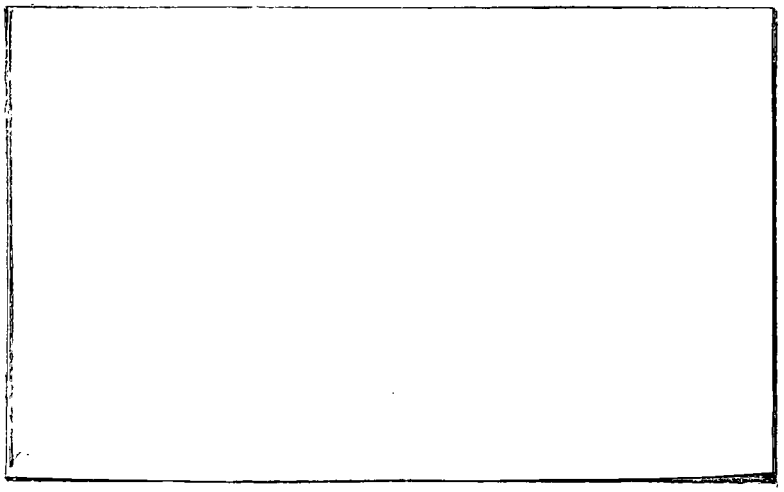


PSI Environmental Geotechnical Construction

Consulting • Engineering • Testing

Information To Build On

RESPONSE TO FDEP COMMENTS
GROUNDWATER MONITORING PLAN
BI-ANNUAL EVALUATION
LENA ROAD LANDFILL
PERMIT NO. S041-211176
MANATEE COUNTY, FLORIDA
PSI PROJECT NO. 552-4L015

psi

psi Environmental Geotechnical Construction
Consulting • Engineering • Testing

Interoffice Message

To: FDEP

Date: 12/19/96

Allison Aman, P.G.

Subject: Lee Road Landfill Permit. SS2-42015

Message:

As discussed, I have signed & sealed the documents.

RECEIVED
DEC 23 1996
Department of Environmental Protection
BY SOUTHWEST DISTRICT

Signed:

From:

RESPONSE | To: _____ Date: _____

Message:

Signed: _____

B-900-16 (1)

PSI Environmental Geotechnical Construction
Consulting • Engineering • Testing

October 10, 1996

Department of Environmental Protection
Southwest District
Division of Waste Management
3804 Coconut Palm Drive
Tampa, Florida 33619

Attention: Ms. Allison Amram, P.G.
Solid Waste Section

Re: Response to FDEP Comments
Groundwater Monitoring Plan Biannual Evaluation
Lena Road Landfill, Permit No. SO41-211176
Manatee County, Florida
PSI No. 552-4L015

Dear Ms. Amram:

Professional Service Industries, Inc. (PSI) has prepared responses to the Department comments dated August 7, 1996. The Department comments pertain to the Groundwater Monitoring Plan Biannual Evaluation prepared by PSI and dated April 17, 1996. PSI has the following responses to the Department's comments:

FDEP Comment No. 1 - *Section 4.2 Please provide the dates of each sampling period. All sampling periods during 1994 and 1995 should be included in the evaluation.*

Consultants Response to No. 1 - The biannual evaluation utilized all provided groundwater sampling data. In accordance with the landfill's amended permit, the groundwater data was subdivided into semi-annual sampling periods for the biannual analysis. The first half 1994 groundwater samples were collected on May 17-19, 1994 and June 1-2, 1994. The second half 1994 groundwater samples were collected on December 20, 1994, January 1, 3, 10 and 11, 1995 and March 22 and April 22, 1995. The March 22, 1995 samples were from CW-5A and GC-1A. The April 22, 1995 samples were for wells with Iron, Mercury and Sodium analysis omitted.

PSI • 4400 - 140th Avenue North, Suite 100 • Clearwater, FL 34622 • Phone 813/538-2300 • Fax 813/538-2244

The first half 1995 groundwater samples were collected August 21 - 23, 1995. The second half 1995 groundwater samples were collected October 2 - 4 and November 7 - 9, 1995.

FDEP Comment No. 2 - *Section 5.4 Please provide the vertical gradient calculations.*

Consultants Response to No. 2 - Three well pairs (shallow and deep) were used for the vertical gradient calculations. The analysis was limited to the first and second half of 1994 since corresponding water level data was limited to this period. The thickness of the confining layer was assumed to be 125 feet. The calculations were as follows.

Measurement Date (*)	Well Pair		
	GC-1A/SA-4	LRII-2/SA-5	LRII-4/SA-8
Half 1, 1994	(25.66-14.18)/125 ft	(28.95-15.12)/125 ft	(25.47-11.38)/125 ft
Half 2, 1994	(26.52-20.38)/125 ft	(31.28-22.02)/125 ft	(27.74-21.98)/125 ft
Averages	0.071 ft/ft	0.092 ft/ft	0.079 ft/ft

All measurements are from the groundwater sampling events, May and June, 1994 and December 1994 and January 1995, with the exception of Half 2, 1994 for GC-1A which are from the December 27, 1994 monthly monitoring report. The overall average vertical gradient based on these calculations is 0.08 ft/ft from the surficial aquifer to the deep aquifer.

FDEP Comment No. 3 - *Section 6.2.1. Does access to wells CW-4 and CW-5A need to be improved so that these wells can be monitored in all seasons.*

Consultants Response to No. 3 - According to Manatee County Public Works Department, the access problems have been corrected.

FDEP Comment No. 4 - *Appendix A - Figures.*

1. *Is there any explanation for the unusually high groundwater elevation in well SA-2 shown in figure 11? It is more than twice the elevation in the other nearby wells.*
2. *Some wells appear to be either high or low for the generalized contours presented. Specifically, wells GC-1A and CW-4 appear to be lower than surrounding wells and the*

drawn contours, and well MW-2 appears to be higher. Please consider revising the flow conditions, and/or provide explanations for these groundwater elevations.

Consultants Response to No. 4 - (1) According to previous reports SA-2, is screened from -15 to -115 feet. Groundwater elevation data from SA-2 is apparently influenced by surficial aquifer conditions and may not be indicative of the deep aquifer.

(2) The groundwater elevation contour maps have been revised as requested (Attachment 1). The new figures presented in Attachment 1 are intended as a direct replacement for the figures included in the biannual evaluation with only minor changes to the measurement dates and some of the groundwater contours as requested in the FDEP letter. GC-1A is in a drainage area of an adjacent creek. Piezometer PZ-15A was installed to better evaluate flow conditions around GC-1A. The revised contour maps indicate CW-4 corresponds with the generalized flow regime. As water levels were not measured in MW-3 and only intermittently in MW-5, a thorough evaluation of the flow conditions in the area of MW-2 is not possible for the 1994/1995 biannual evaluation. The revised contour maps represent our best estimate of the conditions based on the limited data in this area.

