

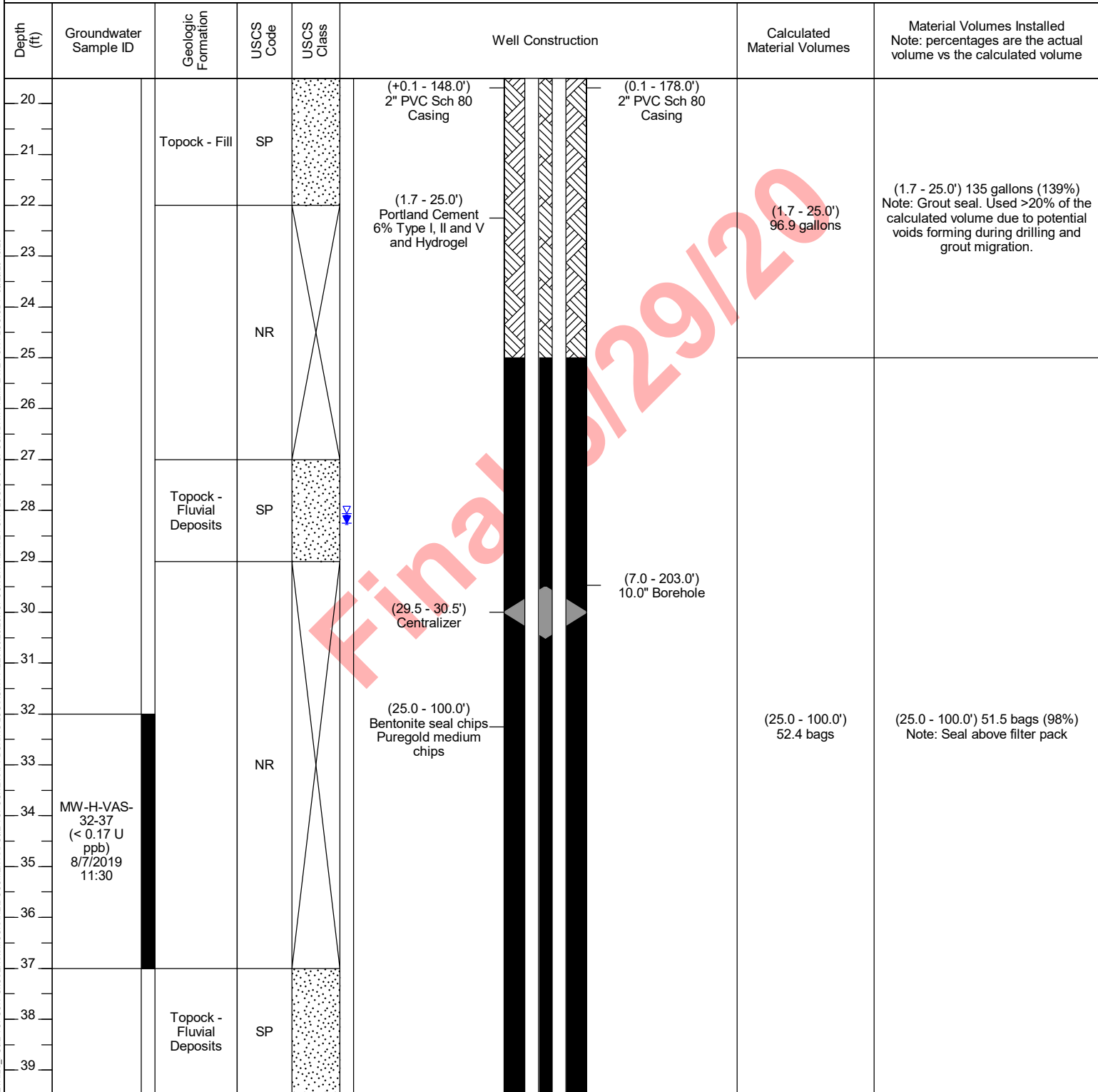
Date Started: 08/22/2019	Surface Elevation: 483.71 ft amsl	<b>Well ID: MW-82-168, MW-82-198</b>
Date Completed: 10/16/2019	Shallow Well Elevation: 483.75 ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 483.66 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103048.25	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Easting (NAD83): 7615993.33	Location: PG&E Topock, Topock, California
Drilling Asst: J. Colon / F. Sandoval	Borehole Diameter: 4-12 inches	
Logger: Augie Parrinello	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Sean McGrane	Development End Date: 9/22/2019	
Total Depth: 207 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
0					(+0.5 - 2.5') Surface completion		(+0.5 - 2.5') 20 bags Note: 30" diameter Concrete Pad with 18" diameter Lockable Vault, Quickcrete Concrete Mix with Buff dye.
0.1 - 178.0'					2" PVC Sch 80 Casing		
0.1 - 148.0'					2" PVC Sch 80 Casing		
0.0 - 7.0'			NR		12.0" Borehole		
1.7 - 25.0'		Topock - Fill	SP		Portland Cement 6% Type I, II and V and Hydrogel	(1.7 - 25.0') 96.9 gallons	(1.7 - 25.0') 135 gallons (139%) Note: Grout seal. Used >20% of the calculated volume due to potential voids forming during drilling and grout migration.
7.0 - 203.0'			NR		10.0" Borehole		
17.0 - 18.0'		Topock - Fill	SP				

