COMPLIANCE MONITORING

Piezometer Construction Diagram

Piezometer: C-4-E1SR

Project:	Sanifill, DRPI New Castle, Delaware	Date Started: Date Finished:	06/20/96 06/20/96
Survey	N624215.70 E456307.30	Ground Elevation: 28.10 ft.	Inner Casing Elevation: 30.92 ft.
			Outer Casing Elevation: NM ft.

DEPTH, ft.	ELEVATION	STRATIGRAPHIC DESCRIPTION	LITHOLOGY	SPT (bpf)	SAMPLES	HEADSPACE RESULTS (ppmv)	PIEZOMETER SCHEMATIC	PIEZOMETER MATERIALS
		Not sampled						Riser 3' Above Ground Surface
								Grout
5								
10								Cement/Bentonite Mix
15								
20								Bentonite Pellets
25								Sandpack (Jessie Morie #1)
30	-2.9	end of boring						0.010 Slot 2" PVC Threaded Bottom Cap Sandpack (Jessie Morie #1)
35								

STATE OF DELAWARE
HENRY SCOTT LAIRD
REG. No. 325
REGISTERED PROFESSIONAL GEOLOGIST

Notes:
NA = not applicable
bgs = below ground surface
bpf = blows per foot
NS = not surveyed
NOS = not sampled
▽ = water level at completion
* = Soil or rock samples collected for chemical analysis

Completion Depth:	31.00 ft bgs	Depth to Water:	9 ft bgs
Drilling Company:	Craig-Test Boring	Date of Measurement:	6/22/96

MONITORING WELL INSTALLATION LOG

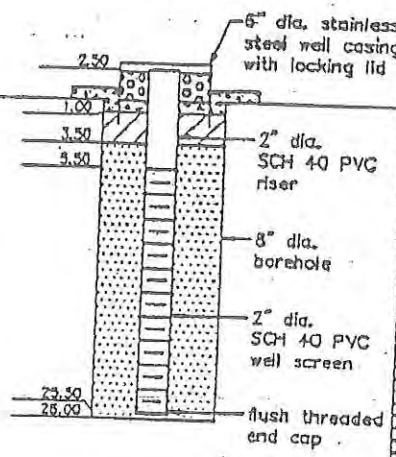
JOB NO. 953-6277 PROJECT SANIFILL/WELL INSTALLATION/DE WELL NO. C4-N1S SHEET 1 of 1
GA INSP. S. NEYSHEHIRIJAN DRILLING METHOD 4 1/4" ID. HOLLOW STEM AUGER GROUND ELEV. 22.0 WATER DEPTH 13.6' TOC
WEATHER P. SUNNY DRILLING COMPANY WALTON CORPORATION COLLAR ELEV. 24.7 TIME/DATE 0915/08-17-95
TEMP. 87° F DRILL RIG CME 55 DRILLER G. TRUVER STARTED 0810/07-28-95 (TIME / DATE) COMPLETED 0915/07-28-95 (TIME / DATE)
LOCATION / COORDINATES N 624606.2 E 455285.0

MATERIALS INVENTORY

WELL CASING 2 in. dia. 8 LF. WELL SCREEN 2 in. dia. 20 LF. BENTONITE SEAL BENTONITE CHIPS
CASING TYPE SCH 40 PVC SCREEN TYPE SCH 40 PVC INSTALLATION METHOD GRAVITY
JOINT TYPE FLUSH THREADED SLOT SIZE 0.010" MACHINE SLOTTED FILTER PACK QTY. 500 LBS
GROUT QUANTITY N/A CENTRALIZERS NONE USED FILTER PACK TYPE #1 MORIE SAND
GROUT TYPE N/A DRILLING MUD TYPE N/A INSTALLATION METHOD GRAVITY

ELEV./DEPTH	SOIL/ROCK DESCRIPTION
	GROUND SURFACE
0.00	For lithologic description, see boring log C4-N1S.
10.00	
20.00	
30.00	
40.00	
50.00	
60.00	
70.00	
80.00	
90.00	
100.00	

WELL SKETCH



STATE OF DELAWARE
MICHAEL McNEE MORRIS
NO. 510
REGISTERED PROFESSIONAL GEOLOGIST

INSTALLATION NOTES

WELL DEVELOPMENT NOTES

Well developed 08-08-95 through 08-22-95 with a 2" dia. Grundfos submersible pump. See C4-N1S well development record for additional well development information.

REVISED 10-03-95

LEGEND

PEA GRAVEL
CEMENT PAD
BENTONITE CHIPS

PROJECT: SANIFILL/WELL INSTALL/DE
PROJECT LOCATION: NEW CASTLE, DE
PROJECT NUMBER: 953-6277

RECORD OF BOREHOLE C4-N1S

BORING DATE: 07-27-95
BORING LOCATION: N 624608.2 E 455285.0

SHEET: 1 OF 1
DATUM: NGVD

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH	SAMPLES NUMBER	TYPE	BLOWS / 6 in	N	RECOVERY	REMARKS	PIEZOMETER OR STANDPIPE INSTALLATION
0	4 1/4" ID H.S.A.	0.0-2.0 ft. Moderate yellowish-brown, fine SAND, some silt.			22.00 / 0.00							
		2.0-14.0 ft. Light brown, fine SAND, SILT, and CLAY, trace gravel. (FILL?)			20.00 / 2.00							
5						S-1	DO	4,4,5,5	9	3/24		
						S-2	DO	4,3,4,5	7	18/24		
10						S-3	DO	1,2,2,2	4	18/24		
						S-4	DO	1,1,1,2	2	7/24		
					8.00	S-5	DO	WEIGHT OF RODS	N/A	1/24		
15		14.0-16.0 ft. Soft, moderate red and light grey CLAY, some fine sand.			14.00 / 6.00	S-6	DO	WOR,WOR,3,1	3	10/24		
		16.0-18.0 ft. Wet, greyish-orange, fine SAND, little clay and silt.			16.00 / 4.00	S-7	DO	1,2,2	4	16/18		
20		18.0-26.0 ft. Moderate red, pale red, and light grey CLAY to SILTY CLAY with occasional fine sand and silt lenses.			18.00	S-8	DO	1,1,6,9	7	5/24		
						S-9	DO	3,6,8,10	12	17/24		
						S-10	DO	8,8,12,15	20	24/24		
25						S-11	DO	3,7,10,15	17	24/24		
		BORING TERMINATED AT 26.0 FT. BELOW GROUND SURFACE.			-4.00 / 26.00							
30												
35												
40												

STATE OF DELAWARE
MICHAEL McNEE MORRIS
NO. 510
REGISTERED PROFESSIONAL GEOLOGIST

URS Greiner Woodward Clyde

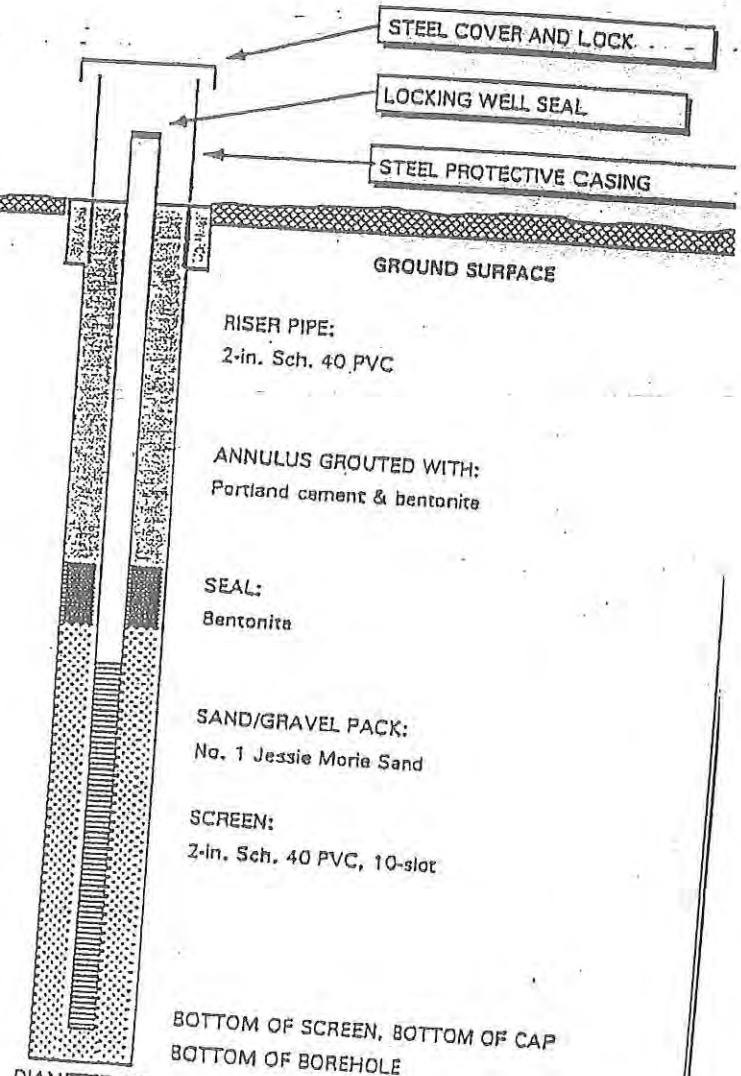
CONSTRUCTION OF WELL NO. C5-N1S

Project name and number Delaware Recyclable Products, Inc.(DRPI) - 8E02062	*DNREC well permit No.* 162039
Elevation datum See Key	
Drilling company Craig Test Boring Co., Inc.	*Surveyor* VanDemark & Lynch, Inc.
Ground elevation 29.8 ft	
Date and time of completion 12-9-98	*Northing* 624395.6
Top of protective steel casing elevation NA	
Inspector G. Riehle	*Easting* 454680.7
Top of riser pipe elevation 32.96 ft	

A = Top of Casing
B = Top of Riser
C = Ground Surface
D = Bottom of Larger Diameter Borehole
E = Top of Bentonite Seal
F = Top of Sand Pack
G = Top of Screen
H = Bottom of Screen
I = Bottom of Borehole

GENERALIZED SOIL DESCRIPTION
See Log of Boring C5-N1S

KEY	ELEVATIONS (Based on National Geodetic Vertical Datum, 1929)	DEPTHS (ft below ground, not to scale)
A		
B	32.96	
C	29.8	0
D	27.8	2.0
E	14.8	15.0
F	12.8	17.0
G	9.8	20.0
H	-10.2	40.0
I	-12.2	42.0



STATE OF DELAWARE
GARY M. RIEHLE
REG. NO. 910
REGISTERED PROFESSIONAL GEOLOGIST

DIAMETER OF BOREHOLE: 8 in.

REMARKS (Installation, development) :

inch ID Hollow Stem Auger
Developed with submersible pump

URS Greiner Woodward Clyde

LOG OF BORING C5-N1S

PROJECT NAME/NUMBER: Delaware Recyclable Products, Inc (DRPI)-8E02062		DATE STARTED: 12/9/98	DATE COMPLETED: 12/9/98
DRILLING CONTRACTOR: Craig Test Boring Co., Inc.	FOREMAN: Gary McAneny	GROUND ELEVATION (FT. MSL): 29.8	WATER DEPTH (FT BGS): 19.5
DRILLING EQUIPMENT: Hollow Stem Auger		COMPLETION DEPTH (FT BGS): 42'	ROCK DEPTH (FT BGS): NA
TYPE BIT: NA	SIZE AND TYPE CORE BARREL: NA	COMPLETION METHOD: 4.25-inch ID HSA	
CASING: NA		SOIL SMPLS: DIST. 5' intervals UNDIST.	
CASING HAMMER: WEIGHT NA	DROP NA		
SAMPLER: 2-inch Standard Split-Spoon		BORING LOCATION: C5-N1S	
SAMPLER HAMMER: WEIGHT 140#	DROP 30-in.	INSPECTOR: Gary Riehle	

DESCRIPTION	Sample Interval	Depth (FT BGS)	Water Level	Samples: Recov. (in)	Samples: Penetr. Resist. BL/12in		REMARKS
Medium dense; dry; black and brown silty fine-coarse SAND and GRAVEL (SP-GM) - Fill		0		14			
		1			29		
		2					
		3					
		4					
Loose; dry; light brown fine SAND with little silt (SW)		5		16			
		6			7		
		7					
		8					
		9					

STATE OF DELAWARE
GARY M. RIEHLE
REG. NO. 910
REGISTERED PROFESSIONAL GEOLOGIST

URS Greiner Woodward Clyde

LOG OF BORING C5-N1S

DESCRIPTION	Sample Interval	Depth (FT BGS)	Water Level	Samples: Recov. (in)	Samples: Penetr. Resist. BL/12in		REMARKS
10-11': Loose; dry; light brown fine-coarse SAND with little silt (SP)				18			
		11			8		
11-12': Loose-soft; moist; brown fine sandy SILT (SM)							
		12					
		13					
		14					
15-16': Medium stiff; moist; light brown CLAY with little silt; medium plasticity (CL)		15		16			
16-17': Loose; dry; brown fine-medium SAND with little silt (SP-SM)		16			6		
		17					
		18					
		19					
Medium stiff ; moist-wet; grayish brown clayey silty fine-medium SAND with trace fine gravel (SM-ML)		20		14			
		21			5		
		22					
		23					

URS Greiner Woodward Clyde

LOG OF BORING C5-N1S

DESCRIPTION	Sample Interval	Depth (FT BGS)	Blow Count	Samples: Recov. (in)	Samples: Penetr. Resist. BL/12in	Samples:	REMARKS
		25					
25-25.5': Same as above				18			
25.5-27': Loose; wet; brown silty fine-coarse SAND with trace-little fine gravel (SP)		26			6		
		27					
		28					
		29					
Loose; moist; dark gray clayey SILT; some organics; medium to high plasticity (MH-OH)		30	18				
		31			7		
		32					
		33					
		34					
Medium stiff; moist-wet; interseamed dark gray silty CLAY with organics (OH) and light gray fine-medium SAND with little silt (SP)		35	18				
		36		8			
		37					

