

## Ted Strouse

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**From:** Ted Strouse <tstrouse@ctfl.com>  
**Sent:** Monday, February 20, 2012 9:56 AM  
**To:** 'john.morris@dep.state.fl.us'  
**Subject:** GWMP groundwater flow and proposed well locations at SCSW  
**Attachments:** Groundwater monitoring SCSW.pdf

John

Here is the report I spoke with you about last week for the Sumter County site. Please review I would like to move forward with well installations.

Respectfully,

Theodore J. Strouse, P.E.

Central Testing Laboratory, Inc.  
130 Satellite Court  
Leesburg, Florida 34748  
352-787-1268  
352-728-2245

Dept. Of Environmental Protection

**FEB 23 2012**

Southwest District

Engineering & Materials Testing

January 19, 2012

Reply to:  
Leesburg

Board of Sumter County Commissioners  
Public Works Division  
319 E. Anderson Avenue  
Bushnell, Florida 33513

Dept. Of Environmental Protection

FEB 23 2012

Southwest District

Attention: Mr. Scott Cottrell, P.E.  
County Engineer

Subject: Groundwater Monitoring SCSW Landfill  
CTL File No. 1184094.200

Dear Mr. Cottrell

CTL has been collecting groundwater elevation data from temporary piezometers installed around the area of buried plastic debris for the purpose of determining groundwater flow direction and the locations of the background and two down gradient monitor wells to be installed. The temporary piezometers were installed September 23, 2011. An SPT boring was performed at each location prior to installing the piezometer to determine the general soil profile, to identify the confining unit soils, and to determine the depth to groundwater. The results of these borings are presented on Boring Logs in Appendix I.

The results of the SPT borings indicate the general soil profile in the area of concern consists of a layer of surficial sands on the order of 15 to 20 feet thick underlain by clayey sands, sandy clays and clay soils 10 to 15 feet thick over the limestone formation which extended through the terminal depth of the borings.

The confining unit soils on this site include the clayey sands, sandy clays and clay soils encountered. Laboratory testing of these soils indicates a fines content (percent passing the No. 200 US Standard sieve) ranging between 23 and 83 percent. The various soil layers comprising the confining unit soils can be seen on the cross sections prepared between the boring locations also included in Appendix I.

The groundwater levels were measured at the time of drilling to determine depth to groundwater. The groundwater was encountered at depths of between 25 and 28 feet below ground surface.

The piezometers were installed to a depth of approximately 38.5 feet below existing grade. The top of casing elevations were determined on October 1, 2011 by Wiley Surveying and Mapping, Inc. A copy of this survey is presented in Appendix II.

Groundwater data has been collected over a period of time from October 2011 through January 2012 as discussed with FDEP to observe seasonal fluctuations. The data collected is presented in the following Table 1.

5400 S. Florida Avenue  
Inverness, FL 34450  
(352) 726-6447

130 Satellite Ct.  
Leesburg, FL 34748  
(352) 787-1268

Sumter County  
(352) 793-3110

1725 SW 17th Street  
Ocala, FL 34471  
(352) 622-1186



Groundwater Elevation Data Summary  
 TABLE 1

<b>Date</b>			
<b>October 14, 2011</b>			
<b>Piezometer No.</b>	<b>Top of Casing Elevation</b>	<b>Depth to groundwater</b>	<b>Groundwater Elevation</b>
PZ-1	74.67'	29.68'	44.99'
PZ-2	72.08'	26.65'	45.43'
PZ-3	73.17'	27.33'	45.84'
PZ-4	73.27'	27.95'	45.32'
<b>Date</b>			
<b>November 2, 2011</b>			
<b>Piezometer No.</b>	<b>Top of Casing Elevation</b>	<b>Depth to groundwater</b>	<b>Groundwater Elevation</b>
PZ-1	74.67'	30.01'	44.66'
PZ-2	72.08'	27.04'	45.04'
PZ-3	73.17'	27.77'	45.40'
PZ-4	73.27'	28.39'	44.88'
<b>Date</b>			
<b>November 15, 2011</b>			
<b>Piezometer No.</b>	<b>Top of Casing Elevation</b>	<b>Depth to groundwater</b>	<b>Groundwater Elevation</b>
PZ-1	74.67'	30.27'	44.40'
PZ-2	72.08'	27.30'	44.78'
PZ-3	73.17'	28.01'	45.16'
PZ-4	73.27'	28.62'	44.65'
<b>Date</b>			
<b>December 6, 2011</b>			
<b>Piezometer No.</b>	<b>Top of Casing Elevation</b>	<b>Depth to groundwater</b>	<b>Groundwater Elevation</b>
PZ-1	74.67'	30.66'	44.01'
PZ-2	72.08'	27.70'	44.38'
PZ-3	73.17'	28.45'	44.72'
PZ-4	73.27'	29.05'	44.22'
<b>Date</b>			
<b>January 12, 2012</b>			
<b>Piezometer No.</b>	<b>Top of Casing Elevation</b>	<b>Depth to groundwater</b>	<b>Groundwater Elevation</b>
PZ-1	74.67'	31.29'	43.38'
PZ-2	72.08'	28.35'	43.73'
PZ-3	73.17'	29.20'	43.97'
PZ-4	73.27'	29.65'	43.62'

The data was used to create groundwater elevation contour maps to determine the groundwater flow direction. The contour maps are presented as Figures 1 through 5.

Groundwater flow direction is typically determined to be perpendicular to the contour lines and in the down gradient direction. Based on the data and the maps prepared, groundwater flow has been determined to be in a northwest direction. The background well for the water quality monitoring will be

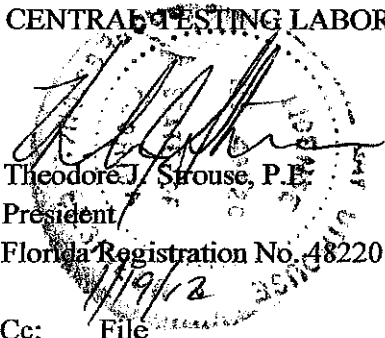
positioned in close proximity to Temporary Piezometer PZ-3. The two down gradient wells will be positioned northwest of the background well with one positioned north of the area of concern and one positioned west of the area of concern. These locations are similar to the locations originally proposed in our Groundwater Monitoring Plan dated May 5, 2011, as Figure 13. A copy of the proposed locations is presented here with in Appendix III.

The data collected through the time interval indicates a seasonal variation on the order of 1 to 2 feet. However the historical data available from the wells on the property to the north and south of this area suggests larger variations on the order of 5 to 6 feet in previous years. Therefore we will install the monitor wells with a 10 foot screen positioned to intercept the water level within the screened interval. Based on the data, it is proposed that the wells be installed with a tip elevation of 36.0' NGVD. The wells will be constructed per the Monitor Well Construction Detail provided in Appendix IV.

CTL is pleased to be of assistance on this project. Should you have any questions or comments regarding anything in this report, please do not hesitate to contact me at (352) 787-1268 or via email at [tstrouse@ctfl.com](mailto:tstrouse@ctfl.com).

Sincerely,

CENTRAL TESTING LABORATORY, INC.