FDEP Comment No. 5 - *Appendix B - Hydrographs. It appears that the first half of 1995 is misrepresented, based on the groundwater elevations presented in Appendix A figures. Also, the existing hydrographs do not appear to consistently use quarters 1 and 3 or 2 and 4 which is confusing (some appear to use quarters 1 and 4). The report should include all 1994 and 1995 water level data from sampling events and provide date of measurement. What data was used to plot well LRII-4? The figures in Appendix 1 show that water elevations were not measured in this well over the two year period. Please review and revise the hydrographs, and include the quarterly measurements. Changes to the report text which are based (on) this data should be made as necessary.*

Consultants Response to No. 5 - The hydrographs presented in the biannual evaluation utilize the groundwater elevation data collected at the time of the groundwater sampling events (biannual evaluation Appendix C). The data used for the surficial aquifer groundwater elevation contour maps was obtained from the monthly water gradient reports. The use of the monthly water gradient reports for the surficial aquifer contour maps was necessary since groundwater elevations are not measured at the piezometers during the semi-annual sampling events. Static water levels are obtained from the monitor wells and piezometers during the monthly gradient reports in accordance with Specific Condition 29, of the landfill's approved permit.

For clarity, we have revised the 1994/1995 biannual evaluation hydrographs to correspond with the data presented on the groundwater elevation contour maps. The dates of measurement are included on the groundwater contour maps Attachment 1. The revised hydrographs are included in Attachment 2. The hydrographs and groundwater elevation contour maps for the deep aquifer remain essentially unchanged since the original data was obtained from the groundwater sampling event reports.

Section 5.3 of the biannual evaluation describes the groundwater elevation trends observed on the hydrographs. Based on the revised hydrographs the average fluctuation of the groundwater elevations in the shallow monitor wells is 4.1 feet. The general trends are indicative of the regional trends typically observed in Florida and reflect the seasonal variations in rainfall. The hydrograph for LRII-2, Graph 2, is a model for these trends. In general, the lowest groundwater elevations are observed in March, April and May following the conclusion of the winter dry season. The groundwater elevations rise from June through the end of the summer and typically reach their peak in September or October. Minor variations in these trends are observed between shallow monitoring wells due to variations in local lithology and drainage patterns.

FDEP Comment No. 6 - *Appendix C -Groundwater Data for Each Monitoring Well. A brief check on these tables showed different water quality results for the first half of 1995 for monitoring well LRII-2. Please check the accuracy of the data in these tables. Also, the data presented for the first half of 1994 does not appear to match the results submitted to the FDEP for the February 1994 sampling event. What sampling event is presented here? This evaluation should include all groundwater sampling conducted in the past two years, not selected data.*

Consultants Response to No. 6 - The landfills permit was revised on July 21, 1994. The revised permit changed the groundwater sampling periods from quarterly to semi-annually. The biannual evaluation utilized all semi-annual sampling event data over the two year period. The dates for each semi-annual sampling event are listed in the Consultants Response No. 1. Some minor errors in the groundwater elevations were noted on the original groundwater sampling event tables. Revised groundwater sampling data tables are presented in Attachment 3.

The conclusions included in the biannual report remain essentially unchanged by the preceding corrections/clarifications with the exception of the hydrograph analysis. As indicated, the revised hydrographs for the shallow wells indicate typical seasonal trends representative of Florida's annual variations in rainfall. No long term trends are observed.

PSI appreciates the opportunity to be of service on this important project. If you have any questions, please do not hesitate to contact us.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

David A. Stedje, P.G.
Project Hydrogeologist

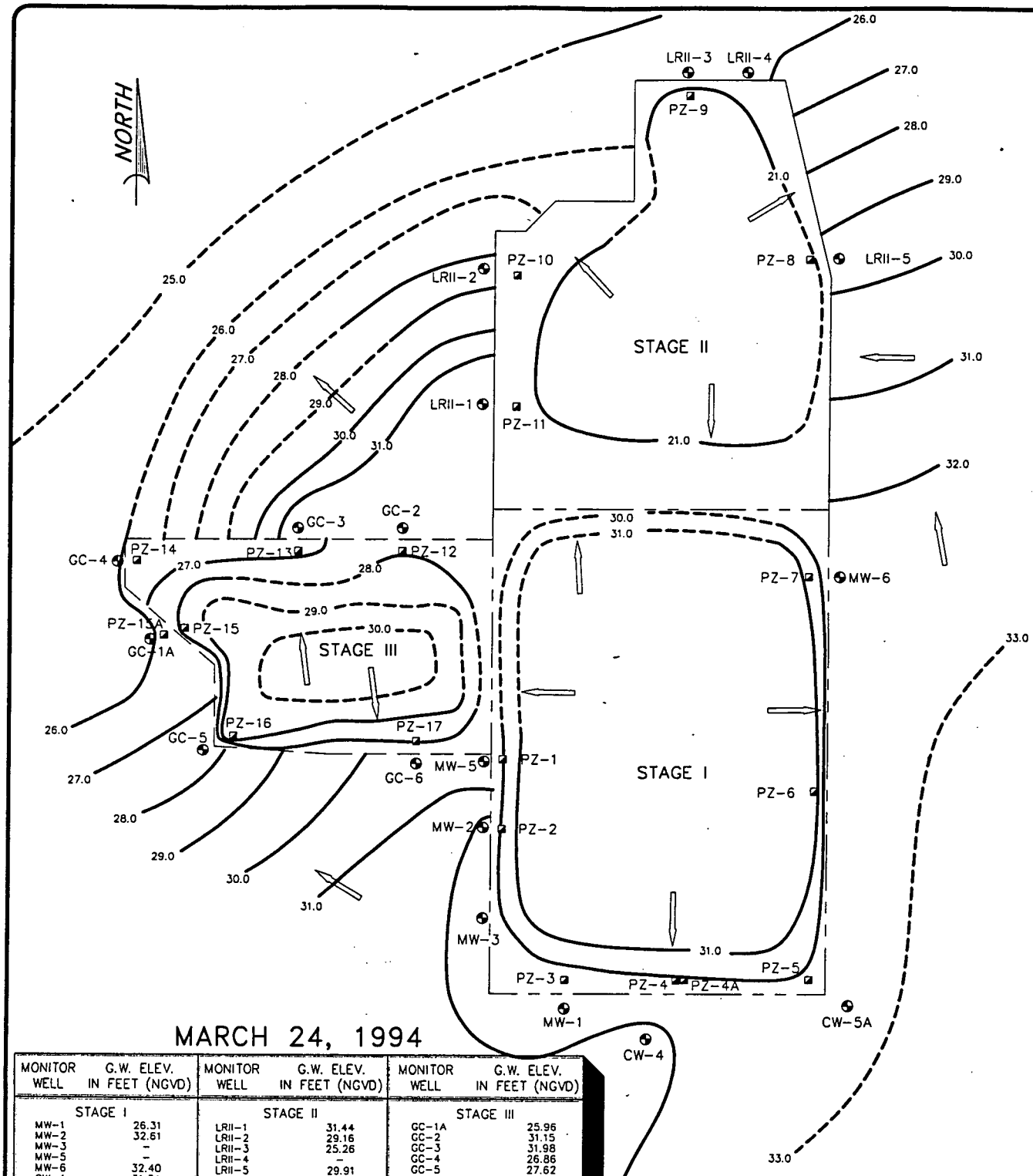
John R. Marquardt, P.E.
Senior Engineer

Attachments

CC: Ben Alex, Manatee County Public Works
Keith Butts, PSI Sarasota

ATTACHMENT 1

Groundwater Elevation Contour Maps



MARCH 24, 1994

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE I	
MW-1	26.31
MW-2	32.61
MW-3	–
MW-5	–
MW-6	32.40
CW-4	31.34
CW-5A	–
PZ-1	–
PZ-2	30.18
PZ-3	29.30
PZ-4	30.04
PZ-5	30.21
PZ-6	31.66
PZ-7	29.81