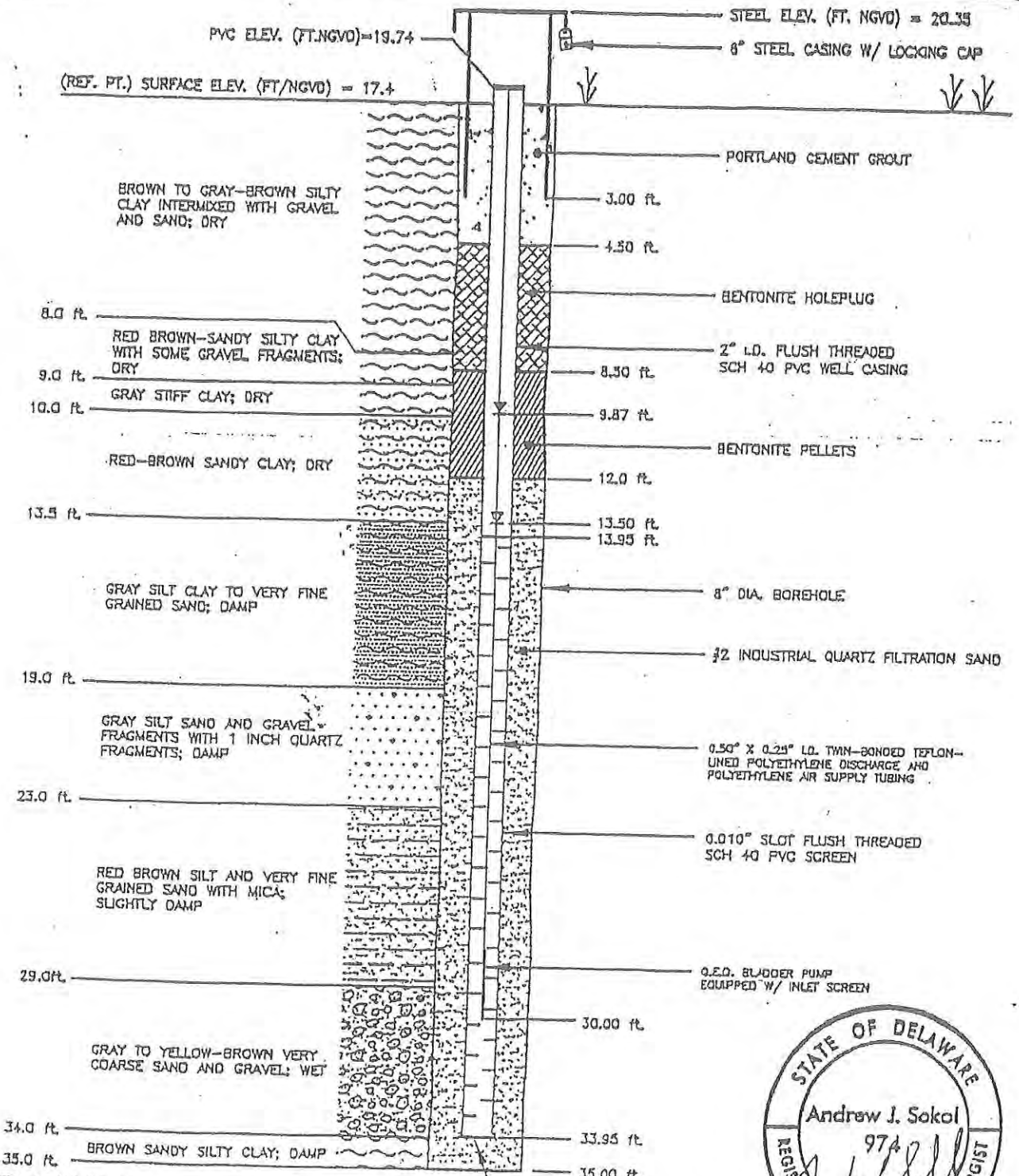
URS Greiner Woodward Clyde

LOG OF BORING C5-N1S

DESCRIPTION	Sample Interval	Depth (FT BGS)	Water Level	Samples: Recov. (in)	Samples: Penetr. Resist. BL/12in		REMARKS
		39					
		40					
40-40.5': Loose; moist; dark gray SILT with littl clay (ML)				18			
40.5-42': Loose; wet; gray silty fine-coarse SAND with trace fine gravel (SP)		41			9		
		42					
End of Boring @ 42'.							
		43					
		44					
		45					
		46					
		47					
		48					
		49					
		50					

WM-089A005

11/30/00



COMPLETED: 10/24/2000
DEDICATED PUMP INSTALLED: 10/30/2000
DRILLED BY: B.L. MYERS BROTHERS, INC.
NORTHING: 622,839.00; EASTING: 454,301.32
PERMIT # 1750079 W
▼ SWL (10/24/00)
▽ ENCOUNTERED WATER

STATE OF DELAWARE
Andrew J. Sokol
974
REGISTERED PROFESSIONAL GEOLOGIST

NOT TO SCALE

BLAZOSKY

DELAWARE RECYCLABLE PRODUCTS, INC.
INDUSTRIAL WASTE LANDFILL

NEW CASTLE BOROUGH NEW CASTLE COUNTY DELAWARE

MONITORING WELL C5-W1R(S)

Borehole Number: CS-W1R(S)

Surface Elevation (ft/msl): 17.4 (ft)

Borehole Diameter: 8 inches, From 0 to 35 (ft)

_____ inches, From ____ to ____ (ft)

_____ inches, From ____ to ____ (ft)

Total Depth: 35 (ft)

Depth to Static Ground Water Level (SWL): 7.53 (ft)

Date SWL Measured: 10/24/00 (mm/dd/yy)

Permit No. 175079-W

Drilling Method: HOLLOW STEM AUGER

Date Drilled: 10/24/00 (mm/dd/y

Drilled By: B.L. MYERS BROTHERS, INC.

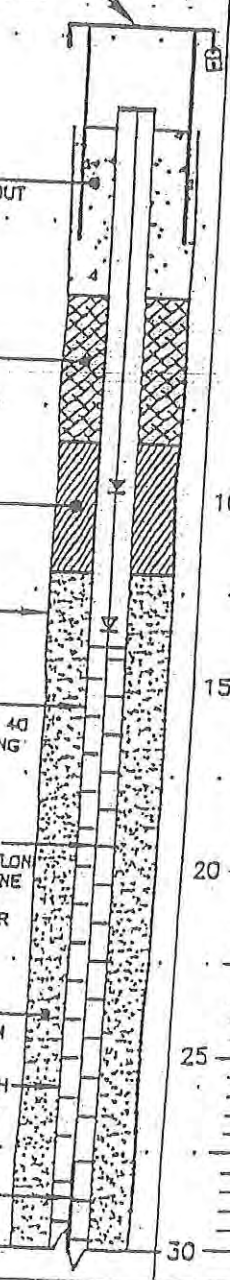
Driller License Number: 627

Logged By: M. NAPOLITAN, BAI

County/State: NEW CASTLE, DELAWARE

Township or Municipality: MINQUADLE

Depth (Ft)	Lithologic Description	Plot	Ground Water Observations	Samples No.	Samples Rec** Att	Comments	Well/Piezometer Construction	Depth (Ft)
0							6" STEEL CASING W/ LOCKING CAP	0
	BROWN TO GRAY-BROWN SILTY CLAY INTERMIXED WITH GRAVEL AND SAND; DRY						PORTLAND CEMENT GROUT	
5			DRY	1	6 6 8 7	0'		5
	RED BROWN-SANDY SILTY CLAY WITH SOME GRAVEL FRAGMENTS; DRY						BENTONITE HOLEPLUG	
10	GRAY STIFF CLAY; DRY		DRY ▽	2	8 9 10 13	1.6'		
	RED-BROWN SANDY CLAY; DRY						BENTONITE PELLETS	10
15			▽ DAMP	3	7 7 9 12	2.0'	8" DIA. BOREHOLE	
	GRAY SILTY CLAY TO VERY FINE GRAINED SAND; DAMP						2" I.D. FLUSH THREADED SCH 40 PVC WELL CASING	15
20			DAMP	4	10 17 14 9	1.3'		
	GRAY SILTY SAND AND GRAVEL FRAGMENTS WITH 1 INCH QUARTZ FRAGMENTS; DAMP						0.50" x 0.25" ID TWIN-BONDED TEFLON LINED POLYETHYLENE DISCHARGE AND POLOYETHYLENE AIR SUPPLY TUBING	20
25			DAMP	5	7 8 13 16	1.9'	#2 INDUSTRIAL QUARTZ FILTRATION SAND	
	RED BROWN SILT AND VERY FINE GRAINED SAND WITH MICA; SLIGHTLY DAMP						0.010" SLOT FLUSH THREADED SCH 40 PVC SCREEN	25
30				6	7 9 14 8	1.7'	Q.E.D. BLADDER PUMP EQUIPPED W/ INLET SCREEN	30



* ▽ Encountered Ground Water ▼ Composite Static Water Level **Recovered / Attempted

WLB-089/000

Borehole Number: C3-W1R(S)

Surface Elevation (ft/msl): 17.4 (ft)

Borehole Diameter: 8 inches, From 0 to 35 (ft)

_____ inches, From ____ to ____ (ft)

_____ inches, From ____ to ____ (ft)

Total Depth: 35 (ft)

Depth to Static Ground Water Level (SWL): 7.53 (ft)

Date SWL Measured: 10/24/00 (mm/dd/yy)

Permit No. 175079-W

Drilling Method: HOLLOW STEM AUGER

Date Drilled: 10/24/00 (mm/dd/yy)

Drilled By: B.L. MYERS BROTHERS, INC.

Driller License Number: 627

Logged By: M. NAPOLITAN, EAI

County/State: NEW CASTLE, DELAWARE

Township or Municipality: MINQUADLE

Depth (Ft)	Lithologic Description	Plot	Ground Water Observations	Samples No.	Samples Rec** Att	Comments	Well/Piezometer Construction	Depth (Ft)
30	GRAY TO YELLOW-BROWN VERY COARSE SAND AND GRAVEL; WET		WET				Q.E.D. BLADDER PUMP EQUIPPED W/ INLET SCREEN; #2 INDUSTRIAL QUARTZ FILTRATION SAND	30
35	BROWN SANDY SILTY CLAY; DAMP		DAMP	7	14 20 13 15 / 1.3'		SLIP-ON PVC END CAP	35

STATE OF DELAWARE
Andrew J. Sokol
974
REGISTERED PROFESSIONAL GEOLOGIST

* ▽ Encountered Ground Water ▼ Composite Static Water Level **Recovered / Attempted

IBA006

URS Greiner Woodward Clyde

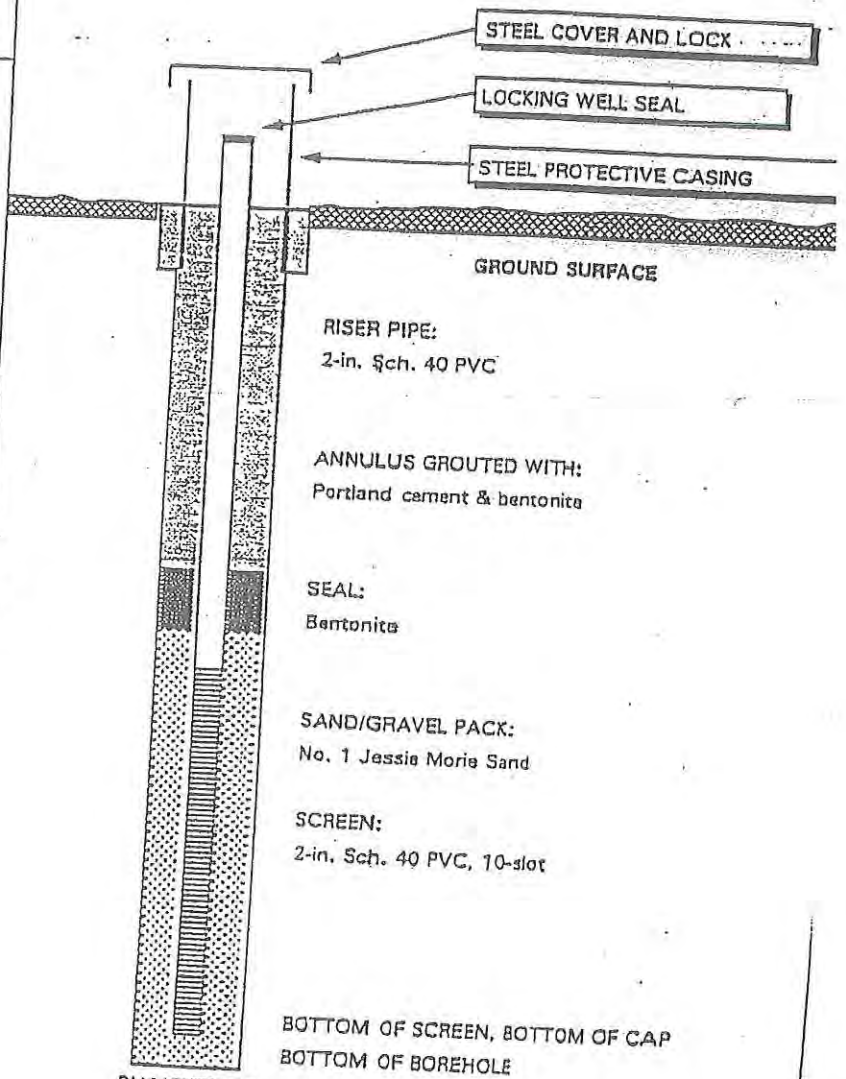
CONSTRUCTION OF WELL NO. C5-W2S

Project name and number		*DNREC well permit No.*	*Elevation datum*
Delaware Recyclable Products, Inc.(DRPI) - 8E02062		162040	See Key
Drilling company		*Surveyor*	*Ground elevation*
Craig Test Boring Co., Inc.		VanDemark & Lynch, Inc.	17.8 ft
Date and time of completion		*Northing*	*Top of protective steel casing elevation*
12-11-98		623671.8	NA
Inspector		*Easting*	*Top of riser pipe elevation*
G. Riehle		454413.1	20.46 ft

A = Top of Casing
B = Top of Riser
C = Ground Surface
D = Bottom of Larger Diameter Borehole
E = Top of Bentonite Seal
F = Top of Sand Pack
G = Top of Screen
H = Bottom of Screen
I = Bottom of Borehole

GENERALIZED SOIL DESCRIPTION
See Log of Boring C5-W2S

KEY	ELEVATIONS (Based on National Geodetic Vertical Datum, 1929)	DEPTHS (ft below ground, not to scale)
A		
B	20.46	
C	17.8	0
D	15.8	2.0
E	13.8	4.0
F	11.8	6.0
G	9.8	8.0
H	-7.2	25.0
I	-9.2	27.0



DIAMETER OF BOREHOLE: 8 in.

