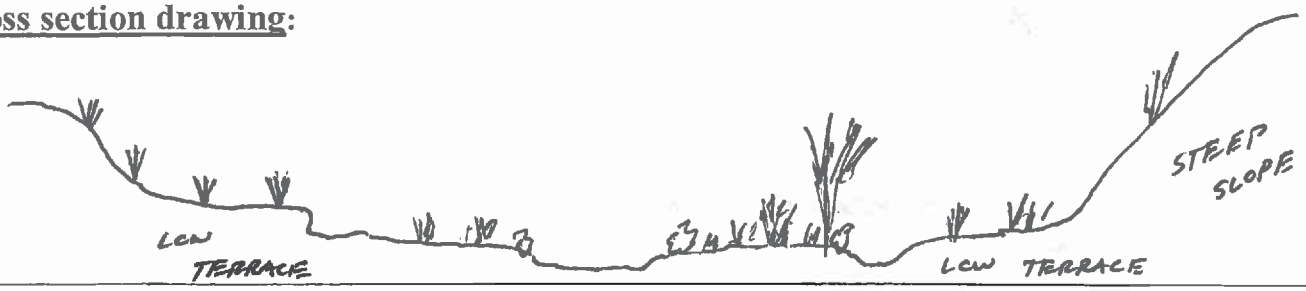


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☑ GPS 2005
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: TOPOCK **Cross section ID:** T-11 **Date:** 2/14/2012 **Time:** 2:35 PM

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: SAND DEPOSITION
- ☐ Other: _____

Comments: BROAD ACTIVE FLOOD PLAIN - DEFINED CUT BANKS ALONG EDGE OF LOW TERRACE, MULTIPLE LOW FLOW CHANNELS. HIGHER VEGETATION DENSITY AND DIVERSITY IN ACTIVE FLOODPLAIN RELATIVE TO LOW TERRACES

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: 15 % Tree: 5 % Shrub: 10 % Herb: <2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: SCOURING
- ☒ Other: SAND DEPOSITION
- ☐ Other: _____

Comments: SCATTERED VEGETATION THROUGHOUT THE ACTIVE FLOODPLAIN INCLUDES PARKINSONIA FLORIDA, LARREA TRIDENTATA, LYCIUM ANDERSONII, AND HYMENOCLEA SALSOLA

HERBACEOUS - CHAMAESYCE, CRYPTANTHA, ESCHSCHOLTZIA.

Project ID: TOPOCC **Cross section ID:** T-11 **Date:** 2/14/2012 **Time:** 2:35PM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: FINE PEBBLE - COBBLE

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: SCOUR
- ☐ Other: _____
- ☐ Other: _____

Comments: LOW FLOW CHANNELS DEVOID OF VEGETATION GENERALLY FINER SUBSTRATE THAN THE ADJACENT FLOODPLAIN; SOME WITH STEEP CUT BANKS OTHERS MORE SWALE-LIKE

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: 10 % Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: VEGETATION ON THE LOW TERRACE IS MOSTLY LARREA TRIDENTATA - LOWER DIVERSITY THAN WITHIN THE FLOOD PLAIN

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK	**Date:** 2/14/2012	**Time:** 4:00 pm
Project Number:	**Town:** NEEDLES	**State:** CA
Stream:	**Photo begin file#:** 452	**Photo end file#:** 453
Investigator(s): R. HUDDLESTON, K. STEINER		

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-12

Projection: NAD83 **Datum:** WGS 84

Coordinates: 34.715490 -114.495808

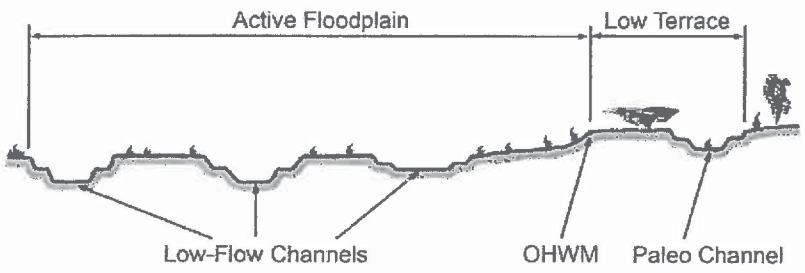
Potential anthropogenic influences on the channel system: 4 - 10' DIAMETER CULVERTS DOWNSTREAM UNDER I-40, LARGE BOX CULVERT UNDER BNSF RR TRACKS

Brief site description: CONFINED CHANNEL - STEEP SIDE SLOPES RELATIVELY DENSE VEGETATION AT BASE OF SLOPES - OUTER EDGE OF ACTIVE FLOODPLAIN - SANDY - PEBBLE SUBSTRATE

Checklist of resources (if available):

- [x] Aerial photography
  - Dates:
- [x] Topographic maps
- [x] Geologic maps
- [x] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  - Gage number:
  - Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS Zoo5
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-12 **Date:** 2/14/202 **Time:** 4:00 PM

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: CONFINED CHANNEL BETWEEN ROCKY SLOPES. LOW FLOW CHANNEL SANDY W/ PEBBLES AND SOME COBBLE IS GENERALLY DEVOID OF VEGETATION - BUT RELATIVELY DENSE SHRUB GROWTH ALONG OUTER EDGES

Floodplain unit: [ ] Low-Flow Channel [x] Active Floodplain [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND-PEBBLE

Total veg cover: ____ % Tree: ____ % Shrub: 25 % Herb: <5 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [x] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: FINER SUBSTRATE
- [x] Other: ABSENCE OF VEG - LOW FLOW
- [ ] Other: _____

Comments: - CENTER OF CHANNEL DEVOID OF VEGETATION

EDGES WITH LARREA TRIDENTATA, ENCELIA FARINOSA, HYPTIS EMORYI, BEBBIA JUNCEA AND ACACIA GREGGII

SPARSE ANNUALS/HERBS - CHAMAESYCE SP., ARISTIDA SP. AND SCHISMUS SP.

Project ID: TOPOCK Cross section ID: T-12 Date: 2/14/2012 Time: 4:00PM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND W/ SOME PEBBLE / COBBLE

Total veg cover: 0 % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: ABSENCE OF VEGETATION
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/15/2012 | **Time:** 1:40PM
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: | **Photo begin file#:** 372 | **Photo end file#:** 376
Investigator(s): R. HUDDLESTON, K. STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-13

Projection: NAD83 **Datum:** WGS84
Coordinates: 34.724855 -114.576657

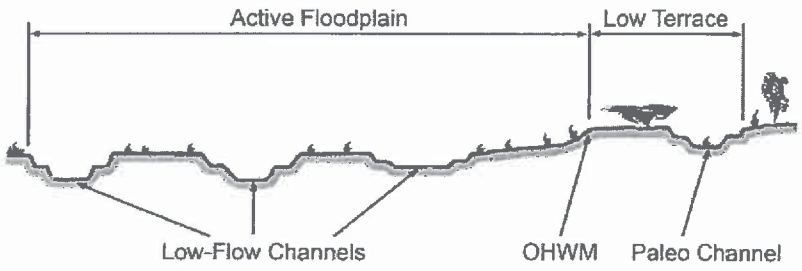
Potential anthropogenic influences on the channel system: -ROAD ON NORTH SIDE OF THE CHANNEL - DOWNSTREAM INTO LARGE BASIN AREA WITH 6 - 48" DIAM CULVERTS

Brief site description: GRAVEL - COBBLE CHANNEL - SPARSE VEGETATION PRESENT - MOST OCCURS ON LOW RIDGE WITHIN ACTIVE FLOODPLAIN STEEP CUT BANKS ALONG THE SIDES OF THE CHANNEL

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [X] Geologic maps
- [X] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [X] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [X] GPS - 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-13 **Date:** 2/15/2012 **Time:** 1:40PM

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: GRAVEL - COBBLE CHANNEL - DEFINED CUT BANK ALONG EDGES OF LOW FLOW CHANNELS - SCATTERED TREES AND SHRUBS - DIFFERENT SPECIES IN WASH THAN SURROUNDING AREAS

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 8 % Tree: 2 % Shrub: 5 % Herb: 1 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: SCOURING
- ☐ Other: _____
- ☐ Other: _____

Comments: OCCASSIONAL PARKINSONIA FLORIDA ALONG THE EDGES OF THE CHANNEL, LARREA TRIDENTA ON UPPER BARS AND HYMENOCLEA SALSOLA SCATTERED THROUGHOUT

Project ID: Topock **Cross section ID:** T-13 **Date:** 2/15/2012 **Time:** 1:40PM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: ____ % Tree: ____ % Shrub: 2 % Herb: 2 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SCATTERED HYMENOCLEA SALSOLA WITHIN THE LOW FLOW CHANNEL - LARGELY DEVOID OF VEGETATION SCATTERED HERBS - CHAMAESYCE

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: COBBLE

Total veg cover: 10 % Tree: 5 % Shrub: 5 % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SOME PARKINSONIA FLORIDA ON NORTH SIDE, SOUTH SIDE LARREA TRIDENTATA, AMBROSIA DUMOSA AND OPUNTIA BASILARIS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK	**Date:** 2/15/2012 **Time:** 2:00PM
Project Number:	**Town:** NEEDLES **State:** CA
Stream:	**Photo begin file#:** 379 **Photo end file#:** 383
Investigator(s): R. HUDDLESTON, K. STEINER	
Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:** T-14
Y ☐ / N ☒ Is the site significantly disturbed?	**Projection:** NAD83 **Datum:** WGS84
	Coordinates: 34.725371 -114.515550

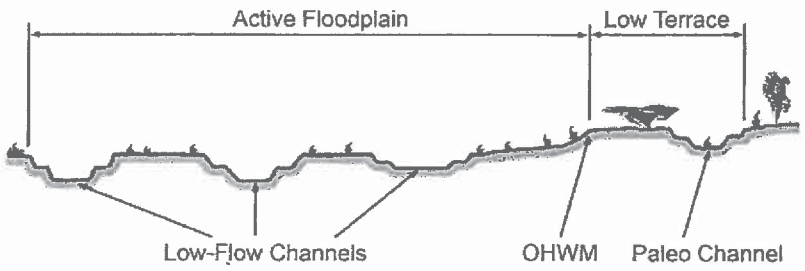
Potential anthropogenic influences on the channel system: ROAD ON NORTH SIDE OF THE CHANNEL - DOWN STREAM 48" CULVERTS UNDER THE ROAD

Brief site description: DEFINED PEBBLE - COBBLE SUBSTRATE / CHANNEL SCATTERED TREES AND SHRUBS PRESENT WITHIN THE ACTIVE FLOODPLAIN

Checklist of resources (if available):

- ☑ Aerial photography
  - Dates:
- ☑ Topographic maps
- ☑ Geologic maps
- ☑ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☑ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☑ GPS -2005
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: Topock **Cross section ID:** T-14 **Date:** 2/15/2012 **Time:** 2:00PM

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☐ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: TOPOGRAPHIC CHANNEL WITH DEFINED CUT BANKS SOIL CRACKS IN SILTY DEPOSITS, DRIFT AND DEBRIS DEPOSITS

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 15 % Tree: 5 % Shrub: 10 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: SPARSE PARKINSONIA FLORIDA ALONG THE EDGES OF THE CHANNEL, HYMENOCLEA SALSOLA SCATTERED THROUGHOUT THE CHANNEL

HERBS INCLUDE SCATTERED - CHAMAESYCE SP.

