

D. E. R.

MAR 21 1989

SOUTHWEST DISTRICT
TAMPA

**Completion Report for Monitoring Wells
Installed at Lena Road Landfill,
Manatee County, Florida**



Ardaman & Associates, Inc.

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Ardaman & Associates, Inc.

March 10, 1989
File Number 86-115

Consultants in Soils, Hydrogeology,
Foundations and Materials Testing

Manatee County Public Works Department
4501 66th Street West
Bradenton, Florida 33507

Attention: Mr. Dan Gray

Subject: Completion Report for Monitoring Wells Installed at Lena Road
Landfill, Manatee County, Florida

Gentlemen:

As requested and authorized by the County, we have completed installation of the new monitoring wells at the subject facility in accordance with our understanding of the Florida Department of Environmental Regulation (FDER) Permit. The following new wells at the locations shown in Figure 1 comprise the surficial and artesian aquifer wells.

- | | |
|----------|-------------|
| • LR11-1 | • MW-5(New) |
| • LR11-2 | • MW-6(New) |
| • LR11-3 | • SMR-1 |
| • LR11-4 | • SMR-2 |
| • LR11-5 | • SA-4 |
| • GC-1 | • SA-5 |
| • GC-2 | • SA-6 |
| • GC-3 | • SA-7 |
| • GC-4 | • SA-8 |
| • GC-5 | |
| • GC-6 | |

The construction program for the new wells consisted of advancing a 6-inch diameter hole to the selected well depth, inserting a length of 2-inch diameter slotted PVC pipe (Schedule 40, 10-slot) connected to a 2-inch diameter solid PVC riser, backfilling the annular space with 20-30 silica sand to above the screen and backfilling the remaining annular space with a cement-bentonite grout or clayey fine sand above the silica sand to ground surface. At the surface a 4-inch diameter steel casing was placed around the well and embedded in a concrete pad to protect the well. Three posts also were installed around each protective casing. At the end of the installation process, the wells were developed until the water was clear. The wells were installed using the hydraulic rotary and hollow stem drilling techniques.

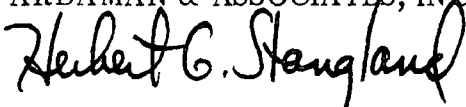
The pertinent hydrogeological data for the new monitoring wells are provided on the enclosed well completion report forms. (Tables 1 through 20) The well installation records are enclosed in Appendix I. The soil profiles for the new wells

installation records are enclosed in Appendix I. The soil profiles for the new wells are provided in Figure 2. The elevations to the top of the new wells and to the ground surface were provided to us by the Manatee County Public Works Department.

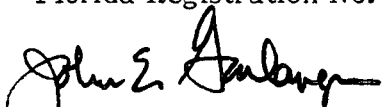
In addition, a number of wells were abandoned at the Lena Road and State Road 70 landfills using the tremie grout method under the direct supervision of Mr. Steve Fisher, water well contractor license number 2884. Table 21 summarizes this work effort. Several surficial aquifer wells at the Lena Road landfill could not be located because they had been destroyed by construction and/or buried. These wells were located within the area surrounded by the slurry wall. The bottoms of the wells are in the surficial sand above the natural clay bottom liner. A secondary artesian well, installed by FDER, is located within the Stage III area along the entrance road (Figure 2). We have not located this well nor have we determined whether it has been abandoned. On March 10, 1989 Mr. Gray from Manatee County thoroughly looked in the area shown on the well location map and could not find any evidence of a well. The Adam's irrigation well was logged on March 9, 1989 and will be abandoned as soon as the abandonment plan has been approved by the County Health Department.

We appreciate the opportunity to serve you on this phase of the project. If you have any questions about this report or need additional assistance, please do not hesitate to contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.



Herbert G. Stangland, Jr., P.E.
Senior Water Resources Engineer
Florida Registration No. 16713



John E. Garlanger, Ph.D., P.E.
Principal

HGS/de
Enclosures

cc: J. Kuehn, Ardaman
C. Crosby, Manatee County Health Dept.

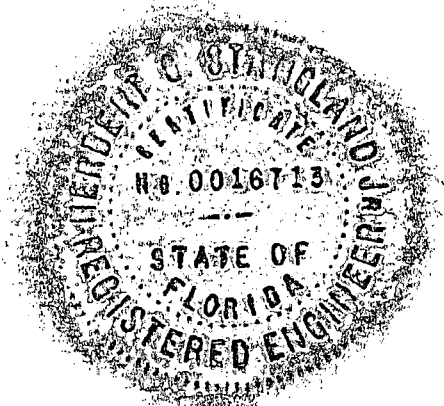


Table 1
MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: LRH-1 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-15-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 18.5 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/ 8.5 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/ 9.5 (feet)

SCREEN INTERVAL: 8.5 to 18.0 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 6.5 to 18.5 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 3.5 to 6.5 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 3.5 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 38.02

GROUND SURFACE ELEVATION (feet, NGVD): 34.9

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 32" / 82° 26' 48"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 2
MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____ GMS NO.: _____

WELL NO.: _____ WELL NAME: LRH-2 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-14-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 20.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/10.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/9.5 (feet)

SCREEN INTERVAL: 10 to 19.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 8.0 to 20.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 5.0 to 8.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 8.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 36.53

GROUND SURFACE ELEVATION (feet, NGVD): 33.2

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 44" / 82° 26' 48"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 3
MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: LRH-3 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-23-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 20.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/10.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/9.5 (feet)

SCREEN INTERVAL: 10.0 to 19.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 19.0 to 20.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 5.0 to 8.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 5.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 33.51

GROUND SURFACE ELEVATION (feet, NGVD): 30.4

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 50" / 82° 26' 36"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 4

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: LRH-4 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-23-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 20.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/10.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/9.5 (feet)

SCREEN INTERVAL: 10.0 to 19.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 8.0 to 20.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 5.0 to 8.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 5.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 33.90

GROUND SURFACE ELEVATION (feet, NGVD): 30.9

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 50" / 82° 26' 28"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 5

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: LRII-5 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-23-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 20.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/10.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/9.5 (feet)

SCREEN INTERVAL: 10.0 to 19.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 8.0 to 20.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 5.0 to 8.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 5.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 36.78

GROUND SURFACE ELEVATION (feet, NGVD): 33.5

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 41" / 82° 26' 21"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 6

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: GC-1 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-25-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 20.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/10.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/9.5 (feet)

SCREEN INTERVAL: 10 to 19.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 8.0 to 20.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 5.0 to 8.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 5.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 31.36

GROUND SURFACE ELEVATION (feet, NGVD): 27.1

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 15" / 82° 27' 13"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 7

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: GC-2 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-21-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 15.5 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/ 5.5 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/ 9.5 (feet)

SCREEN INTERVAL: 5.5 to 15.0 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 3.5 to 15.5 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 1.5 to 3.5 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 1.5 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 38.23

GROUND SURFACE ELEVATION (feet, NGVD): 35.2

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 25" / 82° 26' 56"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 8

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: GC-3 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-20-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 20.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/10.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/ 9.5 (feet)

SCREEN INTERVAL: 10 to 19.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 8.0 to 20.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 5.0 to 8.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 5.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 35.08

GROUND SURFACE ELEVATION (feet, NGVD): 32.0

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 25" / 82° 27' 02"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 9

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: 3005A151181 WELL NAME: GC-4 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-20-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 9.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/9.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/9.5 (feet)

SCREEN INTERVAL: 9.0 to 18.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 7.0 to 19.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 5.0 to 7.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 5.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 33.98

GROUND SURFACE ELEVATION (feet, NGVD): 30.3

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 23" / 82° 27' 14"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 10

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: GC-5 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-22-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 18.5 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/ 8.5 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/ 9.5 (feet)

SCREEN INTERVAL: 8.5 to 18.0 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 6.5 to 18.5 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 3.5 to 6.5 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 3.5 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 36.52

GROUND SURFACE ELEVATION (feet, NGVD): 32.5

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 05" / 82° 27' 09"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC - TOP OF CASING

Table 11

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: GC-6 WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-21-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 19.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/ 9.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/ 9.5 (feet)

SCREEN INTERVAL: 9.0 to 18.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 7.0 to 19.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 4.0 to 7.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 4.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 39.10

GROUND SURFACE ELEVATION (feet, NGVD): 35.2

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 05" / 82° 26' 53"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 12

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: MW-5(New) WELL TYPE: C

RILLING METHOD: Hollow Stem DATE INSTALLED: 10-22-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 18.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/ 8.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/ 9.5 (feet)

SCREEN INTERVAL: 8.0 to 17.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 6.0 to 18.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 4.0 to 6.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 4.0 (feet,bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 39.91

GROUND SURFACE ELEVATION (feet, NGVD): 37.1

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 06" / 82° 26' 48"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 13

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: MW-6 (New) WELL TYPE: C

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-17-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 18.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/ 8.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/ 9.5 (feet)

SCREEN INTERVAL: 8.0 to 17.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 6.0 to 18.0 (feet, bls)

SEALANT TYPE Clayey Fine Sand INTERVAL: 4.0 to 6.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 4.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 39.32

GROUND SURFACE ELEVATION (feet, NGVD): 36.1

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 21" / 82° 26' 21"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 14

MONITORING WELL
COMPLETION REPORT

DATE: March 8, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____ GMS NO.: _____

WELL NO.: _____ WELL NAME: SMR-1 WELL TYPE: B

DRILLING METHOD: Hollow Stem DATE INSTALLED: 10-6-88

BY: Steve Fisher

AQUIFER MONITORED: Surficial

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 20.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/10.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/9.5 (feet)

SCREEN INTERVAL: 10 to 19.5 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 9.0 to 20.0 (feet, bls)

SEALANT TYPE: Clayey Fine Sand INTERVAL: 7.0 to 9.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 7.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 36.48

GROUND SURFACE ELEVATION (feet, NGVD): 33.4

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 37" / 82° 26' 03"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 15

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: SMR-2 WELL TYPE: B

DRILLING METHOD: Hydraulic Rotary DATE INSTALLED: 11-3-88

BY: John May

AQUIFER MONITORED: Artesian

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 153.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/100.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/50.0 (feet)

SCREEN INTERVAL: 100 to 150 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 90.0 to 153.0 (feet, bls)

SEALANT TYPE: Grout INTERVAL: 90.0 to 90.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 90.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 36.10

GROUND SURFACE ELEVATION (feet, NGVD): 33.4

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 37" / 82° 26' 03"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 16

MONITORING WELL
COMPLETION REPORT

DATE: March 10, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: SA-4 WELL TYPE: C

DRILLING METHOD: Hydraulic Rotary DATE INSTALLED: 11-5-88

BY: John May

AQUIFER MONITORED: Artesian

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 153.0 (feet, bls)

CASING TYPE: TFJ SCH-40 PVC CASING DIAMETER/LENGTH: 2 inch/100.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/50.0 (feet)

SCREEN INTERVAL: 100 to 150 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 90.0 to 153.0 (feet, bls)

SEALANT TYPE: Grout INTERVAL: 90.0 to 90.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 90.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 31.28

GROUND SURFACE ELEVATION (feet, NGVD): 27.5

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 15" / 82° 27' 13"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 17

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: SA-5 WELL TYPE: C

DRILLING METHOD: Hydraulic Rotary DATE INSTALLED: 10-19-88

BY: John May

AQUIFER MONITORED: Artesian

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 153.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/100.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/50.0 (feet)

SCREEN INTERVAL: 100.0 to 150.0 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 90.0 to 153.0 (feet, bls)

SEALANT TYPE: Grout INTERVAL: 90.0 to 90.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 90.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 37.92

GROUND SURFACE ELEVATION (feet, NGVD): 34.9

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 32" / 82° 26' 48"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 18

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: SA-6 WELL TYPE: C

DRILLING METHOD: Hydraulic Rotary DATE INSTALLED: 10-25-88

BY: John May

AQUIFER MONITORED: Artesian

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 153.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/100.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/50.0 (feet)

SCREEN INTERVAL: 100 to 150 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 90.0 to 153.0 (feet, bls)

SEALANT TYPE: Grout INTERVAL: 90.0 to 90.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 90.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 36.04

GROUND SURFACE ELEVATION (feet, NGVD): 33.0

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 44" / 82° 26' 48"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 19

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: SA-7 WELL TYPE: C

DRILLING METHOD: Hydraulic Rotary DATE INSTALLED: 10-28-88

BY: John May

AQUIFER MONITORED: Artesian

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 153.0 (feet, bls)

CASING TYPE: TFJ SCH 40 PVC CASING DIAMETER/LENGTH: 2 inch/100.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/50.0 (feet)

SCREEN INTERVAL: 100 to 150 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 90.0 to 153.0 (feet, bls)

SEALANT TYPE: Grout INTERVAL: 90.0 to 90.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 90.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 33.27

GROUND SURFACE ELEVATION (feet, NGVD): 30.3

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 50" / 82° 26' 36"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

TOC = TOP OF CASING

Table 20

MONITORING WELL
COMPLETION REPORT

DATE: March 9, 1989

FACILITY NAME: Lena Road Landfill

DER PERMIT NUMBER: _____

GMS NO.: _____

WELL NO.: _____ WELL NAME: SA-8 WELL TYPE: C

DRILLING METHOD: Hydraulic Rotary DATE INSTALLED: 11-1-88

BY: John May

AQUIFER MONITORED: Artesian

HOLE DIAMETER: 0.5 (feet) TOTAL DEPTH: 153.0 (feet, bls)

CASING TYPE: TFJ SCH.40 PVC CASING DIAMETER/LENGTH: 2 inch/100.0 (feet)

SCREEN TYPE: TFJ SCH 40 PVC SCREEN SLOT SIZE/LENGTH: 0.01 inch/50.0 (feet)

SCREEN INTERVAL: 100 to 150 (feet, bls)

FILTER PACK TYPE/SIZE: 20-30 Silica Sand INTERVAL: 90.0 to 153.0 (feet, bls)

SEALANT TYPE: Grout INTERVAL: 90.0 to 90.0 (feet, bls)

GROUT TYPE: Modified ACI Type I INTERVAL: 0 to 90.0 (feet, bls)

MEASURING POINT LOCATION AND ELEVATION (feet NGVD): TOC / 34.48

GROUND SURFACE ELEVATION (feet, NGVD): 31.1

LATITUDE AND LONGITUDE OF THE WELL: 27° 28' 50" / 82° 26' 28"

DESCRIBE WELL DEVELOPMENT: Centrifugal pump

NAME OF PERSON PREPARING REPORT: Diane Bloomberg/Herb Stangland

ATTACH AS-BUILT MW CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG.