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WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_TOPOCK\_DRAFT BORING LOGS\GINT FILES\06.29.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT\_06/29/20 15:28

Date Started: 08/22/2019	Surface Elevation: 483.71 ft amsl	<b>Well ID: MW-82-168, MW-82-198</b>
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Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
40		Topock - Fluvial Deposits	SP		(+0.1 - 148.0') 2" PVC Sch 80 Casing		
41					(0.1 - 178.0') 2" PVC Sch 80 Casing		
42		Topock - Fluvial Deposits	SP				
43							
44	Attempted to collect sample (Interval did not produce.) 8/6/2019 10:00	Topock - Fluvial Deposits	SP				
45							
46		Topock - Fluvial Deposits	CH				
47							
48	MW-H-VAS-47-52 (< 0.17 U ppb) 8/7/2019 13:30	Topock - Fluvial Deposits	NR				(25.0 - 100.0') 51.5 bags (98%) Note: Seal above filter pack
49							
50							
51							
52		Topock - Fluvial Deposits	SP				
53							
54		Topock - Fluvial Deposits	SW-SM				
55		Topock - Fluvial Deposits	SW				
56		Topock - Fluvial Deposits	NR				
57							
58		Topock - Fluvial Deposits	SP-SM				
59			SW-SM				

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Drilling Asst: J. Colon / F. Sandoval	Borehole Diameter: 4-12 inches	
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Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
60		Topock - Fluvial Deposits	SW-SM		(+0.1 - 148.0') 2" PVC Sch 80 Casing		
61							
62			NR				
63							
64							
65							
66							
67		Topock - Fluvial Deposits	SW-SM				
68		Topock - Fluvial Deposits	GW-GM		(25.0 - 100.0') Bentonite seal chips Puregold medium chips (69.5 - 70.5') Centralizer	(25.0 - 100.0') 52.4 bags	(25.0 - 100.0') 51.5 bags (98%) Note: Seal above filter pack
69		Topock - Alluvium Deposits	GM				
70							
71		Topock - Alluvium Deposits	GM				
72							
73		Topock - Alluvium Deposits	GM				
74							
75			NR				
76							
77							
78		Topock - Alluvium Deposits	GM				
79			SW-SM				

