APPENDIX 11

Well/Boring & Slug Test Documentation

ADVANCED ENVIRONMENTAL MANAGEMENT, INC.
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282 FAX (770) 242-8388

LITHOLOGIC LOG

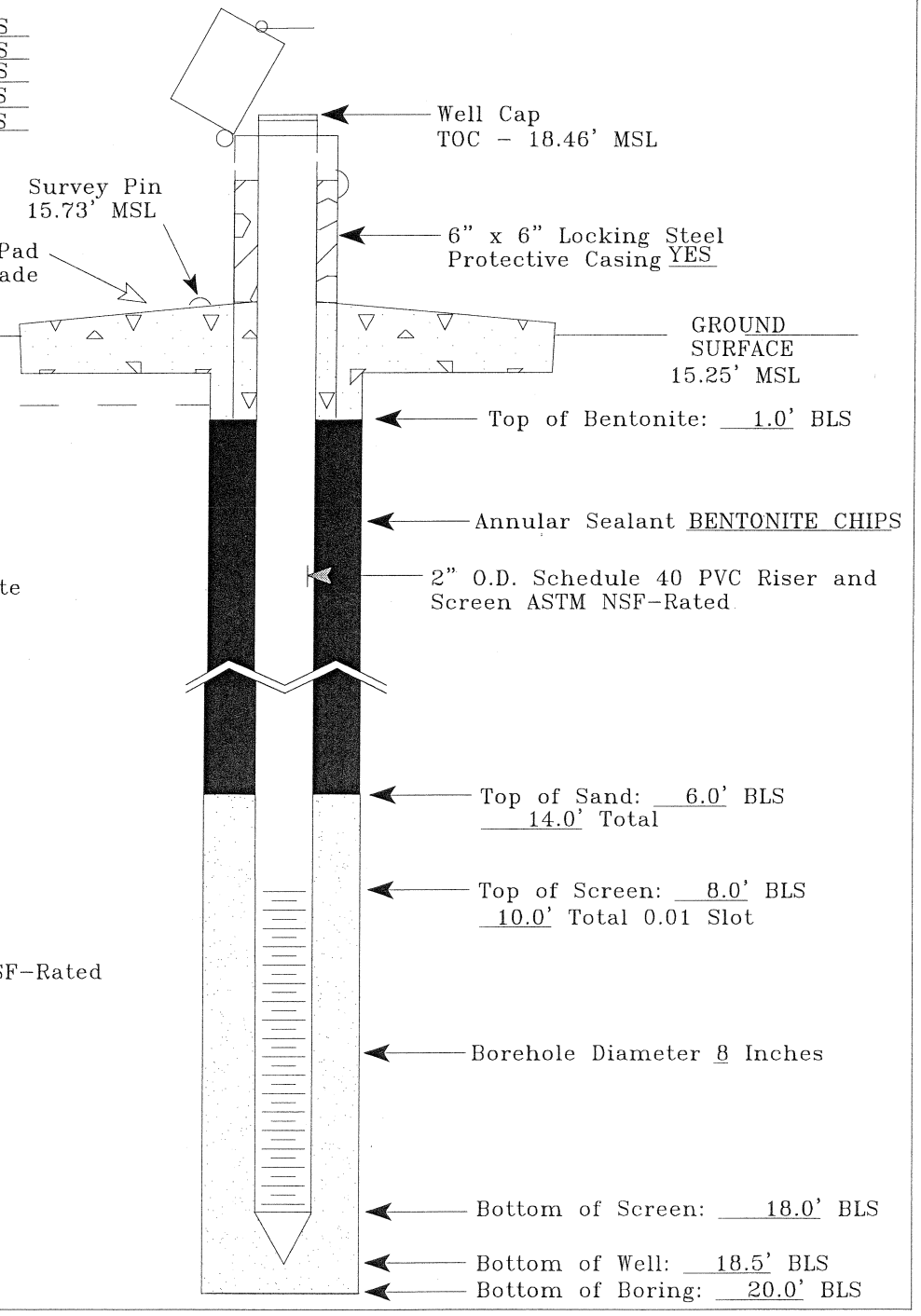
CONTRACTED WITH: City of Savannah
WELL NO.: AMW-1
PROJECT: MSWL Assessment
JOB NO.: J0100
DATE: 4/28/98
DRILLER: Piedmont/B. Titshaw
RIG: CME-45
LOGGED BY: DLW

ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	TOPSOIL - 6 INCHES		
17.0	SC - Brown fine SAND; some Clay; (COASTAL)	0	
	CL - Grey-tan CLAY; some Sand; (COASTAL)	5	Groundwater at 14' BGS at TOB Groundwater at 6.5' BGS 5 Hours
	SC - Brown Clayey SAND; (COASTAL)	10	
	- Grey; wet	15	
	BORING TERMINATED AT 20.0 FEET	20	
		25	
		30	
		35	
		40	
		45	
		50	

WELL COMPLETION REPORT AMW-1

Drilling Co.: PIEDMONT DRILLING
Date: 04/28/98
Driller: BRIAN TITSHAW
Boring No.: AMW-1
Drilling Method: 4.25" ID HSA
Type of Rig: CME-45
Geologist/Engineer: DLW
Drilling Fluid: N/A

Survey Pin YES
Weep Hole YES
Protective Casing YES
Pea Gravel YES
Vented Riser YES



2.5 Bags of Bentonite
50 Lb. Bags
Placement GRAVITY

7.0 Bags of Sand NSF-Rated
50 Lb. Bags
Placement GRAVITY

6" Sump

NOT TO SCALE

ADVANCED ENVIRONMENTAL MANAGEMENT, INC.
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282 FAX (770) 242-8388

LITHOLOGIC LOG

CONTRACTED WITH: City of Savannah
WELL NO.: AMW-2
PROJECT: MSWL Assessment
JOB NO.: J0100
DATE: 4/28/98
DRILLER: Piedmont/B. Titshaw
RIG: CME-45
LOGGED BY: DLW

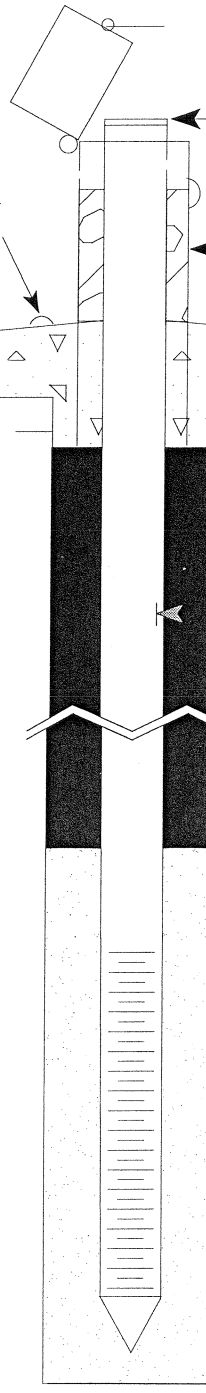
ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	TOPSOIL - 6 INCHES		
15.3	SC - Grey SAND; some Clay; (COASTAL)	0	
	CL - Grey-tan CLAY; some Sand; (COASTAL)	5	Groundwater at 12' BGS at TOB
	- Red-brown, Sandy		Groundwater at 6.5' BGS 5 Hours
	SC - Brown Clayey SAND; (COASTAL)	10	
	- Wet	15	
	BORING TERMINATED AT 20.0 FEET	20	
		25	
		30	
		35	
		40	
		45	
		50	

WELL COMPLETION REPORT AMW-2

Drilling Co.: PIEDMONT DRILLING
Driller: BRIAN TITSHAW
Drilling Method: 4.25" ID HSA
Geologist/Engineer: DLW

Date: 04/28/98
Boring No.: AMW-2
Type of Rig: CME-45
Drilling Fluid: N/A

Survey Pin YES
Weep Hole YES
Protective Casing YES
Pea Gravel YES
Vented Riser YES



3.0 Bags of Bentonite
50 Lb. Bags
Placement GRAVITY

7.0 Bags of Sand NSF-Rated
50 Lb. Bags
Placement GRAVITY

6" Sump

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

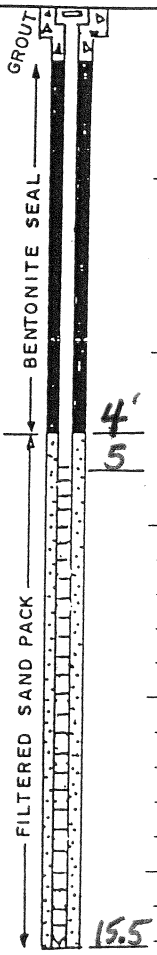
Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWA-1
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	November 4, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	8 inch
*****Borehole Depth:	17.0 feet
Well Depth:	15.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 2" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 2" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	3.01 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	0.78 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	Hand bail surge method
Type of Protective Cover:	4" x 4" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	17.23 feet
Top of Riser Elevation:	19.62 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	7.0 feet
Total length of casing:	17.0 feet
Stick-up:	2.0 feet
Depth to top of filter pack:	4.0 feet
Depth to top of bentonite:	1.0 feet

***** ***All depths measured from original ground surface.***

ADVANCED ENVIRONMENTAL MANAGEMENT, INC.	LOG OF BORING GWA-1	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Savannah, Georgia
DATE DRILLED: 11-4-93	ELEVATION: Surface ☐ Top-of-Casing ☐
DRILLING METHOD: HOLLOW STEM AUGER	TOTAL DEPTH: 17 feet
DRILLING CONTRACTOR: PIEDMONT	GEOLOGIST: P. GAGEN

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Well Diagram
					Grass cover			
					Clay (ML) black to brown sandy clay			
5								
					Sand (SC) Grey clayey fine to medium sand			
10								
					Sand (SC) tan clayey fine to coarse sand			
15								
					BT @ 17'			
20								
25								
30								



Advanced Environmental Management, Inc.

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWA-2
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	November 4, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	8 inch
*****Borehole Depth:	17.0 feet
Well Depth:	15.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 2" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 2" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	3.01 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	0.65 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	Hand bail surge method
Type of Protective Cover:	4" x 4" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	16.87 feet
Top of Riser Elevation:	19.23 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	7.0 feet
Total length of casing:	17.0 feet
Stick-up:	2.0 feet
Depth to top of filter pack:	3.5 feet
Depth to top of bentonite:	1.0 feet

***** ***All depths measured from original ground surface.***

ADVANCED ENVIRONMENTAL MANAGEMENT, INC.	LOG OF BORING GWA-2	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Savannah, Georgia
DATE DRILLED: 11-4-93	ELEVATION: Surface ☐ Top-of-Casing ☐
DRILLING METHOD: HOLLOW STEM AUGER	TOTAL DEPTH:
DRILLING CONTRACTOR: PIEDMONT	GEOLOGIST: P. GAGEN

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Well Diagram
					Grass Cover			GROUT
					Clay (ML) Black to brown sandy clay			
5					Clay (ML) Red brown sandy clay			BENTONITE SEAL
10					Sand (SM) Tan clayey fine sand			3.5'
								5
15								FILTERED SAND PACK
					BT @ 17'			
20								
25								15.5
30								

Advanced Environmental Management, Inc.

PIEDMONT ENVIRONMENTAL DRILLING, INC.
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282 FAX (770) 242-8388

LITHOLOGIC LOG

CONTRACTED WITH:City of Savannah
PROJECT:Dean Forest Road MSWL
DRILLER:Piedmont Environmental

JOB NO.:J0100
RIG:

WELL NO.:GWA-3
DATE:5/3/94
LOGGED BY:P. Gagen

ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	Pinestraw Cover	0	
	SC - Tan to brown Fine Clayeyt SAND (Coastal)	5	
	CL - Tan to brown Fine Sandy CLAY	10	STABILIZED GROUNDWATER AT 9.70'
		15	
	BORING TERMINATED AT 18.5'	20	
		25	
		30	
		35	
		40	
		45	
		50	

PIEDMONT ENVIRONMENTAL DRILLING
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
PHONE: (770) 242-8282

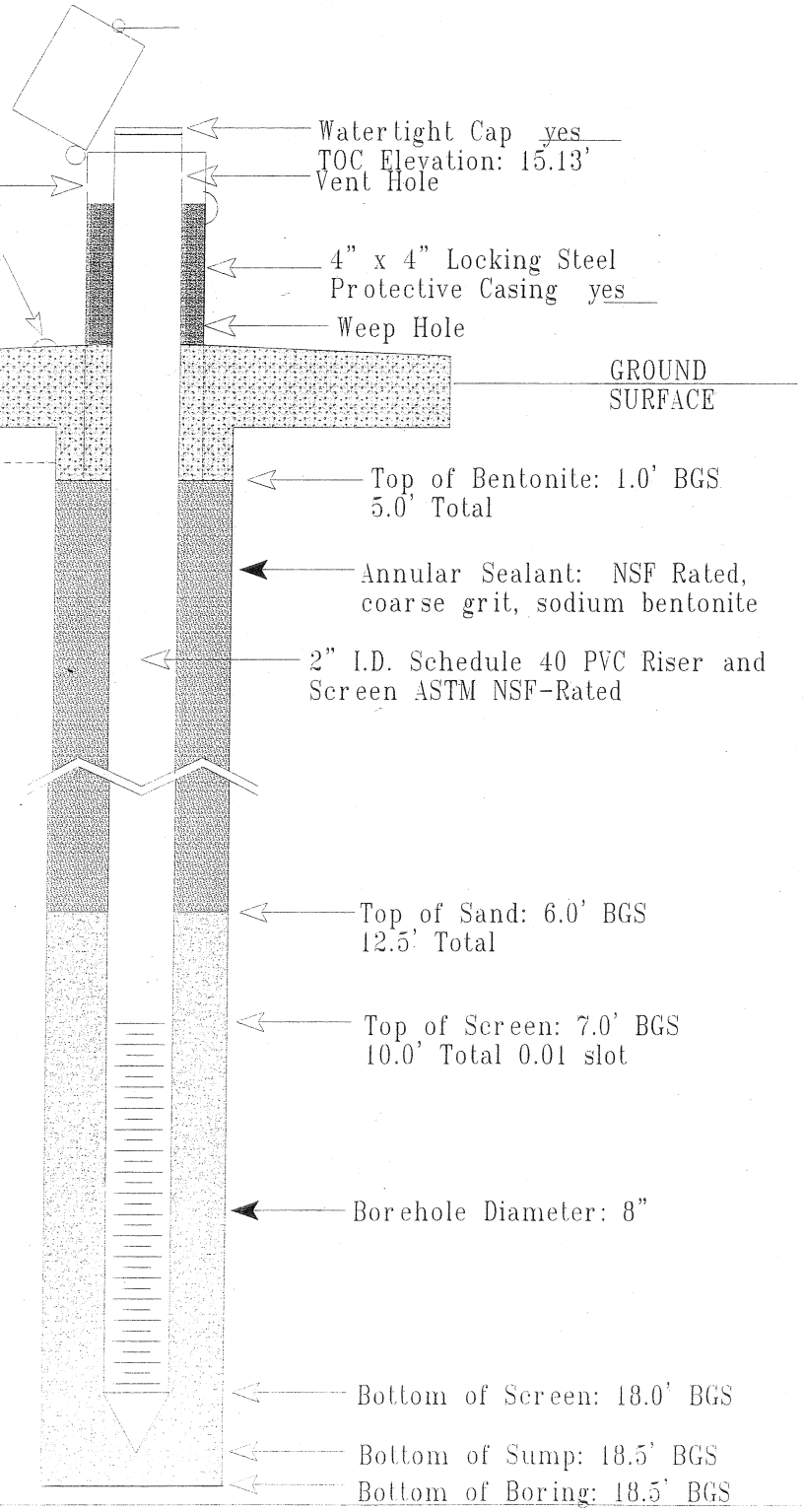
WELL COMPLETION REPORT

WELL/BORING #: GWA-3

PROJECT: Dean Forest Rd MSWL
DATE: 5/3/94
GEO./ENG.: P. Gagen

DRILLING CO.: Piedmont Drilling
DRILLER: D. Staton
METHOD: 4.25" I.D. HSA
RIG: CME-55

Survey Pin yes
Weep Hole yes
Protective Casing yes
Pea Gravel yes
Vented Riser yes



BGS - Below Ground Surface
NOT TO SCALE

PIEDMONT ENVIRONMENTAL DRILLING, INC.
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282 FAX (770) 242-8388

LITHOLOGIC LOG

CONTRACTED WITH:City of Savannah
PROJECT:Dean Forest Road MSWL
DRILLER:Piedmont Environmental

JOB NO.:J0100
RIG:

WELL NO.:GWA-4
DATE:5/3/94
LOGGED BY:P. Gagen

ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	Pinestraw Cover	0	
	SC - Tan to brown Fine Clayeyt SAND (Coastal)	5	
	CL - Tan to brown Fine Sandy CLAY	10, 15	
	BORING TERMINATED AT 18.5'	20, 25, 30, 35, 40, 45, 50	

PIEDMONT ENVIRONMENTAL DRILLING
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
PHONE: (770) 242-8282

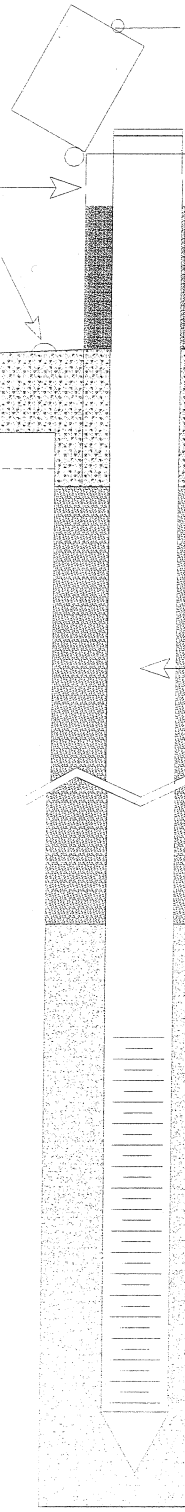
WELL COMPLETION REPORT

WELL/BORING #: GWA-4

PROJECT: Dean Forest Rd MSWL
DATE: 5/3/94
GEO./ENG.: P. Gagen

DRILLING CO.: Piedmont Drilling
DRILLER: D. Staton
METHOD: 4.25" I.D. HSA
RIG: CME-55

Survey Pin yes
Weep Hole yes
Protective Casing yes
Pea Gravel yes
Vented Riser yes



Vent Hole

Survey Pin

6' x 6' Concrete Pad
2' Below Grade

GROUND SURFACE

FROST LINE

2.5 Bags of Bentonite
50 lb bags

8 Bags of Sand
50 lb Bags
Placed via gravity

Watertight Cap yes
TOC Elevation: 16.25'
Vent Hole

4" x 4" Locking Steel
Protective Casing yes

Weep Hole

GROUND SURFACE

Top of Bentonite: 1.0' BGS
5.0' Total

Annular Sealant: NSF Rated,
coarse grit, sodium bentonite

2" I.D. Schedule 40 PVC Riser and
Screen ASTM NSF-Rated

Top of Sand: 6.0' BGS
12.5' Total

Top of Screen: 7.0' BGS
10.0' Total 0.01 slot

Borehole Diameter: 8"

Bottom of Screen: 18.0' BGS

Bottom of Sump: 18.5' BGS

Bottom of Boring: 18.5' BGS

BGS - Below Ground Surface
NOT TO SCALE

ADVANCED ENVIRONMENTAL MANAGEMENT
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282

LITHOLOGIC LOG
SHEET 1 OF 1

CONTRACTED WITH: Cooper, Barnett & Page
PROJECT NAME: Dean Forest Road MSWL
DRILLER: Piedmont Drilling/D. Staton

