



TOPOCK WELL COMPLETION AND ACCEPTANCE REPORT -REMEDIATION WELLS

Well Name: FW-02B

Screen Zone (feet below ground surface [bgs]): 95 - 112 and 122 - 132 (no seal between screens)

Dates Pilot Borehole Drilling: <u>08/20/2022 – 09/01/2022</u>

Temporary Backfill: 09/01/2022 - 09/07/2022

Dates Pilot Borehole Overdrilling: <u>10/12/2022 – 10/22/2022</u>

Well Installation: 10/23/2022 - 11/05/2022

Dates Well Head Completion: Installation of vault will be completed at a later date as noted on the Well Construction Log

Dates of Development: <u>11/06/2022 – 11/19/2022</u>

Note: Well Testing was completed successfully and in accordance with Well Specification 33 22 00 unless noted below.

Well Testing Conducted	Required (Y/N)	Dates	Comments
Alignment Test	Y	11/22/2022	None
Specific Capacity Test	Y	11/20/2022	None
Injectivity Test	Y	11/21/2022	None
Plumbness Test (Gyroscope)	Ν		
Spinner Log	Ν		
Downhole Video	Y	12/02/2022	None
Other			

Acceptance Criteria

☑ **Meets Design Criteria for Construction** - Well installed in accordance with well specifications and final design.

Comments: As-built well construction consistent with the final well design (see Attached Logs).

Meets Design Criteria for Injectivity Rate

Goal from 100% Design:	50
Tested Rates	
(gallons per minute [gpm]):	25.0, 50.5, 74.5

	3.95 gpm/ft per 6.34 ft of mounding at an injection rate of 25 gpm
	2.00 gpm/ft per 25.27 ft of mounding at an injection rate of 50.5 gpm
Specific Injectivity	1.33 gpm/ft per 56.20 ft of mounding at an injection rate of 74.5 gpm
	The 50 gpm step (100% proposed nominal rate) stabilized. The 74.5 gpm step
	(~150% proposed nominal rate) could not be fully evaluated for stabilization due to
	time constraints. Mounding may have stabilized at 74.5 gpm if testing was
Comments	conducted for a longer duration.

☑ Well Functions as Designed

Comments: criteria for the intended use.

Meets Design Criteria for Plumbness and Equipment Install – The well was free of blockages and of sufficient plumbness and alignment to allow for well development, "Dummy Tool" alignment testing, well testing, and well sampling.

Comments: Downhole equipment has not been installed as of the submittal of this Completion Report. Installation is planned to be completed in 2023.

Meets Design Criteria for Turbidity (Turbidity less than 50 NTU)

Comments: Turbidity at the completion of well development meets the design criteria.

Final Turbidity at End of Well Development

Screen Zone	Turbidity (NTUs)
<u>95 – 112' and 122 – 132 '</u>	2.25
(no seal between screens)	

Other Water Quality Parameters

Water Quality Parameters at end of development

Screen Depths	Temp (C)	рН	ORP (mV)	Cond (uS/cm)	DO
<u>95 – 112' and 122 – 132 '</u>	29.6	7.46	84.8	2537	5.40
<u>(no seal between screens)</u>					

ATTACHMENTS

- Final Well Design
- Boring Log
- Temporary Backfill Log
- Drilling Log
- Well Construction Log
- Well Development Log
- Specific Capacity Testing Package
- Specific Injectivity Testing Package

- Photo Logs
- Video Survey Report

NOTE: Field documentation for all phases of well installation, well development and testing are included in the Daily Well Construction Reports. The Daily Well Construction Reports and DoR Daily Well Construction Quality Control Reports are compiled and organized by date on *AutodeskBuild*. The parent folder for both daily reports are located on *AutodeskBuild* in the following location: Files/For the Field/DOR Drilling Quality Control/01 QC Documentation. Analytical reports are compiled and uploaded to *AutodeskBuild* in the same folder. The technical scopes were performed by or under the direct supervision of Designer of Record (DoR) Professional Geologists (see attached Certification Statement).

ACCEPTANCE APPROVAL

DoR Approver Name: Greg Foote

Approval Signature/Date:

Areg S. Jew to

DATE January 31, 2023

Final Well Design

Final Well Design FW-02B (10/25/22)



Well ID: Well Type: Dual Screened FW-02B Well Purpose: Remediation Borehole Dia.: 22 - 24 in. Well Diameters: 12 in. Backfill Volumes 0 ft Units Quantity 2 ft. Material Temp Backfill Sand 9.0 Bags *May be modified in the field 15 ft. 1009.6 Neat Cement Gallons Depth of Conductor Casing 62.22 ft. Well Construction Materials For upper screen 95-112 ft: 12" Suregrip SDR-17 Casing 55 ft. 12" 35-slot 316L SS Wire Wrap Screen Transition Sand For lower screen 135-166 ft: 93.2 Bags 12" Suregrip SDR-17 Casing Red Flint 0.20-0.30 12" 15-slot 316L SS Wire Wrap Screen Cemex #60 Lapis Lustre if needed 85 ft. For upper primary filter pack 93-114 ft: 89 ft. Red Flint 0.80-1.20 Sand 90 ft. **Bentonite Chips** For upper transition sands 37-40 ft: 2.4 Bags Red Flint 0.20-0.30 Sand 92.5 ft. Approximate DTW 95 ft. 97-102 feet For lower primary filter pack 127-172 ft: Results: <0.025 Red Flint 0.35-0.45 Sand For lower transition sands 114-121 ft: Red Flint 0.20-0.30 Sand 83.5 Sand Pack bags 107-112 feet Results: <0.025 112 ft. 114 ft. 117 ft. 22.6 Transition Sand Bags 117-122 feet Results: 7.8 ug/L 120.5 ft. 121 ft. 1.4 **Bentonite Pellets** Buckets 122 ft. * Not to Scale Legend Sand Pack 41.8 Transition Sand bags Primary Fitler Sand Red 0.35-0.45 Bentonite Pellets or Chips 133-121 ft bgs Neat Cement up to 6% Bentonite Centralizers Suregrip SDR-17 casing 127-132 feet 316L SS Wire Wrap Screen Results: 36 ug/L Stainless Steel End Cap 132 ft 133 ft. 134.5 ft. 137 ft. 137.5 ft. Back Fill Sand 28.8 bags Cemex #1/20 Total Depth of 22-Inch Diameter 133-140 ft bgs 140 ft. Pilot Borehole Total Depth 142 ft.

Boring Log

9	AR	CADI	S		Bo	oring	Log	She	eet: 1 of	8
Date S	started	08/20/2	2022		Surface	e Elevat	ion: <u>551.67 ft amsl</u>	Boring No.:	FW-02B	Pilot
Date C	Comple	ted: <u>09/01/2</u>	2022		Northin	ng (NAE	983): <u>2100637.96</u>	Doning iton		
Drilling	Co.:	Casca	de		Easting	g (NAD8	33): <u>7614544.74</u>	Client: <u>PG&E</u>		
Drilling	Metho	od: <u>Sonic I</u>	Drilling		Total D	epth:	<u>142 ft bgs</u>	Project: Final G	W Remedy Pł	nase 2A
Drill Ri	д Туре	: <u>Boart L</u>	_ongyear drill	head	Boreho	ole Diarr	neter: <u>4-8 inches</u>	Location: PG&E	Topock, Need	les California
Driller	Name:	Matt A	rnold		Depth t	to First	Water: <u>102.0 ft bgs</u>			
Drilling	Asst:	<u>LA / IS</u>	/ DH		Sampli	ng Meth	nod: <u>4 inch x 10 ft. Core Barrel</u>	Project Number:	30126255	
Logge	r:	J. And	erson / L. Mil	ando	Sampli	ng Inter	val: <u>Continuous</u>			
Editor:		<u>Sean N</u>	McGrane		Conver	rted to V	Vell: 🗵 Yes 🗌 No			
_	≥			ici n						
Depth (ft)	Recove (ft)	Sieve Sample ID	Groundwater Sample ID	Geolog Formati	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Fluid
1				Fluvial			(0-2 ft) Well graded sand with gravel (SW); ligh very fine to very coarse grained, subangular to granules, subangular; trace small to very large	nt gray (10YR 7/2); subround; trace pebbles,	(0.0 - 5.0') Air-knifed for utility	(0.0 - 5.0') No drilling fluid used
- '				Deposits	SW	P	subangular; poorly sorted; dry; NOTE: sample air-knifing activities.	disturbed from	clearance sediments not	
									logged.	
						<u>~~</u> ~	(2-8 ft) No Recovery			
						1\ /				
⊢° –					1	\ /				
						$ \rangle / $				
- 4	2					$ \rangle / $				
						V				
- ⁵					NR	ΙŇΙ				
						/				
- 0						$ / \rangle $				
- ′ -						/ \				
<u> 8 </u>					·		(8-10.5 ft) Well graded sand with gravel (SW);	brown (10YR 5/3);	(8.0 - 17.0')	(8.0 - 17.0')
							very fine to very coarse grained, subangular to to very large pebbles, subangular; trace silt; tra	subround; little small	Soft drilling, core sample	No drilling fluid used
_ 9 _				Fluvial	sw		subangular; trace clay; poorly sorted; dry.	5 ,	lost down hole,	
		No Sieve	No	Deposits					pushing loose	
10		Samples Collected	Samples	•					formation	
		Concoled	Collected			1000 1000 1	(10.5-17 ft) No Recovery		instead of the	
11						1 /	. , , .		oore barren.	
						$ $				
12						\ /				
	2.5			· · · ·		$ \rangle / $				
13						$ \rangle / $				
						V				
14					INF	$ \land $				
						/				
15					1					
16						/ \				
					1					
17					+	ᡰᢆ᠆᠈ᠵ᠍ᢩᢛ	(17-28 5 ft) Well graded sand with gravel (SW)	brown (10YR 5/3)	(17.0 - 22.0')	(17 0 - 22 0')
						2000	very fine to very coarse grained, subangular to	subround; little small	Core barrel	No drilling fluid
18					1		subangular; trace clay; poorly sorted; dry.	ice granules,	the drill casing	used
	4.5			Fluvial Deposits	SW		(17.5-19.5 ft) Increase in the percentage of coa sediments.	arser grained	and the drill casing	
19					1	0			advanced	
					1				0.5-1 ft.	
20				 	<u> </u>	<u>Received</u>			Potental void	
Abbrev	viations	s: USCS = l	Jnified Soil C	lassification	N Syster	m, ft = f	eet, bgs = below ground surface, ams	sl = above mean se	a level, NR = I	No Recovery,
N/A =	Not Ap	plicable, GV	v = groundwa	ater, ppb =	parts p	er billio	n, Notes: Solid blue and hollow blue w	vater table marks re	epresent depth	n to water (ft.
pgs.) fi	irst end	countered fro	om logging ar	nd depth to	water	measur	ed during the first VAS interval, respec	ctively. Apparent pa	artial recoverie	s can be the
result	or pote	nual compac	cuon of sedim	ients in the	core b	ag.				

9	AR	CAD	S		Во	ring	J Log	She	eet: 2 of	8
Date S	Started:	08/20/	2022		Surface	Eleva	tion: <u>551.67 ft amsl</u>	Borina No.:	FW-02B	Pilot
Date C	Comple	eted: <u>09/01/</u>	2022		Northin	g (NA[083): <u>2100637.96</u>			
Drilling	Co.:	<u>Casca</u>	de		Easting	(NAD	83): <u>7614544.74</u>	_ Client: <u>PG&E</u>		
Drilling	Metho	od: <u>Sonic</u>	Drilling		Total D	epth:	<u>142 ft bgs</u>	_ Project: <u>Final G</u>	N Remedy Ph	nase 2A
Drill Ri	д Туре	e: <u>Boart I</u>	Longyear drill	head	Boreho	le Dian	neter: <u>4-8 inches</u>	_ Location: <u>PG&E</u>]	Fopock, Need	les California
Driller	Name:	<u>Matt A</u>	rnold		Depth t	o First	Water: <u>102.0 ft bgs</u>			
Drilling	Asst:	<u>LA / IS</u>	S/DH		Samplir	ng Met	hod: <u>4 inch x 10 ft. Core Barrel</u>	_ Project Number:	30126255	
Logge	r:	<u>J. And</u>	erson / L. Mila	ando	Samplir	ng Inte	rval: <u>Continuous</u>	_		
Editor:		Sean N	McGrane		Conver	ted to	Well: 🖄 Yes 🛄 No			
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Fluid
 21 	4.5						(17-28.5 ft) Well graded sand with gravel (SW very fine to very coarse grained, subangular to to very large pebbles, subangular; trace silt; tr subangular; trace clay; poorly sorted; dry.	(); brown (10YR 5/3); o subround; little small ace granules,	forming or extremely soft sand.	
23										
24				Fluvial Deposits	sw		(24 ft) Increase in the percentage of coarser g granules with depth. Lower percentage of silt depth.	rained sediemnt and percentage with		
26 										
27	7									
28										
29							(28.5-31 ft) Well graded sand with gravel (SW 7/2); very fine to very coarse grained, subangu); light gray (10YR llar to subround; little		
30		No Sieve Samples Collected	No Groundwater Samples Collected	Fluvial Deposits	sw		small to very large pebbles, subangular to sub granules, subangular; trace silt; dry; pebbles of metadiorite; granule and pebble size decrease percentage of sand decreases with depth; fria cementation.	pround; trace composed of es with depth; ble caliche		
31							(31-37 ft) Well graded sand with gravel (SW);	light gray (10YR 7/2);		
32							very large pebbles, subangular; trace granule: silt; poorly sorted; dry; larger pebbles are com	s, subangular; trace posed of metadiorite.	(32.0 - 107.0') Rough drilling	(32.0 - 107.0') No drilling fluid
33									potential boulder at approximately	used
34				Alluvium	SW				32 ft bgs.	
L _	4.5			Deposits						
35										
 36										
37 38				Alluvium	SW-SM		(37-39.5 ft) Well graded sand with silt (SW-SI 7/2); very fine to coarse grained, subangular to trace small pebbles, subround; trace granules strong HCI reaction; friable caliche cementation	N); light gray (10YR o subround; trace silt; s, subangular; dry; on.		
39	7.5									
40										
Abbrev	viations	s: USCS = l	Jnified Soil C	lassificatior	Systen	n, ft = 1	eet, bgs = below ground surface, am	sl = above mean se	a level, NR = I	No Recovery
N/A =	Not Ap	oplicable, GV	V = groundwa	ater, ppb =	parts p	er billio	n, Notes: Solid blue and hollow blue	water table marks re	present depth	n to water (ft.
bgs.) f	irst end	countered fro	om logging ar	nd depth to	water r	neasur	ed during the first VAS interval, respe	ctively. Apparent pa	rtial recoverie	s can be the
result	of pote	ntial compac	ction of sedim	ents in the	core ba	ag.				

9	AR	CAD	S		Во	oring	Log	She	eet: 3 of	8			
Date S	Started:	08/20/	2022		Surface	e Elevat	tion: <u>551.67 ft amsl</u>	Boring No.:	FW-02B	Pilot			
Date (Comple	ted: <u>09/01/</u>	2022		Northin	g (NAC	083): <u>2100637.96</u>		<u></u>				
Drilling	J Co.:	<u>Casca</u>	de		Easting	(NAD8	33): <u>7614544.74</u>	_ Client: <u>PG&E</u>					
Drilling	Metho	od: <u>Sonic</u>	Drilling	·	Total D	epth:	<u>142 ft bgs</u>	_ Project: <u>Final G</u>	W Remedy Pl	nase 2A			
Drill R	д Туре	: <u>Boart I</u>	Longyear drill	head	Boreho	le Diarr	neter: <u>4-8 inches</u>	_ Location: <u>PG&E</u>	Topock, Need	les California			
Driller	Name:	<u>Matt A</u>	rnold		Depth t	o First	Water: <u>102.0 ft bgs</u>						
Drilling	J Asst:	LA / IS	<u>S / DH</u>		Samplii	ng Meth	nod: <u>4 inch x 10 ft. Core Barrel</u>	_ Project Number:	30126255				
Logge	r:	<u>J. And</u>	erson / L. Mila	ando	Samplii	ng Inter	val: <u>Continuous</u>	_					
		<u>Sean I</u>	McGrane	'	Conver	ted to V	Vell: 🗵 Yes 🗌 No	I					
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Fluid			
	7.5			Alluvium Deposits	sw		(39.5-46.5 ft) Well graded sand with gravel (S gray (10YR 6/2), and light gray (10YR 7/1); ve grained, subangular to subround; little granul small pebbles, subangular; trace silt; poorly s reaction; strong caliche cementation.	SW); light brownish ery fine to very coarse es, subangular; trace sorted; dry; strong HCI					
47				Alluvium Deposits	SW-SM		(46.5-47.5 ft) Well graded sand with silt (SW 7/1); fine to very coarse grained, subangular trace granules, subangular to subround; trace subangular; poorly sorted; dry; moderate HCl	.5 ft) Well graded sand with silt (SW-SM); light gray (10YR to very coarse grained, subangular to subround; little silt; anules, subangular to subround; trace small pebbles, ular; poorly sorted; dry; moderate HCI reaction; moderate					
48 49				Alluvium Deposits	SW-SM		caliche cementation. (47.5-49 ft) Well graded sand with silt and gra orange yellow (10YR 8/2), and light gray (10Y coarse grained, subangular to subround; little pubbles subangular to subround; little	avel (SW-SM); pale (R 7/1); fine to very e small to large					
50	5	No Sieve Samples Collected	No Groundwater Samples Collected	Alluvium Deposits	SW-SM		subargular to subround; poorly sorted; dry; m moderate caliche cementation. (49-50.5 ft) Well graded sand with silt and gr orange yellow (10YR 8/2), and light gray (10 coarse grained, subangular to subround: little	avel (SW-SM); pale 'R 7/1); fine to very : small to large					
51 52				$\langle \rangle$			pebbles, subangular to subround; trace silt; tr subangular to subround; trace clay; poorly so HCI reaction; moderate caliche cementation. (49-50.5 ft) Decrease in silt to approximately the amout moderate caliche cementation.	race granules, rted; dry; moderate 1% silt, and increase					
 53 54	- 3			Alluvium Deposits	SW		(50.5-57 ft) Well graded sand with gravel (SV 7/2); very fine to coarse grained, subangular to small to medium pebbles, subangular to sub subangular to subround; trace silt; trace clay; moderate HCI reaction; weak caliche cement	V); light gray (10YR co subround; little ound; little granules, poorly sorted; dry; ation.					
55													
56 57													
				Alluvium	SW	<u>ۅ؞ؚ؞ؚڹ</u>	(57-57.5 ft) Well graded sand with gravel (SV	V); light gray (10YR					
58 59	8			Alluvium Deposits	SW-SM		(12), very line to coarse grained, subangular i small to medium pebbles, subangular to subi subangular to subround; trace silt; trace clay; moderate HCI reaction; weak caliche cement	o subround; little round; little granules, poorly sorted; dry; ation.					
60	viations		Inified Soil Cl	assification	Sveter	<u>[•]•]</u> n ft – f	eet has - below around surface, or	uel – above moan ac	alevel ND -				
	Not Ar	$\frac{1}{2}$		assilication	oysier	n, n = 10	eer, bys - below ground surface, am	isi – auove mean se water table marks ro	a ievel, INK =	nu recovery,			
hae) f	irst end	ountered fr	v – grounuwa om logging on	nd denth to	water r		ed during the first VAS interval room	ectively Annarent n	artial recoverio	s can be the			
result		ntial compa	ction of sedim	ents in the	core h	10asul	ca daring the list vao lillerval, lesp	σοινοιγ. Αρραιοτιι μα					
- Coult			Saon of Sculli		5010 00	-y.							

9	AR	CADI	S		Во	oring	Log	She	eet: 4 of	8
Date S	started:	08/20/2	2022		Surface	e Eleva	tion: <u>551.67 ft amsl</u>	Boring No.:	FW-02B	Pilot
Date C	Comple	ted: <u>09/01/</u>	2022		Northin	g (NAI	083): <u>2100637.96</u>		<u> •==</u>	
Drilling	Co.:	Casca	de		Easting	(NAD	33): <u>7614544.74</u>	Client: <u>PG&E</u>		
Drilling	Metho	od: <u>Sonic</u>	Drilling ongvoor drill	hood	l otal D Doroho	epth:	<u>142 tt bgs</u>	Project: Final G	W Remedy Pl	las California
Drillor Drillor	g Type Nomo:	Boart L	<u>_ongyear anii</u> roold	nead	Boreno Donth t	e Diar	Neter: <u>4-8 incres</u>	Location: PG&E	<u>i opock, ineed</u>	les Calilomia
Drilling	i Δeet·				Samplir Samplir	o riisi na Met	volter. <u>102.0 it bys</u>	Project Number:	30126255	
	r.	.L And	erson / I Mila	ando	Samplir Samplir	ng Inte	val: Continuous		30120233	
Editor:		Sean M	VcGrane		Conver	ted to	Vell: X Yes No	-		
	>			<u>ں ج</u>						
Depth (ft)	Recover (ft)	Sieve Sample ID	Groundwater Sample ID	Geologi Formatic	USCS Code	USCS Class	Soil Description		Drilling Notes	Drilling Fluid
61 62				Alluvium Deposits	SW-SM		(57.5-62.5 ft) Well graded sand with silt and gr brown (10YR 5/3); very fine to coarse grained, subround; little granules, subangular to subrou small to medium pebbles, subangular to subro poorly sorted; dry; moderate HCI reaction; wea cementation. (60-62.5 ft) Decrease in fine content.	avel (SW-SM); subangular to ind; little silt; trace und; trace clay; ik caliche		
63 64 64	8			Alluvium Deposits	sw		(62.5-65 ft) Well graded sand with gravel (SW) (10YR 6/2); very fine to coarse grained, subang subangular; little small to large pebbles, subar trace clay; poorly sorted; dry; moderate HCI re- cementation.); light brownish gray gular; little granules, ngular; trace silt; action; weak caliche		
65						<u></u>	(65-67 ft) No Recovery			
66	0				NR					
67				Alluvium	sw		(67-68 ft) Well graded sand with gravel (SW); (10YR 6/2); very fine to coarse grained, subang	light brownish gray gular; little granules,		
68			Deposit				subangular; little small to large pebbles, suban trace clay; poorly sorted; dry; moderate HCI re- cementation.	igular; trace silt; action; weak caliche		
69 70		No Sieve Samples Collected	No Sieve Samples Collected	Alluvium Deposits	sw		(68-71 ft) Well graded sand with gravel (SW); fine to very coarse grained, subangular to subr subangular to subround; little small to large pe subround; trace silt; trace clay; poorly sorted; c moderate HCI reaction; weak caliche cementa	light gray (10YR //2); ound; little granules, bbles, subangular to bbles, subangular to try to moist; tion.		
71 72 73	7			Alluvium	SM		(71-74.5 ft) Silty sand (SM); light gray (10YR 7/ coarse grained, subangular to subround; some large pebbles, subangular to subround; trace g to subround; trace clay; poorly sorted; dry; mod weak caliche cementation. (72-74.5 ft) Decrease in silt, granules and pebl	(2); very fine to very e silt; trace small to granules, subangular derate HCI reaction; bles, increase in		
73										
75 76				Alluvium Deposits	SW		(<i>v</i> +.o- <i>i i</i> .5 m) well graded sand with gravel (SV (10YR 5/4); fine to very coarse grained, subang little granules, subangular to subround; trace s pebbles, subangular to subround; trace silt; tra sorted; dry to moist; moderate HCI reaction; we cementation.	w j; yellowish brown gular to subround; mall to medium ice clay; poorly eak caliche		
77							(77 ft) Decrease in small to large peoples incr	ease in sand		
78 78 79 79	8			Alluvium Deposits	SW-SM		(77.5-83 ft) Well graded sand with silt and grav yellowish brown (10YR 5/4); very fine to very or subangular to subround; little silt; little small to subangular; trace granules, subangular to sub poorly sorted; dry; moderate HCI reaction; wea cementation.	vel (SW-SM); parse grained, plarge pebbles, round; trace clay; ik caliche		
80 Abbrev	viations	: USCS = 1	Inified Soil CI	assification	Svster	<u>.•[•</u> } n ft = ⁺	eet bas = below around surface amo	al = above mean se	 a level NR =	No Recovery
N/A =	Not Ar	plicable GV	V = groundwa	ter. ppb =	parts n	er billio	n. Notes: Solid blue and hollow blue v	vater table marks re	epresent dent	to water (ff
bas.) f	irst end	countered fro	om logaina an	d depth to	water r	neasu	ed during the first VAS interval, respec	ctively. Apparent pr	artial recoverie	s can be the
result o	of pote	ntial compac	ction of sedim	ents in the	core ba	ag.	<u> </u>	, , ,		

