



SHEET 1 of 6

SOIL BORING LOG



CH2MHILL

PROJECT NUMBER

334469.SA.HS

BORING NUMBER

MW-238 (IW-1)

SHEET 2 of 6

SOIL BORING LOG

PROJECT : Memphis Depot - Intermediate Aquifer Inv. LOCATION : Memphis, Tennessee ELEVATION:
DRILLING CONTRACTOR : Boart Longyear NAME OF DRILLER : T. Overcash
DRILLING METHOD/EQUIPMENT: SR 120 Track-Mounted Rotasonic SIZE/TYPE OF BIT : 4X6"; 9.25"
OVERBURDEN THICKNESS : DEPTH DRILLED INTO ROCK N/A TOTAL DEPTH OF BORING : 191 ft-bgs
WATER LEVELS : XXX ft-bgs START: 9/13/07 / END: 9/18/07 LOGGER : Derek Miller / Kirk Nuzum (KNV)

DEPTH BELOW SURFACE (FT)				STANDARD	SOIL DESCRIPTION	COMMENTS
SAMPLE INTERVAL (FT)				PENETRATION	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. FID (ppm)
RECOVERY (FT)				TEST RESULTS		
#/TYPE				6"-6"-6" (N)		
40	36-46	10 / 10	C-5	N/A	36.0-37.4: AS ABOVE 37.4-46.0: GRAVELLY SAND (SW), yellowish brown to red-dish brown, sl. moist, loose, fine to medium-grained sand, ~25% gravel, some sandstone up to 1.5", subangular, easily breakable w/ finger pressure, chert up to 1/2", subround, ~10% silt	MAX FID ON CORE: 135.5
45					46.0-48.6: AS ABOVE	MAX FID ON CORE: 127.0
50	46-56	10 / 10	C-6	N/A	48.6-55.3: SAND (SP), pale yellow, dry, loose, v. fine-grained	
55					55.3-56.0: GRAVELLY SAND (SW), dark yellowish brown, sl. moist, loose, gravel up to 1", chert, subround, fine to coarse-grained sand, ~25% gravel 56.0-66.0: GRAVELLY SAND (SW), pale brownish yellow, dry, loose to hard and crumbly, fine to medium-grained sand, gravels up to 1", sandstone, break apart w/ finger pressure, gravels up to 3/4", chert, subround, ~20-25% gravels, ~5% silt	MAX FID ON CORE: 118.5
60	56-66	10 / 10	C-7	N/A		
65					66.0-76.0: SAND (SP), brownish yellow to pale yellow w/ depth, sl. moist, loose, fine-grained sand, obscure contact	MAX FID ON CORE: 67.9
70	66-76	10 / 10	C-8	N/A		



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PROJECT : Memphis Depot - Intermediate Aquifer Inv. LOCATION : Memphis, Tennessee

ELEVATION:

DRILLING CONTRACTOR : Boart Longyear

NAME OF DRILLER : T. Overcash

DRILLING METHOD/EQUIPMENT: SR 120 Track-Mounted Rotasonic

SIZE/TYPE OF BIT : 4X6"; 9.25"

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WATER LEVELS : XXX ft-bgs START: 9/13/07 / END: 9/18/07

LOGGER : Derek Miller / Kirk Nuzum (KNV)

DEPTH BELOW SURFACE (FT)	STANDARD			SOIL DESCRIPTION	COMMENTS		
	SAMPLE INTERVAL (FT)		PENETRATION TEST RESULTS 6"-6"-6" (N)				
	RECOVERY (FT)	#/TYPE					
75	66-76	10 / 10	C-8	N/A	MAX FID ON CORE: 67.9		
80	76-86	10 / 10	C-9	N/A		76.0-82.3: AS ABOVE, wet	MAX FID ON CORE: 78.0
85						82.3-83.3: SILTY SAND (SM), yellowish brown, wet, loose, fine-grained sand, ~30% silt 83.3-84.3: SANDY CLAY W/ LITTLE GRAVEL (CL), brownish yellow to strong brown, wet, soft to loose, ~20% fine to coarse-grained sand, gravel up to 1/2", subangular, ~20% 84.3-86.0: CLAY (CL), brownish yellow, sl. moist, firm, few medium distinct light gray mottles	
90	86-96	10 / 10	C-10	N/A		86.0-89.7: CLAY (CL), light gray, sl. moist, firm, common medium distinct brownish yellow mottles 89.7-96.0: SL. SANDY CLAY (CL), dark gray, sl. moist, firm, ~5-10% v. fine-grained sand	MAX FID ON CORE: 0.0 Sample MW238_SS_90: VOC (8260B/5035A) TOC (415.1)
95	96-98	2 / 2	ST-1	N/A		96.0-98.0: AS ABOVE *LOGGED SHAVINGS FROM TUBE*	MAX FID ON CORE: N/A Sample MW238_ST_96-98: (Shelby tube) Vertical permeability and grain size analysis
100	98-100	2 / 2	C-11	N/A		98.0-100.0: AS ABOVE	MAX FID ON CORE: 0.0
					0.0-100.0: 6" SCHEDULE 80 PERMANENT CASING		
	100-106	6 / 6	C-12	N/A	100.0-103.0: SILTY CLAY (CL), light gray to yellowish brown, sl. moist, v. soft to firm w/ depth 103.0-106.0: SL. SILTY CLAY (CL), dark gray, sl. moist, hard, trace silt and organic debris throughout	MAX FID ON CORE: N/A	
105							



