9/	4RC4	DIS Design & for natura built asse	Consultancy all and its		Well Consti	ruction Log	;	Sheet: 1 of 7
Date S	Started:	03/04/2020			_Surface Elevation: _Shallow Well Elevation:	502.11 ft amsl	Well ID: IR	Z-31
	•				_ Deep Well Elevation:		Client: DC 9 F	_
Drilling	-	Cascade			- •	N/A	Client: PG&E	
_	-	Dual Rotary			_Northing (NAD83):	2101940.23		GW Remedy Phase 1
Driller	Name:	Jon Martinez			_Easting (NAD83):	7615789.13	Location: <u>PG&</u> E	<u> Topock, Needles, California</u>
Drilling	g Asst:	A. & H. Amez	guita		_Borehole Diameter:	16-18 inches		
Logge	er:	Ellen Redner			_Static Water Level:	See Log for Depths	Project Numbe	r: RC000753.0051
Editor		Sean McGran	ie		_Development End Date:	-	•	
	Depth:	128.83 ft bgs			_Well Completion:		To Be Completed	in Well Vault
T Otal E					_ TT OIL COMPICUOM.			
Depth (ft)	Groundwat Sample II		USCS	USCS Class		onstruction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
1			ND		(0.0 - 48.2') 10" SHUR-GRIP SDR17 PVC Casing (0.0 - 4.0') Cemex #60 Mesh (40x70) Lapis Lustre Sand		(0.0 - 4.0') 9.8 bags	(0.0 - 4.0') 9 bags (92%) Note: Temporary backfill sand to fill annular space prior to vault installation
		Topock - Alluvium Deposits Topock - Alluvium Deposits	GW SM		(4.0 - 36.8') Portland Cement 3% Bentonite Type I, II and V with Hydrogel	(0.0 - 20.6') 18.0" Borehole	(4.0 - 36.8') 299.1 gallons	(4.0 - 36.8') 316 gallons (106%) Note: Grout seal
Abbre	viations: U	ISCS = Unified	Soil Cla	assificat	tion System. ft = feet. bas	= below ground surface, a	msl = above mean	sea level, GW =
. — —					•	-		
0					· · · · · · · · · · · · · · · · · · ·	e and hollow blue water tal	ole marks represen	ι uepιn ιο water (π. bgs.)
ฐ์ <mark>meas</mark> เ	ured pre-sp	ecific capacity	tor the	shallow	and deep screens respec	tively		

9/	ARCA	DIS Design 8 for nature built ass	Consultancy ral and ets		Well Cons	structi	on Log	,	Sheet: 2 of 7
	Started:	03/04/2020	Cases		_Surface Elevation:	<u>502.1</u>	I ft amsl	Well ID: IR	7-31
Date 0	Completed:	03/07/2020			_Shallow Well Elevatio	n: <u>N/A</u>			
Drilling	g Co.:	Cascade			_Deep Well Elevation:	N/A		Client: PG&I	<u> </u>
Drilling	g Method:	Dual Rotary			Northing (NAD83):	<u>21019</u>	40.23	Project: Final	GW Remedy Phase 1
Driller	Name:	Jon Martinez			_Easting (NAD83):	<u>76157</u>	89.13	Location: <u>PG&I</u>	E Topock, Needles, California
Drilling	g Asst:	A. & H. Amez	guita		_Borehole Diameter:	<u>16-18</u>	inches		
Logge		Ellen Redner			_Static Water Level:	See Lo	og for Depths	Project Numbe	r: RC000753.0051
Editor		Sean McGrai			_Development End Da				
Total [Depth:	128.83 ft bgs	I		_Well Completion:	Fli	ush Stick-up 🗵	To Be Completed	in Well Vault
Depth (ft)	Groundwate Sample ID		USCS	USCS Class		II Construction		Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
21		Topock - Alluvium Deposits	SM		(0.0 - 48.2') 10" SHUR-GRIP SDR17 PVC Casing		(0.0 - 20.6') 18.0" Borehole		
		Topock - Alluvium Deposits	SW-SM		(4.0 - 36.8') Portland Cement 3% Bentonite Type I, II and V with Hydrogel		— (20.6 - 42.0') 18.0" Borehole	(4.0 - 36.8') 299.1 gallons	(4.0 - 36.8') 316 gallons (106%) Note: Grout seal
		Topock - Alluvium Deposits	GW		(34.5 - 35.5') Centralizer		'		
37			GW-GM	A P	(36.8 - 40.2') Cemex #60 Mesh — (40x70) Lapis Lustre Sand			(36.8 - 40.2') 5.8 bags	(36.8 - 40.2') 8 bags (138%) Note: Transition sand. Used >20% of the calculated volume due to potential voids forming during drilling.
					ion System, ft = feet, b				
					· · · · · · · · · · · · · · · · · · ·		ollow blue water ta	ıble marks represen	t depth to water (ft. bgs.)
measu	ured pre-sp	ecific capacity	for the	shallow	and deep screens resp	pectively			

MEL

Date Started: 03/04/2020 Surface Elevation: 502.11 ft amsl Date Completed: 03/07/2020 Shallow Well Elevation: N/A Drilling Co.: Cascade Deep Well Elevation: N/A Drilling Method: Dual Rotary Northing (NAD83): 2101940.23 Project: Final GW Remedy Phase 1 Driller Name: Jon Martinez Easting (NAD83): 7615789.13 Location: PG&E Topock, Needles, California	9/	ARC4	DIS Design & for natura built asset	Consultancy ral and ets		Well Const	ruction Log	S	Sheet: 3 of 7
Date Completed: 03/07/20/20 Shallow Well Elevation: M/A						Surface Elevation:	502.11 ft amsl	Well ID: IRZ	<u>'</u> -31
Diller Name Duel Rolary Duel Rolary								_	
Diller Name: Dom Martinez D	_					_ •	·		
Dalling Asst: A. & H. Amezgulia Borehole Diameter: 16-18 inches George Georg	_		•			- ', ,		•	-
Deposits Ellen Redner Static Water Levels See Log for Depths Project Number: RC000753.0051								_ Location: <u>PG&E</u>	: Topock, Needles, California
Editor				-				Project Number	· PC000753 0051
Topods		•						_ FTOJECT Number	. <u>NC000733.0031</u>
1		epth:						o Be Completed	in Well Vault
11	Depth (ft)		Geologic Formation	USCS	USCS Class	Well C	onstruction		Note: percentages are the actual
46	42 43 43		Alluvium	GW-GM		10" SHUR-GŔIP		3	200
48			Alluvium	SM	• P D				
Topock - Alluvium Deposits Topock - Alluvium Deposits SP-SM Deposits Topock - Alluvium Deposits GM O O O O O O O O O O O O O O O O O O	48	48-53 (2000 ppb) 1/8/2020	Topock - Alluvium	ML		10" 10-Slot 316L SS Wire Wrap Screen (40.2 - 78.8') Cemex #30 Mesh	(42.0 - 59.9') 16.0" Borehole		Note: Filter pack swabbed for approximately 60 minutes to settle prior to installation of overlying annular material. Used >20% of the calculated volume due to potential voids forming during
	55565758		Alluvium Deposits Topock - Alluvium Deposits Topock - Alluvium	SP-SM					
		viations: U	SCS = Unified	l I Soil Cl	lassifica	1	□ [· ː · ː] = below ground surface, ams	sl = above mean s	sea level, GW =

particulations: USCS = Unified Soil Classification System, π = feet, bgs = below ground surface, amsi = above mean sea level, Gvv = groundwater, ppb = parts per billion, NR = no recovery; Notes: solid blue and hollow blue water table marks represent depth to water (ft. bgs.) measured pre-specific capacity for the shallow and deep screens respectively

