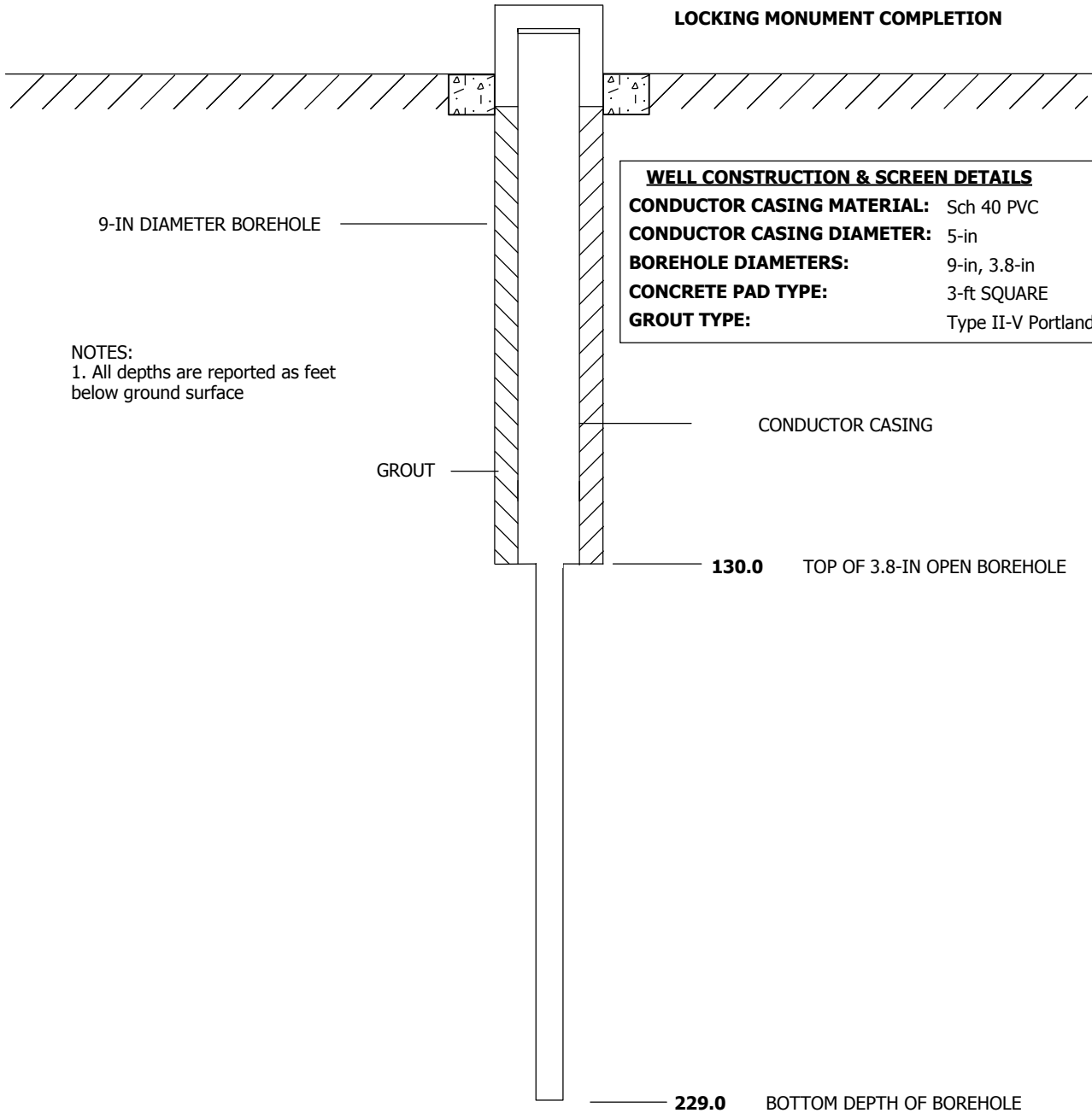


WELL COMPLETION DIAGRAM

PROJECT NO: 417981.ER.02.FW	PROJECT: ER-TCS Groundwater Investigation	WELL NO: <i>MW-70BR-225</i>
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LOCATION: Site H