STATE OF DELAWARE
GARY M. RIEHLE
REG. NO. 910
REGISTERED PROFESSIONAL GEOLOGIST

REMARKS (Installation, development):

5 inch ID Hollow Stem Auger
Developed with submersible pump

URS Greiner Woodward Clyde

LOG OF BORING C5-W2S

PROJECT NAME/NUMBER: Delaware Recyclable Products, Inc (DRPI)-8E02062		DATE STARTED: 12/11/98	DATE COMPLETED: 12/11/98
DRILLING CONTRACTOR: Craig Test Boring Co., Inc.	FOREMAN: Gary McAneny	GROUND ELEVATION (FT. MSL): 17.8	WATER DEPTH (FT BGS): 13
DRILLING EQUIPMENT: Hollow Stem Auger		COMPLETION DEPTH (FT BGS): 27'	ROCK DEPTH (FT BGS): NA
TYPE BIT: NA	SIZE AND TYPE CORE BARREL: NA	COMPLETION METHOD: 4.25-inch ID HSA	
CASING: NA		SOIL SMPLS: DIST. 5' intervals UNDIST NA	
CASING HAMMER: WEIGHT NA	DROP NA		
SAMPLER: 2-inch Standard Split-Spoon		BORING LOCATION: C5-W2S	
SAMPLER HAMMER: WEIGHT 140#	DROP 30-in.	INSPECTOR: Gary Riehle	

DESCRIPTION	Depth (FT BGS)	Samples: Recov. (in)	Samples: Penetr. Resist. BL/12in	REMARKS
0-1': Loose; dry; brown silty fine-coarse SAND with little fine-medium gravel	0	16		
1-2': Soft; moist; red and white CLAY - reworked embankment fill	1		3	
	2			
	3			
	4			
Stiff; red CLAY, clayey SAND and light brown silty fine-coarse SAND - little fine-medium rounded gravel interspersed throughout - reworked embankment fill	5	14		
	6		11	
	7			
	8			
	9			

STATE OF DELAWARE
GARY M. RIEHLE
REG. NO. 810
REGISTERED PROFESSIONAL GEOLOGIST

URS Greiner Woodward Clyde

LOG OF BORING C5-W2S

DESCRIPTION	Sample Interval	Depth (FT BGS)	Water Table	Samples Recov. (in)	Samples Penetr. Resist. BL/12in		REMARKS
10-11.5': Stiff; dry; red with light gray CLAY with thin white seam of fine SAND grading to red clayey SAND - low plasticity (CL)				16			
		11			11		
11.5'-12': Loose; dry; light brown to light orange-brown fine SAND (SW)							
		12					
		13					
		14					
Very loose; moist with wet seams; gray-dark gray organic rich clayey SILT with thin seams of silty fine to medium SAND (MH-SM)		15		22			
		16			2		
		17					
		18					Change in drilling resistance at 18'.
		19					
Medium dense; wet; light gray silty fine SAND grading to fine-coarse SAND with trace fine-coarse rounded gravel		20		20			
		21		16			
		22					
		23					

URS Greiner Woodward Clyde

LOG OF BORING C5-W2S

DESCRIPTION	Sample Interval	Depth (FT BGS)	Water Table	Samples: Recov. (in)	Samples: Penetr. Resist. BL/12in		REMARKS
		-					
		- 25 -					
Very stiff; dry; red CLAY with trace fine rounded gravel; medium plasticity (CH)				18			
		-					
		- 26 -			19		
End of Boring at 27'		-					
		27					
		-					
		- 28 -					
		-					
		- 29 -					
		-					
		- 30 -					
		-					
		- 31 -					
		-					
		- 32 -					
		-					
		- 33 -					
		-					
		- 34 -					
		-					
		- 35 -					
		-					
		- 36 -					
		-					
		- 37 -					

DUFFIELD ASSOCIATES

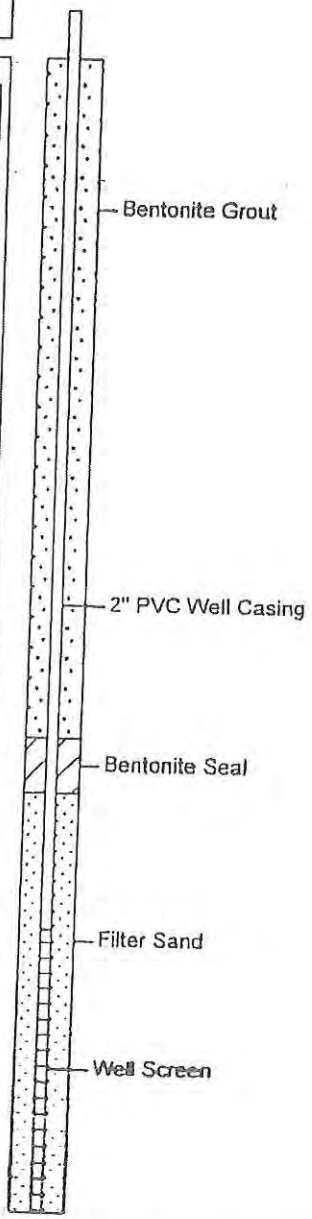
LOG OF BORING MW-1S

Petrillo Landfill
New Castle, Delaware
W.O. #1443.EB

Date Started	: August 12/1999	Drilling Equipment	: Truck mounted CME-55
Date Completed	: August 16/1999	Drilling Procedures	: SPT- 2"split spoon
Weather	: Sunny, 90's	Logged by:	: EBS
Drilling Agency	: Walton Corp.	State Permit	: 166642
Driller	: Gary Truver Sr.	Top of PVC Elev. (ft)	: 63.93

Depth in Feet	Surf. Elev. 61.6	DESCRIPTION	Samples
0	61	SAND	1
2	59		
4	57	SILT	2
6	55		
8	53		3
10	51	SAND	4
12	49		
14	47	SAND	5
16	45		
18	43	SAND	
20	41		6
22	39		
24	37		7
26	35		
28	33		
30	31		8
32	29		
34	27		9
36	25		
38	23		
40	21	CLAY	10
42			

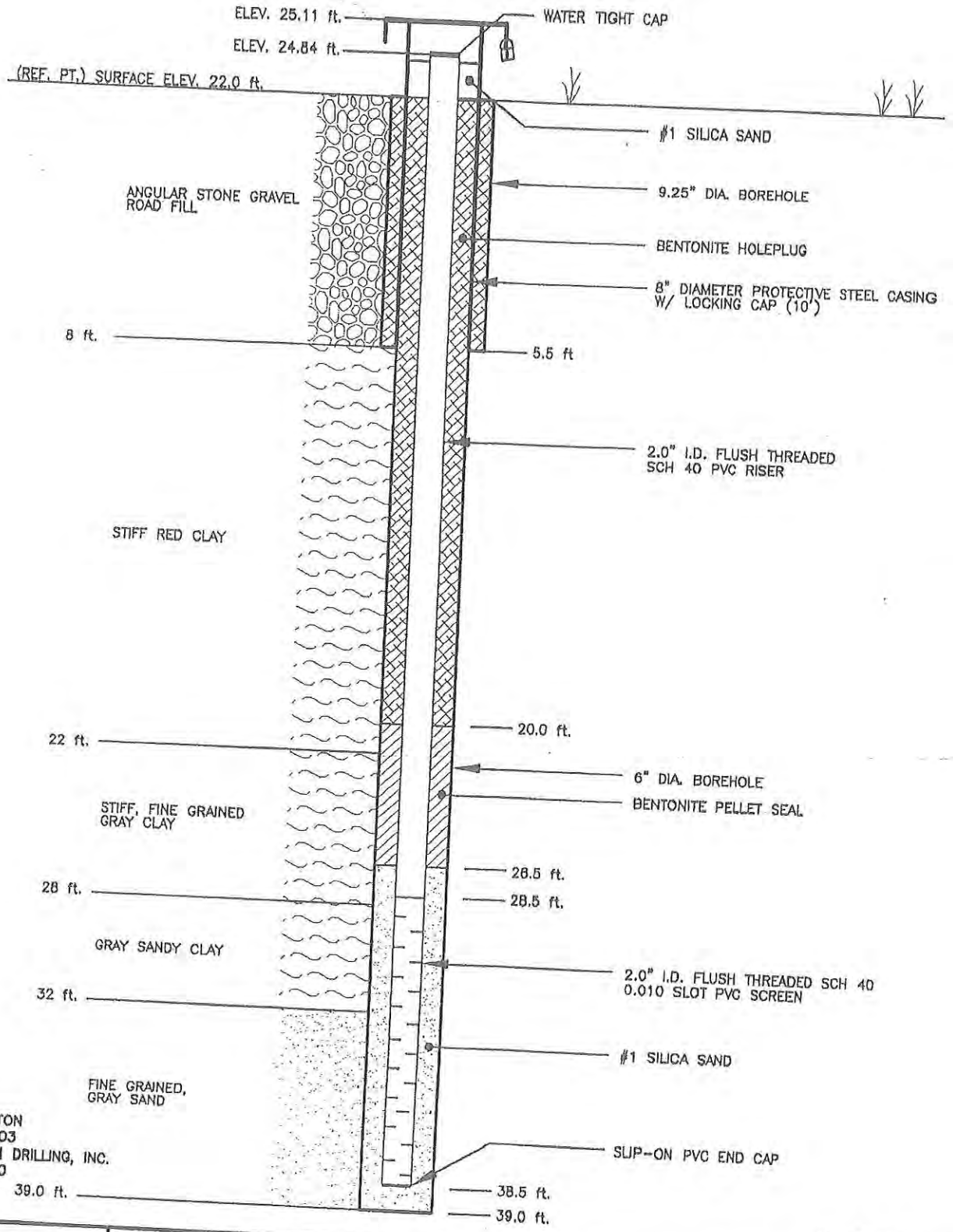
Well1: MW-1S
Elev.: 63.93 (TOC)



1. Boring terminated at 42.0 feet.
2. Well screen set at 32'- 42'.

WMI-186A001

12/18/03



LOGGED BY: ED LAYTON
DATE DRILLED: 12/3/03
DRILLED BY: UNITECH DRILLING, INC.
NORTHING: 621740.10
EASTING: 454640.00
PERMIT #197623-W

NOT TO SCALE

DELAWARE RECYCLABLE PRODUCTS, INC.

WASTE MANAGEMENT, INC.

MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

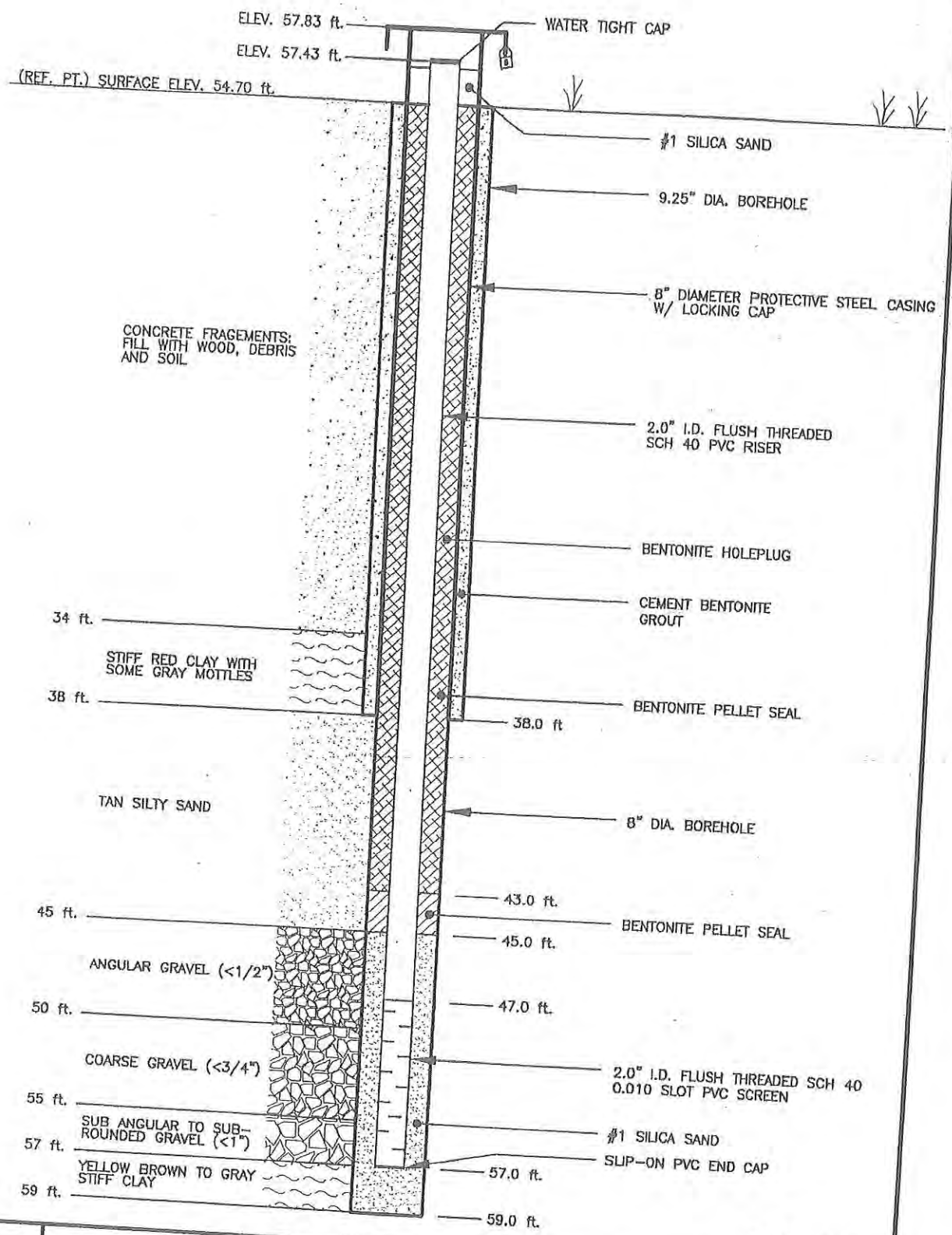
MONITORING WELL MW-101S

BLAZOSKY ASSOCIATES INC.
Balanced Environmental Solutions

BALANCED ENVIRONMENTAL SOLUTIONS
State College, PA.,Telephone:814/238-2060; Delaware Valley, PA

WMI-186A003

12/18/03



LOGGED BY: ED LAYTON
DATE DRILLED: 12/03/03
DRILLED BY:
UNITECH DRILLING, INC.
NORTHING: 620712.30
EASTING: 455949.70
PERMIT #197625-W

NOT TO SCALE

BLAZOSKY Associates Inc.
Balanced Environmental Solutions

DELAWARE RECYCLABLE PRODUCTS, INC.

