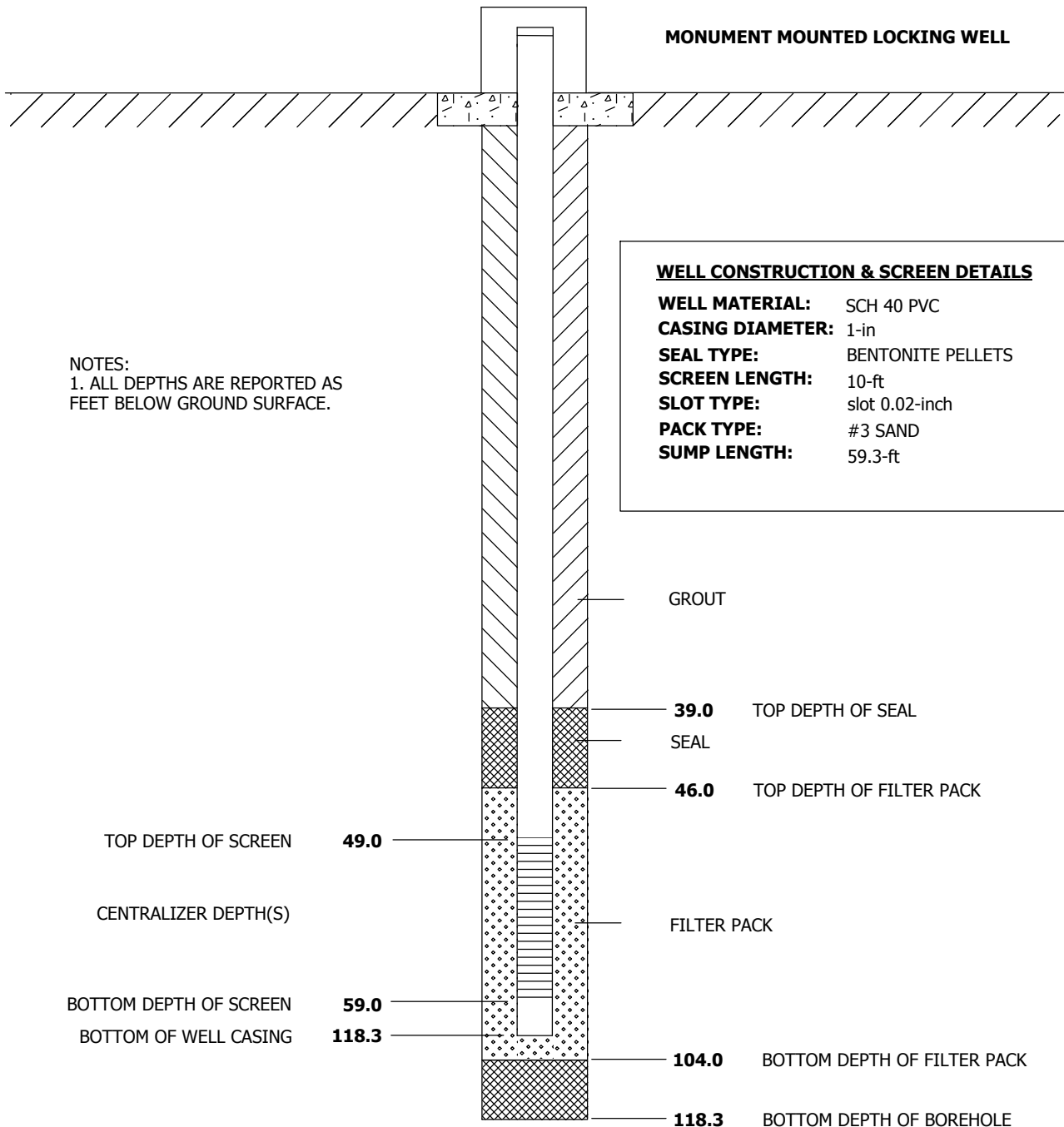


WELL COMPLETION DIAGRAM

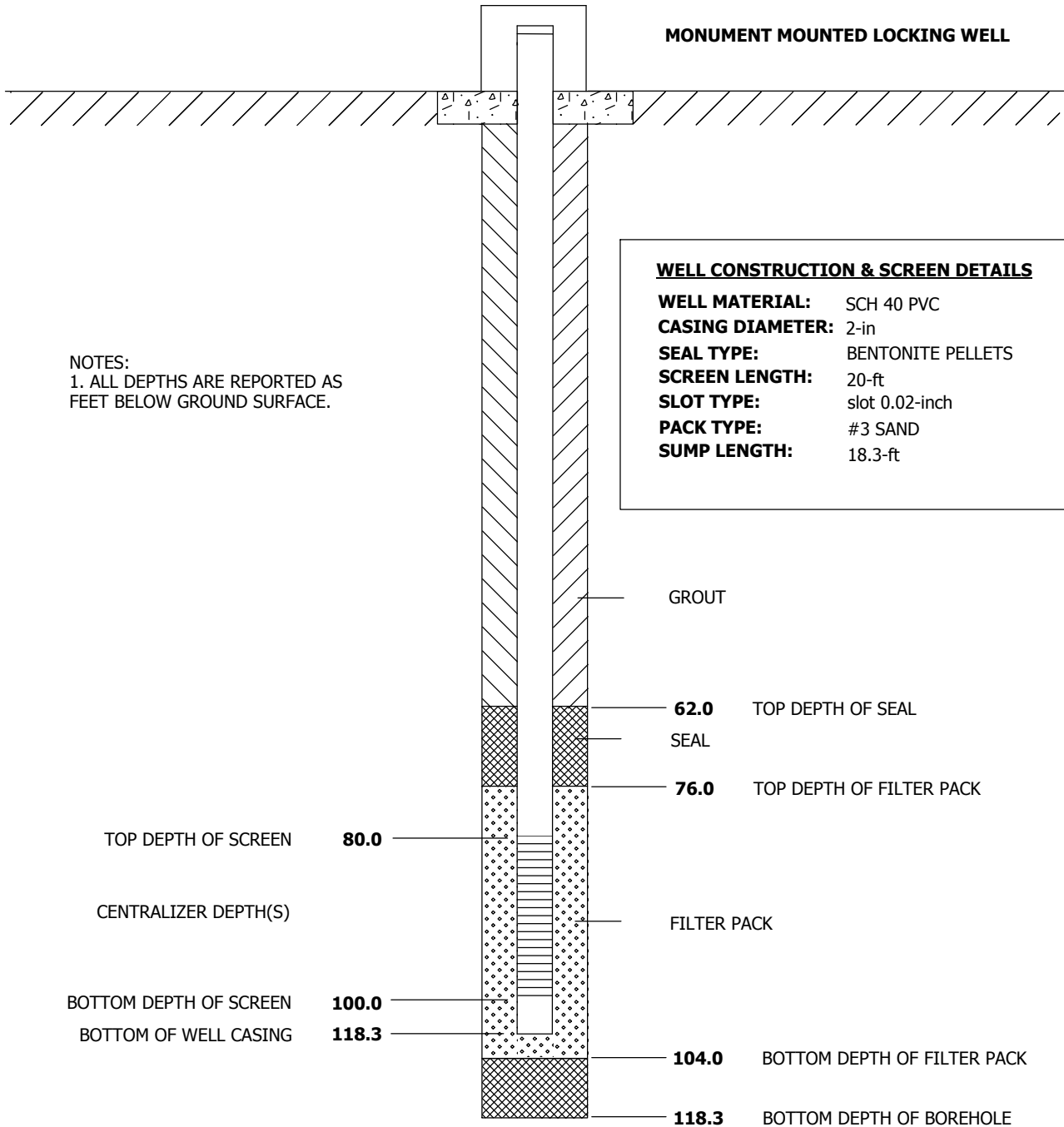
PROJECT NO: 315024.IM.02	PROJECT: PG&E Topock IM Investigation (Phase 5 2004)	WELL NO: MW-39-060
LOCATION: Floodplain well field Topock, CA. - Central dune area, approximately 300' north of railroad, 150' east of extraction well bench.		
DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH		DRILLING START DATE: ---
DRILLING METHOD: Rotosonic		DRILLING END DATE: ---
LOGGER: J. Wellmeyer		WELL COMPLETION DATE: 04/22/2004
TOP OF WELL CASING (NGVD 29): 468.00		NORTHING COORDINATE (CCS DAND 27, ZONE 5): 2102495.05
GROUND SURFACE ELEVATION (NGVD 29): 465.30		EASTING COORDINATE (CCS NAD 27 ZONE 5): 7616099.45