JOB NO.: J1124
RIG: CME 550

BORING NO. GWA-5
DATE: 6/2/05
LOGGED BY: EAB

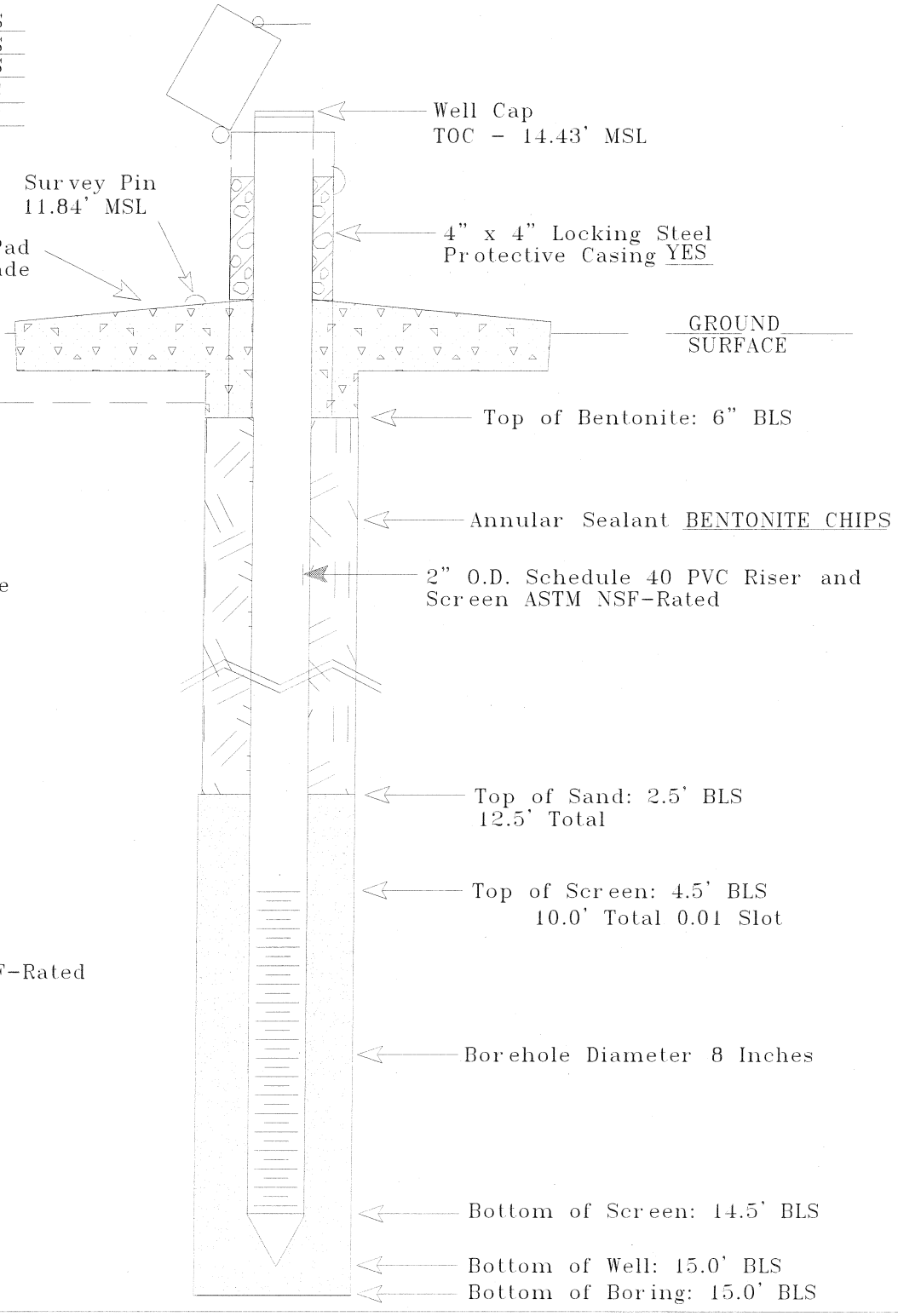
ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	Topsoil - 6 "	0	8 feet of Water at time of well completion
	CL -brown CLAY, some fine sand, residual		
	CL -light brown CLAY, some medium sand	5	
	-moist		
	SC - gray medium SAND, some clay, wet	10	
	Boring teminated @ 15.0 feet	15	
		20	
		25	
		30	
		35	
		40	
		45	
		50	

WELL COMPLETION REPORT GWA-5

Drilling Co.: PIEDMONT DRILLING
Driller: Donnie Staton
Drilling Method: 4.25" ID HSA
Geologist/Engineer: EAB

Date: 6/2/05
Boring No.: GWA-5
Type of Rig: CME 550
Drilling Fluid: N/A

Survey Pin YES
Weep Hole YES
Protective Casing YES
Pea Gravel YES
Vented Riser YES



2.5 Bags of Bentonite
50 Lb. Bags
Placement GRAVITY

5.0 Bags of Sand NSF-Rated
50 Lb. Bags
Placement GRAVITY

6" Sump

NOT TO SCALE

WELL NO. GWA-5

Well Design and Construction Documentation

Job Name:	City of Savannah MSWL
Job No.:	J1124
Date of Construction:	6/2/05
Well Construction Details:	Attached
Borehole Depth:	15.0 feet BGS
Well Depth:	15.5 feet BGS
Top of PVC Casing Elev.:	14.43 feet
Survey Pin Elevation:	11.84 feet
Borehole Diameter:	8 inch
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Depth to top of filter pack:	2.5 feet BGS
Filter Pack Material and Size:	20/40 Silica Sand; sample saved.
Filter Pack Volume:	2.5 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	NSF Rated, Certified Coarse Grit Bentonite Chips
Sealant Volume:	1.75 $feet^3$
Sealant Placement Method:	Gravity/Washed-Hydrated with Potable Water
Depth to top of bentonite:	0.5 feet BGS
Stick-up:	2.60 feet
Length of Riser (including stick-up):	7.65 feet
Total length of casing:	18.15 feet
Type of Protective Cover:	4" x 4" x 5' Standing Locking Cover
Surface Seal Design/Construction:	6' x 6' x 4" concrete grout pad
Well Development Method:	Moderate Surging and Pumping
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 550 ATV
Drilling Method:	4.25" I.D. Hollow-stem Auger
Well Location:	Attached
Lithologic Logs:	Attached
Riser Materials:	ASTM 2" dia. PVC, NSF Rated
Screen Materials:	ASTM 2" dia. PVC, NSF Rated
Riser and Screen Joint Type:	Flush Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet

ADVANCED ENVIRONMENTAL MANAGEMENT
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282

LITHOLOGIC LOG

CONTRACTED WITH: Cooper, Barnett & Page
PROJECT NAME: Dean Forest Road MSWL
DRILLER: Piedmont Drilling/D. Staton

JOB NO.: J1124
RIG: CME 550

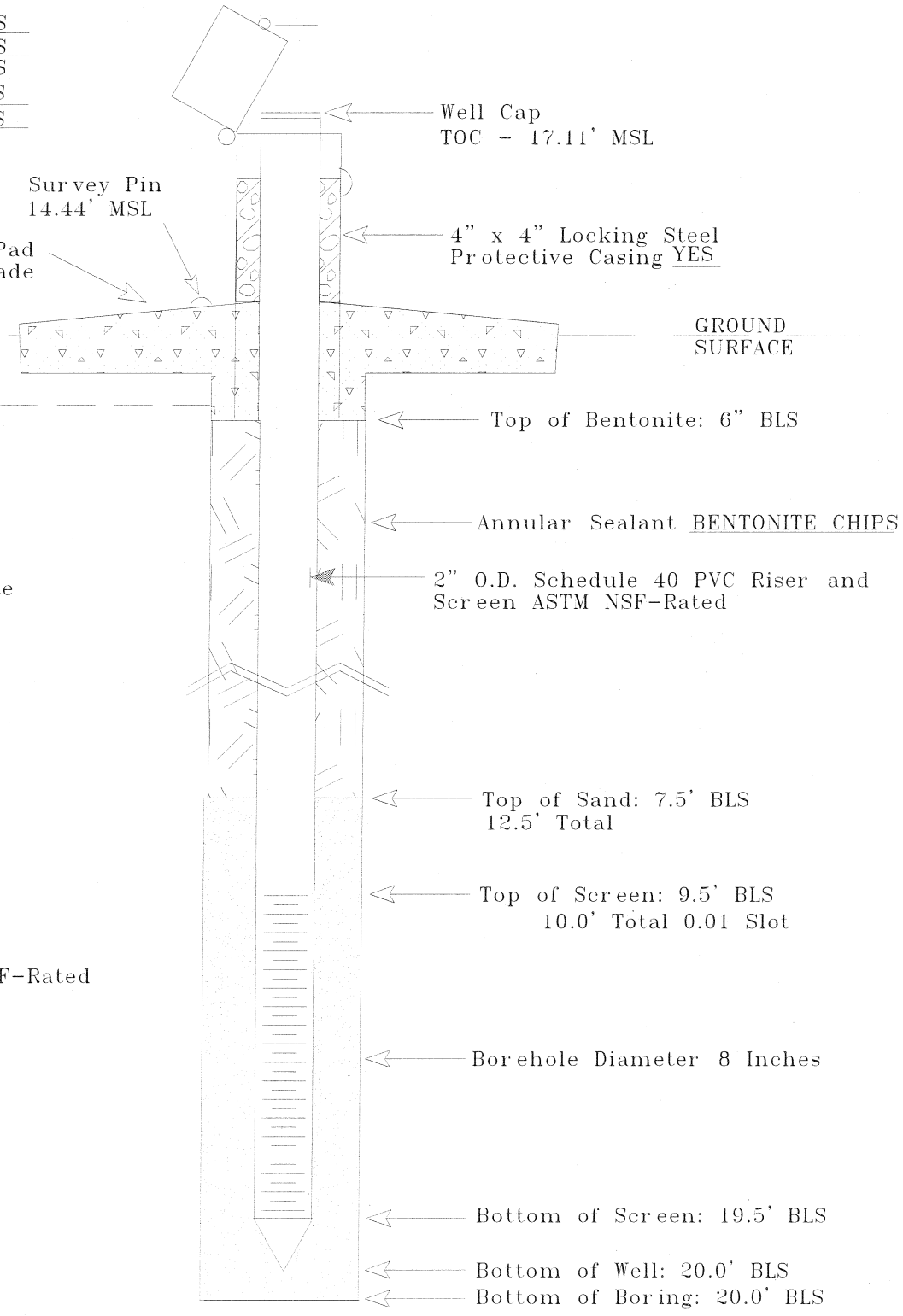
BORING NO. GWA-6
DATE: 6/2/05
LOGGED BY: EAB

ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	Topsoil - 6 "	0	
	CL -brown CLAY, some fine sand, residual		
	CL -light brown CLAY, some medium sand	5	
	-moist	10	
	SC - gray medium SAND, wet	15	
	Boring teminated @ 20.0 feet	20	
		25	
		30	
		35	
		40	
		45	
		50	

WELL COMPLETION REPORT GWA-6

Drilling Co.: PIEDMONT DRILLING
Date: 6/2/05
Driller: Donnie Staton
Boring No.: GWA-6
Drilling Method: 4.25" ID HSA
Type of Rig: CME 550
Geologist/Engineer: EAB
Drilling Fluid: N/A

Survey Pin YES
Weep Hole YES
Protective Casing YES
Pea Gravel YES
Vented Riser YES



3.5 Bags of Bentonite
50 Lb. Bags
Placement GRAVITY

6.0 Bags of Sand NSF-Rated
50 Lb. Bags
Placement GRAVITY

6" Sump

NOT TO SCALE

WELL NO. GWA-6

Well Design and Construction Documentation

Job Name:	City of Savannah MSWL
Job No.:	J1124
Date of Construction:	6/2/05
Well Construction Details:	Attached
Borehole Depth:	20.0 feet BGS
Well Depth:	20.0 feet BGS
Top of PVC Casing Elev.:	17.11 feet
Survey Pin Elevation:	14.44 feet
Borehole Diameter:	8 inch
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Depth to top of filter pack:	7.5 feet BGS
Filter Pack Material and Size:	20/40 Silica Sand; sample saved.
Filter Pack Volume:	3.0 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	NSF Rated, Certified Coarse Grit Bentonite Chips
Sealant Volume:	2.45 $feet^3$
Sealant Placement Method:	Gravity/Washed-Hydrated with Potable Water
Depth to top of bentonite:	0.5 feet BGS
Stick-up:	2.69 feet
Length of Riser (including stick-up):	11.69 feet
Total length of casing:	22.19 feet
Type of Protective Cover:	4" x 4" x 5' Standing Locking Cover
Surface Seal Design/Construction:	6' x 6' x 4" concrete grout pad
Well Development Method:	Moderate Surging and Pumping
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 550 ATV
Drilling Method:	4.25" I.D. Hollow-stem Auger
Well Location:	Attached
Lithologic Logs:	Attached
Riser Materials:	ASTM 2" dia. PVC, NSF Rated
Screen Materials:	ASTM 2" dia. PVC, NSF Rated
Riser and Screen Joint Type:	Flush Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-1	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: August 31, 1993	ELEVATION: 22.37 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 25.0 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SM) Brown to black fine silty sand			
5								
10					SAND (SC) Brown to black fine clayey sand			▼ GROUNDWATER TABLE AT 72 HOURS
15					SAND (SM) Brown to tan fine silty sand			
20					CLAY (ML) Grey sandy clay			
25					Boring Terminated at 25 Feet.			
30								

Boring GWC-1

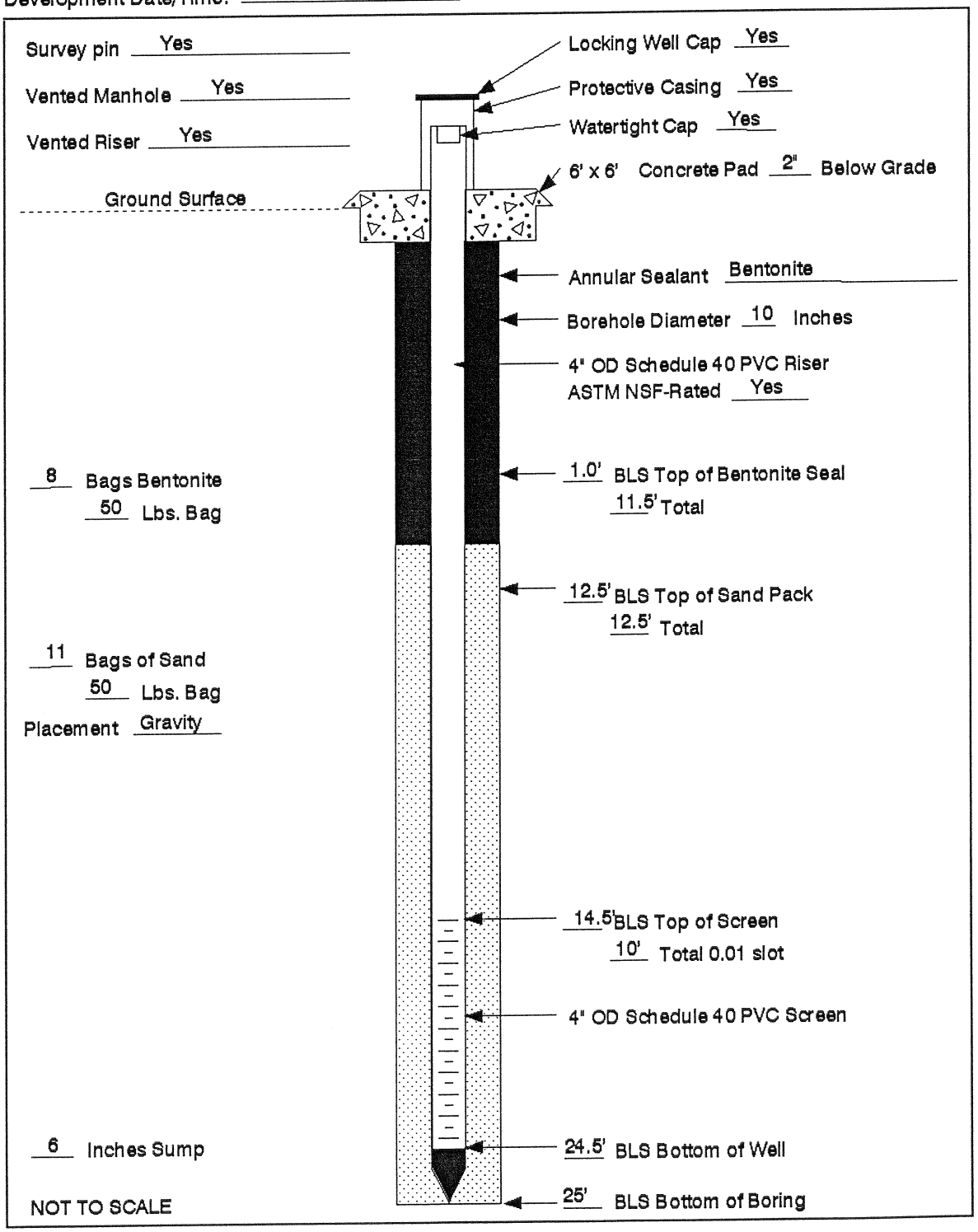
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-1

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/22/93/1330

Boring No.: GWC-1
Date: August 31, 1993
Type of Rig: CME-55
Development Method: Arch Pump



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-1
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	August 31, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	25.0 feet
Well Depth:	24.5 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.73 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	5.27 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	arch pump surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	20.55 feet
Top of Riser Elevation:	22.37 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	17.0 feet
Total length of casing:	27.0 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	12.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-2	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: August 31, 1993	ELEVATION: 18.99 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 15.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan to red-brown fine clayey sand			
5								
					SAND (SC) Grey to tan fine clayey sand			▼ GROUNDWATER TABLE AT 72 HOURS
10								
15								
					Boring Terminated at 15.5 Feet.			
20								
25								
30								

Boring GWC-2

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

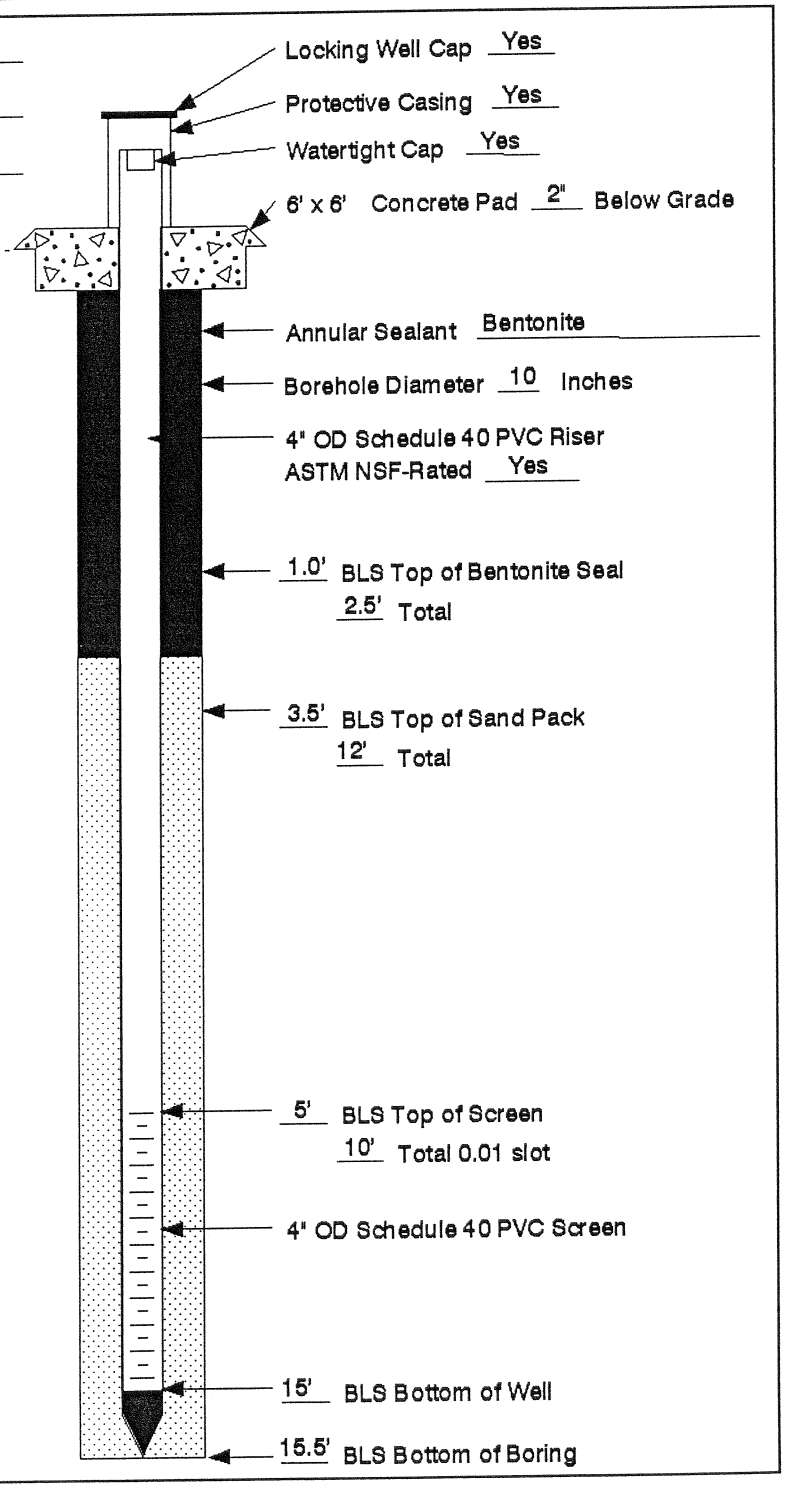
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-2

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/0930

Boring No.: GWC-2
Date: August 31, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