Project ID: Topock **Cross section ID:** T-14 **Date:** 2/15/2012 **Time:** 2:00 PM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: PEBBLE - COBBLE

Total veg cover: <5 % Tree: ____ % Shrub: ____ % Herb: <5 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: COBBLY SUBSTRATE GENERALLY DEVOID OF VEGETATION WITH THE EXCEPTION OF SCATTERED CHAMAESYCE

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: COBBLE PEBBLE

Total veg cover: ____ % Tree: ____ % Shrub: 10 % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: VEGETATION INCLUDES SPARSE LARREA TRIDENTATA AND ENCELIA FARINOSA

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/15/2012 | **Time:** 2:20PM
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: | **Photo begin file#:** 390 | **Photo end file#:** 394
Investigator(s): R. HUDDLESTON, K STEINER

Y [x] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [x] Is the site significantly disturbed?

Location Details: T-15

Projection: NAD83 **Datum:** WGS 84
Coordinates: 34.725144 -114.573413

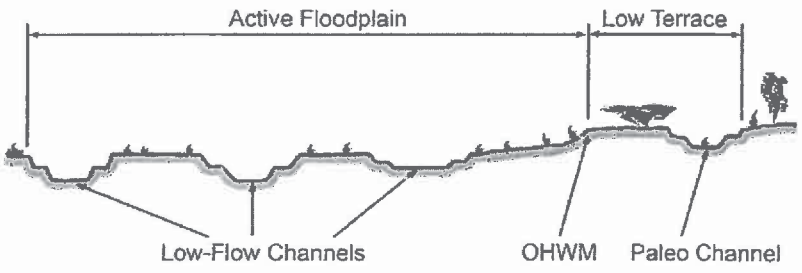
Potential anthropogenic influences on the channel system: - IMPOUNDMENT OF TWO NATURAL DRAINAGES - UPSTREAM HYDROLOGY ALTERED BY RAILROAD AND HIGHWAY CONSTRUCTION. DOWN STREAM CULVERTS UNDER ROADWAY

Brief site description: - BROAD, LOW TOPOGRAPHIC IMPOUNDMENT TO CAPTURE AND HOLD STORMWATER RUN-OFF. MORE OF A BASIN THAN A CHANNEL IN THIS LOCATION

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [x] Topographic maps
- [x] Geologic maps
- [x] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-15 **Date:** 2/15/2012 **Time:** 2:20PM

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [X] Change in average sediment texture
- [X] Change in vegetation species
- [X] Change in vegetation cover
- [X] Break in bank slope
- [X] Other: SOIL CRACKS
- [X] Other: DRIFT DEPOSITS

Comments: THIS AREA IS A BROAD, LOW BASIN LIKE FEATURE THAT APPEARS TO HAVE BEEN CONSTRUCTED TO HOLD STORMWATER FLOWS - SCATTERED VEGETATION THROUGHOUT THIS AREA.

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND

Total veg cover: 30 % Tree: 20 % Shrub: 8 % Herb: 2 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [X] Late (herbaceous, shrubs, mature trees)

Indicators:

- [X] Mudcracks
- [ ] Ripples
- [X] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

- AREAS WITH RELATIVELY DENSE TAMARIX THICKETS WITHIN THIS BASIN - OTHER PARTS MORE OPEN WITH SCATTERED SHRUBS -

Project ID: Topock **Cross section ID:** T-15 **Date:** 2/15/2012 **Time:** 2:20PM

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

NONE PRESENT

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____ NONE PRESENT

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/15/2012 | **Time:** 2:48
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: | **Photo begin file#:** | **Photo end file#:** 395-396
Investigator(s): R. HUDDLESTON, K. STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-16

Projection: NAD83 **Datum:** WGS 84
Coordinates: 34.723832 -114.574149

Potential anthropogenic influences on the channel system:

FLOWS INTO LARGE IMPOUNDMENT SOUTH OF PARK MOABI

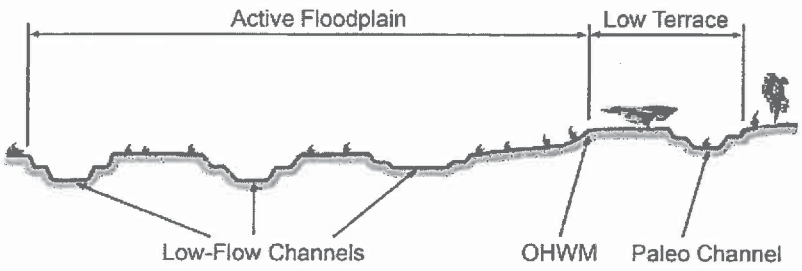
Brief site description: - STEEP SIDE SLOPES ALONG CHANNEL
SANDY-SILTY-GRAVEL CHANNEL - SPARSE VEGETATION ALONG THE CHANNEL

Checklist of resources (if available):

- [✓] Aerial photography
  Dates:
- [✓] Topographic maps
- [✓] Geologic maps
- [✓] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [✓] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies

- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [✓] GPS 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: TOPOCK **Cross section ID:** T-16 **Date:** 2/15/2012 **Time:** 2:48

Cross section drawing:

OHWM

GPS point: _____

Indicators:

- [X] Change in average sediment texture
- [ ] Change in vegetation species
- [X] Change in vegetation cover
- [ ] Break in bank slope
- [X] Other: SCOUR CHANNEL
- [ ] Other: _____

Comments: WELL DEFINED CHANNEL WITH SILTY-SANDY LOW FLOW CHANNEL, SPARSE SCATTERED SHRUBS ALONG THE EDGES OF THE CHANNEL

Floodplain unit:

- [X] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SILT-SAND

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- [X] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [X] Other: FLOW LINES
- [X] Other: ABSENCE OF VEG
- [ ] Other: _____

Comments:

Project ID: TOPOCC **Cross section ID:** T-16 **Date:** 2/15/2012 **Time:** 2:48

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND-GRAVEL / SOME PEBBLES

Total veg cover: 5 % Tree: _____ % Shrub: 5 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: - SPARSE SHRUBS ALONG EDGES OF CHANNEL INCLUDING ENCELIA FARINOSA, HYMENOCLEA SALSOLA AND BEBBIA JUNCEA.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: COBBLE - GRAVEL

Total veg cover: 10 % Tree: <5 % Shrub: 5 % Herb: <2 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

SOME PARKINSONIA FLORIDA ALONG THE EDGES OF THE CHANNEL - TO THE SOUTH SCATTERED LARREA TRIDENTA

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 7/15/2012 | **Time:** 3:03pm
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: | **Photo begin file#:** | **Photo end file#:** 399-400
Investigator(s): R. HUDDLESTON, K. STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-17

Projection: NAD83 **Datum:** WGS 84
Coordinates: 34.724106 -114.513444

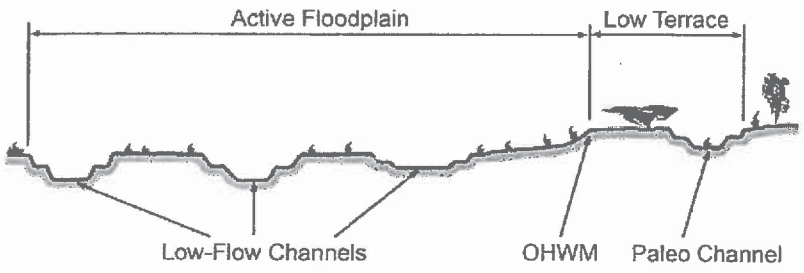
Potential anthropogenic influences on the channel system: -FLOWS INTO LARGE RETENTION BASIN SOUTH OF PARK MOABI
- RR TRACKS / HIGHWAY TO SOUTH

Brief site description: BROAD CHANNEL WITHIN STEEP SLOPES
NO LOW TERRACE PRESENT

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [x] Topographic maps
- [x] Geologic maps
- [x] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

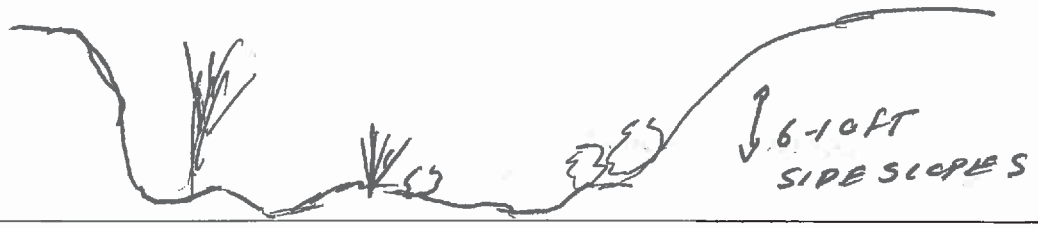


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [x] GPS 2005
   - [ ] Digitized on computer
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-17 **Date:** 2/15/2012 **Time:** 3:03

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: ABSENCE OF VEGETATION
- ☒ Other: SCOURING / FLOW LINES
- ☒ Other: FINE SEDIMENT RELATIVE TO COBBLE/GRAVEL IN ACTIVE FLOOD PLAIN

Comments:

- MULTIPLE LOW FLOW CHANNELS PRESENT WITHIN LARGER CHANNEL

Project ID: TOPOCC **Cross section ID:** T-17 **Date:** 2/15/2012 **Time:** 3:03

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: GRAVEL-COBBLE

Total veg cover: 5 % Tree: ____ % Shrub: 5 % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

- SCATTERED TREES AND SHRUBS IN THE CHANNEL INCLUDE - LARREA TRIDENTATA, HYMENOCLEA SALSOLA, ENCELIA FARINOSA, AND PARKINSONIA FLORIDA

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____ NONE PRESENT

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK | **Date:** 2/15/2012 | **Time:** 3:30
Project Number: | **Town:** NEEDLES | **State:** CA
Stream: | **Photo begin file#:** | **Photo end file#:** 402-403
Investigator(s): R. HUDDLESTON, K. STEINER

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [X] / N [ ] Is the site significantly disturbed?