WASTE MANAGEMENT, INC.

MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

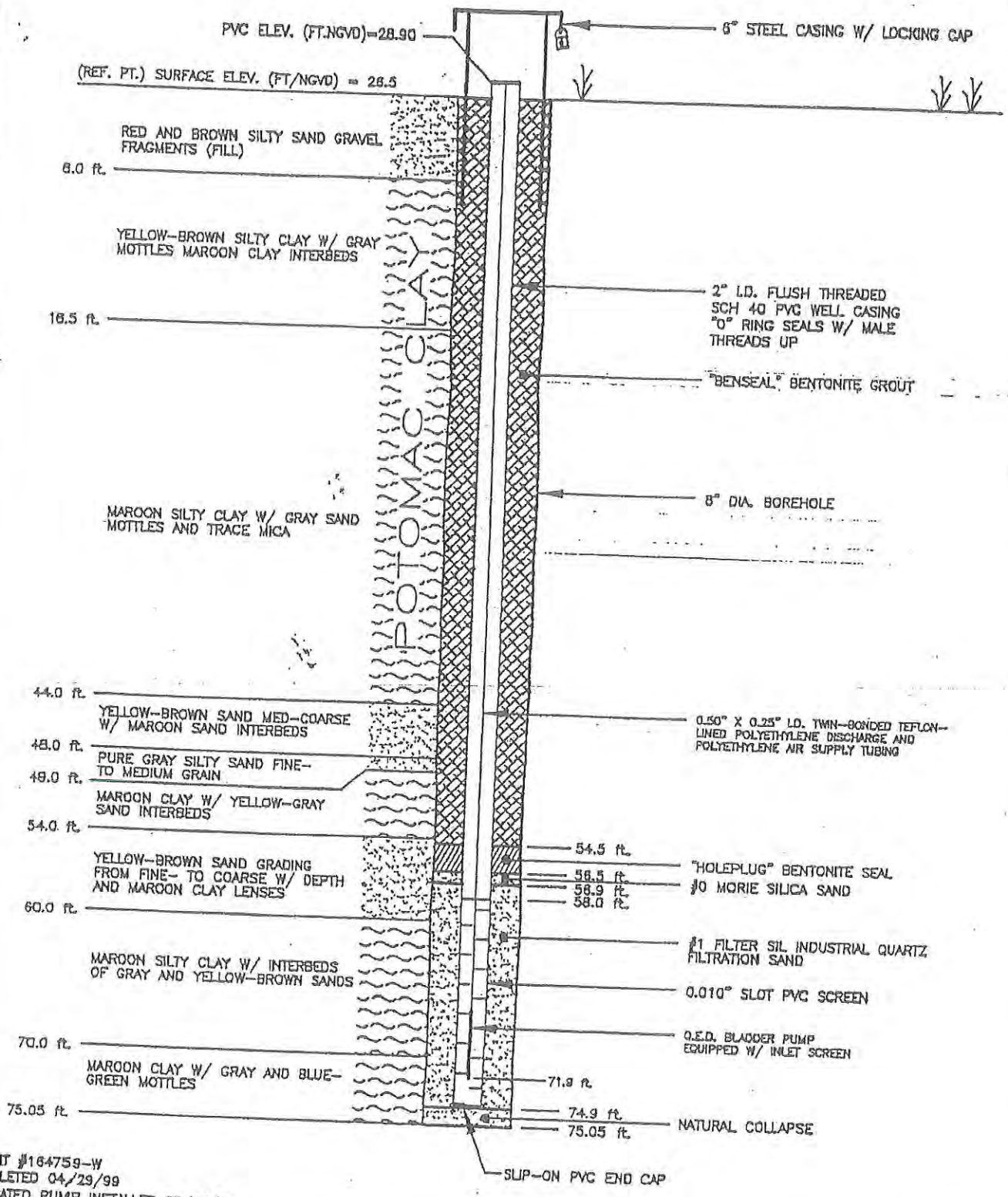
MONITORING WELL MW-102S

BALANCED ENVIRONMENTAL SOLUTIONS

State College, PA.,Telephone:814/238-2060; Delaware Valley, PA Telephone:

WM-030A001

03/18/99



PERMIT #164759-W
COMPLETED 04/29/99
DEDICATED PUMP INSTALLED 03/06/99

NOT TO SCALE

BLAZOSKY ASSOCIATES, INC.

WASTE MANAGEMENT, INC.
DRPI INDUSTRIAL WASTE LANDFILL

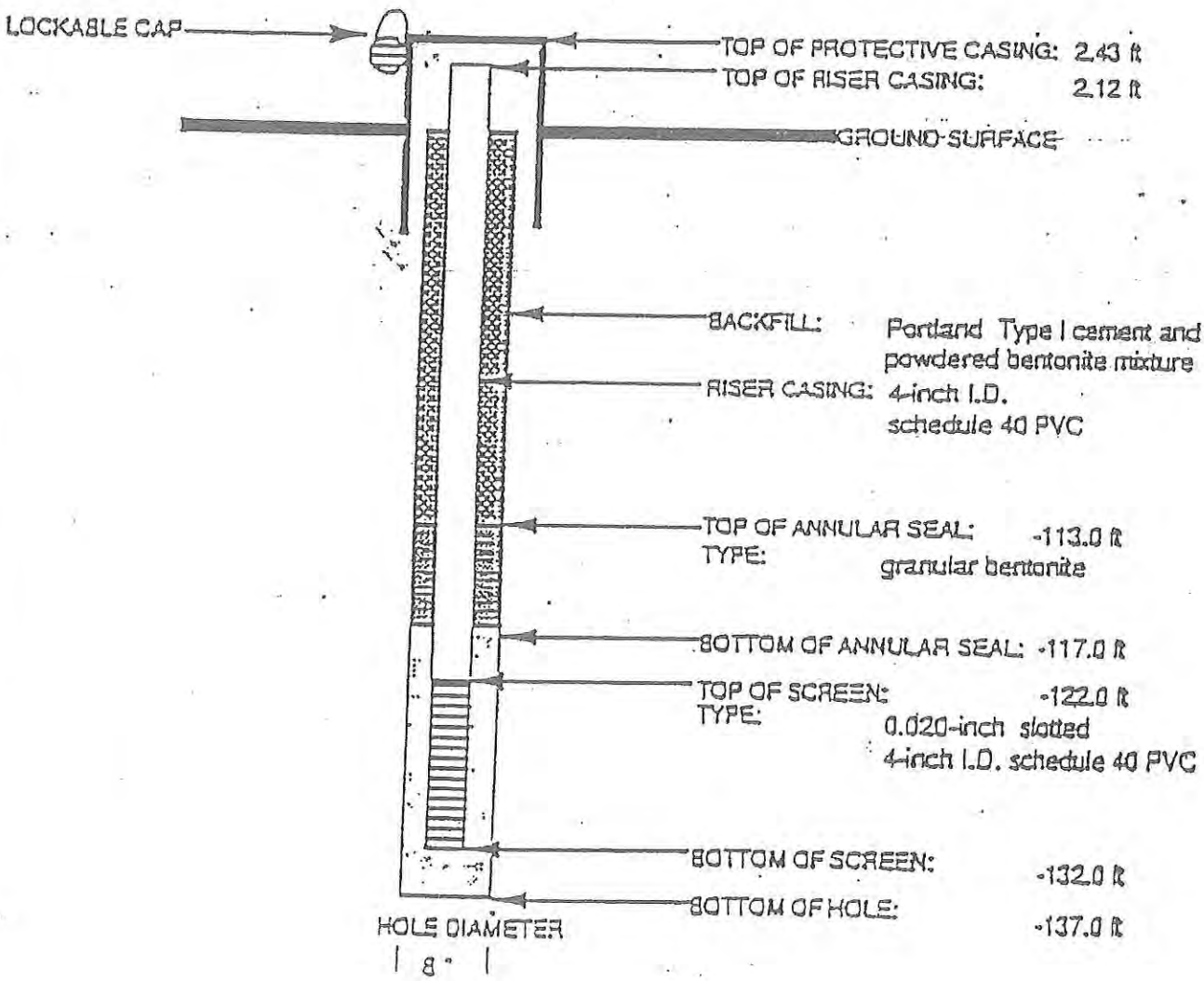
MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

MONITORING WELL MW-4R(D)

CONSULTANTS IN WASTE MANAGEMENT

GROUNDWATER MONITORING WELL
AS-BUILT DIAGRAM

WELL NO.: MW-7(d)	DRILLING CONTRACTOR: Walton Corporation
PROJECT: Delaware Recyclable Products, Inc.	JOB NO.: 5990
COORDINATES:	
DRILLER: Gary Truver GEOLOGIST: Phil Klinedinst	WATER LEVEL: 40.8 ft (11-28-90) DATE FINISHED: 11-28-90



Metcalf & Eddy, Inc. GEOLOGIC LOG

PROJECT: Delaware Recyclable Products	JOB NO.: 005550	BORING NO.: MW-7(d)
LOCATION: ORPI New Castle, DE	ELEVATION: 58.5'	DEPTH: 137'
Southeast side of Marsh Lane	DATE BEGUN: 11/16/90	DATE FINISHED: 11/20/90
DRILL CONTRACTOR: Walton Corporation	GEOLOGIST: P. Klinedinst	
DRILLING RIG: Truck mounted CME 55 and SIMCO Rig	DRILLER: G. Traver	
DRILLING METHOD: 4-1/4" ID Hollow Stem Augers, and mud rotary	DRILL FLUID: Quick gel	HOLE SIZE: 8"
	DEPTH TO WATER: 24'	DATE: 11/16/90
WEATHER: Sunny, 60's °F	WELL PERMIT NO.: 84794	
COMPLETED AS WELL?: Yes		

DEPTH	SAMPLE #	SAMPLE DEPTH	RECOVERY	BLOW COUNTS	SAMPLE DESCRIPTION	HNu (ppm)	NOTES
		0-2.5'			SAND, some silt, little gravel (SM)	0	Fill, dry
		2.5'-4'			CLAY, some silt, reddish brown (CL)		moist
5	1	4'-6'	12"	4,5	CLAY, some silt, mottled brown (CL); grading	0	loose, moist
				2,3	SAND, some clay, little silt (SM)		Columbia Formation
10	2	9'-11'	15"	10,14	SAND, medium to fine, little coarse, little silt, little gravel, yellowish brown (SP)	0	medium dense, moist
				12,13			
15	3	14'-16'	9"	6,11	SAND, medium to fine, some coarse grained, some gravel, some silt, little clay, yellowish brown (SM)	0	medium dense, moist
				14,12			
20	4	19'-21'	22"	10,12	SAND, medium to fine, TR coarse, little silt, TR gravel, TR clay, yellowish brown to orange (SM)	0	medium dense, moist
				14,16			
25	5	24'-25'	14"	7,11	SAND, coarse to medium, some gravel, little fine sand, little silt, yellowish brown (SP)	0	▼ medium dense, wet
				12,10			

Metcalf & Eddy, Inc. GEOLOGIC LOG

PROJECT: DRPI

JOB NO.: 005550

BORING NO.: MW-7(d)

DEPTH	SAMPLE #	SAMPLE DEPTH	RECOVERY	BLOW COUNTS	SAMPLE DESCRIPTION	HNu (ppm)	NOTES
30	6	29'-31'	6"	12.12	SAND, coarse to medium, some gravel, gray	0	medium dense, wet
				11.12	(SP)		
							Potomac Formation
35	7	34'-36'	6"	6.8	CLAY, little silt, yellowish brown, mottled red	0	very stiff, moist
				9.12	and light gray (CL)		
40	8	39'-40'	19"	4.6	CLAY, TR silt, red, mottled light gray and	0	very stiff, moist
				11.15	purple (CL)		
45	9	44'-46'	24"	5.11	CLAY, TR to some silt, red, mottled light gray (CL)	0	very stiff, moist
				15.18			
50	10	49'-51'	24"	8.15	SILT, some to little clay, little to some fine sand,	0	hard, moist
				27.34	yellowish brown, mottled light gray and red (ML)		
55	11	54'-56'	24"	8.11	SILT, and clay, light gray, little white sand	0	hard, moist
				22.25	layer (ML)		

Metcalf & Eddy, Inc.