2 Bags Bentonite
50 Lbs. Bag

10.5 Bags of Sand
50 Lbs. Bag
Placement Gravity

6 Inches Sump

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-2
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	August 31, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	15.5 feet
Well Depth:	15.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.15 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	17.23 feet
Top of Riser Elevation:	18.99 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	7.5 feet
Total length of casing:	17.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	3.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-3	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: August 31, 1993	ELEVATION: 19.66 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 15.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Red to tan fine clayey sand			
5								
								▼ GROUNDWATER TABLE AT 72 HOURS
10					CLAY (ML) Tan to grey fine to coarse sandy clay			
15								
					Boring Terminated at 15.5 Feet.			
20								
25								
30								

Boring GWC-3

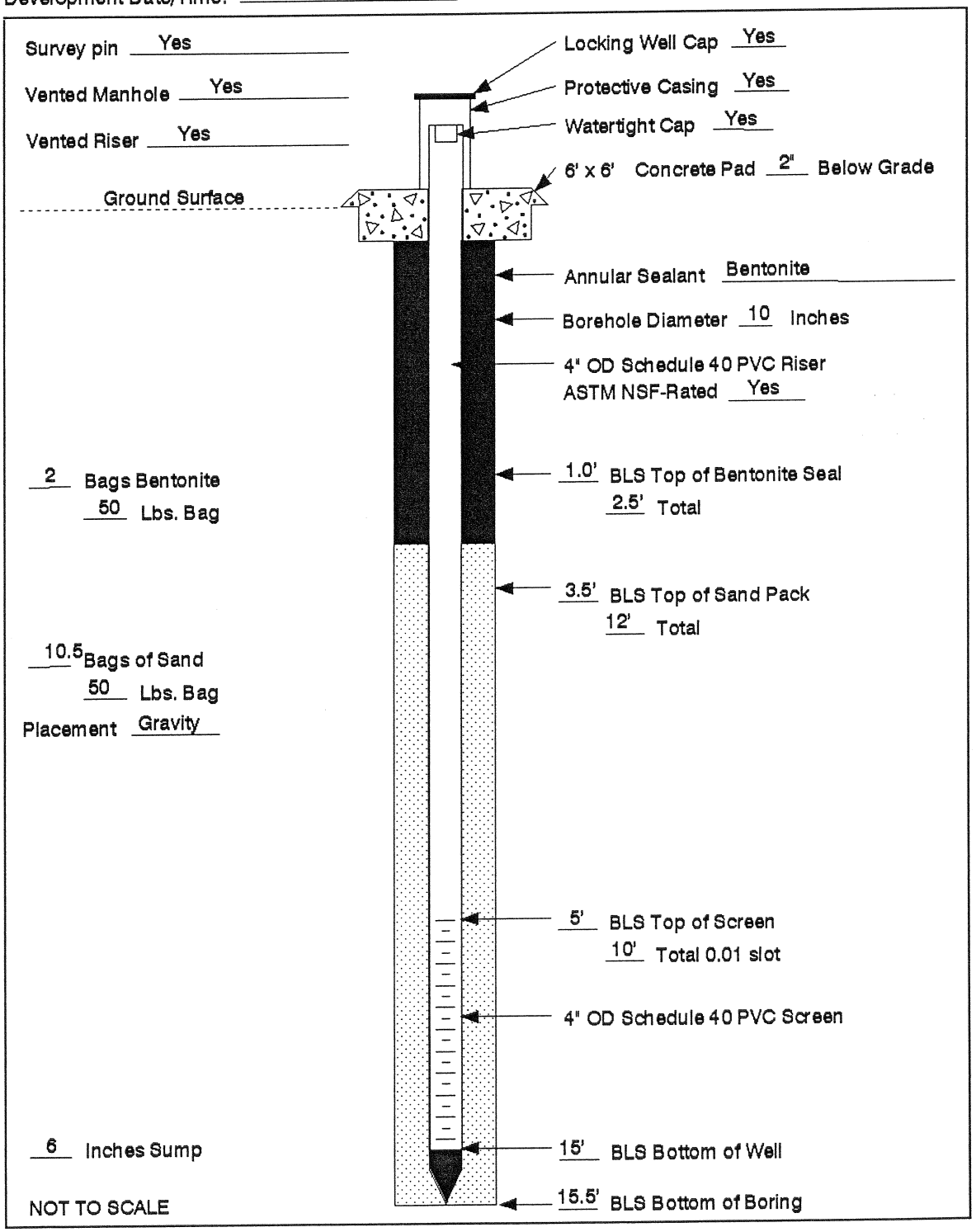
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-3

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1030

Boring No.: GWC-3
Date: August 31, 1993
Type of Rig: CME-55
Development Method: Hand Bail



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-3
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	August 31, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	15.5 feet
Well Depth:	15.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.15 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	17.99 feet
Top of Riser Elevation:	19.66 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	7.5 feet
Total length of casing:	17.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	3.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-4	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: August 31, 1993	ELEVATION: 27.52 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 25.0 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan to brown fine clayey sand			
5								
10					SAND (SC) Grey brown fine sand and clay			
15					CLAY (ML) Grey brown fine sandy clay			
20								▼ GROUNDWATER TABLE AT 72 HOURS
25					Boring Terminated at 25 Feet.			
30								

Boring GWC-4

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

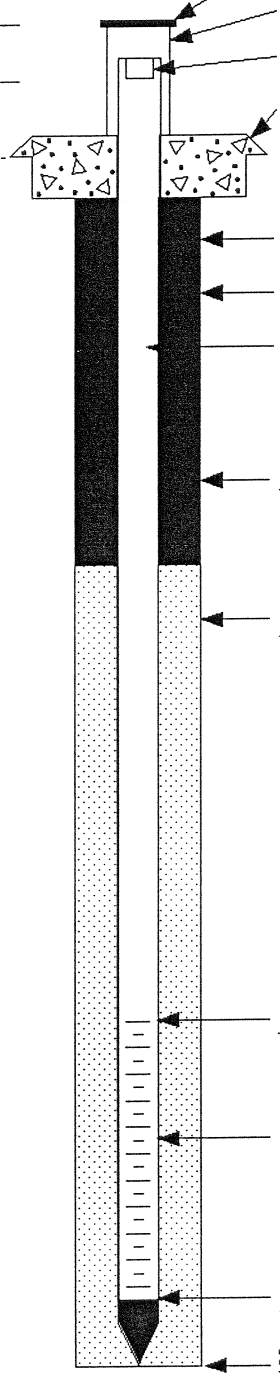
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-4

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/22/93/1430

Boring No.: GWC-4
Date: August 31, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade
Ground Surface
Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes
8.5 Bags Bentonite
50 Lbs. Bag
1.0' BLS Top of Bentonite Seal
12' Total
13' BLS Top of Sand Pack
12' Total
11 Bags of Sand
50 Lbs. Bag
Placement Gravity
14.5' BLS Top of Screen
10' Total 0.01 slot
4" OD Schedule 40 PVC Screen
6 Inches Sump
24.5' BLS Bottom of Well
NOT TO SCALE
25' BLS Bottom of Boring

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-4
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	August 31, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	25.0 feet
Well Depth:	24.5 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	5.50 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	25.64 feet
Top of Riser Elevation:	27.52 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	17.0 feet
Total length of casing:	27.0 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	13.0 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-5	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 1, 1993	ELEVATION: 16.91 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 15.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Grey to black fine sand with clay			
5					CLAY (ML) Grey to black fine sandy clay			
10								▼ GROUNDWATER TABLE AT 72 HOURS
15								
					Boring Terminated at 15.5 Feet.			
20								
25								
30								

Boring GWC-5

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

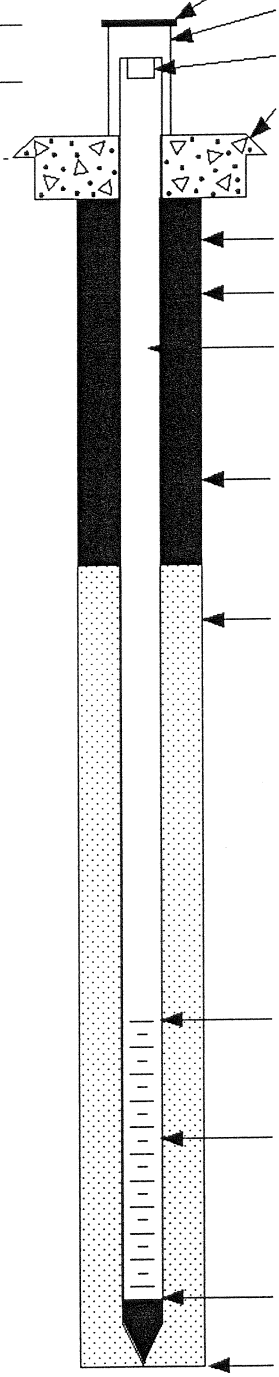
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-5

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1430

Boring No.: GWC-5
Date: September 1, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade

Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes

2 Bags Bentonite
50 Lbs. Bag

1.0' BLS Top of Bentonite Seal
2.5' Total

3.5' BLS Top of Sand Pack
12' Total

11.5 Bags of Sand
50 Lbs. Bag
Placement Gravity

5' BLS Top of Screen
10' Total 0.01 slot

4" OD Schedule 40 PVC Screen

6 Inches Sump

15' BLS Bottom of Well

15.5' BLS Bottom of Boring

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-5
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 1, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	15.5 feet
Well Depth:	15.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.15 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	15.07 feet
Top of Riser Elevation:	16.91 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	7.5 feet
Total length of casing:	17.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	3.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-6	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 1, 1993	ELEVATION: 16.24 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 26.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover SAND (SC) Brown to tan to black fine clayey sand			
5								
					CLAY (ML) Tan to grey fine sandy clay			
10								▼ GROUNDWATER TABLE AT 72 HOURS
15								
20								
25								
					Boring Terminated at 26.5 Feet.			
30								

Boring GWC-6

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

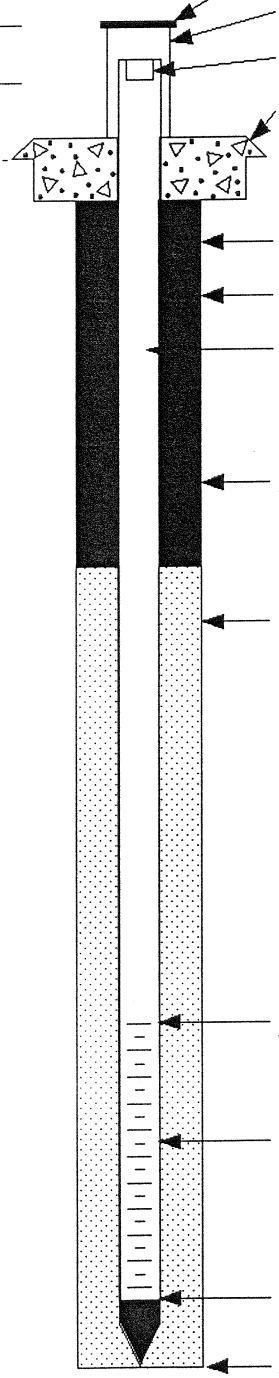
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-6

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1330

Boring No.: GWC-6
Date: September 1, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade
Ground Surface
Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes
9.5 Bags Bentonite
50 Lbs. Bag
1.0' BLS Top of Bentonite Seal
13.5' Total
14.5' BLS Top of Sand Pack
12' Total
10.5 Bags of Sand
50 Lbs. Bag
Placement Gravity
16' BLS Top of Screen
10' Total 0.01 slot
4" OD Schedule 40 PVC Screen
6 Inches Sump
26' BLS Bottom of Well
26.5' BLS Bottom of Boring
NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-6
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 1, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	26.5 feet
Well Depth:	26.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	6.19 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	15.53 feet
Top of Riser Elevation:	16.24 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	18.5 feet
Total length of casing:	28.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	14.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-7	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 1, 1993	ELEVATION: 19.44 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 16.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan to grey fine clayey sand			
5								
					CLAY (ML) Tan fine sandy clay			
10					SAND (SC) Tan fine sand and clay			▼ GROUNDWATER TABLE AT 72 HOURS
15								
					Boring Terminated at 16.5 Feet.			
20								
25								
30								

Boring GWC-7

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-7

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1430

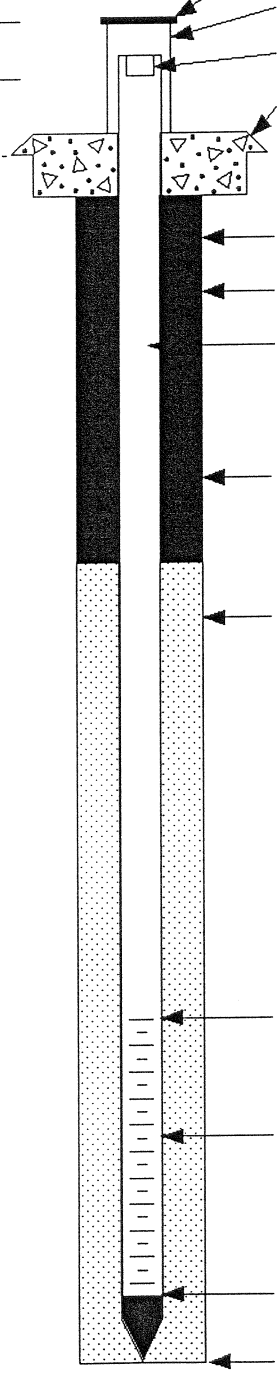
Boring No.: GWC-7
Date: September 1, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes

Vented Manhole Yes

Vented Riser Yes

Ground Surface



Locking Well Cap Yes

Protective Casing Yes

Watertight Cap Yes

6' x 6' Concrete Pad 2" Below Grade

Annular Sealant Bentonite

Borehole Diameter 10 Inches

4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes

2.5 Bags Bentonite
50 Lbs. Bag

1.0' BLS Top of Bentonite Seal
3.5' Total

4.5' BLS Top of Sand Pack
12' Total

11 Bags of Sand
50 Lbs. Bag
Placement Gravity

6' BLS Top of Screen
10' Total 0.01 slot

4" OD Schedule 40 PVC Screen

6 Inches Sump

16' BLS Bottom of Well

16.5' BLS Bottom of Boring

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-7
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 1, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	16.5 feet
Well Depth:	16.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? *YES*
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? *YES*
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? *YES*
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? *YES*
Bentonite Volume:	1.60 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	17.57 feet
Top of Riser Elevation:	19.44 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	8.5 feet
Total length of casing:	18.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	4.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-8	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 1, 1993	ELEVATION: 18.64 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 26.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tand to brown fine sandy clay			
5								
					CLAY (ML) Tan fine sandy clay			
10								▼ GROUNDWATER TABLE AT 72 HOURS
15								
20					CLAY (ML) Grey fine sandy clay			
25								
					Boring Terminated at 26.5 Feet.			
30								

Boring GWC-8

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

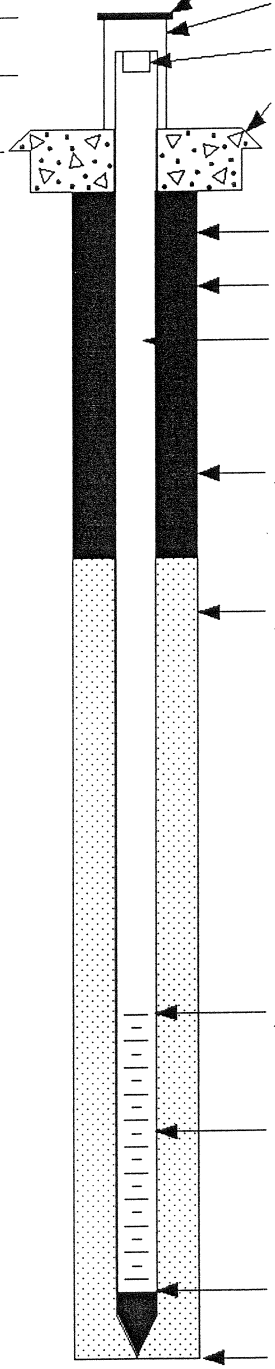
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-8

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1630

Boring No.: GWC-8
Date: September 1, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade

Ground Surface

Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes

9.5 Bags Bentonite
50 Lbs. Bag

1.0' BLS Top of Bentonite Seal
13.5' Total

14.5' BLS Top of Sand Pack
12' Total

11 Bags of Sand
50 Lbs. Bag
Placement Gravity

16' BLS Top of Screen
10' Total 0.01 slot

4" OD Schedule 40 PVC Screen

6 Inches Sump

26' BLS Bottom of Well

26.5' BLS Bottom of Boring

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-8
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 1, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	26.5 feet
Well Depth:	26.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	6.19 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	16.68 feet
Top of Riser Elevation:	18.64 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	18.5 feet
Total length of casing:	28.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	14.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-9	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 2, 1993	ELEVATION: 19.93 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 16.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan to grey fine clayey sand			
5					CLAY (ML) Tan to grey fine sandy clay			
10								▼ GROUNDWATER TABLE AT 72 HOURS
15								
					Boring Terminated at 16.5 Feet.			
20								
25								
30								

Boring GWC-9

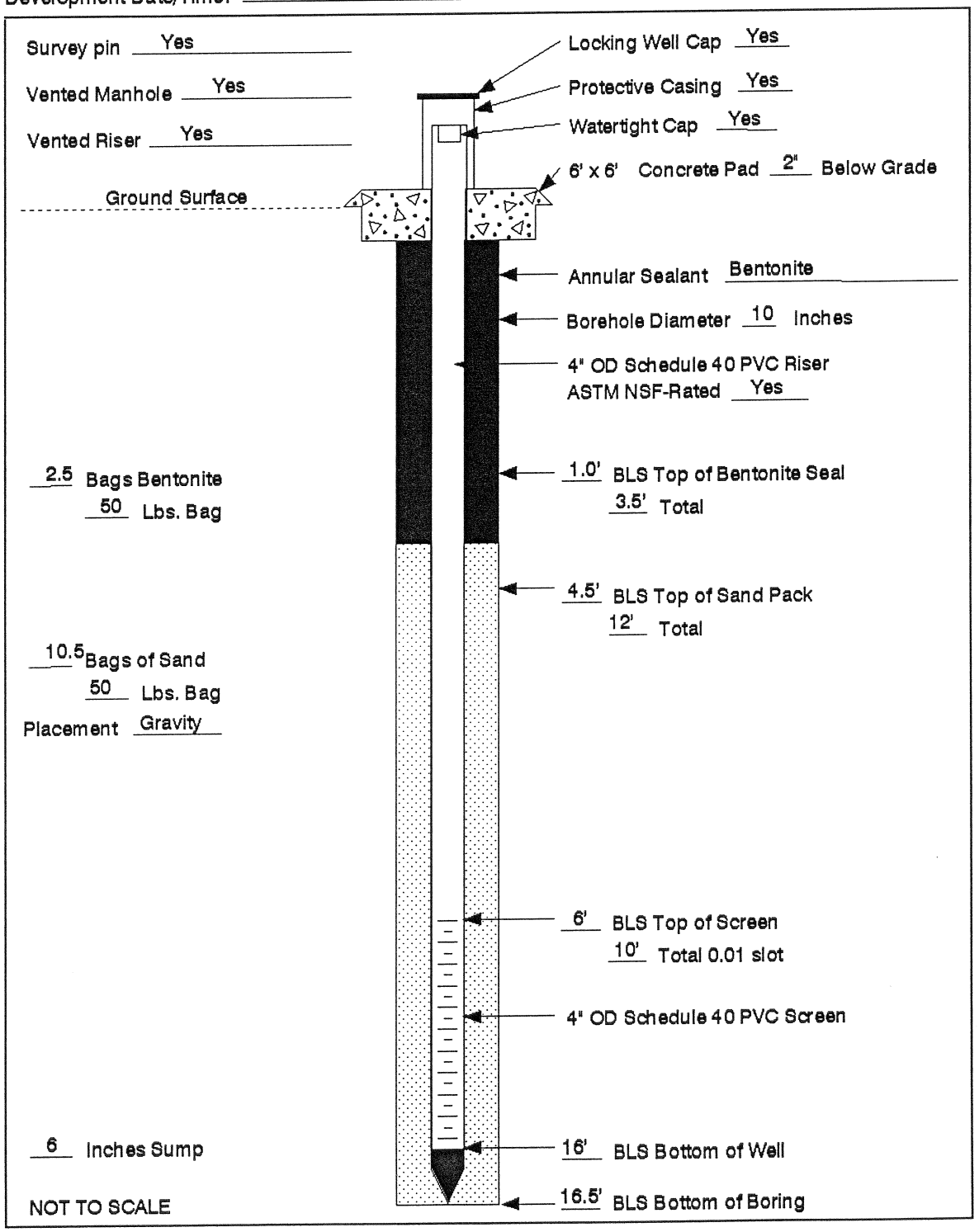
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-9

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1830

Boring No.: GWC-9
Date: September 2, 1993
Type of Rig: CME-55
Development Method: Arch Pump