Theodore J. Strouse, P.E.  
President  
Florida Registration No. 48220

Cc: File

4X4 CM MARION ENG.  
CORNER 22-20-22

FOUND  
CM NE

LINE NE 1/4 22-20-22

N LINE NE 1/4 NE 1/4 22-20-22

89°52'09" W  
1283.75'  
FOUND IRON PIN &  
CAP PLS 2480

SET NAIL & CAP  
LB-1723  
NW COR NE 1/4 NE 1/4  
22-20-22

S89°52'09"E 1333.82'

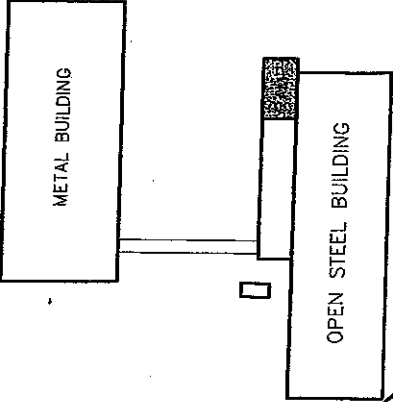
N 89°52'09" W  
50.00'

GROUNDWATER FLOW DATA  
(DATE: 10/14/11)

WELL NO.	GWS ELEV.
PZ-1	44.99
PZ-2	45.43
PZ-3	45.84
PZ-4	45.32

Scale: 1" = 200'

NE 1/4 NE 1/4  
22-20-22



**PZ-1**  
TOP ELEV= 74.67  
LAT= 28-44-21.9524  
LONG= 82-05-25.9384

**PZ-4**  
TOP ELEV= 73.27  
LAT= 28-44-21.3989  
LONG= 82-05-23.5303

**PZ-2**  
TOP ELEV= 72.08  
LAT= 28-44-19.1691  
LONG= 82-05-26.6427

**PZ-3**  
TOP ELEV= 73.17  
LAT= 28-44-18.3058  
LONG= 82-05-23.2591

FOUND 4X4 CM LB-1723

FOUND IRON PIN &  
CAP PSM 3951  
N 89°49'39" W  
1281.29'

WELL &  
TANK

POB LESS

N LINE SW 1/4 NE 1/4 23-20-22

S 89°49'39" E

WIRE FENCE 1146.55'

S LINE NE 1/4 NE 1/4 22-20-22

1331.29'

S 89°49'39" E  
50.00'

POB/POC LESS  
SW COR NE 1/4 NE 1/4  
22-20-22  
FOUND IRON PIN &  
CAP PSM 2480

SE 1/4 NE 1/4  
22-20-22

E LINE SW 1/4 NE  
1/4 22-20-22

FOUND 4X4 CM LB-1723

SOURCE: Wiley Surveying and Mapping Base Map w/Monitoring Wells

**Central Testing Laboratory, Inc.**  
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Cert. of Auth. 2407

# Sumter County Groundwater Monitoring Plan

Proj. No.: 1184094.200 Date: Jan. 18, 2012

Drawn By: B. Ginn Checked By: B. Ginn

Figure 1  
Groundwater Flow Map - 10-14-11

4X4 CM MARION ENG.  
CORNER 22-20-22

FOUND  
CM NE

LINE NE 1/4 22-20-22

N LINE NE 1/4 NE 1/4 22-20-22

89°52'09" W  
1283.75'  
FOUND IRON PIN &  
CAP PLS 2480

SET NAIL & CAP  
LB-1723  
NW COR NE 1/4 NE 1/4  
22-20-22

S89°52'09"E

1333.82'

N 89°52'09" W  
50.00'

**GROUNDWATER FLOW DATA**  
(DATE: 11/2/11)

WELL NO.	GWS ELEV.
PZ-1	44.66
PZ-2	45.04
PZ-3	45.40
PZ-4	44.88

Scale: 1" = 200'

1327.69'

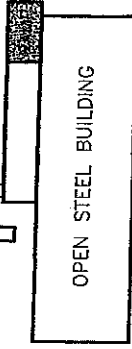
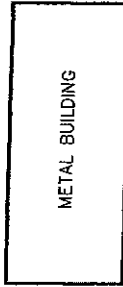
S 00°26'41" W  
W LINE NW 1/4 NE 1/4 22-20-22

NW 1/4 NE 1/4  
22-20-22

1329.00'

WIRE FENCE S 00°33'03" W

N 00°33'03" E



NE 1/4 NE 1/4  
22-20-22

**PZ-1**  
TOP ELEV= 74.67  
LAT= 28-44-21.9524  
LONG= 82-05-25.9384

**PZ-4**  
TOP ELEV= 73.27  
LAT= 28-44-21.3989  
LONG= 82-05-23.5303

**PZ-2**  
TOP ELEV= 72.08  
LAT= 28-44-19.1691  
LONG= 82-05-26.6427

**PZ-3**  
TOP ELEV= 73.17  
LAT= 28-44-18.3058  
LONG= 82-05-23.2591



FOUND 4X4 CM LB-1723

FOUND IRON PIN &  
CAP PSM 3951  
N 89°49'39" W  
1281.29'

WELL TANK

POB LESS

N LINE SW 1/4 NE 1/4 23-20-22

S 89°49'39" E

WIRE FENCE

1146.55'

S LINE NE 1/4 NE 1/4 22-20-22

1331.29'

S 89°49'39" E  
50.00'

POB/POC LESS  
SW COR NE 1/4 NE 1/4  
22-20-22  
FOUND IRON PIN &  
CAP PSM 2480

SE 1/4 NE 1/4  
22-20-22

E LINE SW 1/4 NE  
1/4 22-20-22

FOUND 4X4 CM LB-1723

SOURCE: Wiley Surveying and Mapping Base Map w/Monitoring Wells

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Cert. of Auth. 2407

**Sumter County  
Groundwater  
Monitoring Plan**

Proj. No.:  
1184094.200

Date:  
Jan. 18, 2012

Drawn By:  
B. Ginn

Checked By:  
B. Ginn

**Figure 2**  
**Groundwater Flow Map - 11-2-11**

4X4 CM MARION ENG.  
CORNER 22-20-22

FOUND  
CM NE

LINE NE 1/4 22-20-22

N LINE NE 1/4 NE 1/4 22-20-22

89°52'09" W  
1283.75'

S89°52'09"E

1333.82'

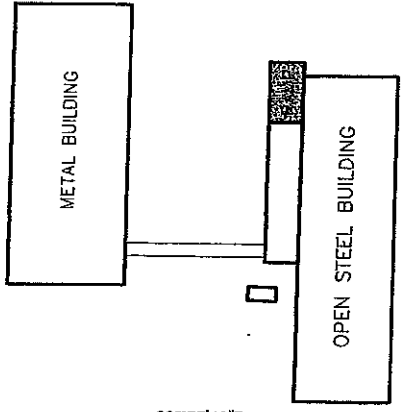
FOUND IRON PIN &  
CAP PLS 2480

SET NAIL & CAP  
LB-1723  
NW COR NE 1/4 NE 1/4  
22-20-22

N 89°52'09" W  
50.00'

GROUNDWATER FLOW DATA (DATE: 11/15/11)	
WELL NO.	GWS ELEV.
PZ-1	44.40
PZ-2	44.78
PZ-3	45.16
PZ-4	44.65

Scale: 1" = 200'



NE 1/4 NE 1/4  
22-20-22

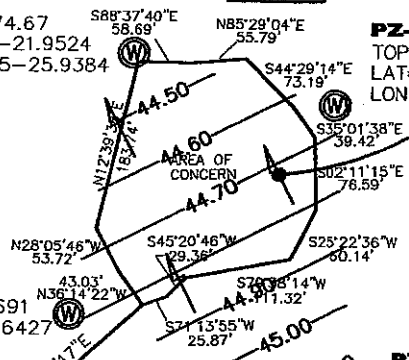
NW 1/4 NE 1/4  
22-20-22

**PZ-1**  
TOP ELEV= 74.67  
LAT= 28-44-21.9524  
LONG= 82-05-25.9384

**PZ-4**  
TOP ELEV= 73.27  
LAT= 28-44-21.3989  
LONG= 82-05-23.5303

**PZ-2**  
TOP ELEV= 72.08  
LAT= 28-44-19.1691  
LONG= 82-05-26.6427

**PZ-3**  
TOP ELEV= 73.17  
LAT= 28-44-18.3058  
LONG= 82-05-23.2591



FOUND 4X4 CM LB-1723

FOUND IRON PIN &  
CAP PSM 3951  
N 89°49'39" W  
1281.29'

WELL &  
TANK

POB LESS

N LINE SW 1/4 NE 1/4 23-20-22

S 89°49'39" E

WIRE FENCE

1146.55'

S LINE NE 1/4 NE 1/4 22-20-22

1331.29'

S 89°49'39" E  
50.00'

POB/POC LESS  
SW COR NE 1/4 NE 1/4  
22-20-22  
FOUND IRON PIN &  
CAP PSM 2480

SE 1/4 NE 1/4  
22-20-22

E LINE SW 1/4 NE  
1/4 22-20-22

FOUND 4X4 CM LB-1723

SOURCE: Wiley Surveying and Mapping Base Map w/Monitoring Wells

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Leesburg, Florida 34748  
(352) 787-1268  
Cert. of Auth. 2407