GEOLOGIC LOG

PROJECT: DRPI

SHEET 3 OF 5

JOB NO.: 005550

BORING NO.: MW-7(d)

DEPTH	SAMPLE #	SAMPLE DEPTH	RECOVERY	BLOW COUNTS	SAMPLE DESCRIPTION	HNu (ppm)	NOTES
60	12	59'-61'	24"	8.10	SILT, some clay, TR fine sand, light gray (ML)	0	very silt, moist
				20.26			
65	13	64'-66'	24"	3.6	SAND, fine to medium, little silt, gray to yellowish brown(SM); grading SAND, some clay (SC)	0	medium dense, wet, grading moist. Sand heaved upward during drilling.
				9.11			
70	14	69'-71'	12"	10.16	CLAY, some silt, brown, mottled red and light gray (CL)	0	hard, moist
				24.24			
75	15	74'-76'	16"	8.11	CLAY, little silt, gray (CL)	0	very silt, moist
				15.25			
80	16	79'-81'	22"	8.18	CLAY, little silt, gray mottled red (CL)	0	hard, moist
				32.40			
85	17	84'-86'	24"	11.22	CLAY, TR silt, gray mottled red (CL)	0	hard, moist
				28.33			

Metcalf & Eddy, Inc. GEOLOGIC LOG

PROJECT: DRPI

SHEET 4 OF 5

JOB NO.: 005550

BORING NO.: MW-7(d)

DEPTH	SAMPLE #	SAMPLE DEPTH	RECOVERY	BLOW COUNTS	SAMPLE DESCRIPTION	HNu (ppm)	NOTES
90	18	89'-91'	24"	11.20	CLAY, and silt, brownish gray (CL); grading	0	dense to hard, wet to
				23.40	SILT, some very fine sand, brownish gray (ML)		moist
95	19	94'-96'	24"	15.15	SAND, fine grained, some silt, gray (SM); grading	0	dense to hard, wet to
				20.21	SILT, dark gray (ML); grading		moist
					CLAY, mottled red (CL)		
100	20	99'-101'	24"	11.22	CLAY, some silt, brownish red, mottled light	0	hard, moist
				34.41	gray (CL)		
105							
110	21	109'-111'	24"	11.24	SAND, medium to fine, little silt, reddish brown	0	hard, moist
				41.50/5"	(SM); grading CLAY, reddish brown (CL)		
115	22	114'-116'	24"	20.30	CLAY, some silt, little sand, reddish brown,	0	hard, wet to moist
				30.42	mottled light gray (CL)		

Metcalf & Eddy, Inc. GEOLOGIC LOG

PROJECT: DRPI

SHEET 5 OF 5

JOB NO.: 005550

BORING NO.: MW-7(d)

DEPTH	SAMPLE #	SAMPLE DEPTH	RECOVERY	BLOW COUNTS	SAMPLE DESCRIPTION	HNu (ppm)	NOTES
120	23	119'-121'	24"	22,34	CLAY, TR gravel, mottled red (CL)	0	hard, moist
				50			
125	24	124'-	8"	24,50/2"	CLAY, some silt, red mottled, yellowish brown	0	hard, moist
		124.7'			(CL); grading SILT, and sand, light gray (ML)		
130	25	129'-	4"	100/5"	SILT, and sand, white (ML); grading SAND, fine	0	very dense, moist
		129.4'			to medium, some silt, white (SM)		
135	26	134'-	9"	72,100/5"	SAND, fine to medium, TR clay, white to light	0	very dense, moist
		134.8'			brown		

Total Depth: 137'

MONITORING WELL INSTALLATION LOG

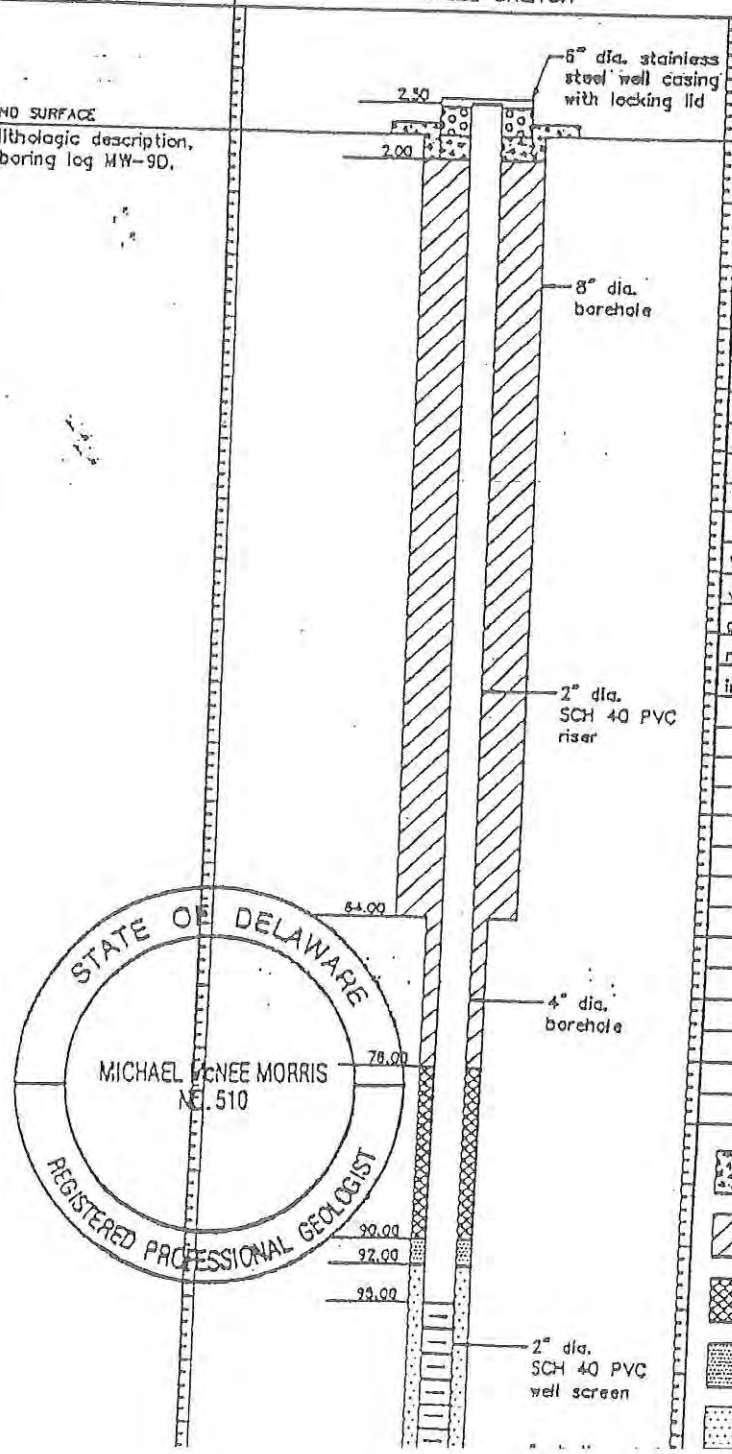
JOB NO. 953-6277 PROJECT SANIFILL/WELL INSTALLATION/DE WELL NO. MW-9D SHEET 1 of 2
GA INSP. S. NEYSHEHIRLIAN DRILLING METHOD 4 1/4" ID HOLLOW STEM AUGER/4" MUD ROTARY GROUND ELEV. 38.1 WATER DEPTH 41.20' TOC
WEATHER SUNNY, HUMID DRILLING COMPANY WALTON CORPORATION COLLAR ELEV. 40.7 TIME/DATE 1400/08-17-95
TEMP 94° F DRILL RIG CME 55 DRILLER G. TRUVER STARTED 1615/08-02-95 (TIME / DATE) COMPLETED 1230/08-03-95 (TIME / DATE)
LOCATION / COORDINATES N 623640.3 E 458739.9

MATERIALS INVENTORY

WELL CASING 2 in. dia. 97.8 L.f. WELL SCREEN 2 in. dia. 15 L.f. BENTONITE SEAL SLURRY
CASING TYPE SCH 40 PVC SCREEN TYPE SCH 40 PVC INSTALLATION METHOD TREMIE
JOINT TYPE FLUSH THREADED SLOT SIZE 0.010" MACHINE SLOTTED FILTER PACK QTY. 110 LBS
GROUT QUANTITY 140 GALLONS CONTRALIZERS NONE USED FILTER PACK TYPE #1 MORIE SAND
GROUT TYPE CEMENT/BENTONITE DRILLING MUD TYPE BENTONITE INSTALLATION METHOD GRAVITY

ELEV./DEPTH	SOIL/ROCK DESCRIPTION
	GROUND SURFACE
0.00	For lithologic description, see boring log MW-9D.
10.00	
20.00	
30.00	
40.00	
50.00	
60.00	
70.00	
80.00	
90.00	
100.00	

WELL SKETCH



STATE OF DELAWARE
MICHAEL McNEE MORRIS
NO. 510
REGISTERED PROFESSIONAL GEOLOGIST

INSTALLATION NOTES

WELL DEVELOPMENT NOTES

Well was developed on 08-16-95 with a 2" dia. Grunfos submersible pump. See MW-9D well development record for additional well development information.

REVISED 10-03-95

LEGEND

- CEMENT PAD
- CEMENT/BENTONITE GROUT
- BENTONITE
- FINE FILTER SAND
- #1 MORIE SAND

MONITORING WELL INSTALLATION LOG

JOB NO. 953-6277 PROJECT SANIFILL/WELL INSTALLATION/DE WELL NO. MW-9D SHEET 2 of 2
GA INSP. S. NEYSHEHRIAN DRILLING METHOD 4 1/4" ID HOLLOW STEM AUGER/4" MUD ROTARY GROUND ELEV. 38.1 WATER DEPTH 41.20' TOC
WEATHER SUNNY, HUMID DRILLING COMPANY WALTON CORPORATION COLLAR ELEV. 40.7 TIME/DATE 1400/08-17-95
TEMP. 94° F DRILL RIG CME 55 DRILLER G. TRUVER STARTED 1615/08-02-95 (TIME / DATE) COMPLETED 1230/08-03-95 (TIME / DATE)
LOCATION / COORDINATES N 6236-40.3 E 456739.9

MATERIALS INVENTORY

WELL CASING 2 in. dia. 97.8 L.F. WELL SCREEN 2 in. dia. 15 L.F. BENTONITE SEAL SLURRY
CASING TYPE SCH 40 PVC SCREEN TYPE SCH 40 PVC INSTALLATION METHOD TREMIE
JOINT TYPE FLUSH THREADED SLOT SIZE 0.010" MACHINE SLOTTED FILTER PACK QTY. 110 LBS
GROUT QUANTITY 140 GALLONS CENTRALIZERS NONE USED FILTER PACK TYPE #1 MORIE SAND
GROUT TYPE CEMENT/BENTONITE DRILLING MUD TYPE BENTONITE INSTALLATION METHOD GRAVITY

ELEV./DEPTH	SOIL/ROCK DESCRIPTION	WELL SKETCH	INSTALLATION NOTES
110.00		115.00 — 4" dia. borehole	
120.00			
130.00			
140.00			
150.00			WELL DEVELOPMENT NOTES: Well was developed on 08-16-95 with a 2" dia. Grunfos submersible pump. See MW-9D well development record for additional well development information.
160.00			
170.00			
180.00		STATE OF DELAWARE — MICHAEL McNEE MORRIS NO. 510 — REGISTERED PROFESSIONAL GEOLOGIST	
190.00			REVISED 10-03-95
200.00			LEGEND
210.00			CEMENT PAD; CEMENT/BENTONITE GROUT; BENTONITE; FINE FILTER SAND; #1 MORIE SAND
220.00			

PROJECT: SANIFILL/WELL INSTALL/DE

PROJECT LOCATION: NEW CASTLE, DE

PROJECT NUMBER: 953-6277

RECORD OF BOREHOLE MW-9D

BORING DATE: 06-02-95

BORING LOCATION: N 623640.3 E 456739.9

SHEET: 1 OF 3

DATUM: NGVD

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV / DEPTH	SAMPLES: NUMBER	TYPE	BLOWS / 6 in	N	REC/ATT	REMARKS	PIEZOMETER OR STANDPIPE INSTALLATION
					38.10							
0	4 1/4" ID HSA/4" MUD ROT.	0.0-12.5 ft. Moderate yellowish-brown, fine to coarse SAND, SILT, and CLAY, some fine to coarse gravel.			0.00							
5						S-1	DO	6,6,3,2	9	11/24		
10						S-2	DO	31,19,15,9	34	12/24		
					25.60							
		12.0-35.0 ft. Moderate yellowish-brown, medium grey, moderate reddish-brown, and pale red CLAY to SILTY CLAY, trace fine sand with occasional thin fine sand lenses.			12.50							
15						S-3	DO	3,4,5,6	9	15/24		
20						S-4	DO	3,4,6,8	10	16/24		
25						S-5	DO	5,7,12,14	19	17/20		
30						S-6	DO	3,7,11,13	18	24/24		
					3.10							
35		35.0-40.0 ft. Light grey and light brown, fine SAND and CLAYEY SILT.			35.00	S-7	DO	5,8,14,15	22	24/24		
40						S-8	DO	6,7,9,16	16	24/24		

STATE OF DELAWARE
MICHAEL McNEE MORRIS
NO. 510
REGISTERED PROFESSIONAL GEOLOGIST

PROJECT: SANIFILL/WELL INSTALL/DE

PROJECT LOCATION: NEW CASTLE, DE

PROJECT NUMBER: 853-6277

RECORD OF BOREHOLE MW-9D

BORING DATE: 06-02-05

BORING LOCATION: N 623640.3 E 456739.9

SHEET: 2 OF 3

DATUM: NGVD

DEPTH FEET	BORING METHOD	SOIL PROFILE: DESCRIPTION	LOCI	GRAPHIC LOG	ELEV / DEPTH	SAMPLES: NUMBER	TYPE	BLOWS / 6 in	N	RECIATT	REMARKS	PIEZOMETER OR STANDPIPE INSTALLATION
					+1.00							
40	4 1/2 ID HSA/4" MUD ROT.	40.0-55.0 ft. Brownish-grey and dark yellowish-brown CLAY, trace fine sand with occasional thin fine sand lenses.			40.00	S-8	DO	8,7,9,16	16	24/24		
45						S-9	DO	8,8,13,16	21	24/24		
50						S-10	DO	8,9,12,16	21	20/24		
					-16.00							
55		55.0-62.5 ft. Light grey, fine SAND, SILT, and CLAY with occasional thin fine sand lenses.			55.00	S-11	DO	8,14,16,23	30	24/24		
60						S-12	DO	8,12,8,10	20	24/24		
					-24.40							
		62.5-65.0 ft. Moderate yellowish-brown, fine to medium SAND, little silt and clay.			62.50							
					-29.90							
65		65.0-78.0 ft. Moderate reddish-brown CLAY to SILTY CLAY with occasional fine sand lenses.			65.00	S-13	DO	8,10,14,23	24	18/24		
70						S-14	DO	11,16,21,26	37	21/24		
75						S-15	DO	11,16,19,23	37	24/24		
					-37.90							
		78.0-83.0 ft. Dark reddish-brown CLAY.			78.00	S-16	DO	11,17,22,29	39	24/24		
						S-17	DO	11,16,25,29	41	24/24		