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Drilling Asst: J. Colon / F. Sandoval	Borehole Diameter: 4-12 inches	
Logger: Augie Parrinello	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Sean McGrane	Development End Date: 9/22/2019	
Total Depth: 207 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
80		Topock - Alluvium Deposits	SW-SM		(+0.1 - 148.0') 2" PVC Sch 80 Casing		
81		Topock - Alluvium Deposits	GW-GM				
82	MW-H-VAS-82-87 ( < 0.0333 U ppb) 8/8/2019 11:37	Topock - Alluvium Deposits	GM				
85		Topock - Alluvium Deposits	GC				
86		Topock - Alluvium Deposits	GM				
88		Topock - Alluvium Deposits	GW-GM				
90		Topock - Alluvium Deposits	GM		(25.0 - 100.0') Bentonite seal chips Puregold medium chips	(25.0 - 100.0') 52.4 bags	(25.0 - 100.0') 51.5 bags (98%) Note: Seal above filter pack
92		Topock - Alluvium Deposits	GW-GM				
96		Topock - Alluvium Deposits	GW-GM				
98		Topock - Alluvium Deposits	GW				
99		Topock - Alluvium Deposits	SW-SM				

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Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
100		Topock - Alluvium Deposits	SW-SM		(+0.1 - 148.0') 2" PVC Sch 80 Casing		
101		Topock - Alluvium Deposits	SW-SM				
102		Topock - Alluvium Deposits	SW-SM				
103		Topock - Alluvium Deposits	SW-SM				
104		Topock - Alluvium Deposits	SW-SM				
105		Topock - Alluvium Deposits	SW-SM				
106		Topock - Alluvium Deposits	SW-SM				
107		Topock - Alluvium Deposits	SW-SM				
108		Topock - Alluvium Deposits	SW-SM				
109		Topock - Alluvium Deposits	SW-SM				
110		Topock - Alluvium Deposits	SW-SM		(100.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8" (109.5 - 110.5') Centralizer	(100.0 - 145.0') 36.1 buckets	(100.0 - 145.0') 43 buckets (119%) Note: Seal above filter pack
111		Topock - Alluvium Deposits	SW-SM				
112		Topock - Alluvium Deposits	SW-SM				
113		Topock - Alluvium Deposits	SW-SM				
114	MW-H-VAS-112-117 (< 0.17 U ppb) 8/9/2019 09:49	Topock - Alluvium Deposits	SW-SM				
115		Topock - Alluvium Deposits	SW-SM				
116		Topock - Alluvium Deposits	SW-SM				
117		Topock - Alluvium Deposits	SW-SM				
118		Topock - Alluvium Deposits	GM				
119		Topock - Alluvium Deposits	GM				

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Drilling Asst: J. Colon / F. Sandoval	Borehole Diameter: 4-12 inches	
Logger: Augie Parrinello	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Sean McGrane	Development End Date: 9/22/2019	
Total Depth: 207 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume			
120		Topock - Alluvium Deposits	GM		(+0.1 - 148.0') 2" PVC Sch 80 Casing					
121					(0.1 - 178.0') 2" PVC Sch 80 Casing					
122										
123										
124										
125										
126										
127										
128										
129					Topock - Alluvium Deposits	SW-SM		(100.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"		
130		(7.0 - 203.0') 10.0" Borehole	(100.0 - 145.0') 36.1 buckets	(100.0 - 145.0') 43 buckets (119%) Note: Seal above filter pack						
131										
132										
133										
134										
135										
136		Topock - Alluvium Deposits	GW							
137										
138		Topock - Alluvium Deposits	SW-SM							
139										
			GW							

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140		Topock - Alluvium Deposits	GW		(+0.1 - 148.0') 2" PVC Sch 80 Casing		
141							
142		Topock - Alluvium Deposits	GW-GM		(100.0 - 145.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(100.0 - 145.0') 36.1 buckets	(100.0 - 145.0') 43 buckets (119%) Note: Seal above filter pack
143							
144	MW-H-VAS-142-147 ( $< 0.17$ U ppb) 8/10/2019 10:04						
145		Topock - Alluvium Deposits	GP-GM				
146							
147		Topock - Alluvium Deposits	GM		(148.0 - 168.0') 2" Sch 80 PVC (20-slot) Screen		
148							
149							
150					(7.0 - 203.0') 10.0" Borehole		
151		Topock - Alluvium Deposits	SW-SM				
152					(145.0 - 171.3') Cemex #3 MESH (8x10) Lapis Lustre Sand	(145.0 - 171.3') 26.1 bags	(145.0 - 171.3') 32 bags (123%) Note: Filter pack. Used >20% of the calculated volume due to potential voids forming during drilling.
153							
154	MW-H-VAS-152-157 ( $< 0.17$ U ppb) 8/10/2019 15:01						
155		Topock - Alluvium Deposits	GW-GM				
156							
157							
158		Topock - Alluvium Deposits	SM				
159							

