



*Pacific Gas and
Electric Company*[®]

**PG&E Topock
Compressor Station
Needles, California**

**Basis of Design Report /Final (100%) Design Submittal
for the Final Groundwater Remedy**

Appendix D: Plans (Engineering Drawings)

November 2015

 **ARCADIS**

CH2MHILL[®]

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TABLE D1-1

FRESHWATER ARIZONA - VALVES

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

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
HNWR1A	V-*0110A	I-01-01		HNWR1A	FW	Valve	Swing Check		6	6"-FW-LCLF-020101	40 27 02	V608	900	180
HNWR1A	V-*0110B	I-01-01		HNWR1A	FW	Valve	Butterfly		6	6"-FW-LCLF-020101	40 27 02	V500	900	180
HNWR1A	V-*0110E	I-01-01		HNWR1A	FW	Valve	Ball	Isolation Valve	1 1/2	1-1/2"-FW-LCLF-0104	40 27 02	V335	900	180
HNWR1A	V-*0171A	I-01-01		HNWR1A	FW	Valve	Butterfly		6	6"-FW-LCLF-020101	40 27 02	V500	900	180
HNWR1A	V-*0172A	I-01-01		HNWR1A	FW	Valve	Butterfly		6	6"-FW-LCLF-020102	40 27 02	V500	900	180
HNWR1A	V-*0161A	I-01-01		HNWR1A	FW	Valve	Butterfly		6	6"-FW-LCLF-020101	40 27 02	V500	900	180
HNWR1A	SP-*0161A	I-01-01		HNWR1A	FW	Valve	Gate	Sample Port	1/2	6"-FW-LCLF-020101	40 27 02	V101 or V925	900	180
HNWR1A	V-*0161C	I-01-01		HNWR1A	FW	Valve	Ball		1/2	6"-FW-LCLF-020101	40 27 02	V335	900	180
HNWR1A	V-*0120A	I-01-01		HNWR1A		Valve	Butterfly		12	12"-FW-HALE-020101	40 27 02	V500	900	180
HNWR1A	V-*0120C	I-01-01		HNWR1A	FW	Valve	Butterfly		12	12"-FW-HALE-020101	40 27 02	V500	900	180
SiteB	V-*0110C	I-01-01		SITE B	FW	Valve ¹	Swing Check		6	6"-FW-PVLK-020104	40 27 02	V608	900	245
SiteB	V-*0110D	I-01-01		SITE B	FW	Valve ¹	Butterfly		6	6"-FW-PVLK-020104	40 27 02	V500	900	245
SiteB	V-*0161B	I-01-01		SITE B	FW	Valve ¹	Butterfly		6	6"-FW-LCLF-020101	40 27 02	V500	900	245
SiteB	V-*0171B	I-01-01		SITE B	FW	Valve ¹	Butterfly		6	6"-FW-LCLF-020101	40 27 02	V500	900	245
SiteB	SP-*0161B	I-01-01		SITE B	FW	Valve ¹	Ball	Sample Port	1/2	6"-FW-LCLF-020101	40 27 02	V335	900	245
SiteB	V-*0161D	I-01-01		SITE B	FW	Valve ¹	Ball		1/2	6"-FW-PVLK-020104	40 27 02	V335	900	245
HNWR1A	AVRV-*0111A	I-01-01		HNWR1A	FW	Valve	Air and vacuum release	1" inlet, 1" outlet, 9" height, 7" max	1	6"-FW-LCLF-020101	33 12 16		1.67 scfs	180
SiteB	AVRV-*0111B	I-01-01	M-01-02	SITE B	FW	Valve ¹	Air and vacuum release	1" inlet, 1" outlet, 9" height, 7" max	1	6"-FW-PVLK-020104	33 12 16		1.67 scfs	245
HNWR1A	FV-*0110	I-01-01		HNWR1A	FW	Valve	Butterfly	Motor Valve	1-1/2	6"-FW-LCLF-0104	Vendor supplied	Vendor supplied	180	204
SiteB	FV-*0110	I-01-01	M-01-02	SITE B	FW	Valve ¹	Butterfly		1-1/2	6"-FW-LCLF-0104	Vendor supplied	Vendor supplied	245	264
SiteB	V-*0110F	I-01-01		SITE B	FW	Valve ¹	Ball	Isolation Valve	1 1/2	1-1/2"-FW-LCLF-0204	40 27 02	V335	900	180
	V-*0180	I-01-01	C-07-119A		FW	Valve	Gate	Isolation Valve	12	12"-FW-HALE-020102	40 27 02			
	V-*0179	I-01-01	C-07-119A		FW	Valve	Gate	Isolation Valve	12		40 27 02			
	V-*0175	I-01-01	C-07-119A		FW	Valve	Gate	Isolation Valve	8		40 27 02			
	V-*0176	I-01-01	C-07-119A		FW	Valve	Gate	Isolation Valve	8		40 27 02			
	V-*0177	I-01-01	C-07-119A		FW	Valve	Gate	Isolation Valve	8		40 27 02			
	V-*0178	I-01-01	C-07-119A		FW	Valve	Gate	Isolation Valve	8		40 27 02			

¹ This is part of a contingent system and may be constructed in the future

² Maximum operating pressure ratings apply to 73 degrees Fahrenheit

**TABLE D1-2
FRESHWATER ARIZONA - EQUIPMENT**

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
HNWR1A	FE-*0172	I-01-01		FW	Flow Element	Magnetic		6"	6"-FW-LCLF-020102	40_91_02.03_1.01A		
HNWR1A	FE-*0171A	I-01-01		FW	Flow Element	Magnetic		6"	6"-FW-LCLF-020101	40_91_02.03_1.01A		
SITEB	FE-*0171B	I-01-01		FW	Flow Element	Magnetic		6"	6"-FW-PVLK-020104	40_91_02.03_1.01A		
HNWR1A	FIT-*0172	I-01-01		FW	Flow Indicating Transmitter	Magnetic		6"	6"-FW-LCLF-020102	40_91_02.03_1.01A		
HNWR1A	FIT-*0171A	I-01-01	M-01-02	FW	Flow Indicating Transmitter	Magnetic		6"	6"-FW-LCLF-020101	40_91_02.03_1.01A		
SITEB	FIT-*0171B	I-01-01		FW	Flow Indicating Transmitter	Magnetic		6"	6"-FW-PVLK-020104	40_91_02.03_1.01A		
HNWR1A	LT-*0151A	I-01-01		FW	Level Transmitter	Submersible		6"	6"-FW-PVLK-020101	40_91_02.05_1.01B		
SITEB	LT-*0151B	I-01-01		FW	Level Transmitter	Submersible		6"	6"-FW-PVLK-020104	40_91_02.05_1.01B		
HNWR1A	PIT-*0161A	I-01-01		FW	Pressure Indicating Transmitter	Diaphragm		6"	6"-FW-LCLF-020101	40_91_02.07_1.01A		
SITEB	PIT-*0161B	I-01-01		FW	Pressure Indicating Transmitter	Diaphragm		6"	6"-FW-PVLK-020104	40_91_02.07_1.01A		
HNWR1A		I-02-01		FW	HNWR-1A Freshwater Supply Well		14" dia, 203 feet deep					--
HNWR1A	PMP-*0110A	I-02-01		FW	HNWR-1A Well Pump	Submersible	300' TDH, 154' pump motor depth		6"-FW-PVLK-020101	44 42 56.04A	900	100
HNWR1A	STR-*0110A	I-02-01		FW	Sand Separator		Centrifugal sand separator with motorized purge valve. Separator has mechanical pipe joints.		6"-FW-PVLK-020101			--
Site B		I-02-01		FW	Site B Freshwater Supply Well		14" dia, 315 feet deep					--
Site B	PMP-*0110B	I-02-01		FW	Site B Well Pump	Submersible	360' TDH, 405' pump motor depth		6"-FW-PVLK-020104	44 42 56.04A	900	100
Site B	STR-*0110B	I-02-01		FW	Sand Separator		Centrifugal sand separator with motorized purge valve. Separator has mechanical pipe joints.		6"-FW-PVLK-020104			--

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²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-3

FRESHWATER CALIFORNIA - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
FWST	V-*0203A	I-02-01		FW	Valve	Butterfly		12	12"-FW-HALE-120204	40 27 02	V513	900	75
FWST	V-*0203B	I-02-01		FW	Valve	Butterfly		12	12"-FW-HALE-120103	40 27 02	V513	900	75
FWST	V-*0203C	I-02-01		FW	Valve	Butterfly		10	12"-FW-PULK-020204	40 27 02	V513	900	25
FWST	V-*0203D	I-02-01		FW	Valve	Butterfly		10	10"-FW-PULK-020203	40 27 02	V513	900	25
FWST	V-*0203E	I-02-01		FW	Valve	Ball		2	2"-FW-HALE-020206	40 27 02	V335	900	25
FW01	V-*0201A	I-02-02		FW	Valve	Butterfly		4	2"-FW-PULK-020201	40 27 02	V521	900	25
FW01	SP-*021A	I-02-02		FW	Valve	Ball	Sample Tap	3/4*	2"-FW-PULK-020201	40 27 02	V335	900	25
FW01	V-*0261A	I-02-02		FW	Valve	Ball	Isolation Valve	1/2	2"-FW-PULK-020201	40 27 02	V335	900	25
FW01	V-*0261B	I-02-02		FW	Valve	Ball	Isolation Valve	1/2	2"-FW-PULK-020201	40 27 02	V335	900	25
FW01	V-*0262B	I-02-02		FW	Valve	Gate	Isolation Valve	1/2	4"-FW-PULK-020203	40 27 02	V335	900	25
FW01	V-*0262A	I-02-02		FW	Valve	Gate	Isolation Valve	1/2	4"-FW-PULK-020203	40 27 02	V335	900	25
FW01	V-*0214A	I-02-02		FW	Valve	Ball	Isolation Valve	1	4"-FW-PULK-020203	40 27 02	V335	900	5
FW01	V-*0201D	I-02-02		RW	Valve	Butterfly		6	6"-RW-PULK-020204	40 27 02	V521	400	135
FW01	SP-*021B	I-02-02		RW	Valve	Ball	Sample Tap	3/4*	6'-RW-PULK-020204	40 27 02	V335	400	135
FW01	V-*0201F	I-02-02	M-02-02	RW	Valve	Butterfly		6	6"-RW-PULK-020204	40 27 02	V521	400	135
FW02	V-*0201A	I-02-02		FW	Valve	Butterfly		4	2"-FW-PULK-020201	40 27 02	V521	900	25
FW02	SP-*021A	I-02-02		FW	Valve	Ball	Sample Tap	3/4*	2"-FW-PULK-020201	40 27 02	V335	900	25
FW02	V-*0261A	I-02-02		FW	Valve	Ball	Isolation Valve	1/2	2"-FW-PULK-020201	40 27 02	V335	900	25
FW02	V-*0261B	I-02-02		FW	Valve	Ball	Isolation Valve	1/2	2"-FW-PULK-020201	40 27 02	V335	900	25
FW02	V-*0262B	I-02-02		FW	Valve	Gate	Isolation Valve	1/2	4"-FW-PULK-020203	40 27 02	V335	900	25
FW02	V-*0262A	I-02-02		FW	Valve	Gate	Isolation Valve	1/2	4"-FW-PULK-020203	40 27 02	V335	900	25
FW02	V-*0214A	I-02-02		FW	Valve	Ball	Isolation Valve	1	4"-FW-PULK-020203	40 27 02	V335	900	5
FW02	V-*0201D	I-02-02		RW	Valve	Butterfly		6	6"-RW-PULK-020204	40 27 02	V521	400	135
FW02	SP-*021B	I-02-02		RW	Valve	Ball	Sample Tap	3/4*	6'-RW-PULK-020204	40 27 02	V335	400	135
FW02	V-*0201F	I-02-02		RW	Valve	Butterfly		6	6"-RW-PULK-020204	40 27 02	V521	400	135
FW01	ARV-*0214	I-02-02	M-02-02	FW	Valve	Air and vacuum release		1 or 2	4"-FW-PULK-020203	33 12 16	A. Air Valve, Water Service	27 cfm	5
FW01	FCV-*0212	I-02-02		FW	Valve	Downhole Flow Control		4	4"-FW-PULK-020203	40 27 02	ASR LLC (Type 964)	400	208
FW02	ARV-*0214	I-02-02	M-02-02	FW	Valve	Air and vacuum release		1 or 2	4"-FW-PULK-020203	33 12 16	A. Air Valve, Water Service	27 cfm	60
FW02	FCV-*0212	I-02-02		FW	Valve	Downhole Flow Control		4	4"-FW-PULK-020203	40 27 02	ASR LLC (Type 964)	200	130
FW01	FV-*0211	I-02-02		FW	Valve	Gate		4	2"-FW-PULK-020201	40 27 02	V521	900	25
FW02	FV-*0211	I-02-02		FW	Valve	Gate		4	2"-FW-PULK-020201	40 27 02	V521	900	25
FW01	FV-*0213	I-02-02	M-02-02		Valve	Gate	Motor Valve			40 27 02			
FW02	FV-*0213	I-02-02	M-02-02		Valve	Gate	Motor Valve			40 27 02			
FWST	V-*0275	I-02-01		DR	Valve	Gate		4	TNK-*0203	40 27 02			
FWST	FV-*0215	I-02-01		FW	Valve	Ball	Actuating Ball Valve			40 27 02			
FWST	V-*0272	I-02-01		FW	Valve	Gate				40 27 02			
FWST	V-*0273	I-02-01		FW	Valve	Check				40 27 02			
FWST	V-*0274	I-02-01		FW	Valve	Check				40 27 02			

TABLE D1-3**FRESHWATER CALIFORNIA - VALVES**

Groundwater Remedy Basis of Design Report/Final (100%) Design

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LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
FW01	V-*0201G	I-02-02			Valve	Butterfly			FW-PULK-020203	40 27 02			
FW02	V-*0201G	I-02-02			Valve	Butterfly			FW-PULK-020203	40 27 02			
FW01	PCV-*0270	I-02-02			Valve	Pressure Control Valve				40 27 02			
FW02	PCV-*0270	I-02-02			Valve	Pressure Control Valve				40 27 02			
FW01	V-*0270	I-02-02			Valve	Butterfly				40 27 02			
FW01	V-*0271	I-02-02			Valve	Check	Isolation Valve			40 27 02			
FW02	V-*0270	I-02-02			Valve	Butterfly				40 27 02			
FW02	V-*0271	I-02-02			Valve	Check	Isolation Valve			40 27 02			

¹ This is part of a contingent system and may be constructed in the future² Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-4

FRESHWATER CALIFORNIA - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
FWST	TNK-*0203	I-02-01		Remedy Freshwater Storage Tank 3		vertical flat bottom tank, 12' diameter, 16' tall	10,000 gal		43 40 13B		--
FW01	INJ-*0202	I-02-03		Freshwater Injection Well #1		14" dia. 353 feet deep					--
FW01	PMP-*0201	I-02-03		Backwash well pump #1	Submersible	276' TDH		4"-FW-PULK-020203	44 42 56.04A	400	40
FW02	INJ-*0202	I-02-03		Freshwater Injection Well #2		14" dia. 139 feet deep					--
FW02	PMP-*0201	I-02-03		Backwash well pump #2	Submersible	204' TDH		4"-FW-PULK-020203	44 42 56.04A	200	15
FWST	LSH-*0255	I-02-01		Level Switch	Float			Tank *0203	40_91_02.05_1.01C		
FWST	LSL-*0255	I-02-01		Level Switch	Float			Tank *0203	40_91_02.05_1.01C		
FWST	LT-*0256	I-02-01		Level Transmitter	Submersible			Tank *0203	40_91_02.05_1.01B		
FW01	FE-*0271	I-02-02	M-02-02	Flow Element	Magnetic		2	2"-FW-PULK-020202	40_91_02.03_1.01A		
FW01	FE-*0272	I-02-02		Flow Element	Magnetic		4	6"-RW-PULK-020204	40_91_02.03_1.01A		
FW01	FIT-*0271	I-02-02	M-02-02	Flow Indicating Transmitter	Magnetic		2	2"-FW-PULK-020202	40_91_02.03_1.01A		
FW01	FIT-*0272	I-02-02		Flow Indicating Transmitter	Magnetic		6	6"-RW-PULK-020204	40_91_02.03_1.01A		
FW01	LSH-*0253	I-02-02		Level Switch	Float		-	Meter Vault	40_91_02.05_1.01C		
FW01	LSH-*0251	I-02-02		Level Switch	Float		4	4"-FW-PULK-020203	40_91_02.05_1.01C		
FW01	LT-*0252	I-02-02		Level Transmitter	Submersible		4	4"-FW-PULK-020203	40_91_02.05_1.01B		
FW01	PI-*0261	I-02-02	M-02-02	Pressure Gauge	Bourdon Tube		2	2"-FW-PULK-020201	40_91_02.07_1.01B		
FW01	PI-*0262	I-02-02		Pressure Gauge	Bourdon Tube		4	4"-FW-PULK-020203	40_91_02.07_1.01B		
FW01	PIT-*0261	I-02-02	M-02-02	Pressure Indicating Transmitter	Diaphragm		2	2"-FW-PULK-020201	40_91_02.07_1.01A		
FW01	PIT-*0262	I-02-02		Pressure Indicating Transmitter	Diaphragm		4	4"-FW-PULK-020203	40_91_02.07_1.01A		
FW02	FE-*0271	I-02-02	M-02-02	Flow Element	Magnetic		2	2"-FW-PULK-020202	40_91_02.03_1.01A		
FW02	FE-*0272	I-02-02		Flow Element	Magnetic		6	6"-RW-PULK-020204	40_91_02.03_1.01A		
FW02	FIT-*0271	I-02-02	M-02-02	Flow Indicating Transmitter	Magnetic		2	2"-FW-PULK-020202	40_91_02.03_1.01A		
FW02	FIT-*0272	I-02-02		Flow Indicating Transmitter	Magnetic		6	6"-RW-PULK-020204	40_91_02.03_1.01A		
FW02	LSH-*0253	I-02-02		Level Switch	Float		-	Meter Vault	40_91_02.05_1.01C		
FW02	LSH-*0251	I-02-02		Level Switch	Float		4	4"-FW-PULK-020203	40_91_02.05_1.01C		
FW02	LT-*0252	I-02-02		Level Transmitter	Submersible		4	4"-FW-PULK-020203	40_91_02.05_1.01B		
FW02	PI-*0261	I-02-02	M-02-02	Pressure Gauge	Bourdon Tube		2	2"-FW-PULK-020201	40_91_02.07_1.01B		
FW02	PI-*0262	I-02-02		Pressure Gauge	Bourdon Tube		4	4"-FW-PULK-020203	40_91_02.07_1.01B		
FW02	PIT-*0261	I-02-02	M-02-02	Pressure Indicating Transmitter	Diaphragm		2	2"-FW-PULK-020201	40_91_02.07_1.01A		
FW02	PIT-*0262	I-02-02		Pressure Indicating Transmitter	Diaphragm		4	4"-FW-PULK-020203	40_91_02.07_1.01A		
FWST	FE-*02XX	I-02-01		Flow Element	Magnetic				40_91_02.03_1.01A		
FWST	FIT-*02XX	I-02-01		Flow Indicating Transmitter	Magnetic				40_91_02.03_1.01A		
FW01	F-*02XX	I-02-01		Strainer	Y type						
FW02	F-*02XX	I-02-01		Strainer	Y type						

¹ This is part of a contingent system and may be constructed in the future

² Maximum operating pressure ratings apply to 73 degrees Fahrenheit

**TABLE D1-5
TCS RECIRCULATION LOOP - VALVES**

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

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
ER01-	V-*0360B	I-03-01		East Ravine Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030101	40 27 02	V341
ER02-	V-*0360B	I-03-01		East Ravine Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030101	40 27 02	V341
ER03-	V-*0360B	I-03-01		East Ravine Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030101	40 27 02	V341
ER04-	V-*0360B	I-03-01		East Ravine Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030101	40 27 02	V341
ER06-	V-*0360B	I-03-01		East Ravine Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030101	40 27 02	V341
TWB01-	V-*0361A	I-03-02		Transwestern Bench Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030201	40 27 02	V341
TWB02-	V-*0361A	I-03-02		Transwestern Bench Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030201	40 27 02	V341
TWB01-	V-*0361B	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030201	40 27 02	V341
TWB02-	V-*0361B	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-030201	40 27 02	V341
TCS01-	V-*0362A	I-03-03		TCS Injection Wells	TCS INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-030301	40 27 02	V341
TCS02-	V-*0362A	I-03-03		TCS Injection Wells	TCS INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-030301	40 27 02	V341
TCS01-	V-*0362B	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-030301	40 27 02	V341
TCS02-	V-*0362B	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-030301	40 27 02	V341
TCS01-	V-*0362C	I-03-03		TCS Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	Injection Well Casing	40 27 02	V341
TCS02-	V-*0362C	I-03-03		TCS Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	Injection Well Casing	40 27 02	V341
TCS01-	V-*0362D	I-03-03		TCS Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	Injection Well Casing	40 27 02	V341
TCS02-	V-*0362D	I-03-03		TCS Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	Injection Well Casing	40 27 02	V341
TCS01-	V-*0362E	I-03-03		TCS Injection Wells	TCS INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-030302	40 27 02	V341
TCS02-	V-*0362E	I-03-03		TCS Injection Wells	TCS INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-030302	40 27 02	V341
TCS01-	V-*0362F	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-030302	40 27 02	V341
TCS02-	V-*0362F	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-030302	40 27 02	V341
TCS01-	V-*0362G	I-03-03		TCS Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-030303	40 27 02	V341
TCS02-	V-*0362G	I-03-03		TCS Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-030303	40 27 02	V341
TCS01-	V-*0362H	I-03-03	M-03-04	TCS Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-030303	40 27 02	V341
TCS02-	V-*0362H	I-03-03	M-03-04	TCS Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-030303	40 27 02	V341
ER01-	V-*0301D	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Full-port ball	Isolation Valve	1"	2"-EX-PVLK-030101	40 27 02	V340
ER02-	V-*0301D	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Full-port ball	Isolation Valve	1"	2"-EX-PVLK-030101	40 27 02	V340

**TABLE D1-5
TCS RECIRCULATION LOOP - VALVES**

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

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
ER03-	V-*0301D	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Full-port ball	Isolation Valve	1"	2"-EX-PVLK-030101	40 27 02	V340
ER04-	V-*0301D	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Full-port ball	Isolation Valve	1"	2"-EX-PVLK-030101	40 27 02	V340
ER06-	V-*0301D	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Full-port ball	Isolation Valve	1"	2"-EX-PVLK-030101	40 27 02	V340
ER01-	V-*0301C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-030101	40 27 02	V783
ER02-	V-*0301C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-030101	40 27 02	V783
ER03-	V-*0301C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-030101	40 27 02	V783
ER04-	V-*0301C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-030101	40 27 02	V783
ER06-	V-*0301C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-030101	40 27 02	V783
ER01-	V-*0301B	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Union Bonnet, Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V239
ER02-	V-*0301B	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Union Bonnet, Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V239
ER03-	V-*0301B	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Union Bonnet, Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V239
ER04-	V-*0301B	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Union Bonnet, Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V239
ER06-	V-*0301B	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Union Bonnet, Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V239
TCS01-	V-*0303B	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-030301	40 27 02	V900
TCS02-	V-*0303B	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-030301	40 27 02	V900
TCS01-	V-*0304G	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-030302	40 27 02	V900
TCS02-	V-*0304G	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-030302	40 27 02	V900
TCS01-	V-*0303F	I-03-03		TCS Injection Wells	TCS INJ	Valve	Check	Low Pressure	1-1/4"	1-1/4"-CA-SUTK-030301	40 27 02	V783
TCS02-	V-*0303F	I-03-03		TCS Injection Wells	TCS INJ	Valve	Check	Low Pressure	1-1/4"	1-1/4"-CA-SUTK-030301	40 27 02	V783
TCS01-	V-*0304J	I-03-03		TCS Injection Wells	TCS INJ	Valve	Check	Low Pressure	1-1/4"	1-1/4"-CA-SUTK-030302	40 27 02	V783
TCS02-	V-*0304J	I-03-03		TCS Injection Wells	TCS INJ	Valve	Check	Low Pressure	1-1/4"	1-1/4"-CA-SUTK-030302	40 27 02	V783
ER01-	V-*0301A	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V340
ER02-	V-*0301A	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V340

**TABLE D1-5
TCS RECIRCULATION LOOP - VALVES**

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

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
ER03-	V-*0301A	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V340
ER04-	V-*0301A	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V340
ER06-	V-*0301A	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-030101	40 27 02	V340
TCS01-	V-*0305C	I-03-03		TCS Injection Wells		Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-030303	40 27 02	V340
TCS02-	V-*0305C	I-03-03		TCS Injection Wells		Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-030303	40 27 02	V340
TWB01-	V-*0302D	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-030201	40 27 02	V340
TWB02-	V-*0302D	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-030201	40 27 02	V340
TCS01-	V-*0303A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-030301	40 27 02	V340
TCS02-	V-*0303A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-030301	40 27 02	V340
TCS01-	V-*0305B	I-03-03	M-03-04	TCS Injection Wells		Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-030303	40 27 02	V340
TCS02-	V-*0305B	I-03-03	M-03-04	TCS Injection Wells		Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-030303	40 27 02	V340
TWB01-	V-*0302C	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Valve	Check	Y-Pattern	2"	2"-EX-PVLK-030201	40 27 02	V781
TWB02-	V-*0302C	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Valve	Check	Y-Pattern	2"	2"-EX-PVLK-030201	40 27 02	V781
TCS01-	V-*0305A	I-03-03	M-03-04	TCS Injection Wells		Valve	Check	Y-Pattern	2"	2"-RW-PVLK-030303	40 27 02	V781
TCS02-	V-*0305A	I-03-03	M-03-04	TCS Injection Wells		Valve	Check	Y-Pattern	2"	2"-RW-PVLK-030303	40 27 02	V781
TCS01-	V-*0306	I-03-03		TCS Injection Wells		Valve	Check	Y-Pattern	3/4"	Injection Well Casing	40 27 02	V783
TCS02-	V-*0306	I-03-03		TCS Injection Wells		Valve	Check	Y-Pattern	3/4"	Injection Well Casing	40 27 02	V783
TCS01-	F-*0303	I-03-03	M-03-04	TCS Injection Loop	TCS INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-030301		
TCS02-	F-*0303	I-03-03	M-03-04	TCS Injection Loop	TCS INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-030301		
TCS01-	FV-*0307	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-030301	40 27 02	V344
TCS01-	FV-*0308	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-030302	40 27 02	V344
TCS02-	FV-*0307	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-030301	40 27 02	V344
TCS02-	FV-*0308	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-030302	40 27 02	V344
ER01-	V-*0360C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Isolation Valve				

**TABLE D1-5
TCS RECIRCULATION LOOP - VALVES**

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

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
ER02-	V-*0360C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Isolation Valve				
ER03-	V-*0360C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Isolation Valve				
ER04-	V-*0360C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Isolation Valve				
ER06-	V-*0360C	I-03-01		East Ravine Extraction Wells	E RAV EX	Valve	Globe	Isolation Valve				
TCS01-	ARV-*03XX	I-03-03		TCS Injection Wells	TCS INJ	Valve	Air Vacuum Release					
TCS01-	ARV-*03XX	I-03-03		TCS Injection Wells	TCS INJ	Valve	Air Vacuum Release					
TCS01-	ARV-*03XX	I-03-03		TCS Injection Wells	TCS INJ	Valve	Air Vacuum Release					
TCS01-	ARV-*03XX	I-03-03		TCS Injection Wells	TCS INJ	Valve	Air Vacuum Release					
TWB01-	V-*03XX	I-03-02		Transwestern Bench Extraction Wells	TWB	Valve	Globe					
TWB02-	V-*03XX	I-03-02		Transwestern Bench Extraction Wells	TWB	Valve	Globe					

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-6

TCS RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
ER01-	PMP-*0340	I-03-01		East Ravine Extraction Wells		Extraction Well Pump	Submersible			2"-EX-SUTK-030101	44 42 56.04A	1.5	300		460 VAC, 3-Phase
ER02-	PMP-*0340	I-03-01		East Ravine Extraction Wells		Extraction Well Pump	Submersible			2"-EX-SUTK-030101	44 42 56.04A	1.5	300		460 VAC, 3-Phase
ER03-	PMP-*0340	I-03-01		East Ravine Extraction Wells		Extraction Well Pump	Submersible			2"-EX-SUTK-030101	44 42 56.04A	1.5	300		460 VAC, 3-Phase
ER04-	PMP-*0340	I-03-01		East Ravine Extraction Wells		Extraction Well Pump	Submersible			2"-EX-SUTK-030101	44 42 56.04A	1.5	300		460 VAC, 3-Phase
ER06-	PMP-*0340	I-03-01		East Ravine Extraction Wells		Extraction Well Pump	Submersible			2"-EX-SUTK-030101	44 42 56.04A	1.5	300		460 VAC, 3-Phase
TCS01-	PMP-*0342	I-03-03		TCS Injection Wells	TCS INJ	Backwash Well Pump	Submersible			2"-CA-SUTK-030303	44 42 56.04A	40	240		460 VAC, 3-Phase
TCS02-	PMP-*0342	I-03-03		TCS Injection Wells	TCS INJ	Backwash Well Pump	Submersible			2"-CA-SUTK-030303	44 42 56.04A	40	240		460 VAC, 3-Phase
TCS01-	PMP-*0343	I-03-03		TCS Injection Wells	TCS INJ	Backwash Well Pump	Submersible			2"-CA-SUTK-030303	44 42 56.04A	40	240		460 VAC, 3-Phase
TCS02-	PMP-*0343	I-03-03		TCS Injection Wells	TCS INJ	Backwash Well Pump	Submersible			2"-CA-SUTK-030303	44 42 56.04A	40	240		460 VAC, 3-Phase
TWB01-	PMP-*0341	I-03-02		Transwestern Bench Extraction Wells	TWB	Extraction Well Pump	Submersible			2"-EX-SUTK-030201	44 42 56.04A	1.5-40	311-313		460 VAC, 3-Phase
TWB02-	PMP-*0341	I-03-02		Transwestern Bench Extraction Wells	TWB	Extraction Well Pump	Submersible			2"-EX-SUTK-030201	44 42 56.04A	1.5-40	311-313		460 VAC, 3-Phase
TWB01-	PIT-*0361A	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"	2"-EX-PVLK-030201	40_91_02.07_1.01A			100	24 V Loop
TWB02-	PIT-*0361A	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"	2"-EX-PVLK-030201	40_91_02.07_1.01A			100	24 V Loop
ER01-	PIT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"	2"-EX-PVLK-030101	40_91_02.07_1.01A			100	24 V Loop
ER02-	PIT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"	2"-EX-PVLK-030101	40_91_02.07_1.01A			100	24 V Loop
ER03-	PIT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"	2"-EX-PVLK-030101	40_91_02.07_1.01A			100	24 V Loop

TABLE D1-6

TCS RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
ER04-	PIT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"	2"-EX-PVLK-030101	40_91_02.07_1.01A			100	24 V Loop
ER06-	PIT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"	2"-EX-PVLK-030101	40_91_02.07_1.01A			100	24 V Loop
TCS01-	PSL-*0362D	I-03-03		TCS Injection Wells		Packer Pressure Switch	Air/Gas Pressure Switch		1/2"	Injection Well Casing	40_91_02.07_1.01C				24 VDC
TCS02-	PSL-*0362D	I-03-03		TCS Injection Wells		Packer Pressure Switch	Air/Gas Pressure Switch		1/2"	Injection Well Casing	40_91_02.07_1.01C				24 VDC
TWB01-	LSH-*0351A	I-03-02		Transwestern Bench Extraction Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Area	40_91_02.05_1.01C				24 VDC
TWB02-	LSH-*0351A	I-03-02		Transwestern Bench Extraction Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Area	40_91_02.05_1.01C				24 VDC
TCS01-	LSH-*0352A	I-03-03		TCS Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Injection well meter vault	40_91_02.05_1.01C				24 VDC
TCS02-	LSH-*0352A	I-03-03		TCS Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Injection well meter vault	40_91_02.05_1.01C				24 VDC
TCS01-	LSH-*0352B	I-03-03		TCS Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Injection Well Vault	40_91_02.05_1.01C				24 VDC
TCS02-	LSH-*0352B	I-03-03		TCS Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Injection Well Vault	40_91_02.05_1.01C				24 VDC
ER01-	LSH-*0350A	I-03-01		East Ravine Extraction Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Area	40_91_02.05_1.01C				24 VDC
ER02-	LSH-*0350A	I-03-01		East Ravine Extraction Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Area	40_91_02.05_1.01C				24 VDC
ER03-	LSH-*0350A	I-03-01		East Ravine Extraction Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Area	40_91_02.05_1.01C				24 VDC
ER04-	LSH-*0350A	I-03-01		East Ravine Extraction Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Area	40_91_02.05_1.01C				24 VDC
ER06-	LSH-*0350A	I-03-01		East Ravine Extraction Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection		Area	40_91_02.05_1.01C				24 VDC
TCS01-	PI-*0362A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	2"-CA-PVLK-030301	40_91_02.07_1.01B			100	24 V Loop
TCS01-	PI-*0362B	I-03-03	M-03-04	TCS Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	2"-RW-PVLK-030303	40_91_02.07_1.01B			100	24 V Loop
TCS01-	PI-*0362C	I-03-03		TCS Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	Injection Well Casing	40_91_02.07_1.01B			100	24 V Loop
TCS01-	PI-*0362E	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	2"-CA-PVLK-030302	40_91_02.07_1.01B			100	24 V Loop

TABLE D1-6

TCS RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
TCS02-	PI-*0362A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	2"-CA-PVLK-030301	40_91_02.07_1.01B			100	24 V Loop
TCS02-	PI-*0362B	I-03-03	M-03-04	TCS Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	2"-RW-PVLK-030303	40_91_02.07_1.01B			100	24 V Loop
TCS02-	PI-*0362C	I-03-03		TCS Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	Injection Well Casing	40_91_02.07_1.01B			100	24 V Loop
TCS02-	PI-*0362E	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	2"-CA-PVLK-030302	40_91_02.07_1.01B			100	24 V Loop
TWB01-	FM-*0371A	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"	2"-EX-PVLK-030201	40_91_02.03_1.01A	100			24 VDC
TWB02-	FM-*0371A	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"	2"-EX-PVLK-030201	40_91_02.03_1.01A	100			24 VDC
TWB01-	FIT-*0371A	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Flow Transmitter	Magnetic Flow Transmitter			2"-EX-PVLK-030201	40_91_02.03_1.01A				
TWB02-	FIT-*0371A	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Flow Transmitter	Magnetic Flow Transmitter			2"-EX-PVLK-030201	40_91_02.03_1.01A				
TWB01-	FE-*0371A	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Flow Element				2"-EX-PVLK-030201	40_91_02.03_1.01A				
TWB02-	FE-*0371A	I-03-02	M-03-03	Transwestern Bench Extraction Wells		Flow Element				2"-EX-PVLK-030201	40_91_02.03_1.01A				
ER01-	FM-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"	2"-EX-PVLK-030101	40_91_02.03_1.01A	100			24 VDC
ER02-	FM-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"	2"-EX-PVLK-030101	40_91_02.03_1.01A	100			24 VDC
ER03-	FM-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"	2"-EX-PVLK-030101	40_91_02.03_1.01A	100			24 VDC
ER04-	FM-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"	2"-EX-PVLK-030101	40_91_02.03_1.01A	100			24 VDC
ER06-	FM-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"	2"-EX-PVLK-030101	40_91_02.03_1.01A	100			24 VDC
ER01-	FIT-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Transmitter	Magnetic Flow Transmitter			2"-EX-PVLK-030101	40_91_02.03_1.01A				

