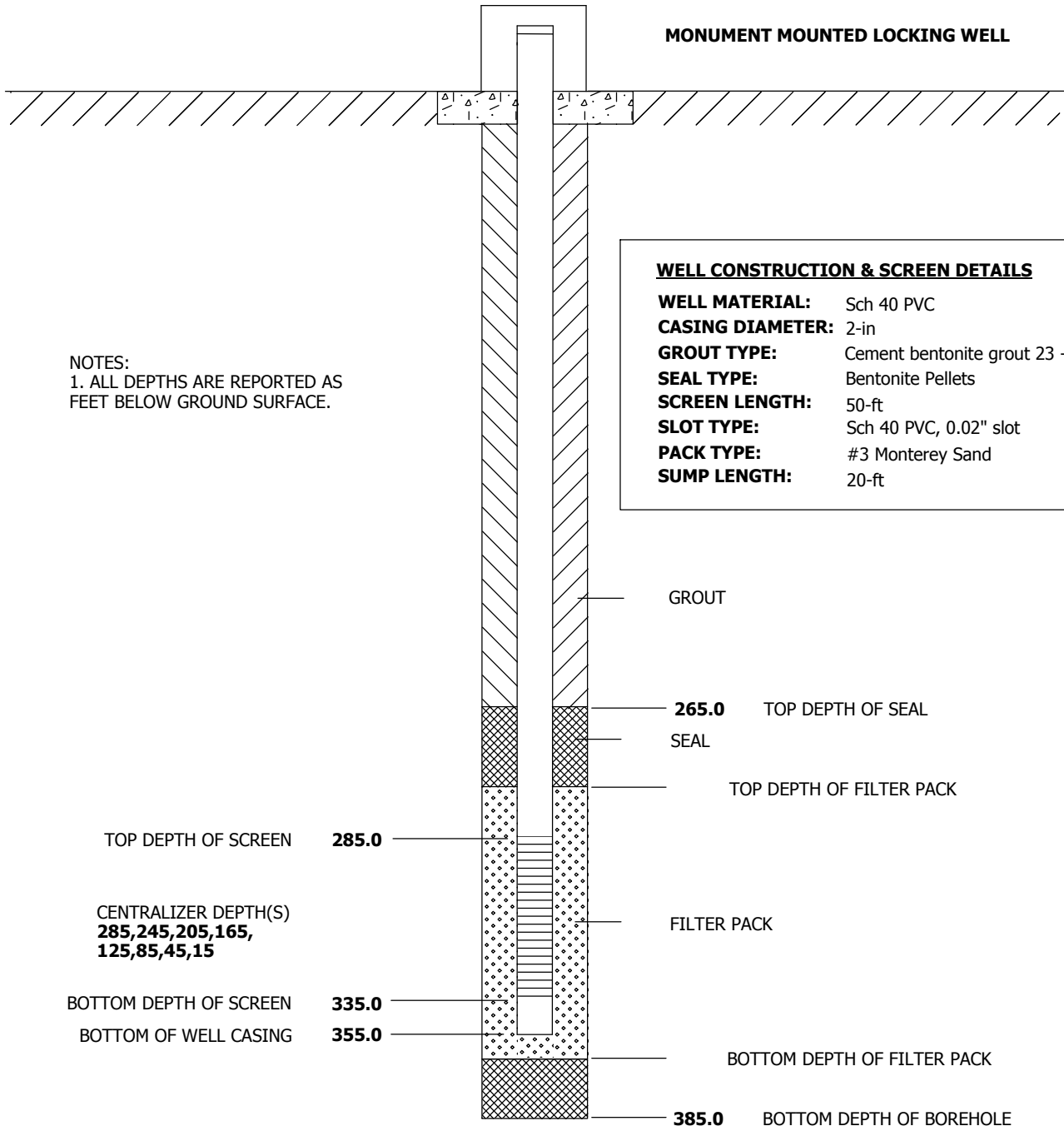


WELL COMPLETION DIAGRAM

PROJECT NO: 326128.01.07.AR	PROJECT: IM-3 Hydrogeologic Investigation, PG&E Topock	WELL NO: CW-2D
LOCATION: East Mesa Area, Parcel No. 650-151-06		
DRILLING CONTRACTOR: Prosonic Corp. Mareta, OH		DRILLING START DATE: 01/18/2005
DRILLING METHOD: Rotosonic		DRILLING END DATE: 01/21/2005
LOGGER: B. Moayyad		WELL COMPLETION DATE: 01/01/2005
TOP OF WELL CASING (NGVD 29): 549.43		NORTHING COORDINATE (CCS DAND 27, ZONE 5): 2103097.47
GROUND SURFACE ELEVATION (NGVD 29): 546.72		EASTING COORDINATE (CCS NAD 27 ZONE 5): 7613798.05