**Sumter County  
Groundwater  
Monitoring Plan**

Proj. No.:  
**1184094.200**

Date:  
**Jan. 18, 2012**

Drawn By:  
**B. Ginn**

Checked By:  
**B. Ginn**

**Figure 3  
Groundwater Flow Map - 11-15-11**

4X4 CM MARION ENG.  
CORNER 22-20-22

FOUND  
CM NE

LINE NE 1/4 22-20-22

N LINE NE 1/4 NE 1/4 22-20-22

89°52'09" W  
1283.75'

S89°52'09"E

1333.82'

FOUND IRON PIN &  
CAP PLS 2480

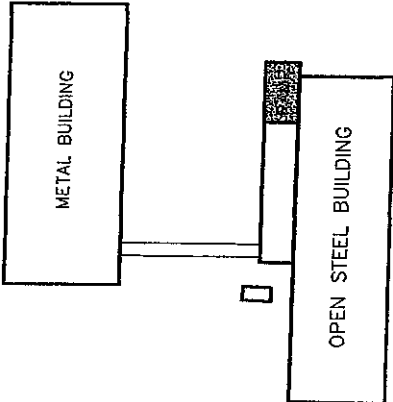
SET NAIL & CAP  
LB-1723  
NW COR NE 1/4 NE 1/4  
22-20-22

N 89°52'09" W  
50.00'

**GROUNDWATER FLOW DATA**  
(DATE: 12/6/11)

WELL NO.	GWS ELEV.
PZ-1	44.01
PZ-2	44.38
PZ-3	44.72
PZ-4	44.22

Scale: 1" = 200'



NW 1/4 NE 1/4  
22-20-22

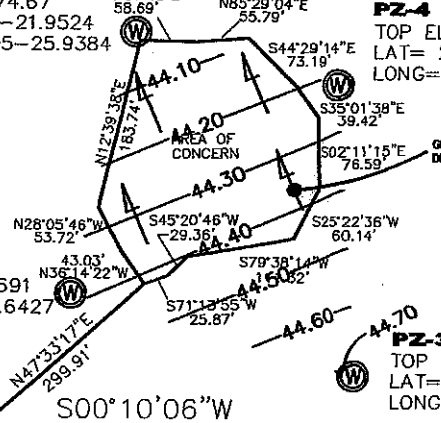
NE 1/4 NE 1/4  
22-20-22

**PZ-1**  
TOP ELEV= 74.67  
LAT= 28-44-21.9524  
LONG= 82-05-25.9384

**PZ-4**  
TOP ELEV= 73.27  
LAT= 28-44-21.3989  
LONG= 82-05-23.5303

**PZ-2**  
TOP ELEV= 72.08  
LAT= 28-44-19.1691  
LONG= 82-05-26.6427

**PZ-3**  
TOP ELEV= 73.17  
LAT= 28-44-18.3058  
LONG= 82-05-23.2591



FOUND 4X4 CM LB-1723

FOUND IRON PIN &  
CAP PSM 3951

N 89°49'39" W  
1281.29'

N LINE SW 1/4 NE 1/4 23-20-22

S 89°49'39" E  
50.00'

WELL &  
TANK

POB LESS

POB/POC LESS  
SW COR NE 1/4 NE 1/4  
22-20-22  
FOUND IRON PIN &  
CAP PSM 2480

FOUND 4X4 CM LB-1723

SE 1/4 NE 1/4  
22-20-22

S89°49'39"E

1147.40'

WIRE FENCE

1146.55'

S 89°49'39" E

S LINE NE 1/4 NE 1/4 22-20-22

1331.29'

E LINE SW 1/4 NE  
1/4 22-20-22

SOURCE: Wiley Surveying and Mapping Base Map w/Monitoring Wells

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**Sumter County  
Groundwater  
Monitoring Plan**

Proj. No.:  
**1184094.200**

Date:  
**Jan. 18, 2012**

Drawn By:  
**B. Ginn**

Checked By:  
**B. Ginn**

**Figure 4**  
**Groundwater Flow Map - 12-6-11**



4X4 CM MARION ENG.  
CORNER 22-20-22

FOUND  
CM NE

JNE NE 1/4 22-20-22

N LINE NE 1/4 NE 1/4 22-20-22

89°52'09" W  
1283.75'

FOUND IRON PIN &  
CAP PLS 2480

SET NAIL & CAP  
LB-1723  
NW COR NE 1/4 NE 1/4  
22-20-22

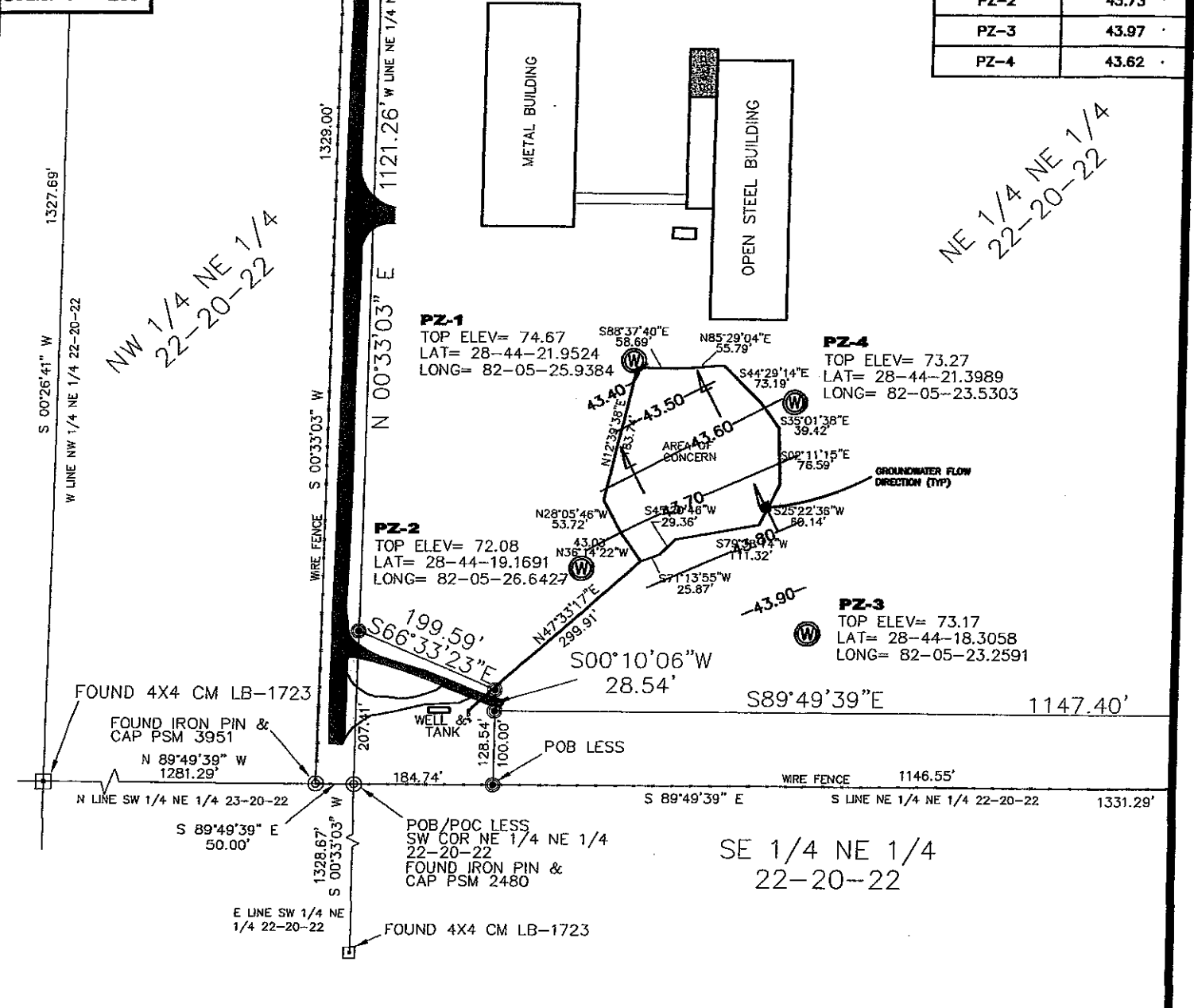
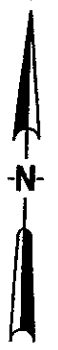
S89°52'09"E

1333.82'

N 89°52'09" W  
50.00'