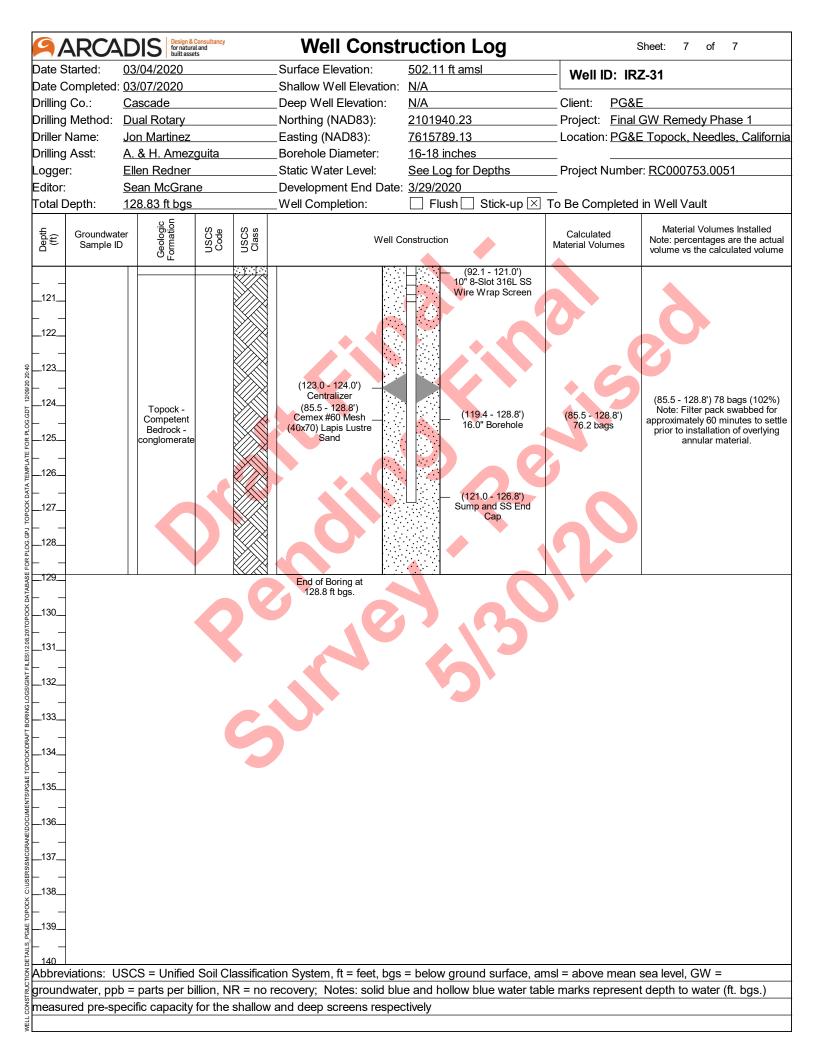
ARC	CAD	S Design & for natura built asse	Consultancy al and ts		Well Consti	ruction Log	S	Sheet: 4 of 7
Date Started	03/0	04/2020			_Surface Elevation:	502.11 ft amsl	Well ID: IRZ	<u>31</u>
Date Comple	ted: <u>03/</u> 0	07/2020			_Shallow Well Elevation:			
Drilling Co.:		cade			_Deep Well Elevation:	N/A	Client: PG&E	
Drilling Metho		al Rotary			_Northing (NAD83):	2101940.23		GW Remedy Phase 1
Driller Name:		Martinez			_Easting (NAD83):	7615789.13	Location: <u>PG&E</u>	Topock, Needles, California
Drilling Asst:		k H. Amez	guita		_Borehole Diameter:	<u>16-18 inches</u>		
Logger:		n Redner			_Static Water Level:	See Log for Depths	Project Number	: RC000753.0051
Editor:		ın McGran	ie		_Development End Date:			
Total Depth:	<u>128</u>	.83 ft bgs			_Well Completion:	☐ Flush ☐ Stick-up ⊠	To Be Completed	in Well Vault
	idwater ple ID	Geologic Formation	OSCS Code	USCS Class		onstruction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
		_	GM		(48.2 - 77.1') —			A
61		Topock - Alluvium	SW-SM		Wire Wrap Screen	\exists		
L J		Deposits /	1					
62	77 ppb) 020	Topock - Alluvium Deposits Topock - Alluvium Deposits Topock - Alluvium Deposits	GM SM		(40.2 - 78.8') Cemex #30 Mesh (30x70) Lapis Lustre Sand	(59.9 - 79.8') 16.0" Borehole	(40.2 - 78.8') 67 bags	(40.2 - 78.8') 84 bags (125%) Note: Filter pack swabbed for approximately 60 minutes to settle prior to installation of overlying annular material. Used >20% of the calculated volume due to potential voids forming during drilling.
		Topock - Alluvium Deposits Topock - Alluvium Deposits	GM SW-SM		(78.8 - 79.9') Cemex #60 Mesh	(77.1 - 92.1') 10" SHUR-GRIP SDR17 PVC Casing	(78.8 - 79.9') 1.9 bags	(78.8 - 79.9') 2 bags (105%) Note: Transition sand
E 80 S	- 116Us	S = Inified	Soil Cir	• <u>∴•}]•[∮</u> accificat	ion System ft = feet bas	= below ground surface, an	nel = ahove moon (sea level GW -
5					•	e and hollow blue water tab		
-					and deep screens respec		o marks represent	. aopin to water (it. bys.)
ر اساطامان ال	c-specifi	o capacity	יטו נוופ	oi ialiUW	and deeb soleens respec	ouvery		

9/	4RC4	DIS Design & for natura built asset	Consultancy al and ets		Well Const	ruction Log	5	Sheet: 5 of 7
Date S	Started:	03/04/2020			_Surface Elevation:	502.11 ft amsl	Well ID: IR	Z-31
Date C	Completed:	03/07/2020			_Shallow Well Elevation:	N/A		
Drilling	Co.:	Cascade			_Deep Well Elevation:	N/A	Client: PG&E	<u> </u>
_	Method:	Dual Rotary			Northing (NAD83):	2101940.23	Project: Final	GW Remedy Phase 1
_	Name:	Jon Martinez			_Easting (NAD83):	7615789.13		Topock, Needles, California
Drilling		A. & H. Amez	nuita		Borehole Diameter:	16-18 inches	Location. <u>r Cal</u>	- Topock, Mosaiss, Samornia
Logge	-	Ellen Redner	guita		Static Water Level:	See Log for Depths	Project Number	r: RC000753.0051
Editor:		Sean McGrar			_Static vvater Level. _Development End Date:		T Toject Number	1. INCOOOT 55.005 1
					_Development End Date. _Well Completion:		 ⊠ To Be Completed	in Wall Vault
Total [Јерин. Т	128.83 ft bgs			_vveii Compietion.	Flush Stick-up [10 be Completed	ırı vveli vault
Depth (ft)	Groundwat Sample II		Code	USCS	Well C	onstruction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
81 82 82	-	Topock - Alluvium	o o o o o o o o o o o o o o o o o o o		(79.9 - 85.5') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(77.1 - 92.1') 10" SHUR-GRIP SDR17 PVC Casing	(79.9 - 85.5') 7.7 buckets	(79.9 - 85.5') 8 buckets (104%) Note: Intermediate seal
N -	_	Deposits	0.00	27	(82.5 - 83.5')			
84	-				Centralizer			
8 –			0	D D				
ੂੰ 85				111				
₹				34	(1)	NAME		
86								
<u> </u>			2	9 0				
Š87		Topock -						
<u></u>		Alluvium	SM					
ਜ਼ੁ ਹ 88		Deposits						
Z Z Z								
- 89 <u> </u>								
69		Topock -						
<u> </u>	-	Alluvium Deposits	SM			(79.8 - 99.5') 16.0" Borehole		
90_						10.0 Boleliole		
	-							
91			0					
<u> </u>	-		6	Pla				
92				37				(85.5 - 128.8') 78 bags (102%)
				M	(85.5 - 128.8') Cemex #60 Mesh	(92.1 - 121.0') 10" 8-Slot 316L SS	(85.5 - 128.8')	Note: Filter pack swabbed for
93			P	50	(40x70) Lapis Lustre	. Wire Wrap Screen		approximately 60 minutes to settle prior to installation of overlying
<u> </u>			o	2P	Sand	· ::::		annular material.
<u>94</u>		Topock - Alluvium	GM 2					
<u>_</u>		Deposits	0	PD		Hii		
ـــــــــــــــــــــــــــــــــــــ				1914				
				37				
<u>96</u>						H:::		
NE CO			l P			H::::1		
97			þ	44				
78 — 31 —	-		:					
	-	Topock -	SM :			H4.4		
5 <u> </u>	1	Deposits						
<u> </u>	1		6	ΨÜ				
99	†	Topock - Alluvium	GM D	11/1		H:::j		
N	-	Deposits		34		(99.5 - 119.4')		
100 Abbrev	viations: L			scification	│ <u> </u>	→ 16.0" Borehole	amel = above meen	sea level GW -
. — —					ecovery; Notes: solid blu	-		
<u></u>					and deep screens respec		ane marks represen	i depiii to water (it. bgs.)
ยูเทษสรับ	areu pre-sp	ecine capacity	ioi tile s	ııaııOW	and deep screens respec	∍uv e iy		

WEL

9/	ARC4	DIS Design for natu built as	& Consultancy ural and sets		Well Const	ruction Log	\$	Sheet: 6 of 7
	Started:	03/04/2020			_Surface Elevation:	502.11 ft amsl	Well ID: IR	7 . 31
Date C	Completed:	03/07/2020			_Shallow Well Elevation:	N/A		L-01
Drilling	Co.:	Cascade			_Deep Well Elevation:	N/A	Client: PG&E	
Drilling	Method:	Dual Rotary			_Northing (NAD83):	2101940.23	Project: Final	GW Remedy Phase 1
Driller	Name:	Jon Martinez			_Easting (NAD83):	7615789.13	Location: PG&E	Topock, Needles, California
Drilling	Asst:	A. & H. Ame:	zguita		_Borehole Diameter:	16-18 inches		
Logge	r:	Ellen Redner	-		_Static Water Level:	See Log for Depths	Project Number	r: RC000753.0051
Editor:		Sean McGra	ne		_Development End Date:	3/29/2020		
Total [Depth:	128.83 ft bgs	3		_Well Completion:	☐ Flush ☐ Stick-up ⊠	To Be Completed	in Well Vault
Depth (ft)	Groundwat Sample II		USCS	USCS	Well C	onstruction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
			GM	PYP		(92.1 - 121.0') 10" 8-Slot 316L SS		
101	IRZ-31-VAS 102-107 (2300 ppb) 1/10/2020 10:35	Topock - Alluvium Deposits Topock - Alluvium Deposits	GW		(85.5 - 128.8') Cemex #60 Mesh (40x70) Lapis Lustre Sand	(99.5 - 119.4') 16.0" Borehole	(85.5 - 128.8') 76.2 bags	(85.5 - 128.8') 78 bags (102%) Note: Filter pack swabbed for approximately 60 minutes to settle prior to installation of overlying annular material.
112113114114								
115								
Z						Haid		
116								
ANE —		Topock -						
	IRZ-31-VAS	Weathered	SM			出為計		
EKSS	115-120 (2500 ppb)	Bedrock - conglomerat						
5118	1/11/2020							
<u></u>	11:33					⊟∷:i		
<u> </u>						'⊟∷:i		
119								
- AES						(119.4 - 128.8')		
120		000 11 %	10	<u> 1: 1:1점</u>	in Out to the second	16.0" Borehole		
. — —					·	= below ground surface, a		
70					· · · · · · · · · · · · · · · · · · ·	e and hollow blue water tal	ole marks represen	t depth to water (ft. bgs.)
g measι	ired pre-sp	ecific capacity	y for the	shallow	and deep screens respec	ctively		

