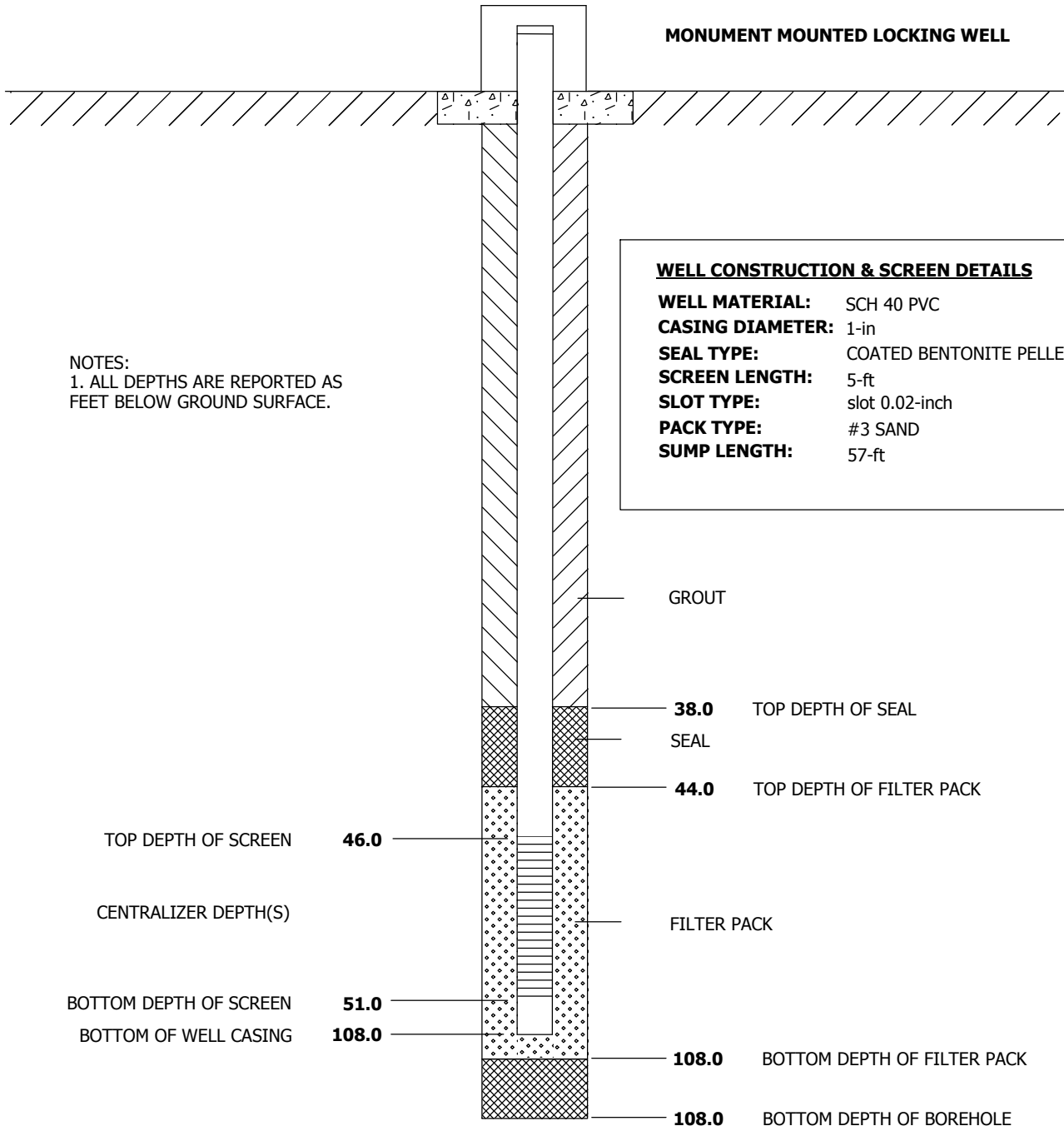


WELL COMPLETION DIAGRAM

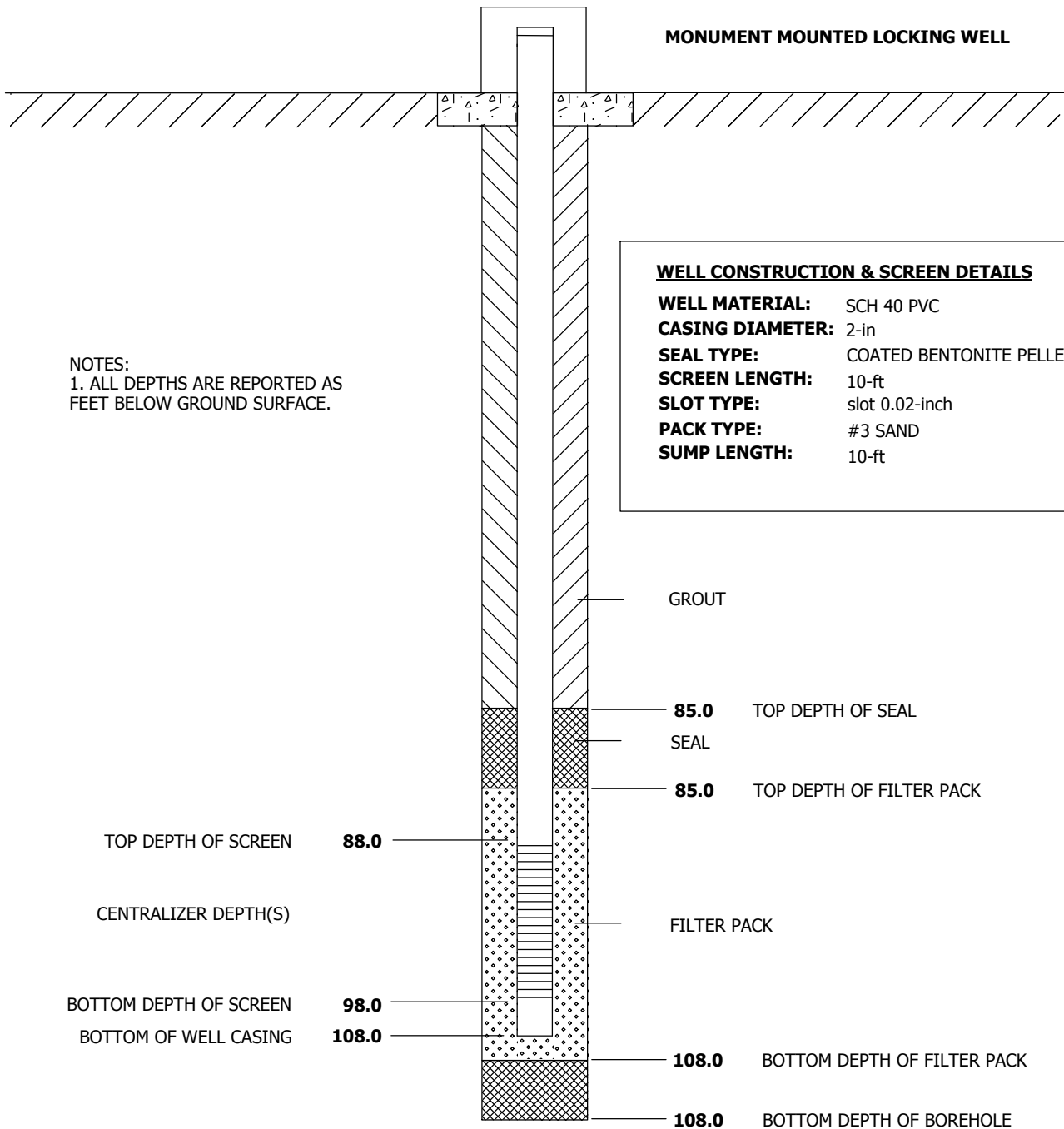
PROJECT NO: 315024.IM.02	PROJECT: PG&E Topock IM Investigation (Phase 5 2004)	WELL NO: MW-36-050
LOCATION: Floodplain well field Topock, CA. - Central dune area, approximately 350' north of railroad, 400' east of extraction well bench.		
DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH		DRILLING START DATE: 05/01/2004
DRILLING METHOD: Rotosonic		DRILLING END DATE: 05/01/2004
LOGGER: J. Wellmeyer		WELL COMPLETION DATE: 05/01/2004
TOP OF WELL CASING (NGVD 29): 469.65		NORTHING COORDINATE (CCS DAND 27, ZONE 5): 2102532.17
GROUND SURFACE ELEVATION (NGVD 29): 466.80		EASTING COORDINATE (CCS NAD 27 ZONE 5): 7616267.47