DRILLING CONTRACTOR: Boart Longyear (B. Bradford)	DRILLING START: 10/13/2011
DRILLING METHOD: Rotosonic/Wireline Rotary Core	DRILLING END: 10/22/2011
LOGGER: A. Brewster (Northstar)	WELL COMPLETION DATE: 10/22/2011
GROUND SURFACE ELEVATION (NAVD 88): 537.6 ft AMSL	GENERAL REMARKS: Open 3.8" diameter borehole from 130 to 227 feet bgs. Centralizers at 50, 100, and 130 ft bgs.
NORTHING (CCS NAD 83 Z 5): 2100513.04	



NOTES:
1. All depths are reported as feet below ground surface

WELL DIAGRAM IS NOT TO SCALE



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 1 OF 12
SOIL BORING LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 DRILLING EQUIPMENT AND METHOD : RS-350, Rotosonic ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)		RECOVERY (in)	LAB SAMPLE	USCS CODE/ LITHOLOGY	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
	RECOVERY (in)							
	LAB SAMPLE							
0.0	0.5	COMPLETE	10501	SM	Silty Sand (SM) 0-68.5' - yellowish brown, (10YR 5/4), dry, loose, 10% gravel, 60% sand, 30% fines, subangular to subrounded, poorly graded, predominantly quartz sand 1' - Color change to light olive brown (2.5Y 5/3)	Soil sample collected between 0.0 and 1.0 ft bgs. Soil sample collected between 2.0 and 3.0 ft bgs. Soil sample collected between 5.0 and 6.0 ft bgs. Soil sample collected between 9.0 and 10.0 ft bgs. Soil sample collected between 14.0 and 15.0 ft bgs. Soil sample collected between 19.0 and 20.0 ft bgs.		
2.0	3.0		10502					
5.0	6.0		10503					
9.0	10.0		10504					
14.0	15.0		10505					
19.0	20.0		10506, 50015					



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 2 OF 12
SOIL BORING LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 DRILLING EQUIPMENT AND METHOD : RS-350, Rotosonic ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW EXISTING GRADE (ft)		RECOVERY (in)	LAB SAMPLE	USCS CODE/ LITHOLOGY	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
INTERVAL (ft)							
		COMPLETE			<p>Silty Sand (SM) 0-68.5' - light olive brown, (2.5Y 5/3), dry, loose, 10% gravel, 60% sand, 30% fines, subangular to subrounded, poorly graded, predominantly quartz sand</p> <p>23' - Change to partially consolidated, color change to light olive brown (2.5Y 5/3)</p>		
25							
29.0							
30	30.0		10507	SM			Soil sample collected between 29.0 and 30.0 ft bgs.
35							
39.0							
40	40.0		10508		31' - Color change to olive brown (2.5Y 5/3)		Soil sample collected between 39.0 and 40.0 ft bgs.



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 3 OF 12
SOIL BORING LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 DRILLING EQUIPMENT AND METHOD : RS-350, Rotosonic ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW EXISTING GRADE (ft)		RECOVERY (in)	LAB SAMPLE	USCS CODE/ LITHOLOGY	SOIL DESCRIPTION	SYMBOLIC LOG	COMMENTS
INTERVAL (ft)	DEPTH BELOW EXISTING GRADE (ft)						
		COMPLETE			Silty Sand (SM) 0-68.5' - light yellowish brown, (10YR 6/4), dry, partially consolidated from 23.0 ft. bgs, 10% gravel, 60% sand, 30% fines, subangular to subrounded, poorly graded, predominantly quartz sand and mixed gravel		
45							
	49.0						
50	50.0		10509	SM			Soil sample collected between 49.0 and 50.0 ft bgs.
	59.0						
60	60.0		10510		59' - Increase in fraction of metadiorite in gravel; change to 20% gravel, 50% sand, and 30% fines.		Soil sample collected between 59.0 and 60.0 ft bgs.