BLS = BELOW LAND SURFACE

WELL TYPE: B = BACKGROUND I = INTERMEDIATE C = COMPLIANCE

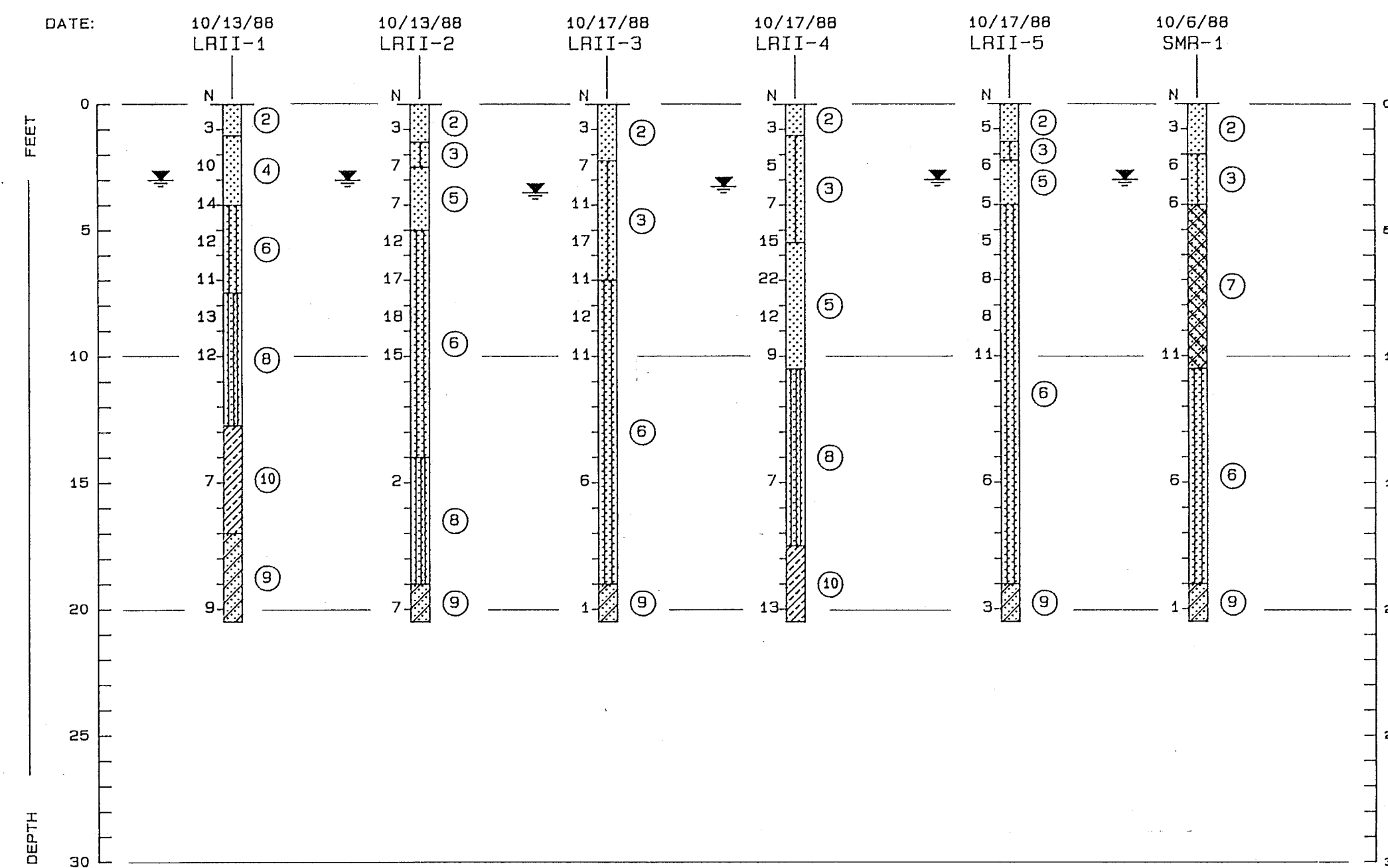
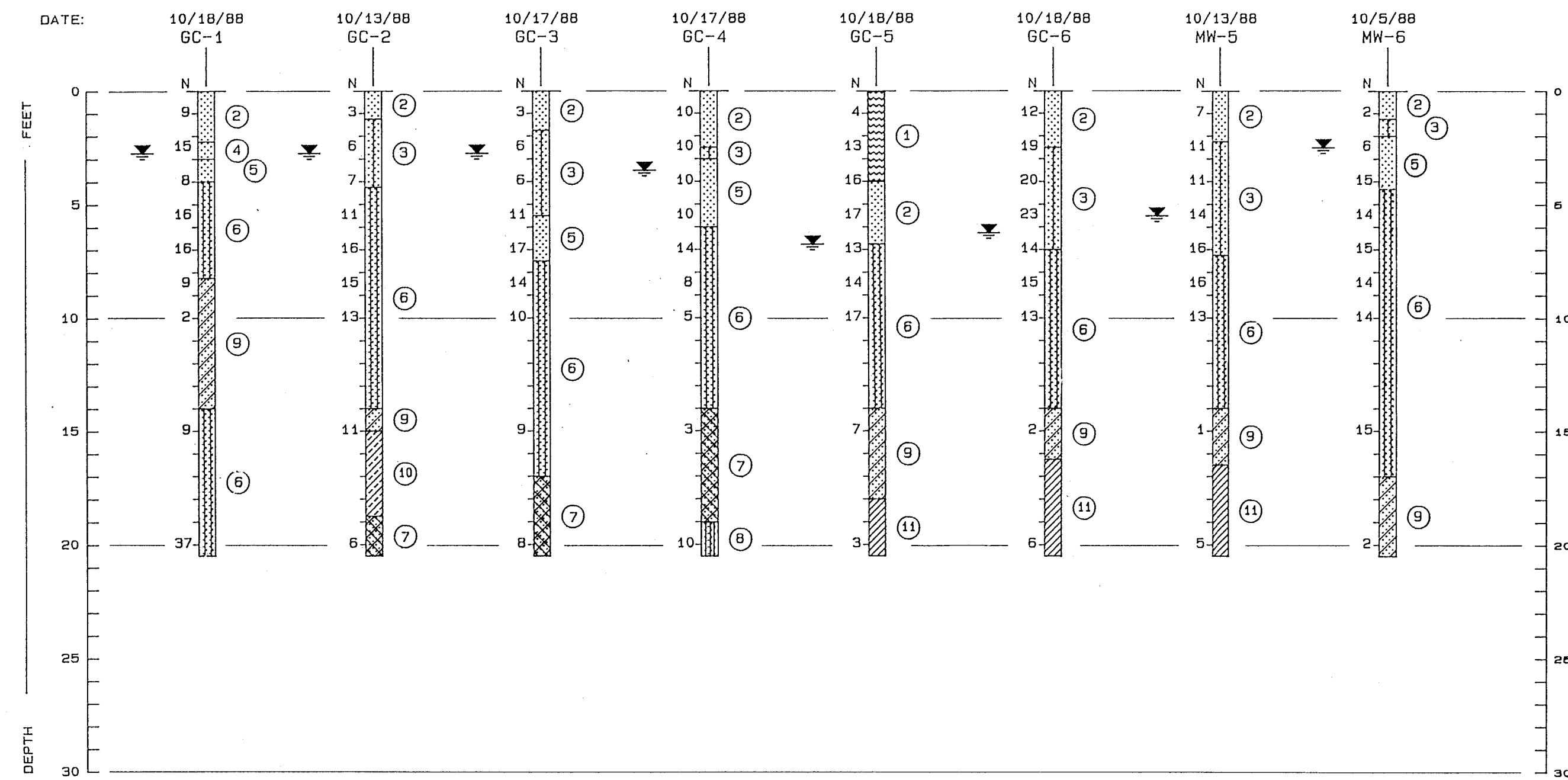
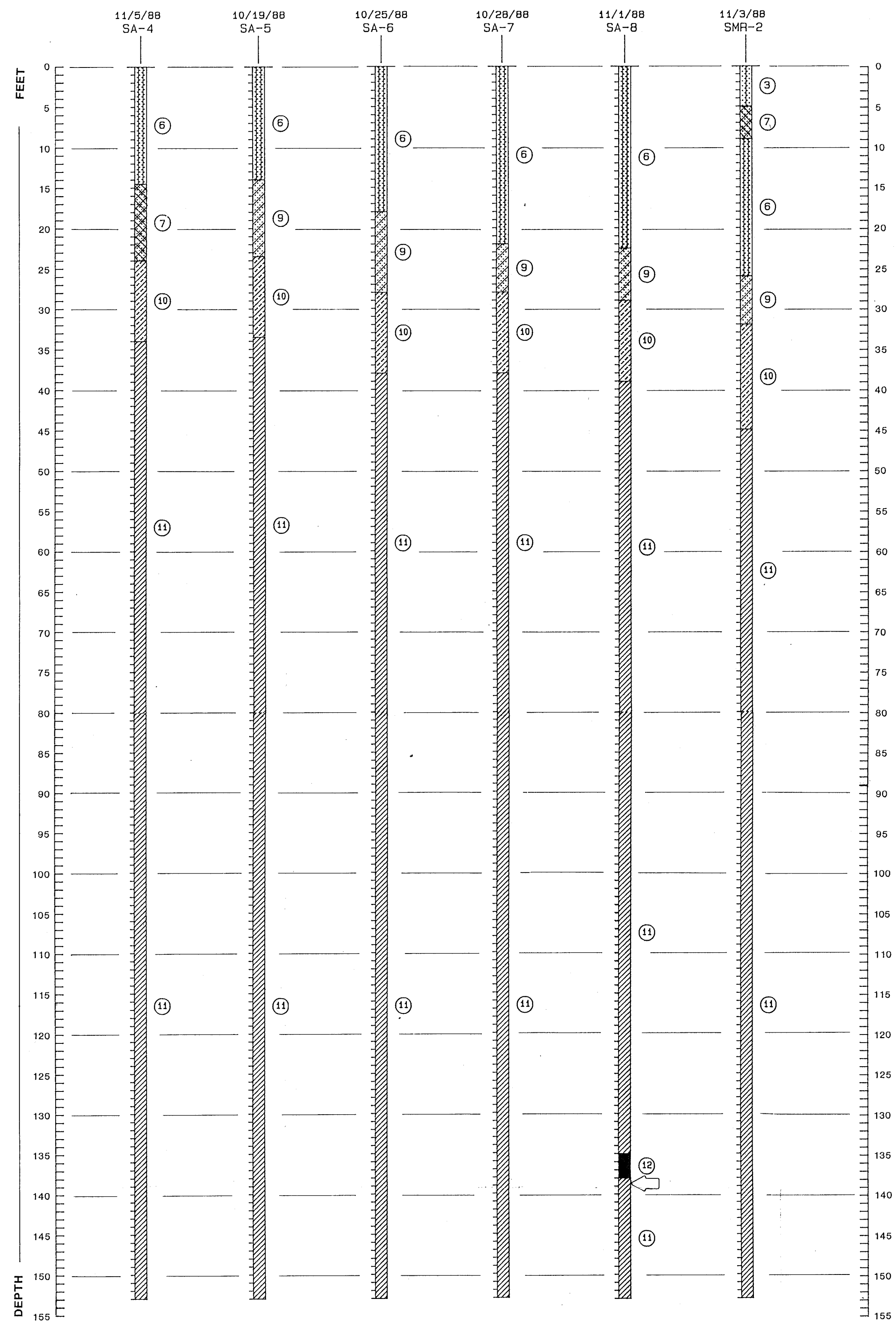
TOC = TOP OF CASING

Table 21

Well Abandonment Program

Well Number	Well Diameter (inches)	Well Depth (feet)	Date Abandoned	Permit Number
Lena Road Landfill				
CW-1	2	25 [±]	10-05-88	88-049
CW-2	2	15 [±]	01-25-89	88-045
MW-4			Destroyed (could not find)	88-044
MW-5 (Old)	2	10 [±]	10-05-88	88-048
MW-6 (Old)	2	20 [±]	10-05-88	88-047
MW-7			Buried in Landfill (could not find)	88-051
MW-8			Buried in Landfill (could not find)	88-052
SA-1	2	120	10-13-88	88-050
Adam's	8	546	Well logged 03-09-89	88-046
State Road 70 Landfill				
MW-1	2	44.8	10-26-88	88-054
MW-2	2	26.7	10-26-88	88-055
MW-3	2	18.2	10-26-88	88-056
MW-4	2	42.5	10-26-88	88-057
MW-5	3	83.8	10-27-88	88-058

SOIL BORING PROFILES



- LEGEND**
- 1 BROWN FINE SAND (FILL) (SP)
 - 2 GRAY FINE SAND (SP)
 - 3 BROWN TO DARK BROWN SLIGHTLY SILTY TO SILTY FINE SAND (SP-SM, SM)
 - 4 YELLOWISH BROWN FINE SAND (SP)
 - 5 BROWN TO DARK GRAY FINE SAND (SP)
 - 6 LIGHT GRAY TO DARK GRAY FINE SAND TO SILTY FINE SAND (SP, SP-SM, SM)
 - 7 DARK GRAY CLAYEY FINE SAND (SC)
 - 8 GRAY FINE SAND TO SILTY FINE SAND WITH PHOSPHATE (SP, SP-SM, SM)
 - 9 GRAY CLAYEY FINE SAND WITH PHOSPHATE (SC)
 - 10 GRAY SANDY CLAY WITH PHOSPHATE AND ROCK FRAGMENTS (CL)
 - 11 GREENISH GRAY CLAY WITH PHOSPHATE, ROCK FRAGMENTS, SAND AND CONSOLIDATED CLAY LENSES (CH)
 - 12 GRAY CHERT
- MW, SMR SURFICIAL AQUIFER MONITOR WELL LOCATION
GC, LR II TEST HOLES
- SA SECONDARY ARTESIAN AQUIFER MONITOR WELL LOCATION TEST HOLES
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
- LOSS OF DRILLING FLUID
- SP, SP-SM UNIFIED SOIL CLASSIFICATION SYSTEM
SM, SC, CH
- GROUNDWATER LEVEL MEASURED ON DATE DRILLED

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS		
DESCRIPTION	BLOW COUNT "N"	
VERY LOOSE	0 TO 4	
LOOSE	4 TO 10	
MEDIUM DENSE	10 TO 30	
DENSE	30 TO 50	
VERY DENSE	50	

II COHESIVE SOILS		
DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	1/4	0 TO 2
SOFT	1/4 TO 1/2	2 TO 4
MEDIUM STIFF	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	4	30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR. ABSENCE OF WATER SURFACE DATA ON CERTAIN BORINGS IMPLIES THAT NO GROUNDWATER DATA IS AVAILABLE, BUT DOES NOT NECESSARILY MEAN THAT GROUNDWATER WILL NOT BE ENCOUNTERED AT THESE LOCATIONS OR WITHIN THE VERTICAL REACHES OF THESE BORINGS IN THE FUTURE.