WELL DIAGRAM IS NOT TO SCALE

WELL COMPLETION DIAGRAM

PROJECT NO: 315024.IM.02	PROJECT: PG&E Topock IM Investigation (Phase 5 2004)	WELL NO: MW-36-100
LOCATION: Floodplain well field Topock, CA. - Central dune area, approximately 350' north of railroad, 400' east of extraction well bench.		
DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH		DRILLING START DATE: 04/30/2004
DRILLING METHOD: Rotosonic		DRILLING END DATE: 05/01/2004
LOGGER: J. Wellmeyer		WELL COMPLETION DATE: 05/01/2004
TOP OF WELL CASING (NGVD 29): 469.69		NORTHING COORDINATE (CCS DAND 27, ZONE 5): 2102532.37
GROUND SURFACE ELEVATION (NGVD 29): 466.80		EASTING COORDINATE (CCS NAD 27 ZONE 5): 7616267.51



WELL DIAGRAM IS NOT TO SCALE

SOIL BORING LOG

PROJECT NAME: PG&E Topock IM Investigation (Phase 1 2004)		HOLE DEPTH (ft): 108.0	DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 466.8 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,102,532.37	EASTING (CCS NAD 27 Z 5): 7,616,267.51	DATE AND TIME STARTED: 04/30/2004	DATE AND TIME COMPLETED: 05/01/2004
DRILLING METHOD: Rotasonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: All Terrain Sonic Rig with continuous 4 core, 6 casing	
LOCATION: Floodplain area, approx. 400' east of MW-20 bench			LOGGED BY: J. Wellmeyer / PHX	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, MINERALOGY, DENSITY/CONSISTENCY, STRUCTURE, MOISTURE.	COMMENTS DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
5		CC1 Box 1	5	SP	POORLY GRADED SAND (SP) - lt yellowish brn, 10YR6/4 f-m sand, well rnd, qtz dredge, loose, dry. - slightly damp - saturated - 10&R4/1 dk gray, f-m well rnd qtz sand, firm, moist, abundant fine-grained organic streaks and particulates	Start exploratory pilot hole 9:17 AM. Collect standard penetration tests (SPT) using 24 split-spoon sampler at 10 foot intervals at base of sonic-advance continuous core (CC) runs. 9:20, heaving sands
10						water added
15		CC2 Box 2 Box 3 Box 4	10			
20						
25		CC3 Box 5 Box 6 Box 7	10			heaving sands, SPT washed
30					- gradational color change to dark grayish brn 10YR4/2	
35		CC4 Box 8 Box 9 Box 10	10		- brn 10YR4/3	

SOIL BORING LOG

PROJECT NAME: PG&E Topock IM Investigation (Phase 1 2004)		HOLE DEPTH (ft): 108.0		DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 466.8 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,102,532.37	EASTING (CCS NAD 27 Z 5): 7,616,267.51		DATE AND TIME STARTED: 04/30/2004	DATE AND TIME COMPLETED: 05/01/2004
DRILLING METHOD: Rotasonic		WATER LEVEL (ft): ---		DRILLING EQUIPMENT: All Terrain Sonic Rig with continuous 4 core, 6 casing	
LOCATION: Floodplain area, approx. 400' east of MW-20 bench				LOGGED BY: J. Wellmeyer / PHX	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
40				SP	POORLY GRADED SAND (SP) - lt yellowish brn 10YR6/4, f-m sand, well rnd, qtz dredge, loose, dry.	DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.
45		CC5 Box 11 Box 12	10		WELL GRADED SAND WITH GRAVEL (SW) - brn 10YR4/3, 95% f-vc sand, 5% gravel <0.5, trace fines, loose. - 50% c-vc sand, 30% f-m sand, 20% gravel up to 3, well rnd - small pocket of red brn clay	
50				SW		
55		CC6 Box 13 Box 14 Box 15	10		- small pockets of light yellowish brn clay - sand content fining - small pockets of light yellowish brn clay	
60				SW		
65		CC7 Box 15 Box 16 Box 17 Box 18	10	SW	WELL GRADED SAND (SW) - dk yellowish brn 10YR4/4, 70% m-c sand, 15% f sand, 10% vc sand, 5% clay, very well rnd qtz sand. - red brn clay sheet - iron staining	
				SW	WELL GRADED SAND WITH GRAVEL (SW) - 10YR4/4, 65% m-c sand, 15% gravel, 10% f sand, 10% vc sand, trace clay, well rnd, loose.	
				SP	POORLY GRADED SAND (SP) - 10YR4/4, 70% m-sand, 20% c sand, 10% f sand, trace fines, loose.	
				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 10YR4/3, 95% f-vc sand, 5% gravel < 1/2, trace fines, loose.	
70						