9	AF	RCADI	S		Bo	oring	j Lo	g	S	heet: 5 of	8
Date S	Started	: 08/20/	2022		Surfac	e Eleva	tion:	551.67 ft amsl	- Boring No	.: FW-02B	Pilot
Date C	Comple	eted: <u>09/01/</u>	2022		Northir	ig (NAE	D83):	2100637.96			
Drilling	Co.:	Casca	de		Easting) (NAD	83):	<u>7614544.74</u>	Client: PG&		0.4
Drilling	Meth	od: <u>Sonic</u>	<u>Drilling</u>	baad	l otal L Daraha	epth:		<u>142 ft bgs</u>	Project: <u>Final</u>	GW Remedy Pl	hase 2A
Drillor	g Type Nomo	Boart i Mott A	<u>_ongyear anii</u> roold	nead	Borenc	he Dian to Eirct	Neter:	<u>4-8 incries</u>	Location: PG&	<u>- Topock, Need</u>	lies Calilomia
Drilling	Δeet·	. <u>Ινιαιι Α</u> ΙΔ/ΙΩ			Depin Samnli	na Met	hod.	/ inch x 10 ft Core Barrel	 Project Number	· 30126255	
	r.		erson / I Mil:	ando	Sampli Sampli	ng Inte	nou. rval:			. <u>30120233</u>	
Editor:	••	Sean M	McGrane		Conve	ted to	Well:	X Yes No			
	~		_	0 5							
Depth (ft)	Recovel (ft)	Sieve Sample ID	Groundwater Sample ID	Geologi Formatio	USCS Code	USCS		Soil Description		Drilling Notes	Drilling Fluid
 81 82				Alluvium Deposits	SW-SM		(77.5-83 yellowis subang subang poorly s cement	3 ft) Well graded sand with silt and g h brown (10YR 5/4); very fine to ver ular to subround; little silt; little smal ular; trace granules, subangular to s orted; dry; moderate HCI reaction; v ation.	rravel (SW-SM); y coarse grained, I to large pebbles, ubround; trace clay; yeak caliche		
83							(83-92.	5 ft) Well graded sand (SW); light gr	ay (10YR 7/2); very fine		
84	8						to very of subang subang reaction	coarse grained, subangular to subro ular to subround; trace small to mec ular to subround; trace silt; poorly so ı; strong caliche cementation; increa	und; trace granules, ium pebbles, irted; dry; moderate HCI ise in the percentage of		
85		No Sieve Samples Collected					finer gra	ained sand and silt with depth.			
86 								0			
87		-									
				Alluvium Deposits	sw						
			No Groundwater								
89			Samples Collected								
L _	3.8										
90						••••••					
91		FW-02B-SS- 90-92.5									
		8/25/2022 16:05									
92		-									
							(92.5-99	9 ft) Well graded sand with silt and g	ravel (SW-SM); light		
93 94 	3.9	FW-02B-SS- 92.5-96 8/25/2022 16:10					gray (10 subrour medium dry; trac modera	IVR 7/2); very fine to very coarse gra id; little granules, angular to subang pebbles, subangular to subround; ice metadiorite pebbles; approximate te caliche cementation.	ined, subangular to ular; little small to ittle silt; poorly sorted; ly 25% of the core has	¥	
95											
				Alluvium	sw-sM						
96				Deposits							
 98		FW-02B-SS- 96-99 8/25/2022 16:15	FW-02B- VAS-97-102							(97.0 - 102.0') VAS interval had to be resampled due to the Cr (//)	(97.0 - 102.0') No drilling fluid used
 90	3.7		(<0.025 ppb) 8/24/2022							inadventently	
			11:12	Alluvium	CIA/					filtered.	
100				Deposits	500						
Abbre	viation	s: USCS = l	Jnified Soil C	lassification	Syster	n, ft = 1	feet, bg	s = below ground surface, a	msl = above mean s	sea level, NR =	No Recovery
N/A =	Not Ap	oplicable, GV	V = groundwa	ater, ppb =	parts p	er billio	n, Note	es: Solid blue and hollow blue	e water table marks	represent dept	n to water (ft.
bgs.) f	Irst en	countered fro	om logging ar	nd depth to	water	measur	red dur	ng the first VAS interval, res	bectively. Apparent	partial recoverie	s can be the
esuit (υ μοιε		JUON OF SEAIM			ay.					

9	AR		S		Bo	oring	J Log				She	et: 6 of	8
Date S	started	08/20/2	2022	:	Surface	e Eleva	tion:	551.67 ft amsl		Borina	10.:	FW-02B	Pilot
Date C	Comple	eted: <u>09/01/2</u>	2022		Northin	ig (NAE	083): <u>2</u>	2100637.96		Bornigi	10		
Drilling	Co.:	Cascad	de		Easting	(NAD	83):	7614544.74		Client: PG	έ&Ε		
Drilling	Metho	od: <u>Sonic [</u>	Drilling		Total D	epth:		142 ft bgs		Project: Fin	al G\	<u>N Remedy Pł</u>	nase 2A
Drill Ri	g Type	e: <u>Boart L</u>	ongyear drill	head I	Boreho	le Dian	neter:	1-8 inches		Location: PG	&E 1	opock, Need	les California
Driller	Name:	<u>Matt Ar</u>	rnold		Depth t	to First	Water:	102.0 ft bgs					
Drilling	Asst:	<u>LA / IS</u>	/ DH	\$	Sampli	ng Met	hod:	1 inch x 10 ft. Core Ba	arrel	Project Num	ber:	30126255	
Logge	r:	<u>J. Ande</u>	erson / L. Mila	ando s	Sampli	ng Inte	rval: 🧕	Continuous		-			
Editor:		<u>Sean N</u>	/IcGrane	(Conver	ted to \	Well: [🛛 Yes 🗌 No					
5	~			05									
Depth (ft)	Recovel (ft)	Sieve Sample ID	Groundwater Sample ID	Geologi Formatic	USCS Code	USCS Class		Soil Descri	iption			Drilling Notes	Drilling Fluid
	3.7	FW-02B-SS- 99-104		Alluvium	SW		(99-104 ft 7/2), some subangula trace sma sorted; dr cemented percentag	Well graded sand with gra brown (10YR 5/3); very fir ir to subround; little granule II to medium pebbles, suba y to moist; moderate calich sediment fragments decre e of coarse grained sand ir	avel (SW); ne to very c es, subangu angular; tra ne cementat eased with o ncreases w	light gray (10YR oarse grained, ular to subround; ce clay; poorly ion; sizes of depth; the ith depth.			
		8/25/2022 16:20		Deposits			(102) Incr	ease in the percentage of n	metadiorite	pebbles.			
	3.5	FW-02B-SS-					(104-108 very fine to to large pe subangula	t) Well graded sand with g o very coarse grained, suba sbbles, subangular to subro r to subround; trace silt; tra	gravel (SW) angular to s ound; trace ace clay; po	; brown (10YR 5/ oubround; little sn granules, porly sorted; mois	3); nall it.		
106 107		104-108 8/25/2022 16:25		Alluvium Deposits	SW			0,				(107.0	(107.0
							(108-112)	it) Well graded sand with si	silt and grav	el (SW-SM); brov	vn	112.0') Bottom of borehole collapsed	112.0') No drilling fluid used
109 110 110 111	3.6	FW-02B-SS- 108-112 8/25/2022 16:30	FW-02B- VAS-107- 112 (<0.025 ppb) 8/24/2022 09:15	Alluvium Deposits	SW-SM		coarse gri medium p subangula the core h), some light yenomism bio ned, subangular to subro ebbles, subangular to subr ir to subround; trace clay; p as moderate caliche ceme	poorly sorte	it; trace small to granules, d; moist; majorit	v of	before sample screen was deployed, tripped back in to clear it out and advance the 6-inch casing to 107 feet bgs. VAS interval had to	
				X			(112-115)	t) Silty sand (SM); brown (*	(10YR 5/3);	very fine to coars	e	be resampled due to the Cr (VI) inadventently	(112.0 -
113 		FW-02B-SS- 112-115 8/25/2022 16:35		Alluvium Deposits	SM		subangula subangula	ir to subround; trace small ir to subround; trace clay; p	to medium poorly sorte	pebbles, d; moist.		not field filtered. (112.0 - 122.0') Tight drilling, went back down to clear it out and the	No drilling fluid used
115 116	5						(115-119 6/4), and l to subrout trace sma poorly sor sediments	t) Well graded sand (SW); orown (10YR 5/3); very fine nd; trace granules, subangu II to medium pebbles, suba ted; moist; moderate calich and metadiorite pebbles v	; light yellow e to coarse y ular to subr angular to s he cementa were mediu	vish brown (10YF grained, subangu ound; trace silt; ubround; trace c tion; cemented m to large in size	R lar ay; e.	rig overheated.	
117 118 119		115-119.5 8/25/2022 16:40	FW-02B- VAS-117- 122 (7.8 ppb) 8/30/2022	Alluvium Deposits	SW								
 _ 120			11:14	Alluvium Deposits	SW-SN								
Abbrev	viation	s: USCS = L	Jnified Soil Cl	assification	Syster	n, ft = f	eet, bgs	= below ground surfa	ace, amsl	= above mea	n se	a level, NR = I	No Recovery,
N/A =	Not Ap	oplicable, GW	/ = groundwa	ater, ppb =	parts p	er billio	n, Notes	: Solid blue and hollov	w blue w	ater table mai	ks re	present depth	n to water (ft.
bgs.) fi	irst end	countered fro	om logging an	d depth to	water	neasur	ed durin	g the first VAS interva	al, respec	tively. Appare	nt pa	rtial recoverie	s can be the
result o	of pote	ntial compac	tion of sedim	ents in the	core b	ag.							
L		1			-	~							

9	AR	RCADI	S		Bo	pring	g Lo	g		SI	neet: 7 of	8
Date S	Started	: 08/20/2	2022		Surfac	e Eleva	ation:	<u>551.67 ft am</u>	nsl	- Borina No.	: FW-02B	Pilot
Date C	Comple	eted: <u>09/01/2</u>	2022	I	Northir	ig (NA	D83):	<u>2100637.96</u>	;		<u> </u>	
Drilling	J Co.:	<u>Casca</u>	de	[Easting) (NAD	983):	<u>7614544.74</u>		Client: <u>PG&E</u>		
Drilling	Metho	od: <u>Sonic I</u>	Drilling		Total D	epth:		<u>142 ft bgs</u>		Project: <u>Final (</u>	GW Remedy P	hase 2A
Drill Ri	д Туре	e: <u>Boart L</u>	<u>ongyear drill</u>	head I	Boreho	le Dia	meter:	<u>4-8 inches</u>		Location: <u>PG&E</u>	Topock, Need	lles California
Driller	Name:	Matt A	rnold		Depth	to First	Water:	<u>102.0 ft bgs</u>				
Drilling) Asst:	<u>LA / IS</u>	/ DH	9	Sampli	ng Me	thod:	<u>4 inch x 10 f</u>	ft. Core Barrel	Project Number:	30126255	
Logge	r:	<u>J. And</u>	erson / L. Mil	ando S	Sampli	ng Inte	erval:	<u>Continuous</u>		_		
Editor:		<u>Sean N</u>	/IcGrane	(Conve	ted to	Well:	× Yes	No			
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class			Soil Description		Drilling Notes	Drilling Fluid
	5	FW-02B-SS- 119.5-122 8/25/2022 16:45		Alluvium Deposits	SW-SN		(119-12 5/3); vei trace cla pebbles	2 ft) Well graded ry fine to coarse g ay, trace granules s, subround; poorl	sand with silt (SW grained, subangular s, subround; trace s ly sorted; moist to v	-SM); brown (10YR r to subround; little silt; mall to medium vet.		
122							• : (122-12	4 5 ft) Silty sand	(SM): dark gravish	brown $(2.5Y 4/2)$ and	(122.0')	(122.0')
							reddish	yellow (7.5YR 7/	6); very fine to coar	se grained, subangular	Drilling with	No drilling fluid
				Alluvium	SM		subang	ular; trace clay; p	oorly sorted; dry to	moist.	casing getting	useu
		FW-02B-SS-		Deposits	Sivi		•		2		tight. Drillers retracked approximately 70 feet of drill casing to ream	
125_		122-127.5 9/1/2022					(124.5-	126.5 ft) Well gra 2 5Y 4/2) and red	d <mark>ed san</mark> d with silt (ddish vellow (7 5YF	SW-SM); dark grayish	the hole to	
		15:30		Alluvium			coarse	grained, subangu	lar to subround; litt	le silt; trace small to	assist with advancing drill	
126_				Deposits	500-510		subang modera	te HCl reaction.	oorly sorted; dry to	ce granules, angular to moist; blocky structure;	casing.	
127	6.8			Alluvium Deposits	SM		(126.5- (2.5Y 4/ grained subang	127.5 ft) Silty san (2), and reddish y , subangular to si ular to subround;	d with gravel (SM); ellow (7.5YR 7/6); ubround; some silt; trace granules, sut	dark grayish brown very fine to very coarse little small pebbles, pangular to subround;		
128							trace cla HCl rea	ay; poorly sorted; ction.	dry to moist; block	y structure; moderate		
129 130		FW-02B-SS- 127.5-131 9/1/2022 15:35	FW-02B- VAS-127- 132 (36 ppb) 8/31/2022	Alluvium Deposits	SW		(127.5- brown (coarse to subrour subrour modera	131 ft) Well grade 2.5Y 4/2), and ree grained, subangu bund; trace small nd; trace silt; poor te HCI reaction.	ed sand with gravel ddish yellow (7.5YF ılar to subround; litt to medium pebbles rly sorted; dry to mo	(SW); dark grayish 7/6); very fine to very le granules, subangular s, subangular to jist; blocky structure;		
			11:00				3					
131							•					
		FW-02B-SS- 131-132		Alluvium	SM		(131-13 reddish	2 ft) Silty sand (S vellow (7 5YR 7/	SM); dark grayish br 6): verv fine to verv	own (2.5Y 4/2), and coarse grained		
132		9/1/2022 15:40		Deposits			subang	ular to subround;	some silt; trace sm	all pebbles,		
						$\begin{vmatrix} \times & \times & \times \\ \times & \times & \times \\ \times & \times & \times \\ \times & \times &$	dry to m (132-13	noist; blocky struct 5 ft) Sedimentary	ture; moderate HC Rock - Conglomer	l reaction. rate; brown (7.5YR 5/4);	(132.0 - 134.5') Poor recovery	(132.0 - 134.5') No drilling fluid
				Weathered			fine gra	ined to medium g	grained; highly weat	hered; soft, wet.		used
5 121				Bedrock - Conglomerate	N/A							
105						$ \times \times$						
135 136	7.2	No Sieve Samples	FW-02B- VAS-135- 137 (Sample results			X X	(135-13 5/4); fin medium drilling	9.5 ft) Sedimenta e grained to med hard; friable; we process.	ary Rock - Conglom ium grained; mode et, moisture in pock	erate; brown (7.5YR rately weathered; ets; pulverized by	(135.0 - 142.0') Rough drilling, drill rig started	(135.0 - 142.0') No drilling fluid used
		Conecieu	disregraded			$ \times \times$	(135.5-	139.5 IT) MOIST to	ary.		(135.5')	(135.5') No drillina fluid
137 			as water not likely representative of aquifer and is	Competent Bedrock - Conglomerate	N/A	× × × × × × × × × × × × × × × × × × ×					The 6-inch diamter casing stick in the formation. had	used
	1		considered								to vibe to free	
400			not water bearing								approximately	
139_			intervaľ) 9/1/2022								118 ft bgs.	
			09:22		N/A							
Abbrev	viation	s: USCS = 1	Inified Soil C	lassification	Sveter	$\frac{1}{1}$ $\frac{1}{2}$ $\frac{1}$	l feet ha	s = below are	ound surface a	nsl = ahove mean s	ea level NR =	No Recovery
N/A =	Not Ar	oplicable GM	V = groundward	ater. nph =	parts n	er hillio	on. Note	es: Solid hlue	and hollow hue	water table marks	represent denti	h to water (ft
bas)f	irst en	countered fro	m logging ar	nd depth to	water i	measu	red duri	ing the first V/	AS interval res	ectively Annarent r	artial recoverie	s can be the
result	of note	ential compac	tion of sedim	ents in the	core h	ad	.ca aul					
Loonin	5, poie	nua compac	Son or Scull		5510 0	-y.						

9	AR	CADI	S		Во	ring	Log		She	et: 8 of	8
Date S	started:	08/20/2	2022		Surface	Elevat	tion: <u>551.67 ft amsl</u>	Borin	a No .	FW_02B	Pilot
Date C	Comple	ted: <u>09/01/</u>	2022	N	lorthin	g (NAE	083): <u>2100637.96</u>		g 110	111-020	
Drilling	Co.:	Casca	de	E	Easting	(NAD8	33): <u>7614544.74</u>	Client:	PG&E		
Drilling	Metho	d: <u>Sonic</u>	Drilling	1	otal D	epth:	<u>142 ft bgs</u>	Project:	Final G	V Remedy Ph	nase 2A
Drill Ri	g Type	: <u>Boart I</u>	<u>_ongyear drill</u>	head E	Boreho	le Dian	neter: <u>4-8 inches</u>	Location:	<u>PG&E 1</u>	opock, Need	les California
Driller	Name:	Matt A	rnold	[Depth t	o First	Water: 102.0 ft bgs			•	
Drilling	Asst:	LA / IS	/ DH		Samplir	na Meth	nod: 4 inch x 10 ft. Core Barrel	Proiect N	umber: 3	30126255	
	r:	J. And	erson / L. Mil	ando S	Samplir	ng Inter	val: Continuous	,	-		
Editor:		Sean M	AcGrane		Conver	ted to N	Vell: 🛛 Yes 🗌 No				
	>			0 5							
Depth (ft)	Recover (ft)	Sieve Sample ID	Groundwater Sample ID	Geologi Formatio	USCS Code	Class	Soil Description			Drilling Notes	Drilling Fluid
 141 	7.2	No Sieve Samples Collected		Competent Bedrock - Conglomerate	N/A	<pre></pre>	(139.5-142 ft) Sedimentary Rock - Congiomerat 5/4); fine grained to medium grained; slightly w hard; friable; dry to moist; moisture in pockets; p method.	e; brown (7.5 reathered; me pulverized by	drilling		
142						X X X	End of Boring at 142 ft bas				
143 144											
149						9					
				•							
				X	•						
 153				•							
155											
156											
160											
Abbre	viations	: USCS = l	Jnified Soil C	lassification	Systen	n, ft = f	eet, bgs = below ground surface, amsl	= above r	nean sea	a level, NR = 1	No Recovery,
N/A =	Not Ap	plicable, GV	V = groundw	ater, ppb = p	parts p	er billio	n, Notes: Solid blue and hollow blue w	ater table ı	marks re	present depth	n to water (ft.
bgs.) f	irst enc	ountered fro	om logging a	nd depth to	water r	neasur	ed during the first VAS interval, respec	tively. App	arent pa	rtial recoverie	s can be the
result (of pote	ntial compac	ction of sedim	nents in the o	core ba	ag.					