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-9
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 2, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	16.5 feet
Well Depth:	16.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.60 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	arch pump surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	18.17 feet
Top of Riser Elevation:	19.93 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	8.5 feet
Total length of casing:	18.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	4.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-10	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 2, 1993	ELEVATION: 20.88 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 20.0 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan to brown fine clayey sand			
5								
10					CLAY (ML) Tan to grey fine sandy clay			▼ GROUNDWATER TABLE AT 72 HOURS
15					SAND (SC) Tan to grey fine clayey sand			
20					Boring Terminated at 20.0 Feet.			
25								
30								

Boring GWC-10

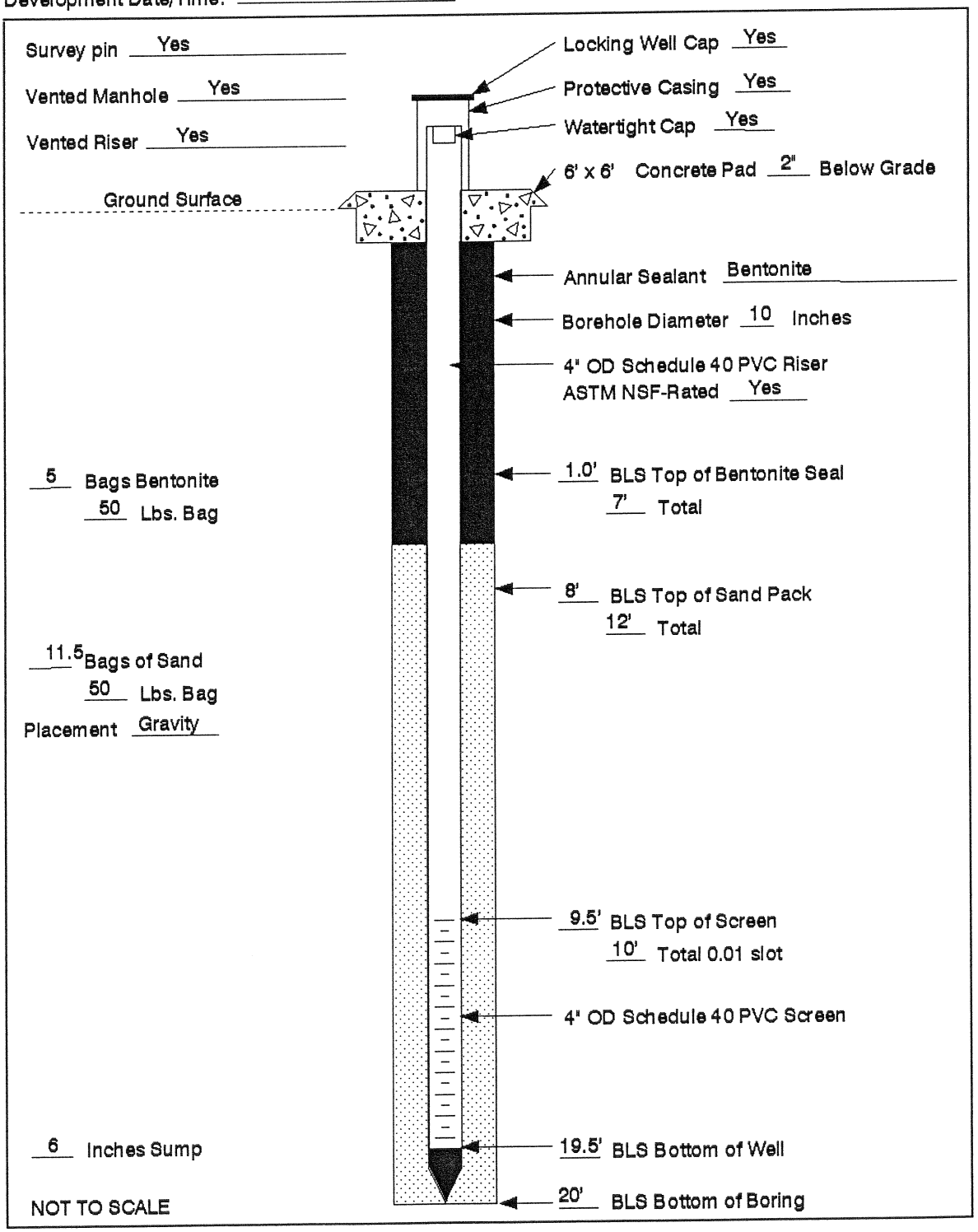
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-10

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1630

Boring No.: GWC-10
Date: September 2, 1993
Type of Rig: CME-55
Development Method: Hand Bail



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-10
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 2, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	20.0 feet
Well Depth:	19.5 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	3.21 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	19.06 feet
Top of Riser Elevation:	20.88 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	12.0 feet
Total length of casing:	22.0 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	8.0 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-11	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 9, 1993	ELEVATION: 22.97 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 29.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Reddish tan fine clayey sand			
5								
10					CLAY (ML) Grey to tan fine sandy clay			▼ GROUNDWATER TABLE AT 72 HOURS
15					SAND (SC) Tan to red fine moist clayey sand			
20								
25					Grades to grey			
30					Boring Terminated at 29.5 Feet.			

Boring GWC-11

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

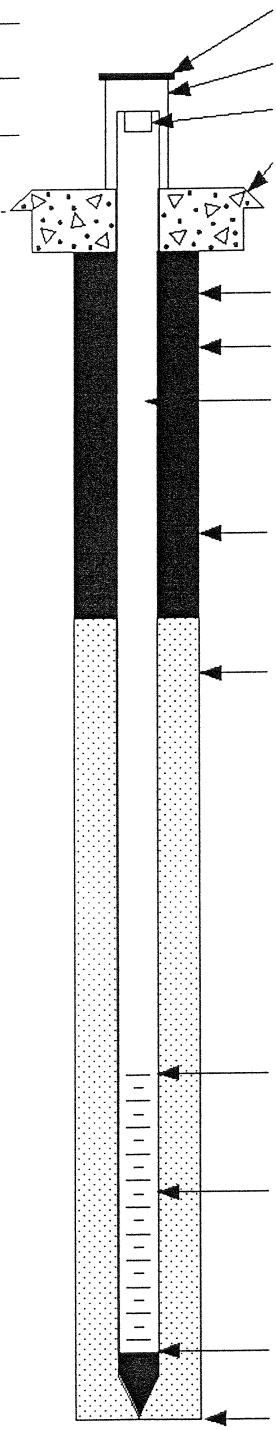
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-11

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1530

Boring No.: GWC-11
Date: September 9, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade

Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes

11.5 Bags Bentonite
50 Lbs. Bag

1.0' BLS Top of Bentonite Seal
16.5' Total

17.5' BLS Top of Sand Pack
12' Total

11 Bags of Sand
50 Lbs. Bag
Placement Gravity

19' BLS Top of Screen
10' Total 0.01 slot

4" OD Schedule 40 PVC Screen

6 Inches Sump

29' BLS Bottom of Well

NOT TO SCALE

29.5' BLS Bottom of Boring

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-11
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 9, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	29.5 feet
Well Depth:	29.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	7.56 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	20.77 feet
Top of Riser Elevation:	22.97 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	21.5 feet
Total length of casing:	31.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	17.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-12	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 8, 1993	ELEVATION: 16.08 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 16.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Black to tan clayey sand			▼ GROUNDWATER TABLE AT 72 HOURS
5					SAND (SC) Tan to grey clayey sand			
10					SAND (SC) Green to tan clayey sand with shell fragments			
15								
					Boring Terminated at 16.5 Feet.			
20								
25								
30								

Boring GWC-12

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

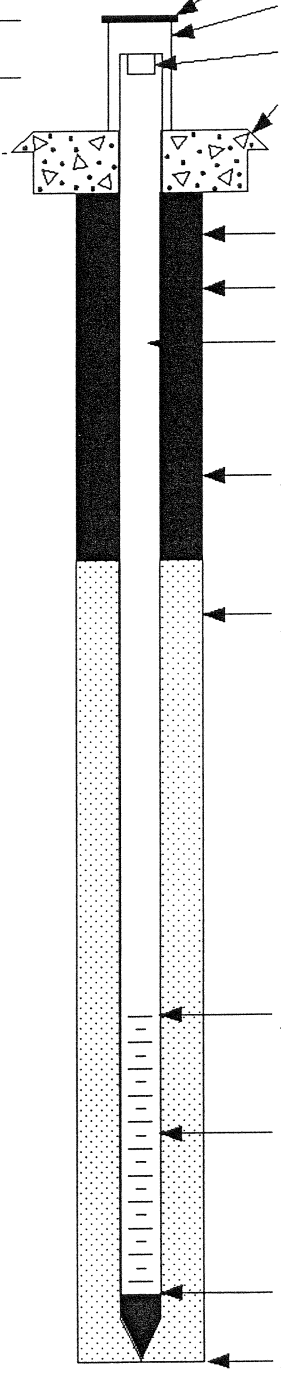
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-12

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/24/93/1430

Boring No.: GWC-12
Date: September 8, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade
Ground Surface
Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes
1.0' BLS Top of Bentonite Seal
3.5' Total
4.5' BLS Top of Sand Pack
12' Total
6' BLS Top of Screen
10' Total 0.01 slot
4" OD Schedule 40 PVC Screen
16' BLS Bottom of Well
16.5' BLS Bottom of Boring

2.5 Bags Bentonite
50 Lbs. Bag

11 Bags of Sand
50 Lbs. Bag
Placement Gravity

6 Inches Sump

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-12
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 8, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	16.5 feet
Well Depth:	16.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.60 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	14.21 feet
Top of Riser Elevation:	16.08 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	8.5 feet
Total length of casing:	18.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	4.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-13	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 2, 1993	ELEVATION: 19.57 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 26.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan to brown fine clayey sand			
5								
					CLAY (ML) Tan to grey fine sandy clay			▼ GROUNDWATER TABLE AT 72 HOURS
10								
					SAND (SC) Tan fine to coarse clayey sand			
15								
20								
25								
					Boring Terminated at 26.5 Feet.			
30								

Boring GWC-13

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

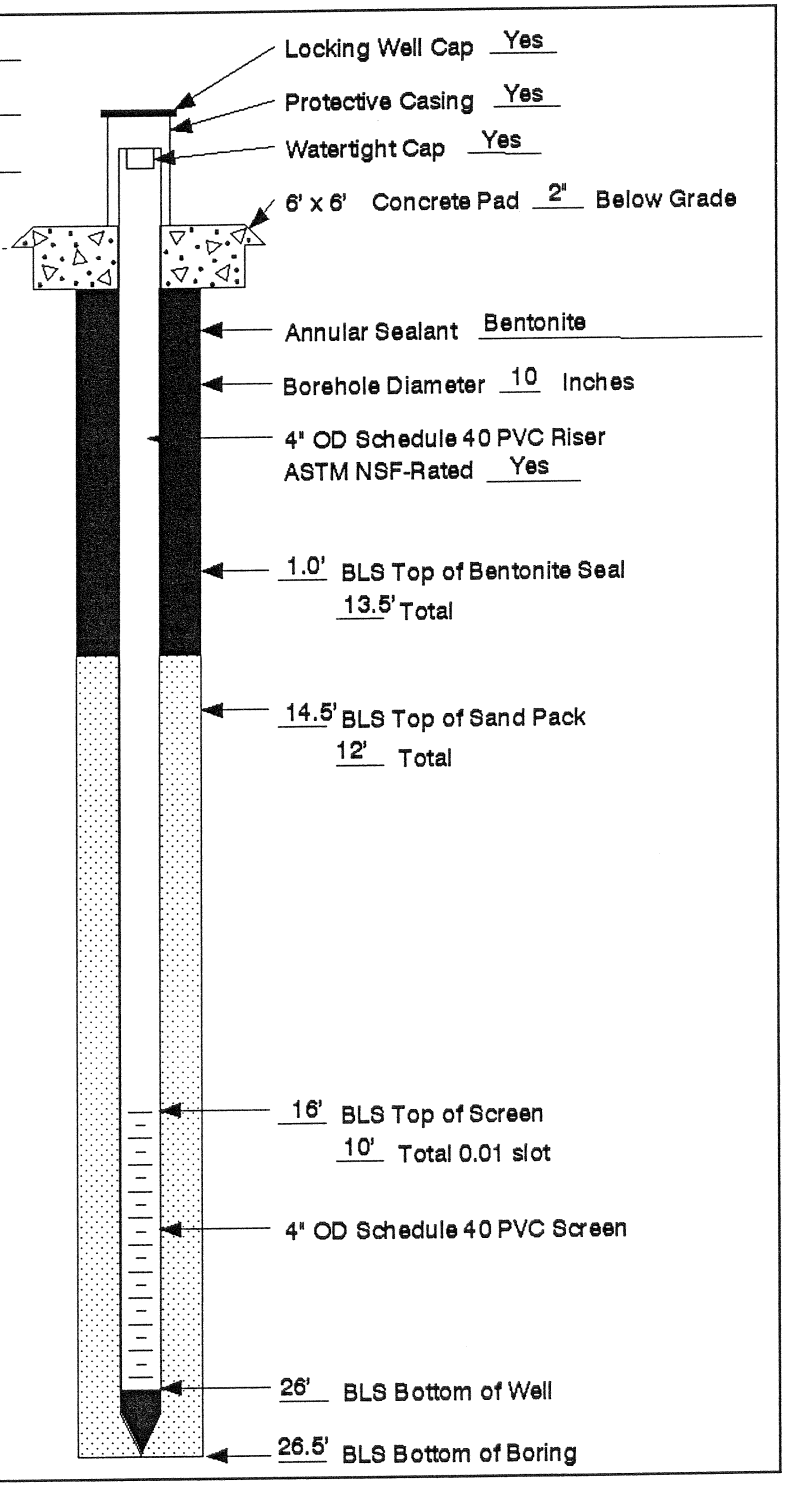
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-13

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/24/93/1530

Boring No.: GWC-13
Date: September 2, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



9.5 Bags Bentonite
50 Lbs. Bag

10.5 Bags of Sand
50 Lbs. Bag
Placement Gravity

6 Inches Sump

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-13
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 2, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	26.5 feet
Well Depth:	26.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	6.19 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	17.68 feet
Top of Riser Elevation:	19.57 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	18.5 feet
Total length of casing:	28.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	14.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-14	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 24, 1993	ELEVATION: 22.40 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 20.0 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen/D. Webb

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Brown fine clayey sand			
5					SAND (SC) Grey to brown fine clayey sand			
					CLAY (ML) Tan to grey fine sandy clay			
10								▼ GROUNDWATER TABLE AT 72 HOURS
15								
20					Boring Terminated at 20.0 Feet.			
25								
30								

Boring GWC-14

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

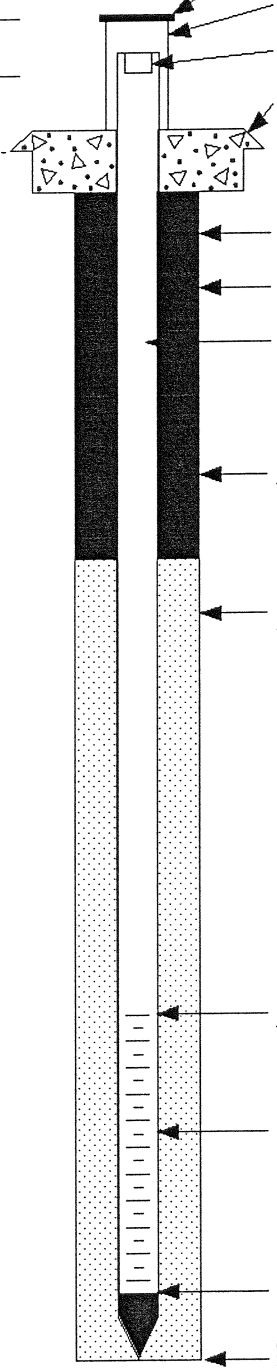
Well Completion Report GWC-14

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/25/93/0900

Boring No.: GWC-14
Date: September 24, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes

Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade



Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes

3.5 Bags Bentonite
50 Lbs. Bag

1.0' BLS Top of Bentonite Seal
4.5' Total

5.5' BLS Top of Sand Pack
12' Total

11 Bags of Sand
50 Lbs. Bag
Placement Gravity

7' BLS Top of Screen
10' Total 0.01 slot

4" OD Schedule 40 PVC Screen

6 Inches Sump

17' BLS Bottom of Well

20' BLS Bottom of Boring

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-14
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 24, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	20.0 feet
Well Depth:	17.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	2.06 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	20.20 feet
Top of Riser Elevation:	22.40 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	9.5 feet
Total length of casing:	19.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	5.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-15	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 8, 1993	ELEVATION: 18.18 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 24.0 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Black fine clayey sand			
5					CLAY (ML) Tan fine sandy clay			▼ GROUNDWATER TABLE AT 72 HOURS
10								
15					CLAY (ML) Grey fine sandy clay			
20								
25					Boring Terminated at 24.0 Feet.			
30								

Boring GWC-15

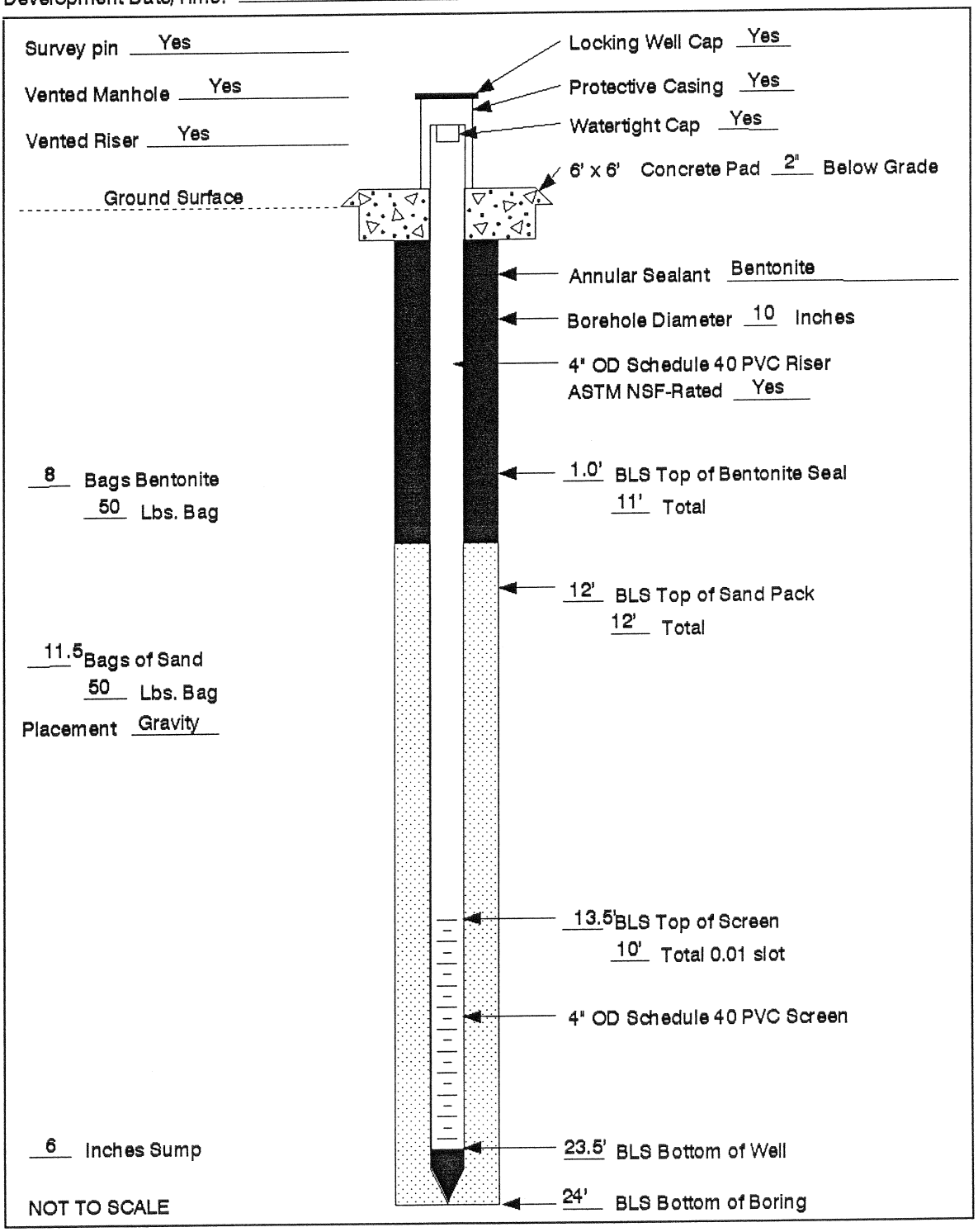
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-15

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1330

Boring No.: GWC-15
Date: September 8, 1993
Type of Rig: CME-55
Development Method: Hand Bail