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE II	
LRII-1	31.44
LRII-2	29.16
LRII-3	25.26
LRII-4	–
LRII-5	29.91
PZ-8	28.71
PZ-9	23.56
PZ-10	18.97
PZ-11	20.82

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE III	
GC-1A	25.96
GC-2	31.15
GC-3	31.98
GC-4	26.86
GC-5	27.62
GC-6	30.35
PZ-12	28.55
PZ-13	26.57
PZ-14	26.27
PZ-15	28.55
PZ-16	29.71
PZ-17	28.32

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- APPROXIMATE SURFICIAL AQUIFER MONITOR WELL LOCATION
- APPROXIMATE SURFICIAL AQUIFER PIEZOMETER LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

3333 LENA ROAD

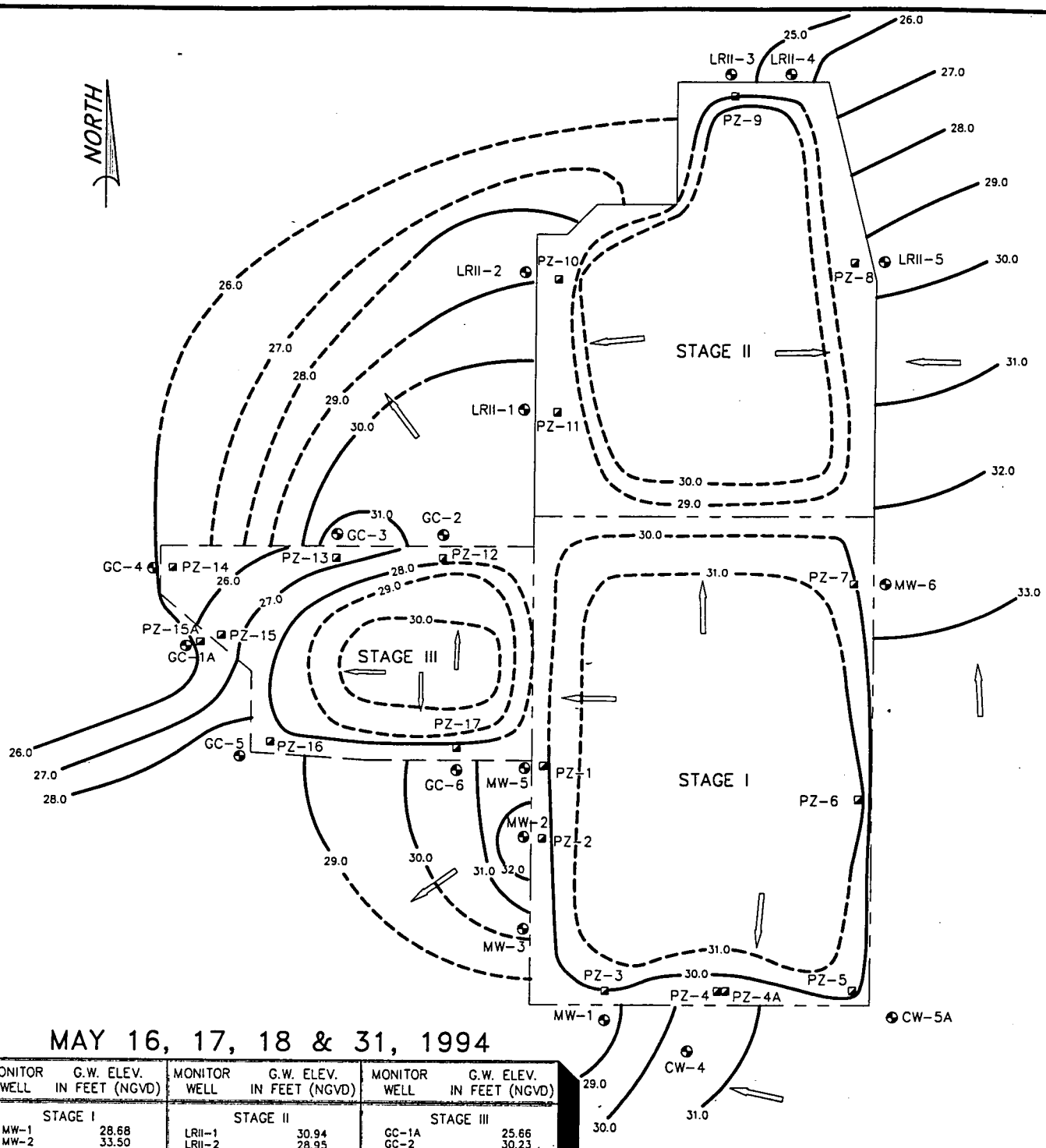
BRADENTON, FLORIDA

ENVIRONMENTAL SERVICES

4400 – 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015	
CHKD. BY: DAS	DATE: 9/13/96	DWG.: FIGURE 3	

552015O3.DWG



MAY 16, 17, 18 & 31, 1994

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE I	
MW-1	28.68
MW-2	33.50
MW-3	–
MW-5	–
MW-6	32.74
CW-4	30.96
CW-5A	–
PZ-1	–
PZ-2	30.20
PZ-3	30.05
PZ-4	26.21
PZ-5	30.29
PZ-6	31.58
PZ-7	29.89

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE II	
LRII-1	30.94
LRII-2	28.95
LRII-3	24.38
LRII-4	–
LRII-5	29.95
PZ-8	23.93
PZ-9	28.90
PZ-10	23.05
PZ-11	23.86

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE III	
GC-1A	25.66
GC-2	30.23
GC-3	31.86
GC-4	26.48
GC-5	28.18
GC-6	30.62
PZ-12	28.42
PZ-13	26.51
PZ-14	25.53
PZ-15	26.37
PZ-16	27.38
PZ-17	28.40

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- APPROXIMATE SURFICIAL AQUIFER MONITOR WELL LOCATION
- APPROXIMATE SURFICIAL AQUIFER PIEZOMETER LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