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 PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
ER02-	FIT-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Transmitter	Magnetic Flow Transmitter			2"-EX-PVLK-030101	40_91_02.03_1.01A				
ER03-	FIT-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Transmitter	Magnetic Flow Transmitter			2"-EX-PVLK-030101	40_91_02.03_1.01A				
ER04-	FIT-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Transmitter	Magnetic Flow Transmitter			2"-EX-PVLK-030101	40_91_02.03_1.01A				
ER06-	FIT-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Transmitter	Magnetic Flow Transmitter			2"-EX-PVLK-030101	40_91_02.03_1.01A				
ER01-	FE-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Element				2"-EX-PVLK-030101	40_91_02.03_1.01A				
ER02-	FE-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Element				2"-EX-PVLK-030101	40_91_02.03_1.01A				
ER03-	FE-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Element				2"-EX-PVLK-030101	40_91_02.03_1.01A				
ER04-	FE-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Element				2"-EX-PVLK-030101	40_91_02.03_1.01A				
ER06-	FE-*0370A	I-03-01		East Ravine Extraction Wells	E RAV EX	Flow Element				2"-EX-PVLK-030101	40_91_02.03_1.01A				
TCS01-	FM-*0372A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	2"	2"-CA-PVLK-030301	40_91_02.03_1.01A	100			24 VDC
TCS01-	FIT-*0372A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Flow Transmitter	Magnetic Flow Transmitter			2"-CA-PVLK-030301	40_91_02.03_1.01A				
TCS01-	FE-*0372A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Flow Element				2"-CA-PVLK-030301	40_91_02.03_1.01A				
TCS01-	FM-*0372B	I-03-03	M-03-04	TCS Injection Wells		Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	2"		40_91_02.03_1.01A	100			24 VDC
TCS01-	FIT-*0372B	I-03-03	M-03-04	TCS Injection Wells		Flow Transmitter	Magnetic Flow Transmitter				40_91_02.03_1.01A				
TCS01-	FE-*0372B	I-03-03	M-03-04	TCS Injection Wells		Flow Element					40_91_02.03_1.01A				
TCS02-	FM-*0372B	I-03-03	M-03-04	TCS Injection Wells		Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	2"		40_91_02.03_1.01A	100			24 VDC
TCS02-	FIT-*0372B	I-03-03	M-03-04	TCS Injection Wells		Flow Transmitter	Magnetic Flow Transmitter				40_91_02.03_1.01A				
TCS02-	FE-*0372B	I-03-03	M-03-04	TCS Injection Wells		Flow Element					40_91_02.03_1.01A				
TCS02-	FM-*0372A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	2"	2"-CA-PVLK-030301	40_91_02.03_1.01A	100			24 VDC
TCS02-	FIT-*0372A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Flow Transmitter	Magnetic Flow Transmitter			2"-CA-PVLK-030301	40_91_02.03_1.01A				

TABLE D1-6

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TCS02-	FE-*0372A	I-03-03	M-03-04	TCS Injection Wells	TCS INJ	Flow Element				2"-CA-PVLK-030301	40_91_02.03_1.01A				
TCS01-	WP-*0304	I-03-03		TCS Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"					100	
TCS02-	WP-*0304	I-03-03		TCS Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"					100	
ER01-	YS-*0380A	I-03-01		East Ravine Extraction Wells		Vault Intrusion Switch	High Security Switch								24 VDC
ER02-	YS-*0380A	I-03-01		East Ravine Extraction Wells		Vault Intrusion Switch	High Security Switch								24 VDC
ER03-	YS-*0380A	I-03-01		East Ravine Extraction Wells		Vault Intrusion Switch	High Security Switch								24 VDC
ER04-	YS-*0380A	I-03-01		East Ravine Extraction Wells		Vault Intrusion Switch	High Security Switch								24 VDC
ER06-	YS-*0380A	I-03-01		East Ravine Extraction Wells		Vault Intrusion Switch	High Security Switch								24 VDC
TWB01-	YS-*0381A	I-03-02		Transwestern Bench Extraction Wells		Vault Intrusion Switch	High Security Switch								24 VDC
TWB02-	YS-*0381A	I-03-02		Transwestern Bench Extraction Wells		Vault Intrusion Switch	High Security Switch								24 VDC
TCS01-	YS-*0382A	I-03-03		TCS Injection Loop		Vault Intrusion Switch	High Security Switch								24 VDC
TCS02-	YS-*0382A	I-03-03		TCS Injection Loop		Vault Intrusion Switch	High Security Switch								24 VDC
TCS01-	YS-*0382B	I-03-03		TCS Injection Loop		Vault Intrusion Switch	High Security Switch								24 VDC
TCS02-	YS-*0382B	I-03-03		TCS Injection Loop		Vault Intrusion Switch	High Security Switch								24 VDC
TWB01-	LT-*0361B	I-03-02		Transwestern Bench Extraction Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement			2"-EX-SUTK-030201	40_91_02.05_1.01B				24 V Loop
TWB02-	LT-*0361B	I-03-02		Transwestern Bench Extraction Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement			2"-EX-SUTK-030201	40_91_02.05_1.01B				24 V Loop
ER01-	LT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement			2"-EX-SUTK-030101	40_91_02.05_1.01B				24 V Loop

TABLE D1-6

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LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
ER02-	LT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement			2"-EX-SUTK-030101	40_91_02.05_1.01B				24 V Loop
ER03-	LT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement			2"-EX-SUTK-030101	40_91_02.05_1.01B				24 V Loop
ER04-	LT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement			2"-EX-SUTK-030101	40_91_02.05_1.01B				24 V Loop
ER06-	LT-*0360B	I-03-01		East Ravine Extraction Wells	E RAV EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement			2"-EX-SUTK-030101	40_91_02.05_1.01B				24 V Loop
TCS01-	LT-*0362F	I-03-03		TCS Injection Wells	TCS INJ					2"-CA-SUTK-030301	40_91_02.05_1.01B				
TCS02-	LT-*0362F	I-03-03		TCS Injection Wells	TCS INJ					2"-CA-SUTK-030301	40_91_02.05_1.01B				
TCS01-	LT-*0362E	I-03-03		TCS Injection Wells	TCS INJ					Injection Well Vault	40_91_02.05_1.01B				
TCS02-	LT-*0362E	I-03-03		TCS Injection Wells	TCS INJ					Injection Well Vault	40_91_02.05_1.01B				

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ23-	V-*0401E	I-04-01		Single Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040101	40 27 02	V341
IRZ23-	V-*0401F	I-04-01	M-04-03	Single Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040101	40 27 02	V341
IRZ01-	V-*0402K	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040201	40 27 02	V341
IRZ05-	V-*0402K	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040201	40 27 02	V341
IRZ09-	V-*0402K	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040201	40 27 02	V341
IRZ01-	V-*0402L	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040201	40 27 02	V341
IRZ05-	V-*0402L	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040201	40 27 02	V341
IRZ09-	V-*0402L	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040201	40 27 02	V341
IRZ01-	V-*0402M	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040202	40 27 02	V341
IRZ05-	V-*0402M	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040202	40 27 02	V341
IRZ09-	V-*0402M	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040202	40 27 02	V341
IRZ01-	V-*0402N	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040202	40 27 02	V341
IRZ05-	V-*0402N	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040202	40 27 02	V341
IRZ09-	V-*0402N	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-EX-PVLK-040202	40 27 02	V341
IRZ01-	V-*0402P	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	Extraction Well Vault	40 27 02	V341
IRZ05-	V-*0402P	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	Extraction Well Vault	40 27 02	V341
IRZ09-	V-*0402P	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	Extraction Well Vault	40 27 02	V341
IRZ01-	V-*0402Q	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	Extraction Well Vault	40 27 02	V341
IRZ05-	V-*0402Q	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	Extraction Well Vault	40 27 02	V341
IRZ09-	V-*0402Q	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Full-port ball	Isolation Valve	1/4"	Extraction Well Vault	40 27 02	V341
IRZ35-	V-*0405D	I-04-03		Single Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040301	40 27 02	V340

TABLE D1-7

NTH IRZ - VALVES

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PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ37-	V-*0405D	I-04-03		Single Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040301	40 27 02	V340
IRZ39-	V-*0405D	I-04-03		Single Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040301	40 27 02	V340
IRZ35-	V-*0405E	I-04-03	M-04-05	Single Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040301	40 27 02	V340
IRZ37-	V-*0405E	I-04-03	M-04-05	Single Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040301	40 27 02	V340
IRZ39-	V-*0405E	I-04-03	M-04-05	Single Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040301	40 27 02	V340
IRZ25-	V-*0407I	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball		1/4"		40 27 02	V341
IRZ27-	V-*0407I	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball		1/4"		40 27 02	V341
IRZ29-	V-*0407I	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball		1/4"		40 27 02	V341
IRZ31-	V-*0407I	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball		1/4"		40 27 02	V341
IRZ25-	V-*0407J	I-04-04	M-04-06	Dual Screen IRZ Injection Wells		Valve	Full-port ball	Sample Port	1/4"		40 27 02	V341
IRZ27-	V-*0407J	I-04-04	M-04-06	Dual Screen IRZ Injection Wells		Valve	Full-port ball	Sample Port	1/4"		40 27 02	V341
IRZ29-	V-*0407J	I-04-04	M-04-06	Dual Screen IRZ Injection Wells		Valve	Full-port ball	Sample Port	1/4"		40 27 02	V341
IRZ31-	V-*0407J	I-04-04	M-04-06	Dual Screen IRZ Injection Wells		Valve	Full-port ball	Sample Port	1/4"		40 27 02	V341
IRZ25-	V-*0407K	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"	2"-CA-PVLK-040401	40 27 02	V341
IRZ27-	V-*0407K	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"	2"-CA-PVLK-040401	40 27 02	V341
IRZ29-	V-*0407K	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"	2"-CA-PVLK-040401	40 27 02	V341
IRZ31-	V-*0407K	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"	2"-CA-PVLK-040401	40 27 02	V341
IRZ25-	V-*0407L	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ27-	V-*0407L	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ29-	V-*0407L	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ31-	V-*0407L	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341

TABLE D1-7

NTH IRZ - VALVES

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IRZ25-	V-*0407O	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ27-	V-*0407O	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ29-	V-*0407O	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ31-	V-*0407O	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ25-	V-*0407N	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ27-	V-*0407N	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ29-	V-*0407N	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ31-	V-*0407N	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Full-port ball		1/4"		40 27 02	V341
IRZ11A-	V-*0413H	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040501	40 27 02	V341
IRZ13A-	V-*0413H	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040501	40 27 02	V341
IRZ15A-	V-*0413H	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040501	40 27 02	V341
IRZ16A-	V-*0413H	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040501	40 27 02	V341
IRZ17A-	V-*0413H	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040501	40 27 02	V341
IRZ19A-	V-*0413H	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040501	40 27 02	V341
IRZ20A-	V-*0413H	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040501	40 27 02	V341
IRZ21A-	V-*0413H	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040501	40 27 02	V341
IRZ11A-	V-*0413J	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V341
IRZ13A-	V-*0413J	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V341
IRZ15A-	V-*0413J	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V341
IRZ16A-	V-*0413J	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V341
IRZ17A-	V-*0413J	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V341

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ19A-	V-*0413J	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V341
IRZ20A-	V-*0413J	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V341
IRZ21A-	V-*0413J	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V341
IRZ11A-	V-*0413L	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040503	40 27 02	V341
IRZ13A-	V-*0413L	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040503	40 27 02	V341
IRZ15A-	V-*0413L	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040503	40 27 02	V341
IRZ16A-	V-*0413L	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040503	40 27 02	V341
IRZ17A-	V-*0413L	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040503	40 27 02	V341
IRZ19A-	V-*0413L	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040503	40 27 02	V341
IRZ20A-	V-*0413L	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040503	40 27 02	V341
IRZ21A-	V-*0413L	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040503	40 27 02	V341
IRZ11A-	V-*0413M	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040503	40 27 02	V341
IRZ13A-	V-*0413M	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040503	40 27 02	V341
IRZ15A-	V-*0413M	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040503	40 27 02	V341
IRZ16A-	V-*0413M	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040503	40 27 02	V341
IRZ17A-	V-*0413M	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040503	40 27 02	V341
IRZ19A-	V-*0413M	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040503	40 27 02	V341
IRZ20A-	V-*0413M	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040503	40 27 02	V341
IRZ21A-	V-*0413M	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	2"	2"-CA-PVLK-040503	40 27 02	V341
IRZ11A-	V-*0419E	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ13A-	V-*0419E	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ15A-	V-*0419E	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ16A-	V-*0419E	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ17A-	V-*0419E	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ19A-	V-*0419E	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ20A-	V-*0419E	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ21A-	V-*0419E	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ11A-	V-*0419F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ13A-	V-*0419F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ15A-	V-*0419F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ16A-	V-*0419F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ17A-	V-*0419F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ19A-	V-*0419F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ20A-	V-*0419F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ21A-	V-*0419F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-HALE-040502	40 27 02	V341
IRZ11B-	V-*0418H	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ13B-	V-*0418H	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ15B-	V-*0418H	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ16B-	V-*0418H	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ17B-	V-*0418H	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ19B-	V-*0418H	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ20B-	V-*0418H	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ21B-	V-*0418H	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ11B-	V-*0418G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ13B-	V-*0418G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ15B-	V-*0418G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ16B-	V-*0418G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ17B-	V-*0418G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ19B-	V-*0418G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ20B-	V-*0418G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ21B-	V-*0418G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040603	40 27 02	V341
IRZ11B-	V-*0418K	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ13B-	V-*0418K	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ15B-	V-*0418K	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ16B-	V-*0418K	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ17B-	V-*0418K	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ19B-	V-*0418K	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ20B-	V-*0418K	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ21B-	V-*0418K	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ11B-	V-*0418J	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ13B-	V-*0418J	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ15B-	V-*0418J	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ16B-	V-*0418J	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341

TABLE D1-7

NTH IRZ - VALVES

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PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ17B-	V-*0418J	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ19B-	V-*0418J	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ20B-	V-*0418J	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ21B-	V-*0418J	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040601	40 27 02	V341
IRZ11B-	V-*0420E	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ13B-	V-*0420E	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ15B-	V-*0420E	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ16B-	V-*0420E	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ17B-	V-*0420E	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ19B-	V-*0420E	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ20B-	V-*0420E	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ21B-	V-*0420E	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ11B-	V-*0420F	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ13B-	V-*0420F	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ15B-	V-*0420F	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ16B-	V-*0420F	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ17B-	V-*0420F	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ19B-	V-*0420F	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ20B-	V-*0420F	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ21B-	V-*0420F	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	2"-RW-PVLK-040602	40 27 02	V341
IRZ35-	V-*0403E	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040302	40 27 02	V340

TABLE D1-7

NTH IRZ - VALVES

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PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ37-	V-*0403E	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040302	40 27 02	V340
IRZ39-	V-*0403E	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040302	40 27 02	V340
IRZ25-	V-*0407M	I-04-04	M-04-06	Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ27-	V-*0407M	I-04-04	M-04-06	Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ29-	V-*0407M	I-04-04	M-04-06	Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ31-	V-*0407M	I-04-04	M-04-06	Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ25-	V-*0407Q	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ27-	V-*0407Q	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ29-	V-*0407Q	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ31-	V-*0407Q	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ35-	V-*0407P	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ27-	V-*0407P	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ29-	V-*0407P	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ31-	V-*0407P	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ11A-	V-*0413N	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ13A-	V-*0413N	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ15A-	V-*0413N	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ16A-	V-*0413N	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ17A-	V-*0413N	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ19A-	V-*0413N	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ20A-	V-*0413N	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ21A-	V-*0413N	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ11A-	V-*0413O	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ13A-	V-*0413O	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ15A-	V-*0413O	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ16A-	V-*0413O	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ17A-	V-*0413O	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ19A-	V-*0413O	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ20A-	V-*0413O	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ21A-	V-*0413O	I-04-04		Dual Screen IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ11A-	V-*0413I	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040501	40 27 02	V340
IRZ13A-	V-*0413I	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040501	40 27 02	V340
IRZ15A-	V-*0413I	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040501	40 27 02	V340
IRZ16A-	V-*0413I	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040501	40 27 02	V340
IRZ17A-	V-*0413I	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040501	40 27 02	V340
IRZ19A-	V-*0413I	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040501	40 27 02	V340
IRZ20A-	V-*0413I	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040501	40 27 02	V340
IRZ21A-	V-*0413I	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040501	40 27 02	V340
IRZ11A-	V-*0413K	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040503	40 27 02	V340
IRZ13A-	V-*0413K	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040503	40 27 02	V340
IRZ15A-	V-*0413K	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040503	40 27 02	V340
IRZ16A-	V-*0413K	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040503	40 27 02	V340

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ17A-	V-*0413K	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040503	40 27 02	V340
IRZ19A-	V-*0413K	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040503	40 27 02	V340
IRZ20A-	V-*0413K	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040503	40 27 02	V340
IRZ21A-	V-*0413K	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040503	40 27 02	V340
IRZ11B-	V-*0418I	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040603	40 27 02	V340
IRZ13B-	V-*0418I	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040603	40 27 02	V340
IRZ15B-	V-*0418I	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040603	40 27 02	V340
IRZ16B-	V-*0418I	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040603	40 27 02	V340
IRZ17B-	V-*0418I	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040603	40 27 02	V340
IRZ19B-	V-*0418I	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040603	40 27 02	V340
IRZ20B-	V-*0418I	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040603	40 27 02	V340
IRZ21B-	V-*0418I	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040603	40 27 02	V340
IRZ11B-	V-*0418L	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040601	40 27 02	V340
IRZ13B-	V-*0418L	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040601	40 27 02	V340
IRZ15B-	V-*0418L	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040601	40 27 02	V340
IRZ16B-	V-*0418L	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040601	40 27 02	V340
IRZ17B-	V-*0418L	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040601	40 27 02	V340
IRZ19B-	V-*0418L	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040601	40 27 02	V340
IRZ20B-	V-*0418L	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040601	40 27 02	V340
IRZ21B-	V-*0418L	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/2"	2"-CA-PVLK-040601	40 27 02	V340
IRZ11B-	V-*0418M	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ13B-	V-*0418M	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ15B-	V-*0418M	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ16B-	V-*0418M	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ17B-	V-*0418M	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ19B-	V-*0418M	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ20B-	V-*0418M	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ21B-	V-*0418M	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ11B-	V-*0418N	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ13B-	V-*0418N	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ15B-	V-*0418N	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ16B-	V-*0418N	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ17B-	V-*0418N	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ19B-	V-*0418N	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ20B-	V-*0418N	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ21B-	V-*0418N	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Full-port ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRZ25-	V-*0407C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040401	40 27 02	V962
IRZ27-	V-*0407C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040401	40 27 02	V962
IRZ29-	V-*0407C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040401	40 27 02	V962
IRZ31-	V-*0407C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040401	40 27 02	V962
IRZ33-	V-*0407C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040401	40 27 02	V962
IRZ25-	V-*0407F	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040403	40 27 02	V962

TABLE D1-7

NTH IRZ - VALVES

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LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ27-	V-*0407F	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040403	40 27 02	V962
IRZ29-	V-*0407F	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040403	40 27 02	V962
IRZ31-	V-*0407F	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040403	40 27 02	V962
IRZ33-	V-*0407F	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040403	40 27 02	V962
IRZ35-	V-*0403C	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040302	40 27 02	V962
IRZ37-	V-*0403C	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040302	40 27 02	V962
IRZ39-	V-*0403C	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040302	40 27 02	V962
IRZ11A-	V-*0413C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040501	40 27 02	V962
IRZ13A-	V-*0413C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040501	40 27 02	V962
IRZ15A-	V-*0413C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040501	40 27 02	V962
IRZ16A-	V-*0413C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040501	40 27 02	V962
IRZ17A-	V-*0413C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040501	40 27 02	V962
IRZ19A-	V-*0413C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040501	40 27 02	V962
IRZ20A-	V-*0413C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040501	40 27 02	V962
IRZ21A-	V-*0413C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040501	40 27 02	V962
IRZ11A-	V-*0413F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040503	40 27 02	V962
IRZ13A-	V-*0413F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040503	40 27 02	V962
IRZ15A-	V-*0413F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040503	40 27 02	V962
IRZ16A-	V-*0413F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040503	40 27 02	V962
IRZ17A-	V-*0413F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040503	40 27 02	V962
IRZ19A-	V-*0413F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040503	40 27 02	V962

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

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IRZ20A-	V-*0413F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040503	40 27 02	V962
IRZ21A-	V-*0413F	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040503	40 27 02	V962
IRZ11B-	V-*0418B	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040601	40 27 02	V962
IRZ13B-	V-*0418B	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040601	40 27 02	V962
IRZ15B-	V-*0418B	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040601	40 27 02	V962
IRZ16B-	V-*0418B	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040601	40 27 02	V962
IRZ17B-	V-*0418B	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040601	40 27 02	V962
IRZ19B-	V-*0418B	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040601	40 27 02	V962
IRZ20B-	V-*0418B	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040601	40 27 02	V962
IRZ21B-	V-*0418B	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040601	40 27 02	V962
IRZ11B-	V-*0418E	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040603	40 27 02	V962
IRZ13B-	V-*0418E	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040603	40 27 02	V962
IRZ15B-	V-*0418E	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040603	40 27 02	V962
IRZ16B-	V-*0418E	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040603	40 27 02	V962
IRZ17B-	V-*0418E	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040603	40 27 02	V962
IRZ19B-	V-*0418E	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040603	40 27 02	V962
IRZ20B-	V-*0418E	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040603	40 27 02	V962
IRZ21B-	V-*0418E	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Air Relief		1/2"	2"-CA-PVLK-040603	40 27 02	V962
IRZ25-	V-*0407B	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040401	40 27 02	V900
IRZ27-	V-*0407B	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040401	40 27 02	V900
IRZ29-	V-*0407B	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040401	40 27 02	V900

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ31-	V-*0407B	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040401	40 27 02	V900
IRZ33-	V-*0407B	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040401	40 27 02	V900
IRZ25-	V-*0407E	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040403	40 27 02	V900
IRZ27-	V-*0407E	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040403	40 27 02	V900
IRZ29-	V-*0407E	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040403	40 27 02	V900
IRZ31-	V-*0407E	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040403	40 27 02	V900
IRZ33-	V-*0407E	I-04-04	M-04-06	TCS Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040403	40 27 02	V900
IRZ35-	V-*0403B	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040302	40 27 02	V900
IRZ37-	V-*0403B	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040302	40 27 02	V900
IRZ39-	V-*0403B	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040302	40 27 02	V900
IRZ11A-	V-*0413B	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040501	40 27 02	V900
IRZ13A-	V-*0413B	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040501	40 27 02	V900
IRZ15A-	V-*0413B	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040501	40 27 02	V900
IRZ16A-	V-*0413B	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040501	40 27 02	V900
IRZ17A-	V-*0413B	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040501	40 27 02	V900
IRZ19A-	V-*0413B	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040501	40 27 02	V900
IRZ20A-	V-*0413B	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040501	40 27 02	V900
IRZ21A-	V-*0413B	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040501	40 27 02	V900
IRZ11A-	V-*0413E	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040503	40 27 02	V900
IRZ13A-	V-*0413E	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040503	40 27 02	V900
IRZ15A-	V-*0413E	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040503	40 27 02	V900

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ16A-	V-*0413E	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040503	40 27 02	V900
IRZ17A-	V-*0413E	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040503	40 27 02	V900
IRZ19A-	V-*0413E	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040503	40 27 02	V900
IRZ20A-	V-*0413E	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040503	40 27 02	V900
IRZ21A-	V-*0413E	I-04-05	M-04-08	Dual Screen IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040503	40 27 02	V900
IRZ11B-	V-*0418A	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040601	40 27 02	V900
IRZ13B-	V-*0418A	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040601	40 27 02	V900
IRZ15B-	V-*0418A	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040601	40 27 02	V900
IRZ16B-	V-*0418A	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040601	40 27 02	V900
IRZ17B-	V-*0418A	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040601	40 27 02	V900
IRZ19B-	V-*0418A	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040601	40 27 02	V900
IRZ20B-	V-*0418A	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040601	40 27 02	V900
IRZ21B-	V-*0418A	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040601	40 27 02	V900
IRZ11B-	V-*0418D	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040603	40 27 02	V900
IRZ13B-	V-*0418D	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040603	40 27 02	V900
IRZ15B-	V-*0418D	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040603	40 27 02	V900
IRZ16B-	V-*0418D	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040603	40 27 02	V900
IRZ17B-	V-*0418D	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040603	40 27 02	V900
IRZ19B-	V-*0418D	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040603	40 27 02	V900
IRZ20B-	V-*0418D	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040603	40 27 02	V900
IRZ21B-	V-*0418D	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Diaphragm		1-1/2"	2"-CA-PVLK-040603	40 27 02	V900

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ25-	V-*0407D	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/4"	1-1/4"-CA-PVLK-040401	40 27 02	V783
IRZ27-	V-*0407D	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/4"	1-1/4"-CA-PVLK-040401	40 27 02	V783
IRZ29-	V-*0407D	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/4"	1-1/4"-CA-PVLK-040401	40 27 02	V783
IRZ31-	V-*0407D	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/4"	1-1/4"-CA-PVLK-040401	40 27 02	V783
IRZ25-	V-*0407H	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-040401		
IRZ27-	V-*0407H	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-040401		
IRZ29-	V-*0407H	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-040401		
IRZ31-	V-*0407H	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-040401		
IRZ33-	V-*0407H	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-PVLK-040401	40 27 02	V783
IRZ25-	V-*0407G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040403	40 27 02	V783
IRZ27-	V-*0407G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040403	40 27 02	V783
IRZ29-	V-*0407G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040403	40 27 02	V783
IRZ31-	V-*0407G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040403	40 27 02	V783
IRZ33-	V-*0407G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040403	40 27 02	V783
IRZ35-	V-*0403D	I-04-03		Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040302	40 27 02	V783
IRZ37-	V-*0403D	I-04-03		Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040302	40 27 02	V783
IRZ39-	V-*0403D	I-04-03		Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040302	40 27 02	V783
IRZ11A-	V-*0413D	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040501	40 27 02	V783
IRZ13A-	V-*0413D	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040501	40 27 02	V783
IRZ15A-	V-*0413D	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040501	40 27 02	V783
IRZ16A-	V-*0413D	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040501	40 27 02	V783

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ17A-	V-*0413D	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040501	40 27 02	V783
IRZ19A-	V-*0413D	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040501	40 27 02	V783
IRZ20A-	V-*0413D	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040501	40 27 02	V783
IRZ21A-	V-*0413D	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040501	40 27 02	V783
IRZ11A-	V-*0413G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040503	40 27 02	V783
IRZ13A-	V-*0413G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040503	40 27 02	V783
IRZ15A-	V-*0413G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040503	40 27 02	V783
IRZ16A-	V-*0413G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040503	40 27 02	V783
IRZ17A-	V-*0413G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040503	40 27 02	V783
IRZ19A-	V-*0413G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040503	40 27 02	V783
IRZ20A-	V-*0413G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040503	40 27 02	V783
IRZ21A-	V-*0413G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040503	40 27 02	V783
IRZ11B-	V-*0418C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040601	40 27 02	V783
IRZ13B-	V-*0418C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040601	40 27 02	V783
IRZ15B-	V-*0418C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040601	40 27 02	V783
IRZ16B-	V-*0418C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040601	40 27 02	V783
IRZ17B-	V-*0418C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040601	40 27 02	V783
IRZ19B-	V-*0418C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040601	40 27 02	V783
IRZ20B-	V-*0418C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040601	40 27 02	V783
IRZ21B-	V-*0418C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040601	40 27 02	V783
IRZ11B-	V-*0418F	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040603	40 27 02	V783

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ13B-	V-*0418F	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040603	40 27 02	V783
IRZ15B-	V-*0418F	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040603	40 27 02	V783
IRZ16B-	V-*0418F	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040603	40 27 02	V783
IRZ17B-	V-*0418F	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040603	40 27 02	V783
IRZ19B-	V-*0418F	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040603	40 27 02	V783
IRZ20B-	V-*0418F	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040603	40 27 02	V783
IRZ21B-	V-*0418F	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Check	Low Pressure	1-1/2"	2"-CA-SUTK-040603	40 27 02	V783
IRZ01-	V-*0402A	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040201	40 27 02	V340
IRZ05-	V-*0402A	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040201	40 27 02	V340
IRZ09-	V-*0402A	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040201	40 27 02	V340
IRZ01-	V-*0402R	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040202	40 27 02	V340
IRZ05-	V-*0402R	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040202	40 27 02	V340
IRZ09-	V-*0402R	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040202	40 27 02	V340
IRZ25-	V-*0410B	I-04-04		Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ27-	V-*0410B	I-04-04		Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ29-	V-*0410B	I-04-04		Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ31-	V-*0410B	I-04-04		Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ33-	V-*0410B	I-04-04		Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ35-	V-*0405C	I-04-03		Single Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040301	40 27 02	V340
IRZ37-	V-*0405C	I-04-03		Single Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040301	40 27 02	V340
IRZ39-	V-*0405C	I-04-03		Single Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040301	40 27 02	V340

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ11A-	V-*0419D	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V340
IRZ13A-	V-*0419D	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V340
IRZ15A-	V-*0419D	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V340
IRZ16A-	V-*0419D	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V340
IRZ17A-	V-*0419D	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V340
IRZ19A-	V-*0419D	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V340
IRZ20A-	V-*0419D	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V340
IRZ21A-	V-*0419D	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V340
IRZ11B-	V-*0420D	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V340
IRZ13B-	V-*0420D	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V340
IRZ15B-	V-*0420D	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V340
IRZ16B-	V-*0420D	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V340
IRZ17B-	V-*0420D	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V340
IRZ19B-	V-*0420D	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V340
IRZ20B-	V-*0420D	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V340
IRZ21B-	V-*0420D	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V340
IRZ01-	V-*0402D	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040201	40 27 02	V340
IRZ05-	V-*0402D	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040201	40 27 02	V340
IRZ09-	V-*0402D	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040201	40 27 02	V340
IRZ01-	V-*0402H	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040202	40 27 02	V340
IRZ05-	V-*0402H	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040202	40 27 02	V340

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ09-	V-*0402H	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040202	40 27 02	V340
IRZ23-	V-*0401D	I-04-01	M-04-03	Single Screen IRZ Extraction Wells	IRZ-23 EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-040101	40 27 02	V340
IRZ25-	V-*0407A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-040401	40 27 02	V340
IRZ27-	V-*0407A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-040401	40 27 02	V340
IRZ29-	V-*0407A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-040401	40 27 02	V340
IRZ31-	V-*0407A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Ball	Isolation Valve	2"	2"-CA-PVLK-040401	40 27 02	V340
IRZ25-	V-*0410C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ27-	V-*0410C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ29-	V-*0410C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ31-	V-*0410C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Ball	Isolation Valve	2"	2"-RW-PVLK-040402	40 27 02	V340
IRZ01-	V-*0402C	I-04-02	M-04-06	Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-040201	40 27 02	V781
IRZ05-	V-*0402C	I-04-02	M-04-06	Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-040201	40 27 02	V781
IRZ09-	V-*0402C	I-04-02	M-04-06	Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-040201	40 27 02	V781
IRZ01-	V-*0402G	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-040202	40 27 02	V781
IRZ05-	V-*0402G	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-040202	40 27 02	V781
IRZ09-	V-*0402G	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-040202	40 27 02	V781
IRZ23-	V-*0401C	I-04-01	M-04-03	Single Screen IRZ Extraction Wells	IRZ-23 EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-040101	40 27 02	V781
IRZ25-	V-*0410A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040402	40 27 02	V781
IRZ27-	V-*0410A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040402	40 27 02	V781
IRZ29-	V-*0410A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040402	40 27 02	V781
IRZ31-	V-*0410A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040402	40 27 02	V781

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ33-	V-*0410A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040402	40 27 02	V781
IRZ35-	V-*0405A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	BW S	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040301	40 27 02	V781
IRZ37-	V-*0405A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	BW S	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040301	40 27 02	V781
IRZ39-	V-*0405A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	BW S	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040301	40 27 02	V781
IRZ11A-	V-*0419B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-HALE-040502	40 27 02	V781
IRZ13A-	V-*0419B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-HALE-040502	40 27 02	V781
IRZ15A-	V-*0419B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-HALE-040502	40 27 02	V781
IRZ16A-	V-*0419B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-HALE-040502	40 27 02	V781
IRZ17A-	V-*0419B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-HALE-040502	40 27 02	V781
IRZ19A-	V-*0419B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-HALE-040502	40 27 02	V781
IRZ20A-	V-*0419B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-HALE-040502	40 27 02	V781
IRZ21A-	V-*0419B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-HALE-040502	40 27 02	V781
IRZ11B-	V-*0420A	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040602	40 27 02	V781
IRZ13B-	V-*0420A	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040602	40 27 02	V781
IRZ15B-	V-*0420A	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040602	40 27 02	V781
IRZ16B-	V-*0420A	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040602	40 27 02	V781
IRZ17B-	V-*0420A	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040602	40 27 02	V781
IRZ19B-	V-*0420A	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040602	40 27 02	V781
IRZ20B-	V-*0420A	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040602	40 27 02	V781
IRZ21B-	V-*0420A	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Check	Y-Pattern	2"	2"-RW-PVLK-040602	40 27 02	V781
IRZ35-	V-*0403A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040302	40 27 02	V239

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ37-	V-*0403A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040302	40 27 02	V239
IRZ39-	V-*0403A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040302	40 27 02	V239
IRZ35-	V-*0405B	I-04-03		Single Screen IRZ Injection Wells	BW S	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040301	40 27 02	V239
IRZ37-	V-*0405B	I-04-03		Single Screen IRZ Injection Wells	BW S	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040301	40 27 02	V239
IRZ39-	V-*0405B	I-04-03		Single Screen IRZ Injection Wells	BW S	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040301	40 27 02	V239
IRZ11A-	V-*0413A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V239
IRZ13A-	V-*0413A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V239
IRZ15A-	V-*0413A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V239
IRZ16A-	V-*0413A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V239
IRZ17A-	V-*0413A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V239
IRZ19A-	V-*0413A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V239
IRZ20A-	V-*0413A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V239
IRZ21A-	V-*0413A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-040501	40 27 02	V239
IRZ11A-	V-*0419C	I-04-05	M-04-8	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V239
IRZ13A-	V-*0419C	I-04-05	M-04-8	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V239
IRZ15A-	V-*0419C	I-04-05	M-04-8	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V239
IRZ16A-	V-*0419C	I-04-05	M-04-8	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V239
IRZ17A-	V-*0419C	I-04-05	M-04-8	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V239
IRZ19A-	V-*0419C	I-04-05	M-04-8	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V239
IRZ20A-	V-*0419C	I-04-05	M-04-8	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V239
IRZ21A-	V-*0419C	I-04-05	M-04-8	Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-HALE-040502	40 27 02	V239

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ11B-	V-*0420C	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V239
IRZ13B-	V-*0420C	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V239
IRZ15B-	V-*0420C	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V239
IRZ16B-	V-*0420C	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V239
IRZ17B-	V-*0420C	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V239
IRZ19B-	V-*0420C	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V239
IRZ20B-	V-*0420C	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V239
IRZ21B-	V-*0420C	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Valve	Globe	Isolation Valve	2"	2"-RW-PVLK-040602	40 27 02	V239
IRZ25-	V-*0412	I-04-04		Clean-In-Place Vaults		Valve	Gate	CIP valve vault	4"	4"-CA-HALE-040405	40 27 02	V157
IRZ27-	V-*0412	I-04-04		Clean-In-Place Vaults		Valve	Gate	CIP valve vault	4"	4"-CA-HALE-040405	40 27 02	V157
IRZ29-	V-*0412	I-04-04		Clean-In-Place Vaults		Valve	Gate	CIP valve vault	4"	4"-CA-HALE-040405	40 27 02	V157
IRZ31-	V-*0412	I-04-04		Clean-In-Place Vaults		Valve	Gate	CIP valve vault	4"	4"-CA-HALE-040405	40 27 02	V157
IRZ01-	V-*0402J	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Gate	North IRZ Valve Vault	6"	6"-CA-HALE-040402	40 27 02	V157
IRZ05-	V-*0402J	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Gate	North IRZ Valve Vault	6"	6"-CA-HALE-040402	40 27 02	V157
IRZ09-	V-*0402J	I-04-02		Dual Screen IRZ Extraction Wells		Valve	Gate	North IRZ Valve Vault	6"	6"-CA-HALE-040402	40 27 02	V157
IRZ35-	V-*0403H	I-04-03		Single Screen IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040304	40 27 02	V157
IRZ37-	V-*0403H	I-04-03		Single Screen IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040304	40 27 02	V157
IRZ39-	V-*0403H	I-04-03		Single Screen IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040304	40 27 02	V157
IRZ35-	V-*0403I	I-04-03		Single Screen IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040304	40 27 02	V157
IRZ37-	V-*0403I	I-04-03		Single Screen IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040304	40 27 02	V157
IRZ39-	V-*0403I	I-04-03		Single Screen IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040304	40 27 02	V157