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-15
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 8, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	24.0 feet
Well Depth:	23.5 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	5.04 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	16.40 feet
Top of Riser Elevation:	18.18 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	16.0 feet
Total length of casing:	26.0 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	12.0 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-15A	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 2, 1993	ELEVATION: 17.08 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 15.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Black fine clayey sand			
5					CLAY (ML) Brown to tan fine sandy clay			▼ GROUNDWATER TABLE AT 72 HOURS
10								
15					Boring Terminated at 15.5 Feet.			
20								
25								
30								

Boring GWC-15A

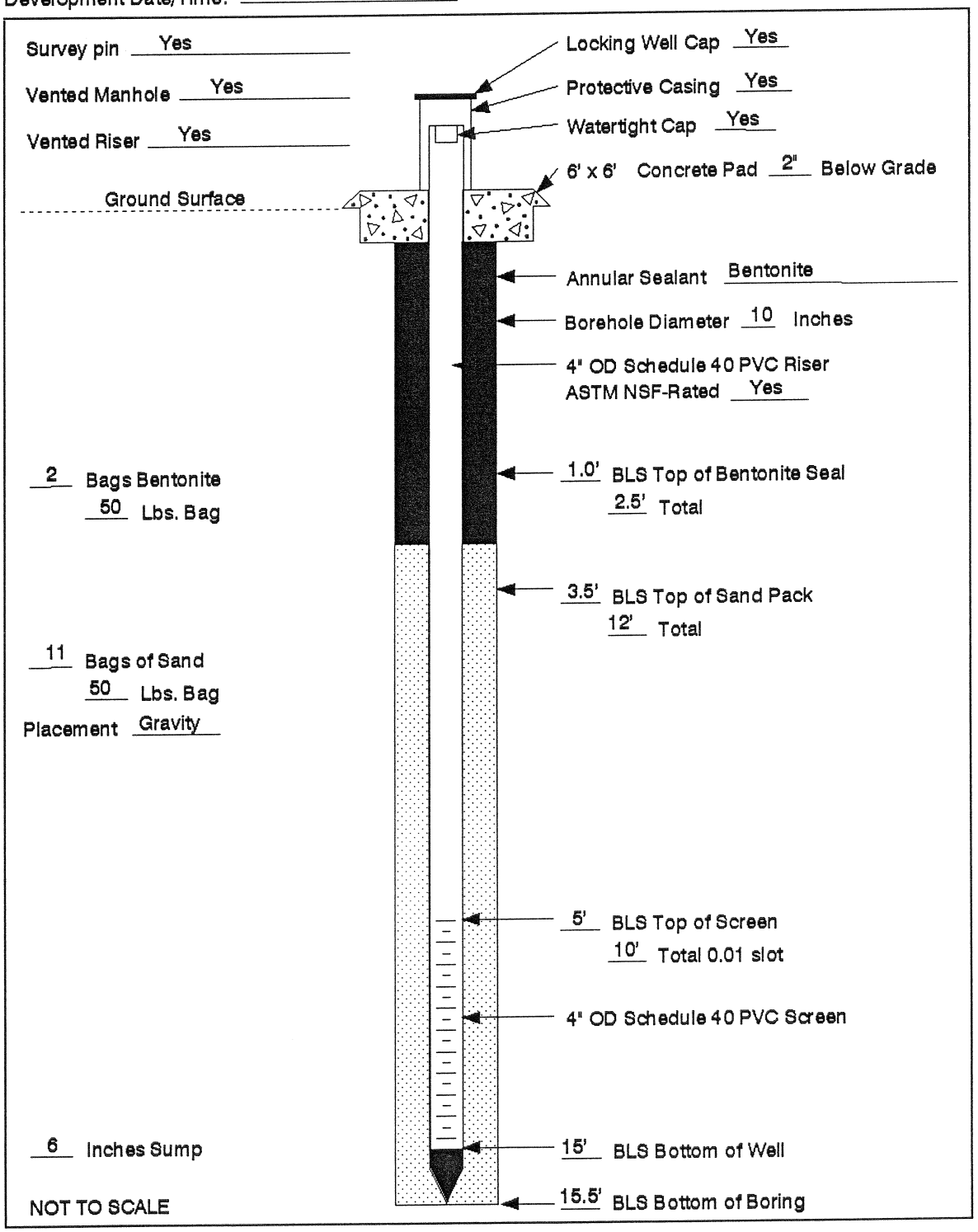
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-15A

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1130

Boring No.: GWC-15A
Date: September 2, 1993
Type of Rig: CME-55
Development Method: Hand Bail



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-15A
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 2, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	15.5 feet
Well Depth:	15.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.15 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	16.03 feet
Top of Riser Elevation:	17.08 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	7.5 feet
Total length of casing:	17.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	3.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-16	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 8, 1993	ELEVATION: 18.30 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 17.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover SAND (SC) Tan to brown clayey sand			
5								▼ GROUNDWATER TABLE AT 72 HOURS
10					SAND (SC) Tan fine clayey sand			
15								
					Boring Terminated at 17.5 Feet.			
20								
25								
30								

Boring GWC-16

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

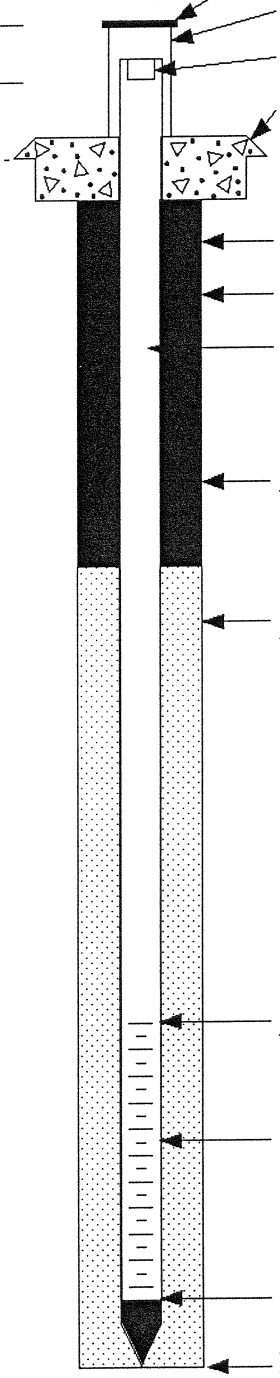
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-16

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1530

Boring No.: GWC-16
Date: September 8, 1993
Type of Rig: CME-55
Development Method: Hand Bail

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade
Ground Surface
Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes
3.5 Bags Bentonite
50 Lbs. Bag
1.0' BLS Top of Bentonite Seal
5' Total
6' BLS Top of Sand Pack
11.5' Total
10.5 Bags of Sand
50 Lbs. Bag
Placement Gravity
7' BLS Top of Screen
10' Total 0.01 slot
4" OD Schedule 40 PVC Screen
6 Inches Sump
17' BLS Bottom of Well
17.5' BLS Bottom of Boring
NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-16
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 8, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	17.5 feet
Well Depth:	17.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	2.29 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	16.25 feet
Top of Riser Elevation:	18.30 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	9.5 feet
Total length of casing:	19.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	6.0 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-17	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 9, 1993	ELEVATION: 16.08 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 25.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover SAND (SC) Tan to grey fine clayey sand			▼ GROUNDWATER TABLE AT 72 HOURS
5								
10					SAND (SC) Tan to grey fine clayey sand with shell fragments			
15								
20					Boring Terminated at 23.5 Feet.			
25								
30								

Boring GWC-17

Savannah Landfill: Dean Forest Rd., Savannah, Georgia

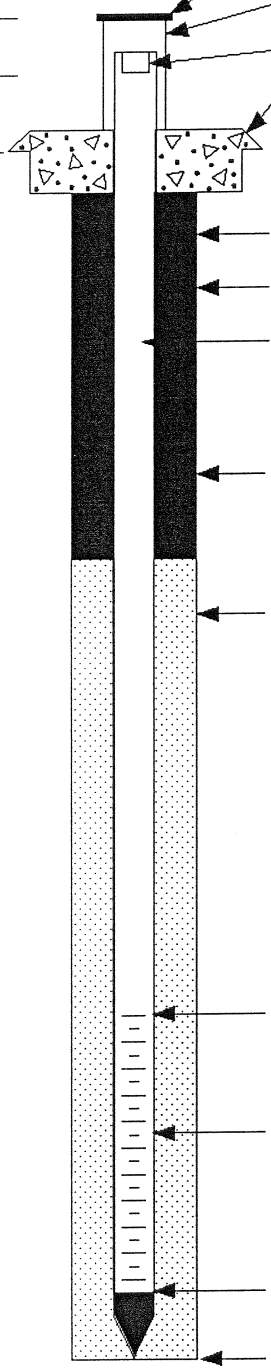
Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-17

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/24/93/1430

Boring No.: GWC-17
Date: September 9, 1993
Type of Rig: CME-55
Development Method: Arch Pump

Survey pin Yes
Vented Manhole Yes
Vented Riser Yes



Ground Surface

Locking Well Cap Yes
Protective Casing Yes
Watertight Cap Yes
6' x 6' Concrete Pad 2" Below Grade

Annular Sealant Bentonite
Borehole Diameter 10 Inches
4" OD Schedule 40 PVC Riser
ASTM NSF-Rated Yes

7 Bags Bentonite
50 Lbs. Bag

1.0' BLS Top of Bentonite Seal
10.5' Total

11.5' BLS Top of Sand Pack
12' Total

11 Bags of Sand
50 Lbs. Bag
Placement Gravity

13' BLS Top of Screen
10' Total 0.01 slot

4" OD Schedule 40 PVC Screen

6 Inches Sump

23' BLS Bottom of Well

23.5' BLS Bottom of Boring

NOT TO SCALE

WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-17
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 9, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	23.5 feet
Well Depth:	23.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	4.81 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	arch pump surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	13.98 feet
Top of Riser Elevation:	16.08 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	15.5 feet
Total length of casing:	25.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	11.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-17A	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 3, 1993	ELEVATION: 15.88 Surface ☐ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 15.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Black to brown fine clayey sand			▼ GROUNDWATER TABLE AT 72 HOURS
5					SAND (SC) Grey fine to coarse clayey sand with shell fragements			
10								
15								
					Boring Terminated at 15.5 Feet.			
20								
25								
30								

Boring GWC-17A

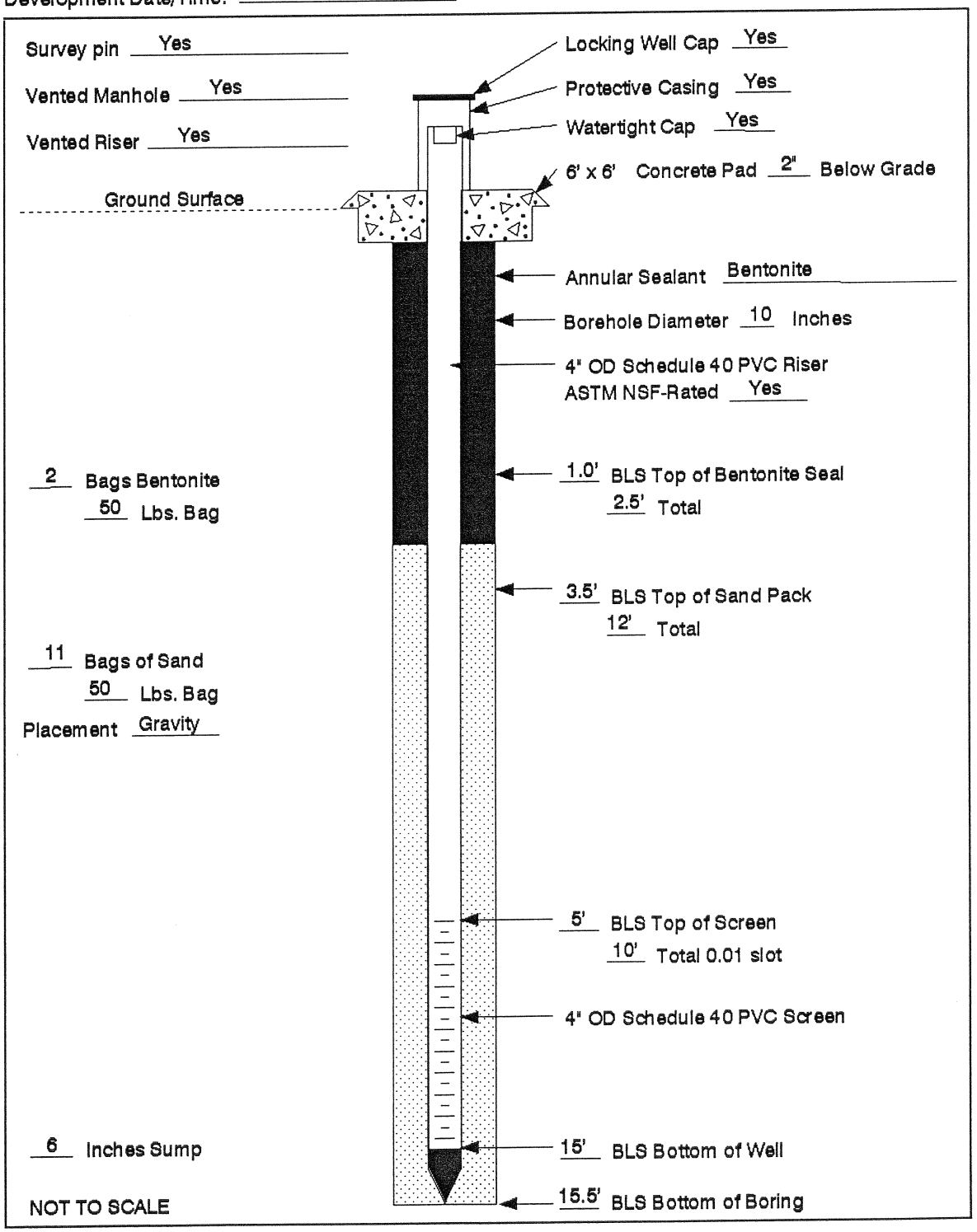
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-17A

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/24/93/1530

Boring No.: GWC-17A
Date: September 3, 1993
Type of Rig: CME-55
Development Method: Arch Pump



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-17A
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 3, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	15.5 feet
Well Depth:	15.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.15 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	arch pump surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	14.02 feet
Top of Riser Elevation:	15.88 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	7.5 feet
Total length of casing:	17.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	3.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-18	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 8, 1993	ELEVATION: 16.27 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 16.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan to brown clayey sand			
5								▼ GROUNDWATER TABLE AT 72 HOURS
					SAND (SC) Black to tan clayey sand			
10								
					SAND (SC) Grey moist clayey sand			
15								
					Boring Terminated at 16.5 Feet.			
20								
25								
30								

Boring GWC-18

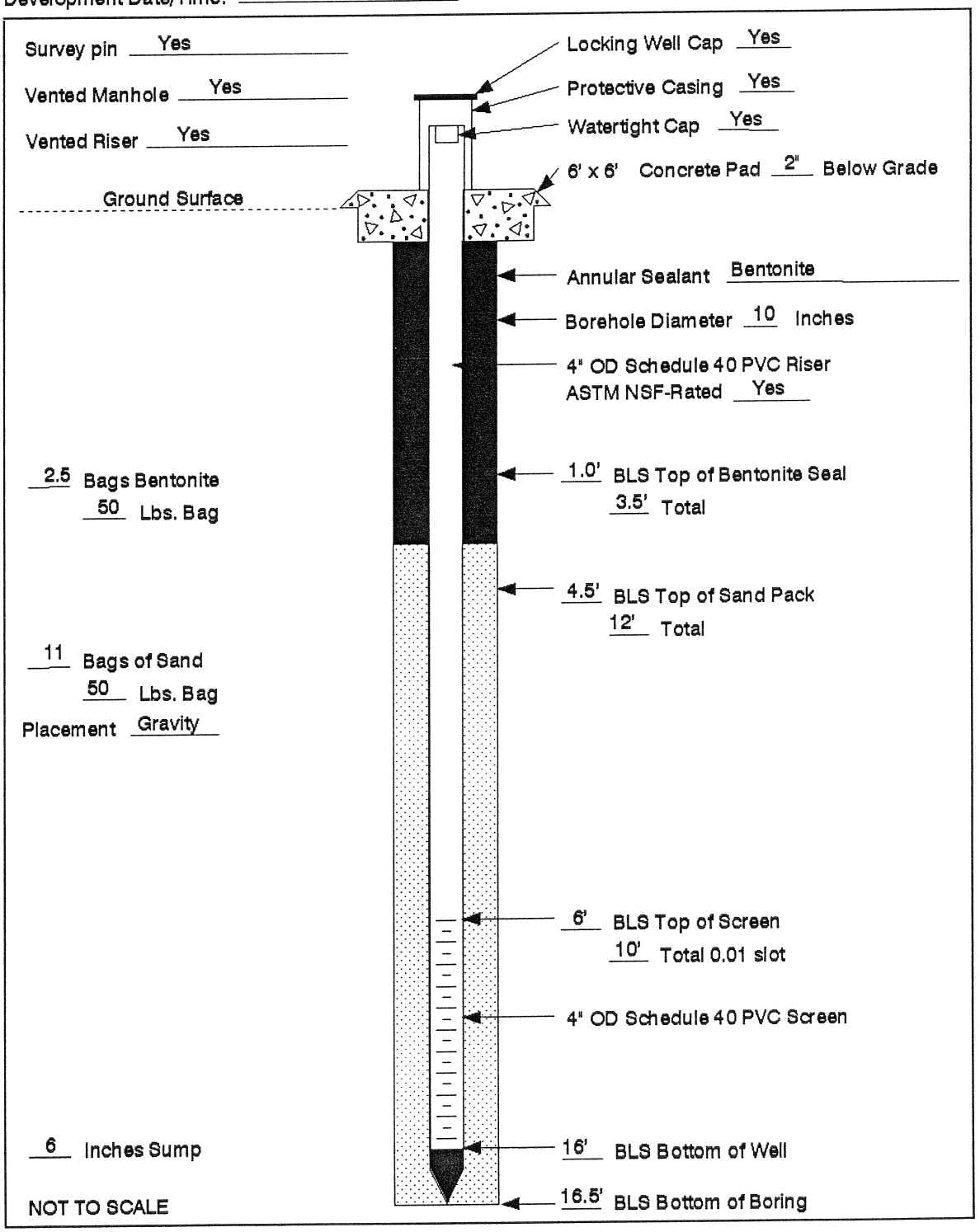
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-18

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/1030

Boring No.: GWC-18
Date: September 8, 1993
Type of Rig: CME-55
Development Method: Hand Bail



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-18
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 8, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	16.5 feet
Well Depth:	16.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.60 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	14.32 feet
Top of Riser Elevation:	16.27 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	8.5 feet
Total length of casing:	18.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	4.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-19	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 8, 1993	ELEVATION: 19.37 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 24.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan to red clayey sand			
5								
								▼ GROUNDWATER TABLE AT 72 HOURS
10								
					SAND (SC) Tan to brown clayey sand			
15								
20					SAND (SC) Grey to tan clayey sand			
25					Boring Terminated at 24.5 Feet.			
30								