Temporary Backfill Log



ARC	ADIS			Temporary	Backfill Log	Sheet: 2 of 8		
Date Started: Date Completed: Drilling Co.: Drilling Method: Driller Name: Drilling Asst: Logger:	09/01/2022 09/07/2022 Cascade Sonic Drilling Matt Arnold LA / IS / DH L. Milando / /	A. Terry		 Surface Elevation: Northing (NAD83): Easting (NAD83): Total Depth: Borehole Diameter: Depth to First Water Editor: 	551.67 ft amsl 2100637.96 7614544.74 142 ft bgs 4-8 inches 102.0 ft bgs Sean McGrane		W-02B Pilot	
ta en (t) Sample ID	Geologic Formation	USCS Code	USCS Class	Cons	truction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
21 - 21 - 22 - 23 - 23 - 23 - 23 - 23 - 23 - 24 - 25 - 26 - 27 - 28 - 29 - 30 Groundwatel Samples Collected 31 - 32 - 33 - 34 - 35 - 36 - 37 - 38 -	Fluvial Deposits Fluvial Deposits Alluvium Deposits	sw sw		(4.0 - 39.0') Cemex #2/12 (12x20) Lapis Lustre Sand		(4.0 - 39.0') 15 bags	(4.0 - 39.0') 13.5 bags (90%) Note: Backfill sand	
40	Alluvium	SW		(39.0 - 131.0') Cemex #1/20 (20x40) Lapis Lustre Sand		(39.0 - 131.0') 36.1 bags	(39.0 - 131.0') 42 bags (116%) Note: Backfill sand	
Abbreviations: U N/A = Not Applica	SCS = Unified able, GW = gr	Soil C	lassificati ater, ppb	on System, ft = feet, bg = parts per billion, No	gs = below ground surface, a tes: Solid blue and hollow blu	msl = above mean le water table marks	sea level, NR = No Recovery, s represent depth to water (ft.	
bgs.) first encoun during overdrilling	tered from log of the pilot bo	ging ar prehole	nd depth	to water measured du	ring the first VAS interval, res	pectively. Granular l	backfill material was removed	

9	ARC	ADIS			Temporary I	Backfill Log	Sheet: 3 of 8	
Date S	Started:	09/01/2022			_ Surface Elevation:	<u>551.67 ft amsl</u>		W-02R Pilot
Date C	Completed:	09/07/2022			_ Northing (NAD83):	2100637.96		
Drilling	Co.:	Cascade			Easting (NAD83):	7614544.74	Client: PG&I	=
Drilling	Method:	Sonic Drilling	1		Total Depth:	142 ft bgs	Project: Final	GW Remedy Phase 2A
Driller	, Name:	Matt Arnold			Borehole Diameter:	4-8 inches	Location: PG&I	E Topock, Needles California
Drilling	Asst:	LA / IS / DH			Depth to First Water:			•
	, er:	L. Milando /	A. Terry	/	Editor:	Sean McGrane	Project Number	: <u>30126255</u>
		in i			Const	ruction Details		
Depth (ft)	Groundwate Sample ID	Geolog Formati	USCS Code	USCS Class	I	· · · · · · ·	Calculated Material Volumes	Note: percentages are the actual volume vs the calculated volume
	No Groundwater Samples Collected	Alluvium Deposits Alluvium Deposits	SW-SM SW-SM SW-SM SW SW		(39.0 - 131.0') Cemex #1/20 (20x40) Lapis Lustre Sand		(39.0 - 131.0') 36.1 bags	(39.0 - 131.0') 42 bags (116%) Note: Backfill sand
	1							
Abbre	viations: US	SCS = Unified	Soil C	lassificat	on System, ft = feet, ba	s = below ground surface, an	nsl = above mean	sea level, NR = No Recoverv.
₹ N/A =	Not Applica	ble, GW = gr	oundwa	ater, ppb	= parts per billion, Not	es: Solid blue and hollow blue	water table marks	s represent depth to water (ft.
bgs.) f	irst encount	ered from loc	ging ar	nd depth	to water measured dur	ing the first VAS interval, resp	ectively. Granular I	backfill material was removed
durina	overdrillina	of the pilot be	orehole					
3	3							







9	ARC	ADIS			Temporary I	Backfill Log	Sheet: 7 of 8		
Date S Date C Drilling Drilling Driller	Started: Completed: g Co.: g Method: Name:	09/01/2022 09/07/2022 Cascade Sonic Drilling Matt Arnold	g		 Surface Elevation: Northing (NAD83): Easting (NAD83): Total Depth: Borehole Diameter: 	551.67 ft amsl 2100637.96 7614544.74 142 ft bgs 4-8 inches	Client: PG&I Project: Final Location: PG&I	W-02B Pilot E GW Remedy Phase 2A E Topock, Needles California	
Drilling	g Asst: er:	LA / IS / DH L. Milando /	A. Terry	/	_ Depth to First Water: Editor:	<u>102.0 ft bgs</u> Sean McGrane	Proiect Number	: 30126255	
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS Code	USCS Class	Const	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
121	-	Alluvium Deposits	SW-SM						
123_ 123_ 123_ 124_	-	Alluvium Deposits	SM				2		
	-	Alluvium Deposits	SW-SM		(39.0 - 131.0') Cemex #1/20 (20x40) Lapis Lustre Sand		(39.0 - 131.0') 36.1 bags	(39.0 - 131.0') 42 bags (116%) Note: Backfill sand	
		Alluvium Deposits	SM						
128_ 128_ 129_ 129_ 129_ 130_ 130_ 121	- FW-02B- VAS-127-132 - (36 ppb) 8/31/2022 - 11:00	Alluvium Deposits	SW						
	-	Alluvium Deposits	SM						
		Weathered Bedrock - Conglomerat	N/A e	× × × × × × × × × × × × × × × × × × ×					
	FW-02B- VAS-135-137 (Sample results disregraded as water not likely representative of aquifer and	Competent Bedrock -	N/A	× × × × × × × × × × × × × × × × × × ×	(131.0 - 142.0') Cemex #8 (4x16) Mesh Lapis Lustre Sand	 	(131.0 - 142.0') 2.9 bags	(131.0 - 142.0') 3.0 bags (103%) Note: Indicator sand	
	is considered not water bearing interval) 9/1/2022 09:22	Conglomerat	e	× × × × × × × × × × × × × × × × × × ×					
140 Abbre	viations [.] 119	 CS = Unified	N/A	$ \stackrel{\scriptstyle \times}{\times} \stackrel{\scriptstyle \times}{\times} \stackrel{\scriptstyle \times}{\times} $	on System ft = feet bo	s = below around surface or	msl = ahove mean	sea level NR = No Recovery	
N/A =	Not Applica	ble, $GW = gi$	roundwa	ater, ppb	= parts per billion, Not	es: Solid blue and hollow blu	e water table marks	s represent depth to water (ft.	
bgs.) f	irst encount	ered from log	gging ar	nd depth	to water measured dur	ing the first VAS interval, resp	pectively. Granular l	backfill material was removed	
during	overdrilling	of the pilot b	orehole						

	9	ARC/	٩DIS			Temporary	Backfill Log		S	heet: 8 of 8
	Date S	tarted:	09/01/2022			_ Surface Elevation:	551.67 ft amsl	- Well	ID: F	W-02B Pilot
	Date C Drilling	ompletea:	<u>09/07/2022</u> Cascade			Νοπηίης (NAD83): Fasting (NAD83):	2100637.96 7614544 74	 Client:	PG&F	=
	Drilling	Method:	Sonic Drilling			_ Total Depth:	142 ft bgs	Project:	Final	- GW Remedy Phase 2A
	Driller I	Name:	Matt Arnold			Borehole Diameter:	4-8 inches	Location:	PG&E	E Topock, Needles California
2/22	Drilling	Asst:	<u>LA / IS / DH</u>			_ Depth to First Water	: <u>102.0 ft bgs</u>			
T 10/12	Loggei	r:	L. Milando /	A. Terry	/ 	Editor:	Sean McGrane	Project N	lumber	: <u>30126255</u>
TA TEMPLATE.GD	Depth (ft)	Groundwate Sample ID	L Geologic Formation	USCS Code	USCS Class	Const	ruction Details	Calculate Material Vol	ed umes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
NT PROJECT.GPJ GINT DAT	 141 142		Competent Bedrock - Conglomerati	N/A	× × × × × × × × × × × × × × × × × × ×	(131.0 - 142.0') Cemex #8 (4x16) Mesh Lapis Lustre Sand		(131.0 - 14 2.9 bag	2.0') s	(131.0 - 142.0') 3.0 bags (103%) Note: Indicator sand
IT FILES\38 2022-10-12\GI	 143							2		
HASE 2 GI	144 									
SV00 NEW F	145									
02 GINT FILE	146									
IENTATION(147									
IELD DOCUN	 148									
ILLING\06_FI										
PHASE II DR	 150						•			
OCUMENTS/										
SHARED DO										
UCTION	152				X					
OCKCONSTR										
MSVPGETOP	 154									
WROOT/TE/										
@SSL\DAVW										
POINT.COM	 157									
365.SHAREF	 158									
\\ARCADISC										
NMENT LOG										
3ANDON	Abbre	/iations: US	SCS = Unified	I Soil Cl	assificat	ion System, ft = feet, bg	gs = below ground surface, a	msl = above	mean s	sea level, NR = No Recovery,
TEMP AL	N/A =	Not Applica	ble, GW = gr	oundwa	ater, ppb	= parts per billion, Not	tes: Solid blue and hollow blu	e water table	marks	represent depth to water (ft.
POCK .	pgs.) fi durina	rst encount	of the pilot b	iging an orehole	ia depth	to water measured dur	ing the first VAS interval, res	pectively. Gra	anular k	backtill material was removed

Drilling Log



9	ARC	4[DIS		Drilling Log			Shee	et: 2	of 8
Date S	Started:	10/	12/202	22	Surface Elevation:	551.67 ft amsl	Borin		FW/	_02B
Date C	Completed:	10/2	22/202	22	Northing (NAD83):	2100637.96	BOLILI	y No		-020
Drilling	Co.:	Cas	scade		Easting (NAD83):	7614544.74	Client:	PG&E		
Drilling	Method:	Dua	al Rota	rv	Total Depth:	142.1 ft bas	Project:	Final G	W Rer	medv Phase 2A
Drill Ri	ia Type:	For	emost	DR 24H	ID Conductor Casing Diameter:	24 inches	Location.	PG&F	Торос	k. Needles
Driller	Name [.]		h Sald	ana	Drill Casing Diameter	22 inches	Loodion	Californ	ia	
Drilling	Acet:	1 0	:////			22" & 20" Tricopo	Droject Nu	umbor: 3	01261	255
	y Assi. Juchar	<u>L.O</u>	<u>. / A.A</u>	<u>. / D.A.</u> mon	Dim Bit.	02.0 ft bgo	појести	<u>1110er.</u>	01202	
			n Dod	nor	Deptilito First Water.					
Ng Ge			II Neu							
Depth	Drilling Run and Averag	(ft) e	USCS	USCS	Description	Drilling notes and observation	ons confirmin	g presence	of	Drilling Fluid
(11)	Penetration F	late	Code		full geologic descriptions)			uungs		
	(0.0 - 19.6) 1.28 mins/ft				.(17-28.5 ft) Well graded sand with gravel (SW); brown (10YR 5/3).					
20					(17.5-19.5 ft) Increase in the percentage of	(19.6 - 39.6') Normal drilling	19-31' bgs, ro	ugh drilling	1	(19.6 - 39.6')
					coarser grained sediments.	31-39' bgs approximately.				450 gallons of water used; 450 gallons of
	-									water recovered; 0
21										galions of water lost
	-									
22										
23				۶.S.Ş						
	-		S///							
24			300		(24 ft) Increase in the percentage of coarser					
	-				grained sediment and granules with depth.					
25				i a Di	Lower percentage of silt percentage with depth.					
						(25.0') Observed trace amount	nts of Cemex	#2/12 (12x	30)	
	-						ungs.			
26										
27										
28				P.a. D.						
				ૢ૽૽ઌ૽૽૽ૡ						
	(19.6 - 39.6)				(28.5-31 ft) Well graded sand with gravel (SW);					
29	2.00 mins/ft				light gray (10YR 7/2).					
30			SW							
31										
	1				(31-37 ft) Well graded sand with gravel (SW);					
	1				ngn yray (101 A 1/2).					
32	1									
i										
33										
34			C 111	ڹٝؖڿ؞ؘ۫ڰؘ						
			SW							
35	-					(35.0') Observed trace amount	nts of Cemer	#2/12 (12*	30)	
	-					Lapis Lustre Sand in drill cutt	tings.		,	
36										
	1									
<u>3/</u>	1				(37-39.5 ft) Well graded sand with silt (SW-SM)	;				
			SW-SM		light gray (10YR 7/2).					
38	<u> </u>									014
Abbre	viations: US	SUS		iea Soil	Classification System, ft = feet, bgs = l	below ground surface, ams	i = above n	nean sea	i ievel,	
ground	awater, Not	es: S	solid bl	ue wate	r table mark represents depth to water	(π. bgs.) depth to water me	easured du	iring colle	ection	of the first VAS
Interva	al in the pilot	bor	ehole.							

9	ARC/	DIS		Drilling Log			Sheet:	3 of 8
Date S	Started:	10/12/202	22	Surface Elevation:	551.67 ft amsl	Boring		1028
Date C	Completed:	10/22/202	22	Northing (NAD83):	2100637.96	DOLIN	J NO <u>FV</u>	<u>-02D</u>
Drilling		Cascade		Easting (NAD83)	7614544 74	Client [.]	PG&F	
Drilling	Method:	Dual Rota	arv	Total Depth:	142 1 ft bas	Project [.]	Final GW Re	emedy Phase 2A
Drill Ri	a Type	Foremost			21 inches	Location	PG&F Topo	ck Needles
Drillor	Name:	loch Sald	lana	Drill Casing Diameter:	22 inches	Looadon.	California	
Drilling					22" 8 20" Tricopo	Droject Nu	mbor: 20126	2055
		L.G. / A.A Arnold I.o	. / D.A.	DIII DII.		FIOJECTING	$\frac{50120}{2}$	1255
		Allion Dod	nor	Depth to First Water.				
Ng Ge								
Depth	Drilling Run (1 and Average	t) USCS	USCS Class	Description (See Pilot boring log for	Drilling notes and observati	ons confirming aterial in drill c	g presence of uttings	Drilling Fluid
()	Penetration Ra	ite		full geologic descriptions)			5	
				(37-39.5 ft) Well graded sand with silt (SW-SM)	;			
	(19.6 - 39.6)	SW-SM						
39	2.00 mins/ft							
		┨ ╞────		(39.5-46.5 ft) Well graded sand with gravel	(20.650.6!) Llord drilling 20	52' normal d	rilling E2 E0' has	(20.6 50.6!)
40				(SW); light brownish gray (10YR 6/2), and light	approximately.	-53, normai di	rilling 53-59 bgs	(39.6 - 59.6) 750 gallons of water
				gray (10 PR 7/1).				used; 600 gallons of water recovered: 150
41			ڹٞ؋۫ؠ۫ڹڹٛ؋					gallons of water lost
4				•				
≝42								
43		SW						
44								
N DE								
45			Ď		(45.0') Observed trace amou	nts of Cemex	#1/20 (20x40)	-
					Lapis Lustre Sand in drill cut	tings.		
46								
					_			
47_		SW-SM		(46.5-47.5 ft) well graged sand with slit (SW-SM); light gray (10YR 7/1).				
48				(47.5-49 ft) Well graded sand with silt and grave (SW-SM): pale grange vellow (10VR 8/2) and	el			
+0	(39.6 - 59.6)	SW-SM		light gray (10YR 7/1).				
	2.95 mins/ft							
49				(49-50.5 ft) Well graded sand with silt and grave				
				(SW-SM); pale orange yellow (10YR 8/2), and				
50		SW-SM		(49-50.5 ft) Decrease in silt to approximately 1%				
				silt, and increase the amount moderate caliche cementation.				
51_				(50.5-57 ft) Well graded sand with gravel (SW);				
				lignt gray (10YR 7/2).				
	1							
≦ ⊃∠				•				
53								
54		SW						
			ٳ۫؞ؚڹٞڲ <u></u> ۥ؋					
	1							
55					(55.0') Observed trace amou	nts of Cemex	#1/20 (20x40)	
					Lapis Lustre Sand in drill cut	tings.		
56								
			[A D					
57								
Abbre	viations: US	CS = Unil	fied Soil	Classification System, ft = feet, bgs = b	pelow ground surface, ams	sl = above n	nean sea leve	l, GW =
ground	dwater, Note	s: Solid b	lue wate	r table mark represents depth to water	(ft. bgs.) depth to water m	easured du	ring collectior	n of the first VAS
interva	I in the pilot	borehole.						

9	ARCA	DIS		Drilling Log				She	et: 4	of 8
Date S	Started: <u>1</u>	0/12/202	22	Surface Elevation:	<u>551.67 f</u>	ft amsl	Borine	n No ·	FW	_02B
Date C	Completed: <u>1</u>	0/22/202	22	Northing (NAD83):	2100637	7.96	Douni	y NO		-020
Drilling	Co.:	Cascade		Easting (NAD83):	7614544	4.74	Client:	PG&E		
Drilling	Method: <u>[</u>	Dual Rota	ary	Total Depth:	<u>142.1 ft</u>	bgs	Project:	<u>Final G</u>	W Re	medy Phase 2A
Drill Ri	g Type: F	oremost	DR 24	HD Conductor Casing Diameter:	24 inche	es	Location:	PG&E	Торос	k, Needles
Driller	Name: <u>J</u>	osh Sald	lana	Drill Casing Diameter:	22 inche	es		Califorr	nia	
Drilling	Asst: L	G. / A.A	. / D.A.	Drill Bit:	23" & 20)" Tricone	Project Nu	umber: 3	301262	255
Tool-P	usher: A	Arnold La	mon	Depth to First Water:	92.0 ft b	ds	. ,	-		
Rig Ge	eologist: E	Ellen Red	ner	Converted to Well:	× Yes	 No				
				Description						
Depth (ft)	Drilling Run (ft and Average Penetration Rat) USCS code	USCS Class	(See Pilot boring log for full geologic descriptions)	Drillir	ng notes and observati temporary backfill ma	ons confirming aterial in drill c	g presence uttings	e of	Drilling Fluid
		SW		(57-57.5 ft) Well graded sand with gravel (SW);						
 59				(57.5-62.5 ft) Well graded sand with silt and	11					
0	(39.6 - 59.6)			gravel (SW-SM); brown (10YR 5/3).						
<u> </u>	2.95 mins/ft			>						
59				>						
					(70.0					
60		SW-SM		(60.62.5.ft) Decrease in fine content	(59.6 -	 /9.1') Normal drilling, hard drilling but appear 	driller states	that it has a little sk	not ower	(59.6 - 79.1') 1200 gallons of water
i –					usual.	g zat upped		,		used; 1100 gallons of water recovered: 100
61				>	(59.6 -	- 60.7') The 24-inch dia	ameter casing	was adva	nced	gallons of water lost
				> >	by pus	shing the casing withou	ut advancing o	Irill string a	and	
62				> >	the cu	ttings below 59.6 ft we	ere removed b	y drilling w	ith the	
02				- 		n diamiter drin casing.				
				(62.5-65 ft) Well graded sand with gravel (SW);						
63				light brownish gray (10YR 6/2).						
		SW/								
64		500								
				*						
65					(65.0')	Observed trace amou	nts of Comov	#1/20 (20~	(40)	
			\backslash		Lapis I	Lustre Sand in drill cut	tings.	#1/20 (20)	-0)	
66		NR	$ \rangle$							
67										
		014/		(67-68 ft) Well graded sand with gravel (SW);						
68	(59.6 - 79.1)	500		, , , , , , , , , , , , , , , , , , , ,						
00	0.00 mins/it			(68-71 ft) Well graded sand with gravel (SW);	11					
			8.0.8	ןוויטווג yiay (ויטדיד //∠). א						
<u>_</u> 69_				>						
		SW		2 2 8						
70				• •						
				> >						
71				(71-74 5 ft) Silty sand (SM): light gray (10VP)						
				7/2).						
72										
				(//2-/4.5 ft) Decrease in silt, granules and pebbles, increase in sand.						
73		SM		}						
				4						
				(74.5-77.5 ft) Well graded sand with gravel						
75		C/W	8.00	(SW); yellowish brown (10YR 5/4).	(75.0')	Observed trace amou	nts of Cemex	#1/20 (20x	40)	
		300		- 	Lapis	Lustre Sand in drill cut	tings.	1	<i>`</i>	
						······	11			014
Abbrev	viations: USC	S = Unif	ned Soil	Classification System, tt = teet, bgs = t	elow gro	ound surface, ams	a = above n	iean sea	a level,	
ground	Jwater, Notes	5. Solid bl	iue wate	er lable mark represents depth to water	(π. bgs.)	ueptn to water m	easured du	ring colle	ection	
interva	ii in me pilot b	orenole.								

9	ARC/	ADIS		Drilling Log					Shee	et: 5	5 of 8
Date S	Started:	10/12/202	22	Surface Elevation:	<u>551</u>	.67 f	amsl	Boring	No ·	FW	-02B
Date C	Completed:	10/22/202	22	Northing (NAD83):	<u>210</u>	0637	.96	Donné	j 110		
Drilling	J Co.:	Cascade		Easting (NAD83):	<u>761</u>	4544	.74	Client:	PG&E		
Drilling	Method:	Dual Rota	iry	Total Depth:	<u>142</u>	2.1 ft I	ogs	Project:	Final G	W Re	medy Phase 2A
Drill Ri	g Type:	<u>Foremost</u>	DR 24H	<u>HD</u> Conductor Casing Diameter:	<u>24 i</u>	nche	S	Location:	PG&E T	Горос	k, Needles
Driller	Name:	Josh Sald	ana	Drill Casing Diameter:	<u>22 i</u>	nche	S		<u>Californ</u>	ia	
Drilling	Asst:	<u>L.G. / A.A</u>	. / D.A.	Drill Bit:	<u>23"</u>	& 20	" Tricone	Project Nu	mber: 3	0126	255
Tool-P	Pusher:	Arnold La	mon	Depth to First Water:	92.0) ft b	<u>j</u> s				
Rig Ge	eologist:	<u>Ellen Red</u>	ner	Converted to Well:	X	Yes	No				
	Drilling Run (ft) uppe		Description		D. 111		c			
Depth (ft)	and Average Penetration R	ate Code	Class	(See Pilot boring log for full geologic descriptions)		Drillin	g notes and observati temporary backfill ma	ons confirming aterial in drill c	g presence uttings	of	Drilling Fluid
				(74.5-77.5 ft) Well graded sand with gravel (SW); yellowish brown (10YR 5/4).							
77		SW									
	(50,6, 70, 1)		Ĩ@Ŭ	(77 ft) Decrease in small to large pebbles,							
	5.38 mins/ft			(77.5-83 ft) Well graded sand with silt and grave	<u>,</u>						
/8				(SW-SM); yellowish brown (10YR 5/4).							
79		_				70.4					(70.4 00.41)
						79.1 -	99.1) Normal drilling				(79.1 - 99.1) 1500 gallons of water
80								•			used; 1800 gallons of water recovered: 300
		SW-SM									gallons of water gained
81											
82											
02											
83				(83-92.5 ft) Well graded sand (SW); light gray	+						
				(10YR 7/2).							
84											
85									14/00 (00	(0)	
						_apis L	ustre Sand in drill cut	tings.	+1/20 (20X4	40)	
86											
87	(70.1 - 00.1)										
	4.35 mins/ft										
		SW									
88											
89											
<u>90 </u>											
91											
92											
	1			(92.5-99 ft) Well graded sand with silt and grave	1						
93				(300-300), light gray (101K //2).							
		SW-SM									
<u>94 _</u>											
<u> </u>											
	<u> </u>				<u> </u>						014/
Abbrev	viations: US	Unif	iea Soil	Classification System, tt = feet, bgs = l		<i>N</i> gro	und surface, ams	i = above n	iean sea	i ievel,	GVV =
ground	uwater, Note	s: Solid bl	ue wate	er table mark represents depth to water	(π.	ugs.)	uepin to water m	easured du	ring colle	ection	oi the first VAS
interva	ii in ine pilot	vorenole.									

9	ARC	٩C	DIS		Drilling Log				Sheet:	6 of 8
Date S	Started:	10/1	12/202	2	Surface Elevation:	<u>551.6</u>	7 ft amsl	Borin	No · FM	/_02B
Date C	Completed:	10/2	22/202	2	Northing (NAD83):	21006	37.96	DOLIN	g NO <u>I V</u>	<u>-02D</u>
Drilling	ı Co.:	Cas	cade		Easting (NAD83):	76145	544.74	Client:	PG&E	
Drilling	, Method:	Dua	l Rota	rv	 Total Depth:	142.1	ft bas	Project:	Final GW Re	emedy Phase 2A
Drill Ri	a Type:	Fore	emost	DR 24H	ID Conductor Casing Diameter	24 inc	hes	Location.	PG&F Topo	ck. Needles
Driller	Name [.]	lost	h Sald	ana	Drill Casing Diameter:	22 inc	hes	Loouton	California	
Drilling	Acet		/ Δ Δ		Drill Bit:	22" 8	20" Tricone	Project Nu	umber: 30126	255
	ushar	Δrp	<u>. / A.A</u>	<u>. / D.A.</u> mon	Dhirbit. Denth to First Water:	02 0 fi		Појссти	<u></u>	200
Rig G	ologist [.]		n Red	ner	Converted to Well:					
			i i i i i i i i i i i i i i i i i i i							
Depth (ft)	Drilling Run (and Average Penetration R	ft) e ate	USCS Code	USCS Class	Description (See Pilot boring log for full geologic descriptions)	Dr	illing notes and observation temporary backfill ma	ons confirmin aterial in drill c	g presence of cuttings	Drilling Fluid
					(92.5-99 ft) Well graded sand with silt and grave	I (95.	0') Observed trace amour	nts of Cemex	#1/20 (20x40)	
								ings.		
90										
97	(79.1 - 99.1) 4 35 mins/ft	S	SW-SM							
									*	
98										
- L										
99										
		1 [(99-104 ft) Well graded sand with gravel (SW); light gray (10YR 7/2), some brown (10YR 5/3)	(99.	1 - 119.1') Normal drilling	approximate	y 99-111' bgs,	(99.1 - 119.1')
100						app	roximately 113-119' bgs.	1-113 bgs, no	ormai drilling	used; 1300 gallons of water
100										water recovered; 0
										galione of water loot
101										
			SW							
102					(102) Increase in the percentage of metadiorite					
					pebbles.					
103										
				૾૽ૼૡ૽૾૾૽૽૽૽૽૽						
104										
					(104-108 ft) Well graded sand with gravel (SW); brown (10YR 5/3).					
105										
						(10	5.0') Observed trace amou	unts of Ceme	x #1/20 (20x40)	
106	1		_							
	(00.4 . 440.5		SW		~					
	(99.1 - 119.1) 4.45 mins/ft									
107										
108					(108-112 ft) Well graded sand with silt and					
					gravel (SW-SM); brown (10YR 5/3), some light					
109										
110			SW-SM							
111										
	1									
					(112-115 ft) Silty sand (SM); brown (10YR 5/3).	11				
113			SM							
<u>-</u>										
114							manual conference	11		
Abbre	viations: US	SUS	= Unif	iea Soil	Classification System, It = feet, bgs = b		pround surface, ams	i = above n	nean sea leve	I, GVV =
ground	awater, Note	es: S		ue wate	er table mark represents depth to water	(π. bg	s.) depth to water me	easured du	iring collectior	n of the first VAS
interva	u in the pilot	pore	enole.							