Location Details: T-18

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.726451 -114.512272

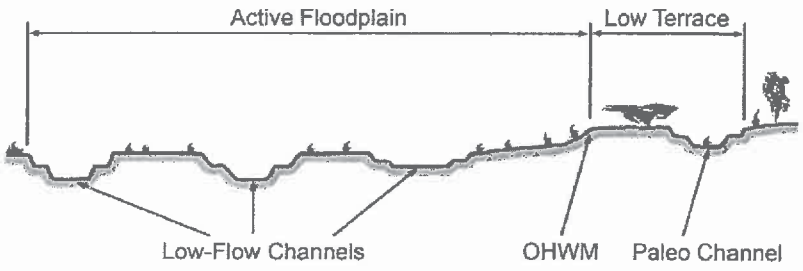
Potential anthropogenic influences on the channel system: - ROUTINELY MAINTAINED STORM WATER CHANNEL / BASIN IN PARK MOABI APPEARS VEGETATION HAS RECENTLY BEEN CLEARED

Brief site description: BROAD -U-SHAPED CHANNEL, SIX 48-INCH DIAMETER CULVERTS AT SOUTH END, ONE SMALL 24-INCH DIAM. CULVERT AT NORTH END

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [x] Topographic maps
- [x] Geologic maps
- [x] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [x] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

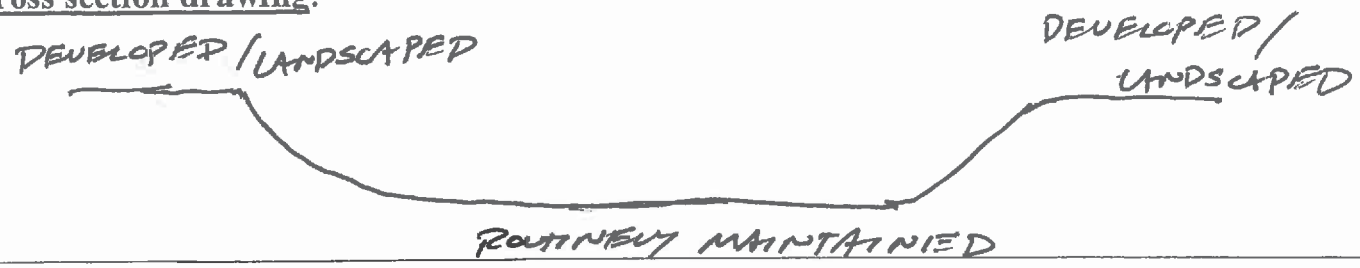


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [x] GPS 2005
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-18 **Date:** 2/15/2012 **Time:** 3:30

Cross section drawing:



OHWM

GPS point: _____

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: - ROUTINELY MAINTAINED STORM WATER CHANNEL AND BASIN WITHIN PARK MCARY - CLEARED OF VEGETATION

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND - SOME GRAVEL

Total veg cover: _____% Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: Topsail **Cross section ID:** T-18 **Date:** 2/15/2012 **Time:** 3:30

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____ NONE PRESENT

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____ NONE PRESENT

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK
Project Number:
Stream: SACRAMENTO WASH
Investigator(s): R. HUDDLESTON, M. FOWLER

Date: 7/16/2012 **Time:** 10:36
Town: NEEDLES **State:** CA
Photo begin file#: 36 **Photo end file#:** 37

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-19

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.733734 -114.474737

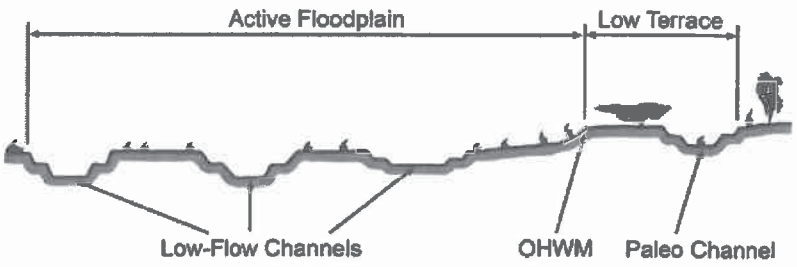
Potential anthropogenic influences on the channel system: SOME VEHICLE TRACKS IN CHANNEL - BUT NO SIGNIFICANT INFLUENCES EVIDENT IN THIS AREA. - POSSIBLE SOME SOIL BERMS CONSTRUCTED ALONG DRAINAGE

Brief site description: MAJOR TRIBUTARY CHANNEL TO THE SACRAMENTO WASH - LOW, BROAD CHANNEL THROUGH DENSE TAMARIX THICKET CHANNEL IS DEVOID OF VEGETATION - SANDY - COBBLE - GRAVEL

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [ ] Geologic maps
- [X] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

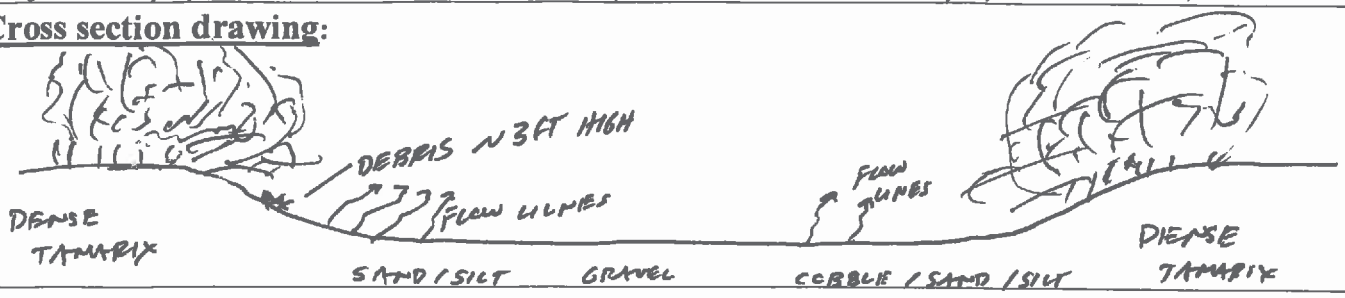


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [X] Digitized on computer
   - [X] GPS - 4T TRANSECT
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-19 **Date:** 7/16/2012 **Time:** 10:36

Cross section drawing:



OHWM

GPS point: T-19

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: FLOW LINES
- ☒ Other: DEBRIS

Comments: RECENT SIGNIFICANT FLOWS IN THIS PART OF THE CHANNEL - SOILS STILL MOIST TO WET IN SOME AREAS - FLOW LINES, DEBRIS EVIDENT SOME SHELLING

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: T-19

Characteristics of the floodplain unit:

Average sediment texture: SAND W/SOME GRAVEL/COBBLE

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: FLOW LINES
- ☐ Other: ____
- ☐ Other: ____

Comments: WIDE CHANNEL - BASED ON WATER MARKS (MOIST SOILS) FLOW LINES AND DEBRIS THE ENTIRE CHANNEL IS INUNDATED DURING FLOW EVENTS - POSSIBLE BERMS CONSTRUCTED ALONG EDGES OF CHANNEL TO CONTAIN FLOW IN THIS AREA - NO ACTIVE FLOOD PLAIN

Project ID: Topock **Cross section ID:** T-19 **Date:** 7/16/2012 **Time:** 10:36

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

(NONE PRESENT)

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

NO ACTIVE FLOODPLAIN OUTSIDE OF LOW FLOW CHANNEL IN THIS AREA.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND

Total veg cover: _____ % Tree: 100 % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: LOW TERRACE ADJACENT TO THE CHANNEL IS CHARACTERIZED BY DENSE TAMARIX APHYLLA – NO EVIDENCE THAT THIS AREA IS SUBJECT TO REGULAR OR OCCASIONAL FLOODING.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK
Project Number:
Stream: SACRAMENTO WASH
Investigator(s): R. HUDDLESTON, M. FOWLER

Date: 7/16/2012 **Time:** 10:45
Town: NEEDLES **State:** CA
Photo begin file#: 43 **Photo end file#:** 44

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-20

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.732944 -114.475596

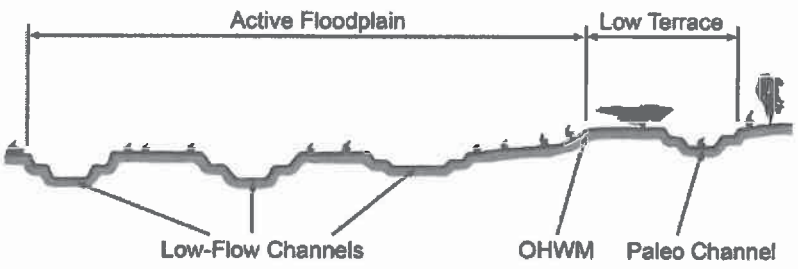
Potential anthropogenic influences on the channel system: - LEVEES HAVE BEEN CONSTRUCTED ALONG THE EDGES OF THE CHANNEL TO CONTAIN FLOW IN THIS AREA, SOME VEHICLE TRACKS