Ä



9/	ARCA	DIS	Design & Consultar for natural and built assets	су	Drilling Log			Sheet:	1 of 7
Date S	Started:	02/25/2	2020	Surfa	ace Elevation:	502.11 ft amsl	Borine	g No.: <u>IRZ</u>	7-31
Date C	Completed:	02/27/2	2020	Nortl	ning (NAD83):	2101940.23		9 110 <u>1112</u>	<u>- 0 :</u>
Drilling	Co.:	Cascac	le	East	ing (NAD83):	7615789.13	Client:	PG&E	
Drilling	Method:	Dual R	otary	Tota	l Depth:	128.8 ft bgs	Project:	Final GW Re	emedy Phase 1
Drill Ri	g Type:	Foremo	ost DR-241	HDCond	ductor Casing Diameter:	18 inches	Location:	PG&E Topo	ck, Needles,
Driller	Name:	Jon Ma	rtinez	Drill(Casing Diameter:	16 inches		<u>California</u>	
Drilling			<u>Amezguit</u>			15.5 & 17.5 Tricone	Project Nu	umber: RC00	0753.0051
Tool-P		A. Lam		-	h to First Water:	47.3 ft bgs			
Rig Ge	eologist:	Ellen R	<u>edner</u>	Conv	verted to Well:	× Yes No			I
Depth (ft)	Drilling Run and Averag Penetration F	e Co		Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observati temporary backfill ma	aterial in drill o	cuttings	Drilling Fluid
1	(0.0 - 20.6) 1.75 mins/ft	GV		(0.0 - 20.6') 18.0" Steel Casing	(8.0 - 17.0') Topock - Alluvium Deposits: Well graded gravel with sand (GW); yellowish brown / moderate yellowish brown (10YR 5/4) (17.0 - 27.0') Topock - Alluvium Deposits: Well graded gravel with sand (GW); yellowish brown / moderate yellowish brown (10YR 5/4)	n			(0.0 - 20.6') 150 gallons of water used; 100 gallons of water recovered; 50 gallons of water lost
20 Abbres	viatione: 110	SCS = 1	Inified Soil	Classification	System ft = feet has -	below ground surface, ams	sl = ahove n	nean sea levol	GW =
Unnie,	vialionis. U	- C	iiiiieu 30ll	CiassillealiUH	Gystern, it – leet, bys –	ociow ground sunace, and		ilicali sca icvel	, UVV -

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW groundwater, NR = no recovery; Notes: depth to water collected during the first VAS sample of the pilot borehole

Poto Started: 02/25/2020					Drilling Log						
Date Started		02/25/20			ace Elevation:		I1 ft amsl	Borin	g No.: <u>IR</u>	Z-31	
Date Compl					ning (NAD83):		940.23				
rilling Co.:		<u>Cascade</u>			ing (NAD83):		789.13	Client:	PG&E	amandu Dhana 1	
rilling Meth		Dual Rot	•		Depth:		3 ft bgs	Project:		emedy Phase 1	
rill Rig Typ riller Name		<u>Foremos</u> Jon Mart	t DR-24H		ductor Casing Diameter Casing Diameter:	16 inc		Location:	PG&E Topo California	ock, ineedies,	
rilling Asst			mezguita	Drill I			& 17.5 Tricone	Project N	umber: RC00	00753 0051	
ool-Pushe		A. Lamor	_		h to First Water:	47.31		. i iojootii	111001. <u>11001</u>	707 00.0001	
Rig Geologi		Ellen Red		=	erted to Well:	× Ye		-			
oepui and	ng Run (f Average ration Ra	Codo	USCS Class	Casing Diameter	Description (See Pilot boring log for full geologic descriptions	D	Orilling notes and observati temporary backfill ma			Drilling Fluid	
	- 20.6) mins/ft	SW-SM		(20.6 - 42.0') 18.0" Steel Casing	(27.0 - 31.0') Topock - Alluvii Deposits; Well graded sand with silt and gravel (SW-SM) dark yellowish brown (10YR 4/4) (31.0 - 39.5') Topock - Alluvii Deposits; Well graded grave with sand (GW); yellowish brown / moderate yellowish brown (10YR 5/4)	(23) (23) (30) (La)	0.0') Observed some Cemster Sand in drill cuttings. 3.0 - 39.5') Soft drilling 0.0') Observed trace amount is been some cemson. D.0') Observed trace amount is been some cemson.	ints of Cemex		(20.6 - 42.0') 120 gallons of water used 75 gallons of water recovered; 45 gallons water lost	
40 do	20: 110			loogification	, ,		around ourface are	d = chava	noon oos la	CW =	
					System, ft = feet, bgs = water collected during the					ei, GVV =	
	rNR =	no reco	verv. Not	es, denth to	water collected during t	e tirst \	VAS sample of the p	liot borehol	e		

orilling Co Orilling M Orill Rig T Oriller Na	mpleted: o.:	02/25/2 02/27/2			ace Elevation:	501	2 4 4 4		1	. N ID:	4
orilling Co Orilling M Orill Rig T Oriller Na	o.:	02/27/2	กวก				2.11 ft		-∣ Borin	g No.: <u>IR</u>	<u>Z-31</u>
orilling M Orill Rig T Oriller Na					hing (NAD83):		01940.		_		
orill Rig T Oriller Na		Cascad			ing (NAD83):		<u>15789.</u>		_ Client:	PG&E	1.51.4
riller Na		Dual Ro	-		l Depth:		3.8 ft b	-	Project:		emedy Phase 1
	• -		st DR-241		ductor Casing Diameter:				_ Location:	PG&E Topo California	ock, ineedies,
		Jon Ma	runez Amezguit		Casing Diameter:		inches	7.5 Tricone	- - Project N	umber: RC00	00752 0051
ool-Pus		A. Lamo	-		th to First Water:		3 ft bg		_ 1 10]661141	ullibel. INCOU	007 33.003 1
ig Geok		Ellen Re			verted to Well:		Yes	No	_		
	rilling Run		s USCS	Casing	Description	Ī	Drilling	 notes and observat	ions confirmin	g presence of	D. 300 Electric
/f+\	and Averag enetration R		e Class	Diameter	(See Pilot boring log for full geologic descriptions)		,	temporary backfill m	aterial in drill o	cuttings	Drilling Fluid
	20.6 - 42.0) I.36 mins/ft			(20.6 - 42.0') 18.0" Steel Casing	Deposits; Well graded gravel with silt and sand (GW-GM); brown (10YR 5/3)			Observed little amou uster Sand in drill cu		#3Mesh (8x20)	
_42		GW-0									
		I GW-C					•	• . 6			(42.0 - 59.9') 216 gallons of water used
_43											50 gallons of water recovered; 166 gallor of water lost
_44					(44.0 - 46.0') Topock - Alluviu Deposits; Silty sand with grav (SM); brown (7.5YR 5/4)	m el					
_45		SM			(cm), zem (rent)						
_46			.0.		(46.0 - 55.0') Topock - Alluviu Deposits; Silt with gravel (ML)			ペレ			
_47		ш			brown (7.5YR 5/4)	Ī	(
_48		ш			N	9					
_49		ш			6						
_50							(50.0') (Observed trace amou	unts of Cemex	#3 Mesh (8x20)	
	42.0 - 59.9) I.17 mins/ft	ML		(42.0 - 59.9') 16.0" Steel Casing			Lupio Li	aster Garia in anii ca	ungo.		
_52		ш									
_53							(53.0 - 5	59.9') Smooth drilling)		
_54		ш	.00								
_55		L			(55.0 - 57.0') Topock - Alluviu						
_56					Deposits; Silty gravel with san (GM); brown (7.5YR 5/4)						
-		GM									
_57					(57.0 - 58.5') Topock - Alluviu	m					
_58		SP-S	М		Deposits; Poorly graded sand with silt and gravel (SP-SM); brown (7.5YR 5/4)						
_59		GM			(58.5 - 60.5') Topock - Alluviu Deposits; Silty gravel with san (GM); brown (7.5YR 5/4)						
60		1	<u>. L.X.J.</u>	<u> </u>							
					System, ft = feet, bgs = water collected during th						el, GW =

ARC ²			Drilling Log		Sheet:	4 of 7
ate Started:	02/25/2020		ace Elevation:	502.11 ft amsl	Boring No.: <u>IF</u>	RZ-31
ate Completed			thing (NAD83):	2101940.23		
Orilling Co.:	Cascade		ting (NAD83):	7615789.13	Client: PG&E	D D 4
Orilling Method:	Dual Rotary		al Depth:	128.8 ft bgs	•	Remedy Phase 1
Orill Rig Type:	Foremost DR-2		ductor Casing Diameter:		Location: PG&E Top	ock, ineedies,
Oriller Name:	Jon Martinez		Casing Diameter:	16 inches 15.5 & 17.5 Tricone	<u>California</u> Project Number: RC0	000752 0051
Orilling Asst: Tool-Pusher:	A. & H. Amezg A. Lamon		th to First Water:	47.3 ft bgs	Project Number. RCC	100755.0051
Rig Geologist:	Ellen Redner	•	verted to Well:	× Yes No		
			Description	103 110		
Depth (ft) Drilling Ru and Avera Penetration	age Code Class		(See Pilot boring log for full geologic descriptions)	temporary backfill	vations confirming presence of material in drill cuttings	Drilling Fluid
_ _61 _	GM SW-SM SW-SM		(60.5 - 61.0') Topock - Alluviu Deposits; Well graded sand with silt (SW-SM); brown (7.5YR 5/4)	Lapis Luster Sand in drill	nounts of Cemex #3 Mesh (8x20 cuttings.	(59.9 - 79.8') 100 gallons of water used; 90 gallons of water recovered; 10 gallons water lost
_62 _ _63			(61.0 - 67.0') Topock - Alluviu Deposits; Silty gravel with sar (GM); brown (7.5YR 5/4)	m and		
_64	GM 0					
_65			0			
_66						
_67 _ _68	SM		(67.0 - 68.0') Topock - Alluviu Deposits; Silty sand with grav (SM); brown (7.5YR 5/4)			
_69			(68.0 - 74.5') Topock - Alluviu Deposits; Silty gravel with sar (GM); brown (7.5YR 5/4)			
		(59.9 - 79.8') 16.0" Steel		(70 0') Observed trace on	nounts of Cemex #3 Mesh (8x20	
_71	GM 50	Casing		Lapis Luster Sand in drill		,
_72						
_73						
_74			(73.5') greenish gray (GLEY1 5/5GY)			
_75			(74.5 - 78.5') Topock - Alluviu Deposits; Silty gravel with sar (GM); brown (7.5YR 5/4)			
_76	GM 0					
_77						
_78						
_79	SW-SM		(78.5 - 80.0') Topock - Alluviu Deposits; Well graded sand with silt and gravel (SW-SM); brown (7.5YR 5/4)			
_80	JSCS = Unified S	oil Classification	 Svstem. ft = feet_bas =	below ground surface a	msl = above mean sea lev	/el. GW =
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		on oldssindation		Solow ground surface, a	pilot borehole	· · · · · · · · · · · · · · · · · · ·