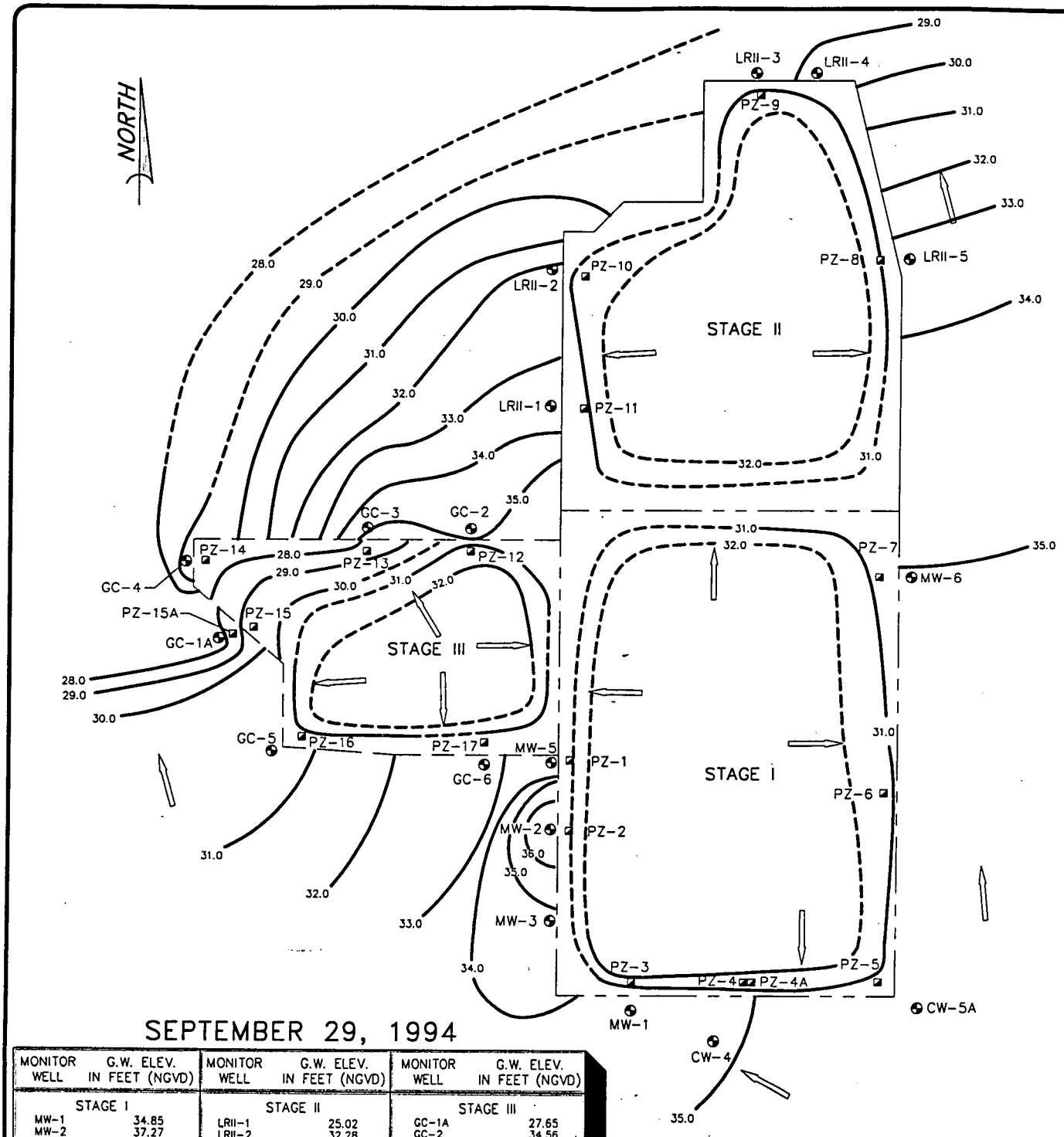
3333 LENA ROAD

BRADENTON, FLORIDA

ENVIRONMENTAL SERVICES
4400 – 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015
CHKD. BY: DAS	DATE: 9/13/96	DWG.: FIGURE 4

55201504.DWG



SEPTEMBER 29, 1994

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE I	
MW-1	34.85
MW-2	37.27
MW-3	–
MW-5	–
MW-6	35.07
CW-4	–
CW-5A	–
PZ-1	–
PZ-2	30.18
PZ-3	32.08
PZ-4	31.50
PZ-5	31.38
PZ-6	31.60
PZ-7	30.32
STAGE II	
LRII-1	25.02
LRII-2	32.28
LRII-3	28.53
LRII-4	–
LRII-5	33.48
PZ-8	31.13
PZ-9	31.23
PZ-10	31.76
PZ-11	31.07
STAGE III	
GC-1A	27.65
GC-2	34.56
GC-3	35.07
GC-4	29.02
GC-5	30.48
GC-6	32.73
PZ-12	31.81
PZ-13	28.36
PZ-14	27.24
PZ-15	29.49
PZ-16	31.34
PZ-17	29.76

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- APPROXIMATE SURFICIAL AQUIFER MONITOR WELL LOCATION
- APPROXIMATE SURFICIAL AQUIFER PIEZOMETER LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