9	ARC/	DIS	5	Drilling Log		Sheet:	7 of 8
Date S	Started:	10/12/20:	22	Surface Elevation:	551.67 ft amsl	- Boring No · FW	/_02B
Date (Completed:	10/22/20:	22	Northing (NAD83):	2100637.96		<u>-02D</u>
Drilling	g Co.:	Cascade		Easting (NAD83):	7614544.74	Client: <u>PG&E</u>	
Drilling	Method:	Dual Rota	ary	Total Depth:	<u>142.1 ft bgs</u>	Project: Final GW Re	emedy Phase 2A
Drill R	ig Type: I	oremos	t DR 241	HD Conductor Casing Diameter:	24 inches	Location: PG&E Topo	ck, Needles
Driller	Name:	Josh Sak	dana	Drill Casing Diameter:	22 inches	California	
Drilling	a Asst: I	G. / A.A	. / D.A.	Drill Bit:	23" & 20" Tricone	Project Number: 30126	255
Tool-F	Pusher:	Arnold La	amon	Depth to First Water:	92.0 ft bas		
Rig G	eologist:	Ellen Rec	Iner	Converted to Well:	X Yes No		
				Description			
Depth (ft)	Drilling Run (f and Average Penetration Ra	t) te	USCS Class	(See Pilot boring log for full geologic descriptions)	Drilling notes and observ temporary backfill	vations confirming presence of material in drill cuttings	Drilling Fluid
115	-	SM		(112-115 ft) Silty sand (SM); brown (10YR 5/3).			
			**************************************	(115-119 ft) Well graded sand (SW); light	(115.0') Observed trace a	mounts of Cemex #1/20 (20x40)	-
(- -				5/3).	Lapis Lustre Sand in drill	cuttings.	
116				•			
	(99.1 - 119.1) 4.45 mins/ft			•			
117_	-	SW		2 2			
118_	-			• •			
	-			•			
119_	-		**********				
				(119-122 ft) Well graded sand with silt (SW-SM) brown (10YR 5/3).	[;] (119.1 - 130.0') Normal dr	illing	(119.1 - 130.0') 900 gallons of water
120							used; 1200 gallons of
							gallons of water gained
101	1	SW-SN					
<u></u> IZI							
122_	-			(122-124.5 ft) Silty sand (SM); dark grayish	-		
	-			brown (2.5Y 4/2), and reddish yellow (7.5YR			
123_	-	CM SM					
	-	311					
124_	-						
	(119.1 - 130.0)			(124 E 126 E ft) Wall graded cand with ailt	_		
125_	6.61 mins/ft			(SW-SM); dark gravish brown (2.5Y 4/2), and	(105.01) 01		-
		SW-SM		reddish yellow (7.5YR 7/6).	Lapis Lustre Sand in drill	mounts of Cemex #1/20 (20x40) cuttings.	
126				•			
				·			
127		614		(126.5-127.5 ft) Silty sand with gravel (SM); dark gravish brown (2,5Y 4/2), and reddish vellow			
				(7.5YR 7/6).			
128	1			(127.5-131 ft) Well graded sand with gravel	h		
	1			yellow (7.5YR 7/6).	"		
	1			·			
129_	1	sw					
	1						
130		- 1		•	(130.0 - 140.0') Normal dr	illing	(130.0 - 140.0')
	-					2	1000 gallons of water
131_	-			(131-132 ft) Silty cand (SM): dark gravish brown			water recovered; 0
	(130.0 - 140.0)	SM		(2.5Y 4/2), and reddish yellow (7.5YR 7/6).			gallons of water lost
132	5.40 mins/ft				41		
		Ν/Δ		{(132-135 tt) Sedimentary Rock - Conglomerate; {brown (7.5YR 5/4).			
133			$\hat{\mathbf{x}} \times \hat{\mathbf{x}}$				
Abbre	viations: US	CS = Uni	fied Soil	Classification System, ft = feet, bgs = b	elow ground surface, ar	msl = above mean sea leve	I, GW =
groun	dwater, Note	s: Solid b	lue wate	er table mark represents depth to water	(ft. bgs.) depth to water	measured during collection	n of the first VAS
interva	al in the pilot l	oorehole.					

C	ARCADIS Drilling Log Sheet: 8 of 8												
Date	Started:	10/12/20	22	Surface Elevation:	551.67	ft amsl	Borin	a No ·	FW_02	2B			
Date	Completed:	10/22/20	22	Northing (NAD83):	21006	37.96	Donni	y 110	1 11-02				
Drilli	ng Co.:	Cascade	1	Easting (NAD83):	761454	14.74	Client:	PG&E					
Drilli	ng Method:	Dual Rot	ary	Total Depth:	142.11	t bgs	Project:	Final GV	N Reme	dy Phase 2A			
Drill	Rig Type:	Foremos	t DR 24	HD Conductor Casing Diameter:	<u>24 incł</u>	ies	Location:	<u>PG&E T</u>	<u>Fopock, N</u>	Veedles			
Drille	r Name:	Josh Sal	dana	Drill Casing Diameter:	22 inch	les		<u>Californi</u>	ia				
Drilli	ng Asst:	<u>L.G. / A.</u>	4. / D.A.	Drill Bit:	<u>23" & 2</u>	0" Tricone	Project Nu	umber: <u>3</u>	0126255				
Tool	Pusher:	Arnold La	amon	Depth to First Water:	92.0 ft	bgs							
Rig	Geologist:	Ellen Red	dner	Converted to Well:	× Yes	No							
_	Drilling Run	(ft)		Description									
Dept (ft)	and Averag Penetration R	e Code	Class	(See Pilot boring log for full geologic descriptions)	Dril	ling notes and observation temporary backfill ma	ons confirmin aterial in drill c	g presence cuttings	of	Drilling Fluid			
			× × ×	(132-135 ft) Sedimentary Rock - Conglomerate;									
-	-			brown (7.5YR 5/4).									
134	_	N/A											
_	_		× × × ×										
135	_		× × × × × ×	2									
				(135-139.5 ft) Sedimentary Rock - Conglomerate; brown (7.5YR 5/4).	(135 Lapis	.0') Observed trace amounts Lustre Sand in drill cutt	unts of Ceme: ings.	68 Mesh (8	x16)				
134	1			(135.5-139.5 ft) Moist to dry.									
	(130.0 - 140.0	N											
-	5.40 mins/ft	"	$\begin{array}{c} \times \times \times \\ \times \times \end{array}$	2									
13/	-	N/A	$\begin{array}{c} \times \times \times \\ \times \times \times \end{array}$										
_	-												
138	_		$\hat{\mathbf{x}} \times \hat{\mathbf{x}}$										
_	-		$\begin{array}{c} \times \times \times \\ \times \times \end{array}$										
_139	_												
-			$\hat{\mathbf{x}} \hat{\mathbf{x}} \hat{\mathbf{x}}$										
140				(139.5-142 ft) Sedimentary Rock - Conglomerate; brown (7.5YR 5/4).									
					(140 diam	0 - 142.1') After circulat	ing to flush ca	asing, the 2	2-inch	(140.0 - 142.1') drilling fluid used			
14	1	N/A			with	out advancing drill string	and the cutti	ngs below 1	140 ft	o anning naid used			
			$\begin{array}{c} \times \times \times \\ \times \times \end{array}$		were	not removed.							
-	-												
142	_		ÎX X X	End of Boring at 142.06 ft bgs.									
-	-												
143	-												
-	-												
144	-												
- -	-												
145	4												
_	4												
146													
147	1												
	1												
-	1												
148	-												
-	-												
149	-												
-	-												
150	4												
_	_												
151													
2													
151	1												
	eviations: US	SCS = Un	ified Soi	Classification System, ft = feet, bas = b	elow a	ound surface ams	l = above n	nean sea	level, GV	V =			
				, , J=		ound oundoo, unio							
grou	ndwater, Not	es: Solid b	olue wate	er table mark represents depth to water	(ft. bas	.) depth to water me	easured du	iring colle	ection of t	he first VAS			

Well Construction Log



Sheet: 2 of 8											
Date S	Started:	10/23/2022			_Surface Elevation:	551.67 ft amsl		/_02B			
Date C	ate Completed: 11/05/2022				_Shallow Well Elevation:	N/A					
Drilling	illing Co.: Cascade				Deep Well Elevation:	N/A	Client: PG&E				
Drilling	Drilling Method: Dual Rotary				Northing (NAD83):	2100637.96	Project: Final	GW Remedy Phase 2A			
Driller	Driller Name: Josh Saldana				Easting (NAD83):	7614544.74	Location: PG&E	Topock. Needles California			
Drilling	Drilling Asst: I.G. / A.A. / D.A.				Borehole Diameter:	22-24 inches					
logger: Fllen Redner				Static Water Level:	See Log for Depths	Project Number	r: 30126255				
Editor: Sean McGrane				Development End Date:	11/19/2022						
Total [Total Depth: 142.06 ft bos				Well Completion	Flush Stick-up X	— To Be Completed	in Well Vault			
i otai E					_ troir completion.						
Depth (ft)	Groundwat Sample II	Geologic Formatio	USCS Code	USCS Class			Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume			
					(0.0 - 95.0')						
21					SDR17 PVC Casing						
	1										
<u> </u>											
24		Fluvial	SW								
		Deposits	500	2							
225	-										
	-										
26	-										
	-										
27											
				8. 3.							
28											
20				0							
	No	Fluvial	SW								
<u> </u>	Samples	Deposits			(20.7 - 61.7') Portland Cement		(20.7 - 61.7')	(20.7 - 61.7') 660 gallons (96%)			
	Collected				Type I, II and IV with		687.3 gallons	Note: Grout seal first lift			
31	-		•		up to 6% Quik-Gel.						
<u> </u>				8.1							
32											
∦33											
34		Alluvium	SW	2000							
		Deposits									
35											
36											
			1								
	-										
38	-	Alluvium	SW-SM								
		Deposits	000-010								
39											
<u> </u>		Allunduren									
40			SW								
Abbre	viations: U	SCS = Unifie	d Soil C	assifica	ion System, ft = feet, bgs	= below ground surface, an	nsl = above mean	sea level, SS = Stainless			
Steal,	NR = No F	ecovery, N/A	= Not A	pplicab	e, GW = groundwater, pp	b = parts per billion, Notes:	Solid blue water ta	able marks represent depth to			
water (ft. bgs.) measured post development.											
5											

ARCADIS Well Construction Log Sheet: 3 of 8											
Date S	Started:	10/23/2022			_Surface Elevation:	551.67 ft amsl		1-02B			
Date C	ate Completed: 11/05/2022			_Shallow Well Elevation:	N/A						
Drilling	ling Co.: Cascade			_Deep Well Elevation:	N/A	 Client: <u>PG&E</u>					
Drilling	Drilling Method: Dual Rotary				Northing (NAD83):	2100637.96	Project: Final (GW Remedy Phase 2A			
Driller	, Name:	Josh Saldan	а		Easting (NAD83):	7614544.74	Location: PG&E	Topock. Needles California			
Drilling	Drilling Asst: $I G / A A / D A$				Borehole Diameter:	22-24 inches					
	Longer Ellen Redner				Static Water Level:	See Log for Depths	Project Number	: 30126255			
Editor		Sean McGra	ne		Development End Date:	11/19/2022					
Total D	Fotal Depth: 142.06 ft bos				Well Completion:Flush Stick-u		— To Be Completed	in Well Vault			
					Construe	ction Details					
Depth (ft)	Groundwat Sample II	Formatin	USCS Code	USCS Class			Calculated Material Volumes	Naterial Volumes installed Note: percentages are the actual volume vs the calculated volume			
		Deposits			(0.0 - 95.0') – (0.0 - 95.0') 12" SHUR-GRIP						
41					SDR17 PVC Casing						
2				۵. پېښې							
42											
43_		Alluvium	sw								
		Deposits									
44											
45											
46											
			_								
47		Alluvium	SW-SM								
		Deposits									
48	1										
		Alluvium	SW-SM								
<u> </u>		Deposits									
49											
	No	Alluvium	SW-SM		(20.7 - 61.7')		(00.7.01.7)	(00.7.04.7)) 000 - 11 - (00%)			
50	Samples	Deposits			Type I II and IV with		(20.7 - 61.7) 687.3 gallons	Note: Grout seal first lift			
	Collected				up to 6% Quik-Gel.		-				
51											
52											
— —											
53				N. O.							
		All		Paris							
54		Deposits	SW		(53.5 - 54.5')						
					Kwik-Zip Centralizer						
55											
 	1			Q							
0	1										
57		Alluvium	S\M								
<u> </u>		Deposits	- 577								
58											
		ΔΙμινίμος									
59		Deposits	SW-SM								
60											
Abbre	viations: U	SCS = Unifie	d Soil Cl	assificat	ion System, ft = feet, bgs	= below ground surface, an	nsl = above mean s	sea level, SS = Stainless			
Steal,	NR = No F	ecovery, N/A	= Not A	pplicabl	e, GW = groundwater, pp	b = parts per billion, Notes:	Solid blue water ta	ble marks represent depth to			
water	water (ft. bgs.) measured post development.										
5											
9	ARC	AD	IS			Well Const	ruction Log	S	Sheet: 4 of 8		
-------------------	------------------------	---------	----------------------	---------------	-------------------	---	-------------------------------	---------------------------------	---		
Date S	Started:	10/23/	2022			_Surface Elevation:	551.67 ft amsl		1028		
Date C	Completed:	11/05/	2022				N/A		1-V2D		
Drillinc	, Co.:	Casca	de			Deep Well Elevation:	N/A	 Client: PG&E			
Drilling	, Method:	Dual R	Rotarv			Northing (NAD83):	2100637.96	Project: Final (GW Remedy Phase 2A		
Driller	Name [.]	Josh S	Saldana			Easting (NAD83)	7614544 74	Location: PG&F	Topock Needles California		
Drilling	i Asst		AA/D	Α		Borehole Diameter	22-24 inches				
	r.	Fllen F	Redner	<i>u</i> u		Static Water Level	See Log for Depths	Project Number	30126255		
Editor		Sean I	McGran	e		Development End Date:	11/19/2022				
Total	Depth:	142.06	ft bas	•		Well Completion	Flush Stick-up X	— To Be Completed	in Well Vault		
i otai i		112.00				_ troir compretent.					
Depth (ft)	Groundwat Sample II	er)	Geologic Formatio	USCS Code	USCS Class	Condita		Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume		
61 61 62		AI	lluvium eposits	SW-SM		(0.0 - 95.0') 12" SHUR-GRIP SDR17 PVC Casing (20.7 - 61.7') Portland Cement Type I, II and IV with up to 6% Quik-Gel.	(62 2 - 142 1') 22"	(20.7 - 61.7') 687.3 gallons	(20.7 - 61.7') 660 gallons (96%) Note: Grout seal first lift		
						\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Diameter Borehole				
<u> </u>						(61.7 - 64.6') Cemex #60 (40x70)		(61.7 - 64.6') 10.1 bags	(61.7 - 64.6') 10 bags (99%) Note: Transition sand		
5 – –		AI	luvium	SW		Lapis Lustre Sand					
04			eposits								
65											
CO											
					$ \setminus / $						
5 <u> </u>				NR	XI						
с <u></u> 6/			lunium								
			eposits	SW							
≝68 ≋											
<u> </u>			•								
69											
	No		eposits	SW							
70	Groundwate Samples	r									
	Collected						0 ° 0 ° 0 °				
<u> </u>											
72						(64.6 - 89.0')	૾૾૾૾૾૾૾૾	(64.6 - 89.0')	(64.6 - 89.0') 88 bags (104%)		
		AI	luvium	SM		Red Flint Sand	6 0 0 0 0 0 0 0 0 0	84.9 bags	Note: Tranisiton sand		
<u>_</u> 73_		De	eposits	SIVI							
<u> </u>											
74						0,0,0,0	૾ૢ૾ૡ૾૾ૡ૾૿ૡ				
— —											
75											
^g _76_			luvium	SW			0000 0000 0000				
78						\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$					
			luvium	0.41 61		 					
79			eposits	SW-SM							
80				• •• -		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	<u> </u>	· · ·			
Abbre	viations: U	SCS =	Unified	Soil Cl	assificat	ion System, ft = feet, bgs	= below ground surface, an	nsl = above mean s	sea level, SS = Stainless		
Steal,	NK = NOF	ecover	y, N/A =	= Not A	pplicabl	e, Gvv = groundwater, pp	b = parts per billion, Notes:	Solid blue water ta	ible marks represent depth to		
water	(ii. bgs.) m	easure	u post d	evelop	nent.						
2											



9	ARC	ADIS			Well Const	ruction Log	S	Sheet: 6 of 8
Date S	Started:	10/23/2022			_Surface Elevation:	551.67 ft amsl		1_02B
Date C	Completed:	11/05/2022				N/A		V-V2D
Drilling	Co.:	Cascade			_Deep Well Elevation:	N/A	Client: <u>PG&E</u>	<u> </u>
Drilling	Method:	Dual Rotary			_Northing (NAD83):	<u>2100637.96</u>	Project: <u>Final</u>	GW Remedy Phase 2A
Driller	Name:	Josh Saldana	a		_Easting (NAD83):	<u>7614544.74</u>	Location: <u>PG&E</u>	Topock, Needles California
Drilling	Asst:	<u>L.G. / A.A. / [</u>	D.A.		_Borehole Diameter:	22-24 inches		
Logge	r:	Ellen Redner			_Static Water Level:	See Log for Depths	Project Number	r: <u>30126255</u>
Editor:		Sean McGrai	ne		_Development End Date	: <u>11/19/2022</u>		
Total [Depth:	142.06 ft bgs			_Well Completion:		To Be Completed	in Well Vault
Depth (ft)	Groundwat Sample II	Geologic	USCS Code	USCS Class	Consul		Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
		Alluvium Deposits	sw		(95.0 - 112.0') 12" 35-Slot 316L SS Wire Wrap Screen		2	
٥ 								
<u> </u>								
⁹ _106_		Alluvium Deposits	SW					(90.0 - 113.4') 97 bags (119%)
					(90.0 - 113.4')		(90.0 - 113.4')	Note: Filter pack, swabbed the filter pack for approximately 100
ື107 ສ					0.80-1.20 MM		81.4 bags	minutes prior to installation of the
								bentonne sear.
≝108 ≋								
109	FW-02B- VAS-107-11	2						
	(<0.025 ppb 8/24/2022	Alluvium						
≩110 ≝	09:15	Deposits	SW-SM					
≤								
±								
ž 1 12								
□ 						SDR17 PVC Casing		
		Alluvium	SM					
z 114		Deposits	Sivi					
⊈115						ର୍ବ ରୋଜରେ ବ ରାଜରେ ବ		
						× 688		
4116					(115.5 - 116.5')			(113.4 - 120.3') 36 bags (150%) Note: Transition sand, used >20%
					Kwik-Zip Centralizer		(113 4 - 120 3')	of the calculated volume due to potential voids that formed during
<u></u>		Alluvium	SW		Red Flint Sand	<u>ଁ</u> ତିର୍ଦ୍ଦିଶ ତା ତିର୍ଦ୍ଦିଶ	24 bags	drilling or the finer grained
CERAN		Deposits			0.20-0.00 WIWI			the upper screen during
<u></u> 118	FW-02B-					ଁରା ନିର୍ଦ୍ଦି ରା ନିର୍ଦ୍ଦିଶ		installation.
	VAS-117-12 (7.8 ppb)	2				<u>ଁ ଚୈଚ୍ଚି</u>		
	8/30/2022 11:14							
		Alluvium	SW-SM					
					i vite fin			
	viations: U	SCS = Unified		assitica	tion System, tt = feet, bgs	s = below ground surface, ar	nsi = above mean	sea level, SS = Stainless
	$\frac{NR}{(ft_bas)} = \frac{NO}{T}$	ecovery, N/A		pplicab ment	ie, Gvv = groundwater, p	$\mu\nu$ = parts per billion, Notes:	Solid Diue Water ta	able marks represent depth to
water	(ir. ngs.) m	easureu post	uevelop	ment.				
_ 								