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SHEET 4 of 6

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DRILLING CONTRACTOR : Boart Longyear NAME OF DRILLER : T. Overcash
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	SAMPLE INTERVAL (FT)			PENETRATION	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. FID (ppm)
	RECOVERY (FT)		#/TYPE			
	TEST RESULTS					
				6"-6"-6" (N)		
110	106-116	10 / 10	C-13	N/A	106.0-116.0: AS ABOVE	MAX FID ON CORE: 3.6
115						
120	116-126	10 / 10	C-14	N/A	116.0-126.0: SL. SANDY CLAY (CL), gray, sl. moist, hard, ~5% v. fine-grained sand lenses throughout	MAX FID ON CORE: 0.8
125						
130	126-136	10 / 10	C-15	N/A	126.0-132.2: AS ABOVE	MAX FID ON CORE: 1.8
135					132.2-133.0: CLAYEY SAND (SC), light gray, moist, soft, v. fine-grained sand, ~40% clay 133.0-134.0: SL. SANDY CLAY (CL), gray, sl. moist, hard, ~5% v. fine-grained sand lenses throughout 134.0-134.6: CLAYEY SAND (SC), light gray, sl. moist, soft, v. fine-grained sand, ~50% clay 134.6-136.0: SL. SANDY CLAY (CL), gray, sl. moist, hard, ~15% v. fine-grained sand lenses throughout 136.0-143.0: SL. SANDY CLAY (CL), gray, sl. moist, hard, ~15% v. fine-grained sand lenses throughout, organic laminated staining in upper interval	MAX FID ON CORE: 0.0
140	136-146	10 / 10	C-16	N/A		

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ELEVATION:

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NAME OF DRILLER : T. Overcash

DRILLING METHOD/EQUIPMENT: SR 120 Track-Mounted Rotasonic

SIZE/TYPE OF BIT : 4X6"; 9.25"


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LOGGER : Derek Miller / Kirk Nuzum (KNV)

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL (FT)		PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION	COMMENTS	
	RECOVERY (FT)	#/TYPE				
145	136-146	10 / 10	C-16	N/A	143.0-146.0: SILTY CLAY (CL), gray, sl. moist, hard, ~5-10% silt	MAX FID ON CORE: 0.0
150	146-156	10 / 10	C-17	N/A	146.0-156.0: SL. SANDY CLAY W/ LITTLE SAND (CL), gray, sl. moist, hard, ~10-15% v. fine-grained sand, laminated organic staining throughout	MAX FID ON CORE: 3.2
155						
160	156-166	10 / 10	C-18	N/A	156.0-159.8: SL. SANDY CLAY (CL), gray, sl. moist, hard, ~15% v. fine-grained sand throughout 159.8-160.1: CLAYEY SAND (SC), light gray, moist, firm, ~50% v. fine-grained sand, ~50% clay 160.1-166.0: SANDY CLAY (CL), gray, sl. moist, hard, ~15-20% v. fine-grained sand increasing w/ depth	MAX FID ON CORE: 3.0
165						
170	166-176	10 / 10	C-19	N/A	166.0-167.2: SL. SANDY CLAY (CL), gray, sl. moist, hard, ~15% v. fine-grained sand throughout 167.2-167.8: SANDY CLAY (CL), gray, moist, firm, ~40% v. fine-grained sand 167.8-176.0: SL. SANDY CLAY (CL), gray, sl. moist, hard, 3 lenses of v. fine-grained sand up to 1/2" thick, ~10%, laminated organic staining throughout	MAX FID ON CORE: 6.2
175						

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SAMPLE INTERVAL (FT)		PENETRATION		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.		DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. FID (ppm)	
RECOVERY (FT)		TEST RESULTS					
#/TYPE		6"-6"-6" (N)					
180	176-186	10 / 10	C-20	N/A	176.0-177.1: AS ABOVE	MAX FID ON CORE: 4.1	
185					177.1-178.0: SANDY CLAY (CL), gray, sl. moist to moist, firm to hard, ~25% lenses of v. fine-grained sand up to 2" thick, moist, soft		
					178.0-186.0: SILTY SAND (SM), light gray, wet, v. soft, fine to v. fine-grained sand, ~20% silt		
190	186-191	10 / 10	C-21	N/A	186.0-191.0: AS ABOVE	MAX FID ON CORE: 2.7	
						TD @ 191.0 FT-BGS	