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ11B-	V-*0424A	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ13B-	V-*0424A	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ15B-	V-*0424A	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ16B-	V-*0424A	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ17B-	V-*0424A	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ19B-	V-*0424A	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ20B-	V-*0424A	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ21B-	V-*0424A	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ13B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ15B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ16B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ17B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ19B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ20B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ21B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ11B-	V-*0424B	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ13B-	V-*0424B	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ15B-	V-*0424B	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ16B-	V-*0424B	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ17B-	V-*0424B	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ19B-	V-*0424B	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ20B-	V-*0424B	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ21B-	V-*0424B	I-04-06		Dual Screen Cluster IRZ Injection Wells		Valve	Gate	CIP valve vault	6"	4"-CA-HALE-040604	40 27 02	V157
IRZ01-	V-*0402I	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ05-	V-*0402I	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ09-	V-*0402I	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ25-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ27-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ29-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ31-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ11B-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ11A-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ13A-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ15A-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ16A-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ17A-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ19A-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ20A-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ21A-	V-*0411A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ11B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ13B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ15B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ16B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ17B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ19B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ20B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ21B-	V-*0422C	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRZ35-	F-*0403	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040302		
IRZ37-	F-*0403	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040302		
IRZ39-	F-*0403	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040302		
IRZ25-	F-*0408A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040401		
IRZ27-	F-*0408A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040401		
IRZ29-	F-*0408A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040401		
IRZ31-	F-*0408A	I-04-04		Dual Screen IRZ Injection Wells	S IRZ INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040401		
IRZ25-	F-*0408B	I-04-04		Dual Screen IRZ Injection Wells		Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040403		
IRZ27-	F-*0408B	I-04-04		Dual Screen IRZ Injection Wells		Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040403		
IRZ29-	F-*0408B	I-04-04		Dual Screen IRZ Injection Wells		Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040403		
IRZ31-	F-*0408B	I-04-04		Dual Screen IRZ Injection Wells		Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-040403		
IRZ25-	FCV-*0408	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040401	40 27 02	V344
IRZ27-	FCV-*0408	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040401	40 27 02	V344
IRZ29-	FCV-*0408	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040401	40 27 02	V344
IRZ31-	FCV-*0408	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040401	40 27 02	V344
IRZ33-	FCV-*0408	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040401	40 27 02	V344

TABLE D1-7

NTH IRZ - VALVES

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PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ25-	FCV-*0409	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040403	40 27 02	V344
IRZ27-	FCV-*0409	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040403	40 27 02	V344
IRZ29-	FCV-*0409	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040403	40 27 02	V344
IRZ31-	FCV-*0409	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040403	40 27 02	V344
IRZ33-	FCV-*0409	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040403	40 27 02	V344
IRZ35-	FCV-*0404	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040302	40 27 02	V344
IRZ37-	FCV-*0404	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040302	40 27 02	V344
IRZ39-	FCV-*0404	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040302	40 27 02	V344
IRZ11A-	FCV-*0414	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040501	40 27 02	V344
IRZ13A-	FCV-*0414	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040501	40 27 02	V344
IRZ15A-	FCV-*0414	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040501	40 27 02	V344
IRZ16A-	FCV-*0414	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040501	40 27 02	V344
IRZ17A-	FCV-*0414	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040501	40 27 02	V344
IRZ19A-	FCV-*0414	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040501	40 27 02	V344
IRZ20A-	FCV-*0414	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040501	40 27 02	V344
IRZ21A-	FCV-*0414	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040501	40 27 02	V344
IRZ11A-	FCV-*0415	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040503	40 27 02	V344
IRZ13A-	FCV-*0415	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040503	40 27 02	V344
IRZ15A-	FCV-*0415	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040503	40 27 02	V344
IRZ16A-	FCV-*0415	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040503	40 27 02	V344
IRZ17A-	FCV-*0415	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040503	40 27 02	V344

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ19A-	FCV-*0415	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040503	40 27 02	V344
IRZ20A-	FCV-*0415	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040503	40 27 02	V344
IRZ21A-	FCV-*0415	I-04-05	M-06-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040503	40 27 02	V344
IRZ11B-	FCV-*0416	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040601	40 27 02	V344
IRZ13B-	FCV-*0416	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040601	40 27 02	V344
IRZ15B-	FCV-*0416	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040601	40 27 02	V344
IRZ16B-	FCV-*0416	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040601	40 27 02	V344
IRZ17B-	FCV-*0416	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040601	40 27 02	V344
IRZ19B-	FCV-*0416	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040601	40 27 02	V344
IRZ20B-	FCV-*0416	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040601	40 27 02	V344
IRZ21B-	FCV-*0416	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040601	40 27 02	V344
IRZ11B-	FCV-*0417	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040603	40 27 02	V344
IRZ13B-	FCV-*0417	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040603	40 27 02	V344
IRZ15B-	FCV-*0417	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040603	40 27 02	V344
IRZ16B-	FCV-*0417	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040603	40 27 02	V344
IRZ17B-	FCV-*0417	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040603	40 27 02	V344
IRZ19B-	FCV-*0417	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040603	40 27 02	V344
IRZ20B-	FCV-*0417	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040603	40 27 02	V344
IRZ21B-	FCV-*0417	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-040603	40 27 02	V344
IRZ35-	V-*0403F	I-04-03	M-04-05	Single Screen IRZ Injection Wells	N IRZ INJ	Valve	sample port					
IRZ37-	V-*0403F	I-04-03	M-04-05	Single Screen IRZ Injection Wells	N IRZ INJ	Valve	sample port					

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ39-	V-*0403F	I-04-03	M-04-05	Single Screen IRZ Injection Wells	N IRZ INJ	Valve	sample port					
IRZ11A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ13A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ15A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ16A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ17A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ19A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ20A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ21A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ35-	V-*0403G	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040302	40 27 02	V340
IRZ37-	V-*0403G	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040302	40 27 02	V340
IRZ39-	V-*0403G	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040302	40 27 02	V340

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-7

NTH IRZ - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ37-	V-*0403F	I-04-03	M-04-05	Single Screen IRZ Injection Wells	N IRZ INJ	Valve	sample port					
IRZ39-	V-*0403F	I-04-03	M-04-05	Single Screen IRZ Injection Wells	N IRZ INJ	Valve	sample port					
IRZ11A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ13A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ15A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ16A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ17A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ19A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ20A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ21A-	F-*0413	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Strainer	Wye		2"	2"-CA-PVLK-040501		
IRZ35-	V-*0403G	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040302	40 27 02	V340
IRZ37-	V-*0403G	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040302	40 27 02	V340
IRZ39-	V-*0403G	I-04-03		Single Screen IRZ Injection Wells	N IRZ INJ	Valve	Full-port ball	Isolation Valve	1/4"	2"-CA-PVLK-040302	40 27 02	V340

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ01-	PMP-*0441	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Extraction Well Pump	Submersible				2"-EX-SUTK-040201	44 42 56.04A		50	268		460 VAC, 3-Phase
IRZ05-	PMP-*0441	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Extraction Well Pump	Submersible				2"-EX-SUTK-040201	44 42 56.04A		50	268		460 VAC, 3-Phase
IRZ09-	PMP-*0441	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Extraction Well Pump	Submersible				2"-EX-SUTK-040201	44 42 56.04A		50	268		460 VAC, 3-Phase
IRZ01-	PMP-*0442	I-04-02		Dual Screen IRZ Extraction Well		Extraction Well Pump	Submersible				2"-EX-SUTK-040202	44 42 56.04A		50	268		460 VAC, 3-Phase
IRZ05-	PMP-*0442	I-04-02		Dual Screen IRZ Extraction Well		Extraction Well Pump	Submersible				2"-EX-SUTK-040202	44 42 56.04A		50	268		460 VAC, 3-Phase
IRZ09-	PMP-*0442	I-04-02		Dual Screen IRZ Extraction Well		Extraction Well Pump	Submersible				2"-EX-SUTK-040202	44 42 56.04A		50	268		460 VAC, 3-Phase
IRZ23-	PMP-*0440	I-04-01		Single Screen IRZ Extraction Wells		Extraction Well Pump	Submersible				2"-EX-SUTK-040101	44 42 56.04A		50	270		460 VAC, 3-Phase
IRZ25-	PMP-*0444	I-04-04		Dual Screen IRZ Injection Wells		Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp
IRZ27-	PMP-*0444	I-04-04		Dual Screen IRZ Injection Wells		Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp
IRZ29-	PMP-*0444	I-04-04		Dual Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ31-	PMP-*0444	I-04-04		Dual Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ33-	PMP-*0444	I-04-04		Dual Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ25-	PMP-*0445	I-04-04		Dual Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ27-	PMP-*0445	I-04-04		Dual Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ29-	PMP-*0445	I-04-04		Dual Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ31-	PMP-*0445	I-04-04		Dual Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ33-	PMP-*0445	I-04-04		Dual Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ35-	PMP-*0443	I-04-03		Single Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040301	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ37-	PMP-*0443	I-04-03		Single Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040301	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ39-	PMP-*0443	I-04-03		Single Screen IRZ Injection Wells	BW S	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040301	44 42 56.04A		35/60	200/200		3hp/5hp, 460 VAC, 3-Phase
IRZ11A-	PMP-*0446	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ13A-	PMP-*0446	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ15A-	PMP-*0446	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ16A-	PMP-*0446	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ17A-	PMP-*0446	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ19A-	PMP-*0446	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ20A-	PMP-*0446	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ21A-	PMP-*0446	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ11A-	PMP-*0447	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase

TABLE D1-8

NTH IRZ - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ13A-	PMP-*0447	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ15A-	PMP-*0447	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ16A-	PMP-*0447	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ17A-	PMP-*0447	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ19A-	PMP-*0447	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ20A-	PMP-*0447	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ21A-	PMP-*0447	I-04-05		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible	1-1/2" FNPT / 2" FNPT			2"-RW-SUTK-040402	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ11B-	PMP-*0448	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ13B-	PMP-*0448	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ15B-	PMP-*0448	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ16B-	PMP-*0448	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ17B-	PMP-*0448	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ19B-	PMP-*0448	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ20B-	PMP-*0448	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ21B-	PMP-*0448	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ11B-	PMP-*0449	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ13B-	PMP-*0449	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ15B-	PMP-*0449	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ16B-	PMP-*0449	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ17B-	PMP-*0449	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ19B-	PMP-*0449	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ20B-	PMP-*0449	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ21B-	PMP-*0449	I-04-06		Dual Screen Cluster IRZ Injection Wells	BW N	Backwash Well Pump	Submersible				2"-RW-SUTK-040602	44 42 56.04A		40	180		460 VAC, 3-Phase
IRZ01-	PIT-*0461A	I-04-02		Dual Screen IRZ Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-040201	40_91_02.07_1.0 1A				100	24 V Loop
IRZ05-	PIT-*0461A	I-04-02		Dual Screen IRZ Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-040201	40_91_02.07_1.0 1A				100	24 V Loop
IRZ09-	PIT-*0461A	I-04-02		Dual Screen IRZ Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-040201	40_91_02.07_1.0 1A				100	24 V Loop

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ01-	PIT-*0461D	I-04-02		Dual Screen IRZ Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-040202	40_91_02.07_1.0 1A				100	24 V Loop
IRZ05-	PIT-*0461D	I-04-02		Dual Screen IRZ Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-040202	40_91_02.07_1.0 1A				100	24 V Loop
IRZ09-	PIT-*0461D	I-04-02		Dual Screen IRZ Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-040202	40_91_02.07_1.0 1A				100	24 V Loop
IRZ23-	PIT-*0460A	I-04-01	M-04-03	Single Screen IRZ Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-040101	40_91_02.07_1.0 1A				100	24 V Loop
IRZ01-	PSL-*0461E	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ05-	PSL-*0461E	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ09-	PSL-*0461E	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ25-	PSL-*0463G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ27-	PSL-*0463G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ29-	PSL-*0463G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ31-	PSL-*0463G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ33-	PSL-*0463G	I-04-04		Dual Screen IRZ Injection Wells	S IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ11A-	PSL-*0464G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ13A-	PSL-*0464G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ15A-	PSL-*0464G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ16A-	PSL-*0464G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ17A-	PSL-*0464G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ19A-	PSL-*0464G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ20A-	PSL-*0464G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ21A-	PSL-*0464G	I-04-05		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ11B-	PSL-*0465G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ13B-	PSL-*0465G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ15B-	PSL-*0465G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ16B-	PSL-*0465G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ17B-	PSL-*0465G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ19B-	PSL-*0465G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ20B-	PSL-*0465G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ21B-	PSL-*0465G	I-04-06		Dual Screen Cluster IRZ Injection Wells	N IRZ EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.0 1C					24 VDC
IRZ23-	LSH-*0450A	I-04-01		NTH IRZ-23	IRZ-23 EX	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ01-	LSH-*0451A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ05-	LSH-*0451A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ09-	LSH-*0451A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ01-	LSH-*0451B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ05-	LSH-*0451B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ09-	LSH-*0451B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ25-	LSH-*0453A	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ27-	LSH-*0453A	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ29-	LSH-*0453A	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ31-	LSH-*0453A	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ33-	LSH-*0453A	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ25-	LSH-*0453B	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ27-	LSH-*0453B	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ29-	LSH-*0453B	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ31-	LSH-*0453B	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ33-	LSH-*0453B	I-04-04		Dual Screen IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ35-	LSH-*0452A	I-04-03		Single Screen IRZ Injection Wells	S IRZ INJ	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			2"-CA-PVLK-040302	40_91_02.05_1.0 1C					24 VDC
IRZ37-	LSH-*0452A	I-04-03		Single Screen IRZ Injection Wells	S IRZ INJ	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			2"-CA-PVLK-040302	40_91_02.05_1.0 1C					24 VDC
IRZ39-	LSH-*0452A	I-04-03		Single Screen IRZ Injection Wells	S IRZ INJ	Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			2"-CA-PVLK-040302	40_91_02.05_1.0 1C					24 VDC
IRZ11A-	LSH-*0454A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ13A-	LSH-*0454A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ15A-	LSH-*0454A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ16A-	LSH-*0454A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ17A-	LSH-*0454A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ19A-	LSH-*0454A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ20A-	LSH-*0454A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ21A-	LSH-*0454A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ11A-	LSH-*0454B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ13A-	LSH-*0454B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ15A-	LSH-*0454B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ16A-	LSH-*0454B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ17A-	LSH-*0454B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ19A-	LSH-*0454B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ20A-	LSH-*0454B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ21A-	LSH-*0454B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					24 VDC
IRZ01-	PI-*0461F	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ05-	PI-*0461F	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ09-	PI-*0461F	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ25-	PI-*0463A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040401	40_91_02.07_1.0 1B				100	24 V Loop
IRZ27-	PI-*0463A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040401	40_91_02.07_1.0 1B				100	24 V Loop
IRZ29-	PI-*0463A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040401	40_91_02.07_1.0 1B				100	24 V Loop
IRZ31-	PI-*0463A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040401	40_91_02.07_1.0 1B				100	24 V Loop
IRZ33-	PI-*0463A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040401	40_91_02.07_1.0 1B				100	24 V Loop
IRZ25-	PI-*0463B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040403	40_91_02.07_1.0 1B				100	24 V Loop
IRZ27-	PI-*0463B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040403	40_91_02.07_1.0 1B				100	24 V Loop
IRZ29-	PI-*0463B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040403	40_91_02.07_1.0 1B				100	24 V Loop
IRZ31-	PI-*0463B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040403	40_91_02.07_1.0 1B				100	24 V Loop
IRZ33-	PI-*0463B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040403	40_91_02.07_1.0 1B				100	24 V Loop
IRZ25-	PI-*0463C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040402	40_91_02.07_1.0 1B				100	24 V Loop
IRZ27-	PI-*0463C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040402	40_91_02.07_1.0 1B				100	24 V Loop

TABLE D1-8

NTH IRZ - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ29-	PI-*0463C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040402	40_91_02.07_1.0 1B				100	24 V Loop
IRZ31-	PI-*0463C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040402	40_91_02.07_1.0 1B				100	24 V Loop
IRZ33-	PI-*0463C	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	BW S	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040402	40_91_02.07_1.0 1B				100	24 V Loop
IRZ25-	PI-*0463D	I-04-04		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ27-	PI-*0463D	I-04-04		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ29-	PI-*0463D	I-04-04		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ31-	PI-*0463D	I-04-04		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ33-	PI-*0463D	I-04-04		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ35-	PI-*0462A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040302	40_91_02.07_1.0 1B				100	24 V Loop
IRZ37-	PI-*0462A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040302	40_91_02.07_1.0 1B				100	24 V Loop
IRZ39-	PI-*0462A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040302	40_91_02.07_1.0 1B				100	24 V Loop
IRZ35-	PI-*0462B	I-04-03	M-04-05	Single Screen IRZ Injection Wells	BW S	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040301	40_91_02.07_1.0 1B				100	24 V Loop
IRZ37-	PI-*0462B	I-04-03	M-04-05	Single Screen IRZ Injection Wells	BW S	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040301	40_91_02.07_1.0 1B				100	24 V Loop
IRZ39-	PI-*0462B	I-04-03	M-04-05	Single Screen IRZ Injection Wells	BW S	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040301	40_91_02.07_1.0 1B				100	24 V Loop
IRZ11A-	PI-*0464A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"		2"-CA-PVLK-040501	40_91_02.07_1.0 1B				100	24 V Loop
IRZ13A-	PI-*0464A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"		2"-CA-PVLK-040501	40_91_02.07_1.0 1B				100	24 V Loop
IRZ15A-	PI-*0464A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"		2"-CA-PVLK-040501	40_91_02.07_1.0 1B				100	24 V Loop
IRZ16A-	PI-*0464A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"		2"-CA-PVLK-040501	40_91_02.07_1.0 1B				100	24 V Loop
IRZ17A-	PI-*0464A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"		2"-CA-PVLK-040501	40_91_02.07_1.0 1B				100	24 V Loop
IRZ19A-	PI-*0464A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"		2"-CA-PVLK-040501	40_91_02.07_1.0 1B				100	24 V Loop
IRZ20A-	PI-*0464A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"		2"-CA-PVLK-040501	40_91_02.07_1.0 1B				100	24 V Loop
IRZ21A-	PI-*0464A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"		2"-CA-PVLK-040501	40_91_02.07_1.0 1B				100	24 V Loop
IRZ11A-	PI-*0464B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"			40_91_02.07_1.0 1B				100	24 V Loop
IRZ13A-	PI-*0464B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"			40_91_02.07_1.0 1B				100	24 V Loop
IRZ15A-	PI-*0464B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"			40_91_02.07_1.0 1B				100	24 V Loop
IRZ16A-	PI-*0464B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"			40_91_02.07_1.0 1B				100	24 V Loop
IRZ17A-	PI-*0464B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"			40_91_02.07_1.0 1B				100	24 V Loop

TABLE D1-8

NTH IRZ - EQUIPMENT

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PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ19A-	PI-*0464B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"			40_91_02.07_1.0 1B				100	24 V Loop
IRZ20A-	PI-*0464B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"			40_91_02.07_1.0 1B				100	24 V Loop
IRZ21A-	PI-*0464B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	2"			40_91_02.07_1.0 1B				100	24 V Loop
IRZ11A-	PI-*0464C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-HALE-040502	40_91_02.07_1.0 1B				100	24 V Loop
IRZ13A-	PI-*0464C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-HALE-040502	40_91_02.07_1.0 1B				100	24 V Loop
IRZ15A-	PI-*0464C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-HALE-040502	40_91_02.07_1.0 1B				100	24 V Loop
IRZ16A-	PI-*0464C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-HALE-040502	40_91_02.07_1.0 1B				100	24 V Loop
IRZ17A-	PI-*0464C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-HALE-040502	40_91_02.07_1.0 1B				100	24 V Loop
IRZ19A-	PI-*0464C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-HALE-040502	40_91_02.07_1.0 1B				100	24 V Loop
IRZ20A-	PI-*0464C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-HALE-040502	40_91_02.07_1.0 1B				100	24 V Loop
IRZ21A-	PI-*0464C	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-HALE-040502	40_91_02.07_1.0 1B				100	24 V Loop
IRZ11A-	PI-*0464E	I-04-05		Dual Screen Cluster IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ13A-	PI-*0464E	I-04-05		Dual Screen Cluster IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ15A-	PI-*0464E	I-04-05		Dual Screen Cluster IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ16A-	PI-*0464E	I-04-05		Dual Screen Cluster IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ17A-	PI-*0464E	I-04-05		Dual Screen Cluster IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ19A-	PI-*0464E	I-04-05		Dual Screen Cluster IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ20A-	PI-*0464E	I-04-05		Dual Screen Cluster IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ21A-	PI-*0464E	I-04-05		Dual Screen Cluster IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ11B-	PI-*0465A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040601	40_91_02.07_1.0 1B				100	24 V Loop
IRZ13B-	PI-*0465A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040601	40_91_02.07_1.0 1B				100	24 V Loop
IRZ15B-	PI-*0465A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040601	40_91_02.07_1.0 1B				100	24 V Loop
IRZ16B-	PI-*0465A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040601	40_91_02.07_1.0 1B				100	24 V Loop
IRZ17B-	PI-*0465A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040601	40_91_02.07_1.0 1B				100	24 V Loop
IRZ19B-	PI-*0465A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040601	40_91_02.07_1.0 1B				100	24 V Loop
IRZ20B-	PI-*0465A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040601	40_91_02.07_1.0 1B				100	24 V Loop
IRZ21B-	PI-*0465A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040601	40_91_02.07_1.0 1B				100	24 V Loop

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ11B-	PI-*0465B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040603	40_91_02.07_1.0 1B				100	24 V Loop
IRZ13B-	PI-*0465B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040603	40_91_02.07_1.0 1B				100	24 V Loop
IRZ15B-	PI-*0465B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040603	40_91_02.07_1.0 1B				100	24 V Loop
IRZ16B-	PI-*0465B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040603	40_91_02.07_1.0 1B				100	24 V Loop
IRZ17B-	PI-*0465B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040603	40_91_02.07_1.0 1B				100	24 V Loop
IRZ19B-	PI-*0465B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040603	40_91_02.07_1.0 1B				100	24 V Loop
IRZ20B-	PI-*0465B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040603	40_91_02.07_1.0 1B				100	24 V Loop
IRZ21B-	PI-*0465B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-040603	40_91_02.07_1.0 1B				100	24 V Loop
IRZ11B-	PI-*0465C	I-04-06		Dual Screen IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040602	40_91_02.07_1.0 1B				100	24 V Loop
IRZ13B-	PI-*0465C	I-04-06		Dual Screen IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040602	40_91_02.07_1.0 1B				100	24 V Loop
IRZ15B-	PI-*0465C	I-04-06		Dual Screen IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040602	40_91_02.07_1.0 1B				100	24 V Loop
IRZ16B-	PI-*0465C	I-04-06		Dual Screen IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040602	40_91_02.07_1.0 1B				100	24 V Loop
IRZ17B-	PI-*0465C	I-04-06		Dual Screen IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040602	40_91_02.07_1.0 1B				100	24 V Loop
IRZ19B-	PI-*0465C	I-04-06		Dual Screen IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040602	40_91_02.07_1.0 1B				100	24 V Loop
IRZ20B-	PI-*0465C	I-04-06		Dual Screen IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040602	40_91_02.07_1.0 1B				100	24 V Loop
IRZ21B-	PI-*0465C	I-04-06		Dual Screen IRZ Injection Wells	BW N	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-RW-PVLK-040602	40_91_02.07_1.0 1B				100	24 V Loop
IRZ11B-	PI-*0465E	I-04-06		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ13B-	PI-*0465E	I-04-06		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ15B-	PI-*0465E	I-04-06		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ16B-	PI-*0465E	I-04-06		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ17B-	PI-*0465E	I-04-06		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ19B-	PI-*0465E	I-04-06		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ20B-	PI-*0465E	I-04-06		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ21B-	PI-*0465E	I-04-06		Dual Screen IRZ Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault	40_91_02.07_1.0 1B				100	24 V Loop
IRZ01-	FM-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ01-	FE-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Element	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC
IRZ01-	FIT-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC
IRZ05-	FM-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC
IRZ05-	FE-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Element	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC
IRZ05-	FIT-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC
IRZ09-	FM-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC
IRZ09-	FE-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Element	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC
IRZ09-	FIT-*0471A	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040201	40_91_02.03_1.0 1A		100			24 VDC
IRZ01-	FM-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC
IRZ01-	FE-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Element	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC
IRZ01-	FIT-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC
IRZ05-	FM-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC
IRZ05-	FE-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Element	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC
IRZ05-	FIT-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC
IRZ09-	FM-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC
IRZ09-	FE-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Element	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC
IRZ09-	FIT-*0471B	I-04-02		Dual Screen IRZ Extraction Well	N IRZ EX	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040202	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ23-	FM-*0470A	I-04-01	M-04-03	Single Screen IRZ Extraction Wells	IRZ-23 EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040101	40_91_02.03_1.0 1A		100			24 VDC
IRZ23-	FE-*0470A	I-04-01	M-04-03	Single Screen IRZ Extraction Wells	IRZ-23 EX	Flow Element	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040101	40_91_02.03_1.0 1A		100			24 VDC
IRZ23-	FIT-*0470A	I-04-01	M-04-03	Single Screen IRZ Extraction Wells	IRZ-23 EX	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	1"		2"-EX-PVLK-040101	40_91_02.03_1.0 1A		100			24 VDC
IRZ25-	FM-*04073A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ25-	FE-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ25-	FIT-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ27-	FM-*04073A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ27-	FE-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ27-	FIT-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ29-	FM-*04073A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ29-	FE-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ29-	FIT-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ31-	FM-*04073A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ31-	FE-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ31-	FIT-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ33-	FM-*04073A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ33-	FE-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ33-	FIT-*0473A	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040401	40_91_02.03_1.0 1A		100			24 VDC
IRZ25-	FM-*04073B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ25-	FE-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ25-	FIT-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ27-	FM-*04073B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ27-	FE-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ27-	FIT-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ29-	FM-*04073B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ29-	FE-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ29-	FIT-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ31-	FM-*04073B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ31-	FE-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ31-	FIT-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ33-	FM-*04073B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ33-	FE-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ33-	FIT-*0473B	I-04-04	M-04-06	Dual Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040403	40_91_02.03_1.0 1A		100			24 VDC
IRZ35-	FM-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ35-	FE-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC
IRZ35-	FIT-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC
IRZ37-	FM-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC
IRZ37-	FE-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC
IRZ37-	FIT-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC
IRZ39-	FM-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC
IRZ39-	FE-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC
IRZ39-	FIT-*0472A	I-04-03	M-04-05	Single Screen IRZ Injection Wells	S IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040302	40_91_02.03_1.0 1A		100			24 VDC
IRZ11A-	FM-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ11A-	FE-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ11A-	FIT-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ13A-	FM-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ13A-	FE-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ13A-	FIT-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ15A-	FM-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ15A-	FE-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ15A-	FIT-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ16A-	FM-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ16A-	FE-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ16A-	FIT-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ17A-	FM-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ17A-	FE-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ17A-	FIT-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ19A-	FM-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ19A-	FE-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ19A-	FIT-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ20A-	FM-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ20A-	FE-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ20A-	FIT-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ21A-	FM-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ21A-	FE-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ21A-	FIT-*0474A	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040501	40_91_02.03_1.0 1A		100			24 VDC
IRZ11A-	FM-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ11A-	FE-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ11A-	FIT-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ13A-	FM-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ13A-	FE-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ13A-	FIT-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ15A-	FM-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ15A-	FE-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ15A-	FIT-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ16A-	FM-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ16A-	FE-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ16A-	FIT-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ17A-	FM-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ17A-	FE-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ17A-	FIT-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ19A-	FM-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ19A-	FE-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ19A-	FIT-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ20A-	FM-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ20A-	FE-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ20A-	FIT-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ21A-	FM-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ21A-	FE-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ21A-	FIT-*0474B	I-04-05	M-04-08	Dual Screen Cluster IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040503	40_91_02.03_1.0 1A		100			24 VDC
IRZ11B-	FM-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ11B-	FE-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ11B-	FIT-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ13B-	FM-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ13B-	FE-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ13B-	FIT-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ15B-	FM-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ15B-	FE-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ15B-	FIT-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ16B-	FM-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ16B-	FE-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ16B-	FIT-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ17B-	FM-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ17B-	FE-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ17B-	FIT-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ19B-	FM-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ19B-	FE-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ19B-	FIT-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ20B-	FM-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ20B-	FE-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ20B-	FIT-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ21B-	FM-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ21B-	FE-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ21B-	FIT-*0475A	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040601	40_91_02.03_1.0 1A		100			24 VDC
IRZ11B-	FM-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ11B-	FE-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ11B-	FIT-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ13B-	FM-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ13B-	FE-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ13B-	FIT-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ15B-	FM-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ15B-	FE-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ15B-	FIT-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ16B-	FM-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ16B-	FE-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ16B-	FIT-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ17B-	FM-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ17B-	FE-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ17B-	FIT-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ19B-	FM-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ19B-	FE-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ19B-	FIT-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ20B-	FM-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ20B-	FE-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ20B-	FIT-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ21B-	FM-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Meter	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ21B-	FE-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Element	Magnetic Flow Meter with HART/Analog output	Injection Well Flow MagMeter	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ21B-	FIT-*0475B	I-04-06		Dual Screen IRZ Injection Wells	N IRZ INJ	Flow Transmitter		Magnetic Flow Meter with HART/Analog output	1"		2"-CA-PVLK-040603	40_91_02.03_1.0 1A		100			24 VDC
IRZ01-	WP-*0425	I-04-02		Dual Screen IRZ Extraction Well		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ05-	WP-*0425	I-04-02		Dual Screen IRZ Extraction Well		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ09-	WP-*0425	I-04-02		Dual Screen IRZ Extraction Well		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ25-	WP-*0423	I-04-04		Dual Screen IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ27-	WP-*0423	I-04-04		Dual Screen IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ29-	WP-*0423	I-04-04		Dual Screen IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ31-	WP-*0423	I-04-04		Dual Screen IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ33-	WP-*0423	I-04-04		Dual Screen IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ11-	WP-*0432	I-04-05		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ13-	WP-*0432	I-04-05		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ15-	WP-*0432	I-04-05		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ16-	WP-*0432	I-04-05		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ17-	WP-*0432	I-04-05		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ19-	WP-*0432	I-04-05		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ20-	WP-*0432	I-04-05		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ21-	WP-*0432	I-04-05		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ11-	WP-*0433	I-04-06		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ13-	WP-*0433	I-04-06		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ15-	WP-*0433	I-04-06		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ16-	WP-*0433	I-04-06		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ17-	WP-*0433	I-04-06		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ19-	WP-*0433	I-04-06		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	

TABLE D1-8

NTH IRZ - EQUIPMENT

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LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ20-	WP-*0433	I-04-06		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ21-	WP-*0433	I-04-06		Dual Screen Cluster IRZ Injection Wells		Well Packer	Inflatable	Inflatable Well Packer	12"							100	
IRZ23-	YS-*0480A	I-04-01		Single Screen IRZ Extraction Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ01-	YS-*0481A	I-04-02		Dual Screen IRZ Extraction Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ05-	YS-*0481A	I-04-02		Dual Screen IRZ Extraction Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ09-	YS-*0481A	I-04-02		Dual Screen IRZ Extraction Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ01-	YS-*0481B	I-04-02		Dual Screen IRZ Extraction Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ05-	YS-*0481B	I-04-02		Dual Screen IRZ Extraction Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ09-	YS-*0481B	I-04-02		Dual Screen IRZ Extraction Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ35-	YS-*0482A	I-04-03		Single Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ37-	YS-*0482A	I-04-03		Single Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ39-	YS-*0482A	I-04-03		Single Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ25-	YS-*0483A	I-04-04		Dual Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ27-	YS-*0483A	I-04-04		Dual Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ29-	YS-*0483A	I-04-04		Dual Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ31-	YS-*0483A	I-04-04		Dual Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ25-	YS-*0483B	I-04-04		Dual Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch						Extraction Well Vault				24 VDC
IRZ27-	YS-*0483B	I-04-04		Dual Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch						Extraction Well Vault				24 VDC
IRZ29-	YS-*0483B	I-04-04		Dual Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch						Extraction Well Vault				24 VDC
IRZ31-	YS-*0483B	I-04-04		Dual Screen IRZ Injection Wells		Vault Intrusion Switch	High Security Switch						Extraction Well Vault				24 VDC
IRZ11A-	YS-*0484A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ13A-	YS-*0484A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ15A-	YS-*0484A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ16A-	YS-*0484A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ17A-	YS-*0484A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ19A-	YS-*0484A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ20A-	YS-*0484A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC

TABLE D1-8

NTH IRZ - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ21A-	YS-*0484A	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ11A-	YS-*0484B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ13A-	YS-*0484B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ15A-	YS-*0484B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ16A-	YS-*0484B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ17A-	YS-*0484B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ19A-	YS-*0484B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ20A-	YS-*0484B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ21A-	YS-*0484B	I-04-05		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch										24 VDC
IRZ11B-	YS-*0484C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault						24 VDC
IRZ13B-	YS-*0484C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault						24 VDC
IRZ15B-	YS-*0484C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault						24 VDC
IRZ16B-	YS-*0484C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault						24 VDC
IRZ17B-	YS-*0484C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault						24 VDC
IRZ19B-	YS-*0484C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault						24 VDC
IRZ20B-	YS-*0484C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault						24 VDC
IRZ21B-	YS-*0484C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault						24 VDC
IRZ01-	LT-*0461B	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040201	40_91_02.05_1.0 1B					24 V Loop
IRZ05-	LT-*0461B	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040201	40_91_02.05_1.0 1B					24 V Loop
IRZ09-	LT-*0461B	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040201	40_91_02.05_1.0 1B					24 V Loop
IRZ01-	LT-*0461C	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ05-	LT-*0461C	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ09-	LT-*0461C	I-04-02		Dual Screen IRZ Extraction Wells	N IRZ EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop

TABLE D1-8

NTH IRZ - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ23-	LT-*0460B	I-04-01		Single Screen IRZ Extraction Wells	IRZ-23 EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040101	40_91_02.05_1.0 1B					24 V Loop
IRZ25-	LT-*0463H	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ27-	LT-*0463H	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ29-	LT-*0463H	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ31-	LT-*0463H	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ33-	LT-*0463H	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ25-	LT-*0463I	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ27-	LT-*0463I	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ29-	LT-*0463I	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ31-	LT-*0463I	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ33-	LT-*0463I	I-04-04		Dual Screen IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040202	40_91_02.05_1.0 1B					24 V Loop
IRZ35-	LT-*0462E	I-04-03		Single Screen IRZ Injection Wells	BW S	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-RW-SUTK-040301	40_91_02.05_1.0 1B					24 V Loop
IRZ37-	LT-*0462E	I-04-03		Single Screen IRZ Injection Wells	BW S	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-RW-SUTK-040301	40_91_02.05_1.0 1B					24 V Loop
IRZ39-	LT-*0462E	I-04-03		Single Screen IRZ Injection Wells	BW S	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-RW-SUTK-040301	40_91_02.05_1.0 1B					24 V Loop
IRZ11A-	LT-*0464H	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ13A-	LT-*0464H	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ15A-	LT-*0464H	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop

TABLE D1-8

NTH IRZ - EQUIPMENT

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IRZ16A-	LT-*0464H	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ17A-	LT-*0464H	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ19A-	LT-*0464H	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ20A-	LT-*0464H	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ21A-	LT-*0464H	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ11A-	LT-*0464I	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ13A-	LT-*0464I	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ15A-	LT-*0464I	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ16A-	LT-*0464I	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ17A-	LT-*0464I	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ19A-	LT-*0464I	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ20A-	LT-*0464I	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ21A-	LT-*0464I	I-04-05		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ11B-	LT-*0465H	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ13B-	LT-*0465H	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop

TABLE D1-8

NTH IRZ - EQUIPMENT

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IRZ15B-	LT-*0465H	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ16B-	LT-*0465H	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ17B-	LT-*0465H	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ19B-	LT-*0465H	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ20B-	LT-*0465H	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ21B-	LT-*0465H	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ11B-	LT-*0465I	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ13B-	LT-*0465I	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ15B-	LT-*0465I	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ16B-	LT-*0465I	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ17B-	LT-*0465I	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ19B-	LT-*0465I	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ20B-	LT-*0465I	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ21B-	LT-*0465I	I-04-06		Dual Screen Cluster IRZ Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-SUTK-040502	40_91_02.05_1.0 1B					24 V Loop
IRZ11B-	LSH-*0454C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					
IRZ13B-	LSH-*0454C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					
IRZ15B-	LSH-*0454C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					
IRZ16B-	LSH-*0454C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					
IRZ17B-	LSH-*0454C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					
IRZ19B-	LSH-*0454C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					
IRZ20B-	LSH-*0454C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					

TABLE D1-8

NTH IRZ - EQUIPMENT

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 PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	TOTAL HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ21B-	LSH-*0454C	I-04-06		Dual Screen Cluster IRZ Injection Wells		Level Switch	General Purpose	Well Vault Sump Level Switch, leak detection			Extraction Well Vault	40_91_02.05_1.0 1C					

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
RB01-	V-*0522A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB02-	V-*0522A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB03-	V-*0522A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB04-	V-*0522A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB05-	V-*0522A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB01-	V-*0522B	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB02-	V-*0522B	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB03-	V-*0522B	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB04-	V-*0522B	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
RB05-	V-*0522B	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-EX-PVLK-050101	40 27 02	V341
IRL01-	V-*0521A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-CA-PVLK-050203	40 27 02	V341
IRL02-	V-*0521A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-CA-PVLK-050203	40 27 02	V341
IRL03-	V-*0521A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-CA-PVLK-050203	40 27 02	V341
IRL04-	V-*0562A	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-CA-PVLK-050303	40 27 02	V341
IRL01-	V-*0521B	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-CA-PVLK-050203	40 27 02	V341
IRL02-	V-*0521B	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-CA-PVLK-050203	40 27 02	V341
IRL03-	V-*0521B	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-CA-PVLK-050203	40 27 02	V341
IRL04-	V-*0562B	I-05-03		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-CA-PVLK-050303	40 27 02	V341
IRL01-	V-*0521C	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRL02-	V-*0521C	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341
IRL03-	V-*0521C	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341
IRL04-	V-*0562C	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341
IRL01-	V-*0521D	I-05-03		IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341
IRL02-	V-*0521D	I-05-02		IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050302	40 27 02	V341
IRL03-	V-*0521D	I-05-02		IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341
IRL04-	V-*0562D	I-05-03		IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050302	40 27 02	V341
IRL01-	V-*0521E	I-05-02		IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341
IRL02-	V-*0521E	I-05-02		IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341
IRL03-	V-*0521E	I-05-02		IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050202	40 27 02	V341
IRL04-	V-*0562E	I-05-03		IRL Injection Wells	FW INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050302	40 27 02	V341
IRL04-	V-*0562F	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	2"-FWCA-HALE-050302	40 27 02	V341
IRL01-	V-*0521G	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	Future Expansion	40 27 02	V341
IRL02-	V-*0521G	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	Future Expansion	40 27 02	V341
IRL03-	V-*0521G	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	Future Expansion	40 27 02	V341
IRL04-	V-*0562G	I-05-03		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	Future Expansion	40 27 02	V341
IRL01-	V-*0521H	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	Future Expansion	40 27 02	V341
IRL02-	V-*0521H	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	Future Expansion	40 27 02	V341
IRL03-	V-*0521H	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	Future Expansion	40 27 02	V341

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRL04-	V-*0562H	I-05-03		IRL Injection Wells	UPGRAD INJ	Valve	Full-Port Ball	Isolation Valve	1/4"	Future Expansion	40 27 02	V341
RB01-	V-*0522C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB02-	V-*0522C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB03-	V-*0522C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB04-	V-*0522C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB05-	V-*0522C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB01-	V-*0522D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB02-	V-*0522D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB03-	V-*0522D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB04-	V-*0522D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
RB05-	V-*0522D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Full-Port Ball	Isolation Valve	1/2"	Extraction Well Vault	40 27 02	V340
IRL01-	V-*0512	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Check	Y-Pattern	2"	2"-FWCA-HALE-050202	40 27 02	V784
IRL02-	V-*0512	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Check	Y-Pattern	2"	2"-FWCA-HALE-050202	40 27 02	V784
IRL03-	V-*0512	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Check	Y-Pattern	2"	2"-FWCA-HALE-050202	40 27 02	V784
IRL04-	V-*0542	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Check	Y-Pattern	2"	2"-FWCA-HALE-050302	40 27 02	V784
IRL01-	V-*0515	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Check	Y-Pattern	1-1/2"	Future Expansion	40 27 02	V783
IRL02-	V-*0515	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Check	Y-Pattern	1-1/2"	Future Expansion	40 27 02	V783
IRL03-	V-*0515	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Check	Y-Pattern	1-1/2"	Future Expansion	40 27 02	V783
IRL04-	V-*0545	I-05-03		IRL Injection Wells	UPGRAD INJ	Valve	Check	Y-Pattern	1-1/2"	Future Expansion	40 27 02	V783

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRL01-	V-*0503A	I-05-02		IRL Injection Wells	FW INJ	Valve	Ball	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL02-	V-*0503A	I-05-02		IRL Injection Wells	FW INJ	Valve	Ball	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL03-	V-*0503A	I-05-02		IRL Injection Wells	FW INJ	Valve	Ball	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL01-	V-*0503B	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL02-	V-*0503B	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL03-	V-*0503B	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL04-	V-*0503B	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL04-	V-*0504A	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	2"-CA-PVLK-050203	40 27 02	V340
IRL01-	V-*0504B	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL02-	V-*0504B	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL03-	V-*0504B	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL01-	V-*0510	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL02-	V-*0510	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL03-	V-*0510	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL04-	V-*0540	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	2"-FWCA-HALE-050302	40 27 02	V340
IRL01-	V-*0511	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL02-	V-*0511	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL03-	V-*0511	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL04-	V-*0541	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	1-1/2"	2"-FWCA-HALE-050302	40 27 02	V340

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRL01-	V-*0513	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL02-	V-*0513	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL03-	V-*0513	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL04-	V-*0543	I-05-03		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL01-	V-*0514	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL02-	V-*0514	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL03-	V-*0514	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL04-	V-*0544	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve	1-1/2"	Future Expansion	40 27 02	V340
IRL01-	V-*0519	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	2"	Future Expansion	40 27 02	V340
IRL02-	V-*0519	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	2"	Future Expansion	40 27 02	V340
IRL03-	V-*0519	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	2"	Future Expansion	40 27 02	V340
IRL04-	V-*0549	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	2"	Future Expansion	40 27 02	V340
IRL01-	V-*0520	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL02-	V-*0520	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V340
IRL03-	V-*0520	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Ball	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V340
RB01-	V-*0501A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
RB02-	V-*0501A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
RB03-	V-*0501A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
RB04-	V-*0501A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

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LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
RB05-	V-*0501A	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
IRL01-	V-*0523	I-05-02	M-05-05	IRL Injection Wells	UPGRAD BW	Valve	Ball	Isolation Valve	2"	3"-RW-PVLK-050204	40 27 02	V340
IRL02-	V-*0523	I-05-02	M-05-05	IRL Injection Wells	UPGRAD BW	Valve	Ball	Isolation Valve	2"	3"-RW-PVLK-050204	40 27 02	V340
IRL03-	V-*0523	I-05-02	M-05-05	IRL Injection Wells	UPGRAD BW	Valve	Ball	Isolation Valve	2"	3"-RW-PVLK-050204	40 27 02	V340
IRL04-	V-*0553	I-05-03	M-05-05	IRL Injection Wells	UPGRAD BW	Valve	Ball	Isolation Valve	2"	3"-RW-PVLK-050304	40 27 02	V340
RB01-	V-*0501D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
RB02-	V-*0501D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
RB03-	V-*0501D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
RB04-	V-*0501D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
RB05-	V-*0501D	I-05-01		River Bank Extraction Wells	RB EX	Valve	Ball	Isolation Valve	2"	2"-EX-PVLK-050101	40 27 02	V340
RB01-	V-*0501C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-050101	40 27 02	V781
RB02-	V-*0501C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-050101	40 27 02	V781
RB03-	V-*0501C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-050101	40 27 02	V781
RB04-	V-*0501C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-050101	40 27 02	V781
RB05-	V-*0501C	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Y-Pattern	2"	2"-EX-PVLK-050101	40 27 02	V781
IRL01-	V-*0502A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-050203	40 27 02	V239
IRL02-	V-*0502A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-050203	40 27 02	V239
IRL03-	V-*0502A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-050203	40 27 02	V239
IRL04-	V-*0532A	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	2"	2"-CA-PVLK-050303	40 27 02	V239

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

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LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRL01-	V-*0502B	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Globe	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V239
IRL02-	V-*0502B	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Globe	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V239
IRL03-	V-*0502B	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Globe	Isolation Valve	2"	2"-FWCA-HALE-050202	40 27 02	V239
IRL04-	V-*0532B	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	2"	2"-FWCA-HALE-050302	40 27 02	V239
IRL01-	V-*0516	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	3"	3"-RW-PVLK-050204	40 27 02	V238
IRL02-	V-*0516	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	3"	3"-RW-PVLK-050204	40 27 02	V238
IRL03-	V-*0516	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	3"	3"-RW-PVLK-050204	40 27 02	V238
IRL04-	V-*0546	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Globe	Isolation Valve	3"		40 27 02	V238
IRL01-	V-*0517	I-05-02		Valve Vault	UPGRAD BW	Valve	Gate	Isolation Valve	6"	6"-RW-HALE-050204	40 27 02	V157
IRL02-	V-*0517	I-05-02		Valve Vault	UPGRAD BW	Valve	Gate	Isolation Valve	6"	6"-RW-HALE-050204	40 27 02	V157
IRL03-	V-*0517	I-05-02		Valve Vault	UPGRAD BW	Valve	Gate	Isolation Valve	6"	6"-RW-HALE-050204	40 27 02	V157
IRL04-	V-*0547	I-05-03		Valve Vault	UPGRAD BW	Valve	Gate	Isolation Valve	6"	6"-RW-HALE-050304	40 27 02	V157
RB01-	V-*0501E	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
RB02-	V-*0501E	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
RB03-	V-*0501E	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
RB04-	V-*0501E	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
RB05-	V-*0501E	I-05-01		River Bank Extraction Wells	RB EX	Valve	Check	Low Pressure	3/4"	Extraction Well Vault	40 27 02	V783
IRL01-	V-*0518	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Pressure Regulator	Pressure Reducing Regulator (self contained)	1-1/2"	2"-CA-PVLK-050203	40 27 02	V722
IRL02-	V-*0518	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Pressure Regulator	Pressure Reducing Regulator (self contained)	1-1/2"	2"-CA-PVLK-050203	40 27 02	V722
IRL03-	V-*0518	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Pressure Regulator	Pressure Reducing Regulator (self contained)	1-1/2"	2"-CA-PVLK-050203	40 27 02	V722
IRL04-	V-*0548	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Pressure Regulator	Pressure Reducing Regulator (self contained)	1-1/2"	2"-CA-PVLK-050303	40 27 02	V722

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRL01-	F-*0519	I-05-02		Dual Screen IRZ Injection Wells	UPGRAD INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-050203		
IRL02-	F-*0519	I-05-02		Dual Screen IRZ Injection Wells	UPGRAD INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-050203		
IRL03-	F-*0519	I-05-02		Dual Screen IRZ Injection Wells	UPGRAD INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-050203		
IRL04-	F-*0519	I-05-03		Dual Screen IRZ Injection Wells	UPGRAD INJ	Strainer	Wye	PVC Body, 2" NPT	2"	2"-CA-PVLK-050303		
IRL01-	FCV-*0509	I-05-02	M-05-05	IRL Injection Wells	UPGRAD BW	Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	3"	3"-RW-PVLK-050204	40 27 02	V541
IRL02-	FCV-*0509	I-05-02	M-05-05	IRL Injection Wells	UPGRAD BW	Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	3"	3"-RW-PVLK-050204	40 27 02	V541
IRL03-	FCV-*0509	I-05-02	M-05-05	IRL Injection Wells	UPGRAD BW	Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	3"	3"-RW-PVLK-050204	40 27 02	V541
IRL04-	FV-*0514	I-05-03	M-05-05	IRL Injection Wells	UPGRAD BW	Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	3"	3"-RW-PVLK-050304	40 27 02	V541
IRL01-	FCV-*0506	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		2"-CA-PVLK-050203	40 27 02	
IRL02-	FCV-*0506	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		2"-CA-PVLK-050203	40 27 02	
IRL03-	FCV-*0506	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		2"-CA-PVLK-050203	40 27 02	
IRL01-	FCV-*0508	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Electric Ball Valve	actuated ball valve	2"	2"-FWCA-HALE-050202	40 27 02	
IRL02-	FCV-*0508	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Electric Ball Valve	actuated ball valve	2"	2"-FWCA-HALE-050202	40 27 02	
IRL03-	FCV-*0508	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Electric Ball Valve	actuated ball valve	2"	2"-FWCA-HALE-050202	40 27 02	
IRL04-	FCV-*0513	I-05-03	M-05-05	IRL Injection Wells	FW INJ	Valve	Electric Ball Valve	actuated ball valve	2"	2"-FWCA-HALE-050302	40 27 02	
IRL01-	V-*0608A	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Check		2"	2"-FWCA-HALE-050202	40 27 02	
IRL02-	V-*0608A	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Check		2"	2"-FWCA-HALE-050202	40 27 02	
IRL03-	V-*0608A	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Valve	Check		2"	2"-FWCA-HALE-050202	40 27 02	
IRL01-	V-*0524	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve		Extraction Well Vault	40 27 02	

TABLE D1-9

INNER RECIRCULATION LOOP - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRL02-	V-*0524	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve		Extraction Well Vault	40 27 02	
IRL03-	V-*0524	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve		Extraction Well Vault	40 27 02	
IRL04-	V-*0554	I-05-03		IRL Injection Wells		Valve	Ball	Isolation Valve		Extraction Well Vault	40 27 02	
IRL01-	V-*0525	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve		Future Expansion	40 27 02	
IRL02-	V-*0525	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve		Extraction Well Vault	40 27 02	
IRL03-	V-*0525	I-05-02		IRL Injection Wells		Valve	Ball	Isolation Valve		Extraction Well Vault	40 27 02	
IRL04-	V-*0555	I-05-03		IRL Injection Wells		Valve	Ball	Isolation Valve		Future Expansion	40 27 02	
IRL01-	FV-*0507	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve	2"	2"-CA-PVLK-050203	40 27 02	
IRL02-	FV-*0507	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve	2"	2"-CA-PVLK-050203	40 27 02	
IRL03-	FV-*0507	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve	2"	2"-CA-PVLK-050203	40 27 02	
IRL01-	ARV-*05XX	I-05-02		IRL Injection Wells	UPGRAD BW	Valve						
IRL02-	ARV-*05XX	I-05-02		IRL Injection Wells	UPGRAD BW	Valve						
IRL03-	ARV-*05XX	I-05-02		IRL Injection Wells	UPGRAD BW	Valve						
IRL01-	FV-*0505	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		Future Expansion	40 27 02	
IRL02-	FV-*0505	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		Future Expansion	40 27 02	
IRL03-	FV-*0505	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		Future Expansion	40 27 02	
IRL04-	FV-*0510	I-05-03		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		Future Expansion	40 27 02	
IRL01-	FCV-*050X	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		Future Expansion	40 27 02	
IRL02-	FCV-*050X	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		Future Expansion	40 27 02	

TABLE D1-9**INNER RECIRCULATION LOOP - VALVES***Groundwater Remedy Basis of Design Report/Final (100%) Design**PG&E Topock Compressor Station, Needles, California*

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRL03-	FCV-*050X	I-05-02		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		Future Expansion	40 27 02	
IRL04-	FV-*0511	I-05-03		IRL Injection Wells	UPGRAD INJ	Valve	Electric Ball Valve	actuated ball valve		Future Expansion	40 27 02	
IRL04-	V-*0533B	I-05-03		IRL Injection Wells	UPGRAD INJ	Valve	Ball			Future Expansion	40 27 02	

¹This is part of a contingent system and may be constructed in the future²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-10

INNER RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAH HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRL01-	PMP-*0541A	I-05-02		IRL Injection Wells	UPGRAD BW	Backwash Well Pump	Submersible				4"-FWCA-SUTK-050202	44 42 56.04A	400	280		460 VAC, 3-Phase
IRL02-	PMP-*0541A	I-05-02		IRL Injection Wells	UPGRAD BW	Backwash Well Pump	Submersible				4"-FWCA-SUTK-050202	44 42 56.04A	400	280		460 VAC, 3-Phase
IRL03-	PMP-*0541A	I-05-02		IRL Injection Wells	UPGRAD BW	Backwash Well Pump	Submersible				4"-FWCA-SUTK-050202	44 42 56.04A	400	280		460 VAC, 3-Phase
IRL04-	PMP-*0542A	I-05-03		IRL Injection Wells	UPGRAD BW	Backwash Well Pump	Submersible				Future Expansion	44 42 56.04A	400	280		460 VAC, 3-Phase
IRL01-	PMP-*0541B	I-05-02		IRL Injection Wells	UPGRAD BW	Backwash Well Pump	Submersible				Future Expansion	44 42 56.04A	400	280		460 VAC, 3-Phase
IRL02-	PMP-*0541B	I-05-02		IRL Injection Wells	UPGRAD BW	Backwash Well Pump	Submersible				Future Expansion	44 42 56.04A	400	280		460 VAC, 3-Phase
IRL03-	PMP-*0541B	I-05-02		IRL Injection Wells	UPGRAD BW	Backwash Well Pump	Submersible				Future Expansion	44 42 56.04A	400	280		460 VAC, 3-Phase
IRL04-	PMP-*0542A	I-05-03		IRL Injection Wells	UPGRAD BW	Backwash Well Pump	Submersible				Future Expansion	44 42 56.04A	400	280		460 VAC, 3-Phase
RB01-	PMP-*0540	I-05-01		River Bank Extraction Wells	RB EX	Extraction Well Pump	Submersible				2"-EX-SUTK-050101	44 42 56.04A	180	319-322		460 VAC, 3-Phase
RB02-	PMP-*0540	I-05-01		River Bank Extraction Wells	RB EX	Extraction Well Pump	Submersible				2"-EX-SUTK-050101	44 42 56.04A	180	319-322		460 VAC, 3-Phase
RB03-	PMP-*0540	I-05-01		River Bank Extraction Wells	RB EX	Extraction Well Pump	Submersible				2"-EX-SUTK-050101	44 42 56.04A	180	319-322		460 VAC, 3-Phase
RB04-	PMP-*0540	I-05-01		River Bank Extraction Wells	RB EX	Extraction Well Pump	Submersible				2"-EX-SUTK-050101	44 42 56.04A	180	319-322		460 VAC, 3-Phase
RB05-	PMP-*0540	I-05-01		River Bank Extraction Wells	RB EX	Extraction Well Pump	Submersible				2"-EX-SUTK-050101	44 42 56.04A	180	319-322		460 VAC, 3-Phase
RB01-	PIT-*0560A	I-05-01		River Bank Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-050101	40_91_02.07_1.01A			100	24 V Loop
RB02-	PIT-*0560A	I-05-01		River Bank Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-050101	40_91_02.07_1.01A			100	24 V Loop
RB03-	PIT-*0560A	I-05-01		River Bank Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-050101	40_91_02.07_1.01A			100	24 V Loop
RB04-	PIT-*0560A	I-05-01		River Bank Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-050101	40_91_02.07_1.01A			100	24 V Loop
RB05-	PIT-*0560A	I-05-01		River Bank Extraction Wells		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"		2"-EX-PVLK-050101	40_91_02.07_1.01A			100	24 V Loop
RB01-	PSL-*0560C	I-05-01		River Bank Extraction Wells	RB EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.01C				24 VDC
RB02-	PSL-*0560C	I-05-01		River Bank Extraction Wells	RB EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.01C				24 VDC

TABLE D1-10

INNER RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAH HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
RB03-	PSL-*0560C	I-05-01		River Bank Extraction Wells	RB EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.01C				24 VDC
RB04-	PSL-*0560C	I-05-01		River Bank Extraction Wells	RB EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.01C				24 VDC
RB05-	PSL-*0560C	I-05-01		River Bank Extraction Wells	RB EX	Packer Pressure Switch	Air/Gas Pressure Switch		1/2"		Extraction Well Vault	40_91_02.07_1.01C				24 VDC
IRL01-	LSH-*0551A	I-05-02		IRL Injection Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
IRL02-	LSH-*0551A	I-05-02		IRL Injection Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
IRL03-	LSH-*0551A	I-05-02		IRL Injection Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
IRL04-	LSH-*0552A	I-05-03		IRL Injection Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
IRL01-	LSH-*0551B	I-05-02		IRL Injection Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
IRL02-	LSH-*0551B	I-05-02		IRL Injection Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
IRL03-	LSH-*0551B	I-05-02		IRL Injection Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
IRL04-	LSH-*0552B	I-05-03		IRL Injection Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
RB01-	LSH-*0550A	I-05-01		River Bank Extraction Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch, Leak Detection			Future Expansion	40_91_02.05_1.01C				24 VDC
RB02-	LSH-*0550A	I-05-01		River Bank Extraction Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch, Leak Detection			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
RB03-	LSH-*0550A	I-05-01		River Bank Extraction Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch, Leak Detection			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
RB04-	LSH-*0550A	I-05-01		River Bank Extraction Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch, Leak Detection			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
RB05-	LSH-*0550A	I-05-01		River Bank Extraction Wells		Level Switch	General Purpose Level Switch	Well Vault Sump Level Switch, Leak Detection			Extraction Well Vault	40_91_02.05_1.01C				24 VDC
IRL01-	PI-*0561A	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-FWCA-HALE-050202	40_91_02.07_1.01B			100	24 V Loop
IRL02-	PI-*0561A	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-FWCA-HALE-050202	40_91_02.07_1.01B			100	24 V Loop
IRL03-	PI-*0561A	I-05-02	M-05-05	IRL Injection Wells	FW INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-FWCA-HALE-050202	40_91_02.07_1.01B			100	24 V Loop
IRL04-	PI-*0562A	I-05-03	M-05-05	IRL Injection Wells	FW INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-FWCA-HALE-050302	40_91_02.07_1.01B			100	24 V Loop
IRL01-	PI-*0561B	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-050203	40_91_02.07_1.01B			100	24 V Loop
IRL02-	PI-*0561B	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-050203	40_91_02.07_1.01B			100	24 V Loop

TABLE D1-10

INNER RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAH HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRL03-	PI-*0561B	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-050203	40_91_02.07_1.01B			100	24 V Loop
IRL04-	PI-*0562B	I-05-03	M-05-05	IRL Injection Wells	UPGRAD INJ	Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-CA-PVLK-050303	40_91_02.07_1.01B			100	24 V Loop
IRL01-	PI-*0561C	I-05-02		IRL Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Future Expansion	40_91_02.07_1.01B			100	24 V Loop
IRL02-	PI-*0561C	I-05-02		IRL Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Future Expansion	40_91_02.07_1.01B			100	24 V Loop
IRL03-	PI-*0561C	I-05-02		IRL Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Future Expansion	40_91_02.07_1.01B			100	24 V Loop
IRL04-	PI-*0562C	I-05-03		IRL Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Future Expansion	40_91_02.07_1.01B			100	24 V Loop
IRL01-	PI-*0561D	I-05-02		IRL Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-FWCA-HALE-050202	40_91_02.07_1.01B			100	24 V Loop
IRL02-	PI-*0561D	I-05-02		IRL Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-FWCA-HALE-050202	40_91_02.07_1.01B			100	24 V Loop
IRL03-	PI-*0561D	I-05-02		IRL Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-FWCA-HALE-050202	40_91_02.07_1.01B			100	24 V Loop
IRL04-	PI-*0562D	I-05-03		IRL Injection Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		2"-FWCA-HALE-050302	40_91_02.07_1.01B			100	24 V Loop
RB01-	PI-*0560D	I-05-01		River Bank Extraction Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault				100	24 V Loop
RB02-	PI-*0560D	I-05-01		River Bank Extraction Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault				100	24 V Loop
RB03-	PI-*0560D	I-05-01		River Bank Extraction Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault				100	24 V Loop
RB04-	PI-*0560D	I-05-01		River Bank Extraction Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault				100	24 V Loop
RB05-	PI-*0560D	I-05-01		River Bank Extraction Wells		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		Extraction Well Vault				100	24 V Loop
RB01-	FM-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	2"		2"-EX-PVLK-050101		100			24 VDC
RB02-	FM-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	2"		2"-EX-PVLK-050101		100			24 VDC
RB03-	FM-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	2"		2"-EX-PVLK-050101		100			24 VDC
RB04-	FM-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	2"		2"-EX-PVLK-050101		100			24 VDC
RB05-	FM-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Meter	Magnetic Flow Meter with HART/Analog output	Extraction Well Flow MagMeter	2"		2"-EX-PVLK-050101		100			24 VDC
RB01-	FIT-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Transmitter	Magnetic	Magnetic Flow Meter	2"		2"-EX-PVLK-050101					

TABLE D1-10

INNER RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAH HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
RB02-	FIT-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Transmitter	Magnetic	Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB03-	FIT-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Transmitter	Magnetic	Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB04-	FIT-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Transmitter	Magnetic	Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB05-	FIT-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Transmitter	Magnetic	Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB01-	FE-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Element		Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB02-	FE-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Element		Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB03-	FE-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Element		Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB04-	FE-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Element		Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB05-	FE-*0570A	I-05-01		River Bank Extraction Wells	RB EX	Flow Element		Magnetic Flow Meter	2"		2"-EX-PVLK-050101					
RB01-	WP-*0512	I-05-01		River Bank Extraction Wells		Well Packer	Inflatable	Inflatable Well Packer	8"						100	
RB02-	WP-*0512	I-05-01		River Bank Extraction Wells		Well Packer	Inflatable	Inflatable Well Packer	8"						100	
RB03-	WP-*0512	I-05-01		River Bank Extraction Wells		Well Packer	Inflatable	Inflatable Well Packer	8"						100	
RB04-	WP-*0512	I-05-01		River Bank Extraction Wells		Well Packer	Inflatable	Inflatable Well Packer	8"						100	
RB05-	WP-*0512	I-05-01		River Bank Extraction Wells		Well Packer	Inflatable	Inflatable Well Packer	8"						100	
RB01-	YS-*0580A	I-05-01		River Bank Extraction Wells		Vault Intrusion Switch	High Security Switch									24 VDC
RB02-	YS-*0580A	I-05-01		River Bank Extraction Wells		Vault Intrusion Switch	High Security Switch									24 VDC
RB03-	YS-*0580A	I-05-01		River Bank Extraction Wells		Vault Intrusion Switch	High Security Switch									24 VDC

TABLE D1-10

INNER RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAH HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
RB04-	YS-*0580A	I-05-01		River Bank Extraction Wells		Vault Intrusion Switch	High Security Switch									24 VDC
RB05-	YS-*0580A	I-05-01		River Bank Extraction Wells		Vault Intrusion Switch	High Security Switch									24 VDC
IRL01-	YS-*0581A	I-05-02		IRL Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Meter Vault					24 VDC
IRL02-	YS-*0581A	I-05-02		IRL Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Meter Vault					24 VDC
IRL03-	YS-*0581A	I-05-02		IRL Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Meter Vault					24 VDC
IRL04-	YS-*0582A	I-05-03		IRL Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Meter Vault					24 VDC
IRL01-	YS-*0581B	I-05-02		IRL Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault					24 VDC
IRL02-	YS-*0581B	I-05-02		IRL Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault					24 VDC
IRL03-	YS-*0581B	I-05-02		IRL Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault					24 VDC
IRL04-	YS-*0582B	I-05-03		IRL Injection Wells		Vault Intrusion Switch	High Security Switch				Extraction Well Vault					24 VDC
IRL01-	LT-*0561E	I-05-02		IRL Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				Future Expansion					24 V Loop
IRL02-	LT-*0561E	I-05-02		IRL Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				Future Expansion					24 V Loop
IRL03-	LT-*0561E	I-05-02		IRL Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				Future Expansion					24 V Loop
IRL04-	LT-*0562E	I-05-02		IRL Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				Future Expansion					24 V Loop
IRL01-	LT-*0561F	I-05-02		IRL Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				4"-FWCA-SUTK-050202					24 V Loop
IRL02-	LT-*0561F	I-05-02		IRL Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				4"-FWCA-SUTK-050202					24 V Loop
IRL03-	LT-*0561F	I-05-02		IRL Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				4"-FWCA-SUTK-050202					24 V Loop

TABLE D1-10

INNER RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAH HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRL04-	LT-*0562F	I-05-02		IRL Injection Wells		Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				4"-FWCA-SUTK-050202					24 V Loop
RB01-	LT-*0560B	I-05-01		River Bank Extraction Wells	RB EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-PVLK-050101					24 V Loop
RB02-	LT-*0560B	I-05-01		River Bank Extraction Wells	RB EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-PVLK-050101					24 V Loop
RB03-	LT-*0560B	I-05-01		River Bank Extraction Wells	RB EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-PVLK-050101					24 V Loop
RB04-	LT-*0560B	I-05-01		River Bank Extraction Wells	RB EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-PVLK-050101					24 V Loop
RB05-	LT-*0560B	I-05-01		River Bank Extraction Wells	RB EX	Submersible Pressure Transducer	Pressure Transducer for Hydrostatic Level Measurement				2"-EX-PVLK-050101					24 V Loop
IRL01-	FIT-*0571A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ						2"-CA-PVLK-050203	40_91_02.03_1.01A				
IRL02-	FIT-*0571A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ						2"-CA-PVLK-050203	40_91_02.03_1.01A				
IRL03-	FIT-*0571A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ						2"-CA-PVLK-050203	40_91_02.03_1.01A				
IRL04-	FIT-*0571A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ						2"-CA-PVLK-050203	40_91_02.03_1.01A				
IRL01-	FE-*0571A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ						2"-CA-PVLK-050203	40_91_02.03_1.01A				
IRL02-	FE-*0571A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ						2"-CA-PVLK-050203	40_91_02.03_1.01A				
IRL03-	FE-*0571A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ						2"-CA-PVLK-050203	40_91_02.03_1.01A				
IRL04-	FE-*0571A	I-05-02	M-05-05	IRL Injection Wells	UPGRAD INJ						2"-CA-PVLK-050203	40_91_02.03_1.01A				
IRL01-	FE-*0571C	I-05-02	M-05-05	IRL Injection Wells	FW INJ						2"-FWCA-HALE-050202	40_91_02.03_1.01A				
IRL01-	FIT-*0571C	I-05-02	M-05-05	IRL Injection Wells	FW INJ						2"-FWCA-HALE-050202	40_91_02.03_1.01A				

TABLE D1-10

INNER RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAH HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRL02-	FE-*0571C	I-05-02	M-05-05	IRL Injection Wells	FW INJ						2"-FWCA-HALE-050202	40_91_02.03_1.01A				
IRL02-	FIT-*0571C	I-05-02	M-05-05	IRL Injection Wells	FW INJ						2"-FWCA-HALE-050202	40_91_02.03_1.01A				
IRL03-	FE-*0571C	I-05-02	M-05-05	IRL Injection Wells	FW INJ						2"-FWCA-HALE-050202	40_91_02.03_1.01A				
IRL03-	FIT-*0571C	I-05-02	M-05-05	IRL Injection Wells	FW INJ						2"-FWCA-HALE-050202	40_91_02.03_1.01A				
IRL04-	FE-*0572C	I-05-03	M-05-05	IRL Injection Wells	FW INJ						2"-FWCA-HALE-050302	40_91_02.03_1.01A				
IRL04-	FIT-*0572C	I-05-03	M-05-05	IRL Injection Wells	FW INJ						2"-FWCA-HALE-050302	40_91_02.03_1.01A				
IRL01-	PSL-*0562	I-05-02		IRL Injection Wells							Extraction Well Vault	40_91_02.07_1.01C				
IRL02-	PSL-*0562	I-05-02		IRL Injection Wells							Extraction Well Vault	40_91_02.07_1.01C				
IRL03-	PSL-*0562	I-05-02		IRL Injection Wells							Extraction Well Vault	40_91_02.07_1.01C				
IRL04-	PSL-*0563	I-05-03		IRL Injection Wells							Extraction Well Vault	40_91_02.07_1.01C				
IRL01-	PI-*0563	I-05-02		IRL Injection Wells							Extraction Well Vault					
IRL02-	PI-*0563	I-05-02		IRL Injection Wells							Extraction Well Vault					
IRL03-	PI-*0563	I-05-02		IRL Injection Wells							Extraction Well Vault					
IRL04-	PI-*0564	I-05-03		IRL Injection Wells							Extraction Well Vault					
IRL01-	FIT-*0571B	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL01-	FE-*0571B	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL02-	FIT-*0571B	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL02-	FE-*0571B	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL03-	FIT-*0571B	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL03-	FE-*0571B	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL04-	FIT-*0572B	I-05-03		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL04-	FE-*0572B	I-05-03		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL01-	FIT-*0571D	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL01-	FE-*0571D	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL02-	FIT-*0571D	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL02-	FE-*0571D	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				

TABLE D1-10
INNER RECIRCULATION LOOP - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	QTY	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAH HEAD (FT)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRL03-	FIT-*0571D	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL03-	FE-*0571D	I-05-02		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL04-	FIT-*0572D	I-05-03		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				
IRL04-	FE-*0572D	I-05-03		IRL Injection Wells							Future Expansion	40_91_02.03_1.01A				

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0608E	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	6"-EX-HALE-060101	40 27 02	V341
IRZ00-	V-*0608F	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	6"-EX-HALE-060101	40 27 02	V341
IRZ00-	V-*0608G	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"		40 27 02	V341
IRZ00-	V-*0608H	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"		40 27 02	V341
IRZ00-	V-*0608I	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"		40 27 02	V341
IRZ00-	V-*0608J	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"		40 27 02	V341
IRZ00-	V-*0608K	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	6"-EX-HALE-060101	40 27 02	V341
IRZ00-	V-*0608L	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	4" IN 8"-EX-HALE-060102	40 27 02	V341
IRZ00-	V-*0608N	I-06-01		IRL Injection Wells		Valve	Full-port ball	Sample Tap	1/4"	6"-EX-HALE-060101	40 27 02	V341
IRZ00-	V-*0608O	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	4" IN 8"-EX-HALE-060102	40 27 02	V341
IRZ00-	V-*0608P	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	6"-EX-HALE-060103	40 27 02	V341
IRZ00-	V-*0670G	I-06-03		IRZ Carbon Amendment Building	WM	Valve	Full-port ball	Isolation Valve	1/4"	2"-WM-PVLK-060305	40 27 02	V341
IRZ00-	V-*0670H	I-06-03		IRZ Carbon Amendment Building	WM	Valve	Full-port ball	Isolation Valve	1/4"	2"-WM-PVLK-060305	40 27 02	V341
IRZ00-	V-*0670A	I-06-04		IRZ Carbon Amendment Building		Valve	Full-port ball	Isolation Valve	1/4"	4"-CIP-PVLK-060402	40 27 02	V341
IRZ00-	V-*0670B	I-06-04		IRZ Carbon Amendment Building		Valve	Full-port ball	Isolation Valve	1/4"	4"-CIP-PVLK-060402	40 27 02	V341
IRZ00-	V-*0670C	I-06-04		IRZ Carbon Amendment Building		Valve	Full-port ball	Isolation Valve	1/4"	4"-RW-PVLK-060403	40 27 02	V341
IRZ00-	V-*0670D	I-06-04		IRZ Carbon Amendment Building		Valve	Full-port ball	Isolation Valve	1/4"	4"-RW-PVLK-060403	40 27 02	V341
IRZ00-	V-*0670E	I-06-04		IRZ Carbon Amendment Building		Valve	Full-port ball		1/4"		40 27 02	V341