9	ARC	Δ	DIS			Well Cor	str	uct	ion Log	ę	Sheet: 7 of 8
Date S	Started:	10	/23/2022			Surface Elevation:		551.6	7 ft amsl		N 00B
Date C	Completed:	11	/05/2022			Shallow Well Flevat	ion:	<u>00110</u> N/A		- well ID: FV	V-02B
Drilling	I Co.:	Са	scade			Deep Well Elevation	ו:	N/A		 Client: PG&B	Ξ
Drilling	Method:	Du	al Rotary			Northing (NAD83):		2100	637.96	Project: Final	GW Remedy Phase 2A
Driller	Name [.]	.10	sh Saldana			Easting (NAD83)		7614	544 74	Location: PG&F	E Topock Needles California
Drilling	Asst [.]	1 (G / A A / D	Α		Borehole Diameter		22-24	inches		
	r.	FI	en Redner			Static Water Level		See I	og for Depths	Project Numbe	r: 30126255
Editor		Se	an McGran	e		Development End [)ate:	11/19	/2022		
Total) Denth:	14	2 06 ft bas			Well Completion:	Julo.		lush Stick-up X	 To Be Completed	in Well Vault
						 Cc	nstruc	tion De			
Depth (ft)	Groundwat Sample ID	er)	Geologi Formatio	USCS Code	USCS Class					Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
			Alluvium Deposits	SW-SM		(120.3 - 120.9') Pel-Plug Bentonite [—] Pellets 3/8" (TR30)			(112.0 - 122.0') 12" SHUR-GRIP SDR17 PVC Casing	(120.3 - 120.9') 1.5 buckets	(120.3 - 120.9') 2 buckets (133%) Note: Bentonite seal, used >20% of the calculated volume due to potential voids that formed during drilling.
2 122								<u> </u>	(122.0 - 132.0')		
									12" 15-Slot 316L SS Wire Wran Screen		
z123			Alluvium	SM							
5			Deposits					-			
								1			
123_			Alluvium								
			Deposits	SW-SM				_			(120.9 - 133.2') 55 bags (128%)
*12b											the calculated volume due to
			Allunium			(120.9 - 133.2')		\exists		(120.0. 122.21)	potential voids forming during drilling or the finer grained lower
5127 ₽			Deposits	SM		Red Flint Sand				(120.9 - 133.2) 43 bags	filter pack entering the well through
						0.35-0.45 10101					installation. Swabbed the fillter
≝128 ≩											prior to installation of the bentonite
								-[::::			seal.
129	FW-02B- VAS-127-13	2	Alluvium	sw			 	7			
	(36 ppb) 8/31/2022		Deposits					1			
₹130 ≅	11:00] ((
			Alluvium								
			Deposits	SM				-			Nata Oandustad "Dummu Taal"
								-	(132.0 - 137.0')		Pre-alignment test to
5 – – = # 100					× × × × × ×				12" SHUR-GRIP		approximately 132.5 ft bgs to confirm there were no obstructions
			Weathered						SDR-17 PVC Sump		in the well post construction.
12/			Bedrock - Conglomerate	N/A							
					$\begin{array}{c} \times \ \times \ \times \\ \times \ \times \ \end{array}$	(134.0 135.0)					
135 – –						Kwik-Zip Centralizer					
E _ 100_	FW-02B-	7									
136	(Sample				$\begin{array}{c} \times \times \times \\ \times \times \end{array}$				•		
,100	disregraded					(133.2 - 140.0')				(122.2 140.0)	(122.2 140.0') 20 bags (106%)
137	as water not likely		Compotent			(20x40) Lapis Lustre				(133.2 - 140.0) 27.3 bags	Note: Backfill sand
	representativ	e d	Bedrock -	N/A	$\begin{vmatrix} x & x & x \\ x & x & x \end{vmatrix}$	Sand		7:::	(137.0 - 137.95')		
5 – – 138	is considered	d	Conglomerate						12" 316 SS		
130 	bearing							<u>.</u>	End Cap		
130	9/1/2022										
 	09:22	1			$\begin{vmatrix} x & x & x \\ x & x & x \end{vmatrix}$						
				N/A	$\begin{array}{c c} x & x & x \\ \hline x & x & x \\ x & x & x \end{array}$]		
Abbre	viations: U	sc	S = Unified	Soil Cla	assificat	ion System, ft = feet,	bgs -	- belo	w ground surface, ar	nsl = above mean	sea level, SS = Stainless
Steal,	NR = No R	eco	overy, N/A =	= Not A	pplicabl	e, GW = groundwate	r, ppl	o = pa	rts per billion, Notes:	Solid blue water ta	able marks represent depth to
water	(ft. bgs.) m	eas	ured post c	levelopi	ment.			•			
PH I											

9	ARC	ADIS			Well Const	ruction Log	:	Sheet: 8 of 8
Date S	Started:	10/23/2022			_Surface Elevation:	551.67 ft amsl		V-02B
Date C	Completed:	11/05/2022			_Shallow Well Elevation:	N/A		
Drilling	Co.:	Cascade			_Deep Well Elevation:	N/A	Client: <u>PG&I</u>	Ξ
Drilling	Method:	Dual Rotary			Northing (NAD83):	2100637.96	Project: Final	GW Remedy Phase 2A
Driller	, Name:	Josh Saldana			Easting (NAD83):	7614544.74	Location: PG&I	E Topock. Needles California
Drilling	Asst:		A		Borehole Diameter:	22-24 inches		
Logge	r.	Ellen Redner			Static Water Level	See Log for Depths	Project Numbe	r: 30126255
Editor		Sean McGran	e		Development End Date:	11/19/2022		
Total [)enth:	142 06 ft bas	0		Well Completion:	Elush Stick-up X	— To Be Completed	in Well Vault
Total								
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS Code	USCS Class	Consid		Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
		Competent Bedrock - Conglomerate	N/A	× × × × × × × × × × × × × × × × × × ×	(140.0 - 142.1') Cemex #8 (4x16) Mesh Lapis Lustre Sand and formation			Note: After circulating to flush casing, the casing was advance by pushing the casing without advancing drill string and the cuttings and temp backfill sand
142				X X X	cuttings			below 140 ft were not removed.
143 6								..
143								
146								
<u> </u>								
147								
1/9								
149								
a150								
				V				
2						•		
154								
					_			
156								
158								
159								
Abbre	viations: U	SCS = Unified	Soil C	assificat	ion System, ft = feet, bgs	= below ground surface, an	ns <mark>l = above</mark> mean	sea level, SS = Stainless
Steal,	NR = No R	ecovery, N/A	= Not A	pplicabl	e, GW = groundwater, pp	b = parts per billion, Notes:	Solid blue water ta	able marks represent depth to
water	(ft. bgs.) m	easured post o	levelop	ment.				

Well Development Log



	a 25 6	201012		1000	a man series									
													11_	
	ARC	ADIS	Design & Consultances for planets			CR.E Terret	Phase 24 G	W Remedy			PG	1	of DS	11/15/22
	Date(s)	Ich los	- Ulul-2	Proj	O126255	Gat Topock	Arcadis	Oversight:	5. Alex	omder	ARCADIS	Job Title:	Env. Scier	4
1	and al	100/22	unque	Measuring	Point (MP)	2.6'			140 3	-5'	Screen Inten	val (ft.	122-132	-
	Well ID	FW-0	28	ft. (ag	(bgs) JA	23 aug	Total Depth	(ft. BMP)	140.4		11		248.0	of gal
	(ft. BMP):	98.5	51 1	ft. bgs):	95.91	Wa	in well (ft):	42.24	Diameter o	f well (in.):	12	Gallons i Water	n wen. <u>c</u> . <u>s</u>	9
	Rig	operator:	Nichola	s Kind	Rig type:	Pulsto	Nº Piz	Bailer make	and size:	10ft.	X3 in-	added:	MA	
	Surge bl	lock make	- P.4.1	112 12			Coul	ds 25	G-5 50			Water source:	N/A_	1
		and size:	FAT. Lan	Adian	Pump ma	ke and size:	Citta		Cond.	Turb NTU	DO (mg/L)	Not	es/Gallons	
	Time	Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp *C	pH (<u>+</u> 1.0)	ORP (mV) (± 10.0 mV)	(± 3%)	(<10.0 NTU)	(+ 0.3 mg/L)	Remove	balling	
11/06/22	1028	Tag	-		-,	40.75	TDU	toc.) V	and	patlan	not	nece	ssoury	
	1132	Tag	98.5	1'DT	w (if	ac.)							h sinee.	
	1135	Theas	uriha	on	t sure	ze blo	ch li	ne -	prep	ariha	to	sung		
	-	in ter	rvat	122.	132				1	1				
	1142	Beg	in s	webl	ing s	creen	meru	al 122	2 - 13	2 (6)	5) - 10	user .	sucan	
	1232	Eno	L Sw	abbin) sc	keen	interva	122	-132	-				
	1305	The	asuri	3 m	ext :	creer	inte	qual.	-	,	()			
6	1310	Be	sin s	wab	ping	scree	+ .ht	erval ;	102 .	112	(535) -	npp	45 Soleen	-
a	1400	En	d su	abbir	g sc	reen in	terval	102 -	112	1				
	1400	Be	gin g	wab	omg s	screen	inter	val c	15 -	102 .				
	1435	En	d s	wabb	ing s	usen.	in ter	val a	15 -	02				-
	1436	Tag	98.2	DD	tw,	140.72	TD (hard	borrer		0.1/1	441	01270	
	1501	Bee)n 60	pling	(#)	100	mhott:	18 m11	1 2m	NI tot	al cal	da	sonas (gal.
	1508	Bo	IL #	2 -	Iml	104:2	-pm//	4 san of	-120	112 101	1 201			Theat
	1518	Be	J.h a	swabb	ing so	- con	1 de	1120	152	27	1000			
	1608	En	d S	ash	aing	: ()	1 Lilla	m -	42-1	SC -				-
	1609	Tao	>-	78.9	140.72	A th	a da	Le	alla	AS L	alited			
	-	-	F	FINISI	100 1	1/07	122-	10	Partor	3 0	rived			-
	-	F	-	Q9 66	140.12	107	d hat	1						-
1/07/	22 0653	lag	-	18.53	140.76	nee	in lease		2 - 1	12'				_
	0700	Bea	the si	La Li	23 2	bern	in the co	112	1					_
	0750	o En	d S	unos	P	about	1 25'	-112		1				
1	0750	1 Be	S.FW-	-02B-	-111922	134	1 13	102						
	Sample I Total gai	lons remov	red at com	pletion of d	levelopment	97	176gal	2						
	Arcadis 5	staff: 1	zhane	treg	2-cco	mane	5							
		-		-	-	-			THE REAL				- Carlin	

FW-02B - Well Development Record



10	Date(s)	1/06/22-	11/19/22	Project #	30126255	roac topoc	Arcadis	Oversight:	J.40	exander	ARCADI	S Job Title: Env. Scie
-	Time	Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp 'C	рН (<u>+</u> 1.0)	ORP (mV) (± 10.0 mV)	Cond. (µS/cm) (± 3%)	Turb NTU (<10.0 NTU)	DO (mg/L) (+ 0.3 mg/L)	Notes/Gallons Removed/Water Clarity
2	0825	End	Suo	166 in	3 sch	een in	terval	95-	102'			
-	0827	Tag	-	98.60	140.72	(hard	botton) -				
-	2835	Begi	- boui	ling	#1)~	Imho	ff: 10	0 m1/0	Somo	1,375	mI/L fot	al solids Cinsal.
	0838	Bail	#2	-	-							- (bailed
	0841	Bail	#3.	Tr	holf:	22 ml	IL samo	1, 60 m	-1/2 +	ofal s	olids)
	0845	Tag	-	98.61	140.75	(han	d botto	m)	•			
		~	- F	in istr	ed for	the of	lay -	10 ga	llons	baile	d —	
2					- 11	108 /2:	2 -	0				
	1051	Tag	-	98.55	btoc.	-						
	1055	Su	gei	-	bund	intake	105.5	btoc.				
	1057	Sur	ge 2	-								
	1059	Sua	Je 3	-								
	1102	Sur	je 4	-								
	Hos	Su	ge 5	-	D. mar inte	wat						
	1105	Pump	25.00	100.5	~103'b	3.71	05.5 b	oc/BA	np			7
	1110	Pump	20.40	101.65	~105 bloc	26.89	7.27	216.3	2601	26.4	55.3	>257.56
	1115	Punp	10.12	100.46	14 14	27.76	7.65	206.3	2655	23.5	25	pumped > pum
	1120	Pump	4.98	101.5	4	27.95	1.65	A (+>.)	2655	10.9	76.0	rafe obecreased
	1125	Pump	4.98	tto		28.28	7.65	174.0	2639	7.34	38.8	Junter Level to
	1127	Pump	TH	-								close to pramp ,
	1155	Tag	-	98.50	pump	states	131.5 6	DC.				
	1156	Sua	je i	-								
	(158	Sur	Je 2	-								
	1159	Suco	23	-								
	1201	Sur	pe 4	-								
	1203	Sun	ge S									
	Sample ID	and Time:	d at comp	etion of de	velopment:							
	Arcadis St	aff:			-							

FW-02B - Well Development Record



$\begin{array}{c c c c c c c c c c c c c c c c c c c $	is Job Title: Bru Scie	PG	_	der	Her	Ha	: 5	ersight	GW R	Arcad	k Pha	Горос	PG&E T	me: [oject Nan 3012625:	Project #	22	cord		lopme	ell Devel ate(s)
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Notes/Gallons) Removed/Water Clarity	DO (mg/L) 0.3 mg/L)	J) (+	irb NTU 0.0 NTU	Ti (<1	ond. /cm) 3%)	(µ)	P (mV) 0.0 mV	ORI (± 10	рН 1.0)	(±	o'c	Temp	pth P)	Total Dep (ft. BMF	DTW t. BMP)	M	GP	ask	Та	Time
$\frac{1205}{1200} \frac{1}{1200} \frac{1}{1$														-	-	8.31	-	-	9	Ta	205
$\frac{1210}{1215} \frac{1}{1215} \frac{1}{1$					-	25)) e	(129	C	5'64	31-	ti	e ad	ale	2p into	pun	8	50,	mp	Pur	205
1215 Pump 50.90 128.21 " 27.24 7.69 46.4 5185 148.0 48.5 1220 Pump 26.38 114.95 " 27.03 7.74 - 8.0 3200 44.8 51.6 1225 Pump 25.38 114.69 " 27.19 7.74 14.2 3174 18.0 100.2 1230 Pump 26.38 115.60 " 27.97 7.68 29.1 3189 13.4 150.0 1235 Pump 26.38 115.60 " 27.40 7.62 18.0 3.84 11.9 130.6 1240 Pump 28.20 114.60 " 27.42 7.68 -0.6 365 13.1 67.9 1245 Pump 28.20 114.60 " 27.42 7.68 -0.6 365 13.1 67.9 1245 Pump 28.20 114.60 " 27.48 7.67 5.8 3183 15.5 59.6 1248 Pump 28.20 114.63 " 27.48 7.67 5.8 3183 15.5 59.6 1248 Pump 28.20 114.65 " 27.48 7.67 5.8 3183 15.5 59.6 1248 Pump 28.20 114.65 " 27.48 7.67 5.8 3183 15.5 59.6 1248 Pump 28.20 114.65 " 27.48 7.67 5.8 3183 15.5 59.6 1248 Pump realfunction - abort 39. equal to the factore 1520 Bach baseline sp. capacity test - 50 GFPM - 1523 Pump malfunction again - 1545 Tag - 79.9! 1545 Tag - 79.9! - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ished for the day - 2257 gallons pu - Fin ishe difference for the day - 2257 gallons pu - Fin ishe difference for the day - 2257 gallons pu - Fin ishe difference for the day - 2257 gallons pu - Fin ishe difference for the day - 2257 gallons pu - Fin ishe difference for the day - 2257 gallons pu - Fin ishe difference for the day - 2257 gallons pu - Fin ishe difference for the day - 2257 gallons pu - Fin ishe difference for the day - 2257 gallons pu - Fin ishe difference for the difference for the day - 2257 gallons pu - Fin	7	26.4	2	1.9	1	22	28	7.2	11	57	7.6	09	27.0		fake 31.5	20.1	66 1	48	mp	Pu	210
$\begin{array}{c} (220 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	to 30 to avoid purp	48.5	0	+8.0	14	85	31	6.4	4	.69	7	24	27.2		н	26.21	90	50	unp	Pu	215
1225 Pump 25.38 114.69 " 27.19 7.74 14.2 3174 18.0 100.7 1230 Pump 26.38 115.60 " 27.59 7.68 29.1 3189 13.4 150.0 1235 Pump 26.38 115.60 " 27.40 7.62 18.0 3184 11.9 130.6 1240 Pump 28.20 114.60 " 27.42 7.68 -0.6 3065 13.1 67.9 1245 Pump 28.54 114.63 " 27.18 7.67 5.8 3183 15.5 59.6 1248 Pump 0 off		51.6	4	4.8	4	00	32	8.0	-	74	7	03	27.		и	14.95	88	26	mp	Pu	220
12.30 Rump 26.38 115.60 "27.57 7.68 29.1 3189 13.4 150.0 12.35 Rump 26.38 115.60 "27.40 7.62 18.0 3184 11.9 130.6 12.40 Rump 28.20 114.60 "27.42 7.68 -0.6 5085 13.1 67.9 12.45 Rump 28.54 114.63 "21.18 7.67 5.8 3183 15.5 59.6 12.48 Rump off 1300 112		100.2	1	3.0	1	79	31	1.2	14	74	7.	19	27.		lı	14.69	.88 1	25	mp	Pu	1225
1235 Runne 26.33 115.60 "27.40 7.62 18.0 3184 11.9 130.6 1240 Runne 28.20 114.60 "27.42 7.68 -0.6 305 13.1 67.9 1245 Runne 28.54 114.63 "27.18 7.67 5.8 3183 (5.5 59.6 1248 Runne off	> 1361	150.0	1	3.4	1	89	31	.1	29	68	4.	59	27.		4	15.60	38	26.	mp	Pun	230
1240 Pring 2820 114.60 11 27.42 7.68 -0.6 3065 13.1 67.9 1245 Pring 28.54 114.63 11 27.18 7.67 5.8 3183 15.5 59.6 1248 Pring off	pum plat	30.6	ť	1.9	1	84	31	3.0	18	.62	7	40	27.4		u	15.60	38 1	26	imp	Ru	235
1245 Rump 28.54 114.63 " 27.18 7.67 5.8 3183 15.5 59.6 1248 Rump off 1300 1300 1355 Tag - 100.21 1520 Bassh baseline sp capacity est - 50 GPM - 1528 Rump malkinction - abort sp. Eggne of the test 1530 Testing Rump 1537 Rump malkinction again 1516 Tag - 98.42 1545 Tag - 99.91 - Finishied for the day - 2257 gallons pr - Finishied for the day - 2257 gallons pr - 98.42 0916 Tag - 98.45 0941 Rump off - boseline gp. engacity test abort ed olice to 0945 - Removing Sft of pipe and will raise pu - 127.5 ft bloc. (125 ft logs) to alternoft test ag. 1024 Ting - 98.85 - 127.5 ft bloc. (125 ft logs) to alternoft test ag. 1024 Ting - 98.85 - 127.5 ft bloc. (125 ft logs) to alternoft test ag. 1024 Ting - 98.85 - 127.5 ft bloc. (125 ft logs) to alternoft test ag. 500 Bassingle 10 and Time: Nee. Page 1 Total gallons removed at completion of development: Arcadis Staft:		57.9	6	3.1	1	165	30	0.6	- (68	7.	42	27.		<i>i</i> ı	14.60	20	28	inp	Pu	240
1248 Bung off 1300 1305 Tag - 100.21 1520 Bagin baseline sp. capacity test - 50 GPM - 1528 Pump malfunction abort sp. capacity test 1530 Testing Pump 1537 Pump malfunction again 1516 Tag - 98.42 1548 Tag - 98.42 1548 Tag - 98.42 - Finishiel for the day - 2257 gallons pu 1548 Tag - 98.42 - Finishiel for the day - 2257 gallons pu 1548 Tag - 98.42 - 99.6 Tag - 98.42 0916 Tag - 98.42 0916 Tag - 98.42 - 11 /09/22 0916 Tag - 98.42 - 12 Shiel of baseline apecific capacity test 0945 - Finishiel of baseline apecific capacity test 0945 - Removing Sft of pipe and will raise pu - 127.5 ft bloc. (125 ft ugs) to attempt test ag 1024 Tag - 98.85 		59.6	4	5.5	(83	31	.8	5	67	7.	18	27.1		и	14.63	.54	28	mp	Pu	1245
1300 1300 1305 1520 Bash baseline sp. capacity est - 50 GPM - 1528 Rump malbunction - abort 30° capacity test 1538 Rump malbunction again 1539 Testing Rump 1539 Testing Rump 1548 Tag - 98.42 1548 Tag - 98.42 1548 Tag - 99.91 - Finished for the day - 2257 gallons pro- 1548 Tag - 98.42 0916 Tag - 98.42 0916 Tag - 98.42 0916 Tag - 98.42 11/09/22 0916 Tag - 98.42 11/09/22 12/5 ft bloc. (125 ft logs) to attempt test again 1024 Tag - 98.83 Sample ID and Time: Del Dage 1 Total gallons removed at completion of development: Arcadis Staff:																-	off	P	un	P.	248
1520 Begin baseline sp. capacity test - 50 GPM - 1528 Pump malfunction - abort 30. capacity test 1530 Testing Pump 1537 Pump malfunction again 1546 Tag - 98.42 1548 Tag - 99.91 - Finished for the day - 2257 gallons pu - Finished for the day - 2257 gallons pu - 98.92 0916 Tag - 98.92 0916 Tag - 98.92 0916 Tag - 98.92 0916 Tag - 98.92 11/09/22 0916 Tag - 98.92 0916 Tag - 98.92 11/09/22 0916 Tag - 98.92 11/09/22 0916 Tag - 98.92 11/09/22 0916 Tag - 98.92 11/09/22 0916 Tag - 98.93 11/09/22 0916 Tag - 98.93 11/09/22 0916 Tag - 98.95 11/09/22 0916 Tag - 98.95 10/24 Teg - 98.85 Sample ID and Time: Dele Page 1 Total gallons removed at completion of development: Arcadis Staff:			-		-		-								_	00.21	- 1	-	19	Ta	1300
1528 Pump malfunction - abort 3p. capacity test 1530 Testing Pump 1537 Pump malfunction again 1546 Tag - 98.42 1548 Tag - 99.91 - Finished for the day - 2257 gallons pu - Finished for the day - 2257 gallons pu - 11/09/22 0916 Tag - 98.42 0916 Tag - 98.51 - 127.5 ft bloc. (125 ft logs) to attempt test ag 1024 Tag - 98.85 - 28.51 Total gallons removed at completion of development: Arcadis staft:	sump interke ?	1-0	ph	GP	5	50	-	t.	es	4	at	pa	. car	P.	e s	selin	ba	5	egi	B	520
1530 Testing Rump 1537 Pump malfunction again 1516 Tag - 98.42 1548 Tag - 99.91 - Finished for the day - 2257 gallons pu - 98.92 0916 Tag - 98.92 0916 Tag - 98.92 11/09/22 0916 Tag - 98.92 11/09/22 0916 Tag - 98.92 11/09/22 0916 Tag - 98.92 0916 Tag - 98.92 11/09/22 0916 Tag - 98.93 11/09/22 12 - 98.95 - 12 - 5 ft bloc. (125 ft logs) to attempt test ag 1024 Tag - 98.85 - 125 ft bloc. (125 ft logs) to attempt test ag 1024 Tag - 98.85 - 125 ft bloc. (125 ft logs) to attempt test ag 1024 Tag - 98.85 - 125 ft bloc. (125 ft logs) to attempt test ag	=132.5 btoc.			-	st	te	ty	Jaci	ne cqu	p.	1-5	ort	abi	-	fion	func	mar	p	un	P	1528
1537 Pump mallunction again 1516 Tag - 98.42 1548 Tag - 99.91 - Finished for the day - 2257 gallons pu - Finished for the day - 2257 gallons pu - 98.72 0916 Tag - 98.72 0916 Tag - 98.72 11/09/22 0916 Tag - 98.72 11/09/22 0916 Tag - 98.72 0930 Begin Gecond attempt of borseline apecific capacity tes 0941 Runsp off - boseline SR. creacity test abox ed due to 0945 - Removing Sft of pipe and will raise pu - 127.5 ft bloc. (125 ft logs) to attempt test ag 1024 Tag - 98.85 Sample 10 and Time: Nee. page 1 Total gallons removed at completion of development: Arcadis Staff:	3 169.26		-		-		P		r					-	-	imp	P	ing	est	T	530
1516 Tag - 98.42' 1548 Tag - 99.91' - Finished for the day - 2257 gallons put 0916 Tag - 98.42' 11/09/22 0916 Tag - 98.42' 0930 Beyn Gerond attempt of baseline apecific capacity test 0930 Beyn Gerond attempt of baseline apecific capacity test 0941 Runsp off - baseline Sp. capacity test abox ed due to 0945 - Removing Sft of pipe and will raise put 127.5 ft bloc. (125 ft 405) to attempt test age 1024 Tag - 98.85 Sample 10 and Time: Nee. page 1 Total gallons removed at completion of development: Arcadis Staft:	Jgallous		-		F			_				ih	aqa.		ction	lfun	m	p	un	P	537
1548 Tag - 99.91 - Finished for the day - 2257 gallons put 0916 Tag - 98.72 11/09/22 0916 Tag - 98.72 11/09/22 0930 Begin Gerond attempt of borseline apecific capacity test 0930 Begin Gerond attempt of borseline apecific capacity test 0941 Runsp off - boseline apecific test abor ed out to 0945 - Removing sft of pipe and will raise put 127.5 ft bloc. (125 ft bos) to attempt test ag 1024 Tag - 98.85 Sample ID and Time: Nee. Page 1 Total gallons removed at completion of development: Arcadis Staft:													0	-	-	38.42	- 4	-	ag	To	1516
- Finished for the day - 2257 gallons pro 98.72 II /09/22 0916 Tag - 98.72 II /09/22 0930 Begin gerand attempt of bosseline greathic capacity test 0941 Runsp off - bosseline GR. capacity test abox end alue to 0945 - Removing Sft of pipe and will raise pur 1024 Tag - 98.85 Sample ID and Time: <u>Nee. page 1</u> Total gallons removed at completion of development: Arcadis Staff:														-	-	19.91		-	19	Ta	548
2 0916 Tag - 98.72 0916 Tag - 98.72 0930 Begin Gerond attempt of baseline apecific capacity test 0941 Rump off - baseline SR. capacity test aborted of use to 0945 Removing Sft of pipe and will raise pu 127.5 ft bloc. (125 ft 405) to attempt test ag 1024 Tag - 98.85 Sample 10 and Time: <u>Nelle page 1</u> Total gallons removed at completion of development: Arcadis Staff:	mped	s an	9425	allo	9	57	22	- :	ag.	r d	the		1 for	id	ish	. Fi			/		
0916 Tag - 98.72 0930 Begin Gerond attempt of borseline opecific capacity tes 0941 Runsp off - bosseline of capacity test abor ed oue to 0945 - Removing off of pipe and will raise pu 127.5 ft bloc. (125 ft bogs) to attempt test ag 1024 Tag - 98.85 Sample ID and Time: <u>Nee. page</u> Total gallons removed at completion of development: Arcadis Staff:		-			1				2	1.0	22	9/	100	11			-				-
0930 Begin Gerond attempt of baseline specific capacity tes 0941 Rump off - baseline Sp. capacity test abox ted orace to 0945 Removing Sft of pipe and will raise pu 127.5 ft bloc. (125 ft 405) to attempt test ag 1024 Tag - 9885				-						-	1 mil		-		A -	18 12		-	49	T	916
9941 Purip off - bosseline SR. capacity test abox ed due to 9945 - Removing Sft of pipe and will revise pu 127.5 ft bloc. (125 ft 405) to altempt test ag 1024 Tag - 9885 Sample ID and Time: <u>Nel.</u> Page Total gallons removed at completion of development: Arcadis Staff:	+ + 542.57	test	ity	paci	co	fiz	eci	4	he	seli	60	f	t of	-10	atter	md	Ger	~	eg.	B	930
0945 Removing Sft of pipe and will raise pu 127.5 ft bloc. (125 ft logs) to attempt test ag 1024 Tag - 98.85 Sample ID and Time: <u>Nel. Page</u> Total gallons removed at completion of development:	gallons	it to b	Re	d o	Fe	100	2	est) t	cite	Ro	c	SR.	e	selin	- 69	H.	p	in	Pu	941
1024 Tag - 98.85 Sample 10 and Time: <u>Nee</u> Page Total gallons removed at completion of development: Arcadis Staff:	mo 1 blig 1	e put	Be	Coni	11	wit	d	and	pe	P	of	ft) 5	inp	mov	- R	-			-	945
1024 Tag - 98.85 Sample ID and Time: <u>See</u> Page Total gallons removed at completion of development: Arcadis Staff:	Pinfanke to	staga	te	of	ton	atta	40) 7	as	fto	125	. (btoc	4	.51	127	-			_	
Sample ID and Time:		- 17								-				-	-	8.85		-	a	Ter	024
Total gallons removed at completion of development:			-	1999							1			1	gel	pa	see	•	Time:	and T	mple ID
Arcadis statis											-			t -	dopment	on of dev	mpleti	at co	moved	ns rer	tal gallo
													144								cadis sta