Brief site description: BROAD OPEN CHANNEL - DEVOID OF VEGETATION W/ EXCEPTION OF SCATTERED TAMARIX ALONG LEVEES SANDY SUBSTRATE W/ SOME GRAVEL AND COBBLE

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [ ] Geologic maps
- [X] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

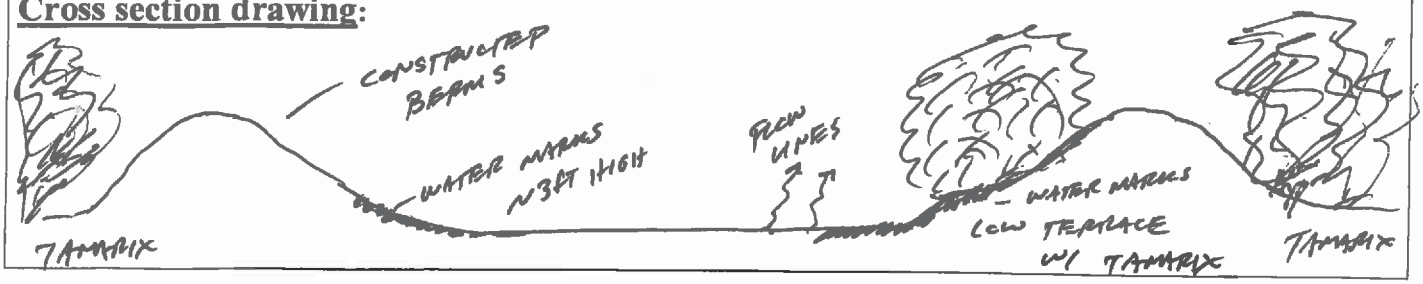


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [X] Digitized on computer
   - [X] GPS TRANSECT
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-20 **Date:** 7/16/2012 **Time:** 10:45

Cross section drawing:



OHWM

GPS point: T-20

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: WATER MARKS (MOIST SOIL)
- ☒ Other: DRIFT+FLOW LINES

Comments: THE ENTIRE CHANNEL WITHIN THE CONFINES OF THE LEVEES APPEARS TO BE INUNDATED DURING FLOWS BASED ON WATER MARKS, FLOW LINES, AND DEBRIS OBSERVED IN THIS AREA.

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND W/ SOME GRAVEL/COBBLE

Total veg cover: 0 % Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: FLOW LINES
- ☒ Other: MOIST/WET SOILS
- ☐ Other: _____

Comments: ENTIRE CHANNEL APPEARS TO BE INUNDATED DURING FLOWS - NO DISTINCT LOW FLOW CHANNELS OBSERVED AT THE TIME OF THE SURVEY

Project ID: Topo cw **Cross section ID:** T-20 **Date:** 7/16/2012 **Time:** 10:45

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____ NONE

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: NO SEPERATE ACTIVE FLOOD PLAIN EVIDENT BROAD LOW CHANNEL IS CONTAINED BY LEVEES ON BOTH SIDES.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND

Total veg cover: _____ % Tree: 20 % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: WATER MARKS-MOIST SOIL
- ☐ Other: _____
- ☐ Other: _____

Comments: LOW TERRACE ON NORTH SIDE - BUT WITHIN THE CONSTRUCTED LEVEE / CREEK (WASH) CHANNEL SCATTERED TAMARIX APHYLA ON LOW TERRACE -OUTSIDE LEVEE'S DENSE TAMARIX APHYLA - SANDY SUBSTRATE

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E TOPOCK
Project Number:
Stream: SACRAMENTO WASH
Investigator(s): R. HUDDLESTON, M. FOWLER

Date: 7/16/2012 **Time:** 10:52
Town: NEEDLES **State:** CA
Photo begin file#: 52 **Photo end file#:** 53

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-21

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.733297 -114.474322

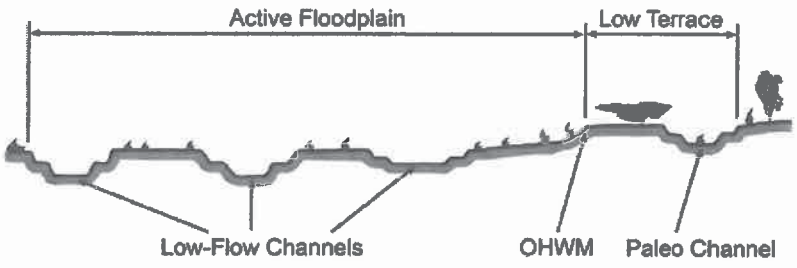
Potential anthropogenic influences on the channel system: - CONSTRUCTED LEVEES ALONG THE SIDES OF THE WASH

Brief site description: BROAD, OPEN CHANNEL - DEVOID OF VEGETATION W/ EXCEPTION OF SPARSE TAMARIX, SANDY SUBSTRATE W/ SOME GRAVEL. DENSE TAMARIX THICKET OUTSIDE OF THE LEVEE

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [ ] Geologic maps
- [X] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

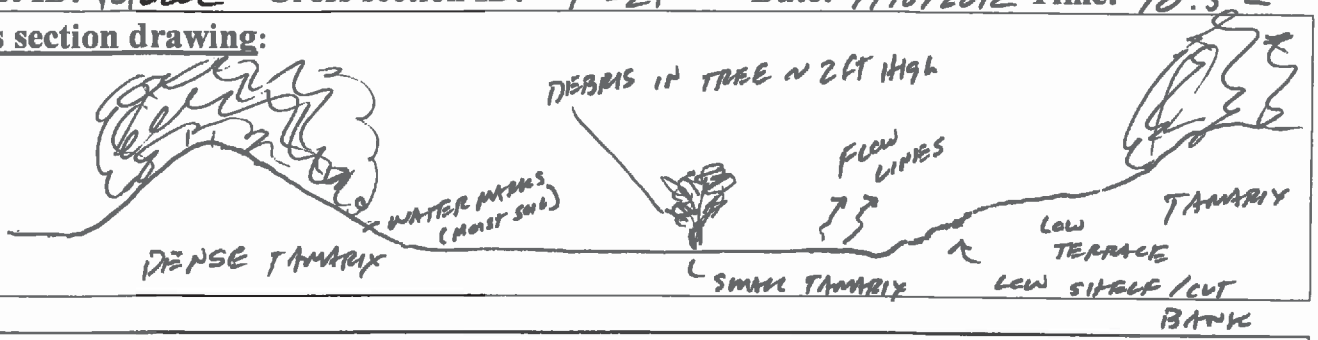


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [X] Digitized on computer
   - [X] GPS TRANSECT
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-21 **Date:** 7/16/2012 **Time:** 10:52

Cross section drawing:



OHWM

GPS point: T-21

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: FLOW LINES
- ☒ Other: MOIST SOIL - WATER MARK
- DEBRIS DEPOSITS
- SOIL CRACKS

Comments:

BROAD OPEN CHANNEL GENERALLY DEVOID OF VEGETATION - EVIDENCE OF RECENT BANK - BANK FLOWS IN THIS AREA.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: T-21

Characteristics of the floodplain unit:

Average sediment texture: SAND W/SOME GRAVEL

Total veg cover: ____ % Tree: 1 % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: FLOW LINES
- ☒ Other: MOIST SOILS
- ☐ Other: ____

Comments:

NO DISTINCT LOW FLOW CHANNEL - IN THIS SECTION FLOWS INCLUDE THE ENTIRE CHANNEL FROM BANK TO BANK

Project ID: Topock **Cross section ID:** T-21 **Date:** 7/16/2012 **Time:** 10:52

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

NONE APPARENT

GPS point: T-21

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

NO ACTIVE FLOODPLAIN EVIDENT - ML FLOWS SEEM CONTAINED BY LEVEES AND CUT BANKS ALONG LOW TERRACE

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND

Total veg cover: _____ % Tree: 20 % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

LARGE TAMARIX APHYLA

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

SMALL TERRACE IS PRESENT ON THE NORTH SIDE OF THE CHANNEL - SOME LARGE TAMARIX APHYLA TREES - NO EVIDENCE OF FLOWS ABOVE CUT BANKS - MINOR FLOODING AT LOW POINTS ONLY

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PG&E Topock **Project Number:** **Stream:** SACRAMENTO WASH **Investigator(s):** R. HUDDLESTON, M. FOWLER	**Date:** 7/17/2012 **Time:** 7:42 **Town:** NEEDLES **State:** CA **Photo begin file#:** 139 **Photo end file#:** 140
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	**Location Details:** T-22 **Projection:** NAD 83 **Datum:** WGS 84 **Coordinates:** 34.731461 -114.479273

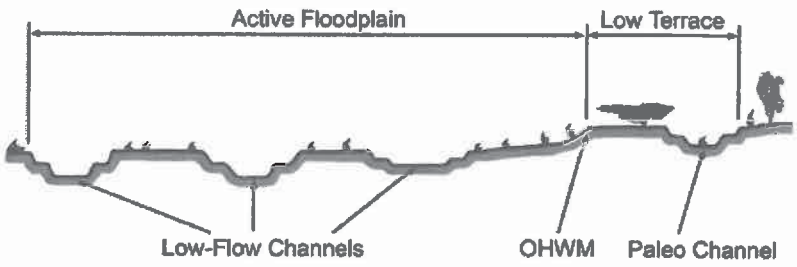
Potential anthropogenic influences on the channel system: THIS SECTION OF THE WASH IS CONTAINED BY CONSTRUCTED LEVEE ON BOTH SIDES OF THE CHANNEL - LOTS OF WOODY DEBRIS ALONG EDGES

Brief site description: BROAD SANDY CHANNEL W/ SPARSE VEGETATION LARGE SAND LEVEES ALONG THE SIDE OF THE WASH IN THIS AREA

Checklist of resources (if available):

- ☒ Aerial photography
  - Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☒ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  - Gage number:
  - Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☒ Digitized on computer
   - ☒ GPS TRANSECT
   - ☐ Other:

Project ID: Tapock **Cross section ID:** T-22 **Date:** 7/17/2012 **Time:** 7:42

Cross section drawing:

OHWM

GPS point: T-22

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: DRIFT LINES
- ☒ Other: FLOW LINES
  SOIL CRACKS
  MOIST SOIL

Comments:

- EVIDENCE OF RECENT FLOW THROUGHOUT ENTIRE CHANNEL BED - SOME WATER STAINING AT BASE OF LEVEE SLOPES, EXTENSIVE SOIL CRACKS, DEBRIS ETC.