9/	ARCA	DI:	S Des	ign & Consultant natural and It assets	су	Drilling Log		Sheet:	5 of 7
	Started:		5/202	20	Surfa	ace Elevation:	502.11 ft amsl	Boring No.: IR	Z-31
	Completed:			20		• ,	2101940.23		<u> </u>
Drilling			cade_			• ,	7615789.13	_ Client: PG&E	Dhana 1
_	Method:		l Rota	ry DR-24H		•	128.8 ft bgs 18 inches		Remedy Phase 1 ock, Needles,
Driller	ig Type: Name:		<u>Martir</u>				16 inches	_ Location. <u>FG&E_Fopt</u> <u>California</u>	JCK, Needles,
Drilling				nezguita			15.5 & 17.5 Tricone	Project Number: RC0	00753 0051
_	Pusher:		amon	•			47.3 ft bgs	_ r rojour rumbor. <u>rtou</u>	00100.0001
	eologist:		Red			verted to Well:	× Yes No	-	
Depth (ft)	Drilling Run and Averag Penetration F	je '	USCS Code	USCS Class	Casing Diameter	Description (See Pilot boring log for full geologic descriptions)		ions confirming presence of aterial in drill cuttings	Drilling Fluid
81	(79.8 - 99.5 1.37 mins/fi		GM SM GM	7.4 7.07.07.07.07.4 7.07.07.07.07.07.07.07.07.07.07.07.07.07	(79.8 - 99.5') 16.0" Steel Casing	full geologic descriptions) (80.0 - 86.5') Topock - Alluviun Deposits; Silty gravel with sand (GM); brown (7.5YR 5/4) (86.5 - 88.0') Topock - Alluviun Deposits; Silty sand with grave (SM); brown (7.5YR 5/4) (88.0 - 91.0') Topock - Alluviun Deposits; Silty sand with grave (SM); brown (7.5YR 5/4) (91.0 - 97.0') Topock - Alluviun Deposits; Silty gravel with sand (GM); yellowish brown / moderate yellowish brown (10YR 5/4) (97.0 - 98.5') Topock - Alluviun Deposits; Silty gravel with grave (SM); brown (7.5YR 5/4)	(90.0') Observed trace amou Lapis Luster Sand in drill cut (92.0 - 95.0') Soft drilling	unts of Cemex #3 Mesh (8x20) titings.	
-			SM			Deposits; Silty sand with grave (SM); brown (7.5YR 5/4) (98.5 - 100.5') Topock -	i		
	(99.5 - 119.4		GM						(99.5 - 119.4') 150
100	`1.90 mins/ft	'		12 X Y J	Ol:f: ''	,	il .	-11	,
Abbre	viations: U	SUS:	= Unif	iea Soil	∪ıassıtıcatıon	System, it = feet, bgs = b	elow ground surface, ams	sı = above mean sea lev	ei, GVV =

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, NR = no recovery; Notes: depth to water collected during the first VAS sample of the pilot borehole

	ARCA			sign & Consultani natural and lt assets		Drilling Log				Sheet:	6 of 7
	Started:		/25/202			ace Elevation:	502.111		Borin	g No.: <u>IR</u>	<u>Z-31</u>
	Completed:			20		ning (NAD83):	210194				
-	Co.: Method:		scade al Rota	r. /		ing (NAD83): I Depth:	7615789 128.8 ft		_ Client: _ Project:	PG&E	emedy Phase 1
-	g Type:			DR-24F		ductor Casing Diameter:		-	_ Froject. _ Location:		•
	Name:		n Martir			Casing Diameter:	16 inche		_ Location.	<u>California</u>	<u> </u>
	Asst:			nezguita				7.5 Tricone	_ _ Project N	umber: RC00	0753.0051
ool-P	usher:		<u>Lamon</u>	-		h to First Water:	47.3 ft b	gs	_		
₹ig Ge	eologist:	Elle	en Red	ner	Con	verted to Well:	× Yes	No			
Depth (ft)	Drilling Run and Averag Penetration F	je	USCS Code	USCS Class	Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilli	ng notes and observa temporary backfill r			Drilling Fluid
_101			GM			(100.5 - 107.0') Topock - Alluvium Deposits; Well gravel gravel with sand (GW); yellowish brown / moderate	Lapis	') Observed trace am Luster Sand in drill co		x #3 Mesh (8x20)	gallons of water used; 1510 gallons of water recovered; 1360 gallor of water gained
_102						yellowish brown (10YR 5/4) (102') brown (7.5YR 5/4)		:5			
_103 - _104_			GW					1,			
- _105							3				
_ _106								17			
- 107 -						(107.0 - 114.0') Topock - Alluvium Deposits; Silty grave					
_108						with sand (GM)	15				
_109 - _110	(99.5 - 119.4 1.90 mins/ft				(99.5 - 119.4') 16.0" Steel						
111			GM		Casing		Mesh	') Observed little to s (8x20) Lapis Luster S - 119.0') Soft drilling	Sand in drill cutt	of Cemex #3 ings.	
- _112_						(111.5') grayish brown (10YR 5/2) (112') brown (7.5YR 5/4)					
- _113_ _											
_114						(114.0 - 120.3') Topock - Weathered Bedrock - conglomerate: Silty sand with					
_115 - 116						gravel (SM); reddish brown (2.5YR 4/4)					
_116 - _117_			014								
			SM								
119											
100	(119.4 - 128.8										(119.4 - 128.8') 70
120 \bbre	2.66 mins/ft viations: U		S = Unif	ied Soil	Classification	System, ft = feet, bgs =	pelow are	ound surface. am	ısl = above r	nean sea leve	gallons of water used; I, GW =
						water collected during th					

9/	ARCA	DIS	Design & Consultant for natural and built assets	су	Drilling Log			Sheet:	7 of 7		
Date S	Started:	02/25/20	020	Surfa	ace Elevation:	502.11 ft amsl	Borine	g No.: <u>IRZ</u>			
Date 0	Completed:	02/27/20	020	North	ning (NAD83):	2101940.23	Domi	9 140 <u>1142</u>	<u>0 i</u>		
Drilling	g Co.:	Cascade	<u>e </u>	Easti	ng (NAD83):	7615789.13	Client:	PG&E			
Drilling	Method:	Dual Ro	tary		•	128.8 ft bgs	Project:	medy Phase 1			
	ig Type:		st DR-24F		ductor Casing Diameter:						
	Name:	Jon Mar			•	16 inches <u>California</u>					
Drilling			<u>Amezguita</u>			15.5 & 17.5 Tricone	Project Nu	ımber: RC000	0753.0051		
	Pusher:	A. Lamo		=		47.3 ft bgs					
Rig G	eologist:	Ellen Re	dner	Con\	verted to Well:	× Yes No					
Depth (ft)	Drilling Run and Averag Penetration F	ie Cod		Casing Diameter	Description (See Pilot boring log for full geologic descriptions)	Drilling notes and observation temporary backfill ma	aterial in drill c	uttings	Drilling Fluid		
 121 _122_					(120.3 - 128.8') Topock - Competent Bedrock - conglomerate; brown (7.5YR 5/4)	. (120.0') Observed trace amo and Cemex #2/12 Mesh (16x cuttings. Cuttings are represe previous 5 feet of drilling.	30) Lapis Lust	er Sand in drill	1070 gallons of water recovered; 1000 gallons of water gained		
_ 123_						113					
	(119.4 - 128.8 2.66 mins/ft			(119.4 - 128.8') 16.0" Steel							
125	2.00 111113/10	ш		Casing		P (
126		ш									
126_ 126_ 127_ 127_		ш									
128_ 128_		ш				(128.0') Observed trace amo (16x30) Lapis Luster Sand in		c#2/12 Mesh			
္ခ ို129			_//>///		End of Boring at 128.8 ft bgs.						
130											
131											
132											
133_											
135											
136_											
VO XOOGOUNEZ 97 21/93 14 1 1 1 3 1 1 3 3 1 1 3 3 1 1 3 4 1 1 3 1 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3 4 1 3											
5											
140											
SAbbre	Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW =										
ground	dwater, NR	= no rec	overy; No	tes: depth to	water collected during the	e first VAS sample of the pi	lot borehole	e			

9/	ARC	CADIS	Design & Consultancy for natural and built assets		Во	ring	Log]		She	et: 1 of	7
	Started:		2020		Surface	Elevat	ion:	502.11 ft amsl	Borin	a No .	IRZ-31 P	ilot
Date C	Comple	ted: <u>01/10/2</u>	2020		Northing	g (NAD	83):	2101940.23	Вотп	g 110	1112 011	<u>110 t</u>
Drilling		Cascac			Easting	•	33):	7615789.13	Client:	PG&E		
Drilling					Total De	•		127 ft bgs	Project:		N Remedy Pl	
Drill Ri			ongyear Trac	k Mount				6-10 inches	Location:		opock, Need	les,
	Name:							47.3 ft bgs	D!4 N	Californi		\
Drilling		J. Cand Joe Lat	delaria / F. Sa	indovai	Samplin	-		4 inch x 10 ft Core Barrel	Project N	umber: <u>I</u>	RC000753.00)51
Logge Editor:		Grant V			Convert	-		Continuous	•			
Laitor.		<u>Orant v</u>	VIIIIOIG				V CII.					
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	Code	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
	0				NR			0') No recovery (NR); see drilling note			(0.0 - 8.0') Core not collected during the installation of 10-inch conductor casing to 8 ft. bgs.	(0.0 - 127.0') No water used
9 — 9 — 10 — 11 — 11 — 11 — 11 — 11 — 11				1	0		sand (C 5/4); gra fine to v	7.0°) Topock - Alluvium Deposits; Wel BW); yellowish brown / moderate yello anules to very large pebbles, angular t ery coarse grained sand, angular to s ay; little coarser clasts composed of n	wish brown (′ o subround; a ubround; trac	I0YR and very e silt;	(8.0 - 22.0') Normal drilling	
12				Topock -								
13	108			Alluvium Deposits	GW							
14												
15						X						
<u> </u>							1					
16						20	9					
<u> </u>												
17							(17.0	27.0') Topock - Alluvium Deposits; Silt	v sand with a	ravel		
	120			Topock - Alluvium Deposits	SM		(SM); ye very find some g trace cl	27.0) Topock - Alluvium Deposits, Sin ellowish brown / moderate yellowish be e grained to very coarse grained, angu ranules to large pebbles, angular to si ay; some coarser clasts composed of ron oxide staining	rown (10YR 5 lar to subrou ıbround; little	5/4); nd; silt;		
20												
	viations	: USCS = U	Inified Soil Cl	assificatio	n System	n, ft = fe	et, bgs	s = below ground surface, ams	above	mean sea	a level, GW =	