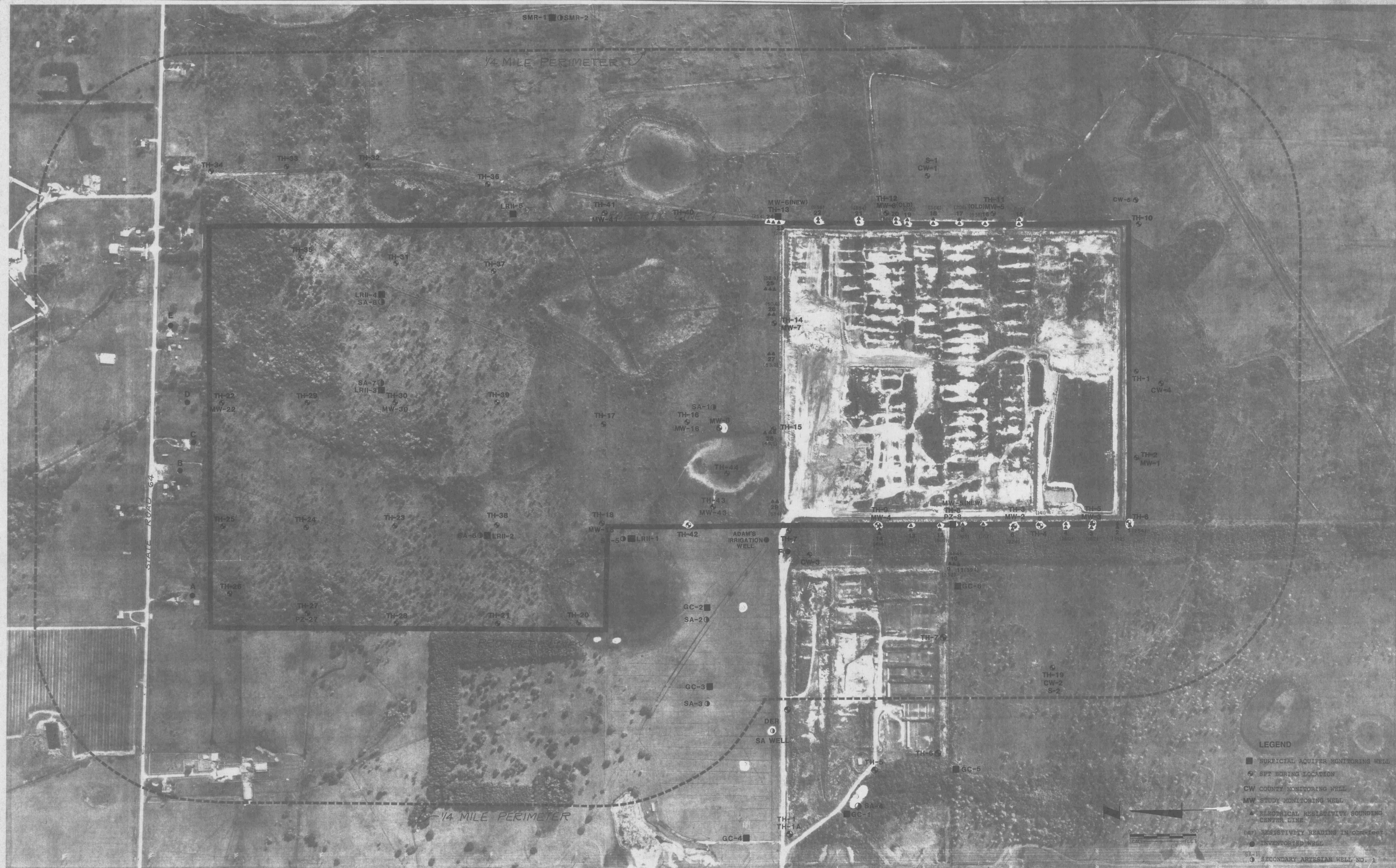
SOIL BORING PROFILES

Ardaman & Associates, Inc.
Consulting Engineers in Soils, Hydrogeology, Foundations, and Materials Testing

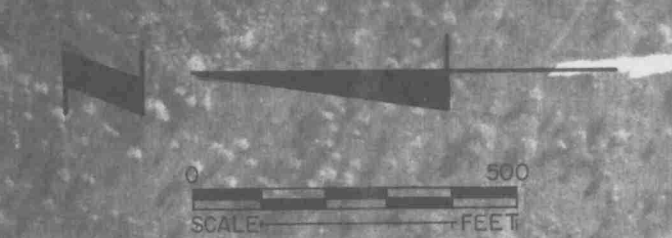
WELL COMPLETION REPORT
LENA ROAD LANDFILL
MANATEE COUNTY, FLORIDA

DRAWN BY: R.B.E. CHECKED BY: JRP DATE: 2/13/89
FILE NO. 86-115 APPROVED BY: H.G. Stangland

FIGURE 2



- LEGEND**
- SURFICIAL AQUIFER MONITORING WELL
 - SET BORING LOCATION
 - CW COUNTY MONITORING WELL
 - MW STUDY MONITORING WELL
 - ▲ ELECTRICAL RESISTIVITY SOUNDING CENTER LINE
 - (R) RESISTIVITY READING IN OHM-Feet
 - INVENTORIED WELL
 - SA-II ● SECONDARY ARTESIAN WELL NO. 1



DESIGNED		SUBMITTED BY: BRILEY, WILD & ASSOCIATES
DRAWN		PRINCIPAL
CHECKED		PROJECT ENGINEER
BY		APPROVED

BWA *Briley, Wild & Associates, Inc.*
CONSULTING ENGINEERS & PLANNERS
BRADENTON-CLEARWATER-ORMOND BEACH-RIVIERA BEACH, FLORIDA

Prepared By: **ARDAMAN & ASSOCIATES, INC.**

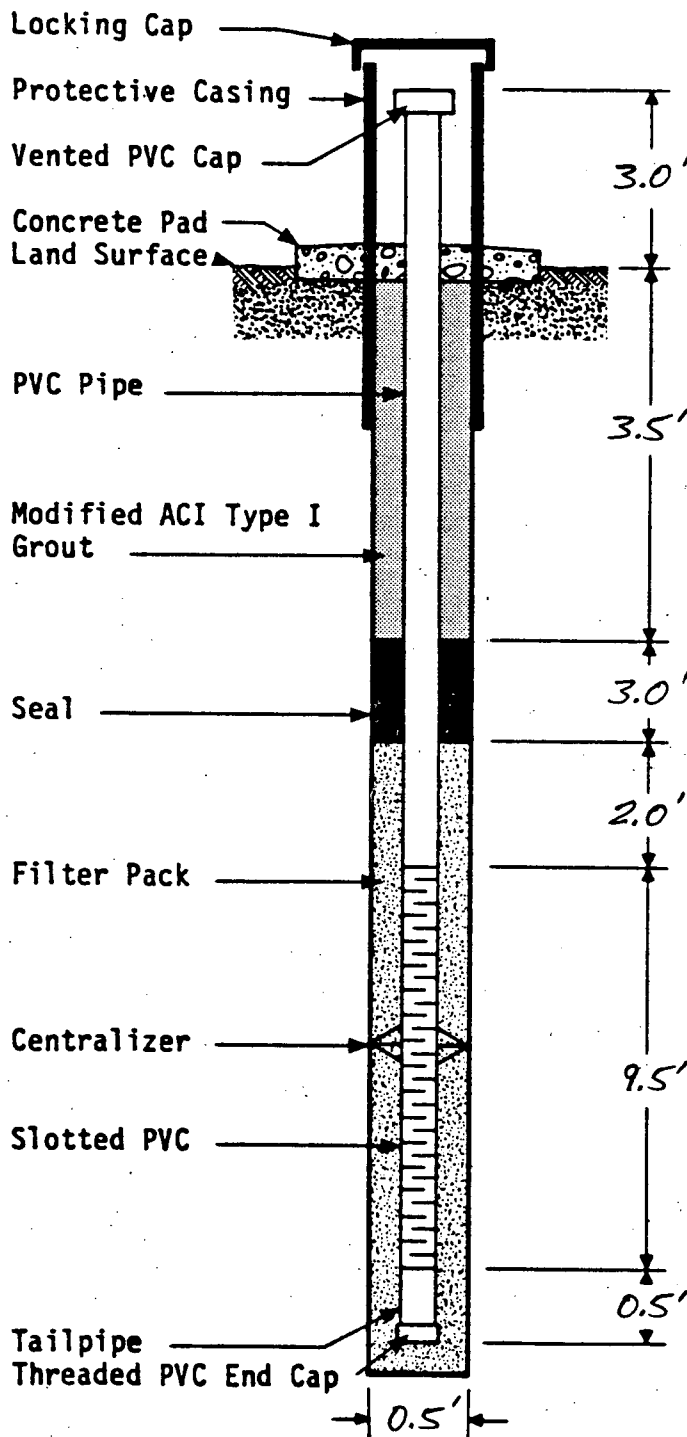
DATE:	PROJ. NO.
SCALE:	FILE NO.
SHEET NO. 1 OF 1	

FIGURE 3.1

Appendix I

Monitor Well Installation Records

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: LR II-1
 Date Installed: 10-15-88
 Crew Supervisor: STEVE FISHER
 Well Location: STAGE II

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø TET SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

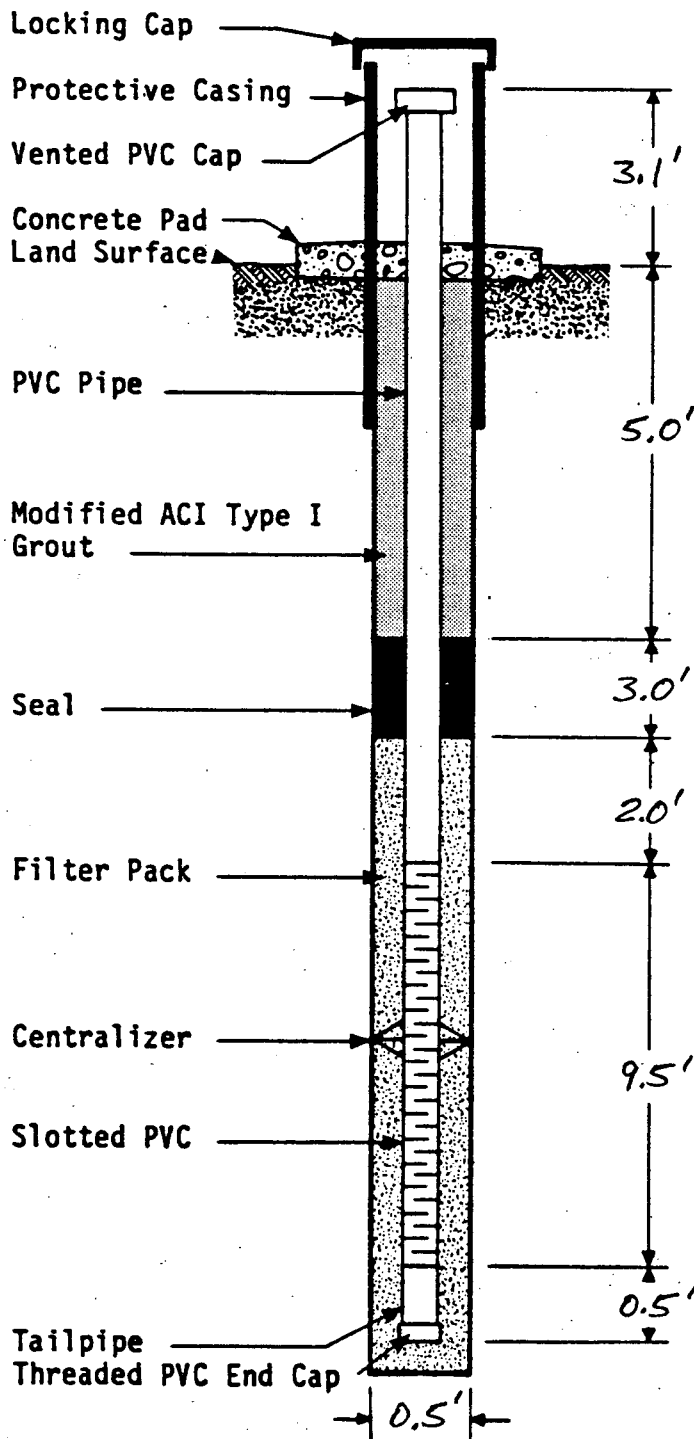
Total Length of PVC Pipe: 8.5 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 18.5 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 15
 Amount of Seal: _____