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0670F	I-06-04		IRZ Carbon Amendment Building		Valve	Full-port ball		1/4"		40 27 02	V341
IRZ00-	V-*0604G	I-06-02		River Bank Extraction Wells		Valve	Full-port ball	Isolation Valve	1/2"	1"-CS-CSLF-060202	40 27 02	V340
IRZ00-	V-*0604H	I-06-02		River Bank Extraction Wells		Valve	Full-port ball		1/2"	1"-CS-CSLF-060202	40 27 02	V340
IRZ00-	V-*0604I	I-06-02		River Bank Extraction Wells		Valve	Full-port ball		1/2"	1"-CS-CSLF-060202	40 27 02	V340
IRZ00-	V-*0601C	I-06-02		IRZ Carbon Amendment Building		Valve	Float		1"	2"-CS-CSLF-060201	40 27 02	V961
IRZ00-	V-*0620E	I-06-03		IRZ Carbon Amendment Building		Valve	Float		1"	1"-FW-PVLK-060303	40 27 02	V961
IRZ00-	V-*0625C	I-06-04		IRZ Carbon Amendment Building		Valve	Gate	Isolation Valve	1"	1"-FW-PVLK-060303	40 27 02	V156
IRZ00-	V-*0603A	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"	1"-CS-CSLF-060202	40 27 02	V343
IRZ00-	V-*0603C	I-06-02		IRZ Carbon Amendment Building		Valve	Ball		1"	1"-CS-CSLF-060202	40 27 02	V343
IRZ00-	V-*0603F	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"	1"-CS-CSLF-060202	40 27 02	V343
IRZ00-	V-*0603G	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"	1"-CS-CSLF-060202	40 27 02	V343
IRZ00-	V-*0603I	I-06-02		IRZ Carbon Amendment Building		Valve	Ball		1"	1"-CS-CSLF-060202	40 27 02	V343
IRZ00-	V-*0603L	I-06-02		IRZ Carbon Amendment Building		Valve	Ball		1"	1"-CS-CSLF-060202	40 27 02	V343
IRZ00-	V-*0603M	I-06-02		IRZ Carbon Amendment Building		Valve	Ball		1"	1"-CS-CSLF-060202	40 27 02	V343
IRZ00-	V-*0603P	I-06-02		IRZ Carbon Amendment Building		Valve	Ball		1"	1"-CS-CSLF-060202	40 27 02	V343

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0603S	I-06-02		IRZ Carbon Amendment Building		Valve	Ball		1"	1"-CS-CSLF-060202	40 27 02	V343
IRZ00-	V-*0603V	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"		40 27 02	V343
IRZ00-	V-*0603X	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"		40 27 02	V343
IRZ00-	V-*0603Z	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"		40 27 02	V343
IRZ00-	V-*0620D	I-06-03		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"	1"-WM-PVLK-060302	40 27 02	V343
IRZ00-	V-*0625E	I-06-03		IRZ Carbon Amendment Building		Valve	Ball		1"	1"-FW-PVLK-060303	40 27 02	V343
IRZ00-	V-*0603B	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"	1"-CS-CSLF-060202	40 27 02	V783
IRZ00-	V-*0603E	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"	1"-CS-CSLF-060202	40 27 02	V783
IRZ00-	V-*0603H	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"	1"-CS-CSLF-060202	40 27 02	V783
IRZ00-	V-*0603K	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"	1"-CS-CSLF-060202	40 27 02	V783
IRZ00-	V-*0603N	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"	1"-CS-CSLF-060202	40 27 02	V783
IRZ00-	V-*0603R	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"	1"-CS-CSLF-060202	40 27 02	V783
IRZ00-	V-*0603U	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"		40 27 02	V783
IRZ00-	V-*0603W	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"		40 27 02	V783

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0603Y	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"		40 27 02	V783
IRZ00-	V-*0620C	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"	1"-WM-PVLK-060302	40 27 02	V783
IRZ00-	V-*0625D	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	1"	1"-FW-PVLK-060303	40 27 02	V783
IRZ00-	V-*0603D	I-06-02		IRZ Carbon Amendment Building		Valve	Air Relief		1/2"	1"-CS-CSLF-060202	40 27 02	V962
IRZ00-	V-*0603J	I-06-02		IRZ Carbon Amendment Building		Valve	Air Relief		1/2"	1"-CS-CSLF-060202	40 27 02	V962
IRZ00-	V-*0603Q	I-06-02		IRZ Carbon Amendment Building		Valve	Air Relief		1/2"	1"-CS-CSLF-060202	40 27 02	V962
IRZ00-	V-*0629C	I-06-03		IRZ Carbon Amendment Building		Valve	Air Relief		1/2"	2"-WM-PVLK-060305	40 27 02	V962
IRZ00-	V-*0602B	I-06-02	M-06-01/02	IRZ Carbon Amendment Building	CL	Valve	Ball	Isolation Valve	1-1/2"	1-1/2"-CS-CSLF-060201	40 27 02	V306/307
IRZ00-	V-*0602A	I-06-02		IRZ Carbon Amendment Building		Valve	Foot		1-1/2"	2"-CS-CSLF-060201	40 27 02	V963
IRZ00-	V-*0628A	I-06-04		IRZ Carbon Amendment Building		Valve	Gate		2"	2"-FW-PVLK-060401	40 27 02	V156
IRZ00-	V-*0628C	I-06-04		IRZ Carbon Amendment Building		Valve	Gate		2"	6"-RW-HALE-060403	40 27 02	V156
IRZ00-	V-*0628E	I-06-04		IRZ Carbon Amendment Building		Valve	Gate		2"	2 in 4"-CIP-HALE-060402	40 27 02	V156
IRZ00-	V-*0628I	I-06-04		IRZ Carbon Amendment Building		Valve	Gate		2"	6"-RW-HALE-060403	40 27 02	V156
IRZ00-	V-*0628K	I-06-04		IRZ Carbon Amendment Building		Valve	Gate		2"	6"-RW-HALE-060403	40 27 02	V156

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0626N	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Pressure Relief		2"	4"-CIP-PVLK-060402	40 27 02	V785
IRZ00-	V-*0603T	I-06-02	M-06-01/02	IRZ Carbon Amendment Building	CL	Valve	Ball	Isolation Valve	2"	1-1/2"-CS-CSLF-060201	40 27 02	V343
IRZ00-	V-*0604B	I-06-03		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	2"	2"-WM-PVLK-060305	40 27 02	V343
IRZ00-	V-*0604D	I-06-03		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	2"	2"-WM-PVLK-060305	40 27 02	V343
IRZ00-	V-*0604F	I-06-03		IRZ Carbon Amendment Building		Valve	Ball		2"	2"-WM-PVLK-060305	40 27 02	V343
IRZ00-	V-*0627B	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"		40 27 02	V343
IRZ00-	V-*0627G	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"	2"-RW-PVLK-060406	40 27 02	V343
IRZ00-	V-*0627H	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"		40 27 02	V343
IRZ00-	V-*0626D	I-06-04		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-RW-PVLK-060403	40 27 02	V540
IRZ00-	V-*0626F	I-06-04		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-CIP-PVLK-060402	40 27 02	V540
IRZ00-	V-*0626H	I-06-04		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-CIP-PVLK-060402	40 27 02	V540
IRZ00-	V-*0627D	I-06-04		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-RW-PVLK-060403	40 27 02	V540
IRZ00-	V-*0620A	I-06-04		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	2"	1"-WM-PVLK-060302	40 27 02	V343
IRZ00-	V-*0620F	I-06-04		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	2"	Tank-*0619	40 27 02	V343

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0620G	I-06-04		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	2"	2"-WM-PVLK-060305	40 27 02	V343
IRZ00-	V-*0620H	I-06-04		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	2"	2"-WM-PVLK-060305	40 27 02	V343
IRZ00-	V-*0620L	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"	2"-WM-PVLK-060305	40 27 02	V343
IRZ00-	V-*0620J	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"	2"-WM-PVLK-060305	40 27 02	V343
IRZ00-	V-*0620K	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"	2"-WM-PVLK-060305	40 27 02	V343
IRZ00-	V-*0626D	I-06-04		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-RW-PVLK-060403	40 27 02	V343
IRZ00-	V-*0626F	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		4"	4"-CIP-PVLK-060402	40 27 02	V343
IRZ00-	V-*0626H	I-06-04		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-CIP-PVLK-060402	40 27 02	V343
IRZ00-	V-*627B	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"		40 27 02	V343
IRZ00-	V-*0627D	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"	4"-RW-PVLK-060403	40 27 02	V343
IRZ00-	V-*0627G	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"	2"-RW-PVLK-060406	40 27 02	V343
IRZ00-	V-*627H	I-06-04		IRZ Carbon Amendment Building		Valve	Ball		2"		40 27 02	V343
IRZ00-	V-*0620M	I-06-03		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	2"	2"-WM-PVLK-060301	40 27 02	V340
IRZ00-	V-*0620N	I-06-03		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	2"	2"-WM-PVLK-060301	40 27 02	V340

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0604A	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	2"-WM-PVLK-060305	40 27 02	V784
IRZ00-	V-*0604C	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	2"-WM-PVLK-060305	40 27 02	V784
IRZ00-	V-*0604E	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	2"-WM-PVLK-060305	40 27 02	V784
IRZ00-	V-*0620B	I-06-03		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	1"-WM-PVLK-060302	40 27 02	V781
IRZ00-	V-*0620I	I-06-03		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	2"-WM-PVLK-060305	40 27 02	V781
IRZ00-	V-*0626E	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"		40 27 02	V781
IRZ00-	V-*0626G	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	4"-CIP-PVLK-060402	40 27 02	V781
IRZ00-	V-*0626M	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	4"-CIP-PVLK-060402	40 27 02	V781
IRZ00-	V-*0626A	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"		40 27 02	V781
IRZ00-	V-*0626C	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"		40 27 02	V781
IRZ00-	V-*0627F	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"		40 27 02	V781
IRZ00-	V-*0628B	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	2"-FW-PVLK-060401	40 27 02	V781
IRZ00-	V-*0628D	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	6"-RW-HALE-060403	40 27 02	V781
IRZ00-	V-*0628F	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	2 in 4"-CIP-HALE-060402	40 27 02	V781

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0628J	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	6"-RW-HALE-060403	40 27 02	V781
IRZ00-	V-*0628L	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	6"-RW-HALE-060403	40 27 02	V781
IRZ00-	V-*0628N	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Y-Pattern	2"	2"-TW-HALE-060404	40 27 02	V781
IRZ00-	V-*0625B	I-06-03		IRZ Carbon Amendment Building		Valve	Check	Swing	3"	1"-FW-PVLK-060303	40 27 02	V780
IRZ00-	V-*0625A	I-06-03		NTH IRZ Well Maintenance Bldg		Valve	Gate	Isolation Valve	3"	1"-FW-PVLK-060303	40 27 02	V156
IRZ00-	V-*0626I	I-06-03		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-CIP-PVLK-060402	40 27 02	V540
IRZ00-	V-*0627E	I-06-03		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-RW-PVLK-060403	40 27 02	V540
IRZ00-	V-*0601F	I-06-02		IRZ Carbon Amendment Building		Valve	Butterfly	Full Port- True Union	2"	2"-VT-HALE-060202	40 27 02	V306/V307/V343
IRZ00-	V-*0608B	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	6"-EX-HALE-060101	40 27 02	V540
IRZ00-	V-*0626A	I-06-03		IRZ Carbon Amendment Building		Valve	Butterfly		4"		40 27 02	V540
IRZ00-	V-*0626B	I-06-03		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-RW-PVLK-060403	40 27 02	V540
IRZ00-	V-*0627C	I-06-03		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-RW-PVLK-060403	40 27 02	V540
IRZ00-	V-*0626J	I-06-04		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-CIP-PVLK-060402	40 27 02	V540
IRZ00-	V-*0608A	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	6"-EX-HALE-060101	40 27 02	V540

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0608D	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	6"-EX-HALE-060101	40 27 02	V540
IRZ00-	V-*0609A	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4" IN 8"-EX-HALE-060102	40 27 02	V540
IRZ00-	V-*0609B	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	6"-EX-HALE-060103	40 27 02	V540
IRZ00-	V-*0609C	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"		40 27 02	V540
IRZ00-	V-*0609D	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"		40 27 02	V540
IRZ00-	V-*0609H	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"		40 27 02	V540
IRZ00-	V-*0609K	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"		40 27 02	V540
IRZ00-	V-*0610A	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-CIP-PVLK-060104	40 27 02	V540
IRZ00-	V-*0610C	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-CIP-PVLK-060104	40 27 02	V540
IRZ00-	V-*0610E	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	4"-CIP-PVLK-060104	40 27 02	V540
IRZ00-	V-*0601A	I-06-02		IRZ Carbon Amendment Building		Valve	Butterfly		4"	2"-CS-CSLF-060201	40 27 02	V540
IRZ00-	V-*0610F	I-06-01		IRZ Carbon Amendment Building		Valve	Ball		4"		40 27 02	
IRZ00-	V-*0610G	I-06-01		IRZ Carbon Amendment Building		Valve	Ball		4"		40 27 02	
IRZ00-	V-*0608C	I-06-01 I-06-02		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	6"-EX-HALE-060101	40 27 02	V782

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0609G	I-06-01 I-06-02		IRZ Carbon Amendment Building		Valve	Check	Swing	4"		40 27 02	V782
IRZ00-	V-*0609J	I-06-01 I-06-02		IRZ Carbon Amendment Building		Valve	Check	Swing	4"		40 27 02	V782
IRZ00-	V-*0610B	I-06-01 I-06-02		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	4"-CIP-PVLK-060104	40 27 02	V782
IRZ00-	V-*0610D	I-06-01 I-06-02		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	4"-CIP-PVLK-060104	40 27 02	V782
IRZ00-	V-*0601B	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	2"-CS-CSLF-060201	40 27 02	V782
IRZ00-	V-*0626K	I-06-03		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	4"-CIP-PVLK-060402	40 27 02	V782
IRZ00-	V-*0628G	I-06-03		NTH IRZ Well Maintenance Bldg		Valve	Gate		6"	2 in 4"-CIP-HALE-060402	40 27 02	V157
IRZ00-	V-*0628S	I-06-03		NTH IRZ Well Maintenance Bldg		Valve	Gate		6"	6"-RW-HALE-060403	40 27 02	V782
IRZ00-	V-*0628H	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	2 in 4"-CIP-HALE-060402	40 27 02	V782
IRZ00-	V-*0628T	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	6"-RW-HALE-060403	40 27 02	V782
IRZ00-	V-*0601D	I-06-02		IRZ Carbon Amendment Building		Vent	Pressure Vent	Pressure Vacuum Vent. Aluminum body, viton gaskets		Tank		Vendor
IRZ00-	V-*0601E	I-06-02		IRZ Carbon Amendment Building		Valve	Pressure Relief	Emergency Relief. NPT		Tank		Vendor
IRZ00-	F-*0622	I-06-03		IRZ Carbon Amendment Building		Strainer	Wye	PVC Body, 2" NPT	2"	2"-WM-PVLK-060305		
IRZ00-	FCV-*0631	I-06-03		NTH IRZ Well Maintenance Bldg		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	2"	2"-WM-PVLK-060305	40 27 02	V344

TABLE D1-11

MW-20 BENCH - VALVES

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LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	FCV-*0632	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	2"	4"-CIP-PVLK-060402	40 27 02	V541
IRZ00-	FCV-*0633	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	2"	4"-RW-PVLK-060403	40 27 02	V541
IRZ00-	FCV-*0628M	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	2"	2"-TW-HALE-060404	40 27 02	V541
IRZ00-	FCV-*0628R	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	2"	2 in 4"-CIP-HALE-060402	40 27 02	V541
IRZ00-	FCV-*0628Q	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	2"	6"-RW-HALE-060403	40 27 02	V541
IRZ00-	FCV-*0628T	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Electric Butterfly Valve	Resilient Seat Open/ Close Lug	2"		40 27 02	V541
IRZ00-	FV-*0611	I-06-02	M-06-01/02	IRZ Carbon Amendment Building	CL	Vavle	Solenoid	internally Piloted Piston Valve	1-1/2"	1-1/2"-CS-CSLF-060201	40 27 02	V940/V941
IRZ00-	FV-*0629	I-06-03		IRZ Carbon Amendment Building		Vavle	Solenoid	internally Piloted Piston Valve	1/2"	1"-WM-PVLK-060302	40 27 02	V940/V941
IRZ00-	FV-*0630	I-06-03		IRZ Carbon Amendment Building		Vavle	Solenoid	internally Piloted Piston Valve	1/2"	1"-FW-PVLK-060303	40 27 02	V940/V941
IRZ00-	FCV-*0612	I-06-02		IRZ Carbon Amendment Building		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1"	1"-CS-CSLF-060202	40 27 02	V344
IRZ00-	FCV-*0613	I-06-02		IRZ Carbon Amendment Building		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1"	1"-CS-CSLF-060202	40 27 02	V344
IRZ00-	FCV-*0614	I-06-02		IRZ Carbon Amendment Building		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1"	1"-CS-CSLF-060202	40 27 02	V344
IRZ00-	FCV-*0615	I-06-02		IRZ Carbon Amendment Building		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1"		40 27 02	V344
IRZ00-	FCV-*0616	I-06-02		IRZ Carbon Amendment Building		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1"		40 27 02	V344

TABLE D1-11

MW-20 BENCH - VALVES

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LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	FCV-*0617	I-06-02		IRZ Carbon Amendment Building		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1"		40 27 02	V344
IRL01-	FV-*0505	I-05-02		IRL Injection Wells		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	Future Expansion	40 27 02	V344
IRL02-	FV-*0506	I-05-02		IRL Injection Wells		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	Future Expansion	40 27 02	V344
IRL03-	FV-*0507	I-05-02		IRL Injection Wells		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-CA-PVLK-050203	40 27 02	V344
IRL04-	FV-*0508	I-05-02		IRL Injection Wells		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1-1/2"	2"-FWCA-HALE-050202	40 27 02	V344
IRZ00-	V-*0609L	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	6"-EX-HALE-060103	40 27 02	V540
IRZ00-	V-*0609M	I-06-01		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	4"-CIP-PVLK-060104	40 27 02	V782
IRZ00-	V-*0609N	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	4" IN 8"-EX-HALE-060102	40 27 02	V341
IRZ00-	V-*0610I	I-06-01		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	4"-CIP-PVLK-060104	40 27 02	V782
IRZ00-	V-*0610H	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	4" IN 8"-EX-HALE-060102	40 27 02	V341
IRZ00-	V-*0609O	I-06-01		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	4"-CIP-PVLK-060104	40 27 02	V782
IRZ00-	V-*0609P	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	4" IN 8"-EX-HALE-060102	40 27 02	V341
IRZ00-	V-*0610J	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	3"-EX-HALE-060105	40 27 02	V341
IRZ00-	V-*0610K	I-06-01		IRL Injection Wells		Valve	Full-port ball	Isolation Valve	1/4"	3"-EX-HALE-060105	40 27 02	V341
IRZ00-	V-*0610L	I-06-01		IRZ Carbon Amendment Building		Valve	Butterfly		4"	3"-EX-HALE-060105	40 27 02	V540
IRZ00-	V-*0604J	I-06-02		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	4"-CIP-PVLK-060104	40 27 02	V782
IRZ00-	V-*0604K	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"		40 27 02	V343

TABLE D1-11

MW-20 BENCH - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE
IRZ00-	V-*0604H	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"		40 27 02	V343
IRZ00-	V-*0604I	I-06-02		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"		40 27 02	V343
IRZ00-	V-*0625E	I-06-03		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"		40 27 02	V343
IRZ00-	V-*0604M	I-06-03		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve	1"		40 27 02	V343
IRZ00-	V-*0604L	I-06-03		IRZ Carbon Amendment Building		Valve	Check	Swing	4"	4"-CIP-PVLK-060104	40 27 02	V782
IRZ00-	FCV-*0628S	I-06-04		IRZ Carbon Amendment Building		Valve	Electric Ball Valve	Three Piece Modulating Ball Valve	1"		40 27 02	V344
IRZ00-	V-*0627K	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Swing			40 27 02	V782
IRZ00-	V-*0627L	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Pressure Relief				40 27 02	V785
IRZ00-	V-*0627J	I-06-04		NTH IRZ Well Maintenance Bldg		Valve	Pressure Relief					
IRZ00-	V-*0627I	I-06-04		IRZ Carbon Amendment Building		Valve	Check	Swing				
IRZ00-	V-*0626L	I-06-04		IRZ Carbon Amendment Building		Valve	Ball	Isolation Valve			40 27 02	V343

¹ This is part of a contingent system and may be constructed in the future

² Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-12

MW-20 BENCH - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ00-	T-*0621	I-06-04	IRZ Carbon Amendment Building		Backwash Tank	Frac Tank		21,000 gal	6"-RW-HALE-060403	33 16 13.14				
IRZ00-	T-*0601	I-06-02	IRZ Carbon Amendment Building		Carbon Substrate Tank		SuperVault Double Wall Horizontal Saddle Tank. Mild Steel	15,000 gal	Tank	43 40 13B				
IRZ00-	T-*0623	I-06-04	IRZ Carbon Amendment Building		Clean-In-Place Tank	Frac Tank		20,000 gal	2 in 4"-CIP-HALE-060402	33 16 13.14				
IRZ00-	T-*0620	I-06-03	IRZ Carbon Amendment Building		Conditioned Water Tank	Frac Tank		21,000 gal	2"-TW-HALE-060404	33 16 13.14				
IRZ00-	T-*0619	I-06-04	IRZ Carbon Amendment Building		Well Maintenance Reagent Day Tank	Closed Head Vertical Bulk Storage Poly Tank	polyethylene	1,000 gal	Tank-*0619	43 40 02B				
IRZ00-	PMP-*0640	I-06-02	IRZ Carbon Amendment Building		Carbon Substrate Pump	Hose Pump	1/2" or 3/4" hose barb or tri-clamp.		1"-CS-CSLF-060202	44 44 13.01B	200	30		120V
IRZ00-	PMP-*0641	I-06-02	IRZ Carbon Amendment Building		Carbon Substrate Pump	Hose Pump	1/2" or 3/4" hose barb or tri-clamp.		1"-CS-CSLF-060202	44 44 13.01B	200	30		120V
IRZ00-	PMP-*0642	I-06-02	IRZ Carbon Amendment Building		Carbon Substrate Pump	Hose Pump	1/2" or 3/4" hose barb or tri-clamp.		1"-CS-CSLF-060202	44 44 13.01B	200	30		120V
IRZ00-	PMP-*0643	I-06-04	IRZ Carbon Amendment Building		Well Maintenance Reagent Pump	Hose Pump	1/2" or 3/4" hose barb or tri-clamp.		2"-WM-PVLK-060305	44 44 13.01B	50	200		460 VAC, 3-Phase
IRZ00-	PMP-*0646	I-06-04	IRZ Carbon Amendment Building		Sump Pump	Sump	1-1/2" NPT Discharge			44 42 56.09B	10-15	20-30		1/2 HP. 115V, 1-Phase
IRZ00-	PMP-*0647	I-06-04	IRZ Carbon Amendment Building		Sump Pump	Sump	1-1/2" NPT Discharge		6"-RW-HALE-060403	44 42 56.09B	10-15	20-30		1/2 HP. 115V, 1-Phase
IRZ00-	PMP-*0644	I-06-04	IRZ Carbon Amendment Building		Clean-in-Place Reagent Pump	Centrifugal	VFD		4"-CIP-PVLK-060402	44 42 56.10B	300	100		10 HP, 460 V, 3-Phase
IRZ00-	PMP-*0648	I-06-04	IRZ Carbon Amendment Building		Conditioned Water Injection Pump		1-1/2" Suction, 1" Discharge, VFD		2"-TW-PVLK-060404	44 42 56.10B	20	160		460 VAC, 3-Phase
IRZ00-	PMP-*0645	I-06-04	IRZ Carbon Amendment Building		Produced Water Transfer Pump	Centrifugal	VFD		4"-RW-PVLK-060403	44 42 56.10B	400	200		25 HP, 460 V, 3-Phase
IRZ00-	LT-*0652	I-06-02	IRZ Carbon Amendment Building		Level Element	Radar	Carbon Substrate Tank Level Sensor	2"	Tank	40_91_02.05_1.01B				24 VDC
IRZ00-	LE-*0652	I-06-02	IRZ Carbon Amendment Building		Level Transmitter	Radar	Carbon Substrate Tank Level Sensor	2"	Tank	40_91_02.05_1.01A				24 VDC
IRZ00-	TT-*0690	I-06-02	IRZ Carbon Amendment Building		Temperature Element	General Purpose Direct Immersion Platinum RTD	Carbon Substrate Tank Temperature Sensor	1/2"	Tank					24 VDC
IRZ00-	TE-*0690	I-06-02	IRZ Carbon Amendment Building		Temperature Sensor	General Purpose Direct Immersion Platinum RTD	Carbon Substrate Tank Temperature Sensor	1/2"	Tank					24 VDC

TABLE D1-12
MW-20 BENCH - EQUIPMENT
 Groundwater Remedy Basis of Design Report/Final (100%) Design
 PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ00-	LE-*0659	I-06-03	IRZ Carbon Amendment Building		Level Element	Radar	CIP and Well Maintenance Tank Level Sensor	2"	Tank-*0619	40_91_02.05_1.01A				24 VDC
IRZ00-	LT-*0659	I-06-03	IRZ Carbon Amendment Building		Level Transmitter	Radar	CIP and Well Maintenance Tank Level Sensor	2"	Tank-*0619	40_91_02.05_1.01B				24 VDC
IRZ00-	LE-*0656	I-06-04	IRZ Carbon Amendment Building		Level Element	Radar	CIP and Well Maintenance Tank Level Sensor	2"	2"-TW-HALE-060404	40_91_02.05_1.01A				24 VDC
IRZ00-	LT-*0656	I-06-04	IRZ Carbon Amendment Building		Level Transmitter	Radar	CIP and Well Maintenance Tank Level Sensor	2"	2"-TW-HALE-060404	40_91_02.05_1.01B				24 VDC
IRZ00-	LE-*0657	I-06-04	IRZ Carbon Amendment Building		Level Element	Radar	CIP and Well Maintenance Tank Level Sensor	2"	6"-RW-HALE-060403	40_91_02.05_1.01A				24 VDC
IRZ00-	LT-*0657	I-06-04	IRZ Carbon Amendment Building		Level Transmitter	Radar	CIP and Well Maintenance Tank Level Sensor	2"	6"-RW-HALE-060403	40_91_02.05_1.01B				24 VDC
IRZ00-	LE-*0658	I-06-04	IRZ Carbon Amendment Building		Level Element	Radar	CIP and Well Maintenance Tank Level Sensor	2"	CIP Frack Tank	40_91_02.05_1.01A				24 VDC
IRZ00-	LT-*0658	I-06-04	IRZ Carbon Amendment Building		Level Transmitter	Radar	CIP and Well Maintenance Tank Level Sensor	2"	CIP Frack Tank	40_91_02.05_1.01B				24 VDC
IRZ00-	PIT-*0661	I-06-04	IRZ Carbon Amendment Building		Gauge Pressure Transmitter	Scalable	Groundwater In-Line Gauge Pressure Transmitter	1/2"	2"-WM-PVLK-060305					24 V Loop
IRZ00-	ASH-*0650	I-06-01	IRZ Carbon Amendment Building		LEL Sensor	LEL Sensor with Transmitter	Rated for Class One Div Two areas, 3 wire, local display, integral mounted sensor / electronics.		Area Monitor					24 V Loop
IRZ00-	AI-*0650	I-06-01	IRZ Carbon Amendment Building		LEL Sensor	LEL Sensor with Transmitter	Rated for Class One Div Two areas, 3 wire, local display, integral mounted sensor / electronics.		Area Monitor					24 V Loop
IRZ00-	PSH-*0665	I-06-02	IRZ Carbon Amendment Building		Pressure Switch	In-Line	Carbon Substrate In-Line Pressure Switch	1/2"	1"-CS-CSLF-060202					24 VDC
IRZ00-	PSH-*0666	I-06-02	IRZ Carbon Amendment Building		Pressure Switch	In-Line	Carbon Substrate In-Line Pressure Switch	1/2"	1"-CS-CSLF-060202					24 VDC
IRZ00-	PSH-*0667	I-06-02	IRZ Carbon Amendment Building		Pressure Switch	In-Line	Carbon Substrate In-Line Pressure Switch	1/2"	1"-CS-CSLF-060202					24 VDC
IRZ00-	PIT-*0662	I-06-01	IRZ Carbon Amendment Building		Pressure Transmitter	Scalable	In-Line Gauge Pressure Transmitter	1/2"	6"-EX-HALE-060101	0_91_02.07_1.01A			100	24 V Loop
IRZ00-	PIT-*0663	I-06-01	IRZ Carbon Amendment Building		Pressure Transmitter	Scalable	In-Line Gauge Pressure Transmitter	1/2"	4" IN 8"-EX-HALE-060102	0_91_02.07_1.01A			100	24 V Loop
IRZ00-	PSH-*0668	I-06-03	IRZ Carbon Amendment Building		Pressure Switch	In-Line		1/2"	2"-WM-PVLK-060305					24 VDC
IRZ00-	PSH-*0669A	I-06-04	IRZ Carbon Amendment Building		Pressure Switch	In-Line		1/2"	4"-CIP-PVLK-060402					24 VDC

TABLE D1-12

MW-20 BENCH - EQUIPMENT

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LOCATION ID	100% TAG NO.	P&ID SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ00-	PSH-*0669B	I-06-04	IRZ Carbon Amendment Building		Pressure Switch	In-Line		1/2"		40_91_02.07_1.01C				24 VDC
IRZ00-	PSH-*0669C	I-06-04	IRZ Carbon Amendment Building		Pressure Switch	In-Line		1/2"		40_91_02.07_1.01C				24 VDC
IRZ00-	LSH-*0655	I-06-03	IRZ Carbon Amendment Building		Level Switch	General Purpose Level Switch	Pipe/Sump Leak Detection Level Switch		1"-WM-PVLK-060302	40_91_02.05_1.01C				24 VDC
IRZ00-	LSH-*0649	I-06-03	IRZ Carbon Amendment Building		Level Switch	General Purpose Level Switch	Pipe/Sump Leak Detection Level Switch							24 VDC
IRZ00-	LSH-*0646	I-06-04	IRZ Carbon Amendment Building		Level Switch	General Purpose Level Switch	Pipe/Sump Leak Detection Level Switch		6"-RW-HALE-060403	40_91_02.05_1.01C				24 VDC
IRZ00-	LSH-*0647	I-06-04	IRZ Carbon Amendment Building		Level Switch	General Purpose Level Switch	Pipe/Sump Leak Detection Level Switch		2 in 4"-CIP-HALE-060402	40_91_02.05_1.01C				24 VDC
IRZ00-	LSH-*0650	I-06-02	IRZ Carbon Amendment Building		Level Switch	General Purpose Level Switch	Tank/Pipe/Sump Leak Detection Level Switch		2"-CS-CSLF-060201	40_91_02.05_1.01C				24 VDC
IRZ00-	LSH-*0651	I-06-02	IRZ Carbon Amendment Building		Level Switch	General Purpose Level Switch	Tank/Pipe/Sump Leak Detection Level Switch		Tank	40_91_02.05_1.01C				24 VDC
IRZ00-	LSH-*0653	I-06-02	IRZ Carbon Amendment Building		Level Switch	General Purpose Level Switch	Tank/Pipe/Sump Leak Detection Level Switch		2" IN 4"-CS-CSLF-060201	40_91_02.05_1.01C				24 VDC
IRZ00-	LSH-*0654	I-06-02	IRZ Carbon Amendment Building		Level Switch	General Purpose Level Switch	Tank/Pipe/Sump Leak Detection Level Switch			40_91_02.05_1.01C				24 VDC
IRZ00-	PI-*0660A	I-06-01	IRZ Carbon Amendment Building		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	6"-EX-HALE-060101	40_91_02.07_1.01B			100	24 V Loop
IRZ00-	PI-*0660B	I-06-01	IRZ Carbon Amendment Building		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		40_91_02.07_1.01B			100	24 V Loop
IRZ00-	PI-*0660C	I-06-01	IRZ Carbon Amendment Building		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		40_91_02.07_1.01B			100	24 V Loop
IRZ00-	PI-*0660F	I-06-04	IRZ Carbon Amendment Building		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	4"-CIP-PVLK-060402	40_91_02.07_1.01B			100	24 V Loop
IRZ00-	PI-*0660G	I-06-04	IRZ Carbon Amendment Building		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"	4"-RW-PVLK-060403	40_91_02.07_1.01B			100	24 V Loop
IRZ00-	PI-*0660H	I-06-04	IRZ Carbon Amendment Building		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"		40_91_02.07_1.01B			100	24 V Loop
IRZ00-	M-*0605	I-06-01	IRZ Carbon Amendment Building		Static Mixer		Length: 46", Removable helical design mixing elements	4"	6"-EX-HALE-060101					
IRZ00-	M-*0606	I-06-01	IRZ Carbon Amendment Building		Static Mixer		Length: 46", Removable helical design mixing elements	4"						

TABLE D1-12

MW-20 BENCH - EQUIPMENT

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LOCATION ID	100% TAG NO.	P&ID SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ00-	M-*0607	I-06-01	IRZ Carbon Amendment Building		Static Mixer		Length: 46", Removable helical design mixing elements	4"						
IRZ00-	FM-*0671	I-06-02	IRZ Carbon Amendment Building		Flow Meter	Coriolis	Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				18-100 VDC and 85-265 VAC; self switching
IRZ00-	FE-*0671	I-06-02	IRZ Carbon Amendment Building		Flow Element		Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				
IRZ00-	FIT-*0671	I-06-02	IRZ Carbon Amendment Building		Flow Transmitter		Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				
IRZ00-	FM-*0675	I-06-02	IRZ Carbon Amendment Building		Flow Meter	Coriolis	Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				18-100 VDC and 85-265 VAC; self switching
IRZ00-	FE-*0675	I-06-02	IRZ Carbon Amendment Building		Flow Element		Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				
IRZ00-	FIT-*0675	I-06-02	IRZ Carbon Amendment Building		Flow Transmitter		Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				
IRZ00-	FM-*0676	I-06-02	IRZ Carbon Amendment Building		Flow Meter	Coriolis	Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				18-100 VDC and 85-265 VAC; self switching
IRZ00-	FE-*0676	I-06-02	IRZ Carbon Amendment Building		Flow Element		Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				
IRZ00-	FIT-*0676	I-06-02	IRZ Carbon Amendment Building		Flow Transmitter		Carbon Substrate Flow Meter	1/2"		40_91_02.03_1.0 1A				
IRZ00-	FM-*0672	I-06-01	IRZ Carbon Amendment Building		Flow Meter	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"	6"-EX-HALE-060101	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FE-*0672	I-06-01	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"	6"-EX-HALE-060101	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0672	I-06-01	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"	6"-EX-HALE-060101	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FM-*0673	I-06-01	IRZ Carbon Amendment Building		Flow Meter	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"		40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FE-*0673	I-06-01	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"		40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0673	I-06-01	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"		40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FM-*0674	I-06-01	IRZ Carbon Amendment Building		Flow Meter	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"		40_91_02.03_1.0 1A	100			24 VDC