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS interval; apparent partial recoveries can be the result of potential compaction of sediments in the core bag

9/-	۱RC	ADIS	Design & Consultancy for natural and built assets		Во	ring Lo	g	Sh	neet: 2 of	7
Date S					Surface	Elevation:	502.11 ft amsl	Boring No.	: IRZ-31 P	ilot
		ted: <u>01/10/2</u>				(NAD83):	2101940.23	_		
Drilling		Cascad			_	(NAD83):	7615789.13	_ Client: PG&E		
Drilling			•		Total De	•	127 ft bgs		SW Remedy Ph	
Drill Ri			ongyear Trac				6-10 inches	Location: PG&E	-	les,
Driller I		Eddie F	kamos lelaria / F. Sa				: 47.3 ft bgs 4 inch x 10 ft Core Barrel	_ <u>Califor</u> _ Project Number:		NE 1
Drilling Logge		Joe Lat			-	g Method: g Interval:	Continuous	_ Project Number.	KC000755.00	131
Editor:		Grant V			-	ed to Well:		_		
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	Class	Soil Description		Drilling Notes	Drilling Fluid
21	120			Topock - Alluvium Deposits	SM		- 31.0') Topock - Alluvium Deposits; Wo		(22.0 - 25.0') Soft drilling (25.0 - 112.0') Rough drilling	
28 29 30 31				Topock - Alluvium Deposits	SW-SM	silt an fine gi clay; s	d gravel (ŚW-SM); dark yellowish brow ained to very coarse grained, angular test to large pebbles, angular to subang some coarser clasts composed of meta	n (10YR 4/4); very o subangular; and ular; little silt; trace diorite ell graded gravel with		
32 33 34 35 36 37	120			Topock - Alluvium Deposits	GW	5/4); coars	GW), yellowish brown / moderate yello granules to large pebbles, angular; and e grained sand, angular to subround; tra parser clasts composed of metadiorite;	very fine to very ace silt; trace clay;		
38 39 40 Abbrev	120 viations	s: USCS = U	nified Soil Cla	assification	GW-GM System	<u> </u>	- 44.0') Topock - Alluvium Deposits; Wo		ea level, GW =	

groundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS interval; apparent partial recoveries can be the result of potential compaction of sediments in the core bag

Date Started: 01/07/2020 Surface Elevation: 502.11 ft ams Boring No.: IRZ- Date Completed: 01/10/2020 Northing (NADB3): 2101940.23 Drilling Co.: Cascade Easting (NADB3): 2101940.23 Drilling Method: Sonic Drilling Total Depth: 127 ft bgs Project: Final GW Reme Drill Rig Type: Boart Longyear Track Mount Borehole Diameter: 6-10 inches Location: PG&E Topock. Driller Name: Depth to First Water: 47.3 ft bgs Qalifornia Joe Latham Sampling Method: Sampling Method: Sampling Method: Sampling Method: Sampling Method: Sampling Method: Qalifornia Sampling Interval: Continuous Soli Description Drilling N Topock Allowum Deposits GW-GM Allowum Deposits Mallowum Deposits IRZ-31-SS-34-SS-30 1/12/2020 1/2/2020	of 7
Date Completed: 01/10/2020 Northing (NAD83): 2101940.23 Total Depth: Total Depth: 127 ft bgs Project: Final GW Reme Project: Proje	31 Pilot
Total Depth: 127 ft bgs Project: Final GW Reme Borehole Diameter: 6-10 inches Location: PG&E Topock, Tilling Asst: J. Candelaria / F. Sandoval Ogger: Joe Latham Sampling Method: A inch x 10 ft Core Barrel Continuous Grant Willford Converted to Well: Yes No Soil Description Topock-Alluvium Deposits GW-GM Topock-Alluvium Deposits At 120 At 120	
Property Boart Longyear Track Mount Borehole Diameter: 6-10 inches Location: PG&E Topock California Project Number: RC0007 RC00	
priller Name: Eddie Ramos	-
Sampling Method: 4 inch x 10 ft Core Barrel Project Number: RC0007 Sampling Interval: Continuous Sampling Interval: Continuous Sampling Interval:	Needles,
Sampling Interval: Converted to Well: Yes No Soil Description Drilling N Soil Description Drilling N Soil Description Soil Description Drilling N Soil Description Soil Description Drilling N Soil Description Drilling N Soil Description Soil Description Drilling N Soil Description Drilling N Soil Description Soil Description Drilling N Soil Description Drilling N Soil Description Soil Description Soil Description Soil Description Drilling N Soil Description Soil Description Soil Description Drilling N Soil Description Soil Description Soil Description Soil Description Drilling N Soil Description Soil Description Soil Description Drilling N Soil Description Soil Description Soil Description Drilling N Soil Description Soil Description Drilling N Soil Description Soil Description Soil Description Drilling N Soil Description Soil Description Soil Description Soil Description Drilling N Soil Description Soil Description Soil Description Soil Description Soil Description Drilling N (43): iron oxide staining: 2-inch lense of light gray material, decrease in granules and pebbles, increase in sand (43): iron oxide staining: 2-inch lense of light gray material, decrease in granules and pebbles, increase in sand (43): iron oxide staining: 12-inch lense of light gray material, decrease in sand (43): iron oxide staining: 12-inch lense of light gray material, decrease in sand (43): iron oxide staining: 12-inch lense of light gray material, decrease in sand (43): iron oxide staining: 12-inch lense of light gray material, decrease in granules and pebbles, increase in sand (43): iron oxide staining: 12-inch lense of light gray material, decrease in sand (43): iron oxide staining: 12-inch lense of light gray material, decrease in sand (43): iron oxide staining: 12-inch lense of	53 0051
Converted to Well: Yes No	00.0001
silt and sand (GW-GM); brown (10YR 5/3); granules to large pebbles, angular to subangular; some very fine to very coarse grained sand, angular to subangular; some very fine to very coarse grained sand, angular to subangular; some very fine to very coarse grained; silt ecarser clasts composed of metadiorite; dry to moist; iron oxide staining 42	
pebbles, angular to subangular; some very fine to very coarse grained sand, angular to subangular; ittle selt; trace clay; trace mica; little coarser clasts composed of metadiorite; dry to moist; iron oxide staining [43]	otes Drilling Flu
Alluvium Deposits Alluvium Deposits GW-GM (43'); iron oxide staining; 2-inch lense of light gray material, decrease in granules and pebbles, increase in sand (44.0 - 46.0') Topock - Alluvium Deposits; Silty sand with gravel (SM); brown (7.5 YR 5/4); fine grained to very coarse grained, subangular to subround; some granules to medium pebbles, angular, little silt; some coarser clasts composed of metadiorite; dry to moist (47.0 - 6.0') Topock - Alluvium Deposits; Silt with gravel (ML); brown (7.5 YR 5/4); no plasticity, some granules to very large pebbles, angular to subangular; little clay; little coarser clasts composed of metadiorite; dry to moist; iron oxide staining only a produce of metadiorite; dry to moist; iron oxide staining oxide staining oxides and subangular; little clay; little coarser clasts composed of metadiorite; dry to moist; iron oxide staining oxides and subangular; little clay; little coarser clasts composed of metadiorite; dry to moist; iron oxide staining oxides and subangular; little clay; little coarser clasts composed of metadiorite; dry to moist; iron oxide staining oxides and subangular; little very fine to very coarse grained subangular; little very fine to very coarse grained subangular; little very fine to very coarse grained, subangular; little very fine to very large grained to very large produce dry to moist; little very fine to very large produce dry to moist; little very fine to very large produce dry to moist; little very fine to very large produce dry to moist; little very fine to very large produce dry to moist; little very fine to very large produce dry to moist; little very fine to very large produce dry to moist; little very fine to very large produce dr	
decrease in granules and pebbles, increase in sand 44	
Topock - Alluvium Deposits SM RZ-31-SS- 45-50 1/12/2020 08:28 RZ-31-VAS- 48-53 (2000 ppb) RZ-31-VAS- 48-53 (2000 ppb) RZ-31-VAS- 48-53 (2000 ppb) RZ-31-VAS- 48-53 (2000 ppb) RZ-31-VAS- Alluvium ML RZ-31-VAS- 48-53 (2000 ppb) RZ-31-VAS- Alluvium ML RZ-31-VAS- 48-53 (2000 ppb) RZ-31-VAS- Alluvium ML RZ-31-VAS- Alluvium ML RZ-31-VAS- 48-53 (2000 ppb)	
IRZ-31-SS-45-50 1/12/2020 08:28 IRZ-31-VAS-48-53 (2000 ppb) Alluvium ML ML (46.0 - 55.0') Topock - Alluvium Deposits; Silt with gravel (ML); brown (7.5YR 5/4); no plasticity, some granules to very large pebbles, angular to subangular; little very fine to very coarse grained sand, angular to subangular; little clay; little coarser clasts composed of metadiorite; dry to moist; iron oxide staining (47.0 - 5	
45-50 1/12/2020 08:28 IRZ-31-VAS- 48-53 (2000 ppb) Alluvium ML Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining Ocomposed of metadiorite; dry to moist; iron oxide staining	
	er ´ tion ent for
IRZ-31-VAS- 48-53	
51 Deposits Opposits Opposits	
15:45	
IRZ-31-SS- 50-55 1/12/2020 08:36	
_55	
Topock - Alluvium Deposits Topock - Alluvium Deposits Alluvium Deposits Topock - Alluvium Deposits Topock - Alluvium Deposits Topock - Alluvium Deposits Alluvium Deposits Topock - Alluvium Deposits	
18Z-31-SS-55-60 Topock - Alluvium Deposits; Poorly graded sand with silt and gravel (SP-SM); brown (7.5YR 5/4); very fine grained to Alluvium Deposits (SP-SM); brown (7.5YR 5/4); very fine grained to SP-SM fine grained, subangular to subround; some granules to large pebbles, angular; little silt; some coarser clasts composed of	
120 120 Topock - Alluvium Deposits GM De	
60 metadiorite; dry to moist; iron oxide staining Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, G	 SW =
proundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS into	
partial recoveries can be the result of potential compaction of sediments in the core bag	, аррагон