STATE OF DELAWARE
MICHAEL McNEE MORRIS
NO. 516
REGISTERED PROFESSIONAL GEOLOGIST

PROJECT: SANIFILL/WELL INSTALL/DE

PROJECT LOCATION: NEW CASTLE, DE

PROJECT NUMBER: 853-6277

RECORD OF BOREHOLE MW-9D

BORING DATE: 06-02-05

BORING LOCATION: N 623640.3 E 456739.9

SHEET: 3 OF 3

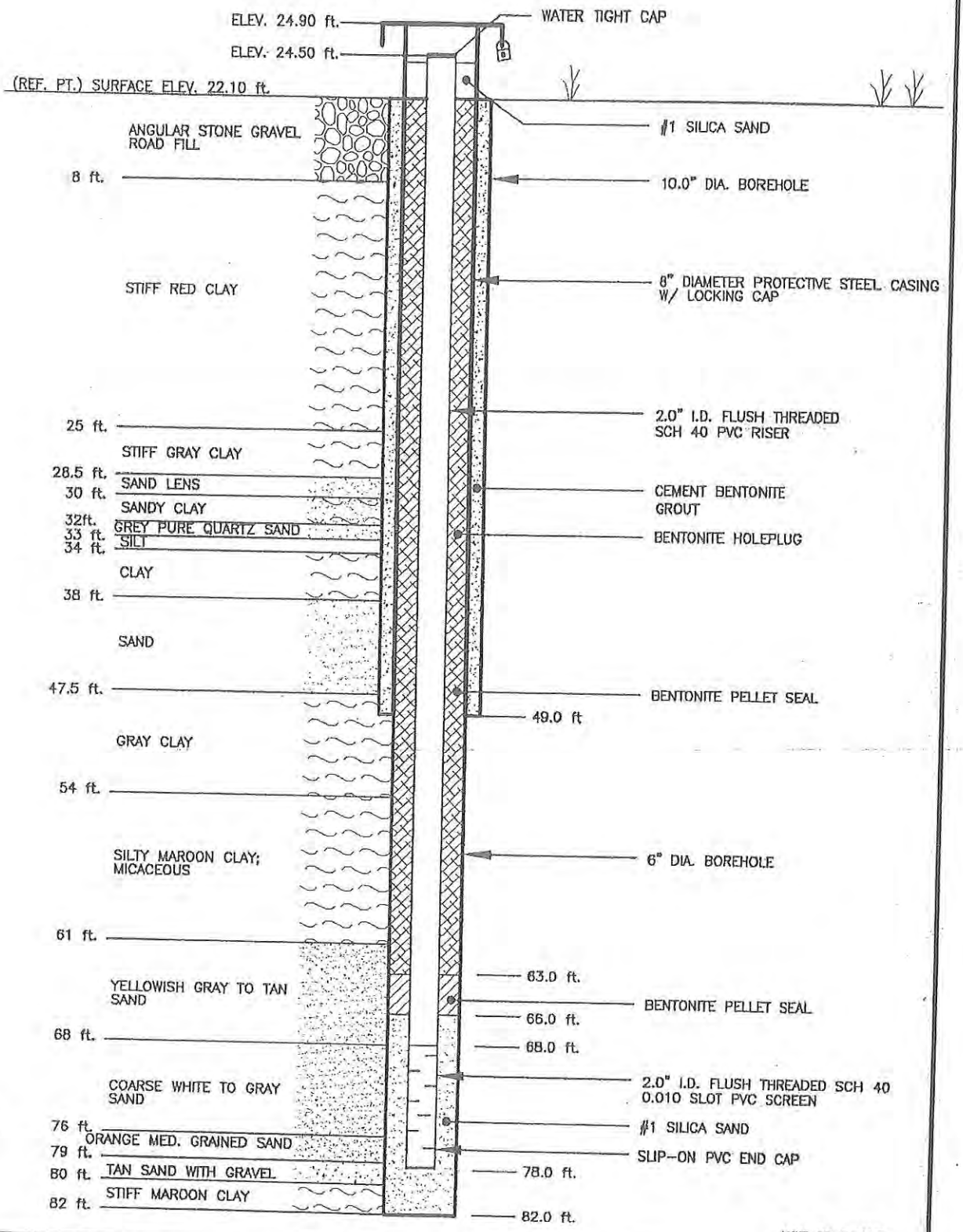
DATUM: NGVD

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE: DESCRIPTION	LOGS	GRAPHIC LOG	ELEV / DEPTH	SAMPLES: NUMBER	TYPE	BLOWS / 6 in	N	REC/ATT	REMARKS	PIEZOMETER OR STANDPIPE INSTALLATION
					-41.00							
80	4 1/4" ID HSA / MUD ROT.	76.0-89.0 ft. Dark reddish-brown CLAY.			80.00	S-17	DB	11,16,23,29	41	24/24		
						S-18	DB	8,13,16,19	29	24/24		
85						S-19	DB	8,14,24,36	43	24/24		
						S-20	DB	13,20,27,34	47	24/24		
					-50.00							
		89.0-91.0 ft. Light grey SANDY CLAY.			89.00	S-21	DB	8,11,15,23	26	24/24		
90					-52.00							
		91.0-93.5 ft. Moderate yellowish-brown, fine to medium SAND, trace silt and clay.			91.00	S-22	DB	29,43,53,53	96	24/24		
					-55.40							
		93.5-95.0 ft. Light grey, fine SAND, SILT, and CLAY.			93.50	S-23	DB	9,14,18,32	32	24/24		
					-56.90							
95		95.0-96.5 ft. Moderate reddish-brown CLAY.			95.00							
					-58.40							
		96.5-98.0 ft. Light brown, fine SAND, trace silt and clay.			96.50	S-24	DB	13,13,21,27	34	20/24		
					-60.90							
		98.0-101.0 ft. Dark yellowish-orange, fine SAND, SILT, and CLAY.			98.00	S-25	DB	17,17,46,53	63	22/24		
100					-62.90							
		101.0-102.5 ft. Fine to coarse SAND, SILT, and CLAY.			101.00	S-26	DB	7,9,17,21	22	20/24		
					-64.40							
		102.5-103.0 ft. Greyish-orange CLAY.			102.50							
		103.0-106.0 ft. Light grey, fine to coarse SAND, SILT, and CLAY.			103.00	S-27	DB	8,22,41,41	73	22/24		
105					-67.90							
		106.0-109.0 ft. Moderate orange-brown, fine to medium SAND, little silt and clay.			106.00	S-28	DB	28,40,46,28	86	22/24		
					-70.90							
		109.0-116.0 ft. Light grey, fine SANDY CLAY.			109.00	S-29	DB	11,16,16,20	32	20/24		
110						S-30	DB	4,10,12,13	22	20/24		
115						S-31	DB	8,7,8,9	13	24/24		
					-77.90							
		BORING TERMINATED AT 116.0 FT. BELOW GROUND SURFACE.			116.00							

STATE OF DELAWARE
MICHAEL McNEE MORRIS
NO. 910
REGISTERED PROFESSIONAL GEOLOGIST

WMI-186A002

12/18/03



LOGGED BY: ED LAYTON
DATE DRILLED: 11/25/03
DRILLED BY:
UNITECH DRILLING, INC.
NORTHING: 621730.10
EASTING: 454647.50
PERMIT #197624-W

NOT TO SCALE

BLAZOSKY Associates Inc.
Balanced Environmental Solutions

DELAWARE RECYCLABLE PRODUCTS, INC.

WASTE MANAGEMENT, INC.

MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

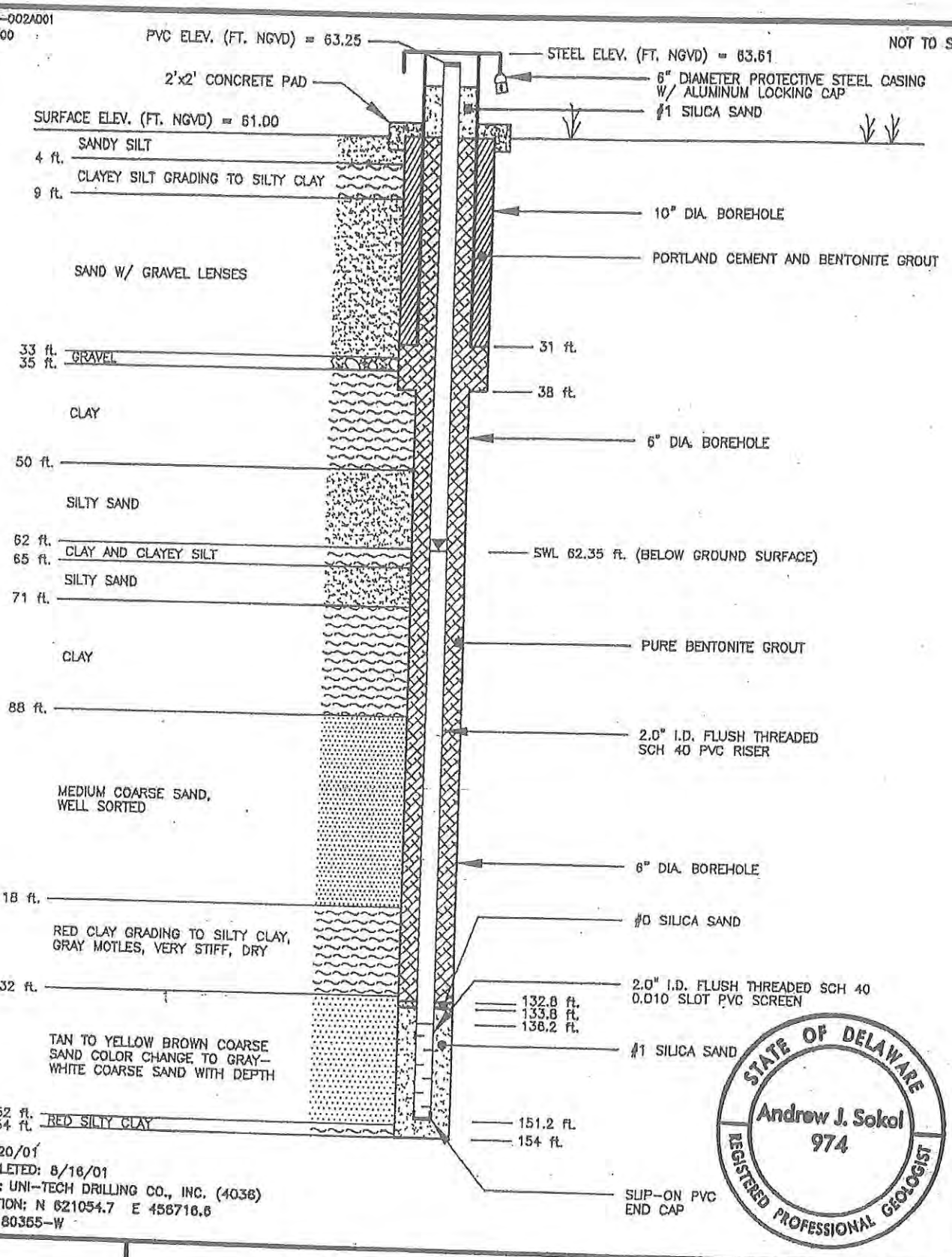
MONITORING WELL MW-101D

BALANCED ENVIRONMENTAL SOLUTIONS

State College, PA.,Telephone:814/238-2060; Delaware Valley, PA Telephone:610/787-0125

CCDEL-002A001
7/27/00

NOT TO SCALE



▽ SWL 8/20/01
DATE COMPLETED: 8/16/01
DRILLED BY: UNI-TECH DRILLING CO., INC. (4036)
WELL LOCATION: N 621054.7 E 456716.6
PERMIT #: 180355-W

BLAZOSKY ASSOCIATES, INC.

CERTIFIED CONCRETE OF DELAWARE
PETRILLO LANDFILL GROUNDWATER CHARACTERIZATION

MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

DEEP MONITORING WELL DMW-1

CONSULTANTS IN WASTE MANAGEMENT

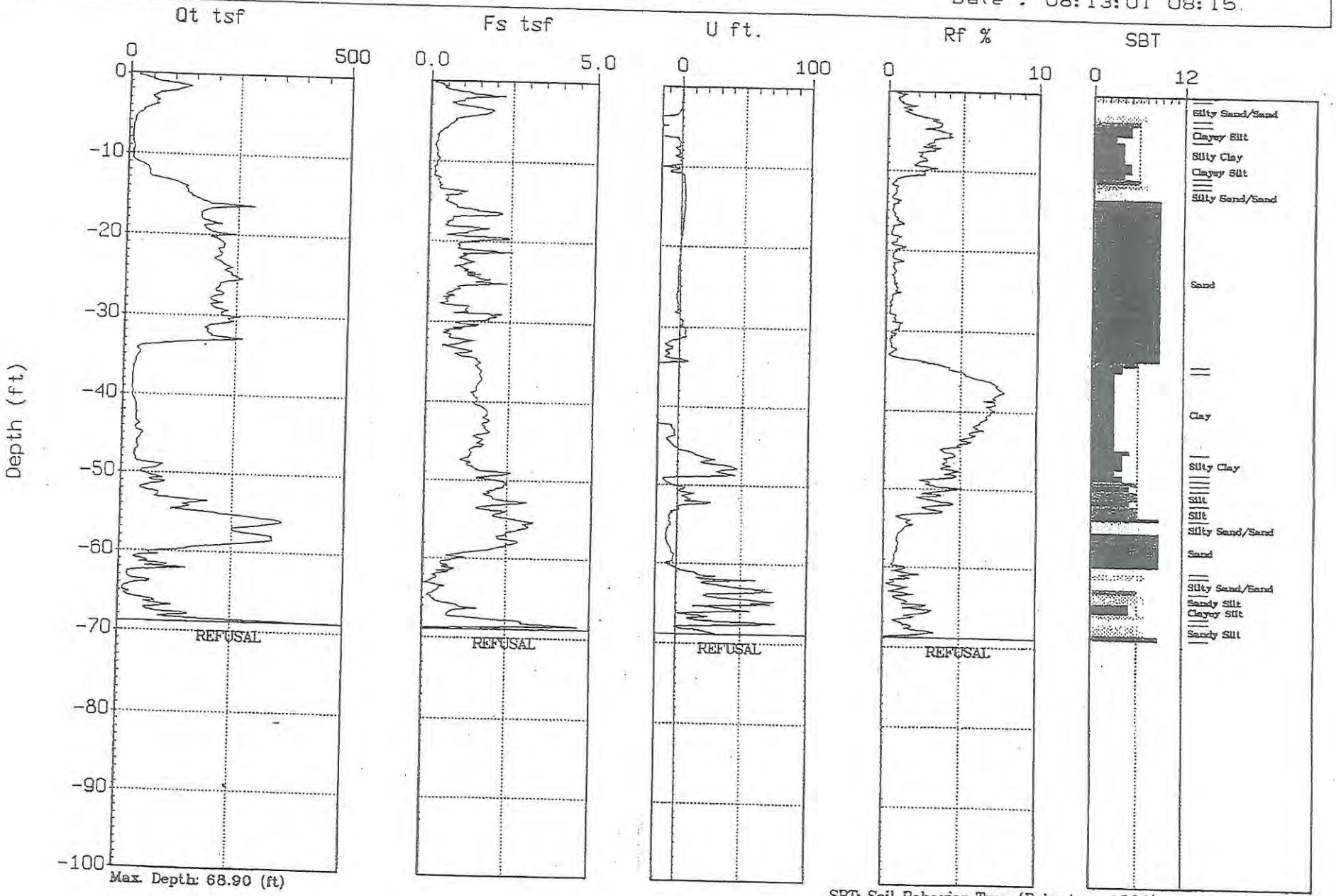
State College, PA., Tele.:814/238-2060; Valley Forge, PA., Tele.:610/935-7701