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 6 OF 12
ROCK CORE LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 CORING EQUIPMENT AND METHOD : RS-350, HQ Wire-Line Rotary ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
87.0	Run 1 3.2 ft 100%	71	>10	87.0-87.2' - Highly fractured, iron stained, calcite infill. 87.6' - Mechanical break	Metadiorite (pTbr) greyish olive green, (5GY 3/2), strong (R4), slightly weathered, slightly foliated, moderately disintegrated and cemented. Chlorite cement throughout Change to phaneritic, predominantly feldspar and quartz	Run 1: 15 min 40 sec	
90			>10	88.1' - Joint, 60 deg, rough, planar, iron staining, calcite mineralization (<1mm), iron staining, narrow. 88.2' - Fracture zone, 30 deg, 40mm chlorite infilling			
90.2	Run 2 5 ft 100%	43	2	88.3' - Joint, 30 deg, rough, stepped, 5mm calcite infilling, no staining, tight 88.7' - Mechanical break	Metadiorite (pTbr) greyish olive green, (5GY 3/2), strong (R4), slightly weathered, slightly foliated, moderately disintegrated and cemented, predominantly quartz and feldspar with chlorite cement	Run 2: 24 min 40 sec	
			3	89.9' - Joint, 15 deg, rough, stepped, 1mm calcite infilling, no staining, tight 90.2' - Mechanical break			
			3	90.8' - Joint, 60 deg, rough, undulating, <1mm calcite infilling, no staining, tight 91' - Mechanical break			
			2	91.3' - Joint, 30 deg, smooth, undulating, <1mm calcite infilling, no staining, tight 91.7' - Joint, 30 deg, smooth, undulating, <1mm calcite infilling, no staining, tight			
			1	92.1' - Joint, 30 deg, smooth, undulating, <1mm calcite infilling, no staining, tight			
95.2	Run 3 2.1 ft 100%	42	3	92.5, 92.6' - Joint, 30 deg, rough, stepped, <1mm calcite infilling, no staining, tight to narrow	95' - Change to thickly foliated	Run 3: 11 min 20 sec	
			>10	93.0, 93.2' - Joint, 60 deg and 30 deg, rough, stepped, iron staining, narrow 94.8' - Joint, 30 deg, rough, stepped, iron staining, narrow			
97.3	Run 4 2.9 ft 100%	44	>10	95.1, 95.3, 95.8' - Joint (3), 60, 30, and 30 deg, rough, stepped, no staining, tight 96.0-96.6' - highly fractured, evidence of joints at 80° dip, rough, stepped to undulating, some calcite infill in healed fractures (<1mm), presence of sedimentary infill (quartz silt, sand) on surfaces (<5mm thick), narrow apertures, no staining.	97' - Change to non-foliated	Run 4: 12 min 15 sec	
			2	97.2, 97.3, 97.7, 97.8' - Joint (4), 20, 40, 20, and 20 deg, rough, stepped, 1mm calcite infilling, no staining, very narrow apertures			
100.2	Run 5 4.5 ft 100%	20	4	97.3-97.4' - Highly fractured 98.3, 98.5' - Joint, 30 deg and 30 deg, smooth, stepped, <1mm calcite infilling, silt infill (<5mm), no staining, narrow aperture	98.5' - Change to aphanitic 99.3' - Megacryst of chlorite (10 x 35mm) 99.5-100.0' - Megacryst of feldspar (>40mm) 100.4-100.7' - Color change to very dusky red (10R 2/2). 100.5' - Fracture at 40 degree dip healed with very dusky red (10R 2/2) mineralization 100.6' - presence of xenocryst (max diameter of 25mm) 100.9-101.4' - Medium banding (<120mm thick) with metadiorite, feldspar, and chlorite bands	Run 5: 53 min 40 sec	
			>10	98.5-99.2' - Highly fractured, iron staining 99.5, 99.6' - Joint, 20 deg, smooth, undulating, 1mm calcite infilling, no staining, very narrow apertures			
			>10	100.1, 100.2, 100.7, 100.8' - Joint (4), 20, 20, 30, and 60 deg, rough, undulating, <3mm calcite infilling, iron staining at 100.7 and 100.8, very narrow to tight apertures			
			>10	100.3' - Healed shear with 50mm of displacement, 60° dip.			
			>10	101.3-107.8' - Highly fractured, calcite on some surfaces (<1mm), minimal iron staining, some silt infill (<1mm), rough, undulating			
104.7	Run 6 3.1 ft 100%	0	>10			Run 6: 61 min 0 sec	