Boring GWC-19

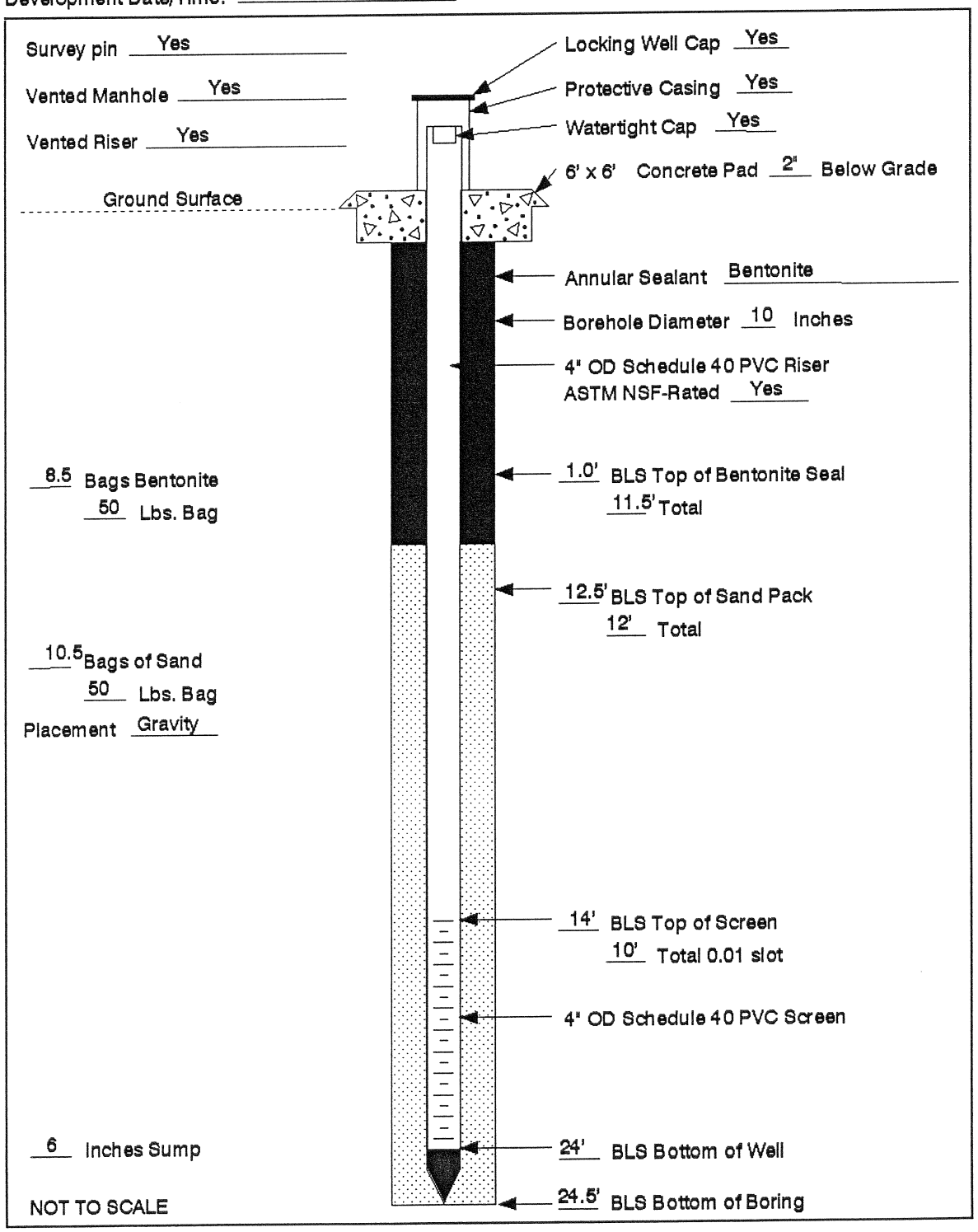
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-19

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/22/93/1630

Boring No.: GWC-19
Date: September 8, 1993
Type of Rig: CME-55
Development Method: Hand Bail



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-19
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 8, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	24.5 feet
Well Depth:	24.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	5.27 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	17.59 feet
Top of Riser Elevation:	19.37 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	16.5 feet
Total length of casing:	26.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	12.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-19A	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 3, 1993	ELEVATION: 19.06 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 16.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover			
					SAND (SC) Tan fine clayey sand			
5								
					SAND (SC) Tan to brown clayey sand			▼ GROUNDWATER TABLE AT 72 HOURS
10								
15								
					Boring Terminated at 16.5 Feet.			
20								
25								
30								

Boring GWC-19A

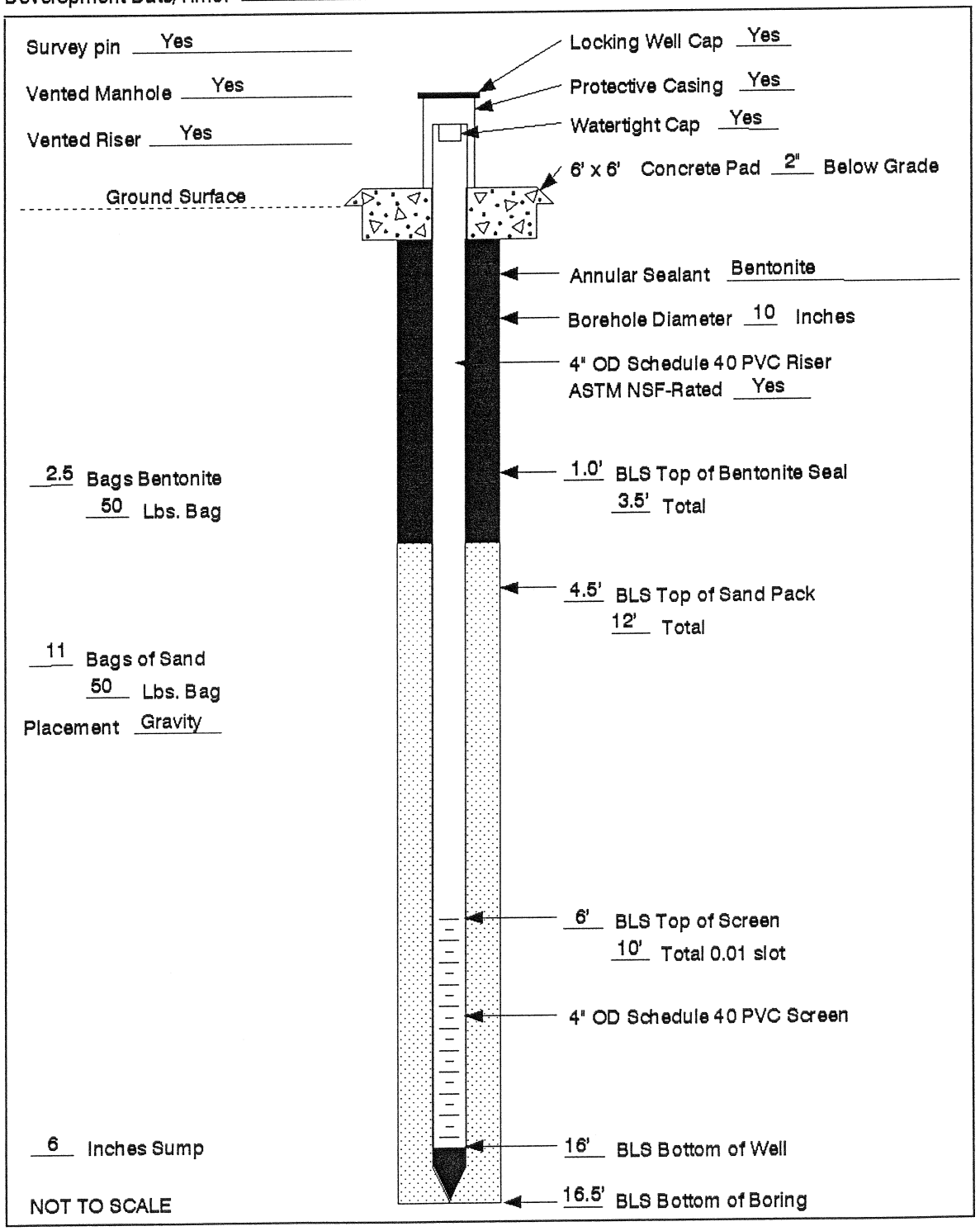
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-19A

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/23/93/0930

Boring No.: GWC-19A
Date: September 3, 1993
Type of Rig: CME-55
Development Method: Hand Bail



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-19A
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 3, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	16.5 feet
Well Depth:	16.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.60 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	17.14 feet
Top of Riser Elevation:	19.06 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	8.5 feet
Total length of casing:	18.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	4.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

PIEDMONT ENVIRONMENTAL DRILLING, INC.	LOG OF BORING GWC-20	Page 1 of 1

PROJECT: Savannah Landfill	LOCATION: Dean Forest Road, Savannah, Ga.
DATE DRILLED: September 3, 1993	ELEVATION: 22.00 Surface □ Top-of-casing ■
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH 16.5 Feet Below Land Surface
DRILLING CONTRACTOR: Piedmont	GEOLOGIST: P. Gagen

Depth (feet)	Sample Code	PID (ppm) Value	PID (ppm) Profile 10 100	Geo-Log	Geologic Description	Standard Penetration Blows	Standard Penetration 10 50	Notes
					Grass Cover SAND (SC) Reddish tan clayey sand			
5								
10					CLAY (ML) Tan to brown fine sandy clay			▼ GROUNDWATER TABLE AT 72 HOURS
15								
					Boring Terminated at 16.5 Feet.			
20								
25								
30								

Boring GWC-20

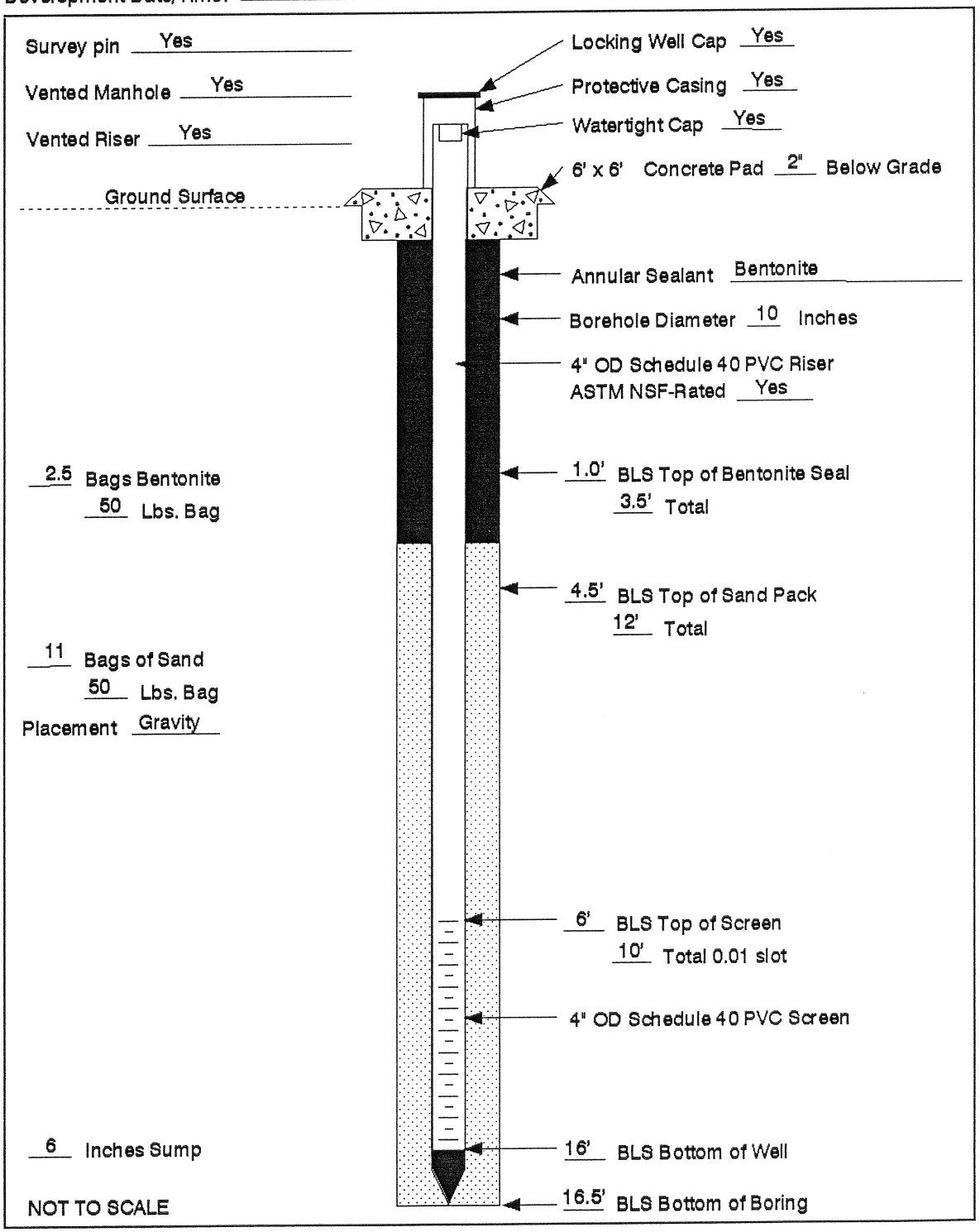
Savannah Landfill: Dean Forest Rd., Savannah, Georgia

Piedmont Environmental Drilling, Inc.

Well Completion Report GWC-20

Drilling Co.: Piedmont Environmental
Driller: D. Staton
Drilling Method: Hollow Stem Auger
Drilling Fluid: N/A
Development Date/Time: 9/22/93/1530

Boring No.: GWC-20
Date: September 3, 1993
Type of Rig: CME-55
Development Method: Hand Bail



WELL DESIGN AND CONSTRUCTION DOCUMENTATION

Job Name:	City of Savannah, Dean Forest Road Landfill
Job No.:	J0076
Well No.:	GWC-20
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 55
Date of Construction;	September 3, 1993
Drilling Method:	Hollow-stem Auger
Well Location:	Attached
Borehole Diameter:	10 inch
*Borehole Depth:	16.5 feet
Well Depth:	16.0 feet
Lithologic Logs:	Attached
Riser Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Screen Materials:	ASTM 4" dia. PVC, steam cleaned? ***YES***
Riser and Screen Joint Type:	Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet
Filter Pack Material and Size:	10/30 Silica Sand; sample saved? ***YES***
Filter Pack Volume:	5.50 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	bentonite pellets; sample saved? ***YES***
Bentonite Volume:	1.60 $feet^3$
Sealant Placement Method:	Bentonite by Gravity
Surface Seal Design/Construction:	6' x 6' x 6" concrete grout pad
Well Development Method:	hand bailed surge method
Type of Protective Cover:	6" x 6" x 5' Standing Locking Cover
Grout Pad Elevation (feet):	20.12 feet
Top of Riser Elevation:	22.00 feet
Well Construction Details:	Attached
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Length of Riser (including stick-up):	8.5 feet
Total length of casing:	18.5 feet
Stick-up:	2.5 feet
Depth to top of filter pack:	4.5 feet
Depth to top of bentonite:	1.0 feet

* ***All depths measured from original ground surface.***

ADVANCED ENVIRONMENTAL MANAGEMENT
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282

LITHOLOGIC LOG

CONTRACTED WITH: Cooper, Barnett & Page
PROJECT NAME: Dean Forest Road MSWL
DRILLER: Piedmont Drilling/D. Staton

JOB NO.: J1124
RIG: CME 550

BORING NO. GWUL-24
DATE: 6/1/05
LOGGED BY: EAB

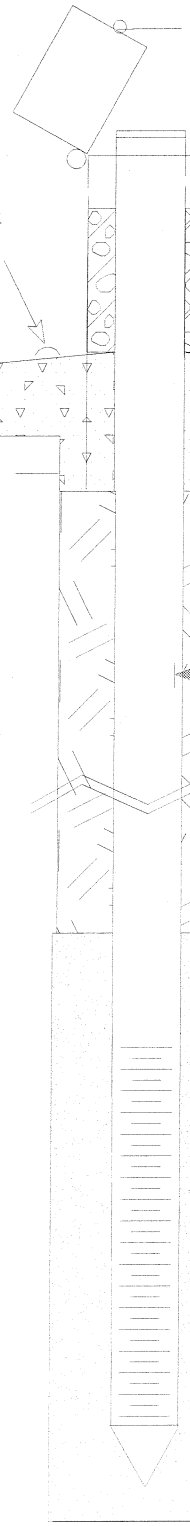
ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	Roadbed Gravel - 6 "	0	
	SC - dark gray SAND, trace clay	5	
	SC -red fine to medium grained SAND, with some clay	10	
	SC - tan fine SAND, some clay	15	
	- moist, more clay	20	
	- very wet, more clay	25	
	Boring teminated @ 30.0 feet	30	
		35	
		40	
		45	
		50	

WELL COMPLETION REPORT GWUL-24

Drilling Co.: PIEDMONT DRILLING
Driller: Donnie Staton
Drilling Method: 4.25" ID HSA
Geologist/Engineer: EAB

Date: 6/1/05
Boring No.: GWUL-24
Type of Rig: CME 550
Drilling Fluid: N/A

Survey Pin YES
Weep Hole YES
Protective Casing YES
Pea Gravel YES
Vented Riser YES



Well Cap
TOC - 26.19' MSL

Survey Pin
23.98' MSL

4" x 4" Locking Steel
Protective Casing YES

6' x 6' Concrete Pad
6" Below Grade

GROUND SURFACE

GROUND SURFACE

FROST LINE

Top of Bentonite: 6" BLS

Annular Sealant BENTONITE CHIPS

7.5 Bags of Bentonite
50 Lb. Bags
Placement GRAVITY

2" O.D. Schedule 40 PVC Riser and
Screen ASTM NSF-Rated

Top of Sand: 16.5' BLS
12.5' Total

Top of Screen: 18.5' BLS
10.0' Total 0.01 Slot

6.0 Bags of Sand NSF-Rated
50 Lb. Bags
Placement GRAVITY

Borehole Diameter 8 Inches

Bottom of Screen: 28.5' BLS

6" Sump

Bottom of Well: 30.0' BLS

Bottom of Boring: 30.0' BLS

NOT TO SCALE

WELL NO. GWUL-24

Well Design and Construction Documentation

Job Name:	City of Savannah MSWL
Job No.:	J1124
Date of Construction:	6/1/05
Well Construction Details:	Attached
Borehole Depth:	30.0 feet BGS
Well Depth:	30.0 feet BGS
Top of PVC Casing Elev.:	26.19 feet
Survey Pin Elevation:	23.98 feet
Borehole Diameter:	8 inch
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Depth to top of filter pack:	16.5 feet BGS
Filter Pack Material and Size:	20/40 Silica Sand; sample saved.
Filter Pack Volume:	3.0 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	NSF Rated, Certified Coarse Grit Bentonite Chips
Sealant Volume:	7.5 $feet^3$
Sealant Placement Method:	Gravity/Washed-Hydrated with Potable Water
Depth to top of bentonite:	1.0 feet BGS
Stick-up:	2.22 feet
Length of Riser (including stick-up):	18.48 feet
Total length of casing:	28.98 feet
Type of Protective Cover:	4" x 4" x 5' Standing Locking Cover
Surface Seal Design/Construction:	6' x 6' x 4" concrete grout pad
Well Development Method:	Moderate Surging and Pumping
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 550 ATV
Drilling Method:	4.25" I.D. Hollow-stem Auger
Well Location:	Attached
Lithologic Logs:	Attached
Riser Materials:	ASTM 2" dia. PVC, NSF Rated
Screen Materials:	ASTM 2" dia. PVC, NSF Rated
Riser and Screen Joint Type:	Flush Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet

ADVANCED ENVIRONMENTAL MANAGEMENT
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282

LITHOLOGIC LOG

CONTRACTED WITH: Cooper, Barnett & Page
PROJECT NAME: Dean Forest MSWL JOB NO.: J1124
DRILLER: Piedmont Drilling/D. Staton RIG: CME 550

BORING NO. GWUL-25
DATE: 6/2/05
LOGGED BY: EAB

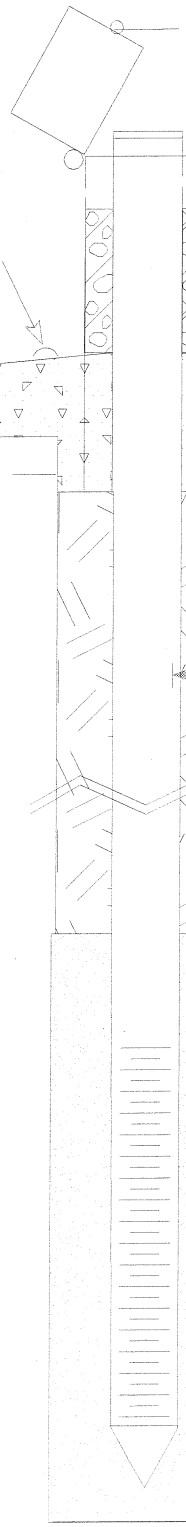
ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
		0	
	-fill		
		5	
	CL - gray CLAY, some fine sand		
		10	- 4/5/6
	- tight	15	- 5/7/8
		20	- 3/4/5
		25	- 6/6/11
	CL - gray CLAY, some medium sand		
	- moist		
		30	- 5/10/10
	SC - gray fine SAND, trace clay		
		35	- 5/6/7
	Boring teminated @ 35.0 feet		
		40	
		45	
		50	

WELL COMPLETION REPORT GWUL-25

Drilling Co.: PIEDMONT DRILLING
Driller: Donnie Staton
Drilling Method: 4.25" ID HSA
Geologist/Engineer: EAB

Date: 6/2/05
Boring No.: GWUL-25
Type of Rig: CME 550
Drilling Fluid: N/A

Survey Pin YES
Weep Hole YES
Protective Casing YES
Pea Gravel YES
Vented Riser YES