MONUMENT MOUNTED LOCKING WELL



NOTES:
1. ALL DEPTHS ARE REPORTED AS FEET BELOW GROUND SURFACE.

WELL CONSTRUCTION & SCREEN DETAILS	
WELL MATERIAL:	Sch 40 PVC
CASING DIAMETER:	2-in
GROUT TYPE:	Cement bentonite grout 23 - 50lb bags
SEAL TYPE:	Bentonite Pellets
SCREEN LENGTH:	50-ft
SLOT TYPE:	Sch 40 PVC, 0.02" slot
PACK TYPE:	#3 Monterey Sand
SUMP LENGTH:	20-ft

	GROUT	
	265.0	TOP DEPTH OF SEAL
	SEAL	
	TOP DEPTH OF FILTER PACK	
TOP DEPTH OF SCREEN	285.0	
CENTRALIZER DEPTH(S) 285,245,205,165, 125,85,45,15		FILTER PACK
BOTTOM DEPTH OF SCREEN	335.0	
BOTTOM OF WELL CASING	355.0	BOTTOM DEPTH OF FILTER PACK
	385.0	BOTTOM DEPTH OF BOREHOLE

WELL DIAGRAM IS NOT TO SCALE

SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

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)			
0						Conductor casing set to 10 ft bgs, wash casing to 88 ft bgs without collection of core. Per work-plan, drilled interval in unsaturated zone was not logged. Drilling returns in unsaturated zone were primarily well-graded sand with silt and gravel.
85						
90		CC1	10	SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - pale brn (10YR6/3), 65% sand, 15% igneous and metamorphic gravel, 10% silt, 10% cobbles up to 4.3" long, ang, medium density, dry-silty moist.</p> <p>- more coarse 2.5-3", 60% sand, 35% subang gravel, 5% fines</p> <p>- becomes moist</p> <p>- 4-4.5 inch cobbles at 94', 96' and 97'</p> <p>- brn 7.5YR4/4, 55% ang to subang sand, 30% subang gravel, 10% subang cobbles, 5% fines, dense, moist to wet</p>	continuous coring started at 88 ft bgs
95						
100				SW	WELL GRADED SAND WITH SILT AND GRAVEL (SW) - brn 7.5YR4/3, 60% sand, 30% subang gravel, 10% fines, medium density, wet.	
		CC2	8.5	SW	WELL GRADED SAND WITH SILT (SW) - brn 7.5YR4/3, 80% sand, 10% gravel, 10% silt, medium density, wet.	
105				GW	WELL GRADED GRAVEL (GW) - brn 7.5YR5/3, 55% mostly f gravel,	



SOIL BORING LOG

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SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
110				SW	42% sand, 3% fines, ang metamorphic, dense, wet. WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/3, 55% sand, 40% gravel, 3% fines, subang igneous and metamorphic grains, medium density, wet.	groundwater grab sample collected from 108-128 ft bgs
115		CC3	8	SW	WELL GRADED SAND WITH SILT AND GRAVEL (SW) - gray 7.5YR5/1, 70% sand, 15% gravel, 10% fines, cobbles up to 4", subang, medium density, wet.	
120				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/2, 70% subrnd m sand, 27% c gravel up to 2.2" long, 3% fines, hard, wet.	
125				SW	- 4.5" metamorphic cobbles, possibly larger, fractured by core	
130		CC4	10	SW	WELL GRADED SAND WITH SILT (SW) - brn, 70% sand, 20% silt, 10% gravel, medium density, wet.	
135				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/2, 70% sand, 27% gravel, 3% fines, occasional cobbles up to 4" long, subrnd to subrnd, hard, wet.	
140				SW	- becomes coarser below 121.5 ft, more silt, less fine sand, 60% sand, 32% gravel, 8% silt	
		CC5	9	SW	WELL GRADED SAND WITH SILT AND GRAVEL (SW) - brn 7.5YR4/2, 65% subrnd sand, 20% subang gravel, 15% fines, cobbles up to 3.3" long, medium density, wet.	
				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn, 80% subrnd sand, 12% subang gravel up to 2" long, 8% fines, hard, wet.	
				SW	WELL GRADED SAND WITH GRAVEL AND SILT (SW) - brn 7.5YR4/2, 55% subrnd sand, 25% subang gravel, 15% fines, 5% cobbles up to 4.2" long, hard, wet.	
						bail 30 gals at 128 ft bgs
						no core 138-140 ft bgs - seemed similar not preserved, fell into cutting pipe



