



MWH Americas, Inc.
335 Phoenixville Pike
Malvern, Pennsylvania 19355

Boring ID: D53B

Ecl3-63

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Project Name: Valero
Location: Delaware City, DE
Project Number:
Date Started: 6/7/07
Date Finished: 6/7/2007
Drilling Method:
Sampling Method:
State Permit Number: NA

Boring Location:
Drilling Company: Boart Longyear (Rick Tabor)
Ground Elevation (ft/msl): 16.0
Total Depth (ft): 97.0'
Boring Diameter (in): 6"
Water Level During Drilling (ft/bgs):
Weather Conditions:
Logged By: Stephen Zahniser

Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
0								0' - 0.6' TOPSOIL: CLAYEY SILT, little medium SAND, little to some very fine mica, abundant rootlets; brown (10YR 4/3).		All PID readings taken at 6 intervals All PID readings are 0.0 ppm unless noted otherwise
								0.6' - 2.9' CLAYEY SILT, little very fine mica; dark yellowish brown (10YR 4/4).		
5								2.9' - 3.6' SILT, little fine SAND, little to some very fine mica; yellowish brown (10YR 5/4).		
								3.6' - 9.7' CLAYEY SILT, trace to little fine SAND, some very fine mica; mottled brown (10YR 5/3) and strong brown (7.5YR 5/6).		
10								9.7' - 10.5' SAND, fine and SILT, little m-c SAND, some f-c GRAVEL, trace COBBLES; SCAA.		
								10.5' - 13' SAND, fine, little SILT, grading to coarse SAND, some fine GRAVEL at 13'; strong brown (7.5YR 5/6).		
15								13' - 15.2' Fining Upward Sequence: 13.0 - 13.5 - interbedded SILT and CLAY; brownish yellow (10YR 6/6) 13.5 - 14.0 - SILT and SAND, fine; strong brown (7.5YR 5/8) 14.0 - 15.2 SAND, fine, little SILT, some fine, and GRAVEL, rounded to subrounded; strong brown (7.5YR 5/8).		
								15.2' - 17.4' SAND, f-m, trace to little f-c, rounded GRAVEL; strong brown (7.5YR 5/6).		
20								17.4' - 17.5' CLAY, medium stiff; light brown (7.5YR 6/3).		
								17.5' - 21.8' SAND, f-m, little SILT, trace fine GRAVEL, rounded, little mica; strong brown (7.5YR 5/6).		
25								21.8' - 22' SAND, fine, and f-c GRAVEL, rounded; yellowish red (5YR 4/6).		
								22' - 22.1' CLAY, medium stiff, plastic; pink (7.5YR 7/3).		
								22.1' - 25.9' SAND, fine, little medium; strong brown (7.5YR 5/8). - Fe-Mg grains 25.5-25.9'		
30								25.9' - 26.5' SAND, f-c, and f-c GRAVEL, subrounded to rounded; strong brown (7.5YR 5/8).		

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Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
30								26.5' - 26.6' CLAY, medium stiff, plastic, chemical alteration (as discoloration) at top and base, pale brown (10YR 6/3).		
								26.6' - 30.1' SAND, fine, some medium, little coarse, rounded, becoming more coarse with depth; brownish yellow (10YR 6/6). - coarse GRAVEL at 30.1'		
35								30.2' - 31.6' SAND, f-m, and f-c GRAVEL, subrounded to rounded, and COBBLES, subrounded to rounded, little coarse SAND; pale brown (10YR 6/3).		
								31.1' - 30.2' CLAY, medium stiff, plastic, chemical alterations (as discoloration) at top and base, pale brown (10YR 6/3).		
40								31.6' - 47' SAND, f-c, angular to subangular, f-c GRAVEL, subrounded to rounded, and COBBLES, subrounded to rounded, little SILT; - pale brown (10YR 6/3) to 33.2' - dark brown (7.5YR 3/4) to 36.5' - yellowish brown (10YR 5/6) to 47.0'		
45								47' - 49.3' SAND, f-c, trace fine, GRAVEL, rounded; yellowish brown (10YR 5/6).		
50								49.3' - 57' SAND, coarse, little f-m; yellowish brown (10YR 5/6).		
55								57' - 61.1' SAND, m-c, little fine, trace fine, rounded to subrounded GRAVEL; yellowish brown (10YR 5/6).		
60								61.1' - 63' SAND, m-c, little fine, some f-c GRAVEL, subrounded to rounded; yellowish brown (10YR 5/6).		
65								63' - 66' SAND, coarse, little to some medium, trace to little fine, trace fine GRAVEL, subrounded to rounded; yellowish brown (10YR 5/6) mild odor - possibly solvent.		

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Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
								66' - 69.8' SAND, f-m, little to some coarse, angular to subrounded; yellowish brown (10YR 5/6). - small CLAY clast with solvent(?) odor at 66.5'		
70								69.8' - 72' SAND, f-m, some SILT, few very dark gray (5YR 3/1) CLAY clasts; reddish brown (5YR 4/3).		
								72' - 72.8' SAND, f-m, some coarse, some f-c GRAVEL, subrounded to rounded; reddish brown (5YR 4/3).		
75								72.8' - 74.9' SAND, f-m, little coarse, trace fine GRAVEL, subangular to subrounded; dark brown (7.5YR 3/4), chlorinated odor.		
								74.9' - 78.5' SAND, f-c, trace fine GRAVEL, rounded; brown (7.5YR 4/4), chlorinated odor.		
80								78.5' - 83.4' SAND, f-c, little f-c GRAVEL, subrounded to rounded; brown (7.5YR 4/4), chlorinated odor. GRAVEL lenses at 80.5' and 82.3'		
85								83.4' - 84.4' SAND, m-c, little to some fine, little fine GRAVEL, subrounded to rounded; brown (7.5YR 4/4), slight chlorinated odor.		
								84.4' - 85.7' SAND, f-c, little f-c GRAVEL, subrounded to rounded, Fe-oxide staining, very dark brown (7.5YR 2.5/2) at 84.4'; brown (7.5YR 4/4), slight chlorinated odor.		
90								85.7' - 87' SAND, f-c, and GRAVEL, f-c, angular to subangular, little SILT, SAND is partially lithified; dark brown (7.5YR 3/2) at top and bottom, dark yellowish brown (10YR 4/4).		Qc1 Potomac-Merchanville Contact at 90.0
								87' - 89' SAND, f-c, little SILT, little fine GRAVEL, subrounded to rounded; yellowish brown (10YR 5/6).		Kpt-Kmv 93.6'
95								89' - 90' SAND, f-c, and GRAVEL, f-c, subrounded to rounded, little SILT; SCAA.		
								90' - 90.1' CLAY (erosional contact); brown (10YR 4/3).		
								90.1' - 93.2' CLAY, little SILT, trace coarse, rounded SAND, some mica, rare pyritized lignite; black (GLEY1 3/N).		
100								93.2' - 93.6' SANDY CLAY, fine, little coarse SAND, little fine GRAVEL, rounded, occasional lignite, SCAA. - Shark (Goblin?) tooth found at 93.4'		
								93.6' - 94.8' CLAY; white (10YR 8/1). - very fine SAND seam at 94.4'		

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Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
105								94.8' - 95.3' SAND, very fine, sorted; white (7.5YR 8/1).		
								95.3' - 95.7' CLAY, stiff; white (10YR 8/1).		
								95.7' - 96.7' SAND, fine, sorted; white (7.5YR 8/1) with dark laminations at 96'		
								96.7' - 97' CLAY, stiff; white (10YR 8/1).		
								97' EOB (97.0')		
110										
115										
120										
125										
130										
135										

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