Well Cap
TOC - 32.07' MSL

Survey Pin
29.40' MSL

4" x 4" Locking Steel
Protective Casing YES

6' x 6' Concrete Pad
6" Below Grade

GROUND SURFACE

GROUND SURFACE

FROST LINE

Top of Bentonite: 6" BLS

Annular Sealant BENTONITE CHIPS

2" O.D. Schedule 40 PVC Riser and
Screen ASTM NSF-Rated

12.0 Bags of Bentonite
50 Lb. Bags
Placement GRAVITY

Top of Sand: 22.5' BLS
12.5' Total

Top of Screen: 24.5' BLS
10.0' Total 0.01 Slot

6.0 Bags of Sand NSF-Rated
50 Lb. Bags
Placement GRAVITY

Borehole Diameter 8 Inches

Bottom of Screen: 34.5' BLS

6" Sump

Bottom of Well: 35.0' BLS

Bottom of Boring: 35.0' BLS

NOT TO SCALE

WELL NO. GWUL-25

Well Design and Construction Documentation

Job Name:	City of Savannah MSWL
Job No.:	J1124
Date of Construction:	6/2/05
Well Construction Details:	Attached
Borehole Depth:	35.0 feet BGS
Well Depth:	35.0 feet BGS
Top of PVC Casing Elev.:	32.07 feet
Survey Pin Elevation:	29.40 feet
Borehole Diameter:	8 inch
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Depth to top of filter pack:	22.5 feet BGS
Filter Pack Material and Size:	20/40 Silica Sand; sample saved.
Filter Pack Volume:	3.0 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	NSF Rated, Certified Coarse Grit Bentonite Chips
Sealant Volume:	8.4 $feet^3$
Sealant Placement Method:	Gravity/Washed-Hydrated with Potable Water
Depth to top of bentonite:	0.5 feet BGS
Stick-up:	2.68 feet
Length of Riser (including stick-up):	27.30 feet
Total length of casing:	37.80 feet
Type of Protective Cover:	4" x 4" x 5' Standing Locking Cover
Surface Seal Design/Construction:	6' x 6' x 4" concrete grout pad
Well Development Method:	Moderate Surging and Pumping
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 550 ATV
Drilling Method:	4.25" I.D. Hollow-stem Auger
Well Location:	Attached
Lithologic Logs:	Attached
Riser Materials:	ASTM 2" dia. PVC, NSF Rated
Screen Materials:	ASTM 2" dia. PVC, NSF Rated
Riser and Screen Joint Type:	Flush Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet

ADVANCED ENVIRONMENTAL MANAGEMENT
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282

LITHOLOGIC LOG

CONTRACTED WITH: Cooper, Barnett & Page
PROJECT NAME: Dean Forest MSWL
DRILLER: Piedmont Drilling/D. Staton

JOB NO.: J1124
RIG: CME 550

BORING NO. GWUL-26
DATE: 6/1/05
LOGGED BY: EAB

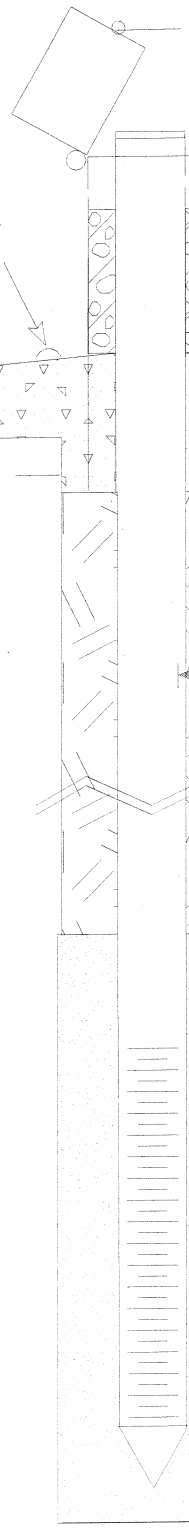
ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	6"-8" road gravel	0	
	SM - medium to fine silty SAND	5	
	SC - gray fine sandy CLAY	10	
	- wet	15	
		20	
		25	
	Boring teminated @ 25.0 feet	30	
		35	
		40	
		45	
		50	

WELL COMPLETION REPORT GWUL-26

Drilling Co.: PIEDMONT DRILLING
Driller: Donnie Staton
Drilling Method: 4.25" ID HSA
Geologist/Engineer: EAB

Date: 6/1/05
Boring No.: GWUL-26
Type of Rig: CME 550
Drilling Fluid: N/A

Survey Pin YES
Weep Hole YES
Protective Casing YES
Pea Gravel YES
Vented Riser YES



NOT TO SCALE

WELL NO. GWUL-26

Well Design and Construction Documentation

Job Name:	City of Savannah MSWL
Job No.:	J1124
Date of Construction:	6/1/05
Well Construction Details:	Attached
Borehole Depth:	25.0 feet BGS
Well Depth:	25.0 feet BGS
Top of PVC Casing Elev.:	24.00 feet
Survey Pin Elevation:	21.22 feet
Borehole Diameter:	8 inch
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Depth to top of filter pack:	11.5 feet BGS
Filter Pack Material and Size:	20/40 Silica Sand; sample saved.
Filter Pack Volume:	3.5 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	NSF Rated, Certified Coarse Grit Bentonite Chips
Sealant Volume:	3.5 $feet^3$
Sealant Placement Method:	Gravity/Washed-Hydrated with Potable Water
Depth to top of bentonite:	0.5 feet BGS
Stick-up:	2.78 feet
Length of Riser (including stick-up):	16.90 feet
Total length of casing:	27.40 feet
Type of Protective Cover:	4" x 4" x 5' Standing Locking Cover
Surface Seal Design/Construction:	6' x 6' x 4" concrete grout pad
Well Development Method:	Moderate Surging and Pumping
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 550 ATV
Drilling Method:	4.25" I.D. Hollow-stem Auger
Well Location:	Attached
Lithologic Logs:	Attached
Riser Materials:	ASTM 2" dia. PVC, NSF Rated
Screen Materials:	ASTM 2" dia. PVC, NSF Rated
Riser and Screen Joint Type:	Flush Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet

ADVANCED ENVIRONMENTAL MANAGEMENT
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282

LITHOLOGIC LOG
SHEET 1 OF 2

CONTRACTED WITH: Cooper, Barnett & Page
PROJECT NAME: Dean Forest MSWL
DRILLER: Piedmont Drilling/D. Staton

JOB NO.: J1124
RIG: CME 550

BORING NO. GWC-29DR
DATE: 9/7/05
LOGGED BY: LTB

ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
	-topsoil - 5"		
	SM - gray, silty fine SAND, moist, (fill)	0	
	SC - gray and tan, clayey fine SAND, (coastal)	5	
	CL - gray, fine sandy CLAY, moist (coastal)	10	
	- medium to coarse, wet	15	
	- dark gray, fine to medium	20	
		25	
		30	
	SM - gray, fine SAND, some silt (coastal)	35	
		40	
		45	
	- shells		
	CL - gray, CLAY, trace to some fine sand, (marl)	50	

ADVANCED ENVIRONMENTAL MANAGEMENT
2722 SIMPSON CIRCLE
NORCROSS, GA 30071
(770) 242-8282

CONTRACTED WITH: Cooper, Barnett & Page
PROJECT NAME: Dean Forest MSWL
DRILLER: Piedmont Drilling/D. Staton

JOB NO.: J1124
RIG: CME 550

BORING NO. GWC-29DR
DATE: 9/7/05
LOGGED BY: LTB

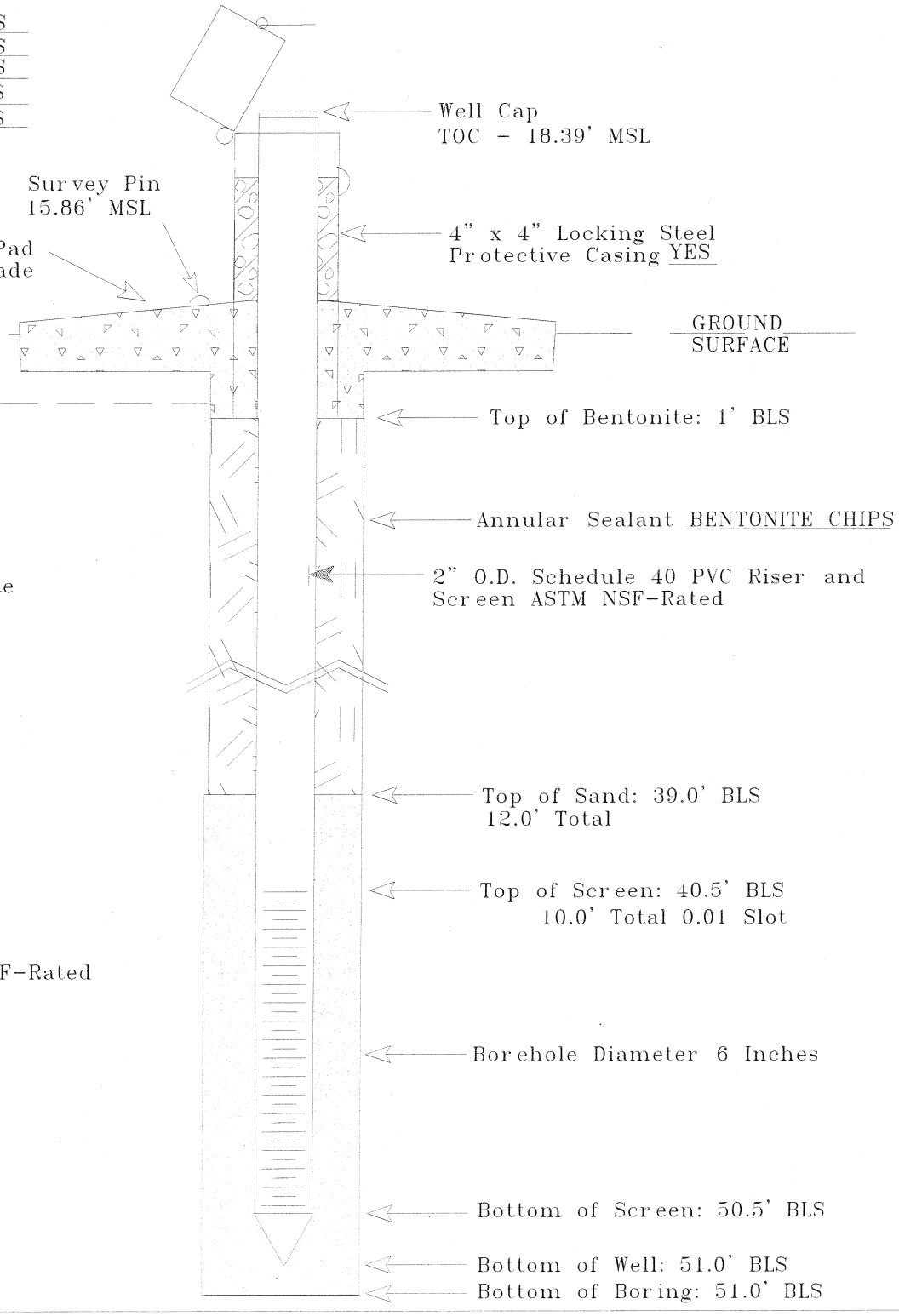
ELEV.	DESCRIPTION	DEPTH (FEET)	NOTES
		50	
	Boring teminated @ 51.0 feet		
		55	
		60	
		65	
		70	
		75	
		80	
		85	
		90	
		95	
		100	

WELL COMPLETION REPORT GWC-29DR

Drilling Co.: PIEDMONT DRILLING
Driller: Donnie Staton
Drilling Method: 4" Mud Rotary
Geologist/Engineer: LTB

Date: 9/7/05
Boring No.: GWC-29DR
Type of Rig: CME 550
Drilling Fluid: Variflo

Survey Pin YES
Weep Hole YES
Protective Casing YES
Pea Gravel YES
Vented Riser YES



17.0 Bags of Bentonite
50 Lb. Bags
Placement GRAVITY

5.0 Bags of Sand NSF-Rated
50 Lb. Bags
Placement GRAVITY

6" Sump

NOT TO SCALE

WELL NO. GWC-29DR

Well Design and Construction Documentation

Job Name:	City of Savannah MSWL
Job No.:	J1124
Date of Construction:	9/7/05
Well Construction Details:	Attached
Borehole Depth:	51.0 feet BGS
Well Depth:	51.0 feet BGS
Top of PVC Casing Elev.:	18.39 feet
Survey Pin Elevation:	15.86 feet
Borehole Diameter:	6 inch
Length of end plug:	0.5 feet
Length of screen:	10.0 feet
Depth to top of filter pack:	39.0 feet BGS
Filter Pack Material and Size:	20/40 Silica Sand; sample saved.
Filter Pack Volume:	2.5 $feet^3$
Filter Pack Placement Method:	Gravity
Sealant Materials:	NSF Rated, Certified Coarse Grit Bentonite Chips
Sealant Volume:	11.9 $feet^3$
Sealant Placement Method:	Gravity/Washed-Hydrated with Potable Water
Depth to top of bentonite:	1.0 feet BGS
Stick-up:	2.53 feet
Length of Riser (including stick-up):	43.08feet
Total length of casing:	53.58 feet
Type of Protective Cover:	4" x 4" x 5' Standing Locking Cover
Surface Seal Design/Construction:	6' x 6' x 4" concrete grout pad
Well Development Method:	Moderate Surging and Pumping
Driller:	Piedmont Environmental Drilling, Inc.
Drill Rig:	CME 550
Drilling Method:	6" OD Mud Rotary
Well Location:	Attached
Lithologic Logs:	Attached
Riser Materials:	ASTM 2" dia. PVC, NSF Rated
Screen Materials:	ASTM 2" dia. PVC, NSF Rated
Riser and Screen Joint Type:	Flush Threaded
Screen Slot Size and Length:	0.010-inch X 10 feet

REPORT
OF
THE DEAN FOREST ROAD LANDFILL SITE ASSESSMENT
CHATHAM COUNTY, GEORGIA
JOB NO. 11124, REPORT NO. 61596
May 5, 1992

EPTH FT.	DESCRIPTION	ELEV	PENETRATION-BLOWS PER FT. 0 10 20 40 60 80 100
0.0	CLAYEY SAND (SC); BROWN; CLAYEY, VERY FINE TO MEDIUM; WET	17	
2.0	SAND (SW/SC): FLAGGY - LIGHT GRAY, WHITE, AND ORANGE MOTTLED, FIRM; CLAYEY TO CLEAN, VERY FINE TO MEDIUM WITH A TRACE OF COARSE; SATURATED	12	14
7.0	SAND (SP): LIGHT GRAY; FIRM; TRACE OF SILT, SLIGHTLY CLAYEY, FINE; SATURATED	7	19
2.0	SILTY CLAY (CL): DARK GRAY; VERY STIFF; TRACE OF VERY FINE TO FINE SAND; SATURATED	2	14
5.0	BORING TERMINATED	-3	
		-8	
	GRAIN SIZES OF LITHOLOGY ARE BASED ON THE ASTM-ASCE GRAIN SIZE SCALE	-13	
		-18	

atlanta testing & engineering

ORING AND SAMPLING - ASTM D-1586
ORE DRILLING - ASTM D-2113

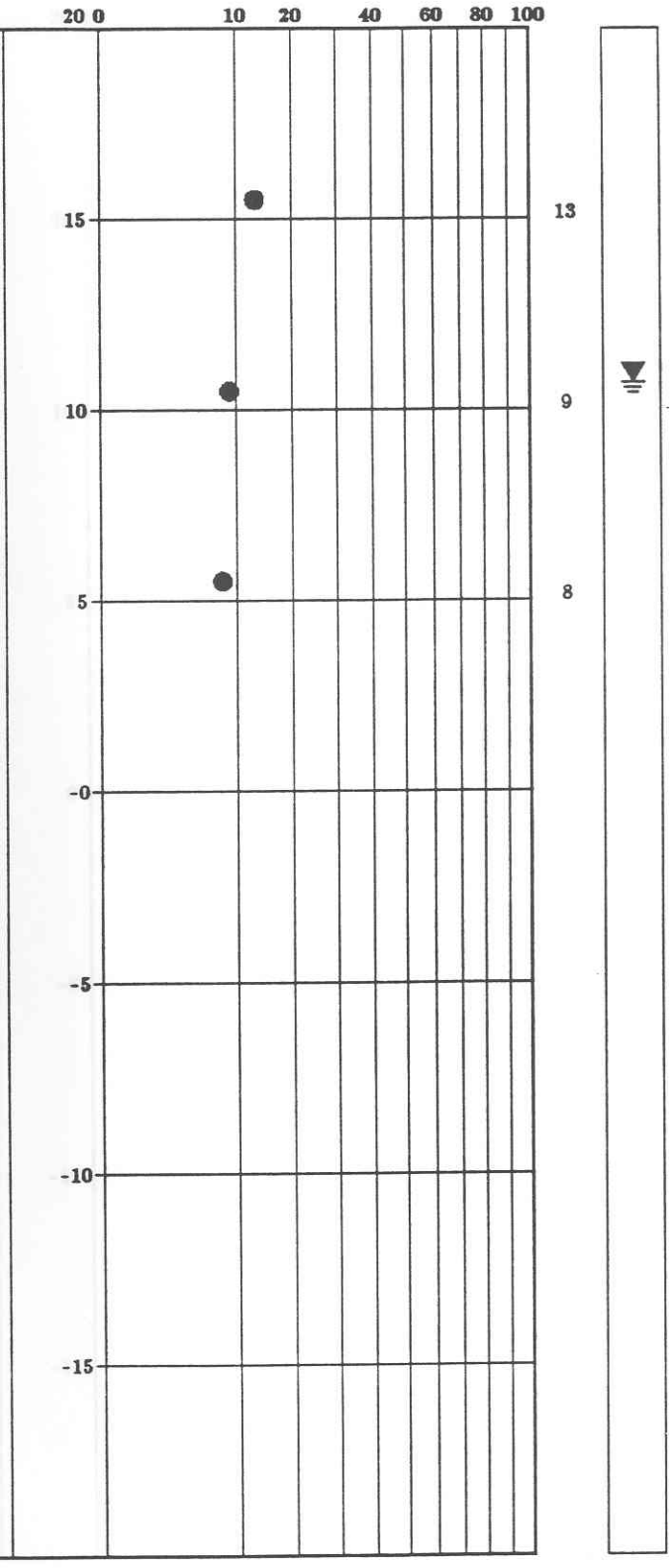
ENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
ALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
0% % ROCK CORE RECOVERY
WATER TABLE 24 HR.
WATER TABLE, T.O.D.
◄ LOSS OF DRILLING WATER

TEST BORING RECORD

BORING NO. 3 (pg. 1 of 1)
DATE DRILLED 3-26-92
REPORT NO. 61596
JOB NO. 11124

DEPTH FT.	DESCRIPTION	ELEV	PENETRATION-BLOWS PER FT.
0.0	CLAYEY SAND (SC): LIGHT GRAY AND TAN MOTTLED; LOOSE, TRACE OF SILT, CLAYEY, VERY FINE TO FINE; MOIST		
4.0	CLAYEY SAND (SC): LIGHT GRAY; FIRM; TRACE OF SILT, CLAYEY, VERY FINE TO FINE; WET		
7.0	SAND (SW): BROWN; LOOSE, TRACE OF SILT, SLIGHTLY CLAYEY VERY FINE TO MEDIUM; WET TO SATURATED		
9.0	SAND (SP): LIGHT GRAY WITH SOME TAN BANDING; LOOSE; TRACE OF SILT, SLIGHTLY CLAYEY, VERY FINE TO FINE; SATURATED		
13.0	CLAY (CH): LIGHT GRAY TO DARK GRAY; FIRM; SATURATED		
15.0	BORING TERMINATED		



GRAIN SIZES OF LITHOLOGY ARE BASED ON THE ASTM-ASCE GRAIN SIZE SCALE

atlanta testing & engineering

BORING AND SAMPLING - ASTM D-1586
CORE DRILLING - ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
50% % ROCK CORE RECOVERY
WATER TABLE 24 HR.
WATER TABLE, T.O.D.
LOSS OF DRILLING WATER

TEST BORING RECORD

BORING NO. 7 (pg. 1 of 1)
DATE DRILLED 3-27-92
REPORT NO. 61596
JOB NO. 11124

PTH T.	DESCRIPTION	ELEV	PENETRATION-BLOWS PER FT. 20 0 10 20 40 60 80 100
.0	CLAYEY SAND (SC): LIGHT GRAY, TAN AND DARK BROWN MOTTLED; LOOSE; SILTY, CLAYEY, VERY FINE TO MEDIUM; WET		
.0	SILTY CLAY (CL): TAN TO DARK BROWN TO GRAY; FIRM; SLIGHTLY SANDY, VERY FINE TO MEDIUM, SILTY; WET	15	6
.0	CLAY (CH): BLUE-GRAY; FIRM; SATURATED - WITH SOME LAMINATIONS OF SAND (SP): LIGHT GRAY; SLIGHTLY CLAYEY, VERY FINE TO FINE; SATURATED	10	5
.0	SAND (SW): LIGHT GRAY; FIRM; SLIGHTLY CLAYEY; VERY FINE TO MEDIUM WITH A TRACE OF COARSE; SATURATED	5	11
	BORING TERMINATED	0	
	GRAIN SIZES OF LITHOLOGY ARE BASED ON THE ASTM-ASCE GRAIN SIZE SCALE	-5	
		-10	
		-15	

atlanta testing & engineering

ORING AND SAMPLING - ASTM D-1586
ORE DRILLING - ASTM D-2113

ENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER ALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

50% % ROCK CORE RECOVERY

WATER TABLE 24 HR.

