



DUFFIELD ASSOCIATES
Consultants in the Geosciences

TEST BORING MW-2

Permit No : 209176

(Page 1 of 3)

Observation and Monitoring Well Installation Review		Date Started : June 23, 2005	Drilling Equipment : ATV-mounted CME-55	Monitoring Well							
Wastewater Treatment Facility		Date Completed : June 23, 2005	Drilling Methods : 4.25" H.S.A.	209176							
At Stonewater Creek		Logged by : JPC	Surface Elevation : 19.7 feet	Top of Well Elev PVC = 22.06							
Fairmount, Sussex County, Delaware		Weather : Clear	Northing : 238,456 U.S. Feet DE SPC NAD 83	Steel Casing Rint = 22.59							
Project No.: 5708.YD		Driller/Agency : J. Foley/Walton Corporation	Easting : 713,734 U.S. Feet DE SPC NAD 83	Surf. Elev. 19.7 ft							
Depth in feet	GRAPHIC	USCS	USDA	Sample Condition	Water Levels	DESCRIPTION	Sample Number	Blows per 6 inches	Recovery (ft)	Well Construction Details	WATER LEVEL
0				<input checked="" type="checkbox"/>	▼		1A	3-4-5-6	1.8	Sakrete	19.7
18.5					▼	Dark brown, grayish brown fine SAND, little silt, trace medium to coarse sand, trace roots (dry).	1B				18.7
2					▼	Light brown, yellowish brown fine SAND, little medium sand, little silt (dry) (well sorted).	2	5-4-4-4	1.4	Cement / Bentonite Grout	
4					▼	Light brown, yellow, yellowish brown fine to medium SAND, trace to little silt, trace coarse to very coarse sand, trace gravel (dry).	3	3-2-3-3	1.3		
6		SP-SM	LS		▼	Yellow, light brown, reddish yellow fine to medium SAND, trace to little silt, trace coarse sand, trace pebbles, (less silt that above) (mottled) (well sorted) (moist at 4.9 feet +/-).	4	3-3-2-2	1.4	2" Schedule 40 PVC Well Casing	12.7
8					▼	Yellow, light brown, yellowish brown, light gray fine to medium SAND, trace to little silt, trace coarse to very coarse sand, trace scattered granules (wet to saturated, saturated at 6.6 feet +/-).	5	2-2-2-2	1.4	Sand Pack - #2 well sand	
10					▼	Light brown, pale yellow medium SAND, little fine sand, trace to little silt (saturated) (apparent Beaverdam Fm.)	6A	1-2-3-4	1.5	Top of Screen	9.5
9.2					▼	White, light brown, pale yellow medium SAND, trace silt, little fine sand (saturated) (well sorted).	6B				
12		SP	S		▼	White, light gray coarse to very coarse SAND, little fine to medium sand, trace silt (saturated).	7	2-2-3-3	0.9		
7.3 7.2					▼	SAME, medium to coarse sand with a dark gray fine to coarse sand and pebble lense at 12.4 to 12.5 feet +/-.	8	2-3-5-6			
14		SP	S		▼	White medium to coarse SAND, little very coarse sand, trace granules, trace pebbles, trace silt (saturated) (well sorted).					
16					▼						

NOTES:

- Monitoring Well MW-1 (DNREC ID 209176) installed upon completion.
- Wet-on-spoon encountered at 8.0 feet +/-; water level observed at 6.1 feet +/-; bottom of augers at 8.0 feet +/-, b.e.g.s.
- EZ Mud used to wash out soils from the augers for samples 7 through 19.
- Auger boring performed in general accordance with ASTM D 1452.
- Continuous, split-barrel sampling performed in general accordance with the Method

- for Penetrative Test and Split-Barrel Sampling (ASTM D 1586).
- Soil descriptions performed in general accordance with ASTM D 2488, the Practice for Description and Identification of Soils (Visual-Manual Procedure).
- Grain size scale utilized for soil descriptions based on a hybrid of the Udden-Wentworth Scale described in Delaware Geological Survey Open File Report 34 "Methodology for Mapping Groundwater Recharge in Delaware's Coastal Plain."