GROUNDWATER FLOW DATA (DATE: 1/12/12)	
WELL NO.	GWS ELEV.
PZ-1	43.38
PZ-2	43.73
PZ-3	43.97
PZ-4	43.62

Scale: 1" = 200'



**PZ-1**  
TOP ELEV= 74.67  
LAT= 28-44-21.9524  
LONG= 82-05-25.9384

**PZ-4**  
TOP ELEV= 73.27  
LAT= 28-44-21.3989  
LONG= 82-05-23.5303

**PZ-2**  
TOP ELEV= 72.08  
LAT= 28-44-19.1691  
LONG= 82-05-26.6427

**PZ-3**  
TOP ELEV= 73.17  
LAT= 28-44-18.3058  
LONG= 82-05-23.2591

**SOURCE:** Wiley Surveying and Mapping Base Map w/Monitoring Wells

<b>Central Testing Laboratory, Inc.</b> 130 Satellite Court Leesburg, Florida 34748 (352) 787-1268 Cert. of Auth. 2407	<b>Sumter County Groundwater Monitoring Plan</b>	<b>Proj. No.:</b> 1184094.200	<b>Date:</b> Jan. 18, 2012
		<b>Drawn By:</b> B. Ginn	<b>Checked By:</b> B. Ginn
		<b>Figure 5 Groundwater Flow Map - 1-12-12</b>	

CTL Folder\Leesburg\Sumter County\Landfill GWM Plan\Report Figures.dwg 1/18/2012 10:54:03 AM EST

***APPENDIX I***

# BORING LOG

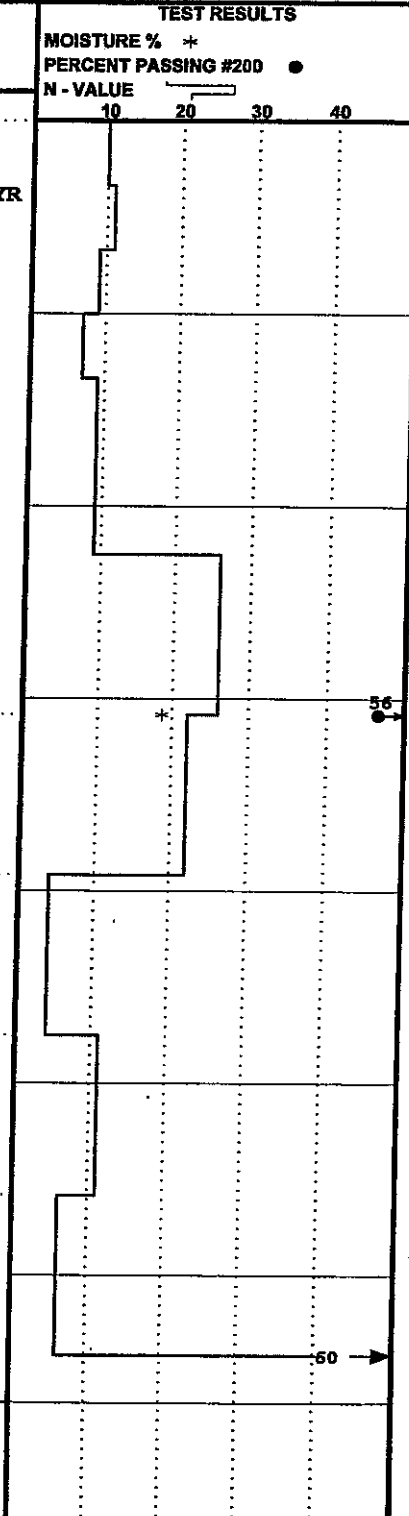
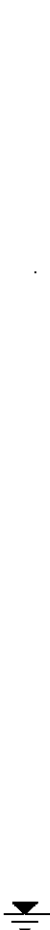
BORING NO. PZ-1

PROJECT: SUMTER COUNTY LANDFILL GWMP  
 BORING LOCATION: NW CORNER OF AREA OF INTEREST (SEE FIGURE NO. 2)  
 BORING METHOD: ASTM D-1586  
 CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS  
 DEPTH TO - Water: 28.0

DATE: 9/23/11  
 ELEVATION: N/A  
 DRILLER: AMDRILL

DEPTH OF COLLAPSE: N/A

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	TEST RESULTS
0	2 3 7	GRAY 10YR 5/1 FINE SAND (SP)	MOISTURE % * PERCENT PASSING #200 ● N - VALUE
6	4 5 6 3 4 5 2 2 5 3 4 5	GRAYISH BROWN TO PALE BROWN 10YR 5/2 FINE SAND (SP) PALE BROWN 10YR 6/3 FINE SAND (SP) LIGHT BROWNISH GRAY 10YR 6/2 FINE SAND (SP) VERY PALE BROWN 10YR 7/3 FINE SAND (SP)	10 20 30 40
12	6 12 14	BROWN 10YR 5/3 FINE SAND (SP)	
18	6 9 13	LIGHT GRAY 10YR 7/1 SANDY CLAY (CL) MOISTURE CONTENT = 18.6% PERCENT PASSING #200 = 56%	56
24	2 2 2	LIGHT GRAY 10YR 7/1 CLAYEY SAND WITH WHITE 10YR 8/1 SILTY SAND MIXED (SC & SM) LOST CIRCULATION AT 25.0 FEET	
30	3 7 4	WHITE 10YR 8/1 SILTY LIMESTONE DRILL ROD DROPPED 6 INCHES FROM 30.0 TO 30.5 FEET.	
36	4 3 3	LIGHT GRAY 10YR 7/1 CLAYEY FINE SAND WITH DARK BROWN CLAY SEAM (SC)	
42	16 20 40	WHITE 10YR 8/1 LIMESTONE BORING TERMINATED	50