SOIL BORING LOG

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DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

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)			
145		CC6	7.2	SW	WELL GRADED SAND (SW) - gray 7.5YR5/1, 93% sand, 5% gravel, 2% fines, subang to ang igneous and metamorphic, medium density, wet.	
150				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/3, 75% sand, 17% subang gravel up to 2.5" long, 8% fines, hard, wet. - more gravel below 146 ft, 70% sand, 25% gravel, 5% fines - material fell back into hole when pipe breaks, appears to be well graded sand with gravel and silt	core barrel breaks on 148-158 ft run, retrieve, end day 1/19/05
155				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR5/2, 84% f sand, 12% f gravel, 4% fines, subang to ang, medium density, wet. - grades to more and c gravel - 157-158.5 ft: 70% sand, 25% gravel up to 2.2 inch long, 5% fines	logging on 1/20/05
160		CC7	18	SW	WELL GRADED SAND WITH GRAVEL AND CLAY (SW) - brn, 60% sand, 25% gravel, 15% clay, subang, hard, wet.	
165				SW	WELL GRADED SAND WITH GRAVEL AND SILT (SW) - brn 7.5YR5/2, 60% sand, 30% gravels up to 2.3" long, 10% fines, subang igneous and metamorphic grains, medium hard, wet.	
165				SM	SILTY SAND WITH GRAVEL (SM) - brn 7.5YR4/3, 60% sand, 12% gravel, 23% silt, subang to subrnd, medium density, non-plastic, wet. - sand grades to gravel	
165				GM	SILTY GRAVEL (GM) - brn, 45% gravel, 30% silt, 25% sand, hard, wet.	
170				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR5/2, 70% sand, 25% gravel up to 2.5" long, 5% fines, occasional cobbles, subang, metamorphic, medium density, wet .	groundwater grab sample collected from 168-188 ft bgs
175				SW	SILTY SAND WITH GRAVEL (SW) - brn 7.5YR5/2, 60% sand, 20-25 % silty and silty plastic fines, 15-20% gravel which is predominantly <1" long, no cobbles, subang, hard, wet. - 60% sand, 20-25% gravel, 15-20% fines	