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160 - 162					(148.0 - 168.0') 2" Sch 80 PVC (20-slot) Screen		
162 - 167	MW-H-VAS-162-167 (< 0.17 U ppb) 8/11/2019 12:01	Topock - Alluvium Deposits	SM		(145.0 - 171.3') Cemex #3 MESH (8x10) Lapis Lustre Sand	(145.0 - 171.3') 26.1 bags	(145.0 - 171.3') 32 bags (123%) Note: Filter pack. Used >20% of the calculated volume due to potential voids forming during drilling.
167 - 172		Topock - Alluvium Deposits	GW-GM		(168.5 - 169.5') Centralizer (168.0 - 170.3') Sump and PVC End Cap		
172 - 175	MW-H-VAS-172-177 (< 0.17 U ppb) 8/12/2019 10:34	Topock - Alluvium Deposits	SM		(171.3 - 175.0') Bentonite seal pellets Pel-Plug (TR30) 3/8"	(171.3 - 175.0') 3.8 buckets	(171.3 - 175.0') 4 buckets (105%) Note: Intermediate seal
175 - 176		Topock - Alluvium Deposits	GW				
176 - 177		Topock - Alluvium Deposits	SM		(175.0 - 203.0') Cemex #3 MESH (8x10) Lapis Lustre Sand	(175.0 - 203.0') 29.4 bags	(175.0 - 203.0') 24 bags (82%) Note: Filter pack
177 - 179		Topock - Alluvium Deposits	SM		(178.0 - 198.0') 2" Sch 80 PVC (20-slot) Screen		

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180 - 182					(178.0 - 198.0') 2" Sch 80 PVC (20-slot) Screen		
182 - 187	MW-H-VAS-182-187 (< 0.17 U ppb) 8/13/2019 10:08	Topock - Alluvium Deposits	SM				
187 - 192					(175.0 - 203.0') Cemex #3 MESH (8x10) Lapis Lustre Sand	(175.0 - 203.0') 29.4 bags	(175.0 - 203.0') 24 bags (82%) Note: Filter pack
192 - 197	MW-H-VAS-192-197 (< 0.17 U ppb) 8/14/2019 10:37	Topock - Alluvium Deposits	SM				
197 - 198		Topock - Alluvium Deposits	GW				
198 - 199		Topock - Weathered Bedrock - conglomerate	SC		(198.5 - 199.5') Centralizer		