9/	AR (CADIS	Design & Consultancy for natural and built assets		Во	ring Lo	g	S	neet: 4 of	7
	Started					Elevation:	502.11 ft amsl	Boring No	.: IRZ-31 P	Pilot
	•	ted: <u>01/10</u>			-	g (NAD83):	2101940.23			
rilling		Casca			_	(NAD83):	7615789.13	Client: PG&E		
_	Metho		Drilling		Total De	•	127 ft bgs	•	GW Remedy P	
	g Type		Longyear Trad	ck Mount			6-10 inches	Location: PG&E	•	lles,
	Name:		Ramos			First Water:		Çalifor		
_	Asst:	<u>J. Car</u>	<u>ndelaria / F. Sa</u>	andoval	•	•	4 inch x 10 ft Core Barrel	Project Number:	RC000753.00	051
.ogge			atham		•	g Interval:	Continuous	-		
ditor:		<u>Grant</u>	Willford		Convert	ed to Well:				
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	Code	USCS	Soil Description		Drilling Notes	Drilling FI
					GM					
61				Topock - Alluvium	SW-SM		61.0') Topock - Alluvium Deposits; We V-SM); brown (7.5YR 5/4); very fine gra			
				Deposits		P X M graine	d, angular to subround; little gran <mark>ule</mark> s t	medium pebbles,		
62_							r to subangular; little silt; trace coarser orite; moist to wet	clasts composed of		
.02		IRZ-31-SS- 60-65				(61.0 -	67.0') Topock - Alluvium Deposits; Silt	y gravel with sand		
62		1/12/2020				To sub	brown (7.5YR 5/4); granu <mark>les to very l</mark> ar angular; some very fine to very coarse (grained sand,		
.63		09:01				subang	gular to subround; some silt; some coa			
_	120			Topock -		Compc	sed of metadionte, moist to wet			
.64				Alluvium Deposits	GM	PSTOL				
-				Deposits						
65										
-						649				
66						k Pid				
_										
67		IRZ-31-SS-					00 00 T	1 20		
_		65-70		Topock - Alluvium	SM		68.0') Topock - Alluvium Deposits; Silt brown (7.5YR 5/4); very fine grained to			
68		1/12/2020 09:13		Deposits	Oivi	angula :	r to subround; some granules to very la	arge pebbles, angular		
						to sub metad	angular; some silt; some coarser clasts orite; moist; iron oxide staining	s composea or	1	
- 69						(68.0 -	74.5') Topock - Alluvium Deposits; Silt	y gravel with sand		
-						p to sub	brown (7.5YR 5/4); granules to very lar angular; some very fine to very coarse (grained sand,		
70_						angula metad	r to subround; some silt; some coarsei orite; trace mica; wet	clasts composed of		
/ 0						19H	,			
- -										
71_				Topock - Alluvium	GM	Porter				
-				Deposits						
72	120	IRZ-31-SS-								
_		70-75 1/12/2020				172 EN	dry to moist			
73		09:20				P (12.3)	, ary to moist			
_						[3]				
74			IRZ-31-VAS-			(73.5')	greenish gray (GLEY1 5/5GY); dry			
			72-77			Palas] [
75_			(480 ppb) 1/9/2020				78.5') Topock - Alluvium Deposits; Silf brown (7.5YR 5/4); granules to very lar			
			13:10			to sub	angular; some very fine to very coarse	grained sand,		
- 76							gular to subround; little silt; some coars adiorite; wet; iron oxide staining	ser clasts composed		
. 5_				Topock -	0	k 41d	·			
77				Alluvium Deposits	GM					
77		IRZ-31-SS-								
-		75-80 1/12/2020				尚 到				
78_		09:35								
-	120					(78.5 -	80.0') Topock - Alluvium Deposits; We	ell graded sand with		
79_				Topock -	0)4/ 01:	silt and	l gravel (SW-SM); brown (7.5YR 5/4); l	ine grained to very		
-				Alluvium Deposits	SW-SM	[。・。・。[ۥ 。。] pebble	grained, angular to subround; some g s, angular; little silt; some coarser clas			
80				·		metad	orite; wet	·		
							s = below ground surface, ams			
			· · · · · · · · · · · · · · · · · · ·				to water measured during the o	collection of the fire	st VAS interval;	apparen
artial	recove	eries can be	the result of p	otential co	mpactio	n of sedimen	s in the core bag			

82 RZ-31-SS-	9/	٩R	CADIS	Design & Consultancy for natural and built assets		Во	ring	Log	Sho	eet: 5 of	7	
Allowing Sample Deposits SM Deposits SM Deposits SM process Allowing Deposits Silly and with gravet and process of the surround state of the surround states of	Date S	Started	: <u>01/07/</u>	2020		Surface	Elevat	on: <u>502.11 ft amsl</u>	Boring No.:	: IRZ-31 P	Pilot	
Total Depth: 127 ft logs Project: Final GW Remedy Phase 5.00 in characteristics and the project of the project	Date C	Comple	eted: <u>01/10/</u>	2020		Northin	g (NAD	•	_			
Big Property Boart Longyear Track Mount, Boreholo Diameter: 6-10 inches Location: PG&E Topock, Needles, Filling Asst. J. Candelaria / F. Sandoval Sampling Method: 4.7.0 ft Dps Location: Converted to Well: X yes No						_	•	,				
Folder Samos Depth to First Water: 47.3 ft bgs California California Cantellaria / E. Sandoval Sampler Depth to First Water: 47.3 ft bgs California Cantellaria / E. Sandoval Sampler Depth to First Water: 47.3 ft bgs California Cantellaria / E. Sandoval Sampler Depth to First Water: 47.3 ft bgs California Cantellaria / E. Sandoval Sampler Depth to First Water: 47.3 ft bgs Cantellaria / E. Sandoval Sampler Depth to First Water: 47.3 ft bgs Cantellaria / E. Sandoval Sampler Depth to First Water: 47.3 ft bgs Cantellaria / E. Sandoval Sampler Depth to First Water: 47.3 ft bgs Cantellaria / E. Sandoval Sandova							•	•	_ Project: Final GW Remedy Phase 1			
A Candelaria / F. Sandova Sampling Interval Continuous Sampling Interval									•			
Sample ID Grant Willford Grant Willford Converted to Well: Yes No Soil Description Soil Description Drilling Notes Drilling File Soil Description Drilling Notes Drilling Notes Drilling File (GM), brown (7.5YR 54), granulas to way large jeeches, angular, suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic well, increased and suits, some coarser death composed of metadottic, suits, suits								<u> </u>				
dition: Grant Willford Converted to Well: Yes No Coundwater See Sample ID Coundwater See Semple ID Coundwater See Semple ID Sample ID Semple ID S	Ŭ	•	<u> </u>			•	•		Project Number:	RC000753.00)51	
See Sample ID Groundwater Sample ID Groundwa						•	•					
RZ_31-SS 1722/20 172	:altor:		Grant	VV IIITOra		Conven	ed to v	/ell: X Yes No				
RZ_31-SS-	Depth (ft)	Recovery (in)			Geologic Formation	USCS	USCS			Drilling Notes	Drilling Flui	
RZ-31-SS	82 82 83	120	80-85 1/12/2020		Alluvium	GM		(GM); brown (7.5YR 5/4); granules to very large some fine to very coarse grained sand, angular silt; some coarser clasts composed of metadic staining	e pebbles, angular; r to subround; some			
RZ-31-SS RS-80 1/12/2020 1/22/2020	_							(64), dry to moist				
SM, jsrown (7.5YR 5/4), yer fine grained to very coarse grained, subangular to subround; some small to very large pebbles, angular to round, little silt; trace small cobbles; moist; iron oxide staining SM SM SM SM SM SM SM S	-		85-90 1/12/2020		Alluvium	SM		(SM); brown (7.5YR 5/4); very fine grained to wangular to subround; some granules to large pusubround; little silt; some coarser clasts compound	ery coarse grained, ebbles, angular to osed of metadiorite;			
92 120 RZ-31-SS-9.95 170,000 170,000 RZ-31-SS-9.95 170,000 170,000 RZ-31-SS-9.95 170,000 170,000 RZ-31-SS-9.95 170,000 170,0	_ _90					Alluvium	SM		(SM); brown (7.5YR 5/4); very fine grained to w subangular to subround; some small to very lar angular to round; little silt; trace small cobbles;	ery coarse grained, rge pebbles,		
IRZ-31-SS-95-100 1/12/2020 09:53 Topock - Alluvium Deposits; Silty sand with gravel (SM); brown (7.5YR 5/4); very fine grained to very coarse grained, subangular to subround; little coarser clasts composed of metadiorite; moist to wet; iron oxide staining Topock - Alluvium Deposits; Silty gravel with sand (GM); brown (7.5YR 5/4); granules to very large pebbles, angular to subround; little silt; some coarser clasts composed of metadiorite; to subangular; and very fine to very coarse grained sand, subangular to subround; little silt; some coarser clasts composed of metadiorite; trace mica; moist; iron oxide staining bbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = roundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS interval; apparent	 _92 _93	120	90-95 1/12/2020		Alluvium	GM		(GM); yellowish brown / moderate yellowish brogranules to very large pebbles, angular to subfine to very coarse grained sand, angular to sul	own (10YR 5/4); ound; some very bround; some silt;			
95-100 1/12/2020 09:53 Topock - Alluvium Deposits SM Deposits SM Deposits SM Deposits (SM); brown (7.5YR 5/4); very fine grained to very coarse grained, subangular to subround; little coarser clasts composed of metadiorite; moist to wet; iron oxide staining (GM); brown (7.5YR 5/4); very fine grained to very coarse grained, subangular to subround; little coarser clasts composed of metadiorite; moist to wet; iron oxide staining (GM); brown (7.5YR 5/4); granules to very large pebbles, angular to subangular; and very fine to very coarse grained sand, subangular to subround; little silt; some coarser clasts composed of metadiorite; trace mica; moist; iron oxide staining bbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = roundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS interval; apparent	 _96 _97		IRZ-31-SS-					(07.0 08 5") Topock Allumium Donosites Cite	cand with are al			
Topock - Alluvium Deposits; Silty gravel with sand (GM); brown (7.5YR 5/4); granules to very large pebbles, angular to subrangular; and very fine to very coarse grained sand, subangular to subround; little silt; some coarser clasts composed of metadiorite; trace mica; moist; iron oxide staining bbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = roundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS interval; apparent	_98	120	95-100 1/12/2020		Alluvium	SM		(SM); brown (7.5YR 5/4); very fine grained to visubangular to subround; some silt; little granulangular to subround; little coarser clasts compmoist to wet; iron oxide staining	ery coarse grained, es to large pebbles, osed of metadiorite;			
roundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS interval; apparent	100				Alluvium Deposits		P P	(GM); brown (7.5YR 5/4); granules to very large to subangular; and very fine to very coarse grai subangular to subround; little silt; some coarse of metadiorite; trace mica; moist; iron oxide sta	e pebbles, angular ined sand, er clasts composed aining			
artial recoveries can be the result of potential compaction of sediments in the core bag			· · · · · · · · · · · · · · · · · · ·					<u> </u>	ollection of the first	t VAS interval;	apparent	
	artial	recove	eries can be	the result of p	otential co	mpactio	n of se	diments in the core bag				