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 7 OF 12
ROCK CORE LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 CORING EQUIPMENT AND METHOD : RS-350, HQ Wire-Line Rotary ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES		SYMBOLIC LOG	LITHOLOGY	COMMENTS	
		R Q D (%)	FRACTURES PER FOOT				DESCRIPTION
							DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS
107.8			>10	~	Metadiorite (pTbr) greyish olive green, (5GY 3/2), strong (R4), slightly weathered, none-foliated, moderately disintegrated and cemented, chlorite cement in fractures	Stop 5/27/2011 at 1700.	
110				~			
115				~			
120				~			
125				~			



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 8 OF 12
ROCK CORE LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 CORING EQUIPMENT AND METHOD : RS-350, HQ Wire-Line Rotary ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION				
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
130	130.0					Metadiorite (pTbr) dusky yellow green, (5GY 5/2), predominantly quartz, feldspar, amphiboles, aphanitic, non-foliated, highly fractured and healed with chlorite cement, lightly weathered, strong, massive 131' - Change to phaneritic 134.0-135.0' - Foliated 135.6-135.8' - Shear zone	Begin wire-line HQ rock coring Run 1: drill rate = 0.27 feet per minute (ft/min) Run 2: drill rate = 0.35 ft/min Run 3: drill rate = 0.20 ft/min Run 4: drill rate = 0.21 ft/min Run 5: drill rate = 0.25 ft/min	
	Run 1 2 ft 85%	55	0	131.4, 131.7' - Joint, 30 deg, rough, undulating, <1mm calcite infilling, manganese staining, narrow aperture				
	132.0		2					
			>10					
	Run 2 4.5 ft 100%	27	2	133.5, 133.7' - Joint, 50 deg and 60 deg, rough, stepped, <1mm calcite infilling, no staining, tight aperture				
135			>10					
	136.5		2	135.6, 135.8' - Joint, 20 deg, rough, undulating, <1mm calcite infilling, iron staining, tight aperture				
			1	136' - Joint, 70 deg, rough, undulating, <2mm calcite infilling, no staining, narrow				
	Run 3 4.5 ft 100%	37	3	137.3, 137.6, 137.8' - Joint, 30 deg, rough, undulating, <1mm calcite infilling, no staining, tight				
			3	138.1, 138.3, 138.6' - Joint, 30 deg, rough, undulating, <1mm calcite infilling, no staining, tight				
140			>10	139.0-140.0' - Multiple fractures, calcite infill (<1mm), iron and manganese staining				
	141.0		4	140.2, 140.6, 140.7, 140.9' - Joint (4), 60, 70, 70, and 20 deg, rough, undulating, <2mm calcite infilling, iron and manganese stained, tight				
			1	141.5, 142.3, 142.6, 143.5' - Joint (4), 30, 20, 30, and 20 deg, rough, undulating, <1mm calcite infilling, iron and manganese stained, tight				
	Run 4 5 ft 100%	50	2					
			>10					
145			4	144.3, 144.4, 144.5, 144.6' - Joint (4), 30 deg, rough, undulating, no infill, iron stained, tight				
			3	145.1, 145.5, 145.7' - Joint (3), 20, 20, and 70 deg, rough, undulating, no infill, iron stained, tight				
	146.0		>10					