FW-02B - Well Development Record



ate(s)	1/06/22-	11/19/22	Project #	30126255		Arcadi	s Oversight:	J.M	exemde	ARCADI	S Job Title: Duo. Su
Time	Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp *C	рН (<u>+</u> 1.0)	ORP (mV) (<u>+</u> 10.0 mV)	Cond. (µS/cm) (<u>+</u> 3%)	Turb NTU (<10.0 NTU)	DO (mg/L) (<u>+</u> 0.3 mg/L)	Notes/Gallons Removed/Water Clarity
1025	Bezi	- this	rd at	frempt	at ba	seline	specif	iz can	acity	test	at 50 GPM.
1033	Pum) ma	Ifunc	tion d	writig	test a	1 40	GPM	subs	eque	to so GPM.
1039	Low	ued	GPM	to 20	and	resta	fed .	lest.		0	A
1040	Res	tert	spec	ific c	apaciti	test	at 20	GRA	1 afte	find.	g a How
	rate	that	wo	ild no	t fü	ictuate	sign	fican	ky. (f	unp a	very clear
1235	s.c. Test	20.24	114.71	at 127.5'	27.22	7.60	10.1	3142	8.70	45.6	+ Bater 2007 64
1240	Pam	p off	- en	d bas	eline	sp. ca	pacity	test			270 Jallons
(300	Tag	-	99.60	Velta							
1430	Ben	p b	ailing	(#)	Jag	well-1	40.72	TD	hard b	attom), 9	8.76 Dru
1437	Beg	in bo	ilita	(#1)-	PImh	uff: 45	m1/L5	and, 1	25 m//L	total	bailed
1441	Ba	#2	->	Imhot	: 22	n//L 30	1,35	m1/L	Taga	ad at M	142 -7140.75 (hard
1448	Beg	h si	wabbi	ng sci	reen i	nterval	122-1	\$2	1. 19		berte.
1538	Eno	Su	Jabbi	B SU	reen i	Liter var	122-	32	1		1
	-		- inish	ed for	The	nay -	555	D.21	gallons	frompe	
	1		000	2	111	10122 1 1-to	1				
0819	12)	-	78.4	140.70	(non	Lec	Tel "	2'-11	p' .		
0830	De	Jin	hhh	the e	suce	L becu	al 10	2-112	-		
0920	En	a si	Juab	o,ha	curean	Inter	val a	5-10	, - iz -		
0920	P		wal	bing .	screen	- inter	get 9	5-102			
0190	5 Rec	ume	300	abbino	5 -						
1000	En	d sw	a66,4	& SCR	een in	ternal	95-1	02'			
1003	Tog	-	98.7	0 140.70	0 (50)	ft both	om)				
1008	Beg	ih ba	iling ((#1)-	Junho	ff: 40	mI/L	sand	, 40 ml	1/4 total	solids
1015	Ba.	1 42	-							-	E logat
1019	Ba	1 #3	, ->J	molt	: 20	un1/L	Sound	, 23	-1/L	total 9	elide Sbailed
Sample	ID and Tim		ee p	levelopment			-				
Total ga	Staff:	Net at Loth									

FW-02B - Well Development Record



ate(s)	11/06/2	2-11/19	^{2²} Project #	30126255		Arcadi	s Oversight:	J.4	lexande	ARCADI	S Job Title: Env Scie
Time	Task	GPM	DTW	Total Depth		pН	ORP (mV)	Cond. (µS/cm)	Turb NTU	DO (mg/L)	Notes/Gallons
022	Tag		98.72	(140.72	(hard	(+1.0)	(± 10.0 mV)	(<u>+</u> 3%)	(<10.0 NTU)	(±0.3 mg/L)	Removed/ water clarity
	5		Finis	hed	for the	e day	- 10	aallou	e ba	iled -	
											/
											/
										-/	
										/	
									A		
									/		
								/			
								11/1	120		
							14	20	Fai	52	
						/	1	201	0		>
					/						
				/							
			-/								
			/								
		-									
	-/				-						
-	/							-			
A											
nole ID a	Ind Time:	FW-07	28-1110	122 1	341						
al gallor	s removed	at comple	tion of deve	lopment:	977	6 gel					

FW-02B - Well Development Record



5m ///	pment Rec 19/32	cord	n/19/2	oject Name: F	G&E Topoc	k Phase 2A G	W Remedy	Dional F	regoto -	PG	Interition Stud Great.	111
	11/00	122	Project #	30126255		Arcadis	Oversight:	50-	chig	Screen Inter	val (ft. $95' - 112'$	
II ID	[W-0	23	ft. (ag	s /bgs)	2.6 985	Total Dept	h (ft. BMP)	140.6	1	bgs)	122-132	
BMP):	98.7	1'	DTW (ft. bgs):	18.61	w	ater column in well (ft):	41.94	Diameter (of well (in.):	12"	Gallons in well: 246	17ga
Rie	Operators	T	a Dom	HC_	Pilcho	Diz			10 13	Linneler	Water NIA-	
Surge b	lock make	Javie	K Dim	Rig type:	10151010	010	Baller mak	e and size:	10 2 5	america	Water NIA	
	and size:	Filong	12" dim	Pump mal	ke and size:	houlds	85 6	5 50			source:	
Time	Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp °C	рН (<u>+</u> 1.0)	ORP (mV) (<u>+</u> 10.0 mV)	(μS/cm) (± 3%)	Turb NTU (<10.0 NTU)	DO (mg/L) (+ 0.3 mg/L)	Notes/Gallons Removed/Water Clarity	
812	STORT	SNER	1 15+	loge	-							
135	tago	col	FD	40.62) PTI	N98.	11 -					
230	Begin	swa	phing	scree	en int	RVCl	122-	132	- 10	WCR.	SCREEN	
030	End	85	Navi	in	122'	132		wing	time	-		
920	End	of	SWAD	ng-	122'	- (32)			,	1 2		
1972	mea	win	& ne	xt int	entel	\$ \$Kipp	eel	122'	- 112'	(gae)		
931	Begi	1 20	aboi	a so	Caller i	ter val	102-	- 112 .				
025	End	g.	Mare	PINZ	[02	- 112						
1028	Inea.	seria	y re	XF SC	MACC	h to Dala	951	1021				
10 22	beg	IN SI	Maber	X De	Han I	nickyn		WL.				
1109	ag	181	OTW	140	60'T	DI Soft	Batta	2 -				
11:26	Suc	1 0100	DE	5 PROG	fire	Bail						
11:29	Beai	Ba	iline	#1,1	DOmL/	L San	els	300 mL	/L total	souds		
11:49	Beat	n Ba	iling	#2								
11:54	Bail	ing	#3	-			-					
12:03	Bail	Ling	#4			-						
2:07	Bai	uny	#5 :	total	Bailed	20 gal	i	ISmi	LL Sora	5 60m	4/6 total solidy	
12:24	DTI	N 98	67 ;	TD 140	61'	Hard	Bottom	P -		-		
13:4	9	-			-						DES 11/15/22	
15:2	9 98.	65' D	TW	, fin	p à Ri	ids in	s hiles	P, Pos	r.p			
15:3	Sure 1	ye 1	-		-							
15 3	3 500	se 2		2-1119	22;	1341	1	1	1			
Sample	ID and Tim	ie: TV	pletion of	development:	974	6 and						

FW-02B - Well Development Record



D	ate(s)	11/06	32-11	19/22	oject Name:	PG&E TOPOG	ck Phase ZA G	w kernedy	Dien	4	514	1719/32 5r
			Sm II/I	Project #	30126255		Arcadis	Oversight:	pages-	mchile	weilib	100000
	Time	Tark		DTW	Total Depth	-	pH	ORP (mV)	(µS/cm)	Turb NTU	DO (mg/L)	Notes/Gallons Removed/Water Clarity
1	15.36	Suls	0PM	(IT. BMP)	(IT. BMP)	Temp 'C	(±1.0)	(+ 10.0 mv)	(+ 3%)	(<10.0 (410)	(+ 0.5 mg/c)	Hernoved, Hernoved,
1	15.39	Aires										
I	16:42	Cola	07									
İ	10-10	over	5		C	-	1115/2	n				
	-			-	Thish	ed .	CI14					
	101	~			11/10	122	-			D. L.A		- 07021
	10 00	pun	np or	1 ad	g. m	20 91	m.,i	take a	ut~11	6 fit log	100 T	ag 48.82
	10:02	Puppo	21.92	1em	Set of	proxim	tely		- 110		a No	
	10:05	Punp	a1.57	101-86	w Hole Ho	24.5	6.499	167.0	2080	19.0	2.70	
	10:10	Pinp	2157	101.93	1	29-6	7.29	389	2056	38.6	2.82	
	10:15	Punp	2157	1022.6		29.7	7.30	12.6	2048	19.5	5.25	
	10.20	lump	21.90	102.14		29.7	7.34	-5.7	2064	12.4	3.56	
	10:25	fump	22.06	102.44		29.6	7.35	-2.2	2094	7.00	3.58	
	10:30	Punp	21.40	102.65		29.6	7.36	-6.1	2138	4.97	3.76	total
	10:35	Pump	22.06	102.35	5 1	29.6	7.37	-9.2	2172	3.70	3.87	790 gallons
	10		- prs	-								
	10:36	Pun	p of	¥ -								
	10:43	Javi	er pi	poins	FOR N	lext si	Jege ; f	mouin	a feet	- PB	Adding	- bft Rod.
	10.57	Int	ake v	Ju b	eat	mI	22.ft	bym	btoc	2		
	11:04	Singe	1	-				2.				
	11:07	Super	2	-								
	11:11	SURG	e 3	-								
	11:13	Sugg	44	-								
	11:10	SURGE	25	-								
	11:26	Fiag	- 99	8.85	-					-		
	11:30	fum	ip on	w	pogom	-						
	11:31	QUND	120.98	set		0						
	1135	Pump	20.90	101.41	fump min 11/224+ 11	129.7	7.42	-16-3	2231	18.8	4.02	
	11-2	Ring	2124	101.65		29.7	7.42	-19.5	a187	21.7	4.35	10561.01
	Into	Pine	21.24	10170		297	7.42	-22.6	2217	27.3	4.51	1161.79
	1145	Simo	21.40	DIDISE		29.7	7.41	-223	2229	8.98	4.61	1259 115
	1150	0,000	2120	1 101 91		39.7	7.41	-23.1	2246	4.80	4.60	1295 00
				a state to			1		-			1010.10

FW-02B - Well Development Record



e(s) 5	1115/22-	11/19/22	Project #	30126255	PG&E TOPOC	Arcadis	Oversight:	piana F	Capso- Shac ne t	Well ID	FW-02B
	titoc/2	2						Cond.	Turk MTU	00 (me/l)	Notes/Gallons
Time	Task	GPM	(ft. BMP)	Total Depth (ft. BMP)	Temp *C	pH (±1.0)	ORP (mV) (+10.0 mV)	(±3%)	(<10.0 NTU)	(+ 0.3 mg/L)	Removed/Water Clarity
05	PUMP	21.24	101.97	12210 DEC	29.7	1.41	-24,8	2270	6.54	4.71	1586.80
206	Pung	off	-	aller							
45	Attaci	fing	21' 80	d, per	oved	6 \$1	p' Rod	-			
314	1311	ft to	tool	w	139At	btoc	int	Ke 1	prati	NT	
327	tag	- 99	1.79	1 -	-						
3:30	JURG	ge #1	-								
3:30	SUR	y # 2									
3.30	5 Surg	\$ \$3	-								
3.3	SURG	t #L	1 -			-					
3:39	Junge	#5	-						-		
34	5 Pum	pon	N	20 900	d int	EKe V	+ 127F	+ bt	DC	11 00	10.00
3:5	0 fump	21.74	119.3	8 Putterna	× 29.4	1.44	140.7	2271	19.8	4.82	1799.21
3.5	5 Rmg	101.60	à1.74	1	29.6	7.44	85.1	2269	15.4	5.05	1862.07
14:01	PUM	0 21.5	1 101.73	3	29.6	7.44	14.4	2271	10.3	509	1941 . 11
14:0	5 Pump	219	0 101.9	51	29.6	7.44	67.0	2466	5.02	6.08	2086.98
14.1) fump	21.91	0 101.9	7	29.10	7.44	62.3	2280	4.34	5.11	2140.55
14:1	5 pum	0 21.74	4 101.8	9	29.6	742	58.0	229	1 380	5:10	2104,00
4:7	10 Pump	217	4 101.9	4 1	29.6	7.43	554	2007	2.96	510	ac701.20
14.	21 Pu	mpo	ff;	waitir	ig toe	Pecho	iqge :	o conc	upct 1	saseline	Spentic Cap. ter
14:4	52 Ta	8 98	.851			0	2010	000	ality -	tort	
15:	27 96	np d	4 †	am P	apelin	e 01	Lacitic.	Cat	ang		
			-	- End	g Day	T IIII	122 -	110	11	The go	Lal
08:1	5 74	8 98	.49'	, no (nub a	foot	3 10	140.	b) 1		
08:	20 Ado	ding s	succip	1001	INTO 1	JES -		102'	1221	-	
082	5 Be	gin Su	vabbin	y 100	121-17	2 gr	reen,	IDC-			
091	7 Stu	p Sw	abbi-	8 sta		+ 092	n due .	to Ain	Quall	ty-En	10000-
-	+			- 11	Jud 1	2010	D			-	my
-	-	100			14101	10 2	andurana	I	-	-	
7:	03 DT	W 98	-66	10 14	100	2-1	121 -	-	15	-	
7:	23 St	ant	Sino	NIGO.	a	1-10	21 0	ada	tin	2 -11	2' Operat
71	7 81	out	Jula	pairs	ar						
80	58 Er	vol a	t svio	toping.	415-1	UL.					

FW-02B - Well Development Record



te(s) -	15-11	19/22	Project #	30126255		Arcadi	s Oversight:	Diona	1900	Well ID	FW-020	
h	105/22			Tetal Death		-11	OPP (m)/)	Cond.	Turb NTU	DO (mg/L)	Notes/Gallons	
Time	Task	GPM	(ft. BMP)	(ft. BMP)	Temp °C	(<u>+</u> 1.0)	(+ 10.0 mV)	(± 3%)	(<10.0 NTU)	(+ 0.3 mg/L)	Removed/Water Clarity	
104	DIW	98.	60'	TO	144.6	10°, a	Far	Swab	bing	NO 09	signet	
922	Baile	Rin	we	11 -	NO LAND	ance				1		
129	Baili	Ng #	1	Sond	Sam	d	Total	solvids	3601	ML		
439	Bailin	17 #	2	-				-				
2945	Baili	*	3	-								
0948	Baili	NG #	4									
955	Baili	× #	5	Sand	35mL	IL.	Total	Sour	15 3	60 mg	L	
1958	Tag	98.1	0'01	N, 146	61'T	P Litton	# Bot	om)				
1014	Begin	SNO	phin	g, sci	een m	terval	122-	132'	-			
104	End	Swa	bing	, Se	reen w	Hewal	122-	132'				
110	Begin	SNO	pring	JSCIRE	h inte	eval	112-	122		- 1		
1202	Beg	AFS	Errcl	Suab	ping;	screen	inter	val	112-	122'		
1202	Beg	IN S	wab	Bing	Interv	ali	Scree	NIA	teral	102-	951	
R41	End	SWG	1001) ser	en mt	erval	102-	95'				
13 08	DTW	98	.53'	TD	140.	99' SI	oft Bot	tim		117	5101/1	
1323	3 Bail	8-1	#1	Sond .	dis	haguism	TUH	e si	shac	- 41	DVNLLC	
1320	1 Bail	INS :	12									
135	Bail	ING +	10					_				
133-	t Bail	UND =	+4 +5	1 al	ne	1.		0 0	i'd >	200.	111	
1344	1 Baul	BUN	0 521	Jonor	U.Sm.	-1C	104	al so	401 3.	aun		
1349	Dit	10 9	0.00	101		a ht						
1543	Wei	Ipisi	alla	Ear	d cl	10 010	11 hol		-			
					105	tos+	- di	Dan	ulial-	22 -		
	-		98.9	2 -			0	18	1.1			
0124	Rin	an or	-	,	-	-	-					
0809	2.100	z I	-	-	-				-			
0810	Suca	2	-				-					
0813	Sing	3	-	-						13.00		
0016	000	. 4	-		-							
0818	ling	5	-						-			
UDAL	- Charge			20-		tok	+	m	1110 5	1+ 1	1	

FW-02B - Well Development Record



Date(s)	5ra 11/1 ++++10=====	11 19/22	Project #	30126255	roue topo	Arcad	is Oversight:	Diara	fragoso -	ARCADI	S Job Title: Env. Geolog
Time	Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp °C	pH (+ 1.0)	ORP (mV) (+ 10.0 mV)	Cond. (µS/cm) (+ 3%)	Turb NTU (<10.0 NTU)	DO (mg/L) (+ 0.3 mg/L)	Notes/Gallons Removed/Water Clarity
0826	GPM	w22.1	DOG	m set	~ nfs						-ps ulial22
0830	Pump	22.23	101.92	Tritice P	29.6	7-26	174.4	2299	37.1	46.4	199 gal
0835	Pump	21.19	10197	pmp n116.54	89.7	9.39	90.5	2279	29.4	4.22	330 gel
0840	Pinp	22.06	102.04	Brog	29.7	7.40	72.7	2279	15.0	4.38	410 gal
0845	Rump	2206	102.09		29.7	7.42	60.7	23 22	11.2	4.47	515 gal
0850	Pump	22.23	102.14		29.7	7.42	51.4	2370	6.63	4.51	636 al
0855	Pomp	2223	102.19		29.7	7.43	44.8	2388	4.89	4.56	754 gel
0900	Pump	200	102.22		29.7	7.43	37.0	2415	3.77	4.66	857 Jal
0905	pinp	22.23	102-25		29.7	7.44	36.4	2459	226	4.78	Total gal pro
0906	Pum	b off									
0914	Add	6' R.	dif	ump .	122.5	Jt					
0922	Tag	DTW	99.0	9'.		0					
0924	SURGE	1	-								
09 29	Sunge	z									
0931	Surge	3									
0933	Surge	4	-								
0936	Inge	5	-								
0937	Tag	DTW	98.50	-							
0943	Tag	PTW	98.94								
0945	Pump	on	W20	gem ;	intak	e at	m 122.	5 ft			
0946	Pum	set	~2	2730	pm	-	143.0				
0950	Wmp	206	101-45		29.6	7.58	200	2474	11-8	5.05	
0955	fino	206	101.64		29.7	441	64.8	2466	10.7	5.12	1236gal
1000	Pump	1206	101.99		29.7	7.46	55	2475	756	5.23	1349
1005	Kimp	2206	101-85		24.7	7.45	26.6	2510	5.03	520	1460
1010	Pump	2406	19.40	1	29-1	1.45	18.6	240 1	3.23	5-33	1555
Sample II Total gall	ons remove	d at compl	etion of de	velopment:	41	'/					