3333 LENA ROAD

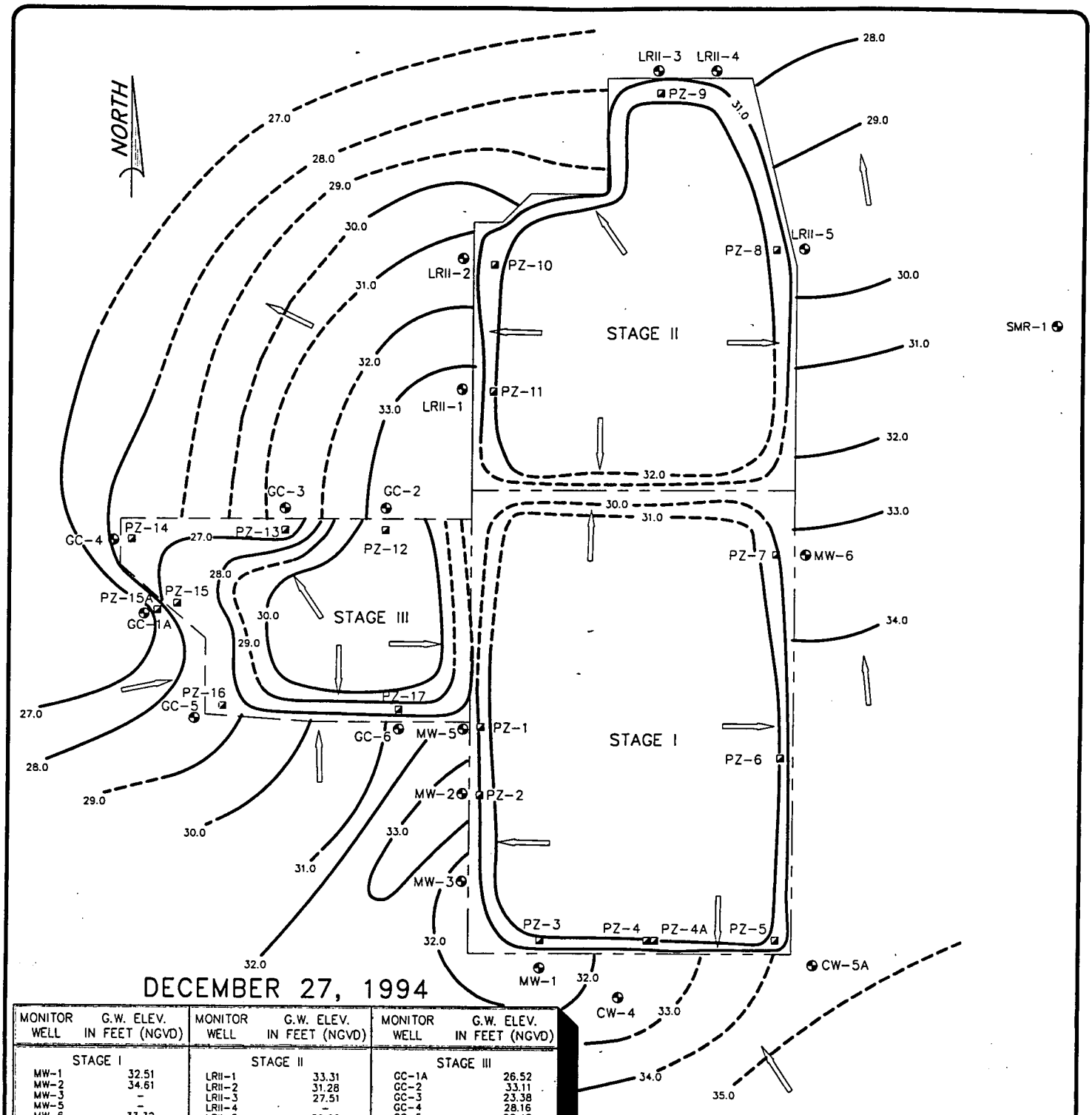
BRADENTON, FLORIDA

ENVIRONMENTAL SERVICES

4400 – 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015
CHKD. BY: DAS	DATE: 9/13/96	DWG.: FIGURE 5

552015O5.DWG



DECEMBER 27, 1994

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE I	
MW-1	32.51
MW-2	34.61
MW-3	–
MW-5	–
MW-6	33.32
CW-4	–
CW-5A	–
PZ-1	–
PZ-2	30.20
PZ-3	31.01
PZ-4	31.04
PZ-5	30.98
PZ-6	31.39
PZ-7	30.02

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE II	
LRII-1	33.31
LRII-2	31.28
LRII-3	27.51
LRII-4	–
LRII-5	30.60
PZ-8	31.75
PZ-9	31.56
PZ-10	31.75
PZ-11	31.96

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE III	
GC-1A	26.52
GC-2	33.11
GC-3	23.38
GC-4	28.16
GC-5	28.48
GC-6	31.27
PZ-12	31.95
PZ-13	27.24
PZ-14	26.33
PZ-15	27.20
PZ-16	27.63
PZ-17	28.86

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- APPROXIMATE SURFICIAL AQUIFER MONITOR WELL LOCATION
- APPROXIMATE SURFICIAL AQUIFER PIEZOMETER LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

3333 LENA ROAD

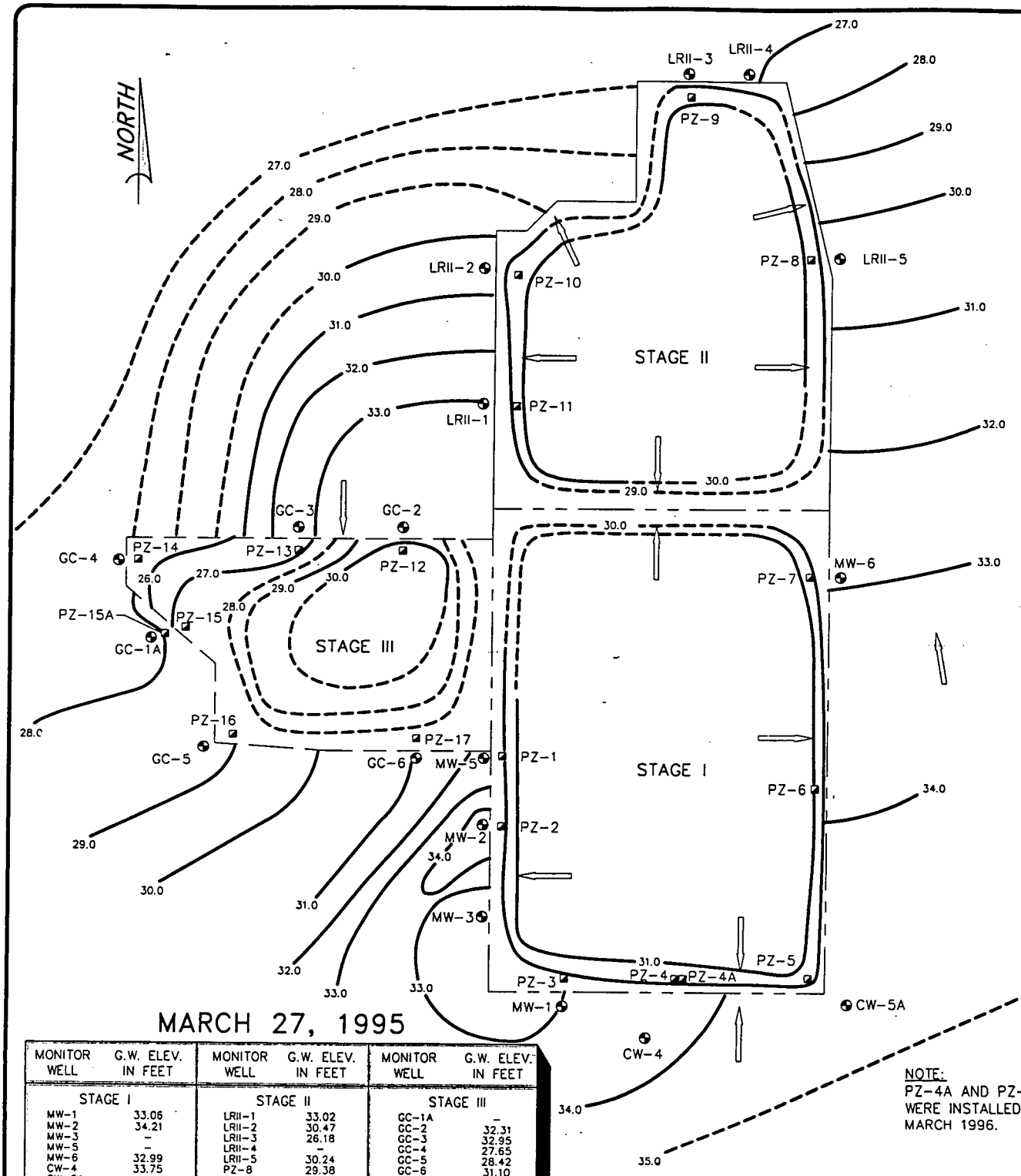
BRADENTON, FLORIDA

ENVIRONMENTAL SERVICES

4400 – 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015
CHKD. BY: DAS	DATE: 9/3/96	DWG.: FIGURE 6

55201506.DWG



MARCH 27, 1995

MONITOR WELL	G.W. ELEV. IN FEET
STAGE I	
MW-1	33.06
MW-2	34.21
MW-3	–
MW-5	–
MW-6	32.99
CW-4	33.75
CW-5A	–
PZ-1	–
PZ-2	30.03
PZ-3	28.93
PZ-4	34.69
PZ-5	30.34
PZ-6	31.29
PZ-7	30.11
STAGE II	
LRII-1	33.02
LRII-2	30.47
LRII-3	26.18
LRII-4	–
LRII-5	30.24
PZ-8	29.38
PZ-9	29.60
PZ-10	29.32
PZ-11	29.44
STAGE III	
GC-1A	–
GC-2	32.31
GC-3	32.95
GC-4	27.65
GC-5	28.42
GC-6	31.10
PZ-12	30.99
PZ-13	26.91
PZ-14	25.22
PZ-15	27.37
PZ-16	27.71
PZ-17	28.59

NOTE:
PZ-4A AND PZ-15A WERE INSTALLED IN MARCH 1996.