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 9 OF 12
ROCK CORE LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 CORING EQUIPMENT AND METHOD : RS-350, HQ Wire-Line Rotary ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES			SYMBOLIC LOG	LITHOLOGY	COMMENTS
		R Q D (%)	FRACTURES PER FOOT	DESCRIPTION			
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS			
150	Run 5 5 ft 100%	72	0	148.8' - Joint, 10 deg, rough, undulating, <1mm calcite infilling, iron and manganese staining, tight	Metadiorite (pTbr) dusky yellow green, (5GY 5/2), predominantly quartz, feldspar, amphiboles, non-foliated, highly fractured and healed with chlorite cement, strong, massive		
			0				
			>10				
			>10				
151.0							
155	Run 6 3.5 ft 100%	79	1	151.1' - Joint, 60 deg, rough, undulating, <1mm calcite infilling, iron and manganese staining, tight 152' - Joint, 10 deg, rough, highly fractured, white clay infill (<2mm), iron stained	152.4' - Change to aphanitic, lightly fractured and healed with chlorite cement, higher average density	Run 6: drill rate = 0.32 ft/min	
			1				
			0				
154.5							
155	Run 7 1.5 ft 100%	0	>10	154.5-156.0'		Run 7: drill rate is not available	
			>10				
156.0							
160	Run 8 4.2 ft 100%	45	2	156.2, 156.8' - Joint, 10 deg and 30 deg, rough, undulating, <1mm calcite infilling, iron and manganese staining, tight 157.8-158.6' - Highly fractured, silt infill (<2mm), manganese staining	157.6' - Foliated		
			>10				
			>10				
			1				
			>10				
160.2							
165	Run 9 5 ft 100%	58	>10	160-161.4' - Highly fractured, some calcite (<2mm), some manganese and iron staining. 161.8, 162.0, 162.9, 163.7, 164.0, 164.9' - Joint (6), 20, 20, 20, 10, 10, and 10 deg, rough, undulating, <1mm calcite infilling, manganese and iron staining, tight	159.4-159.6' - Shear zone	Run 9: drill rate = 0.21 ft/min	
			>10				
			2				
			1				
165.2							
165			>10	165.2-166.0' - Highly fractured, calcite infill (<1mm), manganese staining 166' - Joint, 20 deg, rough, undulating, <1mm manganese staining, tight	166.0-167.0' - Foliated	Run 10: drill rate = 0.18 ft/min	
			1				



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 10 OF 12
ROCK CORE LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 CORING EQUIPMENT AND METHOD : RS-350, HQ Wire-Line Rotary ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS
		RQD (%)	FRACTURES PER FOOT	DESCRIPTION				
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
170	Run 10 4 ft 100%	33	>10	1	166.8-167.5' - Highly fractured, silty infill, manganese and iron staining 167.5, 167.7, 168.9, 169.2, 170.0, 170.3' - Joint (6), 10, 20, 70, 30, 30, and 30 deg, rough, undulating, <1mm calcite infilling, manganese staining, tight	Metadiorite (pTbr) dusky yellow green, (5GY 5/2), predominantly quartz, feldspars, and amphiboles, aphanitic, non-foliated, lightly fractured and healed with chlorite cement, slightly weathered to fresh, strong, massive 167.6-168.0' - Phaneritic 169.2-187.3' - Phaneritic	Run 11: drill rate = 0.26 ft/min	
			1					
	Run 11 5 ft 100%	78	1	171.6' - Joint, 70 deg, rough, stepped, no infill, manganese staining, tight.	171.2-179.2' - Intermittent veins (<10mm) of sodium feldspar			
			0					
175	Run 12 5 ft 100%	68	3	4	173.3, 173.6, 173.7' - Joint (3), 30, 10, and 30 deg, rough, undulating, <1mm manganese staining, tight	176.4-176.6' - Foliated	Run 12: drill rate = 0.20 ft/min	
			0					
	Run 13 4.8 ft 100%	54	4	1	176.0, 176.3, 176.4, 176.8' - Joint (4), 60, 60, 60, and 60 deg, rough, undulating, <1mm calcite infilling, manganese staining, tight			
			0					
180	Run 14 5 ft 100%	64	1	4	177.5, 178.2, 178.4, 178.7, 178.9' - Joint (5), 30, 30, 60, 30, and 60 deg, rough, undulating, <1mm manganese staining, narrow aperture	179.4-180.5' - Large increase in proportion of quartz, sodium feldspar, and chlorite	Run 13: drill rate = 0.13 ft/min	
			3					
	Run 13 4.8 ft 100%	54	5	1	179.2, 179.4, 179.6' - Joint (3), 60, 30, and 30 deg, rough, undulating, <1mm calcite infilling, manganese staining, tight			
			0					
185	Run 13 4.8 ft 100%	54	1	5	181.2, 182.2, 182.3, 182.5, 182.7, 182.8, 183.6' - Joint (7), 50, 30, 50, 40, 60, 60, and 40 deg, rough, undulating, <1mm calcite infilling, manganese and iron staining, tight	Run 14: drill rate = 0.24 ft/min		
			1					
	Run 14 5 ft 100%	64	1	4	184.5' - Joint, 20 deg, rough, stepped, <1mm calcite infilling, manganese staining, tight 185.0, 185.5, 186.2, 186.4, 186.5, 186.6' - Joint (6), 20, 20, 50, 10, 50, and 40 deg, rough, undulating (stepped at 186.2), <1mm calcite infilling, white silt infill at 186.2 (<1mm), manganese staining, tight			
			2					