SOIL BORING LOG

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DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
180		CC8	18	GW	<p>SILTY SAND WITH GRAVEL (SW) - brn 7.5YR5/2, 60% sand, 20-25% silty and silty plastic fines, 15-20% gravel which is predominantly <1" long, no cobbles, subang, hard, wet.</p> <p>WELL GRADED GRAVEL WITH CLAY (GW) - brn 7.5YR4/3, 50% gravel, 35% sand, 15% fines, no cobbles, clay and silt present, ang, hard, wet.</p> <p>- more sandy below 183 ft</p>	<p>DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.</p>
185				GW/SW	<p>WELL GRADED GRAVEL AND SAND (GW/SW) - brn, 45% gravel, 45% sand, 10% fines, subang, hard, wet.</p>	
				SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - brn, 70% sand, 20% subang f gravel, 10% fines, medium density, wet.</p>	
				GW	<p>WELL GRADED GRAVEL (GW) - brn 7.5YR5/2, 60% f c gravel, 30% sand, 10% fines, subrnd, hard, wet.</p>	
190				SW	<p>WELL GRADED SAND WITH SILT AND GRAVEL (SW) - brn 7.5YR5/2, 58% sand, 30% subrnd gravel up to 2.5" long, 12% silty fines, hard, wet.</p>	
				SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - brn, 60% sand, 35% gravel, 5% fines, subrnd, hard, wet.</p>	
				GM	<p>SILTY GRAVEL AND COBBLES (GM and COBBLES) - 30% gravel, 25% cobbles, 25% sand, 20% silty fines.</p>	
195				SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - reddish brn 5YR4/4, 70% sand, 20% subrnd gravel, 5% fines, 5% cobbles up to 3.7" long, subang igneous and metamorphic grains, medium hard, wet.</p> <p>- more brn and silty more silty from 196.5-199 ft</p>	
200				SM	<p>SILTY SAND WITH GRAVEL (SM) - reddish brn 5YR4/4, 55-60% sand, 25% silty fines, 15-20% gravel, predominantly silt to f gravel, medium density, wet.</p> <p>- more gravel below 202.5 ft, 50% sand, 25% gravel, 25% silt and clay</p>	
205				GW	<p>WELL GRADED GRAVEL WITH CLAY (GW) - gray 7.5YR5/1, 65% gravel, 25% sand, 10% fines, ang metamorphic sand and gravel, hard, moist, clay lenses and coatings on gravel.</p> <p>- evidence of clay infiltration by water</p>	
210				SC	<p>CLAYEY SAND WITH GRAVEL (SC) - brn 5YR4/3, 65% sand, 25% clay and silt, 15% f gravel, subrnd to subang, medium density, wet.</p>	

SOIL BORING LOG

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DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

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)			
215		CC10	8.5	SM	SILTY SAND WITH GRAVEL (SM) - brn 5YR4/3, 60-65% sand, 20-25% silty fines, 15% gravel, subrnd, medium density, wet. - some larger gravels	
220		CC11	8.5	GW	WELL GRADED GRAVEL WITH CLAY (GW) - brn, 50% gravel, 35% sand, 15% fines, hard, wet, some clay coatings on gravel, silt and clay lenses. - 75% sand, 55% gravel, 25% cobbles, 5% fines	
225				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/3, 70% sand, 20% gravel, 10% fines, subrnd, hard, wet.	
				SW	WELL GRADED SAND WITH SILT AND GRAVEL (SW) - brn, 50% sand, 35% gravel, 15% fines, subang, hard, wet.	
				GW	WELL GRADED GRAVEL WITH SAND (GW) - brn, 55% gravel, 40% sand, 5% fines, clay coatings, ang, hard, wet.	
230		CC12	17	SW	WELL GRADED SAND WITH GRAVEL AND CLAY (SW) - reddish brn 5YR4/4, 60% sand, 30% gravel up to 2.3" long, 10% fines, subrnd igneous and metamorphic grains, medium density, wet. - well graded sand with gravel, as above with less fines and gravel, brn 7.5YR4/4, 75% sand, 20% gravel, 5% fines - becomes gray 7.5YR5/1	groundwater grab sample collected from 228-248 ft bgs
235				ML	SANDY SILT (ML) - dk greenish gray 10BG4/1, 30% sand, silty plastic, soft, wet.	
240				SM	SILTY SAND WITH GRAVEL (SM) - brn 5YR5/2, 60% sand, 20% gravel, 20% fines, subrnd, medium density, wet.	
245				SW	WELL GRADED SAND WITH GRAVEL AND SILT (SW) - reddish brn 5YR4/3, 67% sand, 30% gravel, 13% fines including some clay, subang, medium hard, wet.	