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- APPROXIMATE SURFICIAL AQUIFER MONITOR WELL LOCATION
- APPROXIMATE SURFICIAL AQUIFER PIEZOMETER LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

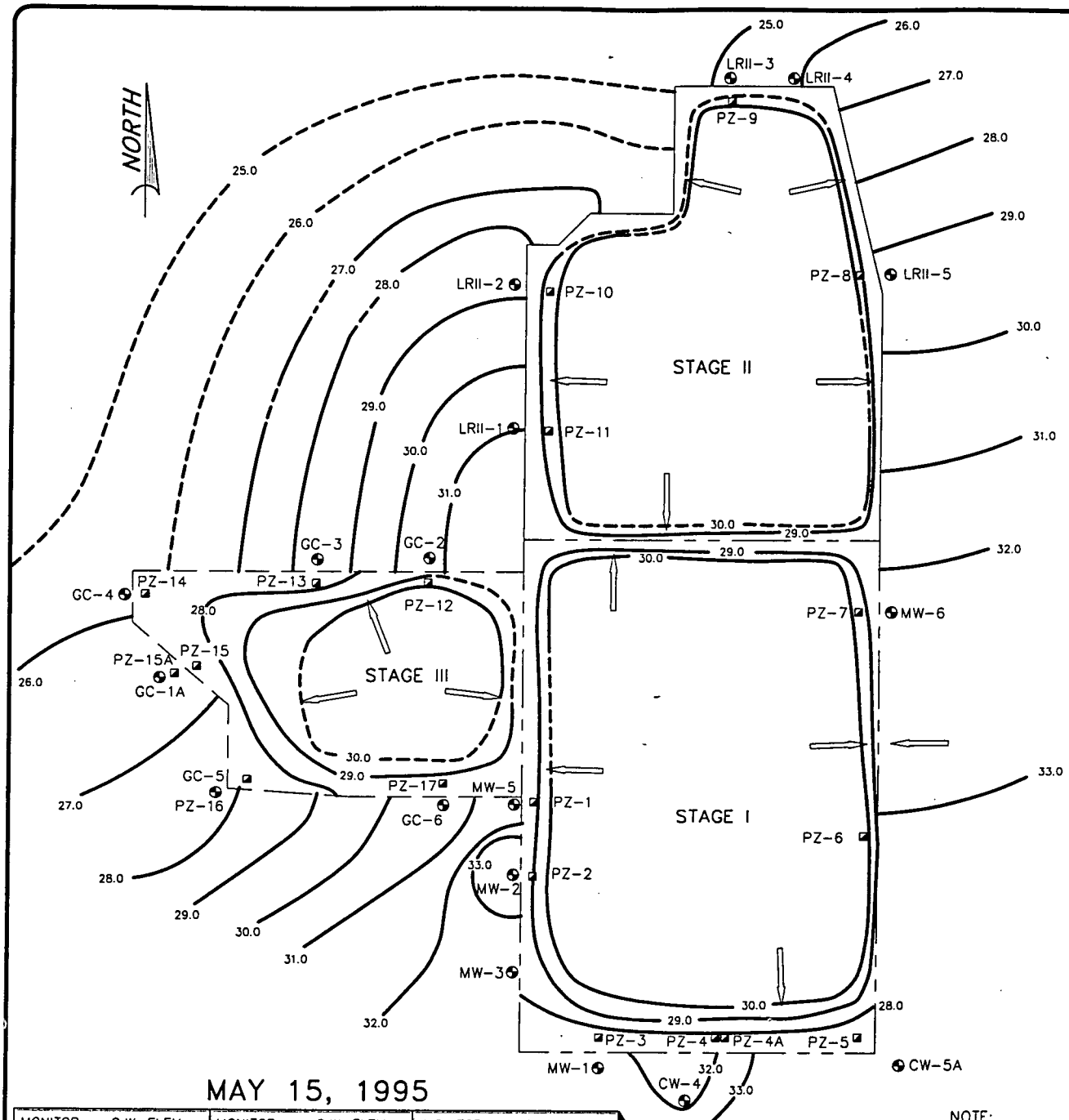
3333 LENA ROAD

BRADENTON, FLORIDA

ENVIRONMENTAL SERVICES
4400 – 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015
CHKD. BY: DAS	DATE: 9/3/96	DWG.: FIGURE 7

55201507.DWG



MAY 15, 1995

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE I	
MW-1	32.81
MW-2	33.23
MW-3	–
MW-5	–
MW-6	32.49
CW-4	31.17
CW-5A	–
PZ-1	–
PZ-2	29.53
PZ-3	27.26
PZ-4	27.37
PZ-5	25.29
PZ-6	31.12
PZ-7	29.69
STAGE II	
LRII-1	31.02
LRII-2	28.95
LRII-3	25.09
LRII-4	–
LRII-5	29.32
PZ-8	29.80
PZ-9	29.86
PZ-10	29.22
PZ-11	29.52
STAGE III	
GC-1A	–
GC-2	30.71
GC-3	28.16
GC-4	25.86
GC-5	27.81
GC-6	30.60
PZ-12	30.14
PZ-13	26.67
PZ-14	28.64
PZ-15	26.45
PZ-16	27.30
PZ-17	28.32

NOTE:
PZ-4A AND PZ-15A WERE INSTALLED IN MARCH 1996.