PROJECT NUMBER: 417981.ER.02.FW	BORING NUMBER: BH-70	SHEET 12 OF 12
ROCK CORE LOG		

PROJECT : PG&E Topock, ER-TCS Investigation LOCATION : PG&E Topock, Site H (2100513.9 N, 7615826.0 E)
 ELEVATION : 538.9 ft DRILLING CONTRACTOR : Boart Longyear (B. Bradford)
 CORING EQUIPMENT AND METHOD : RS-350, HQ Wire-Line Rotary ORIENTATION : Vertical
 WATER LEVELS : Approx. 78 ft BGS START : 5/24/2011 END : 10/22/2011 LOGGER : R. Tweidt (Northstar)

DEPTH BELOW SURFACE (ft)	CORE RUN LENGTH AND RECOVERY (%)	DISCONTINUITIES				SYMBOLIC LOG	LITHOLOGY	COMMENTS
		RQD (%)	FRACTURES PER FOOT	DESCRIPTION				
				DEPTH, TYPE, ORIENTATION, ROUGHNESS, PLANARITY, INFILLING MATERIAL AND THICKNESS, SURFACE STAINING, AND TIGHTNESS				
210	207.4 Run 19 0.9 ft 100%	100	>10	207.4-207.6' - Multiple fractures, calcite infill, no staining	Metadiorite (pTbr) dusky yellow green, (5GY 5/2), predominantly quartz, feldspars, and amphiboles, phaneritic, non-foliated, lightly fractured and healed with chlorite cement, slightly weathered to fresh, strong, massive 208.8-209.4' - Aphanitic	Run 19: drill rate = 0.15 ft/min Run 20: drill rate = 0.27 ft/min		
	Run 20 4 ft 100%	80	2	208.2, 208.4, 209.2, 210.0, 210.1' - Joint (5), 10, 10, 40, 10, and 30 deg, rough, undulating, <1mm calcite infilling, manganese staining, tight				
		80	1					
	211.4		1	211.4, 212.4, 212.9, 213.1, 213.6' - Joint (5), 20, 20, 20, 20, and 30 deg, rough, undulating, <1mm calcite infilling, manganese and iron staining, tight				
215	Run 21 5 ft 100%	74	2	214.2-214.9' - Highly fractured, calcite infill (<1mm), manganese and iron staining	212.5-212.8' - Foliated	Run 21: drill rate = 0.25 ft/min		
		74	>10	215.4, 215.7, 216.3, 216.4' - Joint (4), 40, 20, 40, and 30 deg, rough, undulating, <1mm calcite infilling, manganese and iron staining, tight				
	216.4	>10	216.4-220.4' - Highly fractured, no infill, heavy iron staining					
	216.4	>10	216.6-219.2' - Increase in proportion of feldspars					
220	Run 22 4 ft 125%	0	>10	216.4-220.4' - Highly fractured, no infill, heavy iron staining	216.6-219.2' - Increase in proportion of feldspars	Run 22: drill rate = 0.13 ft/min. Driller loses all drill fluid in this zone.		
		0	>10	221.1, 222.0, 222.2, 222.6, 222.7' - Joint (5), 30, 60, 60, 60, and 30 deg, rough, undulating, <1mm calcite infilling, iron and manganese staining, tight				
	220.4	>10	223.3, 223.4, 223.7, 224.7, 224.8' - Joint (5), 30, 30, 40, 30, and 10 deg, rough, undulating, <1mm calcite infilling, iron and manganese staining, tight					
	220.4	>10	225.5-226.4' - Highly fractured, calcite infill (<1mm), manganese and iron staining					
225	Run 23 5.1 ft 100%	80	1	226.4, 227' - Joint, 30 deg and 40 deg, rough, undulating, <1mm calcite infilling, iron staining, tight	End Drilling on 10/22/2011 Total Borehole Depth: 227.0 ft bgs	Run 23: drill rate = 0.34 ft/min		
		80	4					
	225.5	>10						
	225.5	>10						
	Run 24 1.5 ft 100%	30	>10			Run 24: drill rate = 0.38 ft/min This borehole was converted into the following monitoring well(s): MW-70-105 and MW-70BR-225		
		30	>10					