SOIL BORING LOG

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DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
250				ML	<p>WELL GRADED SAND WITH GRAVEL AND SILT (SW) - reddish brn 5YR4/3, 67% sand, 30% gravel, 13% fines including some clay, subang, medium hard, wet.</p> <p>WELL GRADED SAND WITH SILT AND GRAVELS (ML) - grayish brn 2.5YR5/2, 60% subrnd sand, 20% subang gravel, 20% fines, m dense, damp.</p> <p>-increasing sand, decreasing silt, gravels ang to 3 cm</p>	hard, slow and steady drilling
255			SP	<p>POORLY GRADED SAND WITH SILT (SP) - brn 7.5YR5/3, 85-90% sand, 5-10% gravel, <5% fines, subrnd, loose, damp.</p> <p>WELL GRADED SAND WITH GRAVEL (SW) - olive gray 5YR5/2, gravels to 7 cm, few cobbles to 10cm, subang, medium dense, damp.</p>		
260		CC13	20	SW	<p>WELL GRADED SAND WITH SILT AND GRAVELS (SW) - grayish brn 2.5YR5/2, 60% subrnd sand, 20-25% subang gravel, 15-20% fines, low density, moderate plasticity, damp.</p> <p>- color change to brn 10YR5/3</p> <p>- same as above with fewer fines, 70-80% sand, 10-20% gravel, <10% fines</p>	
265				SP	<p>POORLY GRADED SAND (SP) - brn 10YR5/3, 90% f to m sand, 5% gravel, <5% fines, loose, damp.</p>	
270				SW	<p>WELL GRADED SAND WITH GRAVEL (SW) - reddish brn 5YR4/3, 60-70% m sand, 35-25% subang gravel to 4cm, <5% fines, damp.</p> <p>- cobble with fines - silt/clay, fragments up to 9 cm</p> <p>- very soft clay with cobble fragments up to 10cm</p>	
275					<p>MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - reddish brn 5YR4/3, 80-90% sand, 5-15% subang gravel, <5% fines, damp.</p>	
280		CC14	20			

SOIL BORING LOG

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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.
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285				SW/SP	MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - reddish brn 5YR4/3, 80-90% sand, 5-15% subang gravel, <5% fines, damp.	groundwater grab sample collected from 288-308 ft bgs
290					- same as above, damp to wet - cobble, same as 270-272 ft, damp to wet	
295				SM	SAND WITH SILT AND GRAVEL (SM) - grayish brn 2.5YR5/2, 70% subrnd sand, 20% gravel, 10% fines, loose.	
				SP	POORLY GRADED SAND WITH GRAVEL (SP) - grayish brn 2.5YR5/2, m sand, few gravels, wet.	
				SM	SAND WITH SILT AND GRAVEL (SM) - grayish brn 2.5YR5/2, 70% sand, 15% gravel, 15% fines, low plasticity, loose, wet.	
300					MODERATELY GRADED SAND WITH GRAVEL (SM/SP) - grayish brn 2.5YR5/2, gravels subang to 5cm, wet.	
305				SM/SP	- wet grading to damp at 302.5 to 308 ft bgs	
310				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 10YR5/3, 80% subrnd sand, 15% subang gravel up to 4 cm, <5% fines, loose, moist to wet.	
				SM	SILTY SAND WITH COBBLES (SM)	
315				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 7.5YR4/4, 80% subrnd m to c sand, 15% subang gravel up to 4cm, <5% fines, loose, moist to wet.	



SOIL BORING LOG

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LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
320		CC16	20	SW/SP	- f-m sand, medium density POORLY GRADED SAND WITH GRAVEL (SP/GP) - gley 2.5/5BG, greenish black, 95% sand and gravel, <5% fines, gravels up to 3 cm when cleaned gravels resemble gneissic clasts, gravels mottled with red oxidation, subrnd to subang. WELL GRADED SAND WITH GRAVEL (SW) - reddish brn 5YR4/4, 60% subrnd f to m sand, 30-35% subang to ang gravel up to 5 cm, 5-10% fines, few cobbles that resemble gneiss when cleaned, moist. MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - reddish brn 5YR5/4, 85% subrnd f to m sand, 10% subang to ang gravels to 3 cm, <5% fines.	DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES. groundwater grab sample collected from 348-368 ft bgs
325					- color grades to dk gray 5YR4/1	
330				SW	WELL GRADED SAND WITH GRAVEL (SW) - olive brn 2.5YR4/3, 70-80% subrnd f to m sand, 15-25% subang gravel to 5 cm, <5% fines, loose, moist to wet.	
335						
340		CC17	20	GW	GRAVELLY SAND/GRAVEL WITH SAND (GW) - reddish brn 5YR4/4, gravels subang to ang to 6 cm, increasing fines content with depth from 5-10% to 20%, low plasticity, dense.	
345				CL	CLAY WITH GRAVEL (CL) - brn 10YR4/3, few f to m sand, few gravels up to 2 cm, low to medium plasticity.	
				SP	POORLY GRADED SAND (SP) - reddish brn 5YR4/4, fine to medium, subrnd, <5% fines, damp.	
				SM	SILTY SAND WITH GRAVEL (SM) - olive brn 2.5YR4/3, 50% sand, 35-30% gravel, 15-20% fines, dense, low plasticity, damp.	
				SW	WELL GRADED SAND WITH GRAVEL (SW) - dk grayish brn 2.5YR4/2, 70% subrnd sand, 15-20% subang gravel, 10-15% fines, dense, low plasticity, dry to damp.	
350					MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - brn 7.5YR4/4, 80% m to c subrnd sand, 15% subang gravel to 5 cm, <5% fines, very low plasticity, loose, damp.	