TABLE D1-12

MW-20 BENCH - EQUIPMENT

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LOCATION ID	100% TAG NO.	P&ID SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ00-	FE-*0674	I-06-01	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"		40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0674	I-06-01	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Groundwater Flow MagMeter	2"		40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FM-*0677	I-06-03	IRZ Carbon Amendment Building		Flow Meter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	1"-WM-PVLK-060302	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FE-*0677	I-06-03	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	1"-WM-PVLK-060302	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0677	I-06-03	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	1"-WM-PVLK-060302	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FM-*0678	I-06-03	IRZ Carbon Amendment Building		Flow Meter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	1"-FW-PVLK-060303	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FE-*0678	I-06-03	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	1"-FW-PVLK-060303	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0678	I-06-03	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	1"-FW-PVLK-060303	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FM-*0679	I-06-03	IRZ Carbon Amendment Building		Flow Meter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-WM-PVLK-060305	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FE-*0679	I-06-03	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-WM-PVLK-060305	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0679	I-06-03	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-WM-PVLK-060305	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FE-*0680A	I-06-03	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	4"-CIP-PVLK-060402	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0680A	I-06-03	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	4"-CIP-PVLK-060402	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FE-*0680B	I-06-03	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	4"-RW-PVLK-060403	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0680B	I-06-03	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	4"-RW-PVLK-060403	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FM-*0680C	I-06-03	IRZ Carbon Amendment Building		Flow Meter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-TW-PVLK-060404	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FE-*0680C	I-06-03	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-TW-PVLK-060404	40_91_02.03_1.0 1A	100			24 VDC
IRZ00-	FIT-*0680C	I-06-03	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-TW-PVLK-060404	40_91_02.03_1.0 1A	100			24 VDC

TABLE D1-12

MW-20 BENCH - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	TOTAL HEAD	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
IRZ00-	FS-*0681	I-06-04	IRZ Carbon Amendment Building		Flow Switch	Thermal dispersion	Flow Switch for Eyewash Station		1"-PW-PVLK-060306	40_91_02.03_1.0 1A				
IRZ00-	E-*0622	I-06-03	IRZ Carbon Amendment Building		Eductor	Liqui-Jet		1" NPT Motive Inlet, 1-1/2" NPT Suction and Discharge	1"-FW-PVLK-060303		5			
IRZ00-	F-*0620	I-06-03	IRZ Carbon Amendment Building		Bag Filter Housing	CPVC	Height: 34.1",100 micron filter size	2"	2"-WM-PVLK-060301					
IRZ00-		I-06-02	IRZ Carbon Amendment Building		Eyewash Station	Tempered Water Safety Shower								
IRZ00-	FIT-*0680	I-06-01	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	3"-EX-HALE-060105					
IRZ00-	FE-*0680	I-06-01	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	3"-EX-HALE-060105					
IRZ00-	M-*0608	I-06-01	IRZ Carbon Amendment Building		Static Mixer		Length: 46", Removable helical design mixing elements	4"						
IRZ00-	PI-*0660D	I-06-01	IRZ Carbon Amendment Building		Pressure Gauge	Bourdon Tube	Liquid Filled, 2-1/2" Dial Size	1/4"					100	24 V Loop
IRZ00-	LSH-*0657A	I-06-02	IRZ Carbon Amendment Building		Horn									
IRZ00-	LSH-*0657B	I-06-02	IRZ Carbon Amendment Building		Beacon									
IRZ00-	FE-*0681	I-06-02	IRZ Carbon Amendment Building		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-TW-PVLK-060404		100			24 VDC
IRZ00-	FIT-*0681	I-06-02	IRZ Carbon Amendment Building		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-TW-PVLK-060404		100			24 VDC
IRZ00-	FM-*0681	I-06-02	IRZ Carbon Amendment Building		Flow Meter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	2"-TW-PVLK-060404		100			24 VDC
IRZ00-	TSH-*0691	I-06-04	IRZ Carbon Amendment Building											
IRZ00-	PMP-*0610	I-06-01	IRZ Carbon Amendment Building	RB EX	Pump	Booster								
IRZ00-	PMP-*0611	I-06-01	IRZ Carbon Amendment Building	RB EX	Pump	Booster								
IRZ00-	LSH-*0657	I-06-02	IRZ Carbon Amendment Building		Level Switch									

¹ This is part of a contingent system and may be constructed in the future

² Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-13**PIPELINE - VALVES**

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

LOCATION ID	MECH SHT NO.	FLOW STREAM	EQUIPMENT	TYPE	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
Pipeline A	C-07-20	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-20	RW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-20	SP	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-20	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-20	RW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-21	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-21	RW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-22	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	RW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	CA	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	SP	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-22	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-22	RW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-22	CA	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-22	SP	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-22	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	RW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	CA	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-22	SP	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-24	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-24	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-24	RW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-24	CA	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-24	SP	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-24	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-24	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-24	RW	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-24	CA	Valve	Gate	1		40 27 02B	V134		
Pipeline A	C-07-24	SP	Valve	Gate	1		40 27 02B	V134		
Pipeline B	C-07-31	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-31	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline B	C-07-31	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline A	C-07-31	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline B	C-07-31	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline H	C-07-25	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline H	C-07-25	RW	Valve	Gate	1		40 27 02B	V134		

TABLE D1-13

PIPELINE - VALVES

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

LOCATION ID	MECH SHT NO.	FLOW STREAM	EQUIPMENT	TYPE	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
Pipeline H	C-07-25	CA	Valve	Gate	1		40 27 02B	V134		
Pipeline H	C-07-25	SP	Valve	Gate	1		40 27 02B	V134		
Pipeline H	C-07-25	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline H	C-07-25	RW	Valve	Gate	1		40 27 02B	V101		
Pipeline H	C-07-25	CA	Valve	Gate	1		40 27 02B	V101		
Pipeline H	C-07-25	SP	Valve	Gate	1		40 27 02B	V101		
Pipeline H	C-07-25	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline H	C-07-25	RW	Valve	Gate	1		40 27 02B	V134		
Pipeline H	C-07-25	CA	Valve	Gate	1		40 27 02B	V134		
Pipeline H	C-07-25	SP	Valve	Gate	1		40 27 02B	V134		
Pipeline I	C-07-78	FW	Valve	Gate	1		40 27 02B	V101		
Pipeline I	C-07-78	RW	Valve	Gate	1		40 27 02B	V101		
Pipeline I	C-07-78	SP	Valve	Gate	1		40 27 02B	V101		
Pipeline I	C-07-78	FW	Valve	Gate	1		40 27 02B	V134		
Pipeline I	C-07-78	RW	Valve	Gate	1		40 27 02B	V134		
Pipeline I	C-07-78	SP	Valve	Gate	1		40 27 02B	V134		
Pipeline B	C-07-31	FW	Valve	Butterfly	12		40 27 02B	V500		
Pipeline B	C-07-31	FW	Valve	Butterfly	12		40 27 02B	V500		
Pipeline B	C-07-31	FW	Valve	Butterfly	12		40 27 02B	V500		
Pipeline A, Sta 16+80	C-07-20	FW, RW, SP		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150
Pipeline A, Sta 21+40	C-07-21	FW, RW		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150
Pipeline A, Sta 31+30	C-07-22	FW (2), RW, CA, SP		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150
1	C-07-24	FW (2), RW, CA, SP		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150
Pipeline H, Sta 13+25	C-07-25	FW, RW, CA, SP		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150

TABLE D1-13**PIPELINE - VALVES**

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

LOCATION ID	MECH SHT NO.	FLOW STREAM	EQUIPMENT	TYPE	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
Pipeline B	C-07-27	FW		FLANGED RESILIENT WEDGE GATE VALVE	2	12" FW	33 12 16	Water Service		
Pipeline B	C-07-28	FW		FLANGED RESILIENT WEDGE GATE VALVE	2	12" FW	33 12 16	Water Service		
Pipeline B, Sta 40+48	C-07-31	FW		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150
Pipeline B, Sta 43+30	C-07-31	FW		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150
Pipeline B, Sta 46+01	C-07-31	FW		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150
Pipeline J	C-07-69	FW		Brass Gate Valve	2	8" FW	33 12 16	Water Service		
Pipeline B	C-07-69	FW		Brass Gate Valve	2	8" FW	33 12 16	Water Service		
Pipeline J	C-07-69	FW		Air and vacuum release	2	12" FW	33 12 16	A. Air Valve, Water Service		
Pipeline B	C-07-69	FW		Air and vacuum release	2	12" FW	33 12 16	A. Air Valve, Water Service		
Pipeline L	C-07-74	TW		Air and vacuum release	3/4	2" TW	33 12 16	A. Air Valve, Water Service		150
Pipeline L	C-07-74	TW		Ball valve	3/4	2" TW	33 12 16	A. Air Valve, Water Service		
Pipeline I, Sta 12+00	C-07-78	FW, RW, SP		Combination Air and vacuum valve	1		33 12 16		1.67 scfs	150

TABLE D1-13**PIPELINE - VALVES**

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

LOCATION ID	MECH SHT NO.	FLOW STREAM	EQUIPMENT	TYPE	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
Pipeline L3, Sta 82 +/-		TW		Air Release	1		33 12 16	A. Air Valve, Water Service	5.2 cfm	30

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-14**COMPRESSOR STATION PONDS - VALVES***Groundwater Remedy Basis of Design Report/Final (100%) Design**PG&E Topock Compressor Station, Needles, California*

LOCATION ID	SYSTEM LOCATION	EQUIPMENT	VALVE TYPE	DESCRIPTION	SIZE	POWER (HP, unless noted otherwise)
PONDS	TCS Ponds	Valve	Butterfly	Electric Actuated Butterfly Valve	3	12-24V
PONDS	TCS Ponds	Valve	Butterfly	Electric Actuated Butterfly Valve	3	12-24V
PONDS	TCS Ponds	Valve	Butterfly	Electric Actuated Butterfly Valve	3	12-24V
PONDS	TCS Ponds	Valve	Butterfly	Electric Actuated Butterfly Valve	3	12-24V
PONDS	TCS Ponds	Valve	Check			
PONDS	TCS Ponds	Valve	Check			
PONDS	Pontoon	Valve	Gate			
PONDS	Pontoon	Valve	Gate			
PONDS	Pontoon	Valve	Gate			
PONDS	Pontoon	Valve	Gate			
PONDS	TCS Ponds	Valve	Pressure Release			
PONDS	TCS Ponds	Valve	Pressure Release			
PONDS	TCS Ponds	Valve	Ball			
PONDS	TCS Ponds	Valve	Ball			
PONDS	TCS Ponds	Valve	Ball		3/4	
PONDS	TCS Ponds	Valve	Ball		3/4	
PONDS	TCS Ponds	Valve	Needle		1/4	
PONDS	TCS Ponds	Valve	Needle		1/4	
PONDS	TCS Ponds	Valve	Needle		1/4	
PONDS	TCS Ponds	Valve	Needle		1/4	

¹This is part of a contingent system and may be constructed in the future²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-15
COMPRESSOR STATION PONDS - EQUIPMENT

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

LOCATION ID	100% TAG NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	POWER (HP, unless noted otherwise)
PONDS		M-09-01	TCS Ponds		Generator- wye, neutral grounded, 50-60 psig natural gas fueled			
PONDS	LT-*09XX	M-09-02	TCS Ponds		Level Transmitter			
PONDS	LT-*09XX	M-09-02	TCS Ponds		Level Transmitter			
PONDS	LT-*09XX	M-09-02	TCS Ponds		Level Transmitter			
PONDS	LT-*09XX	M-09-02	TCS Ponds		Level Transmitter			
PONDS	LIC-*09XX	M-09-02	TCS Ponds		Standard Control Unit			
PONDS	PMP-*09XX	A-09-2	TCS Ponds		Sump Pump	Submersible	2" discharge	1
PONDS	PMP-*09XX	A-09-2	TCS Ponds		Sump Pump	Submersible	2" discharge	1
PONDS	PMP-*09XX	A-09-2	TCS Ponds		Sump Pump	Submersible	2" discharge	1
PONDS		E-09-02	TCS Ponds		Transformer 75 KVA, 480V, 3 Phase, 480 Delta Primary, 120/240v secondary- NEMA 3 R enclosure			
PONDS	PMP-*09XX		TCS Ponds		Pump	Vertical		3 HP, 240V, 3P
PONDS	PMP-*09XX		TCS Ponds		Pump	Vertical		3 HP, 240V, 3P

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-16

INFLUENT TANKS - VALVES

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

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	SP-*1171A	I-11-01			RW	Valve	BALL		3/4*	6"-RW-PULK-110101	40 27 02	V335	35	48
RTP01	V-*1101A	I-11-01			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110107	40 27 02	V521	35	48
RTP01	V-*1101B	I-11-01			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110105	40 27 02	V521	492	46
RTP01	SP-*1101C	I-11-01			RW	Valve	BALL	Sample Tap	3/4*	6"-RW-PULK-110105	40 27 02	V335	492	46
RTP01	V-*1101D	I-11-01			RW	Valve	SWING CHECK		6	6"-RW-PULK-110106	40 27 02	V1692	492	46
RTP01	V-1101E	I-11-01			RW	Valve	BUTTERFLY	Isolation Valve	6	6"-RW-PULK-110106	40 27 02	V521	492	46
RTP01	V-1101F	I-11-01	M-11-02	Influent Tank Farm	RW	Valve	BUTTERFLY	Isolation Valve	6	6"-RW-PULK-110106	40 27 02	V521	492	46
RTP01	V-*1101G	I-11-01			RW	Valve	BALL	Isolation Valve	2	2"-RW-PULK-110102	40 27 02	V335	492	46
RTP01	SP-*1101H	I-11-01			RW	Valve	BALL	Sample Tap	3/4*	2"-RW-PULK-110102	40 27 02	V335	492	46
RTP01	V-*1101I	I-11-01			RW	Valve	BALL	Isolation Valve	2	2"-RW-PULK-110103	40 27 02	V335	492	46
RTP01	SP-*1101J	I-11-01			RW	Valve	BALL	Sample Tap	3/4*	2"-RW-PULK-110103	40 27 02	V335	492	46
RTP01	V-*1101K	I-11-01			SL	Valve	BALL	Isolation Valve	2	2"-SL-PULK-110104	40 27 02	V335	492	46
RTP01	SP-*1101L	I-11-01			SL	Valve	BALL	Sample Tap	3/4*	2"-SL-PULK-110104	40 27 02	V335	492	46
RTP01	V-*1101M	I-11-01			DR	Valve	BUTTERFLY	Isolation Valve	4	4"-DR-PULK-110108	40 27 02	V521	492	46
RTP01	V-*1161A	I-11-01			RW	Valve	BALL	Isolation Valve	1/2*	PI-261	40 27 02	V335	492	46
RTP01	V-*1161B	I-11-01			RW	Valve	BALL	Isolation Valve	1/2*	PI-261	40 27 02	V335	492	46
RTP01	V-*1113A	I-11-01			CAU	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-CAU-110110-H	40 27 02	V335	0.17	80
RTP01	V-*1113B	I-11-01			CAU	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-CAU-110110-H	40 27 02	V335	0.17	80
RTP01	V-*1113C	I-11-01			CAU	Valve	BALL CHECK		1/2	1/2" IN 2"-CAU-110110-H	40 27 02	V631	0.17	80
RTP01	V-*1114A	I-11-01			ACD	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-ACD-110109	40 27 02	V335	0.17	80
RTP01	V-*1114B	I-11-01			ACD	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-ACD-110109	40 27 02	V335	0.17	80
RTP01	V-*1114C	I-11-01			ACD	Valve	BALL CHECK		1/2	1/2" IN 2"-ACD-110109	40 27 02	V631	0.17	80
RTP01	V-*1115A	I-11-01			COG	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-COG-110111	40 27 02	V335	0.17	80
RTP01	V-*1115B	I-11-01			COG	Valve	BALL		1/2	1/2" IN 2"-COG-110111	40 27 02	V335	0.17	80
RTP01	V-*1115C	I-11-01			COG	Valve	BALL CHECK		1/2	1/2" IN 2"-COG-110111	40 27 02	V631	0.17	80
RTP01	V-*1102A	I-11-02			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110207	40 27 02	V521	35	48
RTP01	V-*1102B	I-11-02			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110205	40 27 02	V521	492	46
RTP01	SP-*1102C	I-11-02			RW	Valve	BALL	Sample Tap	3/4*	6"-RW-PULK-110205	40 27 02	V335	492	46
RTP01	V-*1102D	I-11-02			RW	Valve	WAFER CHECK		6	6"-RW-PULK-110206	40 27 02	V1692	492	46
RTP01	V-1102E	I-11-02			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110206	40 27 02	V521	492	46
RTP01	V-*1102F	I-11-02			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110206	40 27 02	V521	492	46
RTP01	V-*1102G	I-11-02			RW	Valve	BALL	Isolation Valve	2	2"-RW-PULK-110202	40 27 02	V335	492	46
RTP01	SP-*1102H	I-11-02			RW	Valve	BALL	Sample Tap	3/4*	2"-RW-PULK-110202	40 27 02	V335	492	46
RTP01	V-*1102I	I-11-02			RW	Valve	BALL	Isolation Valve	2	2"-RW-PULK-110203	40 27 02	V335	492	46
RTP01	SP-*1102J	I-11-02			RW	Valve	BALL	Sample Tap	3/4*	2"-RW-PULK-110203	40 27 02	V335	492	46
RTP01	V-*1102K	I-11-02			SL	Valve	BALL	Isolation Valve	2	2"-SL-PULK-110204	40 27 02	V335	492	46
RTP01	SP-*1102L	I-11-02			SL	Valve	BALL	Sample Tap	3/4*	2"-SL-PULK-110204	40 27 02	V335	492	46
RTP01	V-*1102M	I-11-02			DR	Valve	BUTTERFLY	Isolation Valve	4	4"-DR-PULK-110208	40 27 02	V521	492	46
RTP01	V-*1162A	I-11-02			RW	Valve	BALL	Isolation Valve	1/2*	6"-RW-PULK-110206	40 27 02	V335	492	46
RTP01	V-*1162B	I-11-02			RW	Valve	BALL	Isolation Valve	1/2*	6"-RW-PULK-110206	40 27 02	V335	492	46
RTP01	V-*1123A	I-11-02			CAU	Valve	BALL		1/2	1/2" IN 2"-CAU-110211-H	40 27 02	V335	0.17	80
RTP01	V-*1123B	I-11-02			CAU	Valve	BALL		1/2	1/2" IN 2"-CAU-110211-H	40 27 02	V335	0.17	80
RTP01	V-*1123C	I-11-02			CAU	Valve	BALL CHECK		1/2	1/2" IN 2"-CAU-110211-H	40 27 02	V631	0.17	80
RTP01	V-*1124A	I-11-02			ACD	Valve	BALL		1/2	1/2" IN 2"-ACD-110209	40 27 02	V335	0.17	80
RTP01	V-*1124B	I-11-02			ACD	Valve	BALL		1/2	1/2" IN 2"-ACD-110209	40 27 02	V335	0.17	80

TABLE D1-16

INFLUENT TANKS - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1124C	I-11-02			ACD	Valve	BALL CHECK		1/2	1/2" IN 2"-ACD-110209	40 27 02	V631	0.17	80
RTP01	V-*1125A	I-11-02			COG	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-COG-110211	40 27 02	V335	0.17	80
RTP01	V-*1125B	I-11-02			COG	Valve	BALL		1/2	1/2" IN 2"-COG-110211	40 27 02	V335	0.17	80
RTP01	V-*1125C	I-11-02			COG	Valve	BALL CHECK		1/2	1/2" IN 2"-COG-110211	40 27 02	V631	0.17	80
RTP01	V-*1103A	I-11-03			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110307	40 27 02	V521	35	48
RTP01	V-*1103B	I-11-03			RW	Valve	BUTTERFLY		6	TNK-*1103	40 27 02	V521	492	46
RTP01	SP-*1103C	I-11-03			RW	Valve	BALL	Sample Tap	3/4*	TNK-*1103	40 27 02	V335	492	46
RTP01	V-*1103D	I-11-03			RW	Valve	WAFER CHECK		6	6"-RW-PULK-110306	40 27 02	V1692	492	46
RTP01	V-1103E	I-11-03			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110306	40 27 02	V521	492	46
RTP01	V-1103F	I-11-03			RW	Valve	BUTTERFLY	Isolation Valve	6	6"-RW-PULK-110306	40 27 02	V521	492	46
RTP01	V-*1103G	I-11-03			RW	Valve	BALL	Isolation Valve	2	2"-RW-PULK-110302	40 27 02	V335	492	46
RTP01	SP-*1103H	I-11-03			RW	Valve	BALL	Sample Tap	3/4*	2"-RW-PULK-110302	40 27 02	V335	492	46
RTP01	V-*1103I	I-11-03			RW	Valve	BALL	Isolation Valve	2	2"-RW-PULK-110303	40 27 02	V335	492	46
RTP01	SP-*1103J	I-11-03			RW	Valve	BALL	Sample Tap	3/4*	2"-RW-PULK-110303	40 27 02	V335	492	46
RTP01	V-*1103K	I-11-03			SL	Valve	BALL	Isolation Valve	2	2"-SL-PULK-110304	40 27 02	V335	492	46
RTP01	SP-*1103L	I-11-03			SL	Valve	BALL	Sample Tap	3/4*	2"-SL-PULK-110304	40 27 02	V335	492	46
RTP01	V-*1103M	I-11-03			DR	Valve	BUTTERFLY	Isolation Valve	4	4"-DR-PULK-110308	40 27 02	V521	492	46
RTP01	V-*1163A	I-11-03			RW	Valve	BALL	Isolation Valve	1/2*	PI-263	40 27 02	V335	492	46
RTP01	V-*1163B	I-11-03			RW	Valve	BALL	Isolation Valve	1/2*	PI-263	40 27 02	V335	492	46
RTP01	V-*1133A	I-11-03			CAU	Valve	BALL		1/2	1/2" IN 2"-CAU-110310-H	40 27 02	V335	0.17	80
RTP01	V-*1133B	I-11-03			CAU	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-CAU-110310-H	40 27 02	V335	0.17	80
RTP01	V-*1133C	I-11-03			CAU	Valve	BALL CHECK		1/2	1/2" IN 2"-CAU-110310-H	40 27 02	V631	0.17	80
RTP01	V-*1134A	I-11-03			ACD	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-ACD-110309	40 27 02	V335	0.17	80
RTP01	V-*1134B	I-11-03			ACD	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-ACD-110309	40 27 02	V335	0.17	80
RTP01	V-*1134C	I-11-03			ACD	Valve	BALL CHECK		1/2	1/2" IN 2"-ACD-110309	40 27 02	V631	0.17	80
RTP01	V-*1135A	I-11-03			COG	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-COG-110311	40 27 02	V335	0.17	80
RTP01	V-*1135B	I-11-03			COG	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-COG-110311	40 27 02	V335	0.17	80
RTP01	V-*1135C	I-11-03			COG	Valve	BALL CHECK		1/2	1/2" IN 2"-COG-110311	40 27 02	V631	0.17	80
RTP01	V-*1104A	I-11-04			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110407	40 27 02	V521	35	48
RTP01	V-*1104B	I-11-04			RW	Valve	BUTTERFLY	Isolation Valve	6	TNK-*1104	40 27 02	V521	492	46
RTP01	SP-*1104C	I-11-04			RW	Valve	BALL	Sample Tap	3/4*	TNK-*1104	40 27 02	V335	492	46
RTP01	V-*1104D	I-11-04			RW	Valve	WAFER CHECK		6	6"-RW-PULK-110406	40 27 02	V1692	492	46
RTP01	V-1104E	I-11-04			RW	Valve	BUTTERFLY		6	6"-RW-PULK-110406	40 27 02	V521	492	46
RTP01	V-1104F	I-11-04			RW	Valve	BUTTERFLY	Isolation Valve	6	6"-RW-PULK-110406	40 27 02	V521	492	46
RTP01	V-*1104G	I-11-04			RW	Valve	BALL	Isolation Valve	2	2"-RW-PULK-110402	40 27 02	V335	492	46
RTP01	SP-*1104H	I-11-04			RW	Valve	BALL	Sample Tap	3/4*	2"-RW-PULK-110402	40 27 02	V335	492	46
RTP01	V-*1104I	I-11-04			RW	Valve	BALL	Isolation Valve	2	2"-RW-PULK-110408	40 27 02	V335	492	46
RTP01	SP-*1104J	I-11-04			RW	Valve	BALL	Sample Tap	3/4*	2"-RW-PULK-110408	40 27 02	V335	492	46
RTP01	V-*1104K	I-11-04			SL	Valve	BALL	Isolation Valve	2	2"-SL-PULK-110404	40 27 02	V335	492	46
RTP01	SP-*1104L	I-11-04			SL	Valve	BALL	Sample Tap	3/4*	2"-SL-PULK-110404	40 27 02	V335	492	46
RTP01	V-*1104M	I-11-04			DR	Valve	BUTTERFLY	Isolation Valve	4	4"-DR-PULK-110408	40 27 02	V521	492	46
RTP01	V-*1189A	I-11-04			RW	Valve	BALL	Isolation Valve	3/4*	AE/AIT-289	40 27 02	V335	492	46
RTP01	V-*1164A	I-11-04			RW	Valve	BALL	Isolation Valve	1/2*	PI-264	40 27 02	V335	492	46
RTP01	V-*1164B	I-11-04			RW	Valve	BALL	Isolation Valve	1/2*	PI-264	40 27 02	V335	492	46
RTP01	V-*1143A	I-11-04			CAU	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-CAU-110410-H	40 27 02	V335	0.17	80
RTP01	V-*1143B	I-11-04			CAU	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-CAU-110410-H	40 27 02	V335	0.17	80

TABLE D1-16

INFLUENT TANKS - VALVES

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

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1143C	I-11-04			CAU	Valve	BALL CHECK		1/2	1/2" IN 2"-CAU-110410-H	40 27 02	V631	0.17	80
RTP01	V-*1144A	I-11-04			ACD	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-ACD-110404	40 27 02	V335	0.17	80
RTP01	V-*1144B	I-11-04			ACD	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-ACD-110404	40 27 02	V335	0.17	80
RTP01	V-*1144C	I-11-04			ACD	Valve	BALL CHECK		1/2	1/2" IN 2"-ACD-110404	40 27 02	V631	0.17	80
RTP01	V-*1145A	I-11-04			COG	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-COG-110408	40 27 02	V335	0.17	80
RTP01	V-*1145B	I-11-04			COG	Valve	BALL	Isolation Valve	1/2	1/2" IN 2"-COG-110408	40 27 02	V335	0.17	80
RTP01	V-*1145C	I-11-04			COG	Valve	BALL CHECK		1/2	1/2" IN 2"-COG-110408	40 27 02	V631	0.17	80
RTP01	V-*1165A	I-11-04			WS	Valve	BALL	Isolation Valve	1/2*	PI-265	40 27 02	V335	35	30
RTP01	V-*1165B	I-11-04			WS	Valve	BALL	Isolation Valve	1/2*	PI-265	40 27 02	V335	35	30
RTP01	V-*1105A	I-11-04	M-11-03	Influent Tank Farm	WS	Valve	BALL	Isolation Valve	2	2"-WS-PULK-110409	40 27 02	V335	35	30
RTP01	V-*1105B	I-11-04	M-11-03	Influent Tank Farm	WS	Valve	WAFER CHECK		2	2"-WS-PULK-110409	40 27 02	V1692	35	30
RTP01	V-*1105C	I-11-04	M-11-03	Influent Tank Farm	WS	Valve	BALL	Isolation Valve	2	2"-WS-PULK-110410	40 27 02	V335	35	30
RTP01	SV-*1101	I-11-01			UW	Valve	Solenoid		1/2	1/2"-UW-PULK-120505	Vendor supplied	Vendor supplied	0.5 gpm	78
RTP01	SV-*1117	I-11-01			IA	Valve	Solenoid		2	6"-RW-PULK-110107	40 27 02	V940	1.5 scfs	115
RTP01	SV-*1102	I-11-02			UW	Valve	Solenoid		1/2	1/2"-UW-PULK-120505	Vendor supplied	Vendor supplied	0.5 gpm	78
RTP01	SV-*1127	I-11-02			IA	Valve	Solenoid		2	6"-RW-PULK-110207	40 27 02	V940	1.5 scfs	115
RTP01	SV-*1103	I-11-03			UW	Valve	Solenoid		1/2	1/2"-UW-PULK-120505	Vendor supplied	Vendor supplied	0.5 gpm	78
RTP01	SV-*1137	I-11-03			IA	Valve	Solenoid		2	6"-RW-PULK-110307	40 27 02	V940	1.5 scfs	115
RTP01	SV-*1104	I-11-04			UW	Valve	Solenoid		1/2	1/2"-UW-PULK-110409	Vendor supplied	Vendor supplied	0.5 gpm	78
RTP01	SV-*1147	I-11-04			IA	Valve	Solenoid		2	6"-RW-PULK-110407	40 27 02	V940	1.5 scfs	115
RTP01	FV-*1111	I-11-01	M-11-02	Influent Tank Farm	RW	Valve	Butterfly	Pneumatic actuated valve	2	2"-RW-PULK-110102	40 27 02	V521	35	46
RTP01	FV-*1112	I-11-01	M-11-02	Influent Tank Farm	RW	Valve	Butterfly	Pneumatic actuated valve	2	2"-RW-PULK-110103	40 27 02	V521	35	46
RTP01	FV-*1113	I-11-01	M-11-02	Influent Tank Farm	CAU	Valve	Ball	Pneumatic actuated valve	1/2	1/2" to 2"-CAU-PULK-110110H	40 27 02	V335	0.17	80
RTP01	FV-*1114	I-11-01	M-11-02	Influent Tank Farm	ACD	Valve	Ball	Pneumatic actuated valve	1/2	1/2" to 2"-ACD-PULK-110109	40 27 02	V335	0.17	80
RTP01	FV-*1115	I-11-01	M-11-02	Influent Tank Farm	COG	Valve	Ball	Pneumatic actuated valve	1/2	1/2" to 2"-COG-PULK-110111	40 27 02	V335	0.17	80
RTP01	FV-*1117	I-11-01			RW	Valve	Butterfly	Pneumatic actuated valve	6	6"-RW-PULK-110107	40 27 02	V521	400	48
RTP01	FV-*1121	I-11-02			RW	Valve	Butterfly	Pneumatic actuated valve	2	2"-RW-PULK-110202	40 27 02	V521	35	46
RTP01	FV-*1122	I-11-02			RW	Valve	Butterfly	Pneumatic actuated valve	2	2"-RW-PULK-110203	40 27 02	V521	35	46
RTP01	FV-*1123	I-11-02			CAU	Valve	Ball	Pneumatic actuated valve	1/2	1/2" IN 2"-CAU-110210	40 27 02	V335	0.17	80
RTP01	FV-*1124	I-11-02			ACD	Valve	Ball	Pneumatic actuated valve	1/2	1/2" IN 2"-ACD-110204	40 27 02	V335	0.17	80
RTP01	FV-*1125	I-11-02			COG	Valve	Ball	Pneumatic actuated valve	1/2	1/2" IN 2"-COG-110208	40 27 02	V335	0.17	80
RTP01	FV-*1127	I-11-02			RW	Valve	Butterfly	Pneumatic actuated valve	6	6"-RW-PULK-110207	40 27 02	V521	400	48
RTP01	FV-*1131	I-11-03			RW	Valve	Butterfly	Pneumatic actuated valve	2	2"-RW-PULK-110302	40 27 02	V521	35	46
RTP01	FV-*1132	I-11-03			RW	Valve	Butterfly	Pneumatic actuated valve	2	2"-RW-PULK-110303	40 27 02	V521	35	46
RTP01	FV-*1133	I-11-03			CAU	Valve	Ball	Pneumatic actuated valve	1/2	1/2" to 2"-CAU-PULK-110310H	40 27 02	V335	0.17	80
RTP01	FV-*1134	I-11-03			ACD	Valve	Ball	Pneumatic actuated valve	1/2	1/2" to 2"-ACD-PULK-110309	40 27 02	V335	0.17	80
RTP01	FV-*1135	I-11-03			COG	Valve	Ball	Pneumatic actuated valve	1/2	1/2" to 2"-COG-PULK-110311	40 27 02	V335	0.17	80
RTP01	FV-*1137	I-11-03			RW	Valve	Butterfly	Pneumatic actuated valve	6	6"-RW-PULK-110307	40 27 02	V521	400	48

TABLE D1-16

INFLUENT TANKS - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	FV-*1141	I-11-04			RW	Valve	Butterfly	Pneumatic actuated valve	2	2"-RW-PULK-110402	40 27 02	V521	35	46
RTP01	FV-*1142	I-11-04			RW	Valve	Butterfly	Pneumatic actuated valve	2	2"-RW-PULK-110408	40 27 02	V521	35	46
RTP01	FV-*1143	I-11-04			CAU	Valve	Ball	Pneumatic actuated valve	1/2	1/2" IN 2"-CAU-110410	40 27 02	V335	0.17	80
RTP01	FV-*1144	I-11-04			ACD	Valve	Ball	Pneumatic actuated valve	1/2	1/2" IN 2"-ACD-110404	40 27 02	V335	0.17	80
RTP01	FV-*1145	I-11-04			COG	Valve	Ball	Pneumatic actuated valve	1/2	1/2" IN 2"-COG-110408	40 27 02	V335	0.17	80
RTP01	FV-*1147	I-11-04			RW	Valve	Butterfly	Pneumatic actuated valve	6	6"-RW-PULK-110407	40 27 02	V521	400	48
RTP01	SV-*1141	I-11-04				Valve	Solenoid		2	2"-RW-PULK-110402	40 27 02			
RTP01	SV-*1142	I-11-04				Valve	Solenoid		2	2"-RW-PULK-110403	40 27 02			
RTP01	SV-*1145	I-11-04				Valve	Solenoid			1/2" to 2"-COG-PULK-	40 27 02			
RTP01	SV-*1143	I-11-04				Valve	Solenoid			1/2" to 2"-CAU-PULK-	40 27 02			
RTP01	SV-*1144	I-11-04				Valve	Solenoid			1/2" to 2"-ACD-PULK-	40 27 02			

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-17

INFLUENT TANKS - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	TNK-*1101	I-11-01	M-11-01	Influent Tank Farm		Influent Tank #1		500 bbl Frac tank equipped with wheels			33 16 13.14B		--
RTP01	PMP-*1101	I-11-01	M-11-01	Influent Tank Farm		Influent Tank Recirculation Pump #1		@ 101' TDH; self-priming		TNK-*1101	44 42 56.10B	492	30
RTP01	Eductor-*1111	I-11-01	M-11-02	Influent Tank Farm		Eductor #1		3" Tank Liquid Agitator PVC Eductor to complexly (3 turnovers) mix influent tank for 30 minutes. Min. dP of 20 psi.		TNK-*1101			--
RTP01	Eductor-*1112	I-11-01	M-11-02	Influent Tank Farm		Eductor #2		3" Tank Liquid Agitator PVC Eductor to complexly (3 turnovers) mix influent tank for 30 minutes. Min. dP of 20 psi.		TNK-*1101			--
RTP01	TNK-*1102	I-11-02	M-11-01	Influent Tank Farm		Influent Tank #2		500 bbl Frac tank equipped with wheels			33 16 13.14B		--
RTP01	PMP-*1102	I-11-02	M-11-01	Influent Tank Farm		Influent Tank Recirculation Pump #2		@ 101' TDH; self-priming		TNK-*1102	44 42 56.10B	492	30
RTP01	Eductor-*1121	I-11-02		Influent Tank Farm		Eductor #1		3" Tank Liquid Agitator PVC Eductor to complexly (3 turnovers) mix influent tank for 30 minutes. Min. dP of 20 psi.		TNK-*1102			--
RTP01	Eductor-*1122	I-11-02		Influent Tank Farm		Eductor #2		3" Tank Liquid Agitator PVC Eductor to complexly (3 turnovers) mix influent tank for 30 minutes. Min. dP of 20 psi.		TNK-*1102			--
RTP01	TNK-1103	I-11-03	M-11-01	Influent Tank Farm		Influent Tank #3		500 bbl Frac tank equipped with wheels			33 16 13.14B		--
RTP01	PMP-*1103	I-11-03	M-11-01	Influent Tank Farm		Influent Tank Recirculation Pump #3		@ 101' TDH; self-priming		TNK-*1103	44 42 56.10B	492	30
RTP01	Eductor-*1131	I-11-03		Influent Tank Farm		Eductor #1		3" Tank Liquid Agitator PVC Eductor to complexly (3 turnovers) mix influent tank for 30 minutes. Min. dP of 20 psi.		TNK-*1103			--
RTP01	Eductor-*1132	I-11-03		Influent Tank Farm		Eductor #2		3" Tank Liquid Agitator PVC Eductor to complexly (3 turnovers) mix influent tank for 30 minutes. Min. dP of 20 psi.		TNK-*1103			--