WATER TABLE, T.O.D.

◄ LOSS OF DRILLING WATER

TEST BORING RECORD

BORING NO. 8 (pg. 1 of 1)

DATE DRILLED 3-27-92

REPORT NO. 61596

JOB NO. 11124

TH	DESCRIPTION	ELEV	PENETRATION-BLOWS PER FT. 0 10 20 40 60 80 100
5	CLAY (CH/CL): BLUE-GRAY, RED AND BROWN MOTTLED; SLIGHTLY SANDY IN PART; MOIST TO SATURATED	17	
		12	
	SANDY CLAY (CL): LIGHT BROWN, SANDY, VERY FINE TO MEDIUM; SATURATED		
	CLAYEY SAND (SC): LIGHT GRAY; CLAYEY; VERY FINE TO VERY COARSE; SATURATED	7	
	BORING TERMINATED	2	
		-3	
		-8	
	GRAIN SIZES OF LITHOLOGY ARE BASED ON THE ASTM-ASCE GRAIN SIZE SCALE	-13	
		-18	

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NG AND SAMPLING - ASTM D-1586
DRILLING - ASTM D-2113

TRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
ING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
% ROCK CORE RECOVERY
WATER TABLE 24 HR.
WATER TABLE, T.O.D.
◄ LOSS OF DRILLING WATER

TEST BORING RECORD

BORING NO. 9 (pg. 1 of 1)
DATE DRILLED 3-30-92
REPORT NO. 61596
JOB NO. 11124

EPTH FT.	DESCRIPTION	ELEV	PENETRATION-BLOWS PER FT. 0 10 20 40 60 80 100	
.0	SANDY CLAY (CL): BROWN; SILTY, SANDY, VERY FINE TO FINE; WET	15		
0	SANDY CLAY (CL): GRAY; STIFF, SANDY, VERY FINE TO FINE; SATURATED	10	●	14
.0	CLAYEY SAND (SC): LIGHT GRAY; LOOSE; SLIGHTLY CLAYEY TO CLAYEY, VERY FINE TO VERY COARSE WITH SOME VERY FINE PEBBLES; SATURATED	5	●	9
.0	BORING TERMINATED	-0	●	8
	GRAIN SIZES OF LITHOLOGY ARE BASED ON THE ASTM-ASCE GRAIN SIZE SCALE	-5		
		-10		
		-15		
		-20		

atlanta testing & engineering

RING AND SAMPLING - ASTM D-1586
RE DRILLING - ASTM D-2113

NETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
LLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE
0% % ROCK CORE RECOVERY
WATER TABLE 24 HR.
WATER TABLE, T.O.D.
◄ LOSS OF DRILLING WATER

TEST BORING RECORD

BORING NO. 14 (pg. 1 of 1)
DATE DRILLED 3-31-92
REPORT NO. 61596
JOB NO. 11124

PTH T.	DESCRIPTION	ELEV	PENETRATION-BLOWS PER FT. 0 10 20 40 60 80 100
0.0	CLAYEY SAND (SC): GRAY AND TAN MOTTLED; CLAYEY, VERY FINE TO MEDIUM WITH A TRACE OF COARSE AND VERY FINE PEBBLES; WET	18	
3.0	CLAY (CH): DARK BROWN; FIRM; WET	13	9
7.0	CLAYEY SAND (SC): LIGHT GRAY; LOOSE; SLIGHTLY CLAYEY TO CLAYEY; VERY FINE TO VERY COARSE WITH SOME VERY FINE PEBBLES; SATURATED	8	9
1.0	BORING TERMINATED	3	8
		-2	
		-7	
	GRAIN SIZES OF LITHOLOGY ARE BASED ON THE ASTM-ASCE GRAIN SIZE SCALE	-12	
		-17	

atlanta testing & engineering

ING AND SAMPLING - ASTM D-1586
E DRILLING - ASTM D-2113

ETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER
LING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

■ UNDISTURBED SAMPLE
% ROCK CORE RECOVERY
WATER TABLE 24 HR.
WATER TABLE, T.O.D.
◄ LOSS OF DRILLING WATER

TEST BORING RECORD

BORING NO. 15 (pg. 1 of 1)
DATE DRILLED 3-31-92
REPORT NO. 61596
JOB NO. 11124

TABLE 1
SUMMARY OF BORING AND PIEZOMETER CONSTRUCTION DETAILS
DEAN FOREST ROAD LANDFILL
JOB NO. 11124, REPORT NO. 61596

Boring Number	Elevation Land Surface (ft-MLS)	Elevation Top of Casing	Drilling Method	Boring Depth (ft.)	Casing Depth (ft.)	Screen Interval (ft.)	Driller	Date Completed
B-1	19.2	19.23	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/26/92
B-2	18.2	18.46	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/26/92
B-3	16.6	16.60	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/26/92
B-4	16.9	17.98	8 inch O.D. Hollow Stem Auger	15.0	9.0	9.0-14.0	AT&E	3/26/92
B-5	16.7	16.29	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/26/92
B-6	24.8	25.04	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/27/92
B-7	19.8	19.49	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/27/92
B-8	20.3	19.98	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/27/92
B-9	16.6	16.34	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/30/92

TABLE 1
SUMMARY OF BORING AND PIEZOMETER CONSTRUCTION DETAILS
DEAN FOREST ROAD LANDFILL
JOB NO. 11124, REPORT NO. 61596

Boring Number	Elevation Land Surface (ft-MLS)	Elevation Top of Casing	Drilling Method	Boring Depth (ft.)	Casing Depth (ft.)	Screen Interval (ft.)	Driller	Date Completed
B-10	16.8	16.76	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/30/92
B-11	23.8	23.69	8 inch O.D. Hollow Stem Auger	15.0	10.0	20.0-30.0	AT&E	3/31/92
B-12	17.4	17.33	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/31/92
B-13	21.9	21.99	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/31/92
B-14	14.6	14.96	8 inch O.D. Hollow Stem Auger	15.0	10.0	10.0-15.0	AT&E	3/31/92
B-15	18.4	18.92	8 inch O.D. Hollow Stem Auger	15.0	9.5	9.5-14.5	AT&E	3/31/92

TABLE 3
SUMMARY OF AQUIFER SLUG TEST RESULTS
DEAN FOREST ROAD LANDFILL
CHATHAM COUNTY, GEORGIA
JOB NO. 11124, REPORT NO. 61596

Observation Piezometer	Analytical Method	Hydraulic Conductivity (cm/s)	Hydraulic Conductivity (ft/day)	Transmissivity (ft^2/day)	Aquifer Thichness[1] (ft)
B-3	Bouwer-Rice (1976)	$7.4x10^{-3}$	21	$2.0x10^{2}$	9.6
B-7	Bouwer-Rice (1976)	$2.5x10^{-3}$	7.1	27	3.9
B-8	Bouwer-Rice (1976)	$7.2x10^{-6}$	$2.0x10^{-2}$	$2.6x10^{-1}$	12.5
B-9	Bouwer-Rice (1976)	$6.0x10^{-5}$	$1.7x10^{-1}$	2.8	16.4
B-14	Bouwer-Rice (1976)	$1.7x10^{-4}$	$4.4x10^{-1}$	6.9	15.6
B-15	Bouwer-Rice (1976)	$3.0x10^{-4}$	$8.6x10^{-1}$	9.8	11.4
Arithmetic Mean		$1.7x10^{-3}$	4.9	-	-
Weighted Average		$1.3x10^{-3}$	3.6	-	-

[1] *Aquifer thicknesses relate to minor aquifers included within the surficial aquifer system.*

Report of:
Site Acceptability Study
Dean Forest Road Landfill Expansion
City of Savannah
Chatham County, Georgia
Project Number 87883
July, 1998

Prepared By:
Hussey Gay Bell & DeYoung
329 Commercial Blvd.
Savannah, Georgia 31416

Joseph Carris, PE
Project Engineer
Reg. GA 10520

BORING LOG

GEO-ENVIRONMENTAL CONSULTANTS, INC.

Report No.: 98068 DATE: 6/15/98

Client: Hussey, Gay, Bell & DeYoung, Inc.

Project: Dean Forest Landfill; Savannah, Georgia

Boring No.: B-1 (1 of 1) Total Depth 26.0' Elev: ± Location: See site map

Type of Boring: HSA Started: 5/20/98 Completed: 5/20/98 Driller: Whitaker Lab

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	Sample Depth (Feet)	OVA (PPM)	WELL LOG	REMARKS
	0.5	Topsoil					
	1.0	Gray, Silty SAND, Dry					
		Orange-tan, Clayey SAND, Moist					
	3.0	Orange-Tan, Sandy CLAY, Wet					Bentonite (0-10')
			6/7/10/14	4.0			
	6.0	Orange-gray, Clayey SAND, Wet		6.0			
	9.0	Gray-white, slightly Clayey Coarse SAND, Wet	11/21/24/29	9.0			
				11.0			2" SCH 40 PVC Casing Belowground (0-12') (3' Aboveground) Sand (10-17')
			11/13/14/8	14.0			
				16.0			2" SCH 40 PVC Screen 0.01 Slot (12-17')
	17.0	Gray, Silty fine SAND, Wet					
			2/3/6/10	19.0			
				21.0			
	22.0	Gray, Clayey coarse SAND, Wet					
			6/7/9/11	24.0			
	26.0	Boring terminated at 26'		26.0			

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

GEO-ENVIRONMENTAL CONSULTANTS, INC.

Report No.: **98068** DATE: **6/15/98**

Client: **Hussey, Gay, Bell & DeYoung, Inc.**

Project: **Dean Forest Landfill; Savannah, Georgia**

Boring No.: **B-2** **(1 of 1)** Total Depth **26.0'** Elev: **+** Location: **See site map**

Type of Boring: **HSA** Started: **5/20/98** Completed: **5/20/98** Driller: **Whitaker Lab**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	Sample Depth (Feet)	OVA (PPM)	WELL LOG	REMARKS
	0.5	Topsoil					
	1.0	Orange, Sandy Silty CLAY, Damp					
		Orange-gray, Silty Sandy CLAY, Moist					Bentonite (0-8')
	3.5	Orange-gray, Silty Clayey SAND, Wet	7/13/13/15	4.0			
				6.0			2" SCH 40 PVC Casing (0-10')
			2/2/3/3	9.0			
				11.0			Sand (8-15')
	13.5	Gray, Silty fine SAND, Wet	1/1/1/1	14.0			2" SCH 40 PVC Screen 0.01 Slot (10-15')
				16.0			
	17.5	Gray, Silty Clayey coarse SAND, Wet	2/3/3/2	19.0			
				21.0			
		w/well rounded gravel	1/1/2/1	24.0			
	26.0	Boring terminated at 26 feet		26.0			

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

GEO-ENVIRONMENTAL CONSULTANTS, INC.

Report No.: **98068** DATE: **6/15/98**

Client: **Hussey, Gay, Bell & DeYoung, Inc.**

Project: **Dean Forest Landfill; Savannah, Georgia**

Boring No.: **B-3** (1 of 1) Total Depth **26.0'** Elev: ± Location: **See site map**

Type of Boring: **HSA** Started: **5/20/98** Completed: **5/20/98** Driller: **Whitaker Lab**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	Sample Depth (Feet)	OVA (PPM)	WELL LOG	REMARKS
	0.5	Topsoil					
		Tan-orange, Sandy CLAY, Moist					
		Wet					Bentonite (0-8')
	4.0	Gray, Clayey coarse SAND, Wet	3/5/8/11	4.0			
				6.0			2" SCH 40 PVC Casing (0-10')
	8.0	Gray-tan, Clayey Silty fine SAND, Wet					
			2/2/3/2	9.0			
				11.0			Sand (8-15')
	13.0	Gray, Clayey Silty fine SAND, Wet					
			1/0/0/0	14.0			2" SCH 40 PVC Screen 0.01 Slot (10-15')
	16.0	Gray, coarse SAND, Wet		16.0			
			4/7/5/7	19.0			
				21.0			
	24.0	Gray, Clayey Silty fine SAND, Wet	4/5/8/12	24.0			
	26.0	Boring terminated at 26'		26.0			

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

GEO-ENVIRONMENTAL CONSULTANTS, INC.

Report No.: **98068** DATE: **6/15/98**

Client: **Hussey, Gay, Bell & DeYoung, Inc.**

Project: **Dean Forest Landfill; Savannah, Georgia**

Boring No.: **B-4** (1 of 1) Total Depth **26.0'** Elev: **±** Location: **See site map**

Type of Boring: **HSA** Started: **5/20/98** Completed: **5/20/98** Driller: **Whitaker Lab**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	Sample Depth (Feet)	OVA (PPM)	WELL LOG	REMARKS
	0.5	Topsoil					
		Tan, Silty SAND, Damp					Bentonite (0-3')
	2.0	Orange-tan, Silty Sandy CLAY, Moist					2" SCH 40 PVC Casing (0-5')
		Wet	5/6/9/8	4.0			
				6.0			Sand (3-7')
	7.0	Orange-gray, slightly Clayey coarse SAND, Wet					2" SCH 40 PVC Screen 0.01 Slot (5-7')
			2/3/5/5	9.0			
				11.0			
	12.0	Orange-gray, Clayey Silty fine SAND, Wet					
			2/1/3/3	14.0			
				16.0			
	17.0	Gray, Silty Clayey coarse SAND, Wet					
			1/1/4/3	19.0			
	21.0	Gray, Silty Clayey fine SAND, Wet		21.0			
			5/5/8/12	24.0			
	26.0	Boring terminated at 26'		26.0			

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

GEO-ENVIRONMENTAL CONSULTANTS, INC.

Report No.: **98068** DATE: **6/15/98**

Client: **Hussey, Gay, Bell & DeYoung, Inc.**

Project: **Dean Forest Landfill; Savannah, Georgia**

Boring No.: **B-5** **(1 of 1)** Total Depth **26.0'** Elev: **±** Location: **See site map**

Type of Boring: **HSA** Started: **5/27/98** Completed: **5/27/98** Driller: **Whitaker Lab**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	Sample Depth (Feet)	OVA (PPM)	WELL LOG	REMARKS
	0.5	Topsoil					
		Tan-orange, Clayey SAND, Damp					
	2.0	Gray, Sandy CLAY, Damp					
	▽ 3.0	Gray, Clayey SAND, Wet					Bentonite (0-11')
			4/9/9/11	4.0			
				6.0			
	7.0	Gray, Clayey SAND, Wet					
			2/8/8/14	9.0			2" SCH 40 PVC **Casing Belowground (0-18')** (2' Aboveground)
				11.0			
			4/8/9/10	14.0			
	14.5	Dark Gray, Silty Sand, Wet					Sand (11-18')
				16.0			
	18.0	Gray, coarse SAND, Wet					2" SCH 40 PVC Screen 0.01 Slot (13-18')
			1/5/9/11	19.0			
				21.0			
			3/6/7/7	24.0			
	26.0	Boring terminated at 26'		26.0			

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

BORING LOG

GEO-ENVIRONMENTAL CONSULTANTS, INC.

Report No.: **98068** DATE: **6/15/98**

Client: **Hussey, Gay, Bell & DeYoung, Inc.**

Project: **Dean Forest Landfill; Savannah, Georgia**

Boring No.: **B-6** (1 of 1) Total Depth **26.0'** Elev: ± Location: **See site map**

Type of Boring: **HSA** Started: **5/27/98** Completed: **5/27/98** Driller: **Whitaker Lab**

Elevation	Depth	DESCRIPTION OF MATERIALS (Classification)	* Sample Blows	Sample Depth (Feet)	OVA (PPM)	WELL LOG	REMARKS
	0.5	Topsoil					
		Tan-yellow, Silty SAND, Damp					Bentonite (0-1.5')
	2.0	Gray, Clayey Silty SAND, Damp					2" SCH 40 PVC Casing Belowground (0-3.5') (1.5' Aboveground)
	▽	Wet					
			4/7/10/21	4.0			
	5.0	Tan-yellow, Silty Clayey SAND, Wet					Sand (1.5-8.5')
				6.0			
							2" SCH 40 PVC Screen 0.01 Slot (3.5-8.5')
	9.0	Tan-yellow, Sandy CLAY, Wet	3/3/4/6	9.0			
	10.0	Tan-gray, Silty SAND, Wet					
				11.0			
				14.0			
	14.5		3/1/5/8				
	15.0	Gray, Sandy CLAY, Wet					
		Gray-white, coarse SAND, Wet		16.0			
				19.0			
			2/6/12/15				
				21.0			
	22.0	Gray, Clayey coarse SAND, Wet					
				24.0			
			2/4/4/4				
	26.0			26.0			
		Boring terminated at 26'					

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the last two increments of penetration is termed the standard penetration resistance, N.

SUMMARY OF FIELD AND LABORATORY TESTING

Dean Forest Landfill

GCI Project Number 98068

SAMPLE ID	DEPTH (feet)	CATION EXCHANGE CAPACITY (meq/100g)	HYDRAULIC CONDUCTIVITY (cm/sec) (ASTM D5084)	VISUAL DESCRIPTION	WELL ID	HYDRAULIC CONDUCTIVITY (cm/sec) (Slug Test Data)
B-1	7-8	5.7	4.73×10^{-8}	TAN BROWN CLAYEY SAND	B-1	2.88×10^{-5}
B-2	4-5	6.1	6.43×10^{-6}	TAN CLAYEY SAND	B-2	6.35×10^{-6}
B-3	4-5	3.5	2.39×10^{-5}	GRAY BROWN CLAYEY SAND	B-3	4.94×10^{-6}
B-5	4-5	6.1	1.37×10^{-5}	ORANGE BROWN CLAYEY SAND	B-4	8.74×10^{-5}
B-5	8-9	4.3	6.14×10^{-6}	GRAY CLAYEY SAND	B-5	8.07×10^{-4}
B-6	8-9	4.8	4.54×10^{-7}	TAN BROWN CLAYEY SAND	B-6	1.82×10^{-5}
B-7	3-4	5.7	4.53×10^{-7}	BROWN RED CLAYEY SAND	B-7	8.28×10^{-6}
B-8A	2-3	6.5	2.66×10^{-8}	TAN RED SANDY CLAY	B-8	1.41×10^{-4}
B-8B	2-3	5.7	6.46×10^{-9}	TAN RED SANDY CLAY	B-9	1.13×10^{-6}
B-9	11-12	6.5	7.57×10^{-9}	BROWN GRAY SANDY CLAY	B-10	3.5×10^{-4}
B-11	4-5	7.8	1.54×10^{-6}	TAN SANDY CLAY	B-11	2.89×10^{-4}
B-11	2-3	7.0	1.76×10^{-8}	TAN GRAY SANDY CLAY	B-12	NA
B-12	3-4	10.0	8.19×10^{-8}	GRAY SANDY CLAY	B-13	5.03×10^{-5}
B-12	5-6	15.7	3.45×10^{-9}	ORANGE TAN SANDY CLAY	B-14	6.96×10^{-5}
B-14	2-3	9.1	9.20×10^{-9}	TAN ORANGE SANDY CLAY	B-15	2.21×10^{-4}
B-15	17-18	6.5	4.60×10^{-9}	GRAY SANDY CLAY	B-16	3.09×10^{-6}
B-17	13-14	6.5	4.98×10^{-9}	TAN BROWN SANDY CLAY	B-17	3.12×10^{-6}
B-19	3-4	7.4	2.87×10^{-5}	TAN GRAY CLAYEY SAND	B-18	1.26×10^{-3}
B-21	14-15	3.9	5.11×10^{-9}	GRAY SANDY CLAY	B-19	4.98×10^{-5}
B-22	7-8	INSUFFICIENT SAMPLE	3.35×10^{-6}	TAN GRAY CLAYEY SAND	B-20	1.76×10^{-5}
B-23	22-23	2.6	3.85×10^{-7}	GREEN DARK GRAY CLAYEY SAND	B-21	1.15×10^{-5}
B-24	4-5	3.5	1.90×10^{-6}	GRAY WHITE CLAYEY SAND	B-22	1.36×10^{-4}
B-25	4-5	4.3	8.93×10^{-7}	GRAY RED BROWN CLAYEY SAND	B-23	6.15×10^{-5}
B-26	2-3	6.1	1.04×10^{-6}	RED GRAY BROWN CLAYEY SAND	B-24	1.23×10^{-5}
SB-13	11-12	2.2	3.16×10^{-7}	TAN GRAY CLAYEY SAND	B-25	3.38×10^{-7}
SB-18	4-5	5.2	8.41×10^{-7}	TAN GRAY CLAYEY SAND	B-26	6.86×10^{-6}