CONETEC

Blazosky Associates

Site : DMW-1
Location : DRPI

Cone: 20 TON AD106
Date : 08:13:01 08:15

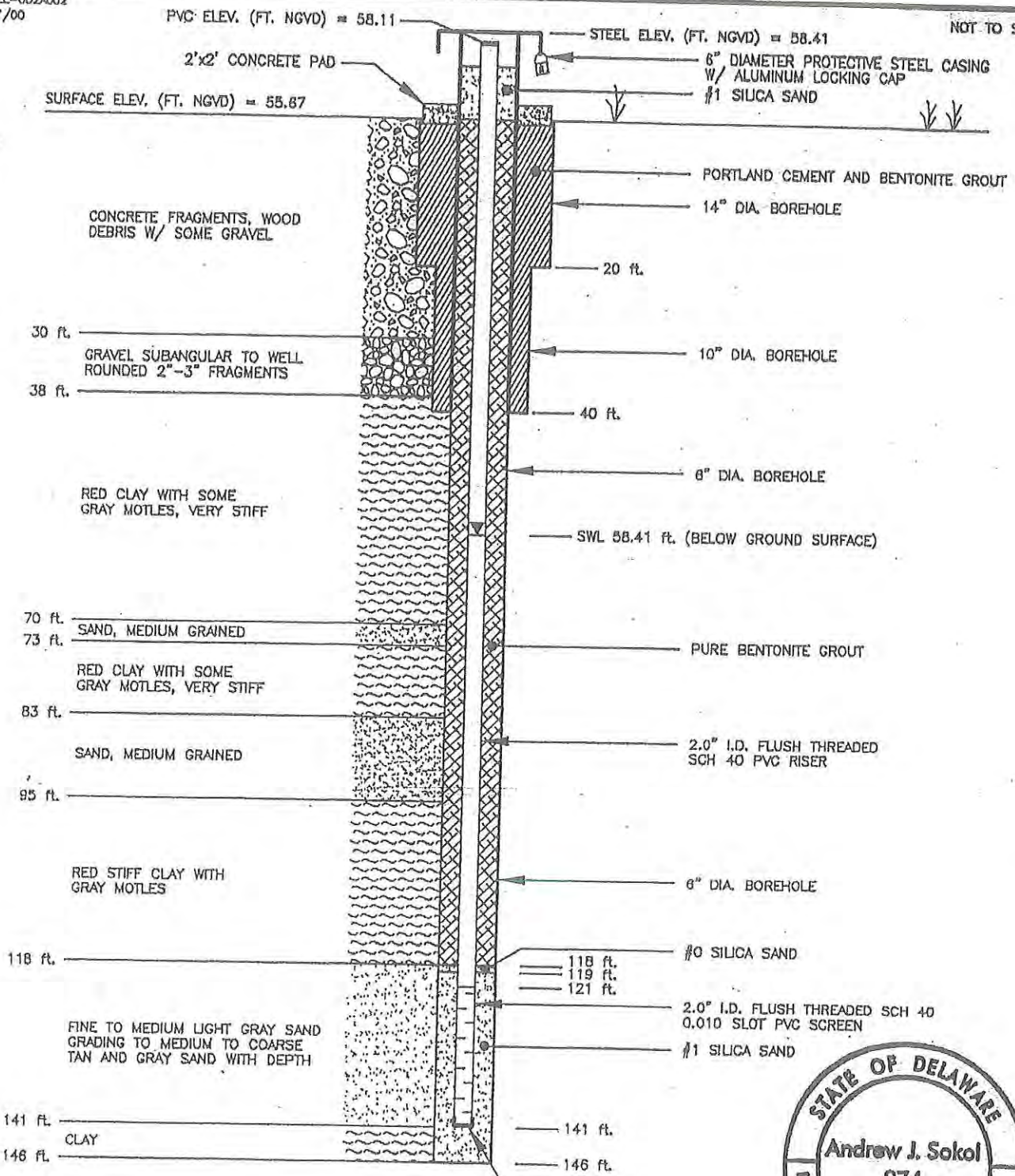


Max. Depth: 68.90 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

CCDEL-002A002
7/27/00

NOT TO SCALE



STATE OF DELAWARE
Andrew J. Sokol
974
REGISTERED PROFESSIONAL GEOLOGIST

▼ SWL 8/28/01
DATE COMPLETED: 8/20/01
DRILLED BY: UNI-TECH DRILLING CO., INC. (4036)
WELL LOCATION: N 620725.6 E 455978.2
PERMIT #: 180426-W

BLAZOSKY ASSOCIATES, INC.

CERTIFIED CONCRETE OF DELAWARE
PETRILLO LANDFILL GROUNDWATER CHARACTERIZATION

MINQUADALE BOROUGH NEW CASTLE COUNTY DELAWARE

DEEP MONITORING WELL DMW-2

CONSULTANTS IN WASTE MANAGEMENT

State College, PA., Tele.:814/238-2060; Valley Forge, PA., Tele.:610/935-7701

BLAZOSKY
ASSOCIATES, INC.

CERTIFIED CONCRETE OF DELAWARE
PETRILLO LANDFILL

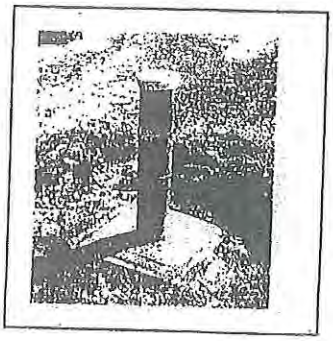
GROUNDWATER CHARACTERIZATION

STATE OF DELAWARE
Andrew J. Sokol
974
REGISTERED PROFESSIONAL GEOLOGIST

Monitoring Well Drill Log
DMW-2

DEPTH (ft.)	DESCRIPTION	ELEV. (ft NGVD)
0-30	Concrete fragments, wood debris with some gravel	55.67 – 25.67
30-38	Gravel, subangular to well rounded, 2-3" fragments	25.67 – 17.67
38-70	Red clay with some gray motles, very stiff	17.67 – -14.33
70-73	Tan sand, medium grained	-14.33 – -17.33
73-83	Red clay with some gray motles, very stiff	-17.33 – -27.33
83-95	Sand, medium grained	-27.33 – -39.33
95-118	Red stiff clay with gray motles	-39.33 – -62.33
118-141	Fine to medium grained light gray sand grading to medium to coarse grained tan and gray sand at depth	-62.33 – -85.33
141-146	Clay	-85.33 – -90.33

Date Drilled:	8/28/01
Drilled By:	Uni-Tech Drilling Co., Inc., Malaga, NJ
Drilling Method:	Mud Rotary
Total Drilled Depth:	146ft
Borehole Diameter:	0-20ft, 14" / 20-40ft, 10" / 40-146ft, 6"
Surface Elevation:	55.67 (ft NGVD)
Bottom Elevation:	-90.33(ft NGVD)
Logged By:	M. Napolitan, **Blazosky Associates, Inc.**
Location:	N 620725.6 E 455978.2
Permit Number:	180426-W



GROUNDWATER ELEVATION

URS Greiner Woodward Clyde

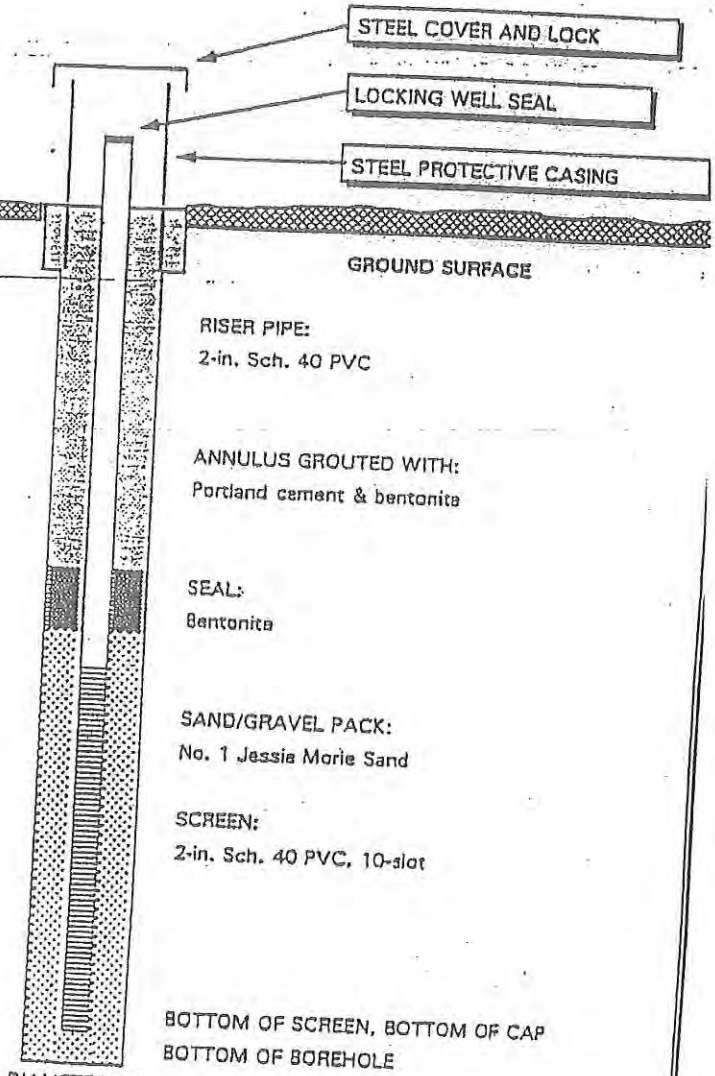
CONSTRUCTION OF WELL NO. MW-4S(R)

Project name and number Delaware Recyclable Products, Inc.(DRPI) - 8E02062		*DNREC well permit No.* 162041	*Elevation datum* See Key
Drilling company Craig Test Boring Co., Inc.		*Surveyor* VanDemark & Lynch, Inc.	*Ground elevation* 26.7 ft
Date and time of completion 12-8-98		*Northing* 624632.1	*Top of protective steel casing elevation* NA
Inspector G. Riehle		*Easting* 455633.3	*Top of riser pipe elevation* 29.32 ft

A = Top of Casing
B = Top of Riser
C = Ground Surface
D = Bottom of Larger Diameter Borehole
E = Top of Bentonite Seal
F = Top of Sand Pack
G = Top of Screen
H = Bottom of Screen
I = Bottom of Borehole

GENERALIZED SOIL DESCRIPTION
See Log of Boring MW-4S(R)

KEY	ELEVATIONS (Based on National Geodetic Vertical Datum, 1929)	DEPTHS (ft below ground, not to scale)
A		
B	29.32	
C	26.7	0
D	24.7	2.0
E	16.7	10.0
F	14.7	12.0
G	12.7	14.0
H	-7.3	34.0
I	-10.3	37.0



DIAMETER OF BOREHOLE: 8 in.

STATE OF DELAWARE
GARY M. RIEHLE
REG. NO. 910
REGISTERED PROFESSIONAL GEOLOGIST

EMARKS (Installation, development) :

4 25 inch ID Hollow Stem Auger
veloped with submersible pump

URS Greiner Woodward Clyde

LOG OF BORING MW-4S(R)

PROJECT NAME/NUMBER: Delaware Recyclable Products, Inc (DRPI)-8E02062		DATE STARTED: 12/8/98	DATE COMPLETED: 12/8/98
DRILLING CONTRACTOR: Craig Test Boring Co., Inc.	FOREMAN: Gary McAnerny	GROUND ELEVATION (FT. MSL): 26.7	WATER DEPTH (FT BGS): 18.4
DRILLING EQUIPMENT: Hollow Stem Auger		COMPLETION DEPTH (FT BGS): 37'	ROCK DEPTH (FT BGS): NA
TYPE BIT: NA	SIZE AND TYPE CORE BARREL: NA	COMPLETION METHOD: 4.25-inch ID HSA	
CASING: NA		SOIL SMPLS: DIST. 5' intervals UNDIST.	
CASING HAMMER: WEIGHT NA	DROP NA		
SAMPLER: 2-inch Standard Split-Spoon		BORING LOCATION: MW-4S(R)	
SAMPLER HAMMER: WEIGHT 140#	DROP 30-in.	INSPECTOR: Gary Riehle	

DESCRIPTION	Sample Interval	Depth (FT BGS)	Water Level	Samples: Recov. (in)	Samples: Penetr. Resist. BL/12in		REMARKS
Very loose-soft; dry; light brown- light orange brown SILT and silty fine to coarse SAND with little trace fine-medium gravel (SM)		0		14			
		1			5		
		2					
		3					
		4					
Loose; dry; reddish to orange brown silty fine SAND with little medium-coarse sand (SM)		5		14			
		6			11		
		7					
		8					
		9					

STATE OF DELAWARE
GARY M. RIEHLE
REG. NO. 910
REGISTERED PROFESSIONAL GEOLOGIST

URS Greiner Woodward Clyde

LOG OF BORING MW-4S(R)

DESCRIPTION	Sample Interval	Depth (FT BGS)	Well Tube	Samples: Recov. (in)	Samples: Penetr. Resist. BL/12in	Samples:	REMARKS
Stiff; dry-moist; red with white and light orange brown seamed CLAY with few very thin seams CLAY with little silt; medium plasticity (CH)				16			
		11			11		
		12					
		13					
		14					
		15					
Medium dense; dry; reddish to orange brown with light gray seams of silty fine-medium SAND with little coarse sand (SM-SP)				16			
		16			21		
		17					
		18					
		19					
		20					
Stiff; dry; red CLAY interseamed with orange brown SILT to silty fine-medium SAND; medium plasticity (CH) with lenses of silt sand silty fine-medium sand (ML-SM)				20			
		21			16		
		22					
		23					

URS Greiner Woodward Clyde

LOG OF BORING MW-4S(R)

DESCRIPTION	Sample Interval	Depth (FT BGS)	Water Level	Samples Recov. (in)	Samples Penetr. Resist. BL/12in		REMARKS
		25					
Loose; moist to wet seamed; light orange brown, and light brown silty fine-medium SAND with lenses of silt with trace clay (SM)				22			
		26			10		
		27					
		28					
		29					
		30					
30-31': Medium dense; moist-wet; light grayish brown to light brown to light orange brown silty fine SAND with lenses of silt with little clay (SM)				20			
31-32': Medium stiff-stiff; dry; red CLAY; medium-high plasticity (CH)		31			14		
		32					
		33					
		34					
		35					
Stiff; dry; red CLAY with areas with trace silt; medium to low plasticity (CH-CL)				14			
		36			14		
		37					

End of Boring @ 37'

Piezometer Construction Diagram

Piezometer: P-8

Project:	Sanifill, DRPI New Castle, Delaware	Date Started: Date Finished:	06/20/96 06/20/96
Survey	N624783.90 E456480.50	Ground Elevation: 22.00 ft.	Inner Casing Elevation: 25.04 ft.
			Outer Casing Elevation: NM ft.