Notes: **PIEZOMETER INSTALLED TO 38.5 FEET. 10'0.10 SLOT SCREEN. 3 BAGS 20/30 SAND AND 1/2 BUCKET OF BENTONITE.**

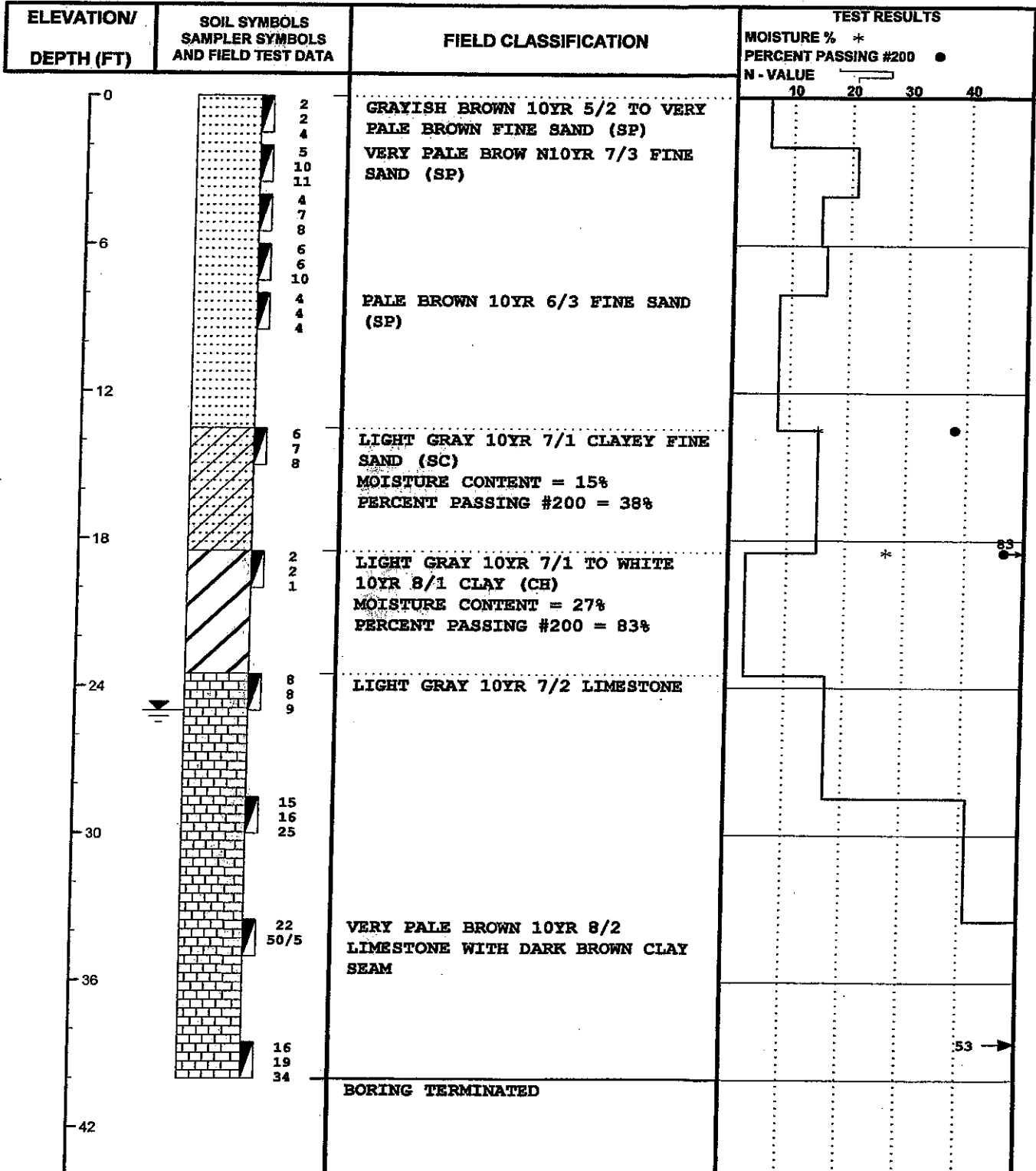
# BORING LOG

BORING NO. PZ-2

PROJECT: SUMTER COUNTY LANDFILL GWMP  
 BORING LOCATION: SW CORNER OF AREA OF INTEREST (SEE FIGURE NO. 2)  
 BORING METHOD: ASTM D-1586  
 CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS  
 DEPTH TO - Water: 25.0

DATE: 9/23/11  
 ELEVATION: N/A  
 DRILLER: AMDRILL

DEPTH OF COLLAPSE: N/A



Notes: PIEZOMETER INSTALLED TO 38.5' USING 4" CONTINUOUS FLIGHT AUGER. 10'0.10 SLOT SCREEN. 2 BAGS 20/30.

# BORING LOG

BORING NO. PZ-3

PROJECT: SUMTER COUNTY LANDFILL GWMP  
 BORING LOCATION: 175' SE OF SE CORNER OF AREA OF INTEREST (SEE FIGURE 1)  
 BORING METHOD: ASTM D-1586  
 CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS  
 DEPTH TO - Water: 25.0

DATE: 9/23/11  
 ELEVATION: N/A  
 DRILLER: AMDRILL

DEPTH OF COLLAPSE: N/A

ELEVATION/ DEPTH (FT)	SOIL SYMBOLS SAMPLER SYMBOLS AND FIELD TEST DATA	FIELD CLASSIFICATION	TEST RESULTS
0	3 5 9	DARK BROWN 10YR 3/3 FINE SAND WITH TRACES OF ROCK (SP)	MOISTURE % * PERCENT PASSING #200 ● N - VALUE
6	6 5 6 2 4 4	DARK GRAY 10YR 4/1 FINE SAND (SP)  GRAYISH BROWN 10YR 5/2 FINE SAND (SP)  PALE BROWN 10YR 6/3 FINE SAND (SP)	10 20 30 40
12	5 9 12	PALE BROWN 10YR 6/3 AND WHITE 10YR 8/1 FINE SAND (SP)	
18	2 2 1	WHITE 10YR 8/1 FINE SAND (SP) PALE BROWN 10YR 6/3 CLAYEY FINE SAND (SC)	
24	1 1 1	LIGHT GRAY 10YR 7/1 CLAY (CH) LOST CIRCULATION AT 23.5' MOISTURE CONTENT = 23% PERCENT PASSING #200 = 70%	* 70
30	6 14 15	LIGHT GRAY 10YR 7/1 LIMESTONE	
36	12 15 14	WHITE 10YR 8/1 SILTY LIMESTONE	
42	17 20 16	BORING TERMINATED	

Notes: PIEZOMETER INSTALLED TO 38.5'. 10"0.10 SLOT SCREEN. 2 BAGS 20/30 SAND AND 1/2 BUCKET BENTONITE.

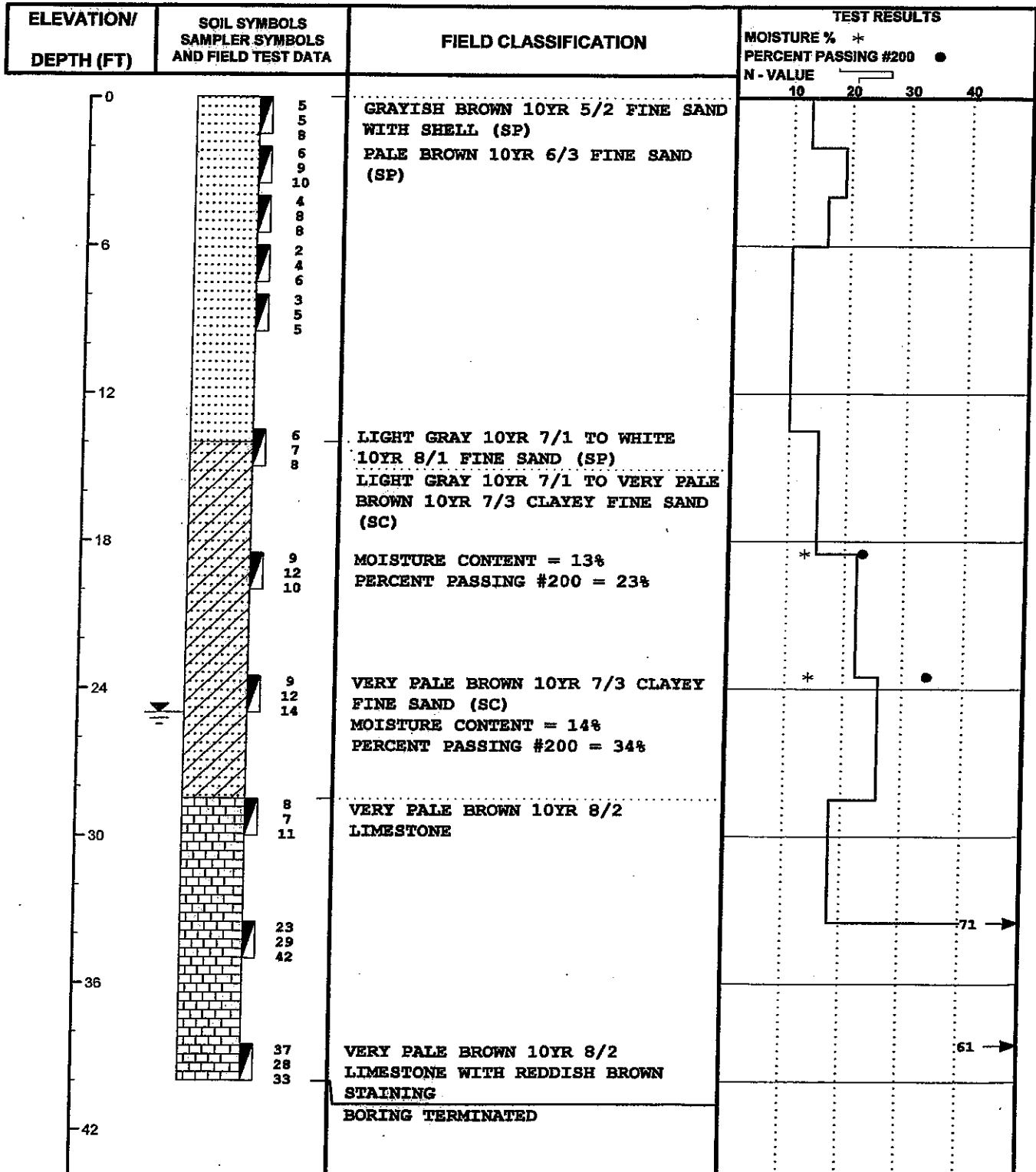
# BORING LOG

BORING NO. PZ-4

PROJECT: SUMTER COUNTY LANDFILL GWMP  
 BORING LOCATION: NE CORNER OF AREA OF INTEREST (SEE FIGURE NO. 2)  
 BORING METHOD: ASTM D-1586  
 CLIENT: SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS  
 DEPTH TO - Water: 25.0