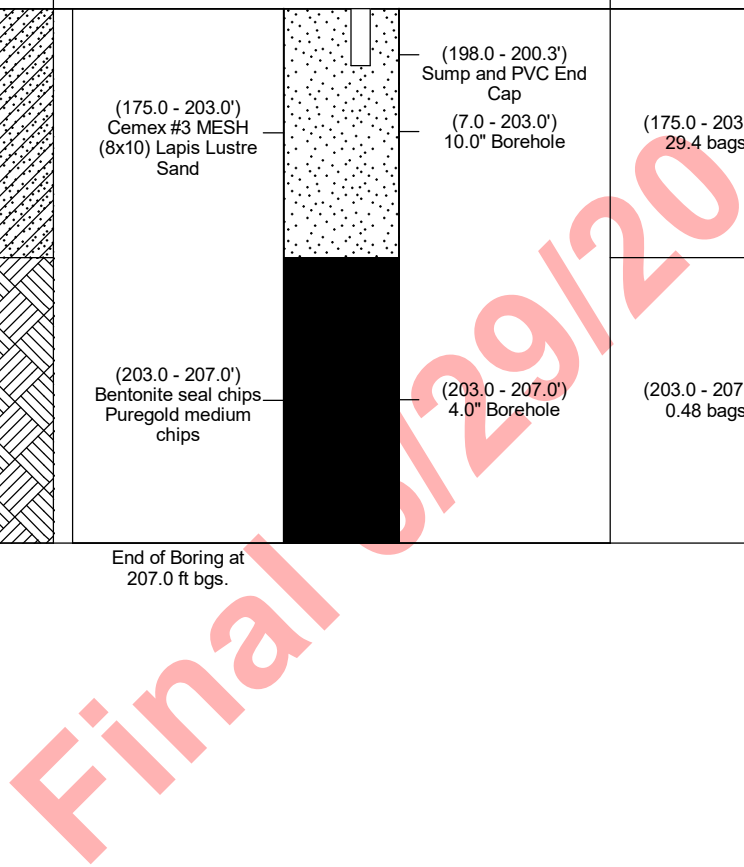
Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, U = not detected above the laboratory reporting limit, NR = no recovery; Notes: solid blue and hollow blue water table marks represent depth to water (ft. bgs.) measured post development for the shallow well and deep well respectively; installed in MW-82d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_C:\USERS\SMCGRANE\DOCUMENTS\PG&E\_TOPOCK\DRIFT BORING LOGS\GINT FILES\06.29.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT\_06/29/20 15:26

Date Started: 08/22/2019	Surface Elevation: 483.71 ft amsl	<b>Well ID: MW-82-168, MW-82-198</b>
Date Completed: 10/16/2019	Shallow Well Elevation: 483.75 ft amsl	
Drilling Co.: Cascade	Deep Well Elevation: 483.66 ft amsl	Client: PG&E
Drilling Method: Sonic Drilling	Northing (NAD83): 2103048.25	Project: Final GW Remedy Phase 1
Driller Name: Eddie Ramos	Easting (NAD83): 7615993.33	Location: PG&E Topock, Topock, California
Drilling Asst: J. Colon / F. Sandoval	Borehole Diameter: 4-12 inches	
Logger: Augie Parrinello	Static Water Level: See Log for Depths	Project Number: RC000753.0051
Editor: Sean McGrane	Development End Date: 9/22/2019	
Total Depth: 207 ft bgs	Well Completion: <input checked="" type="checkbox"/> Flush <input type="checkbox"/> Stick-up <input type="checkbox"/> To Be Completed in Well Vault	

Depth (ft)	Groundwater Sample ID	Geologic Formation	USCS Code	USCS Class	Well Construction	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
200		Topock - Weathered Bedrock - conglomerate	SC		(175.0 - 203.0') Cemex #3 MESH (8x10) Lapis Lustre Sand	(175.0 - 203.0') 29.4 bags	(175.0 - 203.0') 24 bags (82%) Note: Filter pack
201							
202		Topock - Competent Bedrock - conglomerate			(203.0 - 207.0') Bentonite seal chips Puregold medium chips	(203.0 - 207.0') 0.48 bags	(203.0 - 207.0') 1 bags (208%) Note: Decommissioned rathole. Used >20% of the calculated volume due to potential voids that formed during drilling.
203							
204							
205							
206							
207							

End of Boring at 207.0 ft bgs.



Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW = groundwater, ppb = parts per billion, U = not detected above the laboratory reporting limit, NR = no recovery; Notes: solid blue and hollow blue water table marks represent depth to water (ft. bgs.) measured post development for the shallow well and deep well respectively; installed in MW-82d

WELL CONSTRUCTION DETAILS\_PG&E\_TOPOCK\_TOPOCKDRAFT BORING LOGS\GINT FILES\06.29.20\TOPOCK DATABASE FOR PLOG.GPJ\_TOPOCK DATA TEMPLATE FOR PLOG.GDT\_08/29/20 15:28