Remarks: PERMIT #88-595
SA-S AT THIS SITE

Water Level Readings:
 Date: 11/30/88
 Depth BTOC: 4.62' Depth BLS: 1.62'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: LR II-2
 Date Installed: 10-14-88
 Crew Supervisor: STEVE FISHER
 Well Location: STAGE II

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2'x2'x4"
 PVC Pipe: (size & type) 2" Ø TFI SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 10.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 20.0 ft (BLS)

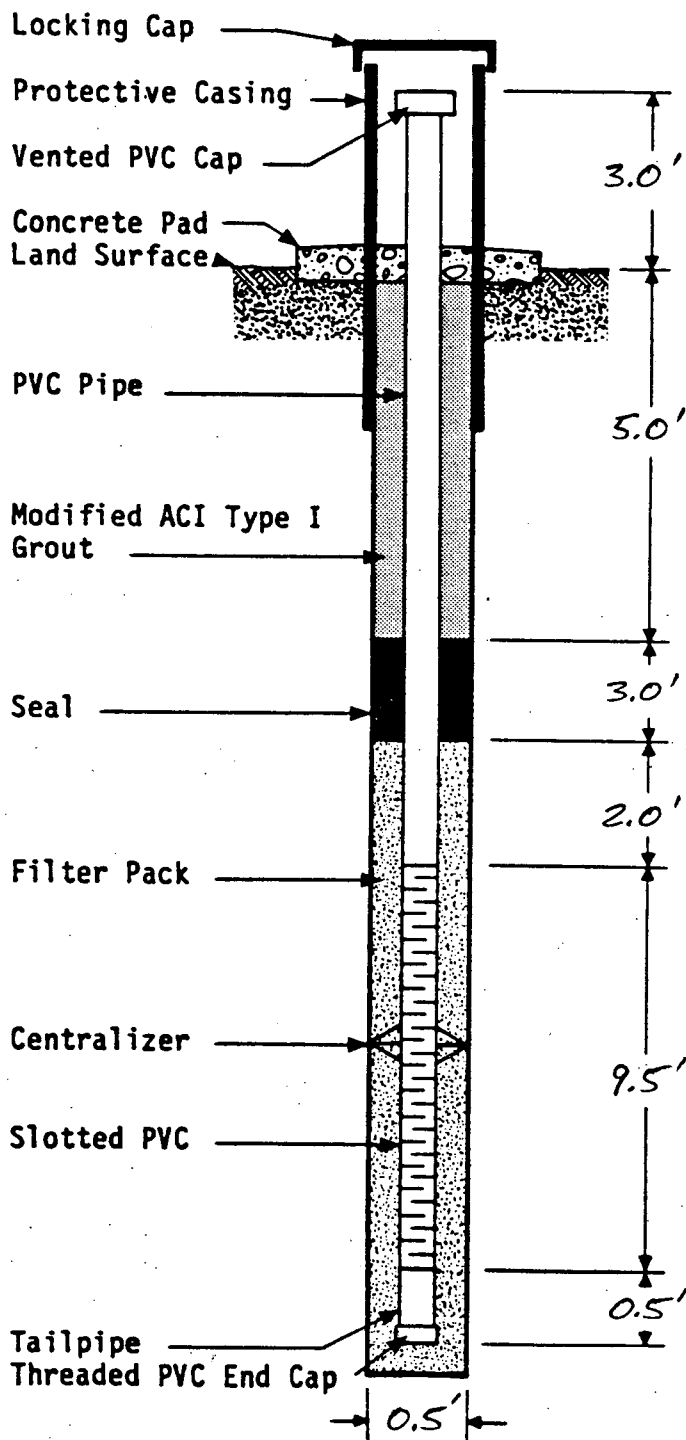
No. Bags of Cement: 3
 No. Bags of Filter Pack: 15
 Amount of Seal: _____

Remarks: PERMIT # 88-589

SA-6 AT THIS SITE

Water Level Readings:
 Date: 12-1-88
 Depth BTOC: 5.83' Depth BLS: 2.73'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: LR II-3
 Date Installed: 10-23-88
 Crew Supervisor: STEVE FISHER
 Well Location: STAGE II

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø TFFJ SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 10.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 20.0 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 16
 Amount of Seal: _____

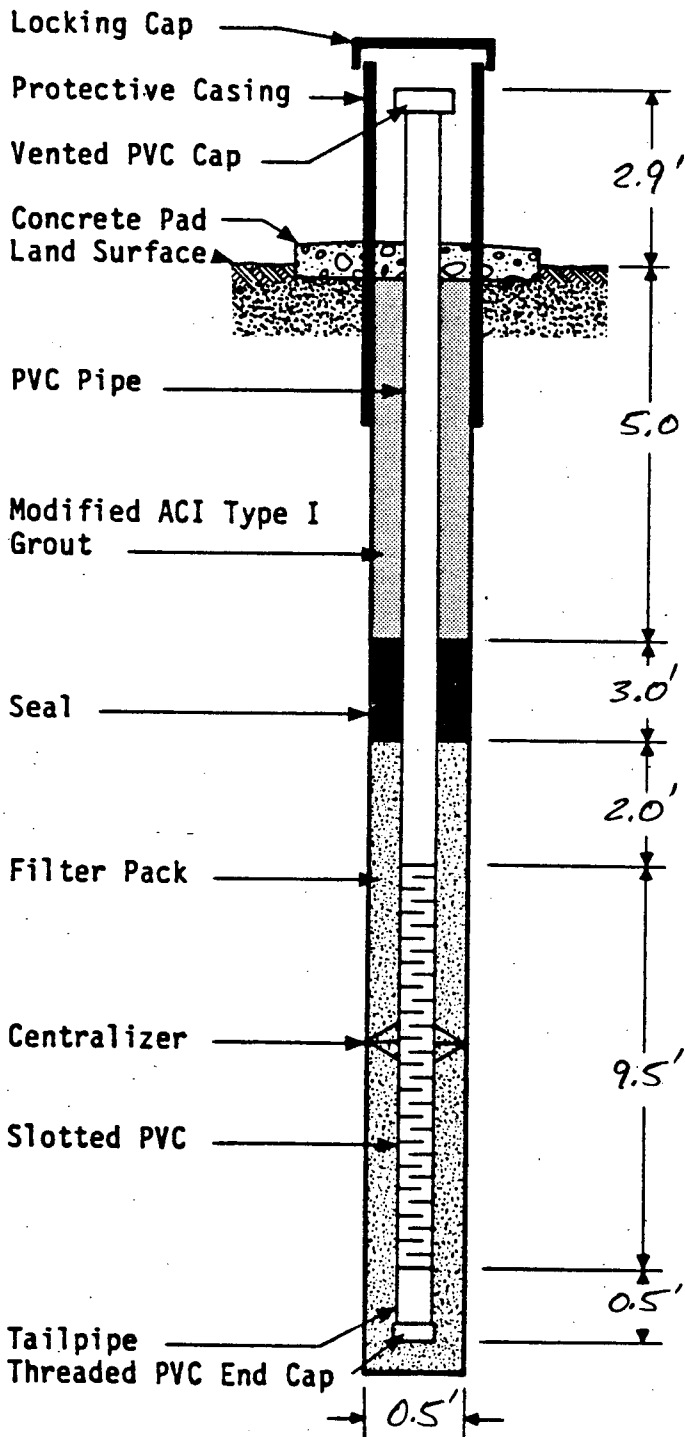
Remarks: PERMIT # 88-590

SA-7 AT THIS SITE

Water Level Readings:
 Date: 12-1-88
 Depth BTOC: 5.54' Depth BLS: 2.54'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD

14



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: LR II-4
 Date Installed: 10-23-88
 Crew Supervisor: STEVE FISHER
 Well Location: STAGE II

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2'x2'x4"
 PVC Pipe: (size & type) 2" Ø TFI SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

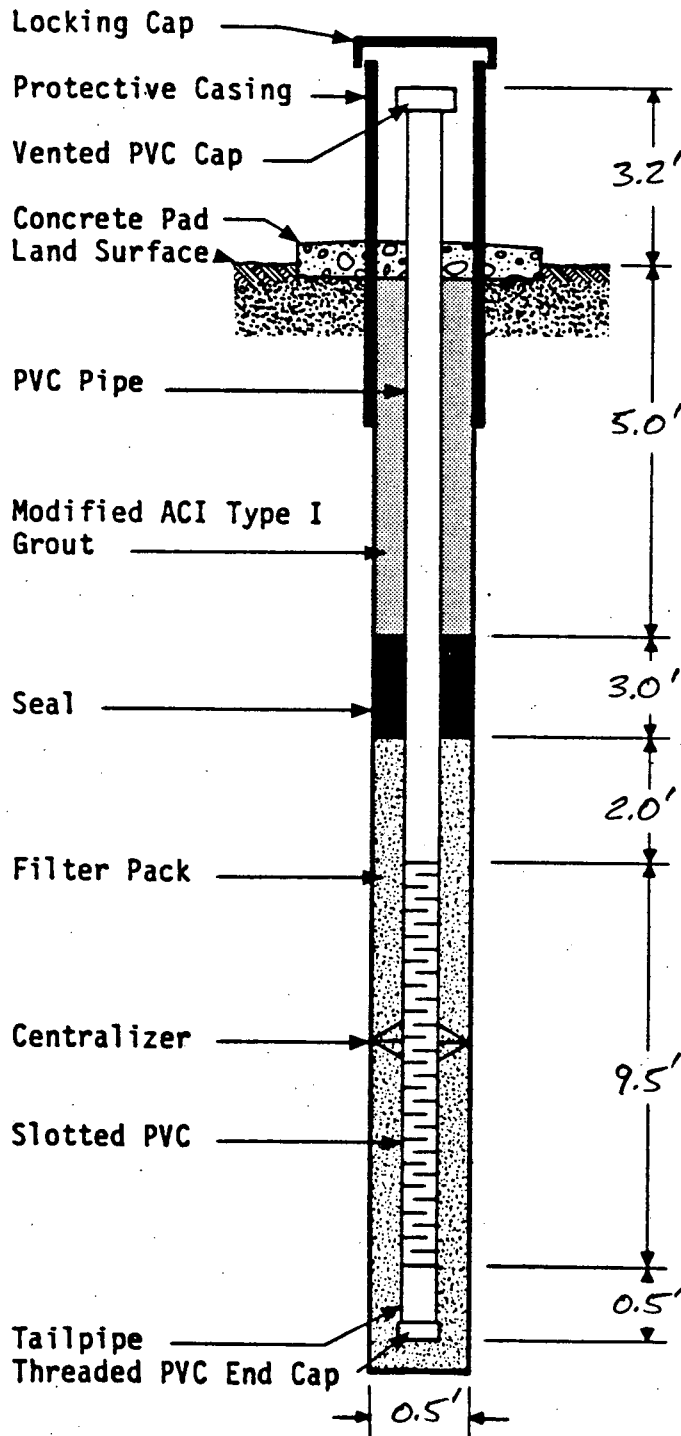
Total Length of PVC Pipe: 10.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 20.0 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 16
 Amount of Seal: _____

Remarks: PERMIT # 88-591
SA-8 AT THIS SITE

Water Level Readings:
 Date: 12-1-88
 Depth BTOC: 5.29' Depth BLS: 2.39'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: LR II-5
 Date Installed: 10-23-88
 Crew Supervisor: STEVE FISHER
 Well Location: STAGE II

Protective Casing: (size & type) 4" ϕ STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" ϕ TFFJ SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" ϕ 0.01" SLOTTED SCHEDULE 40
 Centralizers: (number & location(s)) _____

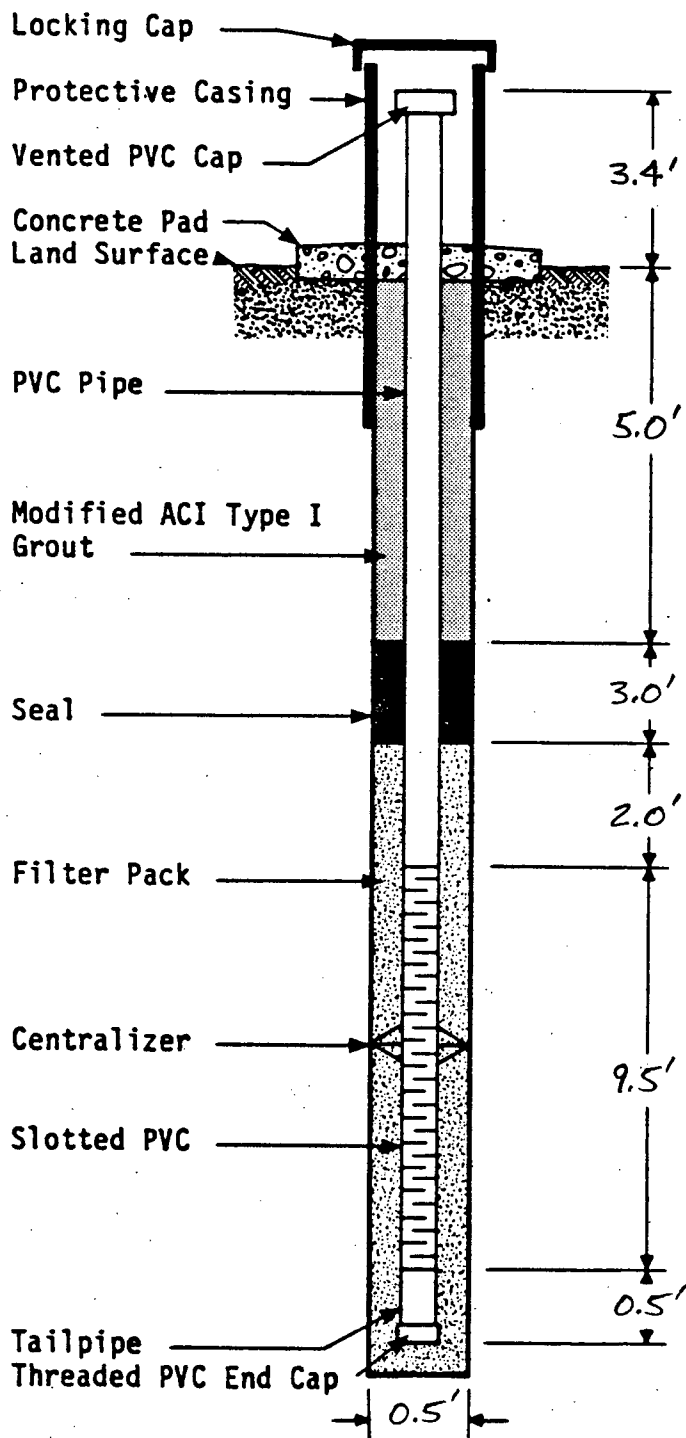
Total Length of PVC Pipe: 10.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 20.0 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 16
 Amount of Seal: _____