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: T-22

Characteristics of the floodplain unit:

Average sediment texture: SAND W/SOME SILT
Total veg cover: 0-5% Tree: ____% Shrub: <1 % Herb: ____%
Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: WATER MARKS
- ☒ Other: MOIST SOIL
- ☒ Other: FLOW LINES

Comments:

IN THIS SECTION OF THE WASH THE LOW FLOW CHANNEL INCLUDES THE ENTIRE BED WITHIN THE LEVEES - NO DISTINCTLY DIFFERENT FLOODPLAIN - EVIDENCE OF SIGNIFICANT RECENT FLOWS THROUGHOUT

Project ID: Topaz **Cross section ID:** T-22 **Date:** 7/17/2012 **Time:** 7:42

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

NOT PRESENT

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

NOT PRESENT

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: PGE TOPOCK	**Date:** 7/17/2012	**Time:** 11:41
Project Number:	**Town:** NEEDLES,	**State:** CA
Stream:	**Photo begin file#:**	**Photo end file#:**
Investigator(s): R. HUDDLESTON, M. FOWLER	197	199

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: T-23

Projection: NAD 83 **Datum:** WGS 84

Coordinates: 34.729183 -114.473621

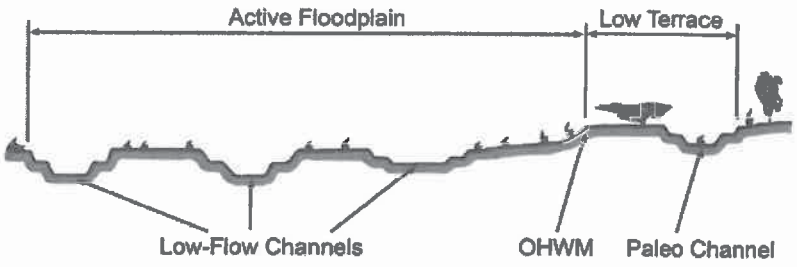
Potential anthropogenic influences on the channel system: CULVERT AT RR TRACKS - DEBRIS PILED ALONG THE SOUTH SIDE OF THE SWALE - POSSIBLY TO DIVERT WATER

Brief site description: BROAD LOW CHANNEL DEVOID OF VEGETATION - LACKS DEFINED BANKS - MORE OF LOW FLOWING SWALE.

Checklist of resources (if available):

- [X] Aerial photography
  Dates:
- [X] Topographic maps
- [ ] Geologic maps
- [X] Vegetation maps
- [ ] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

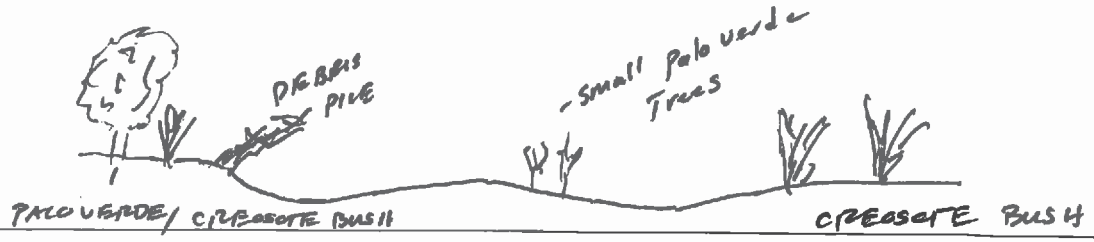


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [X] Mapping on aerial photograph
   - [X] Digitized on computer
   - [X] GPS
   - [ ] Other:

Project ID: Topock **Cross section ID:** T-23 **Date:** 7/17/2012 **Time:** 11:41

Cross section drawing:



OHWM

GPS point: T-23

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: FLOW LINES
- ☐ Other: _____

Comments:

- ENTIRE SWALE APPEARS TO BE LOW FLOW CHANNEL SOMEWHAT DEFINED IN AREA JUST DOWN STREAM FROM RR CULVERT BUT QUICKLY DISSIPATES INTO OVERLAND SHEET FLOW THROUGH DENSE TAMARIX THICKET

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: T-23

Characteristics of the floodplain unit:

Average sediment texture: SAND

Total veg cover: <5 % Tree: 1-2 % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: ~~Dirt~~ FLOW LINES
- ☐ Other: _____
- ☐ Other: _____

Comments:

WEAKLY EXPRESSED - MORE SWALE LIKE - EVIDENCE OF FLOW ACCROSS ENTIRE FEATURE NO DEFINED OR APPARANT ACTIVE FLOOD PLAIN

Project ID: Topock **Cross section ID:** T-23 **Date:** 7/17/2012 **Time:** 11:41

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____ NONE

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: SAND

Total veg cover: _____ % Tree: 20 % Shrub: 10 % Herb: _____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments: NO EVIDENCE OF FLOWS OR FLOODING OUTSIDE OF LOW FLOW CHANNEL

Appendix N
Ephemeral Drainage Sample Point Data Sheets

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 7/13/2012	Time: 10:15 AM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-1	Photos: 353-354
Y [ ] N [X] Significantly Disturbed	GPS: 34.713079	Datum: WGS84
Geomorphic Feature: DRAINAGE	-114.495374	Width: 4 FT
Flow Regime: EPHEMERAL		
Substrate: PEBBLE - COBBLE		
Indicators: DEFINED BED/BANK, ABSENCE OF VEGETATION		

Cross-Section:

Vegetation in Channel: SPARSE CHAMAESYCE

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA
ENCELIA FARINOSA

Notes: TRIBUTARY TO BAT CAVE WASH

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/13/2012	Time: 10:46 AM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-2	Photos: 358, ~~360~~ 359
Y [ ] N [X] Significantly Disturbed	GPS: 34.715529	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.494982	Width: 7.8 FT
Flow Regime: EPHEMERAL		
Substrate: PEBBLE - COBBLE ; SOME BOULDER - DS MOBILE SAND		
Indicators: ERODED CHANNEL DEVOID OF VEGETATION		

Cross-Section:

Vegetation in Channel: NONE

Low Terrace and Adjacent Vegetation: SCATTERED LARREA TRIDENTATA
ENCELIA FARINOSA

Notes: TRIBUTARY TO BAT CAVE WASH - ERODED / DISSECTED ROCKY SLOPE ABOVE THIS POINT

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/13/2012 | Time: 11:02 AM

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-3 | Photos: 362, 363

Y [ ] N [X] Significantly Disturbed | GPS: 34.716823 | Datum: NAD 83

-114.493729

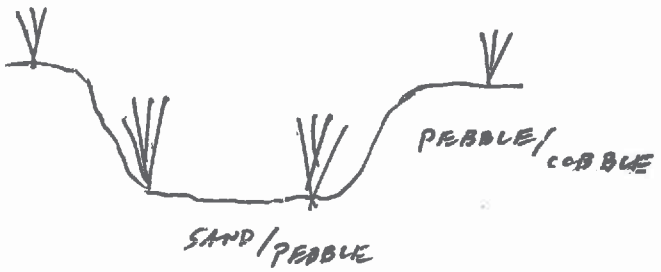
Geomorphic Feature: DRAINAGE | Width: 8.3FT

Flow Regime: EPHEMERAL

Substrate: SAND - PEBBLE

Indicators: GENERAL ABSENCE OF VEGETATION, DEFINED BED / BANK LOW FLOW SCOUR CHANNELS

Cross-Section:



- POSSIBLE CONSTRUCTED STORM WATER DRAINAGE

Vegetation in Channel: LARREA TRIDENTA IN SCATTERED LOCATIONS - MOST OF THE CHANNEL IS DEVOID OF VEGETATION - SPARSE PALOFOXIA ARIDA PRESENT

Low Terrace and Adjacent Vegetation: LARREA TRIDENTA

Notes: - DOWN STREAM OF THIS LOCATION THIS CHANNEL BECOMES SMALLER 2-3 FT WIDE EROSIONAL FEATURE THAT DRAINS INTO BAT CAVE WASH

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/13/2012	Time: 11:49 AM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-4	Photos: 372
Y [ ] N [X] Significantly Disturbed	GPS: 34.720019	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.495183	Width: 3'-10'
Flow Regime: EPHEMERAL		
Substrate: SAND - PEBBLE W/ SOME COBBLE		
Indicators: CHANGE IN SUBSTRATE, ABSENCE OF VEGETATION, BENCHES, SCOURING		

Cross-Section:

Vegetation in Channel: ALONG LOW BENCHES NEXT TO LOW FLOW CHANNEL SCATTERED LARREA TRIDENTATA, ENCELIA FARINOSA AND HYPTIS EMORI

SCATTERED HERBS: PALAFOXIA ARIDA, CHAMAESYCE

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA

Notes: MULTIPLE EROSIONAL CHANNELS ON ADJACENT HILL SIDES DRAIN INTO THIS CHANNEL. THIS DRAINAGE HAS MULTIPLE LOW FLOW CHANNELS IN SOME AREAS

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/13/2012 Time: 1:18 PM
Investigators: R. Huddleston, K Steiner	City: Needles State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-5 Photos: 380-381
Y [ ] N [X] Significantly Disturbed	GPS: 34.721629 Datum: WGS 84
Geomorphic Feature: DRAINAGE -114.495485	Width: 5'
Flow Regime: EPHEMERAL	
Substrate: SAND-PEBBLE, SOME COBBLE / BOULDER	
Indicators: DEFINED BED / BANK, SCOURING ABSENCE OF VEGETATION	