DATE: 9/23/11  
 ELEVATION: N/A  
 DRILLER: AMDRILL

DEPTH OF COLLAPSE: N/A




Notes: **PIEZOMETER INSTALLED TO 38.5' USING 4" CONTINUOUS FLIGHT AUGER. 10'0.10 SLOT SCREEN, 2 BAGS 20/30.**

# KEY TO SYMBOLS

Symbol Description

Symbol Description

Strata symbols


 POORLY GRADED SANDS  
OR GRAVELLY SANDS  
LITTLE OR NO FINES

 INORGANIC CLAYS  
MEDIUM PLASTICITY

 SILTY-CLAYEY SANDS  
SAND-SILT-CLAY MIXES

 SILT AND LIMESTONE  
MIXED

 CLAYEY SANDS  
SAND-CLAY MIXES

 LIMESTONE

 INORGANIC CLAYS OF  
HIGH PLASTICITY


Misc. Symbols

 Water table at  
boring completion

● Percent Passing #200

\* Moisture Content

Soil Samplers

 Standard penetration test

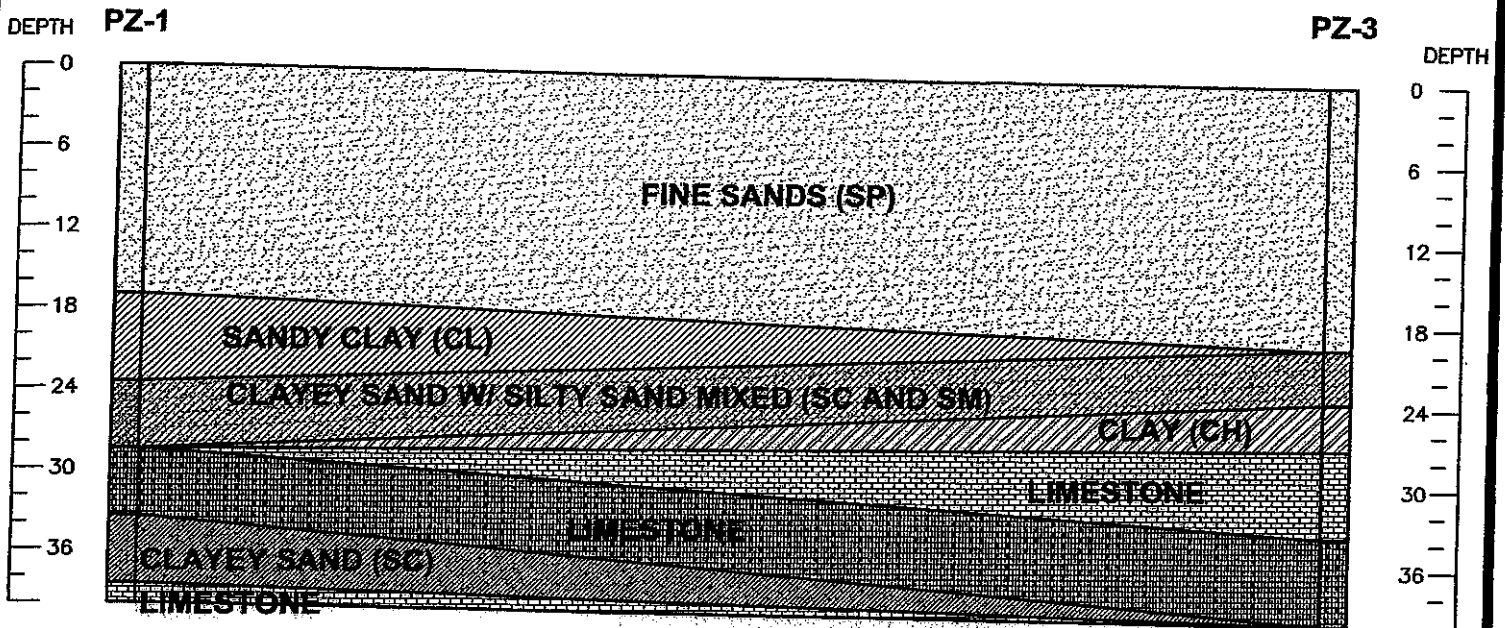
Notes:

1. ELEVATIONS REPORTED ON LOGS PROVIDED BY CLIENT.
2. THESE LOGS ARE SUBJECT TO THE LIMITATIONS, CONCLUSIONS, AND RECOMMENDATIONS IN THIS REPORT. DUE TO POSSIBLE VARIANCES IN THE SUBSURFACE BETWEEN THE LOCATIONS OF THE BORINGS, AND THE VARYING DEGREE OF DISTURBANCE, THE DESCRIPTIONS GIVEN ARE GOOD ONLY FOR THE MATERIALS REMOVED DURING THE CONSTRUCTION OF EACH BORING.
3. RELATIVE DENSITY (sand-silt)
 

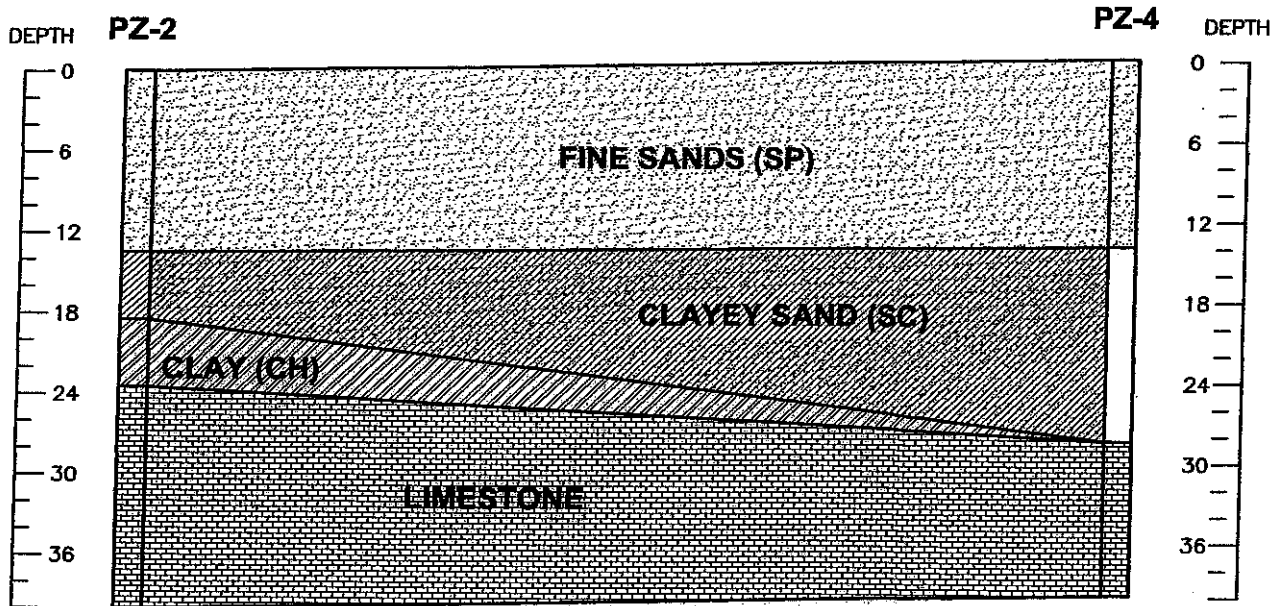
VERY LOOSE - Less than 4 blows/ft.	LOOSE - 4 to 10 blows/ft.
MEDIUM - 10 to 30 blows/ft.	DENSE - 30 to 50 blows/ft.
VERY DENSE - More than 50 blows/ft.	
4. CONSISTENCY (clay)
 

VERY SOFT - Less than 2 blows/ft.	SOFT - 2 to 4 blows/ft.
MEDIUM - 4 to 8 blows/ft.	STIFF - 8 to 15 blows/ft.
VERY STIFF - 15 to 30 blows/ft.	
HARD - More than 30 blows/ft.	
5. COLORS ARE DETERMINED BY USING THE MUNSELL SOIL COLOR CHART AND THE VALUES ARE GIVEN IN CODE SUCH AS 10YR 3/4.