Remarks: PERMIT # 88-592

Water Level Readings:
 Date: 12-14-88
 Depth BTOC: 5.92' Depth BLS: 2.72'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: GC-1
 Date Installed: 10-25-88
 Crew Supervisor: STEVE FISHER
 Well Location: GUN CLUB (STAGE III)

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2'x2'x4"
 PVC Pipe: (size & type) 2" Ø TFFJ SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

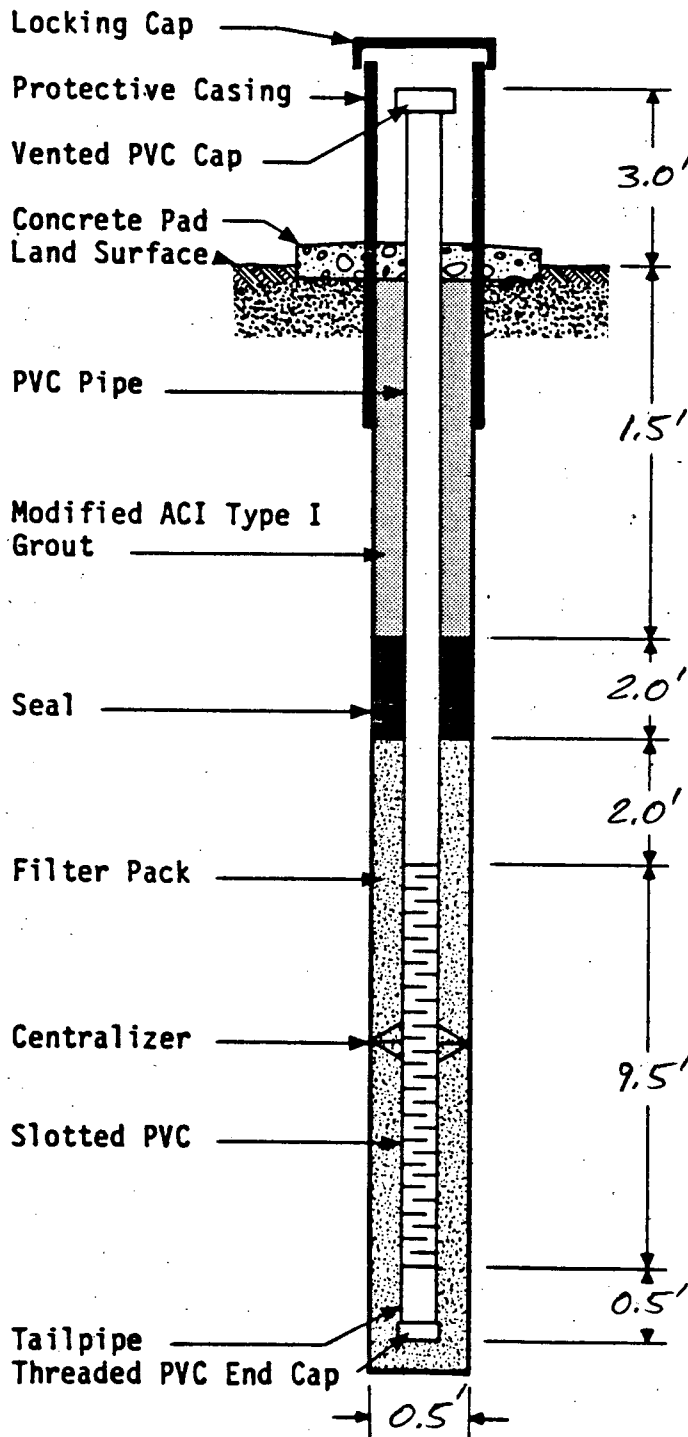
Total Length of PVC Pipe: 10.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 20.0 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 16
 Amount of Seal: _____

Remarks: PERMIT #88-599
SA-4 AT THIS SITE

Water Level Readings:
 Date: 12-14-88
 Depth BTOC: 4.46' Depth BLS: 1.06'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLIDWASTE DEPT.

Well No.: GC-Z
 Date Installed: 10-21-88
 Crew Supervisor: STEVE FISHER
 Well Location: GUN CLUB (STAGE III)

Protective Casing: (size & type) 4" ϕ STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" ϕ TFF SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" ϕ 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 5.5 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 15.5 ft (BLS)

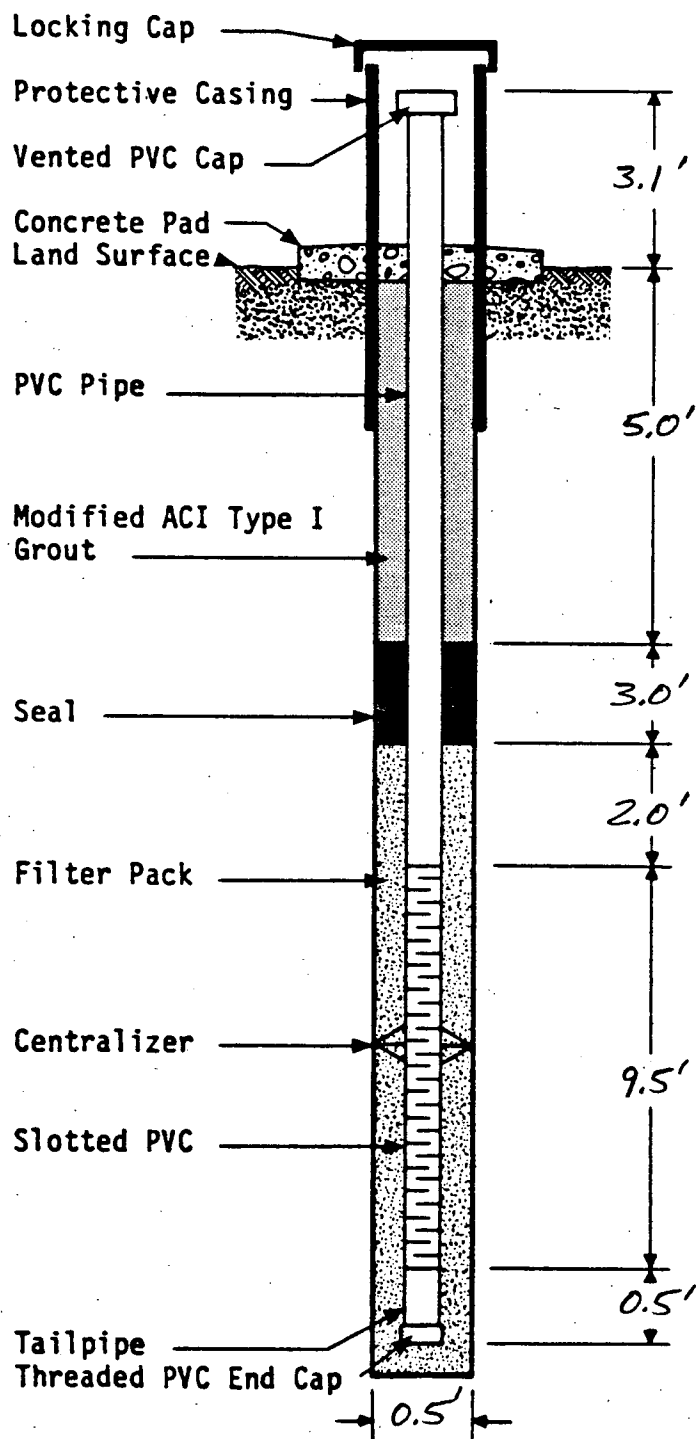
No. Bags of Cement: 2
 No. Bags of Filter Pack: 14
 Amount of Seal: _____

Remarks: PERMIT # 88-596

SA-Z AT THIS SITE

Water Level Readings:
 Date: 12-14-88
 Depth BTOC: 4.17' Depth BLS: 1.17'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: GC-3
 Date Installed: 10-20-88
 Crew Supervisor: STEVE FISHER
 Well Location: GUN CLUB (STAGE III)

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' X 2' X 4"
 PVC Pipe: (size & type) 2" Ø TFI SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 10.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 20.0 ft (BLS)

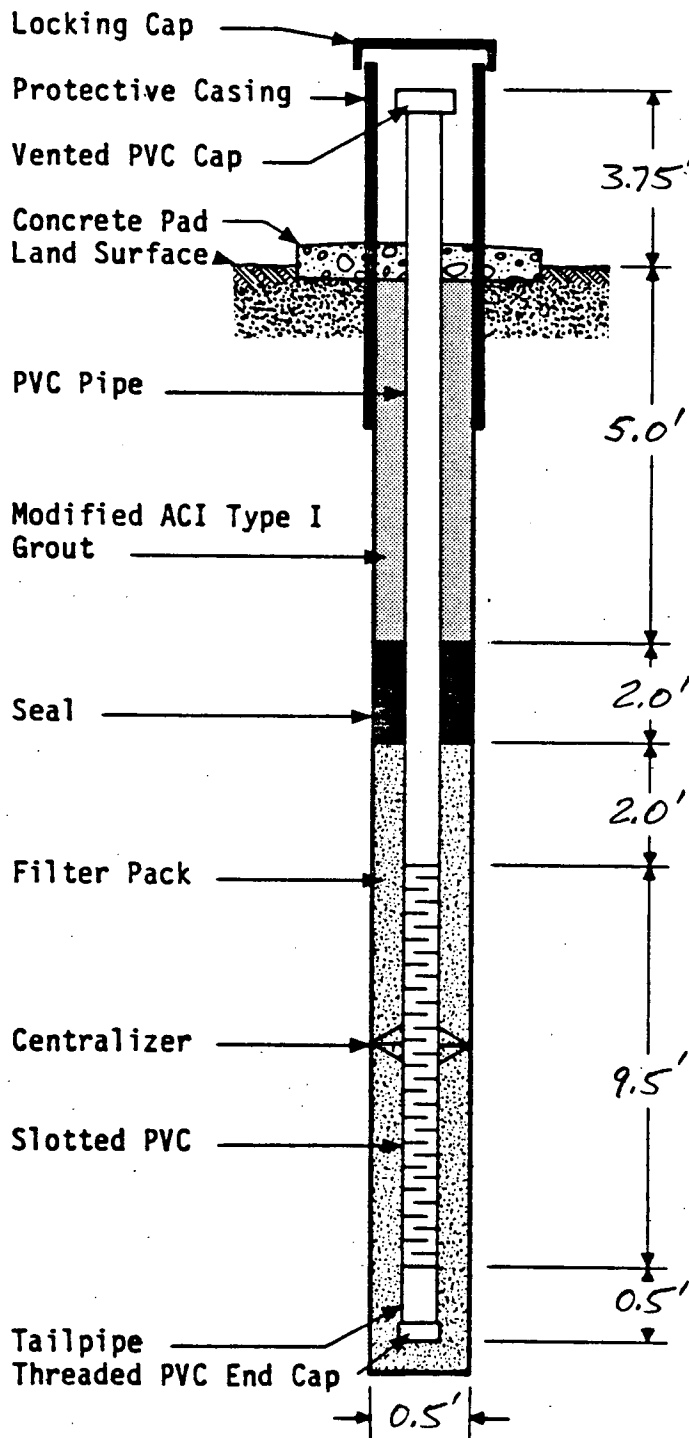
No. Bags of Cement: 3
 No. Bags of Filter Pack: 15
 Amount of Seal: _____

Remarks: PERMIT #88-597

SA-3 AT THIS SITE

Water Level Readings:
 Date: 12-14-88
 Depth BTOC: 4.58' Depth BLS: 1.48'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: GC-4
 Date Installed: 10-20-88
 Crew Supervisor: STEVE FISHER
 Well Location: GUN CLUB (STAGE III)

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø TFI SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

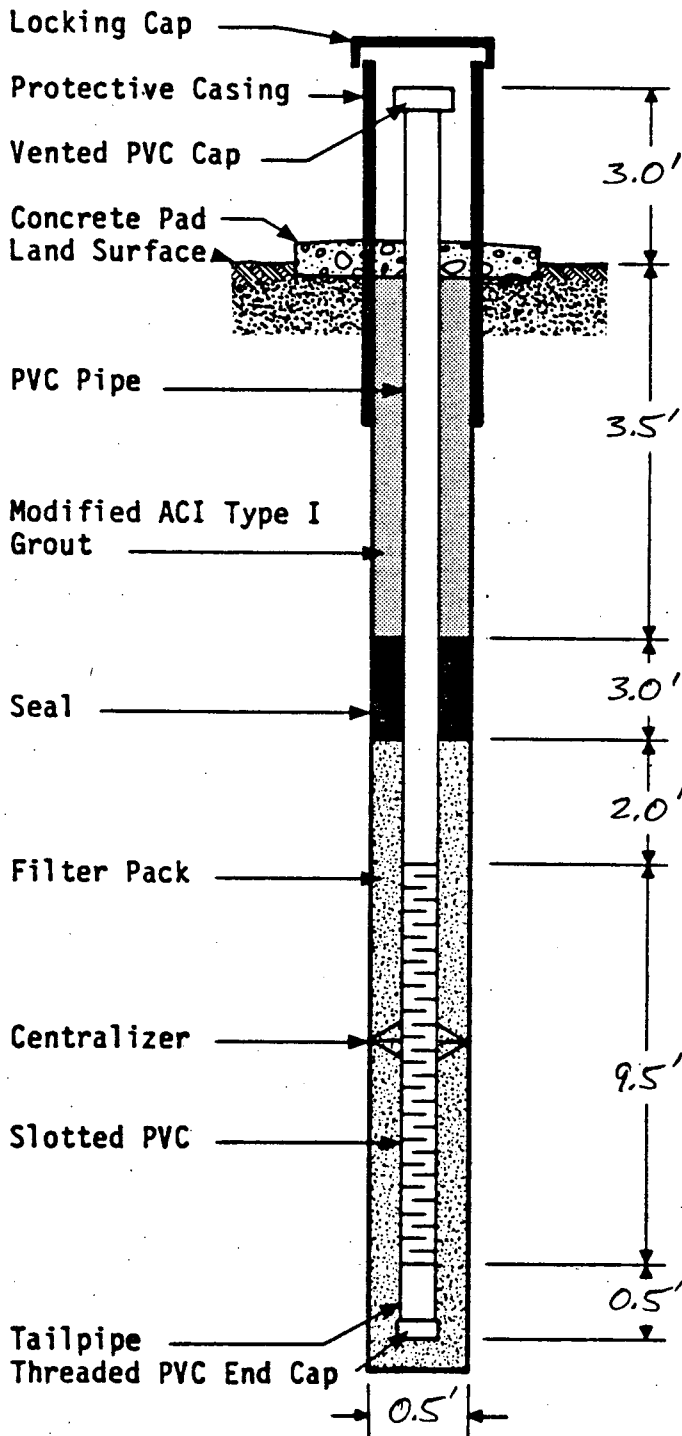
Total Length of PVC Pipe: 9.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 19.0 ft (BLS)