SOIL BORING LOG

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SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/NUMBER	RECOVERY (ft)			
355		CC18	20	SW/SP	MODERATELY GRADED SAND WITH GRAVEL (SW/SP) - brn 7.5YR4/4, 80% m to c subrnd sand, 15% subang gravel to 5 cm, <5% fines, very low plasticity, loose, damp.	
360				SM/ML	SANDY SILT WITH GRAVEL (SM/ML) - brn 7.5YR4/4, 50-60% sand, >20% fines, remainder subang gravel, well graded, dense, damp.	
365		CC19	17	SW	WELL GRADED SAND (SW) - reddish brn 5YR5/3, 40% m sand, 25% c sand, 25% f sand, 5% gravel, 5% fine, soft, saturated. - 60-70% m sand, 10-30% gravel, 10-20% fines	groundwater grab sample collected from 368-385 ft bgs
370				SM/SP	SILTY SAND (SM/SP) - greenish gray 5GY6/1, 40% silty clay, 30% f sand, 25% m sand, <5% c sand, <5% gravel, moderately soft, moist large cobbles - increasing c sand, mottling with reddish brn 5YR4/4	lots of chatter during drilling, drilling is hard
375				SW	WELL GRADED SAND WITH GRAVEL (SW) - brn 10YR5/3, 30% c sand, 30% m sand, 25% f sand, 10% gravel, 5% silt and clay, clasts subang to subrnd up to 4 cm, saturated, soft.	
380				SP/SM	SILTY SAND WITH GRAVEL (SP/SM) - greenish gray 5GY6/1, 30% f sand, 30% silt, 20% m sand, 10% c gravel, 5% f gravel, 5% c sand. - mottling with reddish brn 5YR4/4, decreasing gravel, increasing c and m sand	distinct sweet odor noted from 378-380 ft in one sleeve when cut open on 1/21/05
385				BR	CONGLOMERATE (BR) - reddish brn 5YR4/4, 35% m sand, 20% c sand, 10% gravel, clasts ang to subang	appears to be weathered Miocene conglomerate. Very hard drilling from 380-385 ft

SOIL BORING LOG

PROJECT NAME: IM-3 Hydrogeologic Investigation, PG&E Topock		HOLE DEPTH (ft): 385.0	DRILLING CONTRACTOR: Prosonic Corp. Maretta, OH	
SURFACE ELEVATION: 546.7 ft. MSL	NORTHING (CCS NAD 27 Z 5): 2,103,097.47	EASTING (CCS NAD 27 Z 5): 7,613,798.05	DATE STARTED: 01/18/2005	DATE COMPLETED: 01/21/2005
DRILLING METHOD: Rotosonic		WATER LEVEL (ft): ---	DRILLING EQUIPMENT: Sonic AT (track mounted)	
LOCATION: East Mesa Area, Parcel No. 650-151-06			LOGGED BY: B. Moayyad	

DEPTH BGS (feet)	SAMPLE			USCS CODE	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE/ NUMBER	RECOVERY (ft)		SOIL NAME, USCS SYMBOL, COLOR, PERCENT COMPOSITION, GRADING, GRAIN SHAPE, MINERALOGY, DENSITY/CONSISTENCY, STRUCTURE, MOISTURE.	DRILLING OBSERVATIONS AND OPERATIONS, DAILY START AND END TIMES, DRILL RATE, REFUSALS, SAMPLING AND TESTING NOTES.
					Boring Terminated at 385 ft	
					<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>	