SOIL BORING LOG

PROJECT NAME: PG&E Topock IM Investigation (Phase 1 2004)		HOLE DEPTH (ft): 108.0	DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 466.8 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,102,532.37	EASTING (CCS NAD 27 Z 5): 7,616,267.51	DATE AND TIME STARTED: 04/30/2004	DATE AND TIME COMPLETED: 05/01/2004
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: All Terrain Sonic Rig with continuous 4 core, 6 casing	
LOCATION: Floodplain area, approx. 400' east of MW-20 bench			LOGGED BY: J. Wellmeyer / PHX	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, MINERALOGY, DENSITY/CONSISTENCY, STRUCTURE, MOISTURE.	COMMENTS DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
75		CC8 Box 18 Box 19 Box 20	10	SM	SILTY SAND (SM) - 7.5YR4/4, 60% f sand, 30% silt, 10% clay, some CaCO3 concretions, loose.	drill chatter at 76' - 2 layer pure red clay
				CH	FAT CLAY (CH) - brn 7.5YR4/4, some organics, CaCO3?, concretions.	
				SM	SILTY SAND (SM) - 40% f sand, 20% m sand, 30% silt, 10% clay.	
				GC	CLAYEY GRAVEL (GC) - 7.5YR4/4, 35% clay, 30% gravel up to 3, 20% m-c sand, 10% f sand, 5% silt, matrix supported, heavily weathered.	
80					WELL GRADED GRAVEL (GW) - 95% gravel up to 3 including pea gravel, 5% sands, trace fines, very well rnd, clast supported, fining upward, loose.	only 1/2 of core recovered
85		CC9 Box 21 Box 22	5	GW	- fluvial gravel zone	
90					POORLY GRADED SAND (SP) - brn 10YR4/4, 65% m sand, 15% f sand, 10% c-vc sand, 5% fines, trace gravel, loose.	hard drilling, lots of chatter on core pipe
95		CC10 Box 22 Box 23 Box 24	10	GW	WELL GRADED GRAVEL (GW) - brn 10YR4/3, 70% gravel up to 2, 15% m-c sand, well rnd, clast supported, fining upward. - 70% gravel up to 4, 20% sand, 10% silt	
100					- dusky red 10YR3/4, ang lithic, consolidated CONSOLIDATED CONGLOMERATE (BR) 10R3/4 dusky red, ang lithics, consolidated.	top weathered Miocene conglomerate (Tmc unit)
105		CC11 Box 25 Box 26 Box 27	10	BR		drill chatter, samples very hot very hard drilling

SOIL BORING LOG

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SURFACE ELEVATION: 466.8 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,102,532.37	EASTING (CCS NAD 27 Z 5): 7,616,267.51	DATE AND TIME STARTED: 04/30/2004	DATE AND TIME COMPLETED: 05/01/2004
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: All Terrain Sonic Rig with continuous 4 core, 6 casing	
LOCATION: Floodplain area, approx. 400' east of MW-20 bench			LOGGED BY: J. Wellmeyer / PHX	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/ NUMBER	RECOVERY (ft)			
	X			BR	<p>CONSOLIDATED CONGLOMERATE (BR) 10R3/4 dusky red, ang lithics, consolidated.</p> <p>- hard cemented red conglomerate</p>	<p>high vibrations on drill</p> <p>core barrel refusal</p> <p>stop at 8:35 AM</p>
					<p style="text-align: center;">Boring Terminated at 108 ft</p> <p>ABBREVIATIONS</p> <p>cc = continuous core run brn = brown lt = light dk = dark vf = very fine-grained f = fine-grained m = medium-grained c = coarse-grained vc = very coarse-grained ang = angular subang = subangular subrnd = subrounded rnd = rounded br = bedrock formation ss = sandstone conglom = conglomerate comptd = compacted qtz = quartz</p>	