Legend:



**PZ-1 TO PZ-3 CROSS-SECTION**

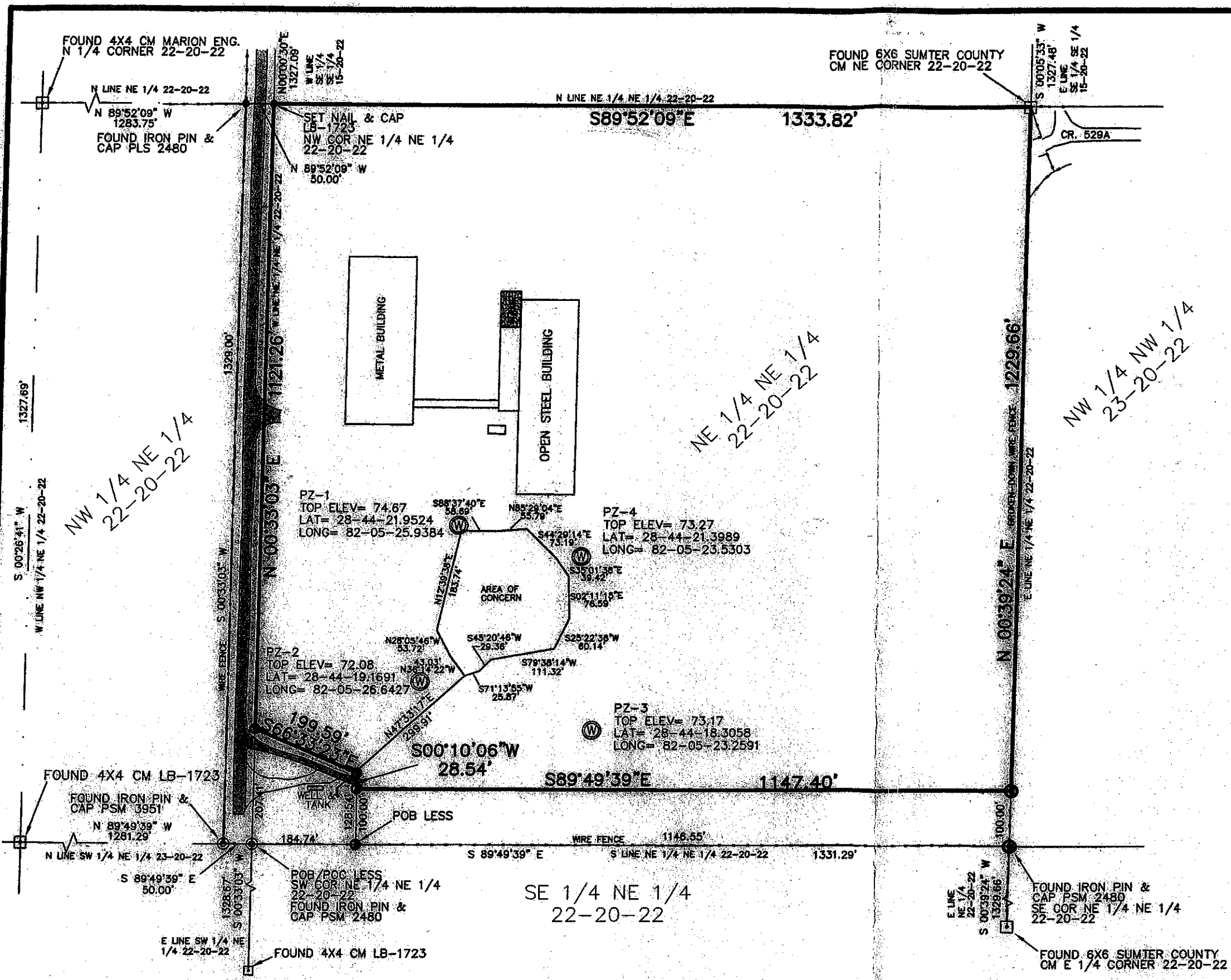


**PZ-2 TO PZ-4 CROSS-SECTION**

<b>Central Testing Laboratory, Inc.</b> 130 Satellite Court Leesburg, Florida 34748 (352) 787-1268 Cert. of Auth. 2407	<b>Sumter County          Groundwater          Monitoring Plan</b>	Proj. No.: <b>1184094.200</b>	Date: <b>Jan. 18, 2012</b>
		Drawn By: <b>B. Ginn</b>	Checked By: <b>B. Ginn</b>
		<b>Cross-Sections</b>	



***APPENDIX II***



**NOTES:**

- 1) THE SPECIFIC PURPOSE OF THIS SURVEY IS TO SHOW THE AREA OF CONCERN IN RELATION TO THE SUBJECT BOUNDARY.
- 2) UNLESS IT BEARS THE SIGNATURE AND ORIGINAL RAISED SEAL OF FLORIDA LICENSED SURVEYOR AND MAPPER, THIS MAP/REPORT IS FOR INFORMATIONAL PURPOSE ONLY AND IS NOT VALID.
- 3) SURVEY WAS COMPLETED IN THE FIELD 04/29/11.

**GRAPHIC SCALE**

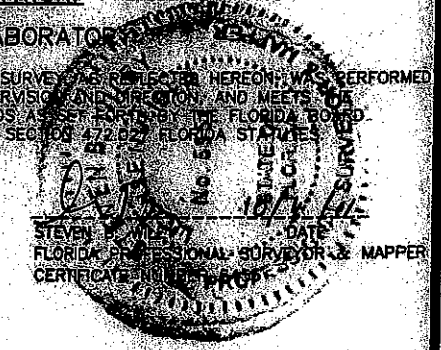


( IN FEET )  
1 inch = 200 ft.



**SURVEYORS CERTIFICATION:** I HEREBY CERTIFY TO:  
CENTRAL TESTING LABORATORY

THAT THE SPECIFIC PURPOSE SURVEY AS REFLECTED HEREON WAS PERFORMED UNDER MY RESPONSIBLE SUPERVISION AND DIRECTION AND MEETS THE MINIMUM TECHNICAL STANDARDS AS SET FORTH BY THE FLORIDA BOARD OF SURVEYORS PURSUANT TO SECTION 472.02, FLORIDA STATUTES.



**SPECIFIC PURPOSE SURVEY**

DRAWN BY:	SBW	DATE:	05/03/2011
CHECKED BY:	SBW	DRAWING NO.:	2
DATE:	11/05	SHEET:	1 of 1

REVISIONS: ADD PIEZOMETER LOCATION AND INFORMATION 10/11/11

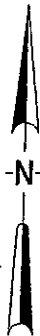
**WILEY SURVEYING AND MAPPING INC.**

11929 GARRISON LANE  
UMATILLA, FLORIDA 32784  
PHONE: (352) 669-6046  
CELL: (352) 267-2364  
PROFESSIONAL SURVEYORS AND MAPPERS