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-39-100
LOCATION: Floodplain well field Topock, CA. - Central dune area, approximately 300' north of railroad, 150' east of extraction well bench.		
DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH		DRILLING START DATE: ---
DRILLING METHOD: Rotosonic		DRILLING END DATE: ---
LOGGER: J. Wellmeyer		WELL COMPLETION DATE: 04/22/2004
TOP OF WELL CASING (NGVD 29): 468.01		NORTHING COORDINATE (CCS DAND 27, ZONE 5): 2102494.95
GROUND SURFACE ELEVATION (NGVD 29): 465.30		EASTING COORDINATE (CCS NAD 27 ZONE 5): 7616099.30



WELL DIAGRAM IS NOT TO SCALE

SOIL BORING LOG

PROJECT NAME: PG&E Topock IM Investigation (Phase 1 2004)		HOLE DEPTH (ft): 118.3		DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 465.3 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,102,494.95	EASTING (CCS NAD 27 Z 5): 7,616,099.30	DATE AND TIME STARTED: 04/19/2004	DATE AND TIME COMPLETED: 04/20/2004	
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---		DRILLING EQUIPMENT: Limited Access Rig with continuous 4 core, 6 casing	
LOCATION: Floodplain well field Topock, CA. - Central dune area, approximately 300' north of railroad, 150' east of extraction well bench.				LOGGED BY: J. Wellmeyer	

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		CC90	8	SP	POORLY GRADED SAND (SP) - lt yellowish brn 10YR6/4, f-m sand, well rnd, qtz, loose, some moisture-dry. - f-m sand, some organic material, well rnd, qtz, loose	4/19/04, 13:15 begin drilling pilot hole saturated
10		CC91	10			
15				SC	CLAYEY SAND (SC) - dk brn sand with dk gray clay 7.5YR3/2, f-m sand, well rnd, loose.	
20				CL	CLAY WITH SAND (CL) - dk brn 7.5YR3/2, 10% f sand, some organic material, soft, f black laminations.	
25		CC92	10	SC	CLAYEY SAND (SC) - dk brn sand with dk gray clay 7.5YR3/2, f-m sand, well rnd, loose. - organic mat	
				CL	CLAY WITH SAND (CL) - dk brn 7.5YR3/2, 10% f sand, some organic material, soft, f black laminations.	
30				SP	POORLY GRADED SAND (SP) - yellowish brn, 70% m sand, 30% f sand, fining upward, well rnd, loose, wet.	
				SP/SC	POORLY GRADED SAND WITH CLAY (SP/SC) - dk grayish brn 7.5YR3/2, 20% clay, m sand, fining upward, well rnd.	
				SP	POORLY GRADED SAND (SP) - dk brn 7.5YR3/2, f-m sand, trace fines, well rnd, qtz, loose, wet.	
35		CC93	10	SW	WELL GRADED SAND (SW) - yellowish brn, f-c sand, well rnd, qtz, soft, wet. - firming	

SOIL BORING LOG

PROJECT NAME: PG&E Topock IM Investigation (Phase 1 2004)		HOLE DEPTH (ft): 118.3		DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 465.3 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,102,494.95	EASTING (CCS NAD 27 Z 5): 7,616,099.30	DATE AND TIME STARTED: 04/19/2004	DATE AND TIME COMPLETED: 04/20/2004	
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---		DRILLING EQUIPMENT: Limited Access Rig with continuous 4 core, 6 casing	
LOCATION: Floodplain well field Topock, CA. - Central dune area, approximately 300' north of railroad, 150' east of extraction well bench.				LOGGED BY: J. Wellmeyer	