FW-02B - Well Development Record

ARCADIS	Design & Consultancy for natural and built assets
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"	106/22	inter and the second se	DTW	Total Depth		рН	ORP (mV)	Cond. (µS/cm)	Turb NTU	DO (mg/L)	Notes/Gallons Removed/Water Clarity
Time	Task	GPM	(ft. BMP)	(ft. BMP)	Temp 'C	(± 1.0)	(+ 10.0 mV)	(± 3%)	(<10.0 NTU)	5.26	1688
1015	Knuck	22.06	101.94	122.5	29.4	1.45	all	2000	164	-21	Title protoced
1020	bunk	2223	101.96	Pr.	24-1	7.45	9.9	NAY	609	5.21	war even ste gaz
1021	Vump	off	-					0.11	01.	24.0.	1
1033	Remo	pring	10ft	8641	eod to	Reprace	with	alft	Kod +	218 120	a
1113	Surge 1										
1116	Surg	e 2									
1118	Singe	3	-								
1120	SURG	e4									
1122	SURG	15	-								
1125	VTO	1 98	\$4	-			1	FS			
1125	Pum	pon	ND	Ogpm	jinto	re at	139	120	lft		
1137	Pmp) alt	ath	22.00	gern		100	0010	0.20	Eko	1924
1130	Punp	22-23	101-32	TATORE	29.6	751	151-8	2562	9.51	513	2012
1135	Pump	2240	101-94	pro	29.1	7-48	112-8	2501	1127	-21	2137
1140	Pumi	22.40	101.7.	2	29.1	7.91	012	2 2521	251	5-36	7237
1145	Pum	p 22.4	0 101.7	9	29.7	7-41	94.0	1000	222	536	2358
1150	Pump) 22.40	101.8	4	29.7	+-46	88.4	2529	0 2-22	540	2550
11:55	5 Puny) 2240	101-8	1	24.1	+46	82-1	000	Q.T	540	total produced
12:0	Olinp	2240	0 101.9		29.1	7.40	87.0	000	122	-10	
B:0	1 Vur	npott	-								
12:2	1 98	93	-				0	1-	T		
1235	5 Goi	ng to	Stort	- Base	line J	pecifie	Capaci	tyle			
133	5 En	d cf	Capa	city t	est; t	atry	sample	e, pun	pstill	5.71	
133	6	24.1	59	-	292	17-48	189.7	001	0.50	P.M	
134	11 30	mple	d	IURD	0.50	A I	HS TOTI		-	-	Total Gallins perso
134	13 Pu	mpaf	F -	- 1110	22 P	1341	Thest	ing			11/19/22 4270
Samp	le ID and T	moved at co	mpletion	of developme	int: 9	776 Ja	e				

FW-02B - Well Development Record

Specific Capacity Testing Package



Location/Well ID	FW-02B
Date	11/20/2022
Screened Interval Tested	95-132 ft bgs
Packer Set Depth	N/A - Single Screen
Packer Seal Test	N/A - Single Screen
Tests Conducted	Four-step specific capacity test (25, 50, 35, and 30 gpm)
Purpose	Specific Capacity Test
Summary	Specific capacity results: 25 gpm = 6.27 gpm/ft, and 30 gpm = 1.15 gpm/ft.
Notes	The test was limited to two distinct tests; approximately 20 minutes into the 50 gpm rate step test, the flow rates started fluctuating. The pumping rate was reduced to 35 gpm. The cause for the fluctuation was water cascading into the well from the dewatered upper screen, giving false water level readings. The pumping rate was further decreased to 30 gpm to prevent the water level from dropping below the transducer. Pumping at 30 gpm was continued through the end of the regular test time but the water level did not stabilize.
Oversight Signature	Ch. Saild
Date	12/6/2022

Acronyms & Abbreviations

bgs = below ground surface ft = feet gpm = gallons per minute IM = interim measure



Location/Well ID	FW-02B
Date	11/20/2022
Screened Interval	95-132 bgs
Pump Depth (ft btoc)	129 ft bgs
Packer Depth (ft btoc)	N/A - Single Screen
Packer Leak Test (Pass/Fail)	N/A - Single Screen
Initial Water Level (ft btoc)	98.86
Initial Totalizer Reading (gal)	307428.00
Final Totalizer Reading (gal)	320102
Approx Pumped Volume (gal)	12674.00
Calculated Volume Purged (gal)	12312.50
Difference in Volume Pumped vs. Calculated	361.50
Number of Specific Capacity Steps	4
Pumping Rates (in order)	25, 50, 35 and 30 gpm

Step 1 (25 GPM) Time	Change in Time Between Measurements	Elapsed Time	Pumping Rate	Total Volume	Depth to	Drawdown
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)
8:35:00	0.00	0.00	0.00	0.00	98.86	0.00
8:40:00	5.00	0.00	0.00	0.00	98.86	0.00
8:41:00	1.00	1.00	27.61	27.61	101.61	2.75
8:42:00	1.00	2.00	24.56	52.17	-	-
8:43:00	1.00	3.00	25.00	77.17	101.78	2.92
8:44:00	1.00	4.00	26.22	103.39	101.87	3.01
8:45:00	1.00	5.00	25.06	128.45	101.95	3.09
8:46:00	1.00	6.00	24.88	153.33	102.04	3.18
8:47:00	1.00	7.00	25.06	178.39	102.08	3.22
8:48:00	1.00	8.00	24.88	203.27	102.08	3.22
8:49:00	1.00	9.00	25.06	228.33	102.15	3.29
8:50:00	1.00	10.00	25.06	253.39	102.19	3.33
8:52:00	2.00	12.00	25.06	303.51	102.25	3.39
8:54:00	2.00	14.00	25.06	353.63	102.31	3.45
8:56:00	2.00	16.00	24.88	403.39	102.35	3.49
8:58:00	2.00	18.00	24.88	453.15	102.37	3.51
9:00:00	2.00	20.00	24.88	502.91	102.40	3.54
9:02:00	2.00	22.00	25.06	553.03	102.44	3.58
9:04:00	2.00	24.00	24.88	602.79	102.47	3.61
9:06:00	2.00	26.00	25.06	652.91	102.49	3.63
9:08:00	2.00	28.00	24.88	702.67	102.51	3.65
9:10:00	2.00	30.00	24.88	752.43	102.54	3.68
9:15:00	5.00	35.00	25.06	877.73	102.57	3.71
9:20:00	5.00	40.00	24.88	1002.13	102.61	3.75
9:25:00	5.00	45.00	25.06	1127.43	102.65	3.79
9:30:00	5.00	50.00	24.88	1251.83	102.67	3.81
9:35:00	5.00	55.00	25.06	1377.13	102.69	3.83
9:40:00	5.00	60.00	24.88	1501.53	102.72	3.86
9:50:00	10.00	70.00	24.88	1750.33	102.75	3.89
10:00:00	10.00	80.00	24.72	1997.53	102.79	3.93
10:10:00	10.00	90.00	24.88	2246.33	102.81	3.95
10:20:00	10.00	100.00	24.88	2495.13	102.84	3.98
10:30:00	10.00	110.00	25.06	2745.73	102.86	4.00
Total Volume Pumpe	ed for Step 1 (gal)		2745.73			
Average Pumping Ra	te (gpm)		25.07			
Specific Capacity (gp	m/ft)		6.27			



Location/Well I	FW-02B				
Dat	e 11/20/2	022			
Screened Interva	al 95-132 l	ogs			
Pump Depth (ft bto	:) 129 ft b	gs			
Packer Depth (ft bto	:) N/A - Sir	ngle Screen			
Packer Leak Test (Pass/Fai	I) N/A - Sir	ngle Screen			
Initial Water Level (ft bto	98.86				
Initial Totalizer Reading (ga) 307428.	00			
Final Totalizer Reading (ga	320102				
Approx Pumped Volume (ga	l) 12674.0	0			
Calculated Volume Purged (ga	l) 12312.5	0			
Difference in Volume Pumped vs. Calculate	d 361.50				
Number of Specific Capacity Step	s 4				
Pumping Rates (in orde) 25, 50, 3	35 and 30 gpm			
Step 2 Change in Time Flanced					Flancod
(50 GPM) Between Time free	Dumning				Time from
Time measurements Test Star	t Rate	Total Volume	Denth to	Drawdown	Sten 2 Start
(HR:MN:SEC) (min) (min)	(gpm)	Pumped (gal)	Water (ft)	(ft)	(min)
	25.06	2745.73	102.86	4.00	0.00
10:40:05 10.08 120.0	8 -	2745.73	103.52	4.66	10.08
10:40:11 0.10 120.1	8 -	2745.73	103.76	4.90	10.18
10:40:22 0.18 120.3	7 -	2745.73	103.76	4.90	10.37
10:40:33 0.18 120.5	5 -	2745.73	104.05	5.19	10.55
10:40:55 0.37 120.9	2 -	2745.73	104.45	5.59	10.92
10:41:00 0.08 121.0	50.73	2749.96	104.59	5.73	11.00
10:42:00 1.00 122.0	50.56	2800.52	105.60	6.74	12.00
10:43:00 1.00 123.0	0 50.56	2851.08	107.72	8.86	13.00
10:44:00 1.00 124.0	50.24	2901.32	108.71	9.85	14.00
10:45:00 1.00 125.0	0 49.91	2951.23	109.61	10.75	15.00
10:46:00 1.00 126.0	0 49.42	3000.65	110.46	11.60	16.00
10:47:00 1.00 127.0	9.10	3049.75	111.70	12.84	17.00
10:48:00 1.00 128.0	48.97	3098.72	112.91	14.05	18.00
10:49:00 1.00 129.0	48.20	3146.92	114.27	15.41	19.00
10:50:00 1.00 130.0	44.85	3191.77	114.45	15.59	20.00
10:52:00 2.00 132.0	47.22	3286.21	114.61	15.75	22.00
10:54:00 2.00 134.0	47.06	3380.33	114.72	15.86	24.00
10:56:00 2.00 136.0	46.90	3474.13	114.64	15.78	26.00
10:58:00 2.00 138.0	46.50	3567.13	114.55	15.69	28.00
11:00:00 2.00 140.0	50.90	3668.93	114.64	15.78	30.00
11:02:00 2.00 142.0	46.56	3762.05	114.61	15.75	32.00
11:04:00 2.00 144.0	44.50	3851.05	112.54	13.68	34.00
11:06:00 2.00 146.0	44.35	3939.75	112.61	13.75	36.00
	JI 41.61	4022.97	114.05	15.19	38.00
11.10.00 2.00 150.0					
11.10.00 2.00 150.0	39.84	4102.65	110.14	11.28	40.00
Total Volume Pumped for Step 2 (gal)	0 39.84 1356.92	4102.65	110.14	11.28	40.00



	Locati	on/Well ID	FW-02B				
		Date	11/20/2	022			
	Screen	ed Interval	95-132 k	ogs			
	Pump Dep	th (ft btoc)	129 ft bg	gs			
	Packer Dep	th (ft btoc)	N/A - Sir	ngle Screen			
	Packer Leak Test	N/A - Sir	ngle Screen				
	Initial Water Level (ft btoc)						
	Initial Totalizer Reading (gal)						
	Final Totalizer Re	ading (gal)	320102				
4	Approx Pumped Vo	olume (gal)	12674.0	0			
Ca	Iculated Volume P	urged (gal)	12312.5	0			
Difference in Vo	olume Pumped vs.	Calculated	361.50				
Num	ber of Specific Cap	acity Steps	4				
	Pumping Rate	s (in order)	25, 50, 3	5 and 30 gpm			
64 m 2	Change in Time	Flowerd					F lawsond
Step 3	Change in Time	Elapsed	Dumming	Tatal Maluma			Elapsed
(35 gpm)	Mossurements	Time from	Pumping	Dumped	Donth to	Draudaura	Time from
	(min)	(min)	(anm)	(Callons)	Motor (ft)	(f+)	(min)
(HK:IVIN:SEC)	(1111)	150.00	(ghu)		110 14	(11)	(1111)
11.10.00	0.00 5.75	150.00	25.04	4102.05	110.14	11.20	0.00
11.15.45	5.75	155.75	25.04	4304.13	114.50	15.50	5.75
11:20:33	4.80	165.00	35.68	4475.33	- 11/1 00	- 15 1/	- 15.00
11.23.00	6 75	171 75	35.68	4034.17	114.00	15.14	21 75
11:31:45	3 25	175.00	35.84	4075.01	114.70	15.04	21.75
11.33.00	5.25	180.00	35.84	5170.69	114.00	16.04	30.00
11:47:00	7.00	187.00	35.04	5419 33	173.81	24 95	37.00
11.55.00	7.00 8.00	195.00	35.52	5703 57	174 39	24.55	45.00
12:00:00	5.00	200.00	35.53	5881 22	124.42	25.55	50.00
12:05:34	5.00	205.57	35.65	6079.67	125.20	26.34	55.57
Total Volume Pump	ed for Step 3 (gal)	203.37	1977.02	007.5.07	123.20	20.34	55.57
Average Pumping Ra	ite (gpm)		35.60				
Specific Capacity (gn	m/ft)		1.35				
charge enhanced (Bb	,,						

ļ	1			1	i '	1	
Step 4	Change in Time	Flapsed	1	1	1	1	Elapsed
(30 gpm)	Between	Time from	Pumping	Total Volume	1	1	Time from
Time	Measurements	Test Start	Rate	Pumped	Depth to	Drawdown	Step 3 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	(Gallons)	Water (ft)	(ft)	(min)
12:05:34	0.00	205.57	35.65	6079.67	125.20	26.34	0.00
12:12:00	6.43	212.00	30.80	6277.82	121.00	22.14	6.43
12:17:00	5.00	217.00	30.96	6432.62	119.71	20.85	11.43
12:20:00	3.00	220.00	30.96	6525.50	119.05	20.19	14.43
12:30:00	10.00	230.00	30.80	6833.50	118.41	19.55	24.43
12:40:00	10.00	240.00	31.13	7144.80	118.52	19.66	34.43
12:50:00	10.00	250.00	30.80	7452.80	118.95	20.09	44.43
13:00:00	10.00	260.00	30.84	7761.20	119.49	20.63	54.43
13:10:00	10.00	270.00	30.84	8069.60	119.92	21.06	64.43
13:20:00	10.00	280.00	30.80	8377.60	120.41	21.55	74.43
13:30:00	10.00	290.00	30.84	8686.00	120.90	22.04	84.43
13:40:00	10.00	300.00	30.30	8989.00	121.28	22.42	94.43
13:50:00	10.00	310.00	30.64	9295.40	121.78	22.92	104.43
14:00:00	10.00	320.00	30.30	9598.40	122.06	23.20	114.43
14:10:00	10.00	330.00	30.30	9901.40	122.50	23.64	124.43
14:20:00	10.00	340.00	30.64	10207.80	122.85	23.99	134.43
14:30:00	10.00	350.00	30.30	10510.80	123.01	24.15	144.43
14:40:00	10.00	360.00	30.14	10812.20	123.40	24.54	154.43
14:50:00	10.00	370.00	30.14	11113.60	123.84	24.98	164.43
15:00:00	10.00	380.00	29.97	11413.30	124.36	25.50	174.43
15:10:00	10.00	390.00	30.14	11714.70	124.72	25.86	184.43
15:20:00	10.00	400.00	29.98	12014.50	124.80	25.94	194.43
15:30:00	10.00	410.00	29.80	12312.50	125.51	26.65	204.43
15:30:49	0.82	410.82	0.00	12312.50	119.70	20.84	205.25
15:31:00	0.18	411.00	0.00	12312.50	116.96	18.10	205.43
15:31:31	0.52	411.52	0.00	12312.50	114.50	15.64	205.95
15:31:42	0.18	411.70	0.00	12312.50	113.05	14.19	206.13



	Locatio	on/Well ID	FW-02B				
		Date	11/20/20	22			
	Screen	ed Interval	95-132 bg	gs			
	Pump Dept	th (ft btoc)	129 ft bgs	5			
	Packer Dept	th (ft btoc)	N/A - Sing	gle Screen			
	Packer Leak Test	(Pass/Fail)	N/A - Sing	gle Screen			
	Initial Water Lev	el (ft btoc)	98.86				
	Initial Totalizer Re	ading (gal)	307428.0	0			
	Final Totalizer Re	ading (gal)	320102				
A	pprox Pumped Vo	olume (gal)	12674.00				
Cal	culated Volume P	urged (gal)	12312.50				
Difference in Vo	lume Pumped vs.	Calculated	361.50				
Numb	per of Specific Cap	acity Steps	4				
	Pumping Rates (in order)						
15:32:00	0.30	412.00	0.00	12312.50	110.91	12.05	206.43
15:33:00	1.00	413.00	0.00	12312.50	-	-	-
15:35:00	2.00	415.00	0.00	12312.50	-	-	-
15:37:00	2.00	417.00	0.00	12312.50	105.29	6.43	211.43
15:38:00	1.00	418.00	0.00	12312.50	103.58	4.72	212.43
15:39:00	1.00	419.00	0.00	12312.50	102.81	3.95	213.43
15:40:00	1.00	420.00	0.00	12312.50	102.11	3.25	214.43
15:41:00	1.00	421.00	0.00	12312.50	101.48	2.62	215.43
15:42:25	1.42	422.42	0.00	12312.50	100.96	2.10	216.85
15:43:34	1.15	423.57	0.00	12312.50	100.59	1.73	218.00
15:44:15	0.68	424.25	0.00	12312.50	100.43	1.57	218.68
15:45:00	0.75	425.00	0.00	12312.50	100.23	1.37	219.43
15:54:00	9.00	434.00	0.00	12312.50	99.42	0.56	228.43
Total Volume Pumpe	ed for Step 4 (gal)		6232.83				
Average Pumping Ra	te (gpm)		30.52				
Specific Capacity (gp	m/ft)		1.15				

Acronyms & Abbreviations

bgs = below ground surface btoc = below top of casing ft = feet gal = gallons gpm = gallons per minute min = minutes -= no data



MW-88-107 During FW-02B Specific Capacity Test On 11/20/22





Specific Injectivity Package

Specific Capacity Test



Location/Well ID	FW-02B
Date	11/21/2022
Screened Interval Tested	95-132 ft bgs
Packer Set Depth	N/A
Packer Seal Test	N/A
Tests Conducted	Three-step injectivity test (25, 50, and 75 gpm)
Purpose	Well injectivity test
Summary	Specific injectivity: 25 gpm = 3.95 gpm/ft, 50 gpm = 2.0 gpm/ft, and 75 gpm = 1.33 gpm/ft.
Notes	The brief increase of the water level in Step 3 was cause by a drop in the pumping rate. The 75 gpm flow rate step test was stopped prior to achieving stabilization because the test could not be extended before it got dark.
Oversight Signature	Ch. Saile
Date	1/9/2023

Acronyms & Abbreviations

bgs = below ground surface ft = feet gpm = gallons per minute IM = interim measure



Location/Well ID	FW-02B
Date	11/21/2022
Screened Interval	95-132 ft.
Injection Outlet Depth (ft btoc)	130 ft bgs
Packer Depth (ft btoc)	N/A
Packer Leak Test (Pass/Fail)	N/A
Initial Water Level (ft btoc)	98.85
Initial Totalizer Reading (gal)	320146.00
Final Totalizer Reading (gal)	339579
Approx Pumped Volume (gal)	19740.27
Calculated Volume Purged (gal)	19433.00
Difference in Volume Pumped vs. Calculated	307.27
Number of Specific Capacity Steps	3
Pumping Rates (in order)	25, 50 and 75 gpm

Step 1 (25 GPM) Time (HR:MN:SEC)	Change in Time Between Measurements (min)	Elapsed Time (min)	Pumping Rate	Total Volume	Depth to	Mounding
9·35·00	0.00	0.00	(Bhiii)		98.85	0.00
9:37:15	2.25	2 25	25.22	56 74	94 57	4.28
9:38:00	0.75	3.00	25.22	75.66	-	-
9:38:20	0.33	3.33	25.22	84.07	94.67	4.18
9:39:00	0.67	4.00	25.22	100.88	94.62	4.23
9:40:04	1.07	5.07	25.06	127.61	94.53	4.32
9:41:09	1.08	6.15	25.06	154.76	94.45	4.40
9:42:10	1.02	7.17	25.22	180.40	94.37	4.48
9:42:12	0.03	7.20	25.22	181.24	94.32	4.53
9:44:00	1.80	9.00	25.22	226.64	94.28	4.57
9:45:09	1.15	10.15	25.06	255.45	94.23	4.62
9:47:20	2.18	12.33	25.06	310.17	94.13	4.72
9:49:32	2.20	14.53	25.09	365.37	94.02	4.83
9:51:00	1.47	16.00	25.22	402.36	93.95	4.90
9:53:00	2.00	18.00	25.06	452.48	93.88	4.97
9:55:14	2.23	20.23	25.06	508.44	93.82	5.03
9:57:14	2.00	22.23	25.06	558.56	93.75	5.10
9:59:00	1.77	24.00	25.06	602.84	93.68	5.17
10:01:00	2.00	26.00	25.06	652.96	93.62	5.23
10:03:11	2.18	28.18	25.22	708.02	93.57	5.28
10:05:00	1.82	30.00	25.06	753.55	93.53	5.32
10:10:00	5.00	35.00	25.06	878.85	93.40	5.45
10:15:00	5.00	40.00	25.06	1004.15	93.31	5.54
10:20:00	5.00	45.00	24.88	1128.55	93.25	5.60
10:25:00	5.00	50.00	25.06	1253.85	93.14	5.71
10:30:00	5.00	55.00	24.88	1378.25	93.05	5.80
10:35:00	5.00	60.00	25.72	1506.85	93.00	5.85
10:45:00	10.00	70.00	24.88	1755.65	92.87	5.98
10:55:00	10.00	80.00	24.88	2004.45	92.77	6.08
11:05:00	10.00	90.00	24.88	2253.25	92.70	6.15
11:15:00	10.00	100.00	24.56	2498.85	92.63	6.22
11:25:00	10.00	110.00	24.72	2746.05	92.56	6.29
11:34:00	9.00	119.00	24.56	2967.09	92.51	6.34
Total Volume Pumpe	d for Step 1 (gal)		2967.09			
Average Pumping Ra	25.06					
Specific Injectivity (g	3.95					