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- APPROXIMATE SURFICIAL AQUIFER MONITOR WELL LOCATION
- APPROXIMATE SURFICIAL AQUIFER PIEZOMETER LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

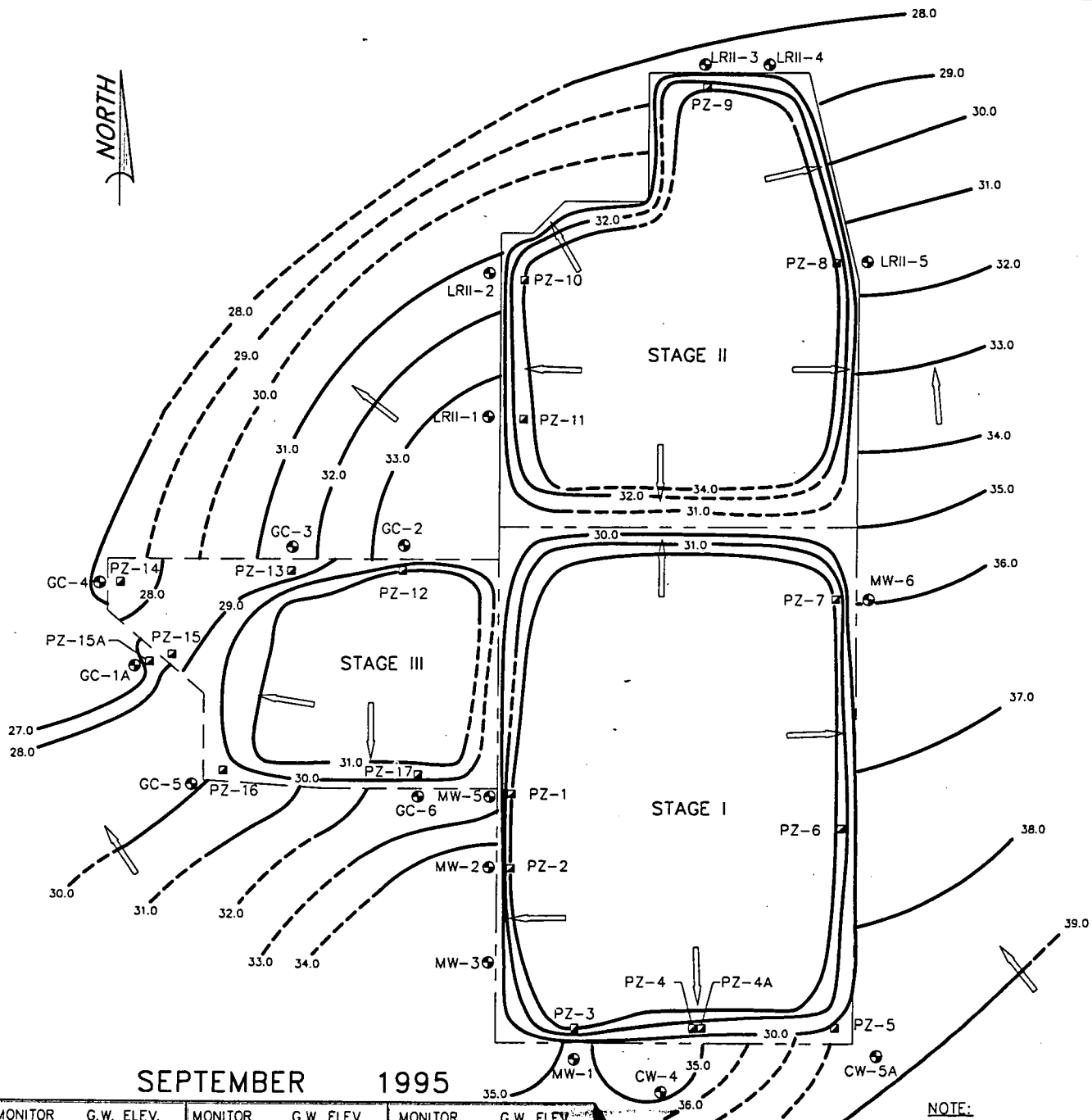
3333 LENA ROAD

BRADENTON, FLORIDA

ENVIRONMENTAL SERVICES
4400 – 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015
CHKD. BY: DAS	DATE: 9/13/96	DWG.: FIGURE 8

552015O8.DWG



SEPTEMBER 1995

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE I	
MW-1	35.06
MW-2	34.51
MW-3	–
MW-5	32.62
MW-6	35.99
CW-4	34.89
CW-5A	38.77
PZ-1	–
PZ-2	32.50
PZ-3	33.08
PZ-4	–
PZ-5	29.96
PZ-6	31.60
PZ-7	32.54

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE II	
LRII-1	33.64
LRII-2	31.52
LRII-3	27.97
LRII-4	–
LRII-5	31.75
PZ-8	33.71
PZ-9	34.13
PZ-10	34.13
PZ-11	33.92

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE III	
GC-1A	26.73
GC-2	33.31
GC-3	31.53
GC-4	28.06
GC-5	29.87
GC-6	32.51
PZ-12	32.13
PZ-13	28.39
PZ-14	27.87
PZ-15	28.24
PZ-16	29.61
PZ-17	30.68

NOTE:
PZ-4A AND PZ-15A WERE INSTALLED IN MARCH 1996.

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- APPROXIMATE SURFICIAL AQUIFER MONITOR WELL LOCATION
- APPROXIMATE SURFICIAL AQUIFER PIEZOMETER LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