Cross-Section:

Vegetation in Channel: NONE

Low Terrace and Adjacent Vegetation: SPARSE LARREA TRIDENTATA

Notes: HISTORIC ROUTE 66 DRAINAGE - FLOWS INTO SMALL CHANNEL / CULVERT UPSLOPE OF IM-3
PHOTOS 382, 383 - RIP-RAP AT US EDGE CULVERT

Project: PG&E Topock Compressor Station | Date: 2/13/2012 | Time: 1:45 PM

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-6 | Photos: 384

Y [ ] N [X] Significantly Disturbed | GPS: 34.720180 | Datum: WGS 84

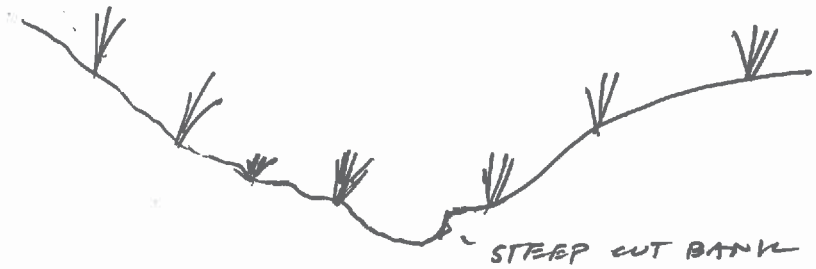
Geomorphic Feature: DRAINAGE | -114.496215 | Width: 3.3 FT

Flow Regime: EPHEMERAL

Substrate: SAND - PEBBLE W/ FEW COBBLES

Indicators: EROSIONAL CHANNEL - CUT BANKS (±) ABSENCE OF VEGETATION, SCOURING

Cross-Section:



Vegetation in Channel: ~~NONE~~ SPARSE CHAMAESYCE SP.

PLANTAGO CUATA, ~~ERECTA~~, ARISTIDA SP.

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, KRAMERIA GRAYI, OPUNTIA BASILARIS

Notes: NO EVIDENCE OF FLOW ABOVE EROSIONAL CHANNEL

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

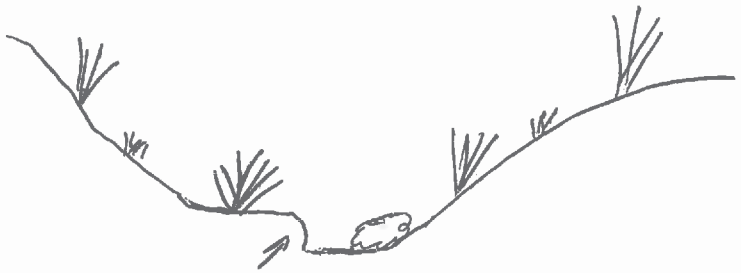
Project: PG&E Topock Compressor Station	Date: 2/13/2012	Time: 2:00PM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-7	Photos: 385
Y [ ] N [X] Significantly Disturbed	GPS: 34.721099	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.495173	Width: 19.2 FT

Flow Regime: EPHEMERAL

Substrate: PEBBLE - COBBLE

Indicators: STEEP CUT BANK, SCOUR CHANNEL

Cross-Section:



Vegetation in Channel: AMBROSIA DUMOSA ALONG EDGES, SPARSE PLANTAGO OVATA, ARISTIDA SP. AND CHAMAESYCE

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, KRAMERIA GRAYI AND BEBBIA JUNCEA

Notes: EROSIONAL FEATURE

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/13/2012	Time: 2:28 PM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-8	Photos: 388-389
Y [ ] N [X] Significantly Disturbed	GPS: 34.720611	Datum: WGS84
Geomorphic Feature: DRAINAGE	-114.498822	Width: 5.3 FT
Flow Regime: EPHEMERAL		
Substrate: SAND - PEBBLE W/ SOME COBBLE, BOULDER		
Indicators: CHANGE IN SUBSTRATE, GENERALLY ABSENT VEGETATION		

Cross-Section:

Vegetation in Channel: GENERALLY ABSENT - SPARSE CHAMAESYCE

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, AMBROSIA DUMOSA, KRAMERIA GRAYI, BEBBIA JUNCEA, HYPTIS EMORYI ALONG THE EDGES OF THE EROSIONAL CHANNEL AND ON SIDE SLOPES

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/13/2012	Time: 2:33 PM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-9	Photos: 390-391
Y [ ] N [X] Significantly Disturbed	GPS: 34.722169	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.498257	Width: 16 FT
Flow Regime: EPHEMERAL		
Substrate: SAND - PEBBLES, SOME COBBLE		
Indicators: MULTIPLE LOW FLOW SANDY - PEBBLE SCOUR CHANNELS		

Cross-Section:

Vegetation in Channel: AMBROSIA DUMOSA, BEBBIA JUNCEA
LARREA TRIDENTATA, KRAMERIA GRAYI

Low Terrace and Adjacent Vegetation:

FOUQUIERIA SPLENDENS, LARREA TRIDENTATA,
KRAMERIA GRAYI, OPUNTIA BASILARIS, ARISTIDA SP.
CHAMAESYCE SP.

Notes: LOW BROAD FLOODPLAIN WITHIN STEEP SIDE SLOPES
MULTIPLE LOW FLOW CHANNELS

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/13/2012 Time: 2:48PM

Investigators: R. Huddleston, K Steiner | City: Needles State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-10 Photos: 392, 393

Y [ ] N [X] Significantly Disturbed | GPS: 34.722453 Datum: WGS84

Geomorphic Feature: DRAINAGE -114.497948 Width: 18.6 FT

Flow Regime: EPHEMERAL

Substrate: SAND - PEBBLE

Indicators: CHANGE IN SUBSTRATE - SPARSE VEGETATION
SCOURING - SAND DEPOSITS

Cross-Section:

Vegetation in Channel: SPARSE PLANTAGO OVATA, ARISTIDA AND CHAMAESYCE SP.

AMBROSIA DUMOSA, BEBBIA JUNCIA AND ACACIA GREGGII ALONG EDGES OF THE CHANNEL

Low Terrace and Adjacent Vegetation: LARREA TRIDENTA, KRAMERIA GRAYI

Notes: HIGHER PLANT COVER AND DIVERSITY ASSOCIATED WITH DRAINAGE FEATURE COMPARED TO ADJACENT ROCKY SLOPES

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/13/2012	Time: 2:55PM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-11	Photos: 394-395
Y [ ] N [X] Significantly Disturbed	GPS: 34.723050	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.497618	Width: 16.1 FT
Flow Regime: EPHEMERAL		
Substrate: FINE PEBBLES, SAND SOME COBBLE		
Indicators: CHANGE IN SUBSTRATE, SAND DEPOSITS CHANGE IN VEGETATION		

Cross-Section:

Vegetation in Channel: - SPARSE BEBBIA JUNCEA, CHAMAESYCE SP. LARREA TRIDENTATA, ONE LARGE PARKINSONIA FLORIDA TREE DOWN STREAM OF THIS POINT LYCIUM ANDERSONII

Low Terrace and Adjacent Vegetation: - ADJACENT TO CHANNEL - LARREA TRIDENTATA, KRAMERIA GRAYI, AMBROSIA DUMOSA OPUNTIA,

Notes: - SIDE SLOPES ROCKY W/ SPARSE VEGETATION

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/13/2012 Time: 3:14 pm
Investigators: R. Huddleston, K Steiner	City: Needles State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: T-B 12 Photos: 402-403
Y [ ] N [X] Significantly Disturbed	GPS: 34.721803 Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.496667 Width: 7 ft
Flow Regime: EPHEMERAL	
Substrate: FINE -MED PEBBLE	
Indicators: FLOW LINES, SCOURING ABSENCE OF VEGETATION	

Cross-Section:

Vegetation in Channel: - SCATTERED VEGETATION ALONG THE EDGES OF CHANNEL - LARREA TRIDENTATA, AMBROSIA DUMOSA, KRAMERIA GRAYI AND BEBBIA JUNCEA

-SPARSE: CHAMAESYCE, PALAFOXIA ARIDA

Low Terrace and Adjacent Vegetation: - VEGETATION IN AREAS ALONG CHANNEL SIMILAR - LARREA, AMBROSIA AND KRAMERIA

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/13/2012 | Time: 3:25 PM

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-13 | Photos: 404-405

Y [ ] N [X] Significantly Disturbed | GPS: 34.720953 | Datum: WGS 84

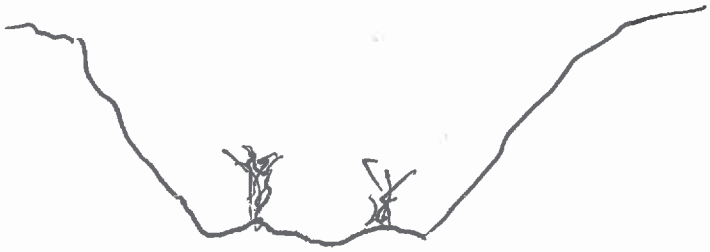
Geomorphic Feature: DRAINAGE | -114.497479 | Width: 23 FT

Flow Regime: EPHEMERAL

Substrate: FINE GRAVEL / COBBLE

Indicators: ABSENCE OF VEGETATION / SCOURING

Cross-Section:



ACACIA GREGGII

Vegetation in Channel: - SCATTERED ACACIA GREGGII - ALSO PRESENT ALONG FLOODPLAIN - LARREA TRIDENTATA, AMBROSIA DUMOSA AND BEBBI JUNCEA - SPARSE HERBS INCLUDE CHAMAESYCE, ERIOGONUM INFLATUM, LUPINUS ARIZONICUS, AND BOUTELOUA ARISTIDOIDES

Low Terrace and Adjacent Vegetation:

LARREA TRIDENTATA, KRAMAMERI GRAYI

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/13/2012 | Time: 3:41 PM

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [X] Normal Circumstances | Sample Point: TB-14 | Photos: 4110-4111

Y [ ] N [X] Significantly Disturbed | GPS: 34.719043 -114.497465 | Datum: WGS84

Geomorphic Feature: DRAINAGE - SWALE | Width: 11 FT

Flow Regime: EPHEMERAL

Substrate: FINE GRAVEL

Indicators: CHANGE IN SUBSTRATE - MORE FINES IN THIS AREA

Cross-Section:

Vegetation in Channel: - SPARSE ~~CHLAFF~~ CHAMAESYCE IN LOW FLOW CHANNEL - ALONG EDGES ENCELIA FARINOSA, LARREA TRIDENTATA, AMBROSIA DUMOSA

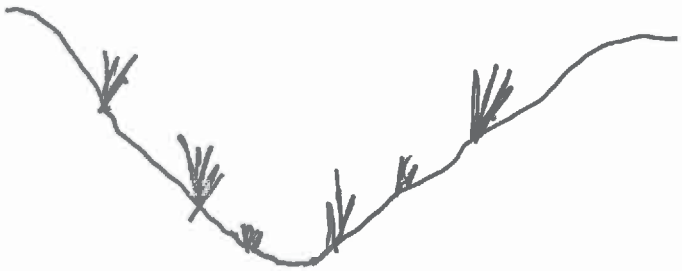
Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA

Notes: FEATURE TERMINATES UP SLOPE AT RR TRACKS

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/13/2012	Time: 3:52pm
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-15	Photos: 414-415
Y [ ] N [X] Significantly Disturbed	GPS: 34.719425	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.499032	Width: 8FT
Flow Regime: EPHEMERAL		
Substrate: GRAVEL-COBBLE		
Indicators: SCOURING, LOW FLOW CHANNEL		

Cross-Section:



Vegetation in Channel: · SOME BEBBIA JUNCEA ALONG EDGES

SPARSE CHAMAESYCE, PALAFOXIA ARIDA AND SCHISMUS BARBATUS

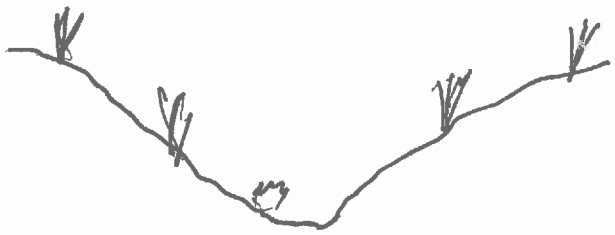
Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, AMBROSIA DUMOSA, KRAMERIA GRAYI, AND OPUNTIA BASILARIS

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/14/2012	Time: 7:58 AM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-16	Photos: 345 - 346
Y [ ] N [X] Significantly Disturbed	GPS: 34.721399 -114.499603	Datum: WGS 84
Geomorphic Feature: DRAINAGE / EROSIONAL CHANNEL		Width: 3 - 6 FT
Flow Regime: EPHEMERAL		
Substrate: SAND / COBBLE		
Indicators: SCOURING, SAND DEPOSITS		

Cross-Section:



Vegetation in Channel: LARREA TRIDENTATA, AMBROSIA DUMOSA, OPUNTIA BASILARIS, CHAMAESYCE SP., CRYPTANTHA SP., PLANTAGO OVATA, AND BOUTELOUA ARISTIDOIDES

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, KRAMERIA GRAYI, CYLINDROPUNTIA SP.

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/14/2012	Time: 8:08 am
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-17	Photos: 347-348
Y [ ] N [X] Significantly Disturbed	GPS: 34.722031	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.499021	Width: 5 1/2 FT
Flow Regime: EPHEMERAL		
Substrate: FINE GRAVEL W/ COBBLE - ROCK		
Indicators: LOW ERASIONAL CHANNEL -		

Cross-Section:

Vegetation in Channel: BEBBIA JUNCEA, HYPTIS EMORYI, POROPHYLLUM GRACILE, AND CHAMAESYCE SP.

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, KRAMERIA GRAYI, AMBROSIA DUMOSA, AND CYLINDROPUNTIA SP.

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/14/2012	Time: 8:20AM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB18	Photos: 349-350
Y [ ] N [X] Significantly Disturbed	GPS: 34.723239	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.498031	Width: 3½ FT
Flow Regime: EPHEMERAL		
Substrate: SAND / GRAVEL / COBBLE		
Indicators: LOW FLOW EROSIONAL CHANNEL		

Cross-Section:

Vegetation in Channel: MOSTLY UNVEGETATED -SPARSE BOUTELOUA ARISTIDOIDES - UPSLOPE OF THIS POINT SOME ACACIA GREGGII

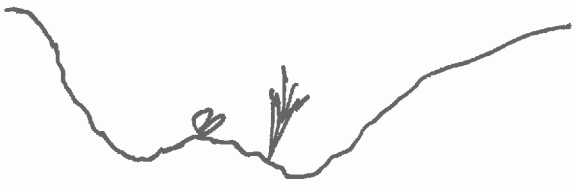
Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, AMBROSIA DUMOSA, KRAMERIA GRAYI

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/14/2012	Time: 8:29 am
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-19	Photos: 351-352
Y [ ] N [X] Significantly Disturbed	GPS: 34.723622	Datum: WGS 84
Geomorphic Feature: DRAINAGE	-114.497889	Width: 26 FT
Flow Regime: EPHEMERAL		
Substrate: SAND - FINE GRAVEL, SOME COBBLE		
Indicators: MULTIPLE LOW FLOW EROSIONAL CHANNELS		

Cross-Section:



Vegetation in Channel: ACACIA GREGGII, AMBROSIA DUMOSA AND OPUNTIA BASILARIS

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, KRAMARIA GRAYI

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/14/2012 | Time: 8:38am

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-20 | Photos: 353-354

Y [ ] N [X] Significantly Disturbed | GPS: 34.723302 | Datum: WGS 84

Geomorphic Feature: DRAINAGE | -114.498879 | Width: 7½ FT

Flow Regime: EPHEMERAL

Substrate: GRAVEL - COBBLE

Indicators: SCOUR CHANNEL, SAND DEPOSITS

Cross-Section:

Vegetation in Channel: SPARSE HERBACEUS VEG. ONLY: CHAMAESYCE SP. BOUTELOUA ARISTIDOIDES

Low Terrace and Adjacent Vegetation: LARREA TRIDENTA, AMBROSIA DUMOSA, KRAMERIA GRAYI

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/14/2012 | Time: 8:42AM

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-21 | Photos: 355-356

Y [ ] N [X] Significantly Disturbed | GPS: 34.722749 | Datum: WGS 84

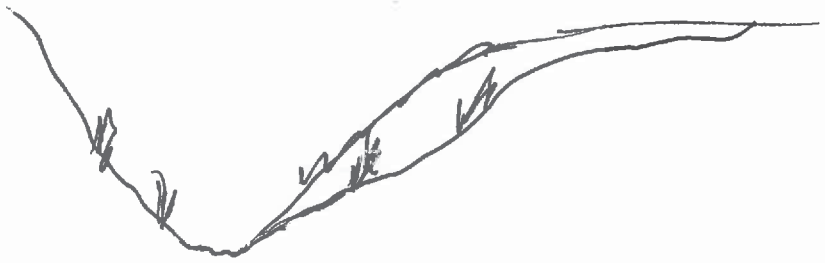
Geomorphic Feature: DRAINAGE | -114.499586 | Width: 4FT

Flow Regime: EPHEMERAL

Substrate: GRAVEL-COBBLE

Indicators: LOW FLOW EROSIONAL CHANNEL

Cross-Section:



Vegetation in Channel: SPARSE HERBACEOUS PLANTS ONLY -

CHAMAESYCE SP., PLANTAGO OVATA, BOUTELOUA ARISTIDOIDES

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA AND KRAMERIA GRAYI

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/14/2012 | Time: 8:50 AM

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-22 | Photos: 357, 358

Y [ ] N [X] Significantly Disturbed | GPS: 34.722292 -114.500327 | Datum: WGS 84

Geomorphic Feature: DRAINAGE / EROSIONAL CHANNEL | Width: 1FT

Flow Regime: EPITEMERAL

Substrate: COBBLE - GRAVEL

Indicators: LOW FLOW EROSIONAL CHANNEL - ABSENCE OF VEGETATION

Cross-Section:

Vegetation in Channel: NONE

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, OPUNTIA BASILARIS

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/14/2012 | Time: 9:41 am

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-23 | Photos: 368-369

Y [ ] N [X] Significantly Disturbed | GPS: 34.721222 -114.502552 | Datum: WGS 84

Geomorphic Feature: EROSIONAL CHANNEL | Width: 5 FT

Flow Regime: EPHEMERAL

Substrate: GRAVEL-COBBLE (ROCKY)

Indicators: LOW FLOW EROSIONAL CHANNEL

Cross-Section:

Vegetation in Channel: SPARSE CHAMAESYSE SP., PHACELIA SP. PLANTAGO OVATA, ERIOGONUM INFLATUM, BOUTELOUA ARISTIDOIDES

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, AMBROSIA DUMOSA, BEBBIA JUNCEA, KRAMERIA GRAYI, CYLINDROPUNTIA SP.