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)			
40				SW	WELL GRADED SAND (SW) - yellowish brn, f-c sand, well rnd, qtz, soft, wet. - thin black organic laminations, loose - dark gray brn, f-c sand, fining upwards, well rnd, loose, wet	
				CH	FAT CLAY (CH) - dk grayish brn 10YR4/2, f black organic lamination, soft-firm, greasy.	
45		CC94	10	SP	POORLY GRADED SAND (SP) - dk grayish brn, mostly rnd qtz c sand, 5% subang mm gravel up to 0.25, clay pockets, some organics, fining upwards, loose.	
				GW	WELL GRADED GRAVEL (GW) - brn, f gravel, cobbles, sand, trace fines, very well rnd, clast supported.	
				CL	CLAY WITH COBBLES (CL) - brn 10YR4/3, orange iron staining, 10% sand, trace silt, large cobbles, some laminated organics.	
50				SP	POORLY GRADED SAND (SP) - dk grayish brn, m sand, thin clay pockets, well rnd, soft, wet.	
55		CC95	10	ML	SILT WITH GRAVEL (ML) - brn, 40% ang gravel up to 1.75, silt supported, partially cemented, soft, wet at depth.	
				SP	POORLY GRADED SAND (SP) - brn, f sand, 5% silt, cobbles up to 2, subrnd, soft, loose, wet. - sparse gravel, 4 basalt cobble	
60				SP		
65		CC96	10	GW	WELL GRADED GRAVEL (GW) - dk brn 7.5YR3/4, gravels up to 2.5, m-c sand, 5% fines, subrnd to ang, mm and volcanic clasts, loose, clast supported, musky odor, wet.	
				GW	- dark reddish brn 5YR3/3, subround to ang gravels up to 1.5, 10% fines, metamorphic clasts, clast supported.	
70						

refusal, hard drilling chatter

hard drilling



SOIL BORING LOG

PROJECT NAME: PG&E Topock IM Investigation (Phase 1 2004)		HOLE DEPTH (ft): 118.3	DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH	
SURFACE ELEVATION: 465.3 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,102,494.95	EASTING (CCS NAD 27 Z 5): 7,616,099.30	DATE AND TIME STARTED: 04/19/2004	DATE AND TIME COMPLETED: 04/20/2004
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Limited Access Rig with continuous 4 core, 6 casing	
LOCATION: Floodplain well field Topock, CA. - Central dune area, approximately 300' north of railroad, 150' east of extraction well bench.			LOGGED BY: J. Wellmeyer	

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		CC97	10	GW	<p>WELL GRADED GRAVEL (GW) - dk brn 7.5YR3/4, gravels up to 2.5, m-c sand, 5% fines, subrnd to ang, mm and volcanic clasts, loose, clast supported, musky odor, wet.</p> <p>- cemented sands & gravels up to 2 fining upwards, silt increasing to 15%, green mm</p>	
80						hard drilling
85		CC98	9	GM	- brn 7.5YR4/3	hard drilling
90						<p>SILTY GRAVEL WITH SAND (GM) - dk reddish brn 5YR3/2, 25% silt, 5% sand, subang gravels, soft to firm, gravel supported.</p>
95		CC99	9	GW	<p>WELL GRADED GRAVEL (GW) - dk reddish brn 5YR3/2, pea gravel up to 1 1/2, 5% clay, rnd to ang, loose, wet.</p>	
100				GW/GC	<p>WELL GRADED GRAVELS WITH CLAY (GW/GC) - dk reddish brn, 30% clay, ang clasts, compacted, dry.</p> <p>- 25% clay, shattered gravels, green mm, clast supported, compacted, dry, dark reddish brn</p> <p>- 20% clay, subround to ang, fining upwards, slightly loose, moist, dark reddish brn</p>	hard drilling
105		CC100	10			stop drilling @ 17:15, resume 4/20/04, 8:20, hard drilling

SOIL BORING LOG

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SURFACE ELEVATION: 465.3 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,102,494.95	EASTING (CCS NAD 27 Z 5): 7,616,099.30	DATE AND TIME STARTED: 04/19/2004	DATE AND TIME COMPLETED: 04/20/2004
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Limited Access Rig with continuous 4 core, 6 casing	
LOCATION: Floodplain well field Topock, CA. - Central dune area, approximately 300' north of railroad, 150' east of extraction well bench.			LOGGED BY: J. Wellmeyer	

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)			
110		CC101	10	GW/GC	<p>WELL GRADED GRAVELS WITH CLAY (GW/GC) - dk reddish brn, 35% clay, some silt, subang clasts, tight and compacted, clast supported, dry.</p> <p>- 60% clay, 35% f sand to f gravel, 5% silt, shattered, dry</p>	<p>hard drilling</p> <p>hard drilling, drill chatter</p> <p>chatter refusal</p>
115					<p>Boring Terminated at 118.3 ft</p> <p>ABBREVIATIONS 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>	<p>stop 4/20/04, 10:15, bottom of boring</p>