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Depth in feet	Surf. Elev. 19.7 ft	GRAPHIC	USCS	USDA	Sample Condition ☒ Remolded	Water Levels ▼ During Drilling ▽ 7/7/2005	DESCRIPTION	SAMPLES	Sample Number	Blows per 6 inches	Recovery (ft)	Well Construction Details	WATER LEVEL	Monitoring Well 209176	Surf. Elev. 19.7 ft
16	3.7						White, light gray, greenish fine to medium SAND, little silt, little coarse sand, little gravel and pebbles (saturated), (moderately to poorly sorted).		9A	2-3-4-4	1.8	2" Schedule 40 PVC Screened Casing - 0.020" slot			
17	2.9		SP	S			Pale olive CLAY, with very thin laminations/layers of fine to coarse sand, trace granules, trace silt (high plasticity) (moist to wet) (sand/clay discontinuous).		9B						
18	2.7		CH	CL			Brown, light brown, yellowish brown, olive brown medium SAND, little silt, trace coarse sand, little fine sand (saturated).		9C						
19	1.7		SP-SM	LS			Gray CLAY, little fine to medium sand, trace coarse sand (high plasticity) (moist)		10A	2-2-3-3	1.7				
20	1.5		CH	C			Pale yellow, light brown medium to coarse SAND, trace to little silt, trace to no clay with discontinuous lense of clay at 18.4 to 18.6 feet +/-, interlayered with above.		10B						
21	0.9		SP-SM	LS			Light gray, white, olive gray, dark gray (lithics) fine to medium SAND, little to some silt, trace coarse sand, trace to no clay (saturated)		11	1-1-3-4	1.5				
22							Light gray, white medium SAND, little coarse sand, trace little silt (well sorted) (saturated).		12	3-1-3-5	1.5				
24			SP-SM	LS-S			White, light gray very fine to medium SAND, trace to little silt with thin 0.05 feet +/- layers of coarse to very coarse sand, trace silt (saturated).		13	3-1	1.0				
26							White, light gray very fine to fine SAND, trace to little silt (saturated) (very loose to loose).		14	2-4-6-5	1.3				
28							White medium to coarse SAND, trace to little silt, trace 0.03 feet +/- thick fine pebble lense at 28.5 feet +/- (saturated).		15A	WH-1-2-2	1.6				
30			SP-SM	LS-S			White, light gray, pale yellow medium to very coarse SAND, little granules, trace silt, trace to little fine sand (saturated).		15B						
32			SP	S			Pale yellow, yellow, white fine SAND, little to trace silt (well sorted) (saturated).								

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32	-12.7	SP	S	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Light brown, pale yellow, olive yellow coarse to very coarse SAND, trace silt, trace to little granules, trace pebbles (saturated). White, light olive yellow medium SAND, little fine sand, trace to little silt (saturated) (coarsening down).	16A 16B	1.8	Slough Backfill	
34		SP	S			White, olive gray, yellowish gray medium to coarse SAND, trace silt, thin lense of coarse to very coarse sand (well sorted).	17	1.1		
36		SP	S			SAME.	18A 18B 18C	1.4		
-16.8 -17.0 -17.6		SP SM	LS			Bright reddish yellow medium to very coarse SAND, trace silt, trace fine sand (saturated) (well sorted). Light brown, yellow, yellowish brown fine to very fine SAND, some silt, trace medium sand (saturated) (tightly packed) (angular bedding plane) (0.03 clay at top of strata) (gravel at 37.3 feet +/-). Yellow, light brown, bright reddish yellow coarse to very coarse SAND, trace to little granules, trace silt (coarsening down to pebbles with medium to very coarse sand) (saturated).	19	0.7	Bottom of Borehole - approx. 8" diameter terminated at 40 feet below existing ground surface.	
40	-20.3	SP	LS							
42										
44										
46										
48										

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