No. Bags of Cement: 2
 No. Bags of Filter Pack: 15
 Amount of Seal: _____

Remarks: PERMIT # 88-598

Water Level Readings:
 Date: 12/14/88
 Depth BTOC: 5.58' Depth BLS: 1.83'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: GC-5
 Date Installed: 10-22-88
 Crew Supervisor: STEVE FISHER
 Well Location: GUN CLUB (STAGE III)

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø T&EJ SCHEDULE 40 PVC
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

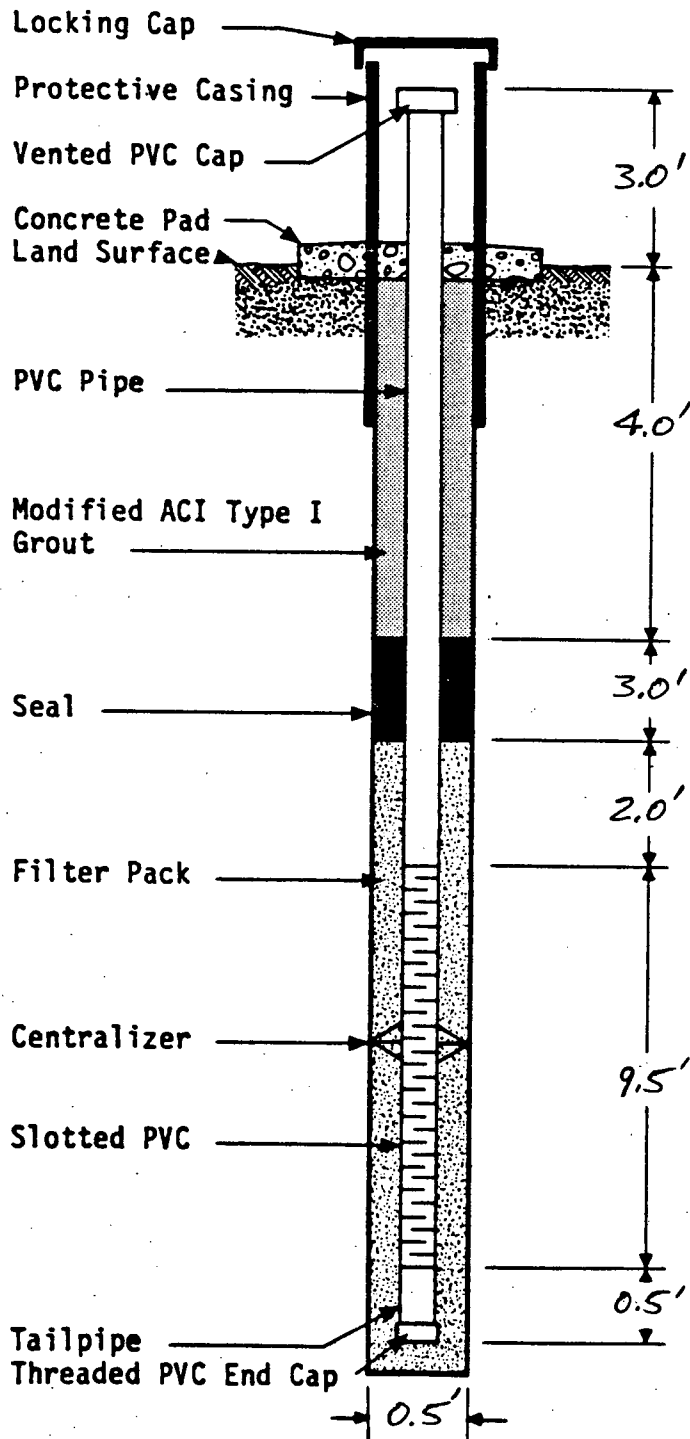
Total Length of PVC Pipe: 8.5 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 18.5 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 16
 Amount of Seal: _____

Remarks: PERMIT # 88-600

Water Level Readings:
 Date: 12-15-88
 Depth BTOC: 7.83' Depth BLS: 4.83'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: GC-6
 Date Installed: 10-21-88
 Crew Supervisor: STEVE FISHER
 Well Location: GUN CLUB (STAGE III)

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' X 2' X 4"
 PVC Pipe: (size & type) 2" Ø TFI SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

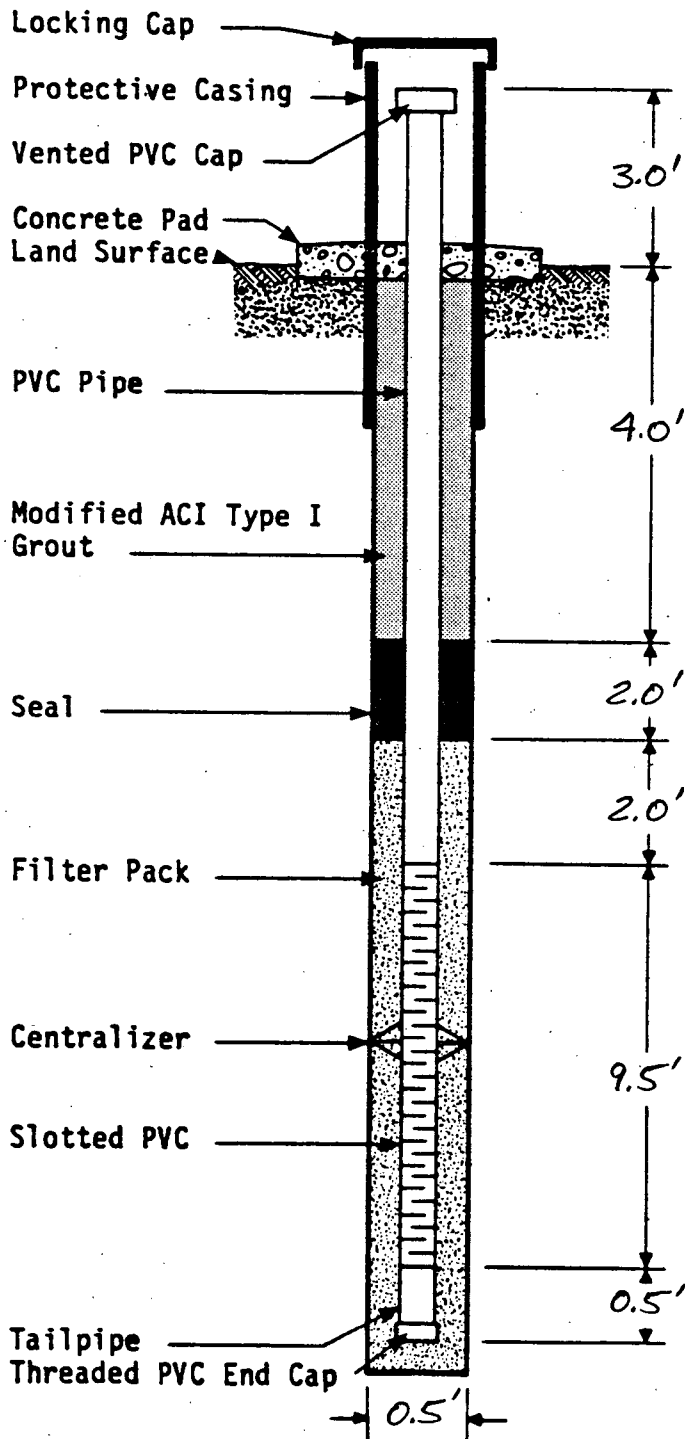
Total Length of PVC Pipe: 9.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 19.0 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 16
 Amount of Seal: _____

Remarks: PERMIT # 88-601

Water Level Readings:
 Date: 12-15-88
 Depth BTOC: 7.96' Depth BLS: 4.96'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: MW-5 (NEW)
 Date Installed: 10-22-88
 Crew Supervisor: STEVE FISHER
 Well Location: STAGE I

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø TFI SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

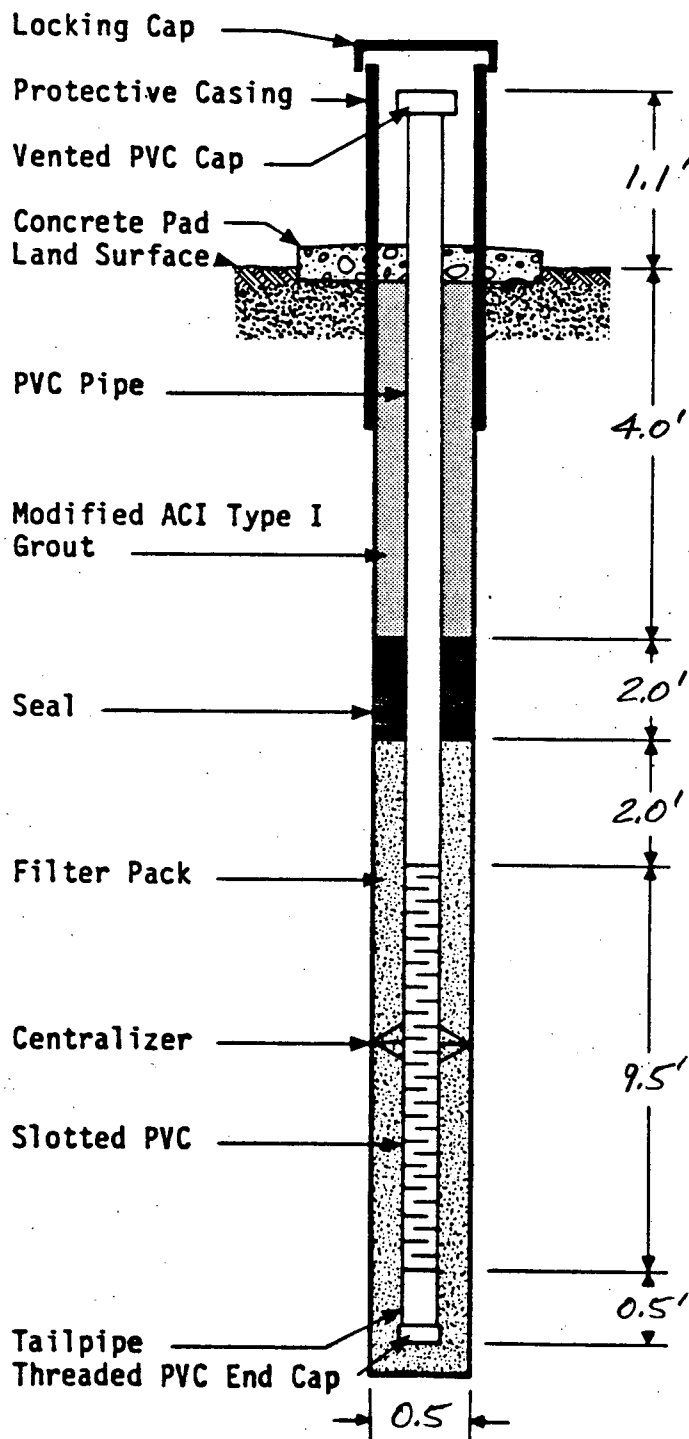
Total Length of PVC Pipe: 8.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 18.0 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 15
 Amount of Seal: _____

Remarks: PERMIT # 88-602

Water Level Readings:
 Date: 12-15-88
 Depth BTOC: 9.17' Depth BLS: 6.17'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: MW-6 (NEW)
 Date Installed: 10-17-88
 Crew Supervisor: STEVE FISHER
 Well Location: STAGE I

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø TFI SCHEDULE 40
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s))