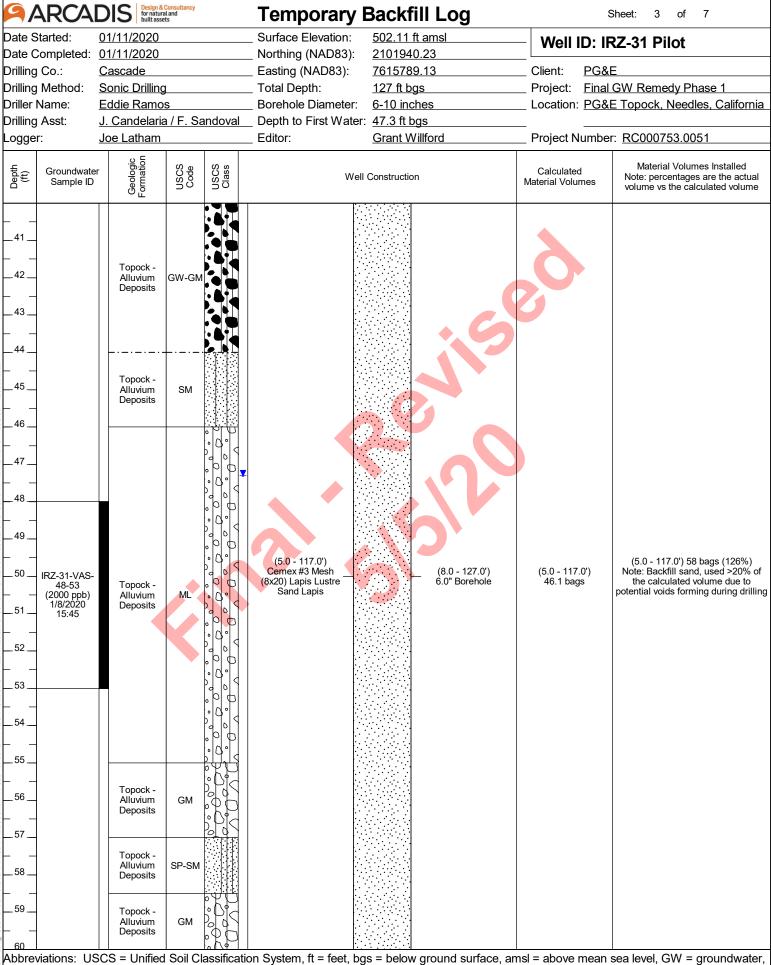
9/	4RC	CADIS	Design & Consultancy for natural and built assets		Во	ring	Log	Sh	eet: 6 of	7
	Started	·		8	Surface	Elevat	ion: <u>502.11 ft amsl</u>	Boring No.	: IRZ-31 P	ilot
	•	ted: <u>01/10/2</u>			Northin		•		· <u></u>	
Drilling		Cascad			Easting	•	•	Client: PG&E		
Drilling					Total De	•	127 ft bgs	•	W Remedy Ph	
Drill Ri			ongyear Trad					Location: PG&E	•	les,
Driller Drilling			delaria / F. Sa		Depth to		•	<u>Califor</u> Project Number:)51
Logge		Joe La			Samplin	-		Floject Number.	KC000733.00)
Editor:		Grant V			Convert	•		-		
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic	USCS	USCS Class	Soil Description		Drilling Notes	Drilling Fluid
					GM	PX.				
101 102		IRZ-31-SS-					(100.5 - 107.0') Topock - Alluvium Deposits; \ with sand (GW); yellowish brown / moderate (10YR 5/4); granules to very large pebbles, at and very fine to very coarse grained sand, sut subround; trace silt; some coarser clasts commetadiorite; trace mica; dry to moist; iron oxic	yellowish brown ngular to subangular; pangular to nposed of		
	120	100-105 1/12/2020 09:58	1P7 04 1/4 0	Topock - Alluvium	GW		(102') brown (7.5YR 5/4); moist	3		
104_			IRZ-31-VAS- 102-107 (2300 ppb) 1/10/2020	Deposits						
= _103_			10:35							
106							(105.5'); dry to moist			
						Ye				
107		ID7 24 CC								
108_ 108_ 109_		IRZ-31-SS- 105-110 1/12/2020 10:10			0		(107.0 - 114.0') Topock - Alluvium Deposits; S (GM); granules to very large pebbles, angular very fine to very coarse grained sand, angular silt; some coarser clasts composed of metad moist to wet; iron oxide staining (108.5'); dry to moist	to subround; some to subround; little		
110	- 120	ID7 24 99		Topock - Alluvium Deposits	GM		(109.5'); dry (111.5') grayish brown (10YR 5/2); dry			
		IRZ-31-SS- 110-115 1/12/2020				GA P	(112') brown (7.5YR 5/4); dry to moist		(112.0 - 114.0')	
113		10:13				[6]			Drill rods chattering	
						139				
114				<u> </u>			(114.0 - 120.3') Topock - Weathered Bedrock		(114.0 -	
	-						Silty sand with gravel (SM); reddish brown (2. grained to very coarse grained, subangular to	5YR 4/4); very fine subround; some	120.0') Soft drilling	
115							granules to very large pebbles, angular to sub some coarser clasts composed of metadiorite	pangular; little silt;		
				Topock -			staining (115'); wet	s, most, non oxide		
_117		IRZ-31-SS-	IRZ-31-VAS-	Weathered Bedrock -	SM					
		115-120 1/12/2020	115-120 (2500 ppb) 1/11/2020	conglomerate			(117.5'); moist			
118		10:15	1/11/2020							
	120									
[119										
120										
	viations	s: USCS = L	Inified Soil Cl	assification	System	n, ft = fe	eet, bgs = below ground surface, ams	sl = above mean se	ea level, GW =	•

Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS interval; apparent partial recoveries can be the result of potential compaction of sediments in the core bag

9/	\R(ADIS	Design & Consultancy for natural and built assets		Во	ring	Log			She	et: 7 of	7
Date S					Surface				Borin	a No.:	IRZ-31 P	ilot
	•	ted: <u>01/10/</u>			Northing		•					
Drilling		Casca			Easting				Client: Project:	PG&E		
Drilling			Drilling		Total Depth: 127 ft bgs						N Remedy Ph	
Drill Ri			Longyear Tra						Location:		opock, Need	les,
Driller			Ramos		-		Vater: 47.3 ft bgs	lana Dannal	Dunin at Ni	Californi		
Drilling		<u>J. Can</u> Joe La	delaria / F. Sa		Samplin Samplin	-		ore Barrei	Project N	umber: <u>I</u>	RC000753.00	51
Logge Editor:			Willford		Convert	-		0				
Luitor.		Oldit	T				7CII. 1. 103 114					
Depth (ft)	Recovery (in)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS	Sc	oil Description			Drilling Notes	Drilling Fluid
121					+		(120.3 - 127.0') Topock - Co brown (7.5YR 5/4); dry, frial	ompetent Bedrock - ble, pulverized	conglomera	te;	(120.0 - 122.0') Drill rods chattering	
122							•	5			(122.0 - 127.0') Rough drilling	
123				Topock -							, tought dilling	
-	120			Competent Bedrock -								
124				conglomerate	•							
125												
120												
127_							End of B	Boring at 127.0 ft bgs	e .			
								ornig at 121.0 it by				
129 129			•				6					
130												
.80.20\td>0.20			X									
132			•									
133												
136												
137												
T38_												
5000139												
140 Abbrev	viations	· 11808 - 1	Inified Soil C	assification	Systom	ft – fa	et has = helow aroun	d surface amal	= abovo r	nean so	a level CM -	
(D)	Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, NR = no recovery; Notes: depth to water measured during the collection of the first VAS interval; apparent											
							diments in the core bag				intorval,	
ш												