Specific Capacity Test

					_		
	Locat	ion/Well ID	FW-02B		1		
		Date	11/21/2022				
Screened Interval			95-132 f	t.			
Injection Outlet Depth (ft btoc)			33-132 IL. 130 ft bas				
Injection Outlet Depth (ft btoc)							
Packer Depth (ft btoc)			N/A				
Packer Leak Test (Pass/Fail)			N/A				
Initial Water Level (ft btoc)			98.85				
Initial Totalizer Reading (gal)			320146.00				
	Final Totalizer Reading (gal)			339579			
	Approx Pumped V	olume (gal)	19740.27				
Ca	Iculated Volume F	Purged (gal)	19433.0	D			
Difference in Ve	olume Pumped vs.	Calculated	307.27				
Num	ber of Specific Cap	oacity Steps	3				
	Pumping Rate	s (in order)	25, 50 and 75 gpm				
Step 2	Change in Time	Elapsed					Elapsed
(50 GPM)	Between	Time from	Pumping				Time from
Time	measurements	Test Start	Rate	Total Volume	Depth to	Mounding	Step 2 Start
(HRIMNISEC)	(min)	(min)	(anm)	Pumped (gal)	Water (ft)	(f+)	(min)
	(1111)	(1111)	(Shiii)			(11)	(1111)
11:34:00	0.00	119.00	24.56	2967.09	92.51	6.34	0.00
11:35:07	1.12	120.12	-	2967.09	92.51	6.34	1.12
11:35:12	0.08	120.20	-	2967.09	92.31	6.54	1.20
11:35:30	0.30	120.50	-	2967.09	91.21	7.64	1.50
11:35:38	0.13	120.63	-	2967.09	90.91	7.94	1.63
11:35:43	0.08	120.72	50.56	2971.30	90.45	8.40	1.72
11:36:00	0.28	121.00	50.73	2985.68	89.61	9.24	2.00
11:37:00	1.00	122.00	50.73	3036.41	87.65	11.20	3.00
11.38.00	1.00	123.00	50.75	3086 97	86.33	12 52	4 00
11.30.00	1.00	123.00	50.50 50 70	2127 70	QE 11	12.00	4.00 E 00
11:39:00	1.00	124.00	50.73	5137.70	05.42	13.43	5.00
11:40:00	1.00	125.00	50.56	3188.26	84.59	14.26	6.00
11:41:00	1.00	126.00	50.90	3239.16	83.86	14.99	7.00
11:42:00	1.00	127.00	50.73	3289.89	83.81	15.04	8.00
11:43:00	1.00	128.00	50.56	3340.45	82.81	16.04	9.00
11:44:00	1.00	129.00	50.73	3391.18	82.41	16.44	10.00
11:45:00	1.00	130.00	50.56	3441.74	82.05	16.80	11.00
11:47:00	2.00	132.00	50.56	3542.86	81.39	17.46	13.00
11:49:00	2.00	134.00	50.56	3643.98	80.88	17.97	15.00
11:51:00	2.00	136.00	50.40	3744.78	80.45	18.40	17.00
11:53:00	2.00	138.00	50.40	3845.58	80.05	18.80	19.00
11.55.00	2.00	140.00	50.40	3946 38	79.67	19 19	21 00
11.55.00	2.00	1/12 00	50.40	AU12 10	70.06	10 5.10	22.00
11.57.00	2.00	144.00	50.40	11/0 20	79.20	10.01	25.00
11.59:00	2.00	144.00	50.50	4140.30	70.94	19.91	25.00
12:01:00	2.00	146.00	50.40	4249.10	/8.68	20.17	27.00
12:03:00	2.00	148.00	50.40	4349.90	/8.43	20.42	29.00
12:05:00	2.00	150.00	50.24	4450.38	78.20	20.65	31.00
12:10:00	5.00	155.00	50.24	4701.58	77.77	21.08	36.00
12:15:00	5.00	160.00	50.08	4951.98	77.35	21.50	41.00
12:20:00	5.00	165.00	50.24	5203.18	77.04	21.81	46.00
12:25:00	5.00	170.00	50.08	5453.58	76.67	22.18	51.00
12:30:00	5.00	175.00	49.91	5703.13	76.45	22.40	56.00
12:35:00	5.00	180.00	50.90	5957.63	75.84	23.01	61.00
12:45:00	10.00	190.00	50.90	6466.63	75.31	23.54	71.00
12:-5:00	10.00	200.00	50.50	6073 03	7/ 26	23.54	\$1.00 \$1.00
12.05.00	10.00	200.00	50.75	7/02/3.93	74.00	23.39	01.00
13.05:00	10.00	210.00	50.90	7402.93	74.55	24.30	91.00
13:15:00	10.00	220.00	50.56	/988.53	/4.26	24.59	101.00
13:25:00	10.00	230.00	50.73	8495.83	74.11	24.74	111.00
13:35:00	10.00	240.00	50.56	9001.43	74.00	24.85	121.00
13:45:00	10.00	250.00	50.56	9507.03	73.84	25.01	131.00
13:50:00	5.00	255.00	50.56	9759.83	73.75	25.10	136.00
13:55:00	10.00	260.00	50.40	10263.83	73.58	25.27	141.00
Total Volume Pumpe	d for Step 2 (gal)		7296.74				-
Average Pumping Rate (gnm)			50 53				
Specific Injectivity (g	2 00						



	Locat		F\W/_∩2₽		l i		
Location/ well ID			100-020				
Date			11/21/2	022			
Screened Interval			95-132 ft.				
Injection Outlet Depth (ft btoc)			130 ft bgs				
Packer Depth (ft btoc)			N/A				
Packer Leak Test (Pass/Fail)			N/A				
Initial Water Level (ft btoc)			98.85				
Initial Totalizer Reading (gal)			320146.00				
First Totalizer Reading (gal)			220570				
	Final Totalizer Reading (gal)			10740.07			
	Approx Pumped V	olume (gal)	19740.2	/			
Ca	Iculated Volume F	Purged (gal)	19433.0	D			
Difference in Ve	olume Pumped vs.	Calculated	307.27				
Num	ber of Specific Cap	oacity Steps	3				
	Pumping Rate	es (in order)	25, 50 ai	nd 75 gpm			
Step 3	Change in Time	Elapsed					Elapsed
(75 gpm)	Between	Time from	Pumping	Total Volume			Time from
Time	Measurements	Test Start	Rate	Pumped	Depth to	Drawdown	Step 3 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	(Gallons)	Water (ft)	(ft)	(min)
13.22.00	0.00	260.00	50 40	10263.83	73 58	25.27	0.00
14.00.04	5.00	265.00	20.⊐0 86.28	10700 99	73.50	25.27	5.00
14.00.04	0.07	203.07	60.20	10719 /6	71.01	20.00	5.07
14.00.19	0.25	203.32	60.60	10727 67	/1.91	20.94	5.32
14:00:38	0.32	205.03	00.00	10/3/.0/	09.00	29.85	5.03
14:00:54	0.27	265.90	63.79	10754.68	71.31	27.54	5.90
14:01:07	0.22	266.12	69.68	10769.78	/0.80	28.05	6.12
14:02:08	1.02	267.13	75.73	10846.77	67.71	31.14	7.13
14:03:00	0.87	268.00	75.57	10912.27	65.47	33.38	8.00
14:04:00	1.00	269.00	75.57	10987.84	63.08	35.77	9.00
14:05:00	1.00	270.00	75.73	11063.57	61.44	37.41	10.00
14:06:00	1.00	271.00	75.73	11139.30	59.64	39.21	11.00
14:07:00	1.00	272.00	75.89	11215.19	58.29	40.56	12.00
14:08:00	1.00	273.00	75.57	11290.76	56.00	42.85	13.00
14:09:00	1.00	274.00	75.57	11366.33	55.89	42.96	14.00
14:10:00	1.00	275.00	75.57	11441.90	54.90	43.95	15.00
14:12:00	2.00	277.00	75.73	11593.36	53.14	45.71	17.00
14:13:00	1.00	278.00	75.88	11669.24	-	-	18.00
14:14:00	1.00	279.00	75.57	11744.81	51.85	47.00	19.00
14:16:00	2.00	281.00	75.57	11895.95	50.65	48.20	21.00
14:18:00	2.00	283.00	75.73	12047.41	49.54	49.31	23.00
14:20:00	2.00	285.00	75.57	12198.55	48.71	50.14	25.00
14.22.00	2.00	287.00	75.57	12349 69	47.99	50.86	27.00
14.24.00	2.00	289.00	75 57	12500.83	47.28	51 57	29.00
14.24.00	2.00	203.00	75 57	12651 07	46.67	52.57	20.00
11.20.00	2.00	201.00	75.37	12001.07	16.00	52.10	33 00
14.20.00	2.00	233.00 20F 00	75.40	12002.//	40.09	52.70	25.00
14:30:00	2.00	295.00	75.40	12953.57	45.05	53.20	35.00
14:35:00	5.00	300.00	75.40	13330.57	45.05	53.80	40.00
14:40:00	5.00	305.00	75.08	13/05.9/	44.//	54.08	45.00
14:45:00	5.00	310.00	75.08	14081.37	44.55	54.30	50.00
14:50:00	5.00	315.00	74.97	14456.22	44.29	54.56	55.00
14:55:00	5.00	320.00	74.92	14830.82	47.00	51.85	60.00
15:00:00	5.00	325.00	75.57	15208.67	46.55	52.30	65.00
15:10:00	10.00	335.00	75.73	15965.97	44.91	53.94	75.00
15:20:00	10.00	345.00	75.40	16719.97	44.14	54.71	85.00
15:30:00	10.00	355.00	75.57	17475.67	43.46	55.39	95.00
15:40:00	10.00	365.00	75.08	18226.47	43.06	55.79	105.00
15:50:00	10.00	375.00	75.73	18983.77	42.47	56.38	115.00
15:55:00	5.00	380.00	75.73	19362.42	42.51	56.34	-
16:00:00	5.00	385.00	75.57	19740.27	42.65	56.20	125.00
Total Volume Pumpe	d for Step 3 (gal)		9476.44				
Average Pumping Rate (gnm)			74.50				
Specific Injectivity (gpm/ft)			1.33				

Abbreviations

- = no data



MW-88-107 During FW-02B Specific Capacity Test On 11/20/22





Photo Logs

ARCADIS

CLIENT NAME: PG&E

Arcadis PROJECT NO: 30126255



Core Depth: 7 to 8 ft bgs Description: Samples 0-5 ft bgs previously collected for logging during air knifing activities. No recovery from 5 to 7 ft bgs. Date: 8/21/2022

WELL CORE PHOTO LOG

FW-02B Pilot 0 to 142 ft

Core Depth: 8 to 10.5 ft bgs Description: Depths on wipe board are not correct. Date: 8/21/2022 PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 8/31/2022



Core Depth: 17 to 22 ft bgs Date: 8/21/2022



Core Depth: 22 to 27 ft bgs Date: 8/21/2022 Core Depth: 27 to 32 ft bgs Date: 8/21/2022 Core Depth: 32 to 37 ft bgs Date: 8/21/2022


Core Depth: 52 to 55 ft bgs Date: 8/21/2022



Core Depth: 52 to 55 ft bgs Date: 8/21/2022

CLIENT NAME: PG&E PROJECT NAME / LOCATION: Topock Compressor Station, Needles, WELL CORE PHOTO LOG California Arcadis PROJECT NO: 30126255 PHOTOS LAST ADDED: 8/31/2022 FW-02B Pilot 0 to 142 ft 60 5 - LOF ft me Core Depth: 55 to 60 ft bgs Core Depth: 60 to 65 ft bgs Core Depth: 67 to 72 ft bgs Description: No recovery from 65 to 67 feet bgs. Date: 8/21/2022 Date: 8/22/2022 Date: 8/21/2022 a/12/12 77 - 82 82 - 87

ft bas

Core Depth: 72 to 77 ft bgs Date: 8/22/2022

ft bas

Core Depth: 77 to 82 ft bgs Date: 8/22/2022 Core Depth: 82 to 87 ft bgs Date: 8/22/2022

ft bas



CLIENT NAME: PG&E	WELL CORE PHOTO LOG	PROJECT NAME / LOCATION: Topock Compressor Station, Needles, California		
Arcadis PROJECT NO: 30126255	FW-02B Pilot 0 to 142 ft	PHOTOS LAST ADDED: 8/31/2022		
Core Depth: 117 to 122 ft bgs Date: 8/24/2022	Core Depth: 122 to 124.5 ft bgs Date: 8/30/2022	<image/> <image/> <text></text>		



Core Depth: 127 to 129.5 ft bgs Date: 8/30/2022



Core Depth: 129.5 to 132 ft bgs Date: 8/30/2022



Core Depth: 132 to 142 ft bgs Date: 8/31/2022



Core Depth: 132 to 142 ft bgs Description: First bag approx. 132 to 134.5 ft bgs, second bag approx. 134.5 to 137 ft bgs Date: 8/31/2022 Core Depth: 132 to 142 ft bgs Description: First bag approx. 134.5 to 137 ft bgs, second bag approx. 137 to 139.5 ft bgs. Date: 8/31/2022 Core Depth: 132 to 142 ft bgs Description: First bag approx. 137 to 139.5 ft bgs, second bag approx. 139.5 to 142 ft bgs. Date: 8/31/2022



Core Depth: 132 to 142 ft bgs Date: 8/31/2022





Date: 10/21/2022



Date: 10/21/2022





 CLIENT NAME: PG&E
 WELL CONSTRUCTION PHOTO LOG
 PROJECT NAME / LOCAT PG&E Topock Compresso

 Arcadis PROJECT NO: 30126255
 WELL ID: FW-02B

 Image: Comparison of the comparison of t

12" SDR-17 WELL CASING ASTM F480 HSP* CE SWEET FPC HSP ARMODAL BLAKER #STHERE TO BE



PROJECT NAME / LOCATION: Final Groundwater Remedy,

 PG&E Topock Compressor Station/Needles, CA

10/22/2022 – FW-02B: Confirmation of inner diameter of well 0.94 feet (11.28-inches)

10/22/2022 – FW-02B: Confirmation of Shur-Grip SDR-17 PVC well casing

10/22/2022 – FW-02B: 316L Stainless Steel End Cap



Arcadis PROJECT NO: 30126255

 WELL CONSTRUCTION PHOTO LOG
 PROJECT NAME / LOCATION: Final Groundwater Remedy,

 PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B



kwik-ZIP°

HD100

10/22/2022 – FW-02B: 316L Stainless Steel End Cap

10/22/2022 – FW-02B: Kwik-Zip centralizers

10/22/2022 - FW-02B-

10/22/2022 – FW-02B: Kwik-Zip centralizers



CLIENT NAME: PG&E	WELL CONSTRUCTION PHOTO LOG	PROJECT NAME / LOCATION: Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA		
Arcadis PROJECT NO: 30126255		WELL ID: FW-02B		
		10/22/2022 – FW-02B: Upper screen Red Flint 0.80-1.20 MM Filter Pack Sand		
Bark Friday		10/22/2022 – FW-02B: Red Flint 0.20-0.30 MM Transition Sand		
		10/22/2022 – FW-02B: Lower Screen Red Flint 0.35-0.45 MM Filter Pack Sand		



Arcadis PROJECT NO: 30126255

PROJECT NAME / LOCATION: Final Groundwater Remedy, WELL CONSTRUCTION PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B

PHOTO LOG







10/22/2022 - FW-02B: Shur-Grip SDR-17 PVC Cap

10/23/2022 - FW-02B: Stainless Steel Cap and Shur-Grip SDR-17 PVC Sump (#1)

10/23/2022 - FW-02B: Centralizer on sump (#1), set at approximately 134.5 ft. bgs



Arcadis PROJECT NO: 30126255

PROJECT NAME / LOCATION: Final Groundwater Remedy, WELL CONSTRUCTION PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B

PHOTO LOG





10/23/2022 - FW-02B: 12-inch 15-slot Type 316L Stainless Steel Wire Wrap Screen (#2)

10/23/2022 - FW-02B: Shur-Grip SDR-17 PVC Well Casing (#3)

10/23/2022 - FW-02B: Centralizer on Well Casing (#3), set at approximately 116 ft. bgs



Arcadis PROJECT NO: 30126255

PROJECT NAME / LOCATION: Final Groundwater Remedy, WELL CONSTRUCTION PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B

PHOTO LOG

10/23/2022 - FW-02B: 12-inch 35-slot Type 316L Stainless Steel Wire Wrap Screen (#4)

10/23/2022 - FW-02B: Shur-Grip SDR-17 PVC Well Casing (#5)

10/23/2022 - FW-02B: Shur-Grip SDR-17 PVC Well Casing (#6) with centralizer set at approximately 92.5 ft. bgs



Arcadis PROJECT NO: 30126255

PROJECT NAME / LOCATION: Final Groundwater Remedy, WELL CONSTRUCTION PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B

PHOTO LOG

10/23/2022 - FW-02B: Shur-Grip SDR-17 PVC Well Casing (#7)

10/23/2022 - FW-02B: Shur-Grip SDR-17 PVC Well Casing (#8)

10/23/2022 - FW-02B: Centralizer on Well Casing (#8), set at approximately 54 ft. bgs





Arcadis PROJECT NO: 30126255

 WELL CONSTRUCTION PHOTO LOG
 PROJECT NAME / LOCATION: Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B

10/23/2022 – FW-02B: Shur-Grip SDR-17 PVC Well Casing (#9)

10/23/2022 – FW-02B: Shur-Grip SDR-17 PVC Well Casing (#10)

10/23/2022 – FW-02B: Centralizer on Well Casing (#10), set at approximately 14 ft. bgs





CLIENT NAME: PG&E	WELL CONSTRUCTION PHOTO LOG	PROJECT NAME / LOCATION: Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA
Arcadis PROJECT NO: 30126255		WELL ID: FW-02B
		10/24/2022 – FW-02B: Cemex #1/20 Mesh (20x40) Lapis Lustre Sand used for backfilling below the bottom of the lower well screen
		10/24/2022 – FW-02B: Lower Screen Red Flint 0.35-0.45 MM Filter Pack Sand
545 200		10/24/2022 – FW-02B: Lower Screen Red Flint 0.35-0.45 MM Filter Pack Sand





CLIENT NAME: PG&E	WELL CONSTRUCTION PHOTO LOG	PROJECT NAME / LOCATION: Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA
Arcadis PROJECT NO: 30126255		WELL ID: FW-02B
		10/25/2022 – FW-02B: Bentonite Seal Pel-Plug 3/8" TR30 Pellets
		10/25/2022 – FW-02B: Swab block used to promote filter pack settling during installation
		10/26/2022 – FW-02B: Swabbing upper screen



CLIENT NAME: PG&E	WELL CONSTRUCTION PHOTO LOG	PROJECT NAME / LOCATION: Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA
Arcadis PROJECT NO: 30126255		WELL ID: FW-02B
ACTION OF CONTRACTION		10/26/2022 – FW-02B: Bentonite Seal Cetco Puregold Medium Chips
		10/26/2022 – FW-02B: Red Flint Sand 0.20-0.30 MM Transition Sand
		10/26/2022 – FW-02B: Red Flint Sand 0.20-0.30 MM Transition Sand



CLIENT NAME: PG&E PROJECT NAME / LOCATION: Final Groundwater Remedy, WELL CONSTRUCTION PG&E Topock Compressor Station/Needles, CA PHOTO LOG Arcadis PROJECT NO: 30126255 WELL ID: FW-02B 2 M 11/1/2022 - FW-02B: Cemex #60 (40x70) Lapis Lustre Transition MGS Sand 1 GmC 11/1/2022 – FW-02B: Cemex #60 (40x70) Lapis Lustre Transition Sand NET WEIGHT - 50 LBS. (22.7 kg) CLEAN · GRADED · KILN DRIED MONTEREY SANDS QUIKRETE PORTLAND CEMENT 11/2/2022 - FW-02B: Quikrete Portland Cement Type I, II and IV used in grout seal 47 21.3 kg



CLIENT NAME: PG&E PROJECT NAME / LOCATION: Final Groundwater Remedy, WELL CONSTRUCTION PHOTO LOG PG&E Topock Compressor Station/Needles, CA Arcadis PROJECT NO: 30126255 WELL ID: FW-02B PORTLAND CEMEN Cemento Portland TIPO I/II O IL 11/2/2022 - FW-02B: COMMERCIAL GRAD Quikrete Portland Cement Type I, II and IV used in grout seal TYPE I/II OR IL naution before A HIGH YIELD BENTONITE UNA BENTONITA DE ALTO RENDIMIENTO 11/2/2022 - FW-02B: Halliburton Quick-Gel High Yield Bentonite Fast Mixing High Viscosity Bentonite Iops Thin, Low Permeable Filter Cake used in grout (up to 6%) Dev Enhanced Borehole Stabilization 50 POUNDS/22.68 KILOS HALLIBURTON NSF roid Industrial Drilling Products D. Box 1675, Houston, TX 77251 -877-378-7412 or 281-871-4613 Www.baroldidp.com YU **QUIK-GEL®** 11/2/2022 - FW-02B: Halliburton Quick-Gel High Yield Bentonite used in grout (up to 6%) Not Restricted



Arcadis PROJECT NO: 30126255

 WELL CONSTRUCTION PHOTO LOG
 PROJECT NAME / LOCATION: Final Groundwater Remedy,

 PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B





11/2/2022 – FW-02B: Pulling casing after installing grout

11/4/2022 – FW-02B: Mixing grout

11/4/2022 – FW-02B: Purged water at start of airlifting



Arcadis PROJECT NO: 30126255

PROJECT NAME / LOCATION: Final Groundwater Remedy, WELL CONSTRUCTION PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B

PHOTO LOG



11/4/2022 – FW-02B: Purge water at end of airlifting



100	

11/4/2022 – FW-02B: Cured grout samples

11/5/2022 - FW-02B: Upper 2 ft. temporary backfilled in with Red Flint Sand 0.80-1.20 MM. Vault to be installed at later date.





Arcadis PROJECT NO: 30126255

 WELL CONSTRUCTION PHOTO LOG
 PROJECT NAME / LOCATION: Final Groundwater Remedy,

 PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B



11/5/2022 – FW-02B: Final well with coupling and riser added on for development



11/22/2022 – FW-02B: Measuring outer diameter of dummy tool used for alignment test



11/22/2022 – FW-02B: Conducting alignment test using dummy tool



Arcadis PROJECT NO: 30126255

 WELL CONSTRUCTION PHOTO LOG
 PROJECT NAME / LOCATION: Final Groundwater Remedy,

 PG&E Topock Compressor Station/Needles, CA

WELL ID: FW-02B



11/22/2022 – FW-02B: Conducting alignment test

Attachment 10

Video Survey Report

		Р	acific	Surv	eys		
		a fui	Il service geophys	ical well loggin	g company		
			Video Su	rvey kepon	L		
Company:	Cascade Drilling				Date:	02-Dec-22	Truck DC (
Well:	FW-02B				Run No.	One	TRUCK PS-6
Field:	Topock				Job Ticket:	30505	
State:	Arizona				Total Depth:	137.9 ft	
Location:	145453 National Tr	rails Hwy.			Water Level:	96.0 ft	SWL
					Oil on Water:	No	Amount: N/A
GPS:	34.7142278114.4	4956363			Operator:	Conner	
Zero Datum	Ground	Level	Tool Zero:	Side-Scan			Dead Space 1.25 ft
Reason for	Survey:	New Well	Construction		Guides Set	12 in	
Death		Obs	ervations			V	Vell Details
Depth		005	civations			Perforation:	From Summer
0.0 ft	Began survey at ground	evel.	orm.			Wire-Wrap	95.00 ft to 112.00 ft
5.2 ft	Second joint in casing, app	appears to be tight and u	iniform.				122.00 ft to 132.00 ft
5.3 ft	Third joint in casing; ap	pears to be tight and uni	form.				
5.3 ft	Top of screened interval	; appears to be open.					
6.0 ft	SWL; water is cloudy.						
12.2 ft	Bottom of screened inte	rval.					
22.2 ft	Top of screened interval	; appears to be open.					
32.2 ft	Bottom of screened inte	rval.					
37.9 ft	Camera light bar tags bo	ottom.					
	Survey ends.						
						Action of the second second	
						Casing Size (in)	From Survey
						OD ID	
						12.000 N/A	0.00 ft to 137.00 ft
						Casing Material	PVC
	7					Screen Material	Stainless Steel
	2015.3	2005	5.4		8095.3		B095.7
	8895.7	8182	A 1		PIRE 1	(GANN)	8118.8
	8122.7	0123			8128.4		B136
800.91 909.62	9.7555 5.6262		1785 w. arrow r upland www.pacit	te., bdlg. d, ste , ca 91786 īcsurveys.com	. 3,4		fax: 909.399.3180

TCS-1 - Pacific Surveys video log description