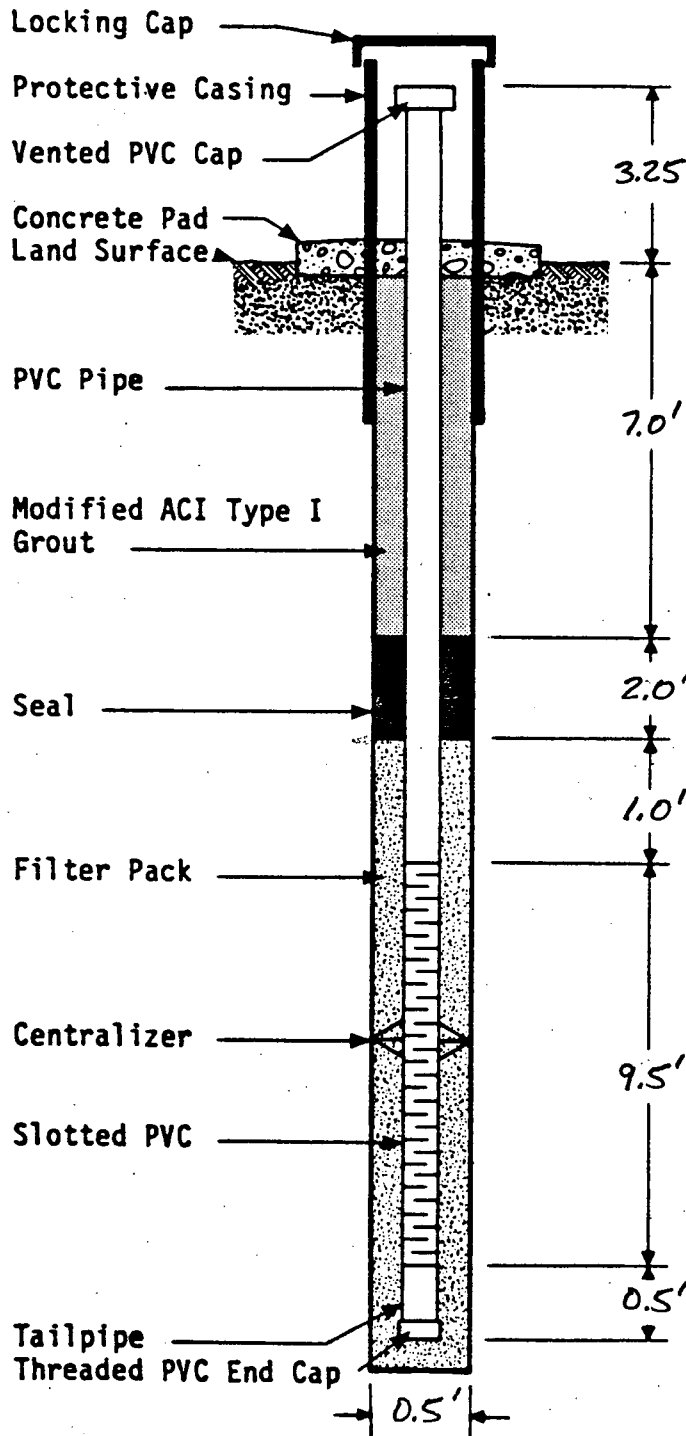
Total Length of PVC Pipe: 8.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 18.0 ft (BLS)

No. Bags of Cement: 3
 No. Bags of Filter Pack: 15
 Amount of Seal: _____

Remarks: PERMIT #594

Water Level Readings:
 Date: 11/30/88
 Depth BTOC: 5.54' Depth BLS: 4.44'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: SMR-1
 Date Installed: 10-6-88
 Crew Supervisor: STEVE FISHER
 Well Location: STAGE II

Protective Casing: (size & type) 4" ϕ STEEL
 Concrete Pad: (size) 2'x2'x4"
 PVC Pipe: (size & type) 2" ϕ TFFJ SCHEDULE 40 PVC
 Seal: (type) CLAYEY FINE SAND
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" ϕ 0.01" SLOTTED SCHEDULE 40 PVC SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 10.0 ft (BLS)
 Total Length of Slotted PVC: 9.5 ft (BLS)
 Total Length of Tailpipe: 0.5 ft
 Total Depth of Well: 20.0 ft (BLS)

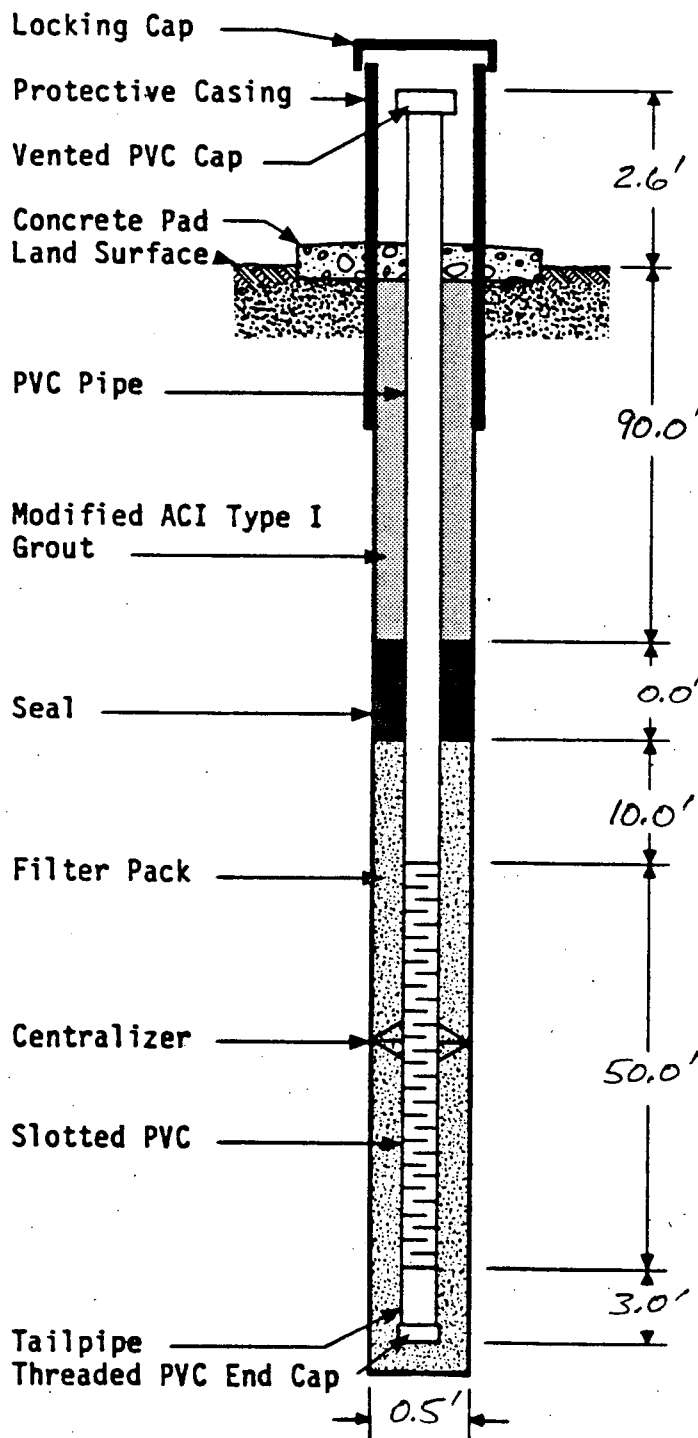
No. Bags of Cement: 3
 No. Bags of Filter Pack: 15
 Amount of Seal: _____

Remarks: PERMIT # 88-593

WELL AT SMR-2

Water Level Readings:
 Date: 12-1-88
 Depth BTOC: 6.25' Depth BLS: 3.00'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: SMR-2
 Date Installed: 11-3-88
 Crew Supervisor: JOHN MAY
 Well Location: STAGE II

Protective Casing: (size & type) 4" ϕ STEEL
 Concrete Pad: (size) 2' X 2' X 4"
 PVC Pipe: (size & type) 2" ϕ TFS SCHEDULE 40
 Seal: (type) GROUT
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" ϕ 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 100.0 ft (BLS)
 Total Length of Slotted PVC: 50.0 ft (BLS)
 Total Length of Tailpipe: 3.0 ft
 Total Depth of Well: 153.0 ft (BLS)

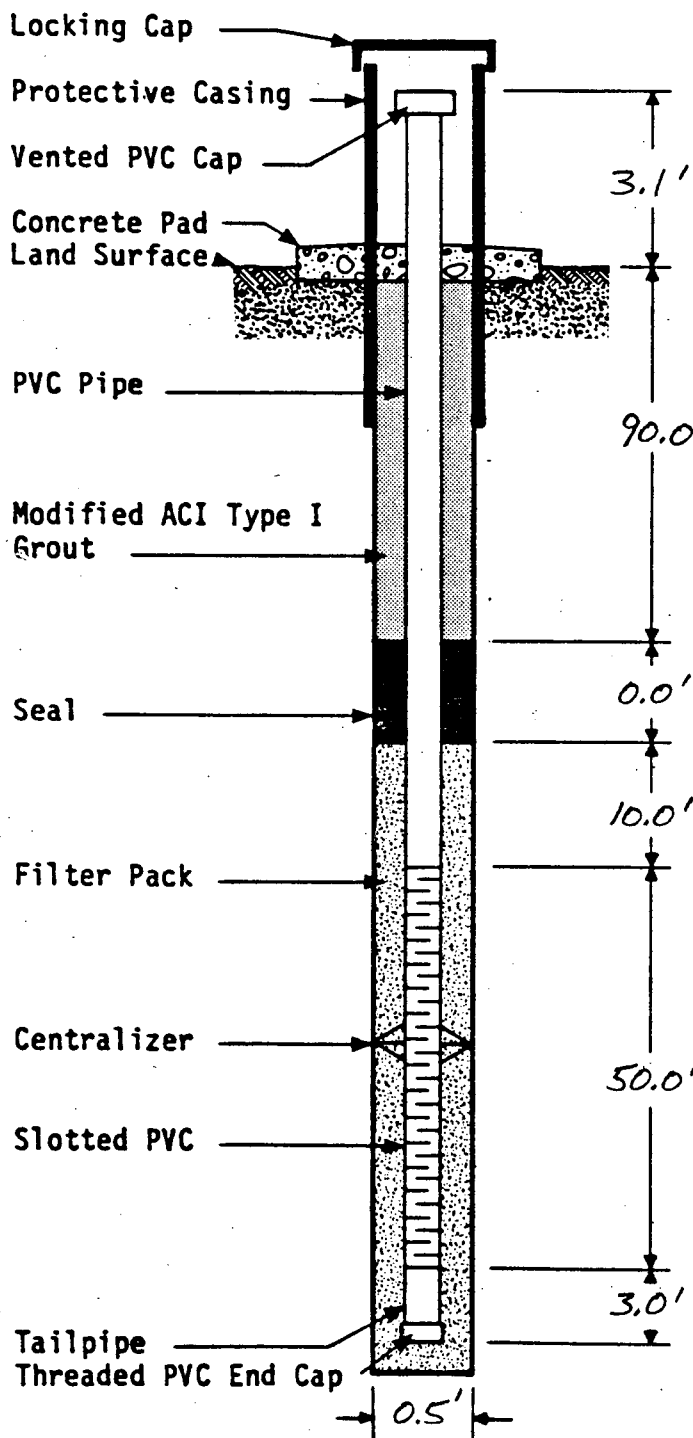
No. Bags of Cement: 18
 No. Bags of Filter Pack: 26
 Amount of Seal: _____

Remarks: PERMIT # 88-606

SMR-1 AT THIS SITE

Water Level Readings:
 Date: 11-30-88
 Depth BTOC: 20.83' Depth BLS: 18.23'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: SA-4
 Date Installed: 11-5-88
 Crew Supervisor: JOHN MAY
 Well Location: STAGE III

Protective Casing: (size & type) 4" ϕ STEEL
 Concrete Pad: (size) 2' X 2' X 4"
 PVC Pipe: (size & type) 2" ϕ TFFJ SCHEDULE 40
 Seal: (type) GROUT
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" ϕ 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 100.0 ft (BLS)
 Total Length of Slotted PVC: 50.0 ft (BLS)
 Total Length of Tailpipe: 3.0 ft
 Total Depth of Well: 153.0 ft (BLS)

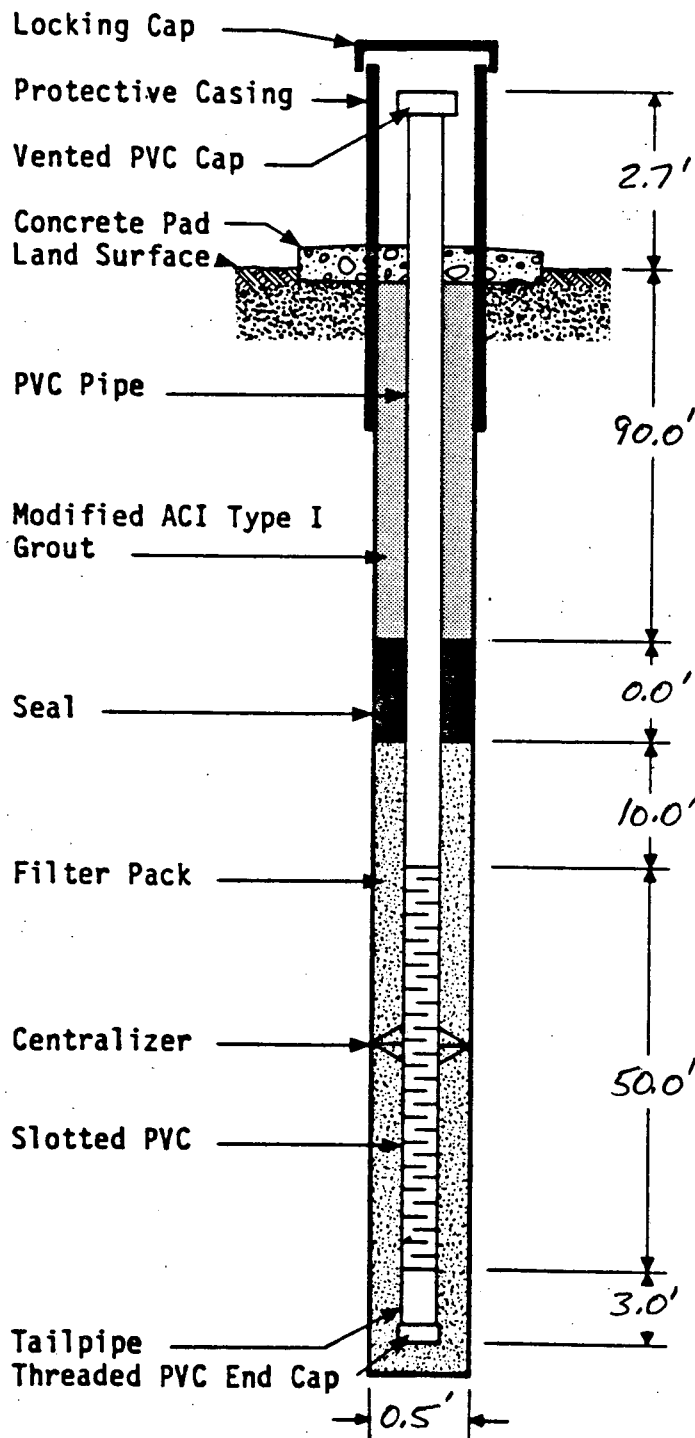
No. Bags of Cement: 18
 No. Bags of Filter Pack: 26
 Amount of Seal: _____