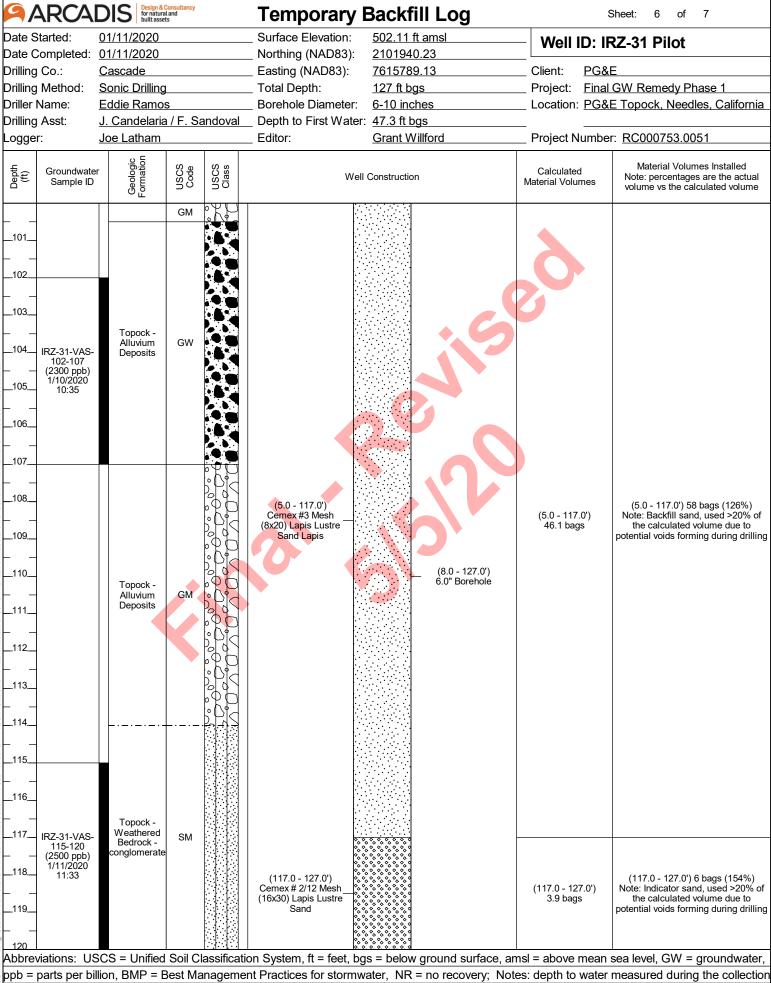
	9/	ARCA	DIS Design for national built as	& Consultancy ural and ssets		Temporary I	Backfill Log	;	Sheet: 1 of 7		
Deling Abthor Commission								Well ID: II	RZ-31 Pilot		
Delling Method: Sonic Dilling Asset: Eddie Ramos Brothelo Biameter Eddie Ramos Brothelo Biameter Eddie Ramos Delling Asset: J. Candelaria / F. Sandoval Depote Eddior: Candelaria / F. Sandoval Depote Project Number RC00753.0051		-				- , ,					
Defer Name: Defer Name: Defer Support Defer Name: Defer Support Defer Name: Defer Support Defer Name:	1 -					- '					
Deling Asset: J. Candeleriar J.F. Sandoval Logger: Job Latham Depth to First Welter: 4.7.3 ft tops Grant Willford Project Number: RC000753,0051 Well Constitution Well Constitution Meterial Volumes Installed Notice percentages are the actical Scheme protectages are the actical Meterial Volumes Note: Storing Plate 1	_			-		•	_	-			
Logger Log Log Lambar Editor: Grant Wilford Project Number RC000753,0051					andoval						
Note: Steel plates with BAPP in place Note: Steel plates with BAPP in plates Note: Steel plates with BAPP in place Note: Steel plates Note: Steel plates with BAPP in place Note: Steel plates	_						-	Project Numbe	Project Number: RC000753.0051		
1	Depth (ft)		Geologic	USCS	USCS Class	Well	Construction		Note: percentages are the actual		
2 2 3 3 4 5 5 7) S bags (12%) Note: Surface seal sand NR (40770) Japa Lustre (40770) Japa Lustre (50 - 117.0) S bags (12%) Note: Surface seal sand NR (50 - 117.0) S bags (12%) Note: Surface seal sand (10 - 8.0) 4.9 bags (12%) Note: Surface seal sand (10 - 8.0) 4.9 bags (12%) Note: Surface seal sand (10 - 8.0) 4.9 bags (12%) Note: Surface seal sand (10 - 8.0) 5.5 bags (12%) Note: Surface seal sand (10 - 8.0) 6.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (10 - 10.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (10 - 10.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (10 - 10.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (10 - 10.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (10 - 10.0 bags (12%) Note: Surface seal sand (10 - 8.0) 7.0 bags (10 - 10.0 bags (12%) Note: Surface seal sand (10 - 10.0 bags (10 - 10.0 bags (12%) Note: Surface seal sand (10 - 10.0 bags (10 - 10.0 bags (12%) Note: Surface seal sand (10 - 10.0 bags (10 - 10.0						(0.0 - 0.5') Steel Plate	~ ~ ~ ~ ~ ~ ° °				
Topock Alluvium GW Cornex #3 Mesh (8.0 - 117.0') 6.0' Borehole Go.0' Borehole	_ 3 _ _ 3 _ 4 _ 4 _			NR		Cemex #60 Mesh \$\circ\cdot\cdot\cdot\cdot\cdot\cdot\cdot\cdo	(0.0 - 8.0') 10.0" Borehole	(0.5 - 5.0') 4.9 bags	(0.5 - 5.0') 5 bags (102%) Note: Surface seal sand		
	7		Alluvium Deposits Topock - Alluvium			(8x20) Lapis Lustre		(5.0 - 117.0') 46.1 bags	(5.0 - 117.0') 58 bags (126%) Note: Backfill sand, used >20% of the calculated volume due to potential voids forming during drilling		
Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater				10 :: -				<u> </u>			

ARCADIS Design & Const. for natural and built assets **Temporary Backfill Log** Sheet: Surface Elevation: Date Started: 01/11/2020 502.11 ft amsl Well ID: IRZ-31 Pilot Date Completed: 01/11/2020 Northing (NAD83): 2101940.23 Drilling Co.: <u>Cascade</u> Easting (NAD83): 7615789.13 Client: PG&E Drilling Method: Sonic Drilling Total Depth: Project: Final GW Remedy Phase 1 127 ft bgs Driller Name: **Eddie Ramos** Borehole Diameter: 6-10 inches Location: PG&E Topock, Needles, California J. Candelaria / F. Sandoval Drilling Asst: Depth to First Water: 47.3 ft bgs Joe Latham Editor: **Grant Willford** Project Number: RC000753.0051 Logger: Geologic Formation Material Volumes Installed USCS Class USCS Code Depth (ft) Groundwater Calculated Well Construction Note: percentages are the actual volume vs the calculated volume Sample ID Material Volumes 21 22 23 Topock -Alluvium Deposits 25 26 Topock -Alluvium 29 SW-SM Deposits (5.0 - 117.0') (5.0 - 117.0') 58 bags (126%) Cemex #3 Mesh (8x20) Lapis Lustre (5.0 - 117.0') 46.1 bags Note: Backfill sand, used >20% of the calculated volume due to (8.0 - 127.0') 30 6.0" Borehole Sand Lapis potential voids forming during drilling 32 35 Topock -Alluvium Deposits 36 39 GW-GM Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater,



9/	ARCA	DIS for buil	natural and t assets		Temporary	Backfill Log		Sheet: 4 of 7		
	Date Started: 01/11/2020 Date Completed: 01/11/2020				Surface Elevation:	502.11 ft amsl	Well ID: I	RZ-31 Pilot		
			20		Northing (NAD83):	2101940.23				
Drilling		Cascade			Easting (NAD83):	7615789.13	Client: PG8			
_	Method: Name:	Sonic Dril Eddie Rar	•		Total Depth: Borehole Diameter:	127 ft bgs 6-10 inches	-	I GW Remedy Phase 1 &E Topock, Needles, California		
Drilling		J. Candel		andoval			Location. <u>PGc</u>	ke Topock, Needles, California		
Logge		Joe Latha		andovai	Editor:	Grant Willford	Project Numbe	Project Number: RC000753.0051		
Depth (ft)	Groundwate Sample ID		USCS	USCS Class	Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
61 62		Topock Alluviur Deposit	n 300-310				8			
63 64 65 66		Topock Alluviur Deposit	n GM							
67 68		Topock Alluviur Deposit	n SM							
69707172		Topock Alluviur Deposil	n GM		(5.0 - 117.0') Cemex #3 Mesh (8x20) Lapis Lustre Sand Lapis	(8.0 - 127.0') 6.0" Borehole	(5.0 - 117.0') 46.1 bags	(5.0 - 117.0') 58 bags (126%) Note: Backfill sand, used >20% of the calculated volume due to potential voids forming during drilling		
73 74	· IRZ-31-VAS- 72-77 · (480 ppb)									
75 76 77	1/9/2020 13:10	Topock Alluviur Deposit	n GM							
78 79 		Topock Alluviur Deposit	n SW-SN							
Abbre	viations: U	SCS = Unif	ied Soil C	lassifica	tion System, ft = feet, bo	s = below ground surface	, amsl = above mean	sea level, GW = groundwater,		

ARCA	DIS for natura built asse	il and ts		Temporary E	засктін Log	\$	Sheet: 5 of 7	
Date Started:	01/11/2020			Surface Elevation:	502.11 ft amsl	Well ID: IF	RZ-31 Pilot	
Date Completed:	01/11/2020			Northing (NAD83):	2101940.23		VE OTT HOU	
Drilling Co.:	Cascade			Easting (NAD83):	7615789.13	Client: PG&I		
Drilling Method:	Sonic Drilling				127 ft bgs	•	GW Remedy Phase 1	
Driller Name:	Eddie Ramo			Borehole Diameter:	6-10 inches	Location: <u>PG&I</u>	E Topock, Needles, California	
Drilling Asst:	J. Candelaria Joe Latham	a / F. Sa	<u>andoval</u>	· · · · · · · · · · · · · · · · · · ·		Project Number: PC000753 0051		
Logger:					Giant Willioid	Project Number: RC000753.0051		
	Groundwater Sample ID Code Code S Class S Clas			Well	Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
	Topock - Alluvium Deposits	GM				20		
	Topock - Alluvium Deposits	SM						
	Topock - Alluvium Deposits	SM		(5.0 - 117.0') Cemex #3 Mesh (8x20) Lapis Lustre Sand Lapis	(8.0 - 127.0') 6.0" Borehole	(5.0 - 117.0') 46.1 bags	(5.0 - 117.0') 58 bags (126%) Note: Backfill sand, used >20% of the calculated volume due to potential voids forming during drilling	
	Topock - Alluvium Deposits	GM						
 98 	Topock - Alluvium Deposits	SM						
99 Abbreviations: U	Topock - Alluvium Deposits	GM Soil C	lassificat	tion System ft = feet ba	s = below ground surface as	msl = ahove mean	sea level, GW = groundwater,	



of the first VAS interval; granular backfill material was removed during overdrilling of the pilot borehole