TABLE D1-17
INFLUENT TANKS - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	TNK-1104	I-11-04	M-11-01	Influent Tank Farm		Influent Tank #4		500 bbl Frac tank equipped with wheels			33 16 13.14B		--
RTP01	PMP-*1104	I-11-04	M-11-01	Influent Tank Farm		Influent Tank Recirculation Pump #4		492 gpm @ 101' TDH; self-priming		TNK-*1104	44 42 56.10B		30
RTP01	Eductor-*1142	I-11-04		Influent Tank Farm		Eductor #1		3" Tank Liquid Agitator PVC Eductor to complexly (3 turnovers) mix influent tank for 30 minutes. Min. dP of 20 psi.		TNK-*1104			--
RTP01	Eductor-*1142	I-11-04		Influent Tank Farm		Eductor #2		3" Tank Liquid Agitator PVC Eductor to complexly (3 turnovers) mix influent tank for 30 minutes. Min. dP of 20 psi.		TNK-*1104			--
RTP01	PMP-*1105	I-11-04	M-11-01/03	Influent Tank Farm		Sump Pump		Influent Tank Farm Sump Pump; 25' TDH			44 42 56.09B	35	0.75
RTP01	LSH-*1159	I-11-04				Influent Tank Farm Sump High Level Switch		Float switch; Package with sump pump PMP-205					--
RTP01	AE-*1181A	I-11-01	M-11-02	Influent Tank Farm		Sensor	pH			6"-RW-PULK-110106	40_91_02.01_1.01B		
RTP01	AE-*1181B	I-11-01	M-11-02	Influent Tank Farm		Sensor	Conductivity			6"-RW-PULK-110106	40_91_02.01_1.01E		
RTP01	AE-*1182	I-11-01	M-11-01	Influent Tank Farm		Sensor	Turbidity			6"-RW-PULK-110106	40_91_02.01_1.01D		
RTP01	AIT-*1181	I-11-01				Analyzer Transmitter	Multiparameter			6"-RW-PULK-110106	40_91_02.01_1.01A		
RTP01	FE-*1171	I-11-01	M-11-02	Influent Tank Farm		Flow Element	Magnetic			6"-FW-LCLF-020101	40_91_02.03_1.01A		
RTP01	FIT-*1171	I-11-01	M-11-02	Influent Tank Farm		Flow Indicating Transmitter	Magnetic			6"-FW-LCLF-020101	40_91_02.03_1.01A		
RTP01	LE-*1152	I-11-01				Level Element	Sonic			TNK-*1101	40_91_02.05_1.01A		
RTP01	LIT-*1152	I-11-01				Level Indicating Transmitter	Sonic			TNK-*1101	40_91_02.05_1.01A		
RTP01	LSH-*1151	I-11-01				Level Switch	Float			TNK-*1101	40_91_02.05_1.01C		
RTP01	LSL-*1151	I-11-01				Level Switch	Float			TNK-*1101	40_91_02.05_1.01C		

TABLE D1-17

INFLUENT TANKS - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	PI-*1161	I-11-01	M-11-01	Influent Tank Farm		Pressure Gauge	Bourdon Tube			6"-RW-PULK-110106	40_91_02.07_1.01B		
RTP01	AE-*1183A	I-11-02				Sensor	pH			6"-RW-PULK-110206	40_91_02.01_1.01B		
RTP01	AE-*1183B	I-11-02				Sensor	Conductivity			6"-RW-PULK-110206	40_91_02.01_1.01E		
RTP01	AE-*1184	I-11-02				Sensor	Turbidity			6"-RW-PULK-110206	40_91_02.01_1.01D		
RTP01	AIT-*1183	I-11-02				Analyzer Transmitter	Multiparameter			6"-RW-PULK-110206	40_91_02.01_1.01A		
RTP01	LE-*1154	I-11-02				Level Element	Sonic			TNK-*1102	40_91_02.05_1.01A		
RTP01	LIT-*1154	I-11-02				Level Indicating Transmitter	Sonic			TNK-*1102	40_91_02.05_1.01A		
RTP01	LSH-*1153	I-11-02				Level Switch	Float			TNK-*1102	40_91_02.05_1.01C		
RTP01	LSL-*1153	I-11-02				Level Switch	Float			TNK-*1102	40_91_02.05_1.01C		
RTP01	PI-*1162	I-11-02	M-11-01	Influent Tank Farm		Pressure Gauge	Bourdon Tube			6"-RW-PULK-110206	40_91_02.07_1.01B		
RTP01	AE-*1185A	I-11-03				Sensor	pH				40_91_02.01_1.01B	not in tag db	
RTP01	AE-*1185B	I-11-03				Sensor	Conductivity			6"-RW-PULK-110306	40_91_02.01_1.01E		
RTP01	AIT-*1186	I-11-03				Sensor	Turbidity			6"-RW-PULK-110306	40_91_02.01_1.01D		
RTP01	AIT-*1185	I-11-03				Analyzer Transmitter	Multiparameter			6"-RW-PULK-110306	40_91_02.01_1.01A		
RTP01	LSH-*1155	I-11-03				Level Switch	Float			TNK-*1103	40_91_02.05_1.01C		
RTP01	LSL-*1155	I-11-03				Level Switch	Float			TNK-*1103	40_91_02.05_1.01C		
RTP01	PI-*1163	I-11-03	M-11-01	Influent Tank Farm		Pressure Gauge	Bourdon Tube			6"-RW-PULK-110306	40_91_02.07_1.01B		
RTP01	AE-*1188	I-11-04				Sensor	Turbidity			6"-RW-PULK-110406	40_91_02.01_1.01D		
RTP01	AE-*1187A	I-11-04				Sensor	pH			6"-RW-PULK-110406	40_91_02.01_1.01B		
RTP01	AE-*1187B	I-11-04				Sensor	Conductivity			6"-RW-PULK-110406	40_91_02.01_1.01E		
RTP01	AIT-*1187	I-11-04				Analyzer Transmitter	Multiparameter			6"-RW-PULK-110406	40_91_02.01_1.01A		
RTP01	AE-*1189	I-11-04	M-11-01	Influent Tank Farm		Sensor	Turbidity			2"-RW-PULK-110403	40_91_02.01_1.01D		
RTP01	AIT-*1189	I-11-04	M-11-01	Influent Tank Farm		Analyzer Transmitter	Turbidity			2"-RW-PULK-110403	40_91_02.01_1.01A		
RTP01	FE-*1181	I-11-04	M-11-02	Influent Tank Farm	WS	Flow Element	Magnetic			2"-WS-PULK-110417	40_91_02.03_1.01A		
RTP01	FIT-*1181	I-11-04	M-11-02	Influent Tank Farm	WS	Flow Indicating Transmitter	Magnetic			2"-WS-PULK-110417	40_91_02.03_1.01A		
RTP01	LE-*1158	I-11-04				Level Element	Sonic			TNK-*1104	40_91_02.05_1.01A		
RTP01	LIT-*1158	I-11-04				Level Indicating Transmitter	Sonic			TNK-*1104	40_91_02.05_1.01A		
RTP01	LSH-*1157	I-11-04				Level Switch	Float			TNK-*1104	40_91_02.05_1.01C		
RTP01	LSL-*1157	I-11-04				Level Switch	Float			TNK-*1104	40_91_02.05_1.01C		

TABLE D1-17
INFLUENT TANKS - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	PI-*1164	I-11-04	M-11-01	Influent Tank Farm		Pressure Gauge	Bourdon Tube			6"-RW-PULK-110406	40_91_02.07_1.01B		
RTP01	PI-*1165	I-11-04	M-11-01/03	Influent Tank Farm		Pressure Gauge	Bourdon Tube				40_91_02.07_1.01B		
RTP01	FIT-*1171	I-11-01		Influent Tank 1		Flow Transmitter	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	6"-RW-PULK-110101	40_91_02.03_1.01A		
RTP01	FE-*1171	I-11-01		Influent Tank 1		Flow Element	Magnetic Flow Meter with HART/Analog output	Well Maintenance/Fresh Water/CIP Flow MagMeter	1"	6"-RW-PULK-110101	40_91_02.03_1.01A		
RTP01	SV-*1113	I-11-01		Influent Tank 1									
RTP01	SV-*1111	I-11-01		Influent Tank 1									
RTP01	SV-*1115	I-11-01		Influent Tank 1									
RTP01	SV-*1114	I-11-01		Influent Tank 1									
RTP01	SV-*1121	I-11-01		Influent Tank 1									
RTP01	SV-*1122	I-11-02		Influent Tank 2									
RTP01	SV-*1125	I-11-02		Influent Tank 2									
RTP01	SV-*1123	I-11-02		Influent Tank 2									
RTP01	SV-*1124	I-11-02		Influent Tank 2									
RTP01	SV-*1131	I-11-03		Influent Tank 3									
RTP01	SV-*1132	I-11-03		Influent Tank 3									
RTP01	LE-*1153	I-11-03		Influent Tank 3		Level Element	Sonic			TNK-*1103	40_91_02.05_1.01A		
RTP01	LIT-*1153	I-11-03		Influent Tank 3		Level Indicating Transmitter	Sonic			TNK-*1103	40_91_02.05_1.01A		
RTP01	SV-*1135	I-11-03		Influent Tank 3									
RTP01	SV-*1133	I-11-03		Influent Tank 3									

TABLE D1-17
INFLUENT TANKS - EQUIPMENT

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

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	SV-*1134	I-11-03		Influent Tank 3									

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-18
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - VALVES
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1210A	I-12-01		Influent Tank Farm	RW	Ball	Isolation Valve	2	2"-RW-PULK-110403	40 27 02	V335	35	46
RTP01	V-*1210B	I-12-01		Influent Tank Farm	RW	Wafer Check		2	2"-RW-PULK-120103	40 27 02	V1692	35	23
RTP01	V-*1210C	I-12-01		Influent Tank Farm	RW	Ball	Isolation Valve	2	2"-RW-PULK-120103	40 27 02	V335	35	23
RTP01	SP-*1210D	I-12-01		Influent Tank Farm	RW	Ball	Sample Tap	3/4*	2"-RW-PULK-120103	40 27 02	V335	35	23
RTP01	V-*1210E	I-12-01		Influent Tank Farm	RW	Ball	Isolation Valve	2	2"-RW-PULK-120111	40 27 02	V335	35	23
RTP01	V-*1261A	I-12-01		Influent Tank Farm	RW	Ball	Isolation Valve	1/2*	2"-RW-PULK-120102	40 27 02	V335	35	23
RTP01	V-*1261B	I-12-01		Influent Tank Farm	RW	Ball	Isolation Valve	1/2*	2"-RW-PULK-120102	40 27 02	V335	35	23
RTP01	V-*1220A	I-12-01	M-11-03	Influent Tank Farm	RW	Ball	Isolation Valve	2	2"-RW-PULK-120101	40 27 02	V335	35	46
RTP01	V-*1220B	I-12-01	M-11-03	Influent Tank Farm	RW	Wafer Check		2	2"-RW-PULK-120103	40 27 02	V1692	35	23
RTP01	V-*1220C	I-12-01	M-11-03	Influent Tank Farm	RW	Ball	Isolation Valve	2	2"-RW-PULK-120103	40 27 02	V335	35	23
RTP01	SP-*1220D	I-12-01	M-11-03	Influent Tank Farm	RW	Ball	Sample Tap	3/4*	2"-RW-PULK-120103	40 27 02	V335	35	23
RTP01	V-*1220E	I-12-01			RW	Ball	Isolation Valve	2	2"-RW-PULK-120103	40 27 02	V335	35	23
RTP01	V-*1262A	I-12-01	M-11-03	Influent Tank Farm	RW	Ball	Isolation Valve	1/2*	PI-362	40 27 02	V335	35	23
RTP01	V-*1262B	I-12-01	M-11-03	Influent Tank Farm	RW	Ball	Isolation Valve	1/2*	PI-362	40 27 02	V335	35	23
RTP01	SP-*1211C	I-12-01			RW	Ball	Sample Tap	3/4*	2"-RW-PULK-120104	40 27 02	V335	35	23
RTP01	SP-*1221C	I-12-01			RW	Ball	Sample Tap	3/4*	2"-RW-PULK-120105	40 27 02	V335	35	23
RTP01	V-*1261C	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	V-*1261D	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	V-*1262C	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	V-*1262D	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	V-*1263A	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23

TABLE D1-18
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - VALVES
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1263B	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	V-*1264A	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	V-*1264B	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	V-*1211	I-12-01			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120109	Vendor supplied	Vendor supplied	35	23
RTP01	SP-*1271A	I-12-01			TW	Ball	Sample Tap	3/4*	2"-TW-PULK-120107	40 27 02	V335	35	23
RTP01	V-*1230A	I-12-02			RW	Ball	Isolation Valve	2	2"-RW-PULK-110414	40 27 02	V335	35	46
RTP01	V-*1230B	I-12-02			RW	Wafer Check		2	2"-RW-PULK-120202	40 27 02	V1692	35	43
RTP01	V-*1230C	I-12-02			RW	Ball	Isolation Valve	2	2"-RW-PULK-120202	40 27 02	V335	35	43
RTP01	SP-*1230D	I-12-02			RW	Ball	Sample Tap	3/4*	2"-RW-PULK-120202	40 27 02	V335	35	43
RTP01	V-*1263C	I-12-02			RW	Ball	Isolation Valve	1/2*	2"-RW-PULK-120202	40 27 02	V335	35	43
RTP01	V-*1263D	I-12-02			RW	Ball	Isolation Valve	1/2*	2"-RW-PULK-120202	40 27 02	V335	35	43
RTP01	V-*1240A	I-12-02	M-11-03	Influent Tank Farm	RW	Ball	Isolation Valve	2	2"-RW-PULK-110414	40 27 02	V335	35	46
RTP01	V-*1240B	I-12-02	M-11-03	Influent Tank Farm	RW	Wafer Check		2	2"-RW-PULK-120203	40 27 02	V1692	35	43
RTP01	V-*1240C	I-12-02	M-11-03	Influent Tank Farm	RW	Ball	Isolation Valve	2	2"-RW-PULK-120203	40 27 02	V335	35	43
RTP01	SP-*1240D	I-12-02	M-11-03	Influent Tank Farm	RW	Ball	Sample Tap	3/4*	2"-RW-PULK-120203	40 27 02	V335	35	43
RTP01	V-*1264C	I-12-02	M-11-03	Influent Tank Farm	RW	Ball	Isolation Valve	1/2*	2"-RW-PULK-120203	40 27 02	V335	35	43
RTP01	V-*1264D	I-12-02	M-11-03	Influent Tank Farm	RW	Ball	Isolation Valve	1/2*	2"-RW-PULK-120203	40 27 02	V335	35	43
RTP01	SP-*1231C	I-12-02			RW	Ball	Sample Tap	3/4*	3"-RW-PULK-120204	40 27 02	V335	35	43
RTP01	SP-*1241C	I-12-02			RW	Ball	Sample Tap	3/4*	3"-RW-PULK-120205	40 27 02	V335	35	43
RTP01	V-*1265A	I-12-02			RW	Ball	Isolation Valve	1/2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43
RTP01	V-*1265B	I-12-02			RW	Ball	Isolation Valve	1/2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43
RTP01	V-*1266A	I-12-02			RW	Ball	Isolation Valve	1/2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43
RTP01	V-*1266B	I-12-02			RW	Ball	Isolation Valve	1/2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43

TABLE D1-18
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - VALVES
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1267A	I-12-02			RW	Ball	Isolation Valve	1/2	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	V-*1267B	I-12-02			RW	Ball	Isolation Valve	1/2	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	V-*1269A	I-12-02			RW	Ball	Isolation Valve	1/2	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	V-*1269B	I-12-02			RW	Ball	Isolation Valve	1/2	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	V-*1231	I-12-02			RW	Ball	Isolation Valve	Supplier	3"-RW-PULK-120209	Vendor supplied	Vendor supplied	35	43
RTP01	SP-*1272A	I-12-02			TW	Ball	Sample Tap	3/4*	2"-TW-PULK-120207	40 27 02	V335	35	43
RTP01	V-*1212A	I-12-03			CAU	Ball	Tank Fill Line	2*	TNK-910	40 27 02	V335	75	150
RTP01	V-*1212B	I-12-03			CAU	Ball	Isolation Valve	1/2	1/2" in 2"-CAU-PULK-120301-H	40 27 02	V335	0.017	80
RTP01	V-*1212C	I-12-03			CAU	Ball	Isolation Valve	1/2	1/2" in 2"-CAU-PULK-120301-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1211A	I-12-03			CAU	Ball	Isolation Valve	1/2	1/2" in 2"-CAU-PULK-120307-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1211B	I-12-03			CAU	Pressure Relief		1/2	1/2" in 2"-CAU-PULK-120307-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1211C	I-12-03			CAU	Pressure Control		1/2	1/2" in 2"-CAU-PULK-120307-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1211D	I-12-03			CAU	Ball	Isolation Valve	1/2	1/2" in 2"-CAU-PULK-120307-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1211E	I-12-03			CAU	Swing Check		1/2	1/2" in 2"-CAU-PULK-120307-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1211F	I-12-03			CAU	Ball	Isolation Valve	1/2	1/2" in 2"-CAU-PULK-120307-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1211G	I-12-03			CAU	Ball	Isolation Valve	1/2	1/2" in 2"-CAU-PULK-120313-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1212D	I-12-03			CAU	Ball	1/2" in 2"-CAU-PULK-120301-H	1/2	1/2" in 2"-CAU-PULK-120301-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1212E	I-12-03			CAU	Pressure Relief		1/2	1/2" in 2"-CAU-PULK-120301-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1212F	I-12-03			CAU	Pressure Control		1/2	1/2" in 2"-CAU-PULK-120301-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1212G	I-12-03			CAU	Ball	Isolation Valve	1/2	1/2" in 2"-CAU-PULK-120301-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1212H	I-12-03			CAU	Swing Check		1/2	1/2" in 2"-CAU-PULK-120301-H	Vendor supplied	Vendor supplied	0.017	80

TABLE D1-18
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - VALVES
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1212I	I-12-03			CAU	Ball	Isolation Valve	1/2	1/2" in 2"-CAU-PULK-120301-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1267	I-12-03			CAU	Vendor supplied		1/2	1/2" in 2"-CAU-PULK-120307-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1269	I-12-03			CAU	Vendor supplied		1/2	1/2" in 2"-CAU-PULK-120301-H	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1220D	I-12-03			COG	Ball	Isolation Valve	1/2	1/2" in 2"-COG-PULK-120304-M	40 27 02	V335	0.017	80
RTP01	V-*1220F	I-12-03			COG	Ball	Isolation Valve	1/2	1/2" in 2"-COG-PULK-120304-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1221A	I-12-03			COG	Ball		1/2	1/2" in 2"-COG-PULK-120310-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1221B	I-12-03			COG	Pressure Relief		1/2	1/2" in 2"-COG-PULK-120310-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1221C	I-12-03			COG	Pressure Control		1/2	1/2" in 2"-COG-PULK-120310-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1221D	I-12-03			COG	Ball		1/2	1/2" in 2"-COG-PULK-120310-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1221E	I-12-03			COG	Ball		1/2	1/2" in 2"-COG-PULK-120310-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1222A	I-12-03			COG	Ball		1/2	1/2" in 2"-COG-PULK-120304-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1222B	I-12-03			COG	Pressure Relief		1/2	1/2" in 2"-COG-PULK-120304-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1222C	I-12-03			COG	Pressure Control		1/2	1/2" in 2"-COG-PULK-120304-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1222D	I-12-03			COG	Ball	Isolation Valve	1/2	1/2" in 2"-COG-PULK-120304-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1222E	I-12-03			COG	Ball	Isolation Valve	1/2	1/2" in 2"-COG-PULK-120304-M	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1271	I-12-03			COG	Vendor supplied		1/2	PI-963	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1230D	I-12-04			ACD	Ball	Isolation Valve	1/2	TNK-*1230	40 27 02	V335	0.017	80
RTP01	V-*1230E	I-12-04			ACD	Ball	Isolation Valve	1/2	1/2" in 2"-ACD-PULK-120401	40 27 02	V335	0.017	80
RTP01	V-*1230F	I-12-04			ACD	Ball	Isolation Valve	1/2	1/2" in 2"-ACD-PULK-120401	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1231A	I-12-04			ACD	Ball		1/2	1/2" in 2"-ACD-PULK-120404	Vendor supplied	Vendor supplied	0.017	80

TABLE D1-18
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - VALVES
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1231B	I-12-04			ACD	Pressure Relief		1/2	1/2" in 2"-ACD-PULK-120404	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1231C	I-12-04			ACD	Pressure Control		1/2	1/2" in 2"-ACD-PULK-120404	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1231D	I-12-04			ACD	Ball		1/2	1/2" in 2"-ACD-PULK-120404	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1231E	I-12-04			ACD	Swing Check		1/2	1/2" in 2"-ACD-PULK-120404	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1231F	I-12-04			ACD	Ball		1/2	1/2" in 2"-ACD-PULK-120404	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1231G	I-12-04			ACD	Ball		1/2	1/2" in 2"-ACD-PULK-120407	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1232A	I-12-04			ACD	Back Pressure	Isolation Valve	1/2	1/2" in 2"-ACD-PULK-120401	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1232B	I-12-04			ACD	Pressure Relief		1/2	1/2" in 2"-ACD-PULK-120401	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1232C	I-12-04			ACD	Pressure Relief		1/2	1/2" in 2"-ACD-PULK-120401	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1232D	I-12-04			ACD	Ball		1/2	1/2" in 2"-ACD-PULK-120401	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1232E	I-12-04			ACD	Swing Check		1/2	1/2" in 2"-ACD-PULK-120401	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1232F	I-12-04			ACD	Ball		1/2	1/2" IN 2"-ACD-PULK-120403	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1272	I-12-04			ACD	Vendor supplied		1/2	1/2" in 2"-ACD-PULK-120404	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1265C	I-12-04			ACD	Vendor supplied		1/2	1/2" in 2"-ACD-PULK-120401	Vendor supplied	Vendor supplied	0.017	80
RTP01	V-*1240D	I-12-04			DEW	Ball	Isolation Valve			Vendor supplied	Vendor supplied		
RTP01	V-*1240E	I-12-04			DEW	Ball	Isolation Valve		CCOL-0940	Vendor supplied	Vendor supplied		
RTP01	V-*1241A	I-12-04			DEW	Ball	Isolation Valve			Vendor supplied	Vendor supplied		
RTP01	V-*1242A	I-12-04			DEW	Back Pressure				Vendor supplied	Vendor supplied		
RTP01	V-*1245A	I-12-04			DEW	Ball	Isolation Valve			Vendor supplied	Vendor supplied		
RTP01	V-*1245B	I-12-04			DEW	Pressure Relief				Vendor supplied	Vendor supplied		

TABLE D1-18
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - VALVES
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1271A	I-12-04			DEW	Ball	Isolation Valve			Vendor supplied	Vendor supplied		
RTP01	V-*1207A	I-12-04			WS	Ball	Isolation Valve	2	2"-WS-PULK-120408	40 27 02	V335	35	12
RTP01	V-*1266C	I-12-04			WS	Ball	Isolation Valve	1/2*		40 27 02	V335	35	12
RTP01	V-*1266D	I-12-04			WS	Ball	Isolation Valve	1/2*		40 27 02	V335	35	12
RTP01	V-*1211H	I-12-05			SL	Ball	Isolation Valve	2	2"-SL-PULK-120501	40 27 02	V335	15	120
RTP01	V-*1211I	I-12-05			SL	Ball	Isolation Valve	Supplier	LPS-611	40 27 02	By Supplier	15	120
RTP01	V-*1212J	I-12-05			SL	Ball	Isolation Valve	2	2"-SL-PULK-120503	40 27 02	V335	15	120
RTP01	V-*1212K	I-12-05			SL	Ball	Isolation Valve	Supplier	LPS-612	40 27 02	By Supplier	15	120
RTP01	V-*1254B	I-12-05			UA	Ball	Isolation Valve	3/4*	PSL-654	40 27 02	V335	15	50
RTP01	V-*1254A	I-12-05			UA	Ball	Isolation Valve	3/4*	PSL-654	40 27 02	V335	15	50
RTP01	V-*1268C	I-12-05			FW	DOUBLE Swing Check		1 1/2	1-1/2"-FW-PULK-120505	40 27 02	V640 or V642	20	78
RTP01	V-*1268D	I-12-05			FW	Ball	Isolation Valve	1 1/2	1-1/2"-FW-PULK-120505	40 27 02	V335	20	78
RTP01	V-*1268E	I-12-05			FW	Ball		1 1/2	1-1/2"-FW-PULK-120505	40 27 02	V335	20	78
RTP01	V-*1268A	I-12-05			FW	Ball	Isolation Valve	1/2*	PI-161	Vendor supplied	Vendor supplied	20	78
RTP01	V-*1268B	I-12-05			FW	Ball	Isolation Valve	1/2*	PI-161	Vendor supplied	Vendor supplied	20	78
RTP01	V-*1270	I-12-05			UA	Ball	Isolation Valve	Supplier	PI-162	Vendor supplied	Vendor supplied	106	100
RTP01	V-*1201C	I-12-05			UA	Pressure Relief		Supplier	CMP-101	40 27 02	Vendor supplied	106	100
RTP01	V-*1201D	I-12-05			UA	Ball	Isolation Valve	Supplier	X-102	40 27 02	Vendor supplied	106	100
RTP01	V-*1203F	I-12-05			UA	Pressure Relief		Supplier	DRM-103	Vendor supplied	Vendor supplied	106	100
RTP01	V-*1203G	I-12-05			UA	Ball		Supplier	DRM-103	Vendor supplied	Vendor supplied	106	100
RTP01	V-*1208A	I-12-05			WS	Swing Check		2	2"-WS-PULK-120502	40 27 02	V1693	35	20
RTP01	V-*1208B	I-12-05			WS	Butterfly		2	2"-WS-PULK-120502	40 27 02	V521	35	20
RTP01	V-*1253A	I-12-05			WS	Ball	Isolation Valve	1/2*	PI-653	40 27 02	V335	35	20
RTP01	V-*1253B	I-12-05			WS	Ball	Isolation Valve	1/2*	PI-653	40 27 02	V335	35	20
RTP01	SV-*1210	I-12-01			UW	Solenoid		1/2	1/2"-UW-PULK-120505	Vendor supplied	Vendor supplied	0.5 gpm	78
RTP01	SV-*1220	I-12-01			UW	Solenoid		1/2	1/2"-UW-PULK-120505	Vendor supplied	Vendor supplied	0.5 gpm	78
RTP01	SV-*1211A	I-12-02			IA	Solenoid		2	3"-RW-PULK-120104	40 27 02	V940	1.5 scfs	115
RTP01	SV-*1240	I-12-02			UW	Solenoid		1/2	1/2"-UW-PULK-120208	Vendor supplied	Vendor supplied	0.5 gpm	78

TABLE D1-18
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - VALVES
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	SV-*1231	I-12-02			IA	Solenoid		2	3"-RW-PULK-120204	40 27 02	V940	1.5 scfs	115
RTP01	FV-*1213	I-12-01			DR	Ball		3/4	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1233	I-12-02			DR	Ball		3/4	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1214	I-12-01			DR	Ball		3/4	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1234	I-12-02			DR	Ball		3/4	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1223	I-12-01			DR	Ball		3/4	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1243	I-12-02			DR	Ball		3/4	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1224	I-12-01			DR	Ball		3/4	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1244	I-12-02			DR	Ball		3/4	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1211A	I-12-01			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1211C	I-12-01			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1212A	I-12-01			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1212C	I-12-01			TW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120104	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1221A	I-12-01			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1221C	I-12-01			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1222A	I-12-01			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1222C	I-12-01			TW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120105	Vendor supplied	Vendor supplied	35	23
RTP01	FV-*1231A	I-12-02			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1231C	I-12-02			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1232A	I-12-02			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43

TABLE D1-18
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - VALVES
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	FV-*1232C	I-12-02			TW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120204	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1241A	I-12-02			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1241C	I-12-02			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1242A	I-12-02			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1242C	I-12-02			RW	Butterfly	Pneumatic actuated valve	2	3"-RW-PULK-120205	Vendor supplied	Vendor supplied	35	43
RTP01	FV-*1210	I-12-05			UA	Ball	Pneumatic actuated valve	2	2"-UA-HEAD-120504	40 27 02-17	V335	15 scfm	115
RTP01	STR-*1268	I-12-05			FW	Y Strainer		1.5	1.5"-FW-PULK-120505	Bronze	FPTxFPT Full Cap Strainer	20	70
RTP01		I-12-03			CAU	Y Strainer		0.5		Vendor supplied	Vendor supplied	0.17	80
RTP01		I-12-03			COG	Y Strainer		0.5		Vendor supplied	Vendor supplied	0.17	80
RTP01		I-12-04			ACD	Y Strainer		0.5		Vendor supplied	Vendor supplied	0.17	80
RTP01	SV-*1211C	I-12-01			RW	Solenoid Valve			3"-RW-PULK-120104				
RTP01	SV-*1212A	I-12-01			RW	Solenoid Valve			3"-RW-PULK-120104				
RTP01	SV-*1212C	I-12-01			RW	Solenoid Valve			3"-RW-PULK-120104				
RTP01	SV-*1221A	I-12-01			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1221C	I-12-01			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1222A	I-12-01			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1222C	I-12-01			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1231C	I-12-02			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1232C	I-12-02			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1241A	I-12-02			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1241C	I-12-02			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1242A	I-12-02			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	SV-*1242C	I-12-02			RW	Solenoid Valve			3"-RW-PULK-120105				
RTP01	V-*1231	I-12-02			RW	Ball							
RTP01	SOV-*1210	I-12-05			UA	Solenoid Valve			2"-UA-HEAD-120504				

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-19
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - EQUIPMENT
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	PMP-*1210	I-12-01	M-11-01	Influent Tank Farm		Filter Feed Pump 1 – A Side	Centrifugal	47' TDH	2"-RW-PULK-120102	44 42 56.10B	35	1.5
RTP01	PMP-*1220	I-12-01	M-11-01	Influent Tank Farm		Filter Feed Pump 2 – A Side	Centrifugal	47' TDH (standby)	2"-RW-PULK-120103	44 42 56.10B	35	1.5
RTP01	FIL-*1211	I-12-01	M-11-01	Influent Tank Farm		Cartridge Filter Coarse 1A – A Side		Quad filter package with hurricane type housing rated for 35 gpm minimum capacity. Includes air actuated valves for filter isolation.	3"-RW-PULK-120104	44 43 13.16		--
RTP01	FIL-*1212	I-12-01	M-11-01	Influent Tank Farm		Cartridge Filter Fine 1B – A Side			3"-RW-PULK-120104	44 43 13.16		--
RTP01	FIL-*1221	I-12-01	M-11-01	Influent Tank Farm		Cartridge Filter Coarse 2A – A Side			3"-RW-PULK-120105	44 43 13.16		--
RTP01	FIL-*1222	I-12-01	M-11-01	Influent Tank Farm		Cartridge Filter Fine 2B – A Side			3"-RW-PULK-120105	44 43 13.16		--
RTP01	PMP-*1230	I-12-02	M-11-01	Influent Tank Farm		Filter Feed Pump 1 – B Side	Centrifugal	72' TDH	2"-RW-PULK-120202	44 42 56.10B	35	3
RTP01	PMP-*1240	I-12-02	M-11-01	Influent Tank Farm		Filter Feed Pump 2 – B Side	Centrifugal	72' TDH (standby)	2"-RW-PULK-120203	44 42 56.10B	35	3
RTP01	FIL-*1231	I-12-02	M-11-01	Influent Tank Farm		Cartridge Filter Coarse 1A – B Side		Quad filter package with hurricane type housing rated for 35 gpm minimum capacity. Includes air actuated valves for filter isolation.	3"-RW-PULK-120204	44 43 13.16		--
RTP01	FIL-*1232	I-12-02	M-11-01	Influent Tank Farm		Cartridge Filter Fine 1B – B Side			3"-RW-PULK-120204	44 43 13.16		--
RTP01	FIL-*1241	I-12-02	M-11-01	Influent Tank Farm		Cartridge Filter Coarse 2A – B Side			3"-RW-PULK-120205	44 43 13.16		--
RTP01	FIL-*1242	I-12-02	M-11-01	Influent Tank Farm		Cartridge Filter Fine 2B – B Side			3"-RW-PULK-120205	44 43 13.16		--
RTP01	TNK-*1212	I-12-03				Caustic Storage Tank		500 gallon HDPE tank with integral double containment (53" Dia x 79" H)	TNK-*1210	43 40 20B		--
RTP01	PMP-*1211	I-12-03				Caustic Feed Pump 1		Chemical metering pump for 25% caustic feed	1/2" in 2"-CAU-PULK-120307-H	44 44 13.01B	10 gph	87 watts
RTP01	PMP-*1212	I-12-03				Caustic Feed Pump 2		Chemical metering pump for 25% caustic feed	1/2" in 2"-CAU-PULK-120301-H	44 44 13.01B	10 gph	87 watts
RTP01		I-12-03				Caustic Dual Feed Pump Skid		Skid package with containment. Includes calibration column (CCOL-0910), pressure indicator (PI-961, PI-962), Y Strainer (1/2"), dampeners, piping, fittings, and manual valves				--

TABLE D1-19
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - EQUIPMENT
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	CCOL-*1212	I-12-03				Calibration Column		Included in package with caustic feed pumps (PMP-911/912)	1/2" in 2"-COG-PULK-120304-M			--
RTP01	TNK-*1220	I-12-03				Coagulant Storage Tank		30 gallon HDPE tank (18-1/2" Dia x 38-5/8" H)	TNK-*1210	43 40 20B		--
RTP01	PMP-*1221	I-12-03				Coagulant Feed Pump 1		Metering Pump	1/2" in 2"-COG-PULK-120310-M	44 44 13.01B	1.2 gph	87 watts
RTP01	PMP-*1222	I-12-03				Coagulant Feed Pump 2		Metering Pump	1/2" in 2"-COG-PULK-120304-M	44 44 13.01B	1.2 gph	87 watts
RTP01		I-12-03				Coagulant Dual Feed Pump Skid		Skid package with containment. Includes calibration column (CCOL-0920), pressure indicator (PI-963), Y Strainer (1/2"), dampeners, piping, fittings, and manual valves				--
RTP01	CCOL-*1220	I-12-03				Calibration Column		Included in package with coagulant feed pumps (PMP-921/922)	1/2" in 2"-COG-PULK-120304-M			--
RTP01	TNK-*1230	I-12-04				Acid Storage Tank		500 gallon HDPE tank with integral double containment (53" Dia x 79" H)	TNK-*1230	43 40 20B		--
RTP01	PMP-*1231	I-12-04				Acid Feed Pump 1		Chemical metering pump for acid feed	1/2" in 2"-ACD-PULK-120404	44 44 13.01B	10 gph	87 watts
RTP01	PMP-*1232	I-12-04				Acid Feed Pump 2		Chemical metering pump for acid feed	1/2" in 2"-ACD-PULK-120401	44 44 13.01B	10 gph	87 watts
RTP01		I-12-04				Acid Dual Feed Pump Skid		Skid package with containment. Includes calibration column (CCOL-0930), pressure indicators (PI-964, PI-965), Y Strainer (1/2"), dampeners, piping, fittings, and manual valves				--
RTP01	CCOL-*1230	I-12-04				Calibration Column		Included in package with acid feed pumps (PMP-931/932)	1/2" in 2"-ACD-PULK-120401			--
RTP01	PMP-*1207	I-12-04				Remedy Produced Water Conditioning Plant Sump Pump	Sump Pump	17' TDH		44 42 56.09B	35	0.5