Remarks: PERMIT # 88-607

GC-1 AT THIS SITE

Water Level Readings:
 Date: 12-14-88
 Depth BTOC: 18.25' Depth BLS: 15.15'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: SA-5
 Date Installed: 10-19-88
 Crew Supervisor: JOHN MAY
 Well Location: STAGE II

Protective Casing: (size & type) 4" ϕ STEEL
 Concrete Pad: (size) 2'x2'x4"
 PVC Pipe: (size & type) 2" ϕ TFI SCHEDULE 40
 Seal: (type) GROUT
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" ϕ 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s))

Total Length of PVC Pipe: 100.0 ft (BLS)
 Total Length of Slotted PVC: 50.0 ft (BLS)
 Total Length of Tailpipe: 3.0 ft
 Total Depth of Well: 153.0 ft (BLS)

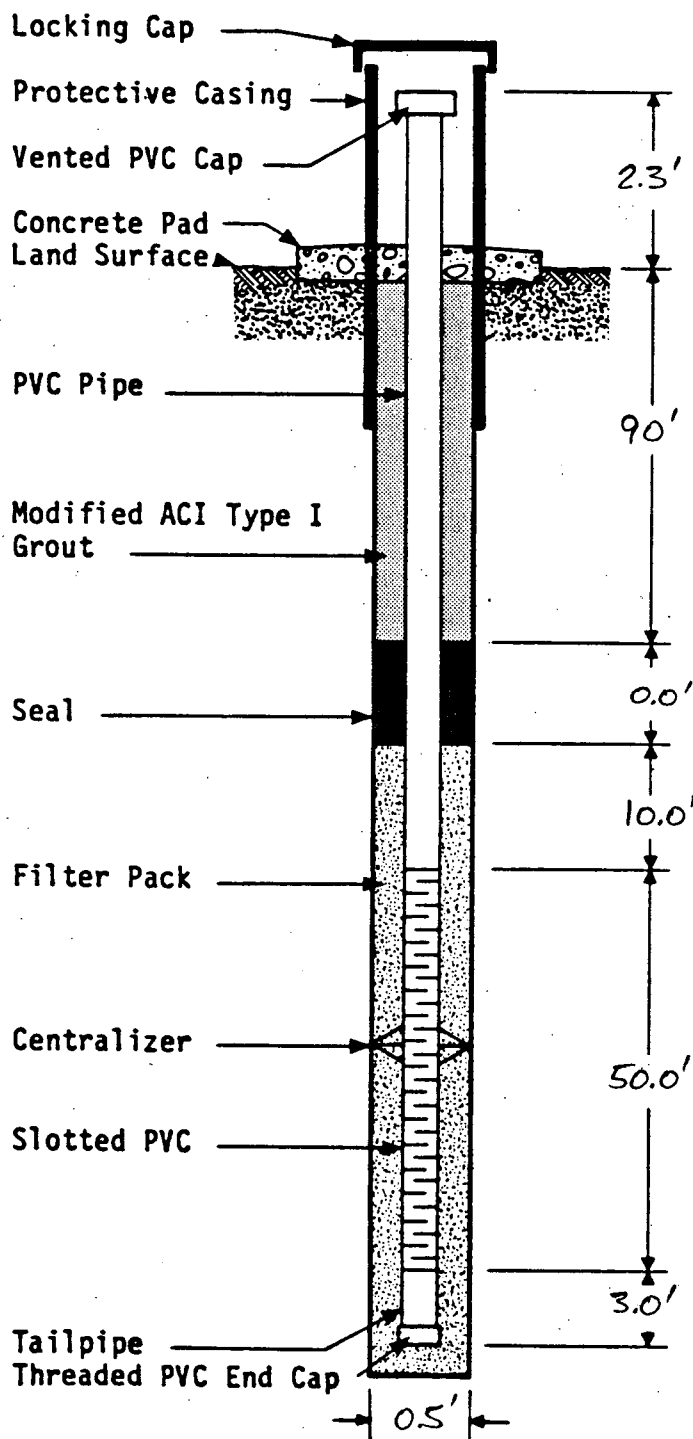
No. Bags of Cement: 18
 No. Bags of Filter Pack: 25
 Amount of Seal:

Remarks: PERMIT # 608

LRII-1 AT THIS SITE

Water Level Readings:
 Date: 12-1-88
 Depth BTOC: 22.25' Depth BLS: 19.55'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: SA-6
 Date Installed: 10-25-88
 Crew Supervisor: JOHN MAY
 Well Location: STAGE II

Protective Casing: (size & type)
4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø TFF
SCHEDULE 40
 Seal: (type) Grout
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø
0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s))

Total Length of PVC Pipe:
100.0 ft (BLS)
 Total Length of Slotted PVC:
50.0 ft (BLS)
 Total Length of Tailpipe:
3.0 ft
 Total Depth of Well:
153.0 ft (BLS)

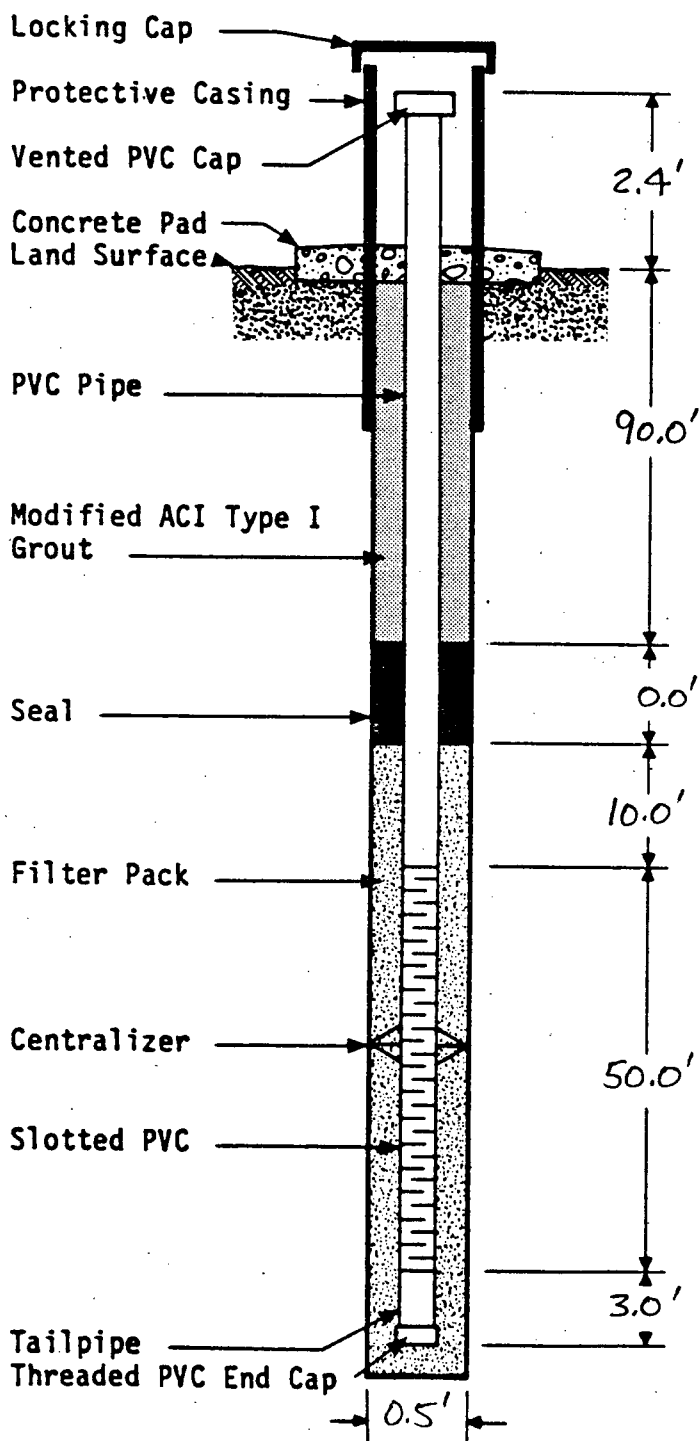
No. Bags of Cement: 18
 No. Bags of Filter Pack: 30
 Amount of Seal: _____

Remarks: PERMIT # 88-603

LR II-2 AT THIS SITE

Water Level Readings:
 Date: 12-1-88
 Depth BTOC: 20.96' Depth BLS: 18.66'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: SA-7
 Date Installed: 10-28-88
 Crew Supervisor: JOHN MAY
 Well Location: STAGE II

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø TFI SCHEDULE 40
 Seal: (type) GROUT
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 100.0 ft (BLS)
 Total Length of Slotted PVC: 50.0 ft (BLS)
 Total Length of Tailpipe: 3.0 ft
 Total Depth of Well: 153.0 ft (BLS)

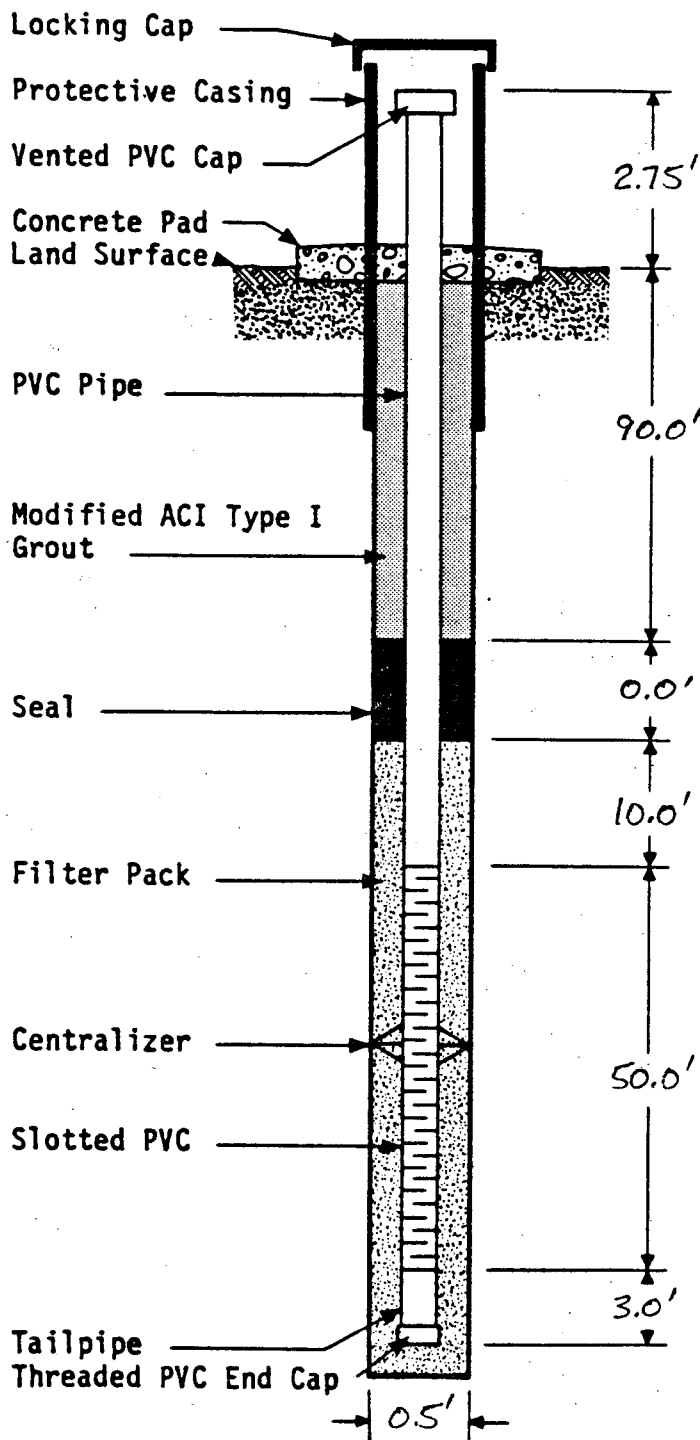
No. Bags of Cement: 17
 No. Bags of Filter Pack: 27
 Amount of Seal: _____

Remarks: PERMIT # 88-604

LR II-3 AT THIS SITE

Water Level Readings:
 Date: 12-1-88
 Depth BTOC: 21.17' Depth BLS: 18.77'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____

MONITOR WELL INSTALLATION RECORD



File No.: 86-115
 Project: LENA ROAD LANDFILL
 Client: MANATEE CO. SOLID WASTE DEPT.

Well No.: SA-8
 Date Installed: 11-1-88
 Crew Supervisor: JOHN MAY
 Well Location: STAGE II

Protective Casing: (size & type) 4" Ø STEEL
 Concrete Pad: (size) 2' x 2' x 4"
 PVC Pipe: (size & type) 2" Ø TFFJ SCHEDULE 40
 Seal: (type) GROUT
 Filter Pack: (type) 20/30 SILICA SAND
 Slotted PVC: (size & type) 2" Ø 0.01" SLOTTED SCHEDULE 40 SCREEN
 Centralizers: (number & location(s)) _____

Total Length of PVC Pipe: 100.0 ft (BLS)
 Total Length of Slotted PVC: 50.0 ft (BLS)
 Total Length of Tailpipe: 3.0 ft
 Total Depth of Well: 153.0 ft (BLS)

No. Bags of Cement: 21
 No. Bags of Filter Pack: 26
 Amount of Seal: _____

Remarks: PERMIT # 88-605
LRII-4 AT THIS SITE

Water Level Readings:
 Date: 12-1-88
 Depth BTOC: 21.00' Depth BLS: 18.25'
 Date: _____
 Depth BTOC: _____ Depth BLS: _____