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/14/2012 | Time: 9:55 am

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-24 | Photos: 370-371

Y [ ] N [X] Significantly Disturbed | GPS: 34.722094 -114.504961 | Datum: WGS 84

Geomorphic Feature: EROSIONAL CHANNEL | Width: ~~2.5 FT~~ 30 FT

Flow Regime: EPHEMERAL

Substrate: GRAVEL-COBBLE | LOW FLOW - 2-3 FT WIDE

Indicators: MULTIPLE LOW FLOW CHANNELS, SCOUR - CHANGE TO FINER SUBSTRATES

Cross-Section:

Vegetation in Channel: SPARSE CHAMAESYCE ALONG LOW FLOW CHANNELS

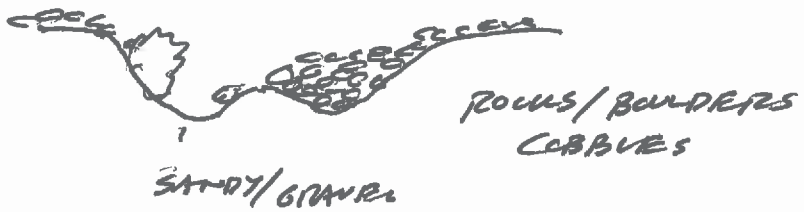
Low Terrace and Adjacent Vegetation: - LARREA TRIDENTATA, AMBROSIA DUMOSA, BEBBIA JUNCEA, KRAMERIA GRAYI

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/14/2012 Time: 3:17pm
Investigators: R. Huddleston, K Steiner	City: Needles State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-25 Photos: 444 - 445
Y [ ] N [X] Significantly Disturbed	GPS: 34.710182 -114.498143 Datum: WGS 84
Geomorphic Feature: EROSIONAL FEATURE	Width: ~3FT
Flow Regime: EPHEMERAL	
Substrate: ROCKY - COBBLES	
Indicators: SMALL BED / BANK FEATURE - SOME DRIFT AND SEDIMENT DEPOSITS	

Cross-Section:



Vegetation in Channel: STEPHANOMERIA PAUCIFLORA, HYMENOCLEA SALSOLA, HYPTIS EMORYI AND ACACIA GREGGII

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA

Notes: FORMER QUARRY IN THIS AREA

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/14/2012 Time: 3:43pm
Investigators: R. Huddleston, K Steiner	City: Needles State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-26 Photos: 448
Y [ ] N [X] Significantly Disturbed	GPS: 34.715115 -114.497522 Datum: WGS 84
Geomorphic Feature: EROSIONAL DRAINAGE	Width: 5FT
Flow Regime: EPHEMERAL	
Substrate: ROCK - COBBLE	
Indicators: NO CLEAR EVIDENCE OF OHWM - TOPO LOW	
Cross-Section:  ROCKY LOW AREA	
Vegetation in Channel: LARREA TRIDENTATA, ENCELIA FARINOSA, KRAMERIA GRAYI	
Low Terrace and Adjacent Vegetation: -SAME AS IN CHANNEL	
Notes:	

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/14/2012 Time: 3:46
Investigators: R. Huddleston, K Steiner	City: Needles State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-27 Photos: 449
Y [ ] N [X] Significantly Disturbed	GPS: 34.715286 -114.497535 Datum: WGS 84
Geomorphic Feature: EROSIONAL CHANNEL	Width: 3.5 FT
Flow Regime: EPHEMERAL	
Substrate: COBBLE-GRAVEL	
Indicators: LOW SCOUR CHANNEL - GENERAL ABSENCE OF VEGETATION	

Cross-Section:

Vegetation in Channel: SOME BEBBIA JUNCEA ALONG SIDES OF LOW FLOW CHANNEL - SPARSE CHAMAESYCE, BOUTELOUA ARISTIDOIDES, AND CRYPTANTHA.

Low Terrace and Adjacent Vegetation:

LARREA TRIDENTATA, KRAMERIA GRAYI, AMBROSIA DUMOSA

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/14/2012 Time: 3:53pm
Investigators: R. Huddleston, K Steiner	City: Needles State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-28 Photos: 450-451
Y [ ] N [X] Significantly Disturbed	GPS: 34.715172 -114.496829 Datum: WGS 84
Geomorphic Feature: EROSIONAL CHANNEL	Width: 4FT + 5½FT
Flow Regime: EPHEMERAL	
Substrate: COBBLE-GRAVEL	
Indicators: ABSENCE OF VEGETATION, SCOURING	

Cross-Section:

Vegetation in Channel: SPARSE CHAMAESYCE SP. AND BOUTELOUA ARISTIDOIDES

Low Terrace and Adjacent Vegetation: BEBBIA JUNCEA, AMBROSIA DUMOSA, LARREA TRIDENTATA, KRAMERIA GRAYI

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 2/14/2012 | Time: 4:09pm

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-29 | Photos: 454 - 456

Y [ ] N [X] Significantly Disturbed | GPS: 34.714866 -114.496452 | Datum: WGS 84

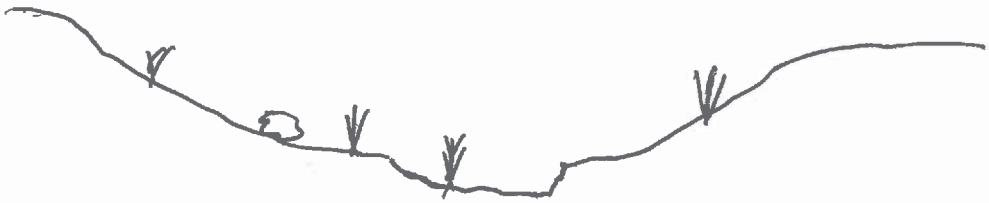
Geomorphic Feature: DRAINAGE / SWALE | Width: 8.5 FT

Flow Regime: EPHEMERAL

Substrate: COARSE SAND, GRAVEL, COBBLE

Indicators: SCOURING, SOME CUT BANKS

Cross-Section:



Vegetation in Channel: LARREA TRIDENTATA, STEPHANOMERIA PAUCIFLORA, BOUTELOUA ARISTIDOIDES

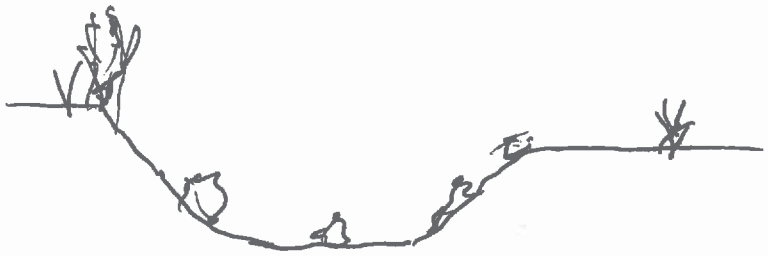
Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, AMBROSIA DUMOSA, OPUNTIA BASILARIS, KRAMERIA GRAYI

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/15/2012	Time: 1:30PM
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB30	Photos: 369-370
Y [ ] N [X] Significantly Disturbed	GPS: 34.724560	Datum: WGS84
Geomorphic Feature: STREAM	-114.517322	Width: 19 FT
Flow Regime: EPHEMERAL		
Substrate: SAND-GRAVEL		
Indicators: - SCOURING / DEFINED BED AND BANK SOIL CRACKS		

Cross-Section:



Vegetation in Channel: CHAMAESYCE SP., CRYPTANTHA SP.
PALAFOXIA ARIDA, PHACELIA SP. HYMENOCLEA SALSOLA,
BEBBIA JUNCEA, ENCELIA FARINOSA

Low Terrace and Adjacent Vegetation: LARREA TRIDENTA,
PARKINSONIA FLORIDA, OPUNTIA BASILARIS,
CYLINDROPUNTIA SP.

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/16/2012	Time:
Investigators: R. Huddleston, K Steiner	City: Needles	State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-31	Photos: ~~358-359~~ 1,360
Y [ ] N [X] Significantly Disturbed	GPS: 34.715290 -114.488677	Datum: 361
Geomorphic Feature: DRAINAGE		Width: 3-5 FT
Flow Regime: EPHEMERAL		
Substrate: FINE GRAVEL TO ROCK		
Indicators: SCOURING, GRAVELLY SUBSTRATE -		

Cross-Section:

Vegetation in Channel: SPARSE LARREA TRIDENTATA, ENCELIA FARINOSA AND BOUTELOUA ARISTIDOIDES

Low Terrace and Adjacent Vegetation: LARREA TRIDENTATA, KRAMERIA GRAYI OPUNTIA BASALARIS

Notes:

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station	Date: 2/16/2012 Time: 9:08 am
Investigators: R. Huddleston, K Steiner	City: Needles State: CA
Y [X] N [ ] Normal Circumstances	Sample Point: TB-32 Photos: 378-381
Y [ ] N [X] Significantly Disturbed	GPS: 34.713524 -114.484515 Datum: NAD 83
Geomorphic Feature: DRAINAGE	Width: 10 FT
Flow Regime: EPHEMERAL	
Substrate: BEDROCK - COBBLE	
Indicators: CULVERT, DEFINED BED-BANK CHANNEL	

Cross-Section:

Vegetation in Channel:	PERITYLE EMORYI, GERAEA CANESCENS
Low Terrace and Adjacent Vegetation:	ENCELIA FARINOSA, HYPTIS EMORYI LARREA TRIDENTATA
Notes:	

ARID WEST EPHEMERAL AND INTERMITTENT STREAM SAMPLE POINT DATA SHEET

Project: PG&E Topock Compressor Station | Date: 7/17/2012 | Time: 11:18 AM

Investigators: R. Huddleston, K Steiner | City: Needles | State: CA

Y [X] N [ ] Normal Circumstances | Sample Point: TB-33 | Photos: 194-196

Y [ ] N [X] Significantly Disturbed | GPS: 34.714114 | Datum: WGS 1984

-114.483223

Geomorphic Feature: DRAINAGE | Width: ~8 FT

Flow Regime: EPHEMERAL

Substrate: SAND - SOME COBBLE NEAR CULVERT

Indicators: ABSENCE OF VEGETATION, FLOW LINES, DEBRIS DEPOSITS

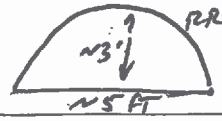
Cross-Section:

Vegetation in Channel: NONE

Low Terrace and Adjacent Vegetation: - LARREA TRIDENTA, ATRIPLEX POLYCARPA

SOME PARKINSONIA FLORIDA NEAR RR TRACKS

Notes:



- DEFINED FLOW/DRAINAGE CHANNEL TO THE WEST OF THE CULVERT BUT DISSIPATES INTO SHEET FLOW BY TIME VEGETION BECOMES TAMARIX