TABLE D1-19
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - EQUIPMENT
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	PMP-*1201	I-12-05	M-11-01/03	Influent Tank Farm		Solids Pump	Air Operated Diaphragm	@ 20' TDH	2"-SL-PULK-110404		20	--
RTP01	LPS-*1211	I-12-05				Liquid Phase Separator 1		Gravity separator with filter fabric mounted on support inside 20 cy dumpster				--
RTP01	LPS-*1212	I-12-05				Liquid Phase Separator 2		Gravity separator with filter fabric mounted on support inside 20 cy dumpster				--
RTP01	PMP-*1208	I-12-05				Liquid Phase Separator Sump Pump		Sump Pump; 35 gpm at 15' TDH		44 42 56.09B		0.33
RTP01	TNK-*1211	I-12-05	M-11-01	Influent Tank Farm		Seal Water Tank		Seal water system package with 2 gal tank, centrifugal				--
RTP01	PMP-*1268	I-12-05	M-11-01	Influent Tank Farm		Seal Water Pump		pump and controller; 16 to 20 gpm, boost by 30 psi	1.5"-FW-PULK-120505			1.5
RTP01	STR-*1268	I-12-05				Y Strainer		1.5" Bronze, NPT ends, full size blow off.	1.5"-FW-PULK-120505			--
RTP01	CMP-*1201	I-12-05				Air Compressor		Single-Stage Rotary Screw, air-cooled, oil-injected, 106 acfm at 100 psig		43 12 01B		25
RTP01	Dryer-*1202	I-12-05				Air Dryer/Filters		Heatless desiccant dryer. 115 scfm inlet flow at 100 psig. Dew Point of +38° F.		43 12 01B		--
RTP01	DRM-*1203	I-12-05				Receiver		200 gal horizontal tank with top plate		43 12 01B		--
RTP01			M-12-07			Potable Water Heat Pump Chiller		Potable water temperature cooler				1 ph - 240v - 70A
RTP02			M-12-07			Potable Water Transfer Pump		@ 80' TDH - 1800 RPM			30	3 ph - 2 hp
RTP02			M-12-07			Circulation Pump		Potable water tank circulator				1 ph - 2/5 hp
RTP02			M-12-07			Potable Water Storage Tank		1000 gallon, insulated PE				--
RTP02			M-12-07			Potable Water Pressure Tank		81 gal capacity tank with tank fitting package				--
RTP02			M-12-07			Glycol Water Expansion Tank		4.4 gallon tank volume				--

TABLE D1-19
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - EQUIPMENT
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP02			M-12-07			Potable Water/ Glycol Heat Exchanger		Maintains potable water temperature				--
RTP02			M-12-07			Sample Room Water Heater		Instantaneous water heater under sink				4600 W, 208V, 1ph
RTP01	DPIT-*1261	I-12-01				Differential Pressure Transmitter	Diaphragm		3"-RW-PULK-120104	40_91_02.07_1.01A		
RTP01	DPIT-*1262	I-12-01				Differential Pressure Transmitter	Diaphragm		3"-RW-PULK-120104	40_91_02.07_1.01A		
RTP01	DPIT-*1263	I-12-01				Differential Pressure Transmitter	Diaphragm		3"-RW-PULK-120105	40_91_02.07_1.01A		
RTP01	DPIT-*1264	I-12-01				Differential Pressure Transmitter	Diaphragm		3"-RW-PULK-120105	40_91_02.07_1.01A		
RTP01	FE-*1271	I-12-01				Flow Element	Magnetic		2"-TW-PULK-120107	40_91_02.03_1.01A		
RTP01	FE-*1272	I-12-01	M-11-02	Influent Tank Farm		Flow Element	Magnetic		2"-RW-PULK-120111	40_91_02.03_1.01A		
RTP01	FIT-*1271	I-12-01				Flow Indicating Transmitter	Magnetic		2"-TW-PULK-120107	40_91_02.03_1.01A		
RTP01	FIT-*1272	I-12-01	M-11-02	Influent Tank Farm		Flow Indicating Transmitter	Magnetic		2"-RW-PULK-120111	40_91_02.03_1.01A		
RTP01	PI-*1261	I-12-01	M-11-01/03	Influent Tank Farm		Pressure Gauge	Bourdon Tube		2"-RW-PULK-120102	40_91_02.07_1.01B		
RTP01	PI-*1262	I-12-01	M-11-01/03	Influent Tank Farm		Pressure Gauge	Bourdon Tube		2"-RW-PULK-120103	40_91_02.07_1.01B		
RTP01	DPIT-*1265	I-12-02				Differential Pressure Transmitter	Diaphragm		3"-RW-PULK-120204	40_91_02.07_1.01A		
RTP01	DPIT-*1266	I-12-02				Differential Pressure Transmitter	Diaphragm		3"-RW-PULK-120204	40_91_02.07_1.01A		
RTP01	DPIT-*1267	I-12-02				Differential Pressure Transmitter	Diaphragm		3"-RW-PULK-120205	40_91_02.07_1.01A		
RTP01	DPIT-*1269	I-12-02				Differential Pressure Transmitter	Diaphragm		3"-RW-PULK-120205	40_91_02.07_1.01A		
RTP01	FE-*1273	I-12-02	M-11-02	Influent Tank Farm		Flow Element	Magnetic		2"-TW-PULK-120207	40_91_02.03_1.01A		
RTP01	FIT-*1273	I-12-02	M-11-02	Influent Tank Farm		Flow Indicating Transmitter	Magnetic		2"-TW-PULK-120207	40_91_02.03_1.01A		
RTP01	PI-*1263	I-12-02	M-11-01/03	Influent Tank Farm		Pressure Gauge	Bourdon Tube		2"-RW-PULK-120202	40_91_02.07_1.01B		
RTP01	PI-*1264	I-12-02	M-11-01/03	Influent Tank Farm		Pressure Gauge	Bourdon Tube		2"-RW-PULK-120203	40_91_02.07_1.01B		
RTP01	LE-*1251	I-12-03				Level Element	Sonic		TNK-*1210	40_91_02.05_1.01A		

TABLE D1-19
REMEDY-PRODUCED WATER CONDITIONING SYSTEM - EQUIPMENT
Groundwater Remedy Basis of Design Report/Final (100%) Design
PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID SHT NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	LE-*1252	I-12-03				Level Element	Sonic		TNK-*1210	40_91_02.05_1.01A		
RTP01	LIT-*1251	I-12-03				Level Indicating Transmitter	Sonic		TNK-*1210	40_91_02.05_1.01A		
RTP01	LIT-*1252	I-12-03				Level Indicating Transmitter	Sonic		TNK-*1210	40_91_02.05_1.01A		
RTP01	PI-*1267	I-12-03				Pressure Gauge	Bourdon Tube		1/2" in 2"-CAU-PULK-120307-H	40_91_02.07_1.01B		
RTP01	PI-*1269	I-12-03				Pressure Gauge	Bourdon Tube		1/2" in 2"-CAU-PULK-120301-H	40_91_02.07_1.01B		
RTP01	PI-*1271	I-12-03				Pressure Gauge	Bourdon Tube		1/2" in 2"-CAU-PULK-120305	40_91_02.07_1.01B		
RTP01	LE-*1253	I-12-04				Level Element	Sonic		TNK-*1230	40_91_02.05_1.01A		
RTP01	LIT-*1253	I-12-04				Level Indicating Transmitter	Sonic		TNK-*1230	40_91_02.05_1.01A		
RTP01	LSH-*1255	I-12-04				Level Switch	Float	Leak detection		40_91_02.05_1.01C		
RTP01	PI-*1272	I-12-04				Pressure Gauge	Bourdon Tube		1/2" in 2"-ACD-PULK-120404	40_91_02.07_1.01B		
RTP01	PI-*1265	I-12-04				Pressure Gauge	Bourdon Tube		1/2" in 2"-ACD-PULK-120401	40_91_02.07_1.01B		
RTP01	PI-*1266	I-12-04			WS	Pressure Gauge	Bourdon Tube			40_91_02.07_1.01B		
RTP01	LSH-*1251	I-12-05				Level Switch	Float			40_91_02.05_1.01C		
RTP01	LSH-*1252	I-12-05				Level Switch	Float			40_91_02.05_1.01C		
RTP01	LSH-*1253	I-12-05				Level Switch	Float			40_91_02.05_1.01C		
RTP01	PI-*1253	I-12-05				Pressure Gauge	Bourdon Tube			40_91_02.07_1.01B		
RTP01	PI-*1268	I-12-05				Pressure Gauge	Bourdon Tube			40_91_02.07_1.01B		
RTP01	PI-*1270	I-12-05				Pressure Gauge	Bourdon Tube			40_91_02.07_1.01B		
RTP01	PIT-*1268	I-12-05				Pressure Indicating Transmitter	Diaphragm			40_91_02.07_1.01A		
RTP01	PSL-*1254	I-12-05				Pressure Switch	Diaphragm			40_91_02.07_1.01C		

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-20

CONDITIONED WATER TANKS - VALVES

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	V-*1401A	I-14-01	TW	Valve	Butterfly		2	2"-TW-PULK-140110	40 27 02	V521	35	25
RTP01	V-*1401B	I-14-01	TW	Valve	Butterfly		2	2"-TW-PULK-140113	40 27 02	V521	35	25
RTP01	V-*1401C	I-14-01	DR	Valve	Butterfly		4	4"-DR-PULK-140118	40 27 02	V521	35	25
RTP01	V-*1402A	I-14-01	TW	Valve	Butterfly		2	2"-TW-PULK-140111	40 27 02	V521	35	25
RTP01	V-*1402B	I-14-01	TW	Valve	Butterfly		2	2"-TW-PULK-140114	40 27 02	V521	35	25
RTP01	V-*1402C	I-14-01	DR	Valve	Butterfly	Isolation Valve	4	4"-DR-PULK-140119	40 27 02	V521	35	25
RTP01	SP-*1405A	I-14-01	TW	Valve	Ball	Sample Port	3/4*	2"-TW-PULK-140117	40 27 02	V335	35	25
RTP01	V-*1405B	I-14-01	TW	Valve	Swing Check		2	2"-TW-PULK-140118	40 27 02	V631	35	25
RTP01	V-*1405C	I-14-01	TW	Valve	Butterfly		2	2"-TW-PULK-140118	40 27 02	V521	35	25
RTP01	V-*1461A	I-14-01	TW	Valve	Ball		1/2*	2"-TW-PULK-140118	40 27 02	V335	35	25
RTP01	V-*1461B	I-14-01	TW	Valve	Ball		1/2*	2"-TW-PULK-140118	40 27 02	V335	35	25
RTP01	V-*1406A	I-14-01	TW	Valve	Ball Check		2	2"-TW-PULK-140117	40 27 02	V631	35	25
RTP01	V-*1406B	I-14-01	TW	Valve	Butterfly		2	2"-TW-PULK-140117	40 27 02	V521	35	25
RTP01	V-*1462A	I-14-01	TW	Valve	Ball	Isolation Valve	1/2*	2"-TW-PULK-140117	40 27 02	V335	35	25
RTP01	V-*1462B	I-14-01	TW	Valve	Ball	Isolation Valve	1/2*	2"-TW-PULK-140117	40 27 02	V335	35	25
RTP01	V-*1407A	I-14-01	WS	Valve	Swing Check		2	2"-WS-PULK-140103	40 27 02	V1693	35	30
RTP01	V-*1407B	I-14-01	WS	Valve	Butterfly		2	2"-WS-PULK-140103	40 27 02	V521	35	30
RTP01	V-*1407C	I-14-01	WS	Valve	Swing Check		2	2"-WS-PULK-140119	40 27 02	V1693	35	30
RTP01	V-*1407D	I-14-01	WS	Valve	Butterfly		2	2"-WS-PULK-140119	40 27 02	V521	35	30
RTP01	V-*1463A	I-14-01	WS	Valve	Ball	Isolation Valve	1/2*	2"-WS-PULK-140119	40 27 02	V335	35	30
RTP01	V-*1463B	I-14-01	WS	Valve	Ball	Isolation Valve	1/2*	2"-WS-PULK-140119	40 27 02	V335	35	30
RTP01	V-*1410A	I-14-02	TW	Valve	Butterfly		2	2"-TW-HALE-120207	40 27 02	V521	35	25
RTP01	V-*1410B	I-14-02	TW	Valve	Butterfly		2	2"-TW-PULK-140203	40 27 02	V521	35	25
RTP01	V-*1410G	I-14-02	DR	Valve	Butterfly		6	6"-DR-PULK-140212	40 27 02	V521	35	25
RTP01	V-*1464A	I-14-02	TW	Valve	Ball		1/2*	2"-TW-PULK-140117	40 27 02	V335	35	25
RTP01	V-*1464B	I-14-02	TW	Valve	Ball		1/2*	2"-TW-PULK-140117	40 27 02	V335	35	25
RTP01	V-*1403A	I-14-02	TW	Valve	Butterfly	Isolation Valve	3	2"-TW-PULK-140110	40 27 02	V521	35	25
RTP01	V-*1403B	I-14-02	TW	Valve	Ball Check		3	2"-TW-PULK-140113	40 27 02	V631	35	48
RTP01	V-*1403C	I-14-02	TW	Valve	Butterfly		3	4"-DR-PULK-140118	40 27 02	V521	35	48
RTP01	V-*1403D	I-14-02	TW	Valve	Butterfly		3*	2"-TW-PULK-140203	40 27 02	V521	75	150
RTP01	V-*1465A	I-14-02	WS	Valve	Ball	Isolation Valve	1/2*	2"-WS-PULK-140201	40 27 02	V335	35	26
RTP01	V-*1465B	I-14-02	WS	Valve	Ball	Isolation Valve	1/2*	2"-WS-PULK-140201	40 27 02	V335	35	26
RTP01	V-*1411A	I-14-02	WS	Valve	Ball		2	2"-WS-PULK-140201	40 27 02	V335	35	26
RTP01	V-*1407B	I-14-02	WS	Valve	Ball		2	2"-WS-PULK-140211	40 27 02	V335	35	26
RTP01	FV-*1413	I-14-02	TW	Valve			2	2"-TW-PULK-140204				
RTP01	FV-*1414	I-14-02	TW	Valve	Ball		2	2"-TW-HALE-140205	40 27 02	V335	900	25
RTP01	FV-*1411	I-14-01	TW	Valve	Butterfly		2	2"-TW-PULK-140110	40 27 02-25	V521	35	43
RTP01	FV-*1412	I-14-01	TW	Valve	Butterfly		2	2"-TW-PULK-140111	40 27 02-25	V521	35	43
RTP01	FV-*1415	I-14-01	TW	Valve	Ball		2	2"-TW-PULK-140101	40 27 02-17	V335	35	25
RTP01	FV-*1416	I-14-01	TW	Valve	Ball		2	2"-TW-PULK-140102	40 27 02-17	V335	35	25

TABLE D1-20**CONDITIONED WATER TANKS - VALVES**

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	P&ID NO.	FLOW STREAM	EQUIPMENT	TYPE	DESCRIPTION	SIZE	LINE/ EQUIP NO.	SPECIFICATION	VALVE TYPE	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²
RTP01	SV-*1413	I-14-02	TW	Valve	Solenoid			2"-TW-PULK-140204				
RTP01	V-*14XX	I-14-02	TW	Valve	Check		2	2"-TW-HALE-140205				
RTP01	V-*1408A	I-14-01	TW	Valve	Ball	Isolation Valve		2"-TW-PULK-140111				
RTP01	V-*1408B	I-14-01	TW	Valve	Ball	Isolation Valve		2"-TW-PULK-140111				
RTP01	SV-*1412	I-14-01	TW	Valve	Solenoid			2"-TW-PULK-140111				
RTP01	SV-*1411	I-14-01	TW	Valve	Solenoid			2"-TW-PULK-140110				
RTP01	V-*1409A	I-14-01	TW	Valve	Ball	Isolation Valve		2"-TW-PULK-140118				
RTP01	PSV-*1409	I-14-01	TW	Valve	Air Release Valve			2"-TW-PULK-140118				
RTP01	SV-*1415	I-14-01	TW	Valve	Solenoid			2"-TW-PULK-140101				
RTP01	SV-*1416	I-14-01	TW	Valve	Solenoid			2"-TW-PULK-140102				

¹This is part of a contingent system and may be constructed in the future²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-21
CONDITIONED WATER TANKS - EQUIPMENT

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

LOCATION ID	100% TAG NO.	90% TAG NO.	P&ID SHT NO.	SYSTEM LOCATION	EQUIPMENT	TYPE	DESCRIPTION	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	TNK-*1410	TNK-401	I-14-01		Conditioned Water Storage Tank #1		500 bbl Frac tank equipped with wheels		33 16 13.14B		--
RTP01	TNK-*1402	TNK-402	I-14-01		Conditioned Water Storage Tank #2		500 bbl Frac tank equipped with wheels		33 16 13.14B		--
RTP01	PMP-*1405	PMP-405	I-14-01		Conditioned Water Transfer Pump 1	Centrifugal	52.4' TDH	2"-TW-PULK-140117	44 42 56.10B	35	1.5
RTP01	PMP-*1406	PMP-406	I-14-01		Conditioned Water Transfer Pump 2	Centrifugal	52.4' TDH	2"-TW-PULK-140117	44 42 56.10B	35	1.5
RTP01	MXR-*1408	MXR-408	I-14-01		Static Mixer		PVC Sch 40 Clear 2" with 6 Elements				--
RTP01	PMP-*1407	PMP-407	I-14-01		Conditioned Water Tank Farm Sump Pump		Sump Pump; 53' TDH	2"-WS-PULK-140119	44 42 56.09B	35	5
RTP01	TNK-*1410	TNK-510	I-14-02		Conditioned Water Storage Tank		42,000 Gal Carbon Steel		43 40 13B		--
RTP01	PMP-*1403	PMP-501	I-14-02	Decontamination Pad/TCS Fill Station	TCS Truck Fill Pump	Centrifugal	90' TDH; self-priming		44 42 56.10B	150	7.5
RTP01	PMP-*1408	PMP-507	I-14-02		Decon Pad Sump Pump		Sump Pump; at 19' TDH	2"-WS-PULK-140201	44 42 56.09B	35	0.5
RTP01	AE-*1481A	AE-481A	I-14-01		Sensor	pH			40_91_02.01_1.01B		
RTP01	AE-*1481B	AE-481B	I-14-01		Sensor	Conductivity			40_91_02.01_1.01E		
RTP01	AE-*1481C	AE-482	I-14-01		Sensor	Turbidity			40_91_02.01_1.01D		
RTP01	AIT-*1481	AIT-481	I-14-01		Analyzer Transmitter	Multiparameter			40_91_02.01_1.01A		
RTP01	FE-*1472	FE-472	I-14-01		Flow Element	Magnetic			40_91_02.03_1.01A		
RTP01	FE-*1471	FE-471	I-14-01		Flow Element	Magnetic		2"-TW-PULK-140118	40_91_02.03_1.01A		
RTP01	FIT-*1472	FIT-472	I-14-01		Flow Indicating Transmitter	Magnetic			40_91_02.03_1.01A		
RTP01	FIT-*1471	FIT-471	I-14-01		Flow Indicating Transmitter	Magnetic		2"-TW-PULK-140118	40_91_02.03_1.01A		
RTP01	LSH-1459	LSH-459	I-14-01		Level Switch	Float			40_91_02.05_1.01C		
RTP01	LSH-*1451	LSH-451	I-14-01		Level Switch	Float			40_91_02.05_1.01C		
RTP01	LSH-*1453	LSH-453	I-14-01		Level Switch	Float			40_91_02.05_1.01C		
RTP01	LSL-*1451	LSL-451	I-14-01		Level Switch	Float			40_91_02.05_1.01C		
RTP01	LSL-*1453	LSL-453	I-14-01		Level Switch	Float			40_91_02.05_1.01C		
RTP01	PI-*1463	PI-463	I-14-01		Pressure Gauge	Bourdon Tube			40_91_02.07_1.01B		
RTP01	PI-*1461	PI-461	I-14-01		Pressure Gauge	Bourdon Tube			40_91_02.07_1.01B		
RTP01	PI-*1462	PI-462	I-14-01		Pressure Gauge	Bourdon Tube			40_91_02.07_1.01B		
RTP01	AE-*1482A	AE-581A	I-14-02		Sensor	pH			40_91_02.01_1.01B		

TABLE D1-21
CONDITIONED WATER TANKS - EQUIPMENT

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

LOCATION ID	100% TAG NO.	90% TAG NO.	P&ID SHT NO.	SYSTEM LOCATION	EQUIPMENT	TYPE	DESCRIPTION	LINE/ EQUIP NO.	SPECIFICATION	MAX OPERATING FLOW (GPM)	POWER (HP, unless noted otherwise)
RTP01	AE-*1482B	AE-581B	I-14-02		Sensor	Conductivity			40_91_02.01_1.01E		
RTP01	AIT-*1482	AIT-581	I-14-02		Analyzer Transmitter	Multiparameter			40_91_02.01_1.01A		
RTP01	FE-*1473	FE-571	I-14-02		Flow Element	Magnetic			40_91_02.03_1.01A		
RTP01	FIT-*1473	FIT-571	I-14-02		Flow Indicating Transmitter	Magnetic			40_91_02.03_1.01A		
RTP01	LI-*1452	LI-553	I-14-02		Level Gauge	Gauge		Tank 1410	See Drawing S-14-05		
RTP01	LSH-*1452	LSH-551	I-14-02		Level Switch	Float		Tank 1410	40_91_02.05_1.01C		
RTP01	LSH-*1455	LSH-555	I-14-02		Level Switch	Float			40_91_02.05_1.01C		
RTP01	LSH-*1454	LSH-554	I-14-02		Level Switch	Float			40_91_02.05_1.01C		
RTP01	LSL-*1452	LSL-551	I-14-02		Level Switch	Float		Tank 1410	40_91_02.05_1.01C		
RTP01	LT-*1452	LT-552	I-14-02		Level Transmitter	Submersible		Tank 1410	40_91_02.05_1.01B		
RTP01	PI-*1464	PI-561	I-14-02		Pressure Gauge	Bourdon Tube			40_91_02.07_1.01B		
RTP01	PI-*1465	PI-562	I-14-02		Pressure Gauge	Bourdon Tube		2"-WS-PULK-140201	40_91_02.07_1.01B		
RTP01	LIT-*1454	LIT-*454	I-14-01		Level Indicating Transmitter	Sonic		TNK-*1402	40_91_02.05_1.01A		
RTP01	LE-*1454	LE-*454	I-14-01		Level Element	Sonic		TNK-*1402	40_91_02.05_1.01A		
RTP01	LIT-*1452	LIT-*454	I-14-01		Level Indicating Transmitter	Sonic		TNK-*1401	40_91_02.05_1.01A		
RTP01	LE-*1452	LE-*454	I-14-01		Level Element	Sonic		TNK-*1401	40_91_02.05_1.01A		

¹This is part of a contingent system and may be constructed in the future

²Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-22**MOABI REGIONAL PARK FACILITIES - VALVES**

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	90% TAG NO.	MECH SHT NO.	SYSTEM LOCATION	EQUIPMENT	TYPE	DESCRIPTION	SIZE	SPECIFICATION	VALVE TYPE
CHQ00-	V-*110	V-*110	G-15-01	CHQ Potable Water	Valve	Gate		1-1/2"	40 27 02	V108/V110
CHQ00-	V-*112	V-*112	G-15-01	CHQ Potable Water	Valve	Gate		1-1/2"	40 27 02	V108/V110
CHQ00-	V-*111	V-*111	G-15-01	CHQ Potable Water	Valve	Gate		2"	40 27 02	V108/V110
CHQ00-	V-*108	V-*108	G-15-01	CHQ Potable Water	Valve	Gate		2-1/2"	40 27 02	V108/V110
CHQ00-	V-*109	V-*109	G-15-01	CHQ Potable Water	Valve	Gate		2-1/2"	40 27 02	V108/V110
CHQ00-	V-*104	V-*104	G-15-01	CHQ Potable Water	Valve	Globe		3"	40 27 02	V210
CHQ00-	V-*101	V-*101	G-15-01	CHQ Potable Water	Valve	Butterly		3"	40 27 02	
CHQ00-	V-*102	V-*102	G-15-01	CHQ Potable Water	Valve	Butterly		3"	40 27 02	
CHQ00-	V-*103	V-*103	G-15-01	CHQ Potable Water	Valve	Butterly		3"	40 27 02	
CHQ00-	V-*107	V-*107	G-15-01	CHQ Potable Water	Valve	Butterly		3"	40 27 02	
CHQ00-	V-*105	V-*105	G-15-01	CHQ Potable Water	Valve	Check		3"	40 27 02	
CHQ00-	V-*115	V-*115	G-15-01	CHQ Potable Water	Valve	Butterly		6"	40 27 02	
CHQ00-	V-*113	V-*113	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*114	V-*114	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*116	V-*116	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*117	V-*117	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*118	V-*118	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*119	V-*119	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*120	V-*120	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*121	V-*121	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*122	V-*122	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*123	V-*123	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*124	V-*124	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*125	V-*125	G-15-01	CHQ Sewer/ Fire Suppression	Valve	Gate		6"	40 27 02	V120/V122
CHQ00-	V-*106	V-*106	G-15-01	CHQ Potable Water	Valve	Backflow Preventer	Double Check Valve Assembly	3"	40 27 02	V640

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TABLE D1-23

MOABI REGIONAL PARK FACILITIES - EQUIPMENT

Groundwater Remedy Basis of Design Report/Final (100%) Design

PG&E Topock Compressor Station, Needles, California

LOCATION ID	100% TAG NO.	MECH SHT NO.	SYSTEM LOCATION	FLOW STREAM	EQUIPMENT	DESCRIPTION	SIZE	SPECIFICATION	MAX OPERATING FLOW (GPM)	MAX OPERATING PRESSURE (PSI) ²	POWER (HP, unless noted otherwise)
CHQ00-	TNK-*101	G-15-01	Utility Pad		HDPE Tank	Diam: 102" Height: 154". Add on seismic restraints	5,000 gal	43 40 15			
CHQ00-	TNK-*102	G-15-01	Utility Pad		HDPE Tank	Diam: 102" Height: 154". Add on seismic restraints	5,000 gal	43 40 15			
CHQ00-	TNK-*107	G-15-01	Utility Pad		XDPE Tank	Diam: 142" Height: 154". Add on seismic restraints	15,000 Gal	43 40 15			
CHQ00-	TNK-*104	G-15-01	Utility Pad	RW	Dual contained FRP Tank	Diam: 4' Length: 12'	1,000 gal	43 40 15			
CHQ00-	TNK-*105	G-15-01	CHQ		dual contained FRP sewage tank	Diam: 8' Length: 32'	10,000 gal	43 40 15			
CHQ00-	TNK-*106	G-15-01	CHQ		dual contained FRP sewage tank	Diam: 8' Length: 32'	10,000 gal	43 40 15			
CHQ00-	TNK-*103	G-15-01	Utility Pad		Bladder Tank	Hydro Tank 170. Model: FXA-700	158 gal				
CHQ00-	PMP-*101A	G-15-01	Utility Pad	POT WTR	Pump	Patterson Pump @ 3500RPM					5 hp motor
CHQ00-	PMP-*101B	G-15-01	Utility Pad	POT WTR	Pump	Patterson Pump @ 3500RPM					5 hp motor
CHQ00-	PMP-*102	G-15-01	Utility Pad	FPW	Centrifugal Pump	Model: Series e-1510 5EB Electrical motor connections 40HP @ 1750RPM, 11" impeller		44 42 56.10B	750	50	40
CHQ00-	PMP-*103	G-15-01	Utility Pad	POT WTR	Submersible Pump	Model: N140, nonautomatic 43 TDH		44 42 56.09B	30		3/4 to 1 HP, 120V
CHQ00-	--	C-15-03	Utility Pad		Generator	Model: 200REOZJF 208-600V Diesel powered Dimensions: 118.1" x 51.2" x 65.8"					
CHQ00-	--	C-15-03	Utility Pad		3-phase pad-mounted PEAK Transformer	300 kVA Pad dimensions: 54" x 74" Height: 50"					

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² Maximum operating pressure ratings apply to 73 degrees Fahrenheit

TABLE D1-24
ABOVEGROUND NON-EMERGENCY REMEDY EQUIPMENT WITH ASSOCIATED SOUND LEVEL INFORMATION
 (Prepared in response to 60% RTC # FMIT-51, Hualapai-37/Chemehuevi-37/Cocopah-37/CRIT-37)
 Groundwater Remedy Basis of Design Report/Final (100%) Design
 PG&E Topock Compressor Station, Needles, California

100% TAG NO.	SYSTEM LOCATION	EQUIPMENT	DESCRIPTION	POWER (HP, unless noted otherwise)
XFMR 01	Transwestern Bench Area	Transformer	Cooper Power Systems. <i>Technical Data 210-12, Three-phase pad-mounted compartmental type transformer.</i> August 2013. Page 3. (see Appendix C of O&M Manual Volume 1),56 dBA ^{1,2}	225 KVA
XFMR 02	MW-20 Bench Area	Transformer	Cooper Power Systems. <i>Technical Data 210-12, Three-phase pad-mounted compartmental type transformer.</i> August 2013. Page 3. (see Appendix C of O&M Manual Volume 1),56 dBA ^{1,2}	225 KVA
XFMR 03	MW-20 Bench Area	Transformer	Cooper Power Systems. <i>Technical Data 210-12, Three-phase pad-mounted compartmental type transformer.</i> August 2013. Page 3. (see Appendix C of O&M Manual Volume 1),56 dBA ^{1,2}	225 KVA
XFMR 04	North Riverbank Area	Transformer	Cooper Power Systems. <i>Technical Data 210-12, Three-phase pad-mounted compartmental type transformer.</i> August 2013. Page 3. (see Appendix C of O&M Manual Volume 1), 56 dBA ^{1,2}	300 KVA
XFMR 05	Upland Area	Transformer	Cooper Power Systems. <i>Technical Data 210-12, Three-phase pad-mounted compartmental type transformer.</i> August 2013. Page 3. (see Appendix C of O&M Manual Volume 1),56 dBA ^{1,2}	225 KVA
XFMR 99	Compressor Station Area	Transformer	Cooper Power Systems. <i>Technical Data 210-12, Three-phase pad-mounted compartmental type transformer.</i> August 2013. Page 3. (see Appendix C of O&M Manual Volume 1), 58 dBA ^{1,2}	1000 KVA
Node 2	MW-20 Bench Area	Communication Panel Air Conditioning Unit	Rittal. <i>Assembly and Operating Instructions.</i> July 2011. Page 41. www.rittal.com/imf/none/3_821/ , <64 dBA ¹	
Node 4	North Riverbank Area	Communication Panel Air Conditioning Unit	Rittal. <i>Assembly and Operating Instructions.</i> July 2011. Page 41. www.rittal.com/imf/none/3_821/ , <64 dBA ¹	
Node 5	Upland Area	Communication Panel Air Conditioning Unit	Rittal. <i>Assembly and Operating Instructions.</i> July 2011. Page 41. www.rittal.com/imf/none/3_821/ , <64 dBA ¹	
CU-1, CU-2	Transwestern Bench Operations Building	Split System Condensing Unit	TBD	
	MW-20 Bench Carbon Amendment Building	Heat Pump	<i>P-Series Full-line Catalog.</i> 2011. Page 15. http://www.mitsubishicomfort.com/media/382152/p%20series_3_11-r_pages.pdf Cooling: 48 dBA ¹ Heating: 50 dBA ¹	
	MW-20 Bench Carbon Amendment Building	Ventilation Fan	TBD	

TABLE D1-24
ABOVEGROUND NON-EMERGENCY REMEDY EQUIPMENT WITH ASSOCIATED SOUND LEVEL INFORMATION
 (Prepared in response to 60% RTC # FMIT-51, Hualapai-37/Chemehuevi-37/Cocopah-37/CRIT-37)
 Groundwater Remedy Basis of Design Report/Final (100%) Design
 PG&E Topock Compressor Station, Needles, California

100% TAG NO.	SYSTEM LOCATION	EQUIPMENT	DESCRIPTION	POWER (HP, unless noted otherwise)
	MW-20 Bench Carbon Amendment Building	Ventilation Fan	TBD	
CH-1300	Remedy-produced Water Conditioning Plant	Potable Water Heat Pump Chiller	Multiaqua. <i>Multiaqua Equipment Sound Levels</i> . January 2008. (see attachment to Multiaqua manual in Appendix C of O&M Manual Volume 1) 69 dBA ¹	
COND-703	Remedy-produced Water Conditioning Plant	Mini-split Condenser	Mitsubishi Electric. <i>Outdoor Unit Service Manual, No. OBH502</i> . January 2009. Page 4. (see Appendix C of O&M Manual Volume 1) Cooling: 56 dBA ¹ Heating: 57 dBA ¹	
COND-711	Remedy-produced Water Conditioning Plant	Mini-split Condenser	Mitsubishi Electric. <i>Outdoor Unit Service Manual, No. OBH502</i> . January 2009. Page 4. (see Appendix C of O&M Manual Volume 1) Cooling: 56 dBA ¹ Heating: 57 dBA ¹	
COND-721	Remedy-produced Water Conditioning Plant	Mini-split Condenser	Mitsubishi Electric. <i>Outdoor Unit Service Manual, No. OBH502</i> . January 2009. Page 4. (see Appendix C of O&M Manual Volume 1) Cooling: 56 dBA ¹ Heating: 57 dBA ¹	
EF-1300	Remedy-produced Water Conditioning Plant	Gable End Exhaust Fan	TBD	
	Remedy-produced Water Conditioning Plant	Office Sample Room Exhaust Fan	Broan. Models 508, 509, & 509S Wall Fans, Specification Sheet. http://www.broan.com/common/productDigitalAssetHandler.ashx?id=03f16dec-399e-4aab-9594-73ddcd8db191 55 dBA +/- 2dBA ^{1,3}	
	TCS Ponds	Electric Power Generator	Capstone. Capstone MicroTurbine Model C30 User's Manual. February 2013. Page 10. (see Appendix C of O&M Manual Volume 1) 65 dBA ⁴	

TABLE D1-24
ABOVEGROUND NON-EMERGENCY REMEDY EQUIPMENT WITH ASSOCIATED SOUND LEVEL INFORMATION
 (Prepared in response to 60% RTC # FMIT-51, Hualapai-37/Chemehuevi-37/Cocopah-37/CRIT-37)
 Groundwater Remedy Basis of Design Report/Final (100%) Design
 PG&E Topock Compressor Station, Needles, California

100% TAG NO.	SYSTEM LOCATION	EQUIPMENT	DESCRIPTION	POWER (HP, unless noted otherwise)
	TCS Ponds	Transformer	Sound level not available ⁵ Larson Electronics LLC. 75 kVA Transformer - 480V 3 Phase - 480V Delta Primary - 120/240V Secondary - NEMA 3R Enclosure. http://www.larsonelectronics.com/images/product/specsheet/68841.pdf (Product specification only. Does not include equipment sound generation)	