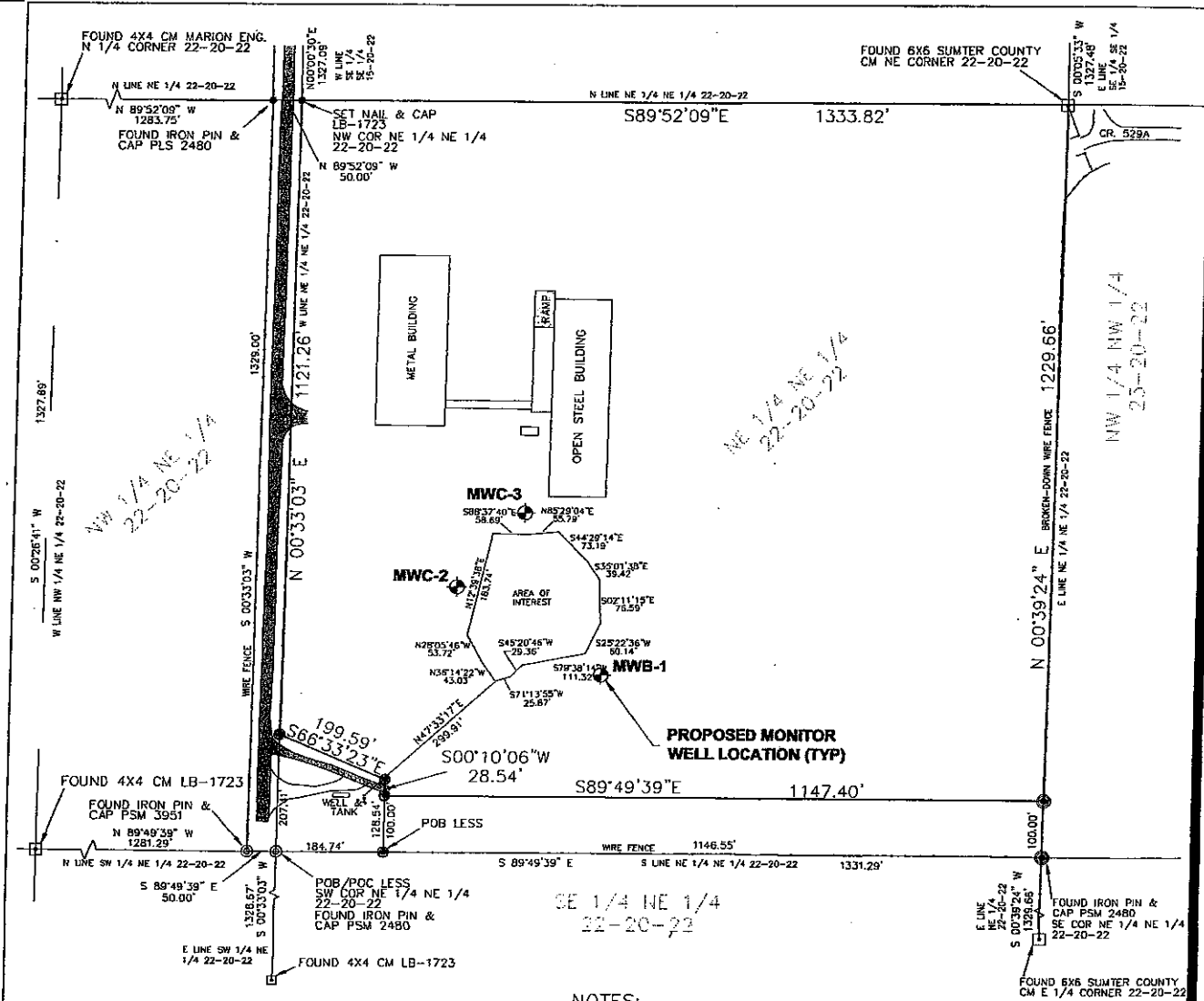
***APPENDIX III***

**NOTES:**

LOCATION OF MONITORING WELLS SUBJECT TO CHANGE  
DEPENDING UPON RESULTS OF PIEZOMETER INFORMATION.



Scale: 1" = 300'



**SPECIFIC PURPOSE SURVEY**

DRAWN BY:	SBW	DATE:	05/03/2011
CHECKED BY:	SBW	DRAWING NO.:	?
JOB NO.:	11005	SHEET:	1 OF 1

- NOTES:**
- 1) THE SPECIFIC PURPOSE OF THIS SURVEY IS TO SHOW THE AREA OF CONCERN IN RELATION TO THE SUBJECT BOUNDARY.
  - 2) UNLESS IT BEARS THE SIGNATURE AND ORIGINAL RAISED SEAL OF FLORIDA LICENSED SURVEYOR AND MAPPER, THIS MAP/REPORT IS FOR INFORMATIONAL PURPOSE ONLY AND IS NOT VALID.
  - 3) SURVEY WAS COMPLETED IN THE FIELD 04/29/11.

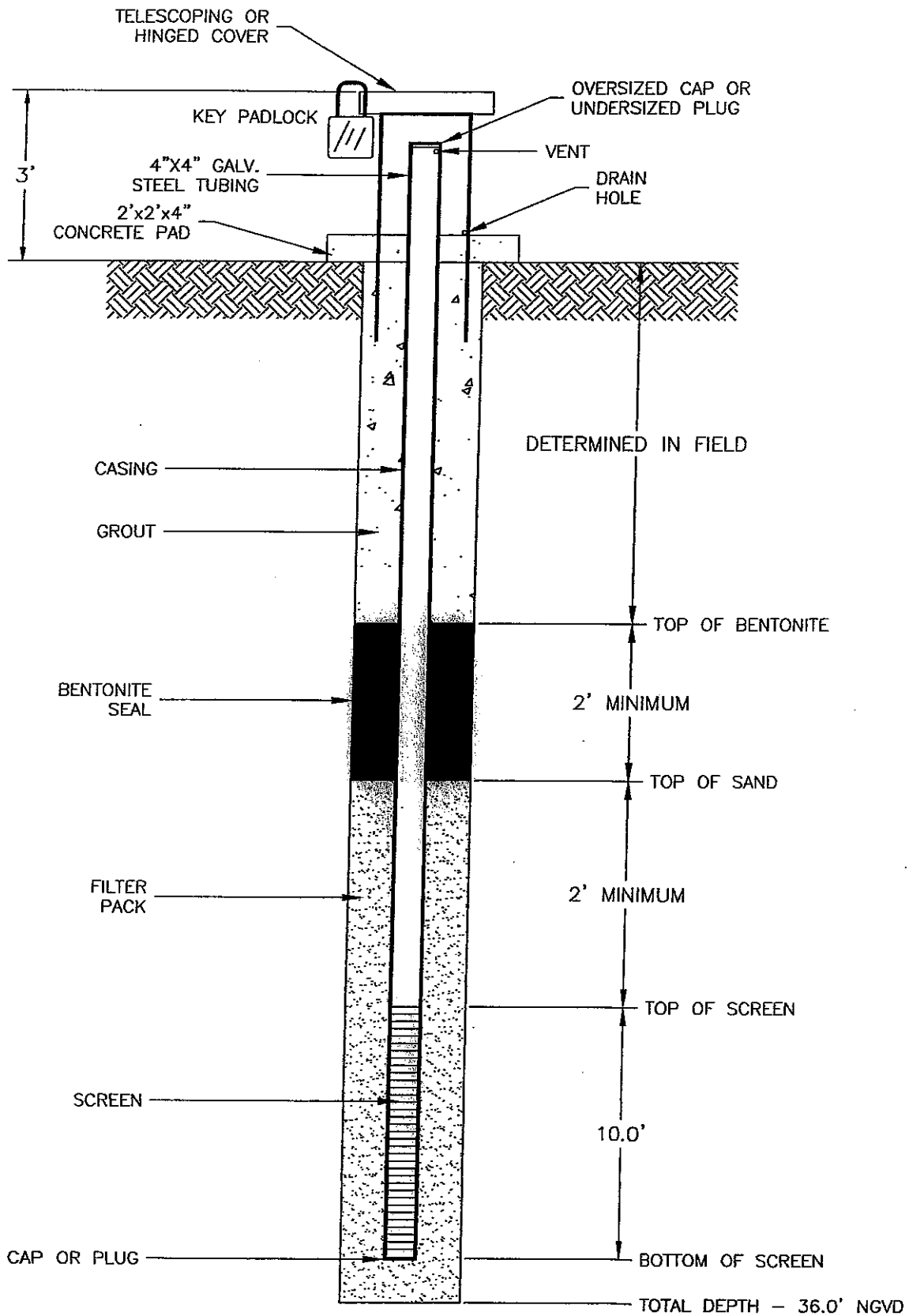
URCE: Wiley Surveying and Mapping, Inc. Specific Purpose Survey

**Central Testing Laboratory, Inc.**  
150 S. ...  
Leesburg, Florida 34748  
(852) 287-1700  
certified since 2/10/07

**Groundwater  
Monitoring Plan  
Sumter County Landfill  
Sumter County, Florida**

Project No. <b>1184033.200</b>	Date: <b>May 4, 2011</b>
Drawn By: <b>B. Ginn</b>	Checked By: <b>T. Strouse</b>
<b>Figure 13 - Monitor Well Location Plan</b>	

***APPENDIX IV***



Central Testing Laboratory, Inc.  
 1100 S. Millar Ave.  
 Leesburg, Florida 34748  
 (852) 782-1768  
 Cent. of Mass. 2402

**Groundwater  
 Monitoring Plan**  
 Sumter County Landfill  
 Sumter County, Florida

Project No. 1184033.200	Date: Apr. 21, 2011
Drawn By: B. Ginn	Checked By: T. Strouse
<b>Monitoring Well Construction Detail</b>	