DEPTH, ft.	ELEVATION	STRATIGRAPHIC DESCRIPTION	LITHOLOGY	SPT (bpf)	SAMPLES	HEADSPACE RESULTS (ppmv)	PIEZOMETER SCHEMATIC	PIEZOMETER MATERIALS
		Not sampled						Riser 3' Above Ground Surface
								Grout
5								Cement/Bentonite Mix
								Bentonite Pellets
10								Sandpack (Jessie Morie #1)
15								
20								0.010 Slot 2" PVC
25								
30	-9.0	end of boring						Threaded Bottom Cap
								Sandpack (Jessie Morie #1)
35								

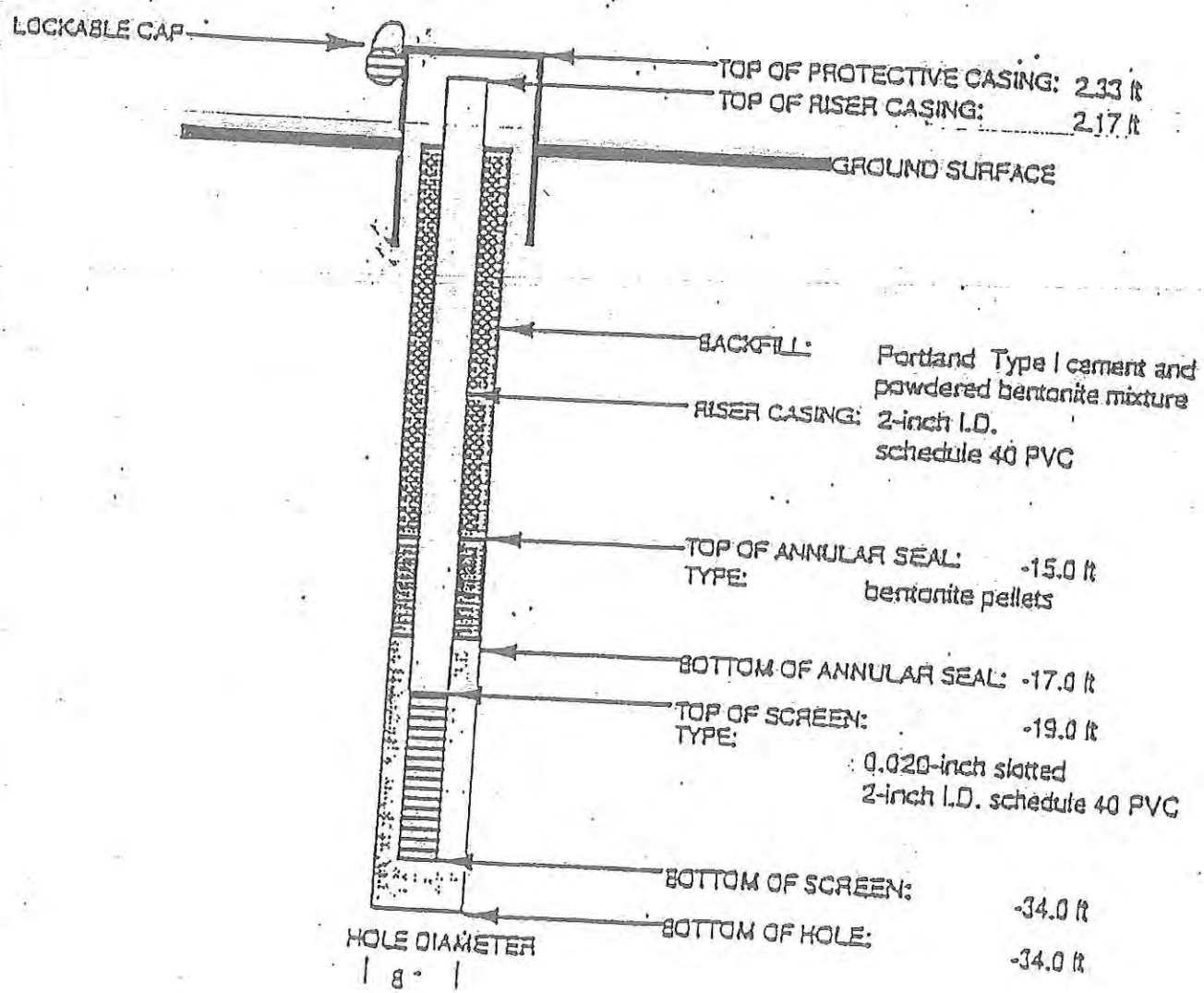
STATE OF DELAWARE
HENRY SCOTT LAIRD
REG. No. 325
REGISTERED PROFESSIONAL GEOLOGIST

Notes:
NA = not applicable
bgs = below ground surface
bpf = blows per foot
NS = not surveyed
NOS = not sampled
▼ = water level at completion
* = Soil or rock samples collected for chemical analysis

Completion Depth:	31.00 ft bgs	Depth to Water:	19 ft bgs
Drilling Company:	Craig-Test Boring	Date of Measurement:	6/21/96
WCC Field Inspector:	S. Opp		

GROUNDWATER MONITORING WELL AS-BUILT DIAGRAM

WELL NO.: MW-7(s)	DRILLING CONTRACTOR: Walton Corporation
PROJECT: Delaware Recyclable Products, Inc.	JOB NO.: 5990
COORDINATES:	
DRILLER: Gary Truver GEOLOGIST: Phil Klinedinst	WATER LEVEL: 23.75 ft (11-27-90) DATE FINISHED: 11-21-90



Metcalf & Eddy, Inc.

GEOLOGIC LOG

PROJECT: Delaware Recyclable Products	JOB NO.: 005990	BORING NO.: MW-7(s)
LOCATION: DRPI New Castle, DE	ELEVATION: 57.1'	DEPTH: 34'
Southeast side of Marsh Lane	DATE BEGUN: 11/21/90	DATE FINISHED: 11/21/90
DRILL CONTRACTOR: Walton Corporation	GEOLOGIST: P. Klinedinst	
DRILLING RIG: Truck mounted CME 55	DRILLER: G. Truver	
DRILLING METHOD: 4-1/4" ID Hollow Stem Augers	DRILL FLUID: No	HOLE SIZE: 8"
	DEPTH TO WATER: 28'	DATE: 11/21/90
WEATHER: Sunny, 40's °F	WELL PERMIT NO.: 84790	
COMPLETED AS WELL?: Yes		

DEPTH	SAMPLE #	SAMPLE DEPTH	RECOVERY	BLOW COUNTS	SAMPLE DESCRIPTION	HNu (ppm)	NOTES
		0-2'			SAND, some silt, little gravel, yellowish brown (SP)	0	No split-spoons taken; Fill, moist
		2'-4.5'			CLAY, some silt, reddish brown to brown (CL)		
5		4.5'-8'			SAND, some clay, some silt, brown (SM)		Columbia Formation
10		8'-23'			SAND, medium to fine, little coarse, little gravel, TR silt, TR clay, yellowish brown (SP)	0	moist
15							
20							
25		23'-34'			SAND, coarse, some medium grained, some gravel, yellowish brown (SP)	0	moist grading, wet
						0	Y

Metcalf & Eddy, Inc.

GEOLOGIC LOG

PROJECT: DRPI

SHEET 2 OF 2

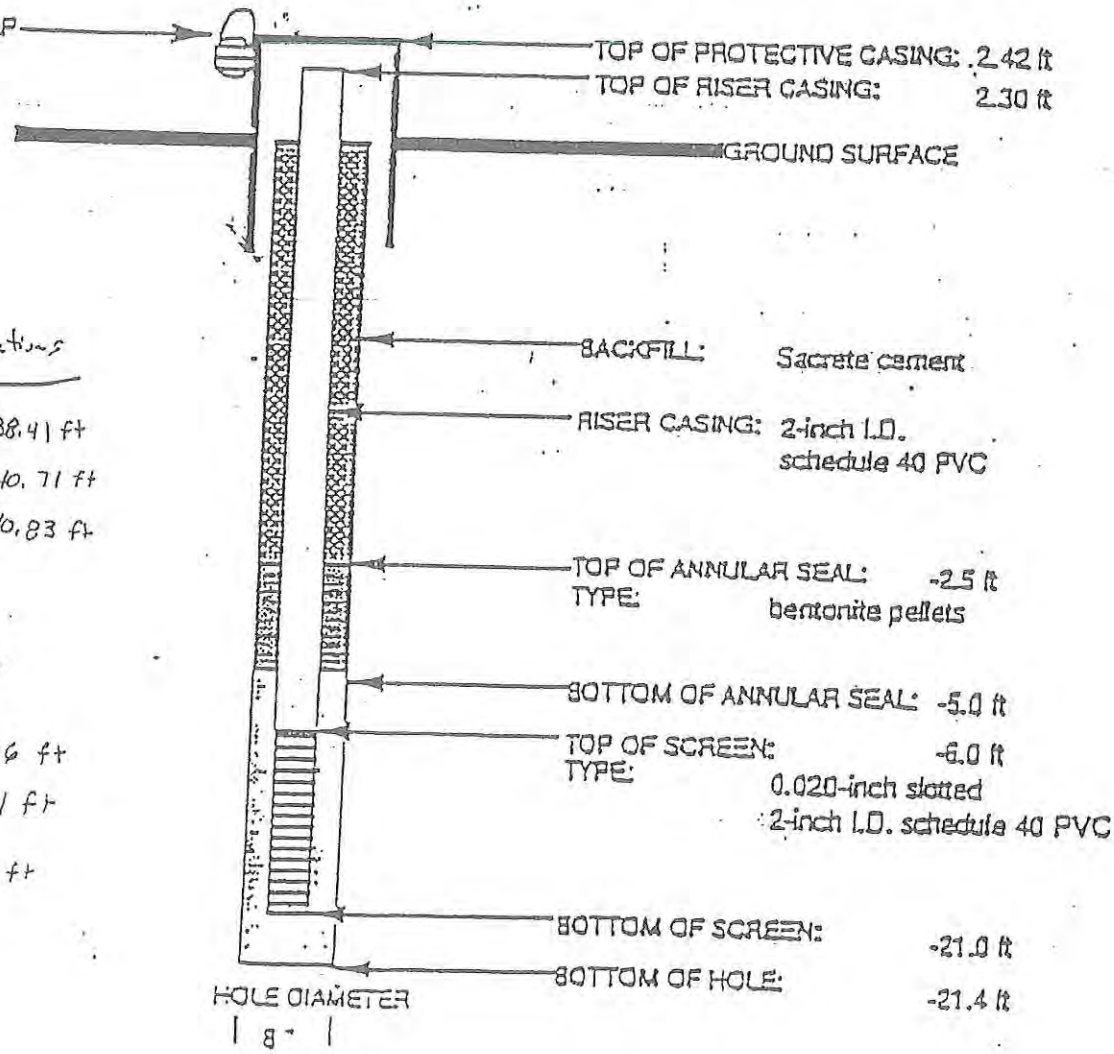
JOB NO.: 005990

BORING NO.: MW-7(s)

DEPTH	SAMPLE #	SAMPLE DEPTH	RECOVERY	BLOW COUNTS	SAMPLE DESCRIPTION	HNu (ppm)	NOTES
35					Total Depth: 34'		

GROUNDWATER MONITORING WELL AS-BUILT DIAGRAM

WELL NO.: MW-8(s)	DRILLING CONTRACTOR: Walton Corporation
PROJECT: Delaware Recyclable Products, Inc.	JOB NO.: 5990
COORDINATES:	
DRILLER: Gary Truver GEOLOGIST: Phil Klinedinst	WATER LEVEL: 8.65 ft (11-27-90) DATE FINISHED: 11-26-90



Original Elevations

Surface	38.41 ft
TOC PVC	40.71 ft
TOC Steel	40.83 ft

New Elevations

Surface	39.26 ft
TOC PVC	38.51 ft
TOC Steel	39.01 ft

PROJECT: Delaware Recyclable Products	JOB NO.: 005990	BORING NO.: MW-3s
LOCATION: DRPI New Castle, DE	ELEVATION: 38.4'	DEPTH: 21.0'
East boundary of property, NE of maint. bldg.	DATE BEGUN: 11/26/90	DATE FINISHED: 11/26/90
DRILL CONTRACTOR: Walton Corporation	GEOLOGIST: P. Klinedinst	
DRILLING RIG: Truck mounted CME 55	DRILLER: G. Truver	
DRILLING METHOD: 4-1/4" ID Hollow Stem Augers	DRILL FLUID: No	HOLE SIZE: 8"
WEATHER: 60's °F	DEPTH TO WATER: 8'	DATE: 11/26/90
COMPLETED AS WELL?: Yes	WELL PERMIT NO.: 84791	

DEPTH	SAMPLE #	SAMPLE DEPTH	RECOVERY	BLOW COUNTS	SAMPLE DESCRIPTION	HNu (ppm)	NOTES
		0-2'			SILT, some clay, yellowish brown (ML)	0	Well location is at the base of a 16' excavation, dry
		2'-4'			SILT, some clay, some sand, little gravel, orange brown (ML)		
5	1	4'-6'	5'	5,10	SAND, and clay, little silt, little gravel, brown (SC)	0	Columbia Formation moist, medium dense; recovery blocked by gravel. ▼
				15,16			
10	2	9'-11'	7'	7,11	SAND, medium to coarse, some fine grained, some silt, little gravel, yellowish brown (SM)	0	dense, wet
				21,12			
							Potomac Formation
15	3	14'-16'	15'	5,3	CLAY, TR silt, gray mottled red (CL)	0	stiff, moist
				9,12			
20	4	19'-21'	20'	3,4	CLAY, some silt, gray (CL)	0	stiff, moist
				6,10			
					Total Depth: 21'		
25							