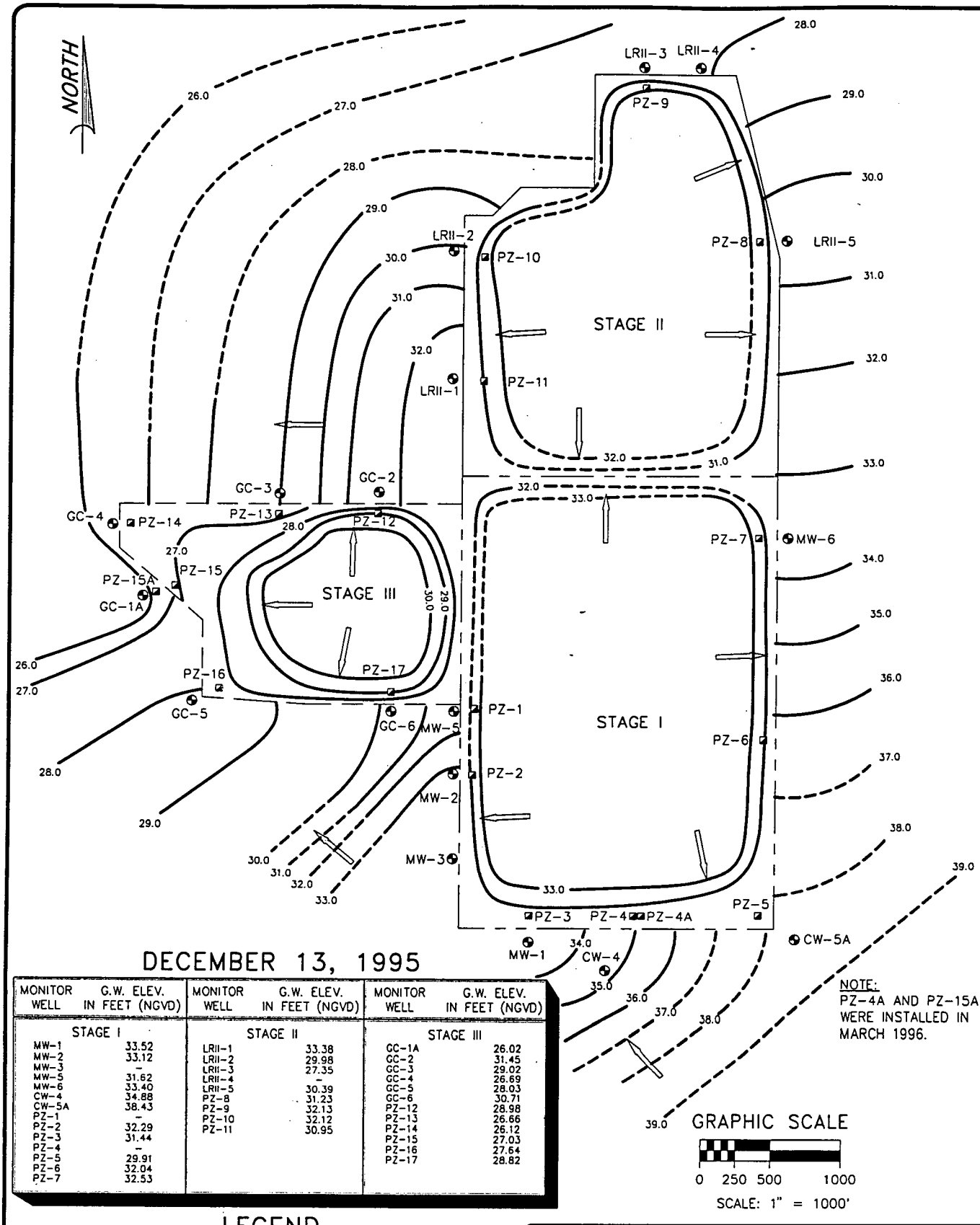
3333 LENA ROAD

BRADENTON, FLORIDA

ENVIRONMENTAL SERVICES
4400 – 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015
CHKD. BY: DAS	DATE: 9/13/96	DWG.: FIGURE 9

55201509.DWG



DECEMBER 13, 1995

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE I	
MW-1	33.52
MW-2	33.12
MW-3	–
MW-5	31.62
MW-6	33.40
CW-4	34.88
CW-5A	38.43
PZ-1	–
PZ-2	32.29
PZ-3	31.44
PZ-4	–
PZ-5	29.91
PZ-6	32.04
PZ-7	32.53

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE II	
LRII-1	33.38
LRII-2	29.98
LRII-3	27.35
LRII-4	–
LRII-5	30.39
PZ-8	31.23
PZ-9	32.13
PZ-10	32.12
PZ-11	30.95

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
STAGE III	
GC-1A	26.02
GC-2	31.45
GC-3	29.02
GC-4	26.69
GC-5	28.03
GC-6	30.71
PZ-12	28.98
PZ-13	26.66
PZ-14	26.12
PZ-15	27.03
PZ-16	27.64
PZ-17	28.82

NOTE:
PZ-4A AND PZ-15A WERE INSTALLED IN MARCH 1996.

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- APPROXIMATE SURFICIAL AQUIFER MONITOR WELL LOCATION
- APPROXIMATE SURFICIAL AQUIFER PIEZOMETER LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

SURFICIAL AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

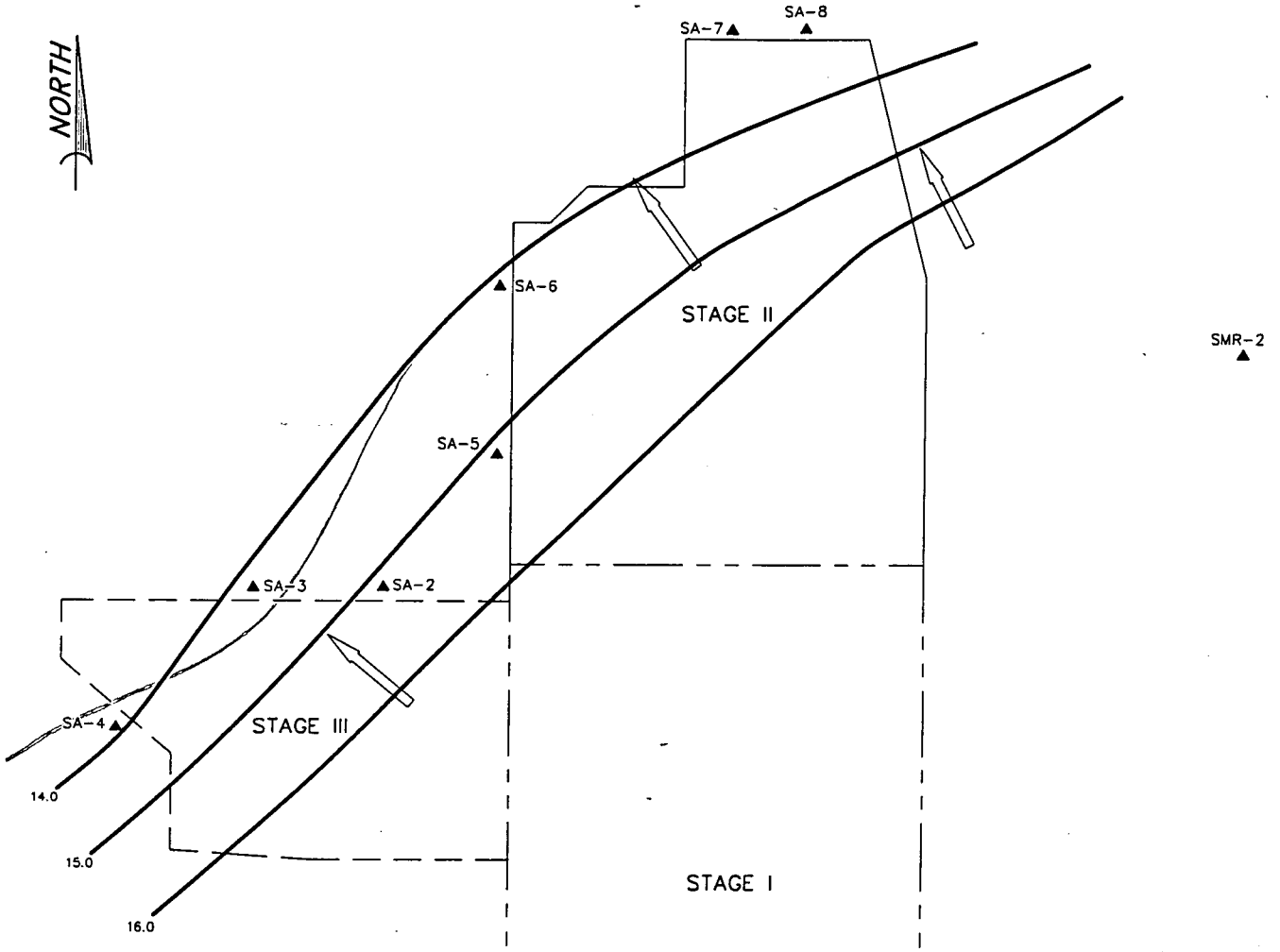
3333 LENA ROAD

BRADENTON, FLORIDA

ENVIRONMENTAL SERVICES
4400 - 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015	
CHKD. BY: DAS	DATE: 9/13/96	DWG.: FIGURE 10	

55201510.DWG



MAY 17, 18, 19
& JUNE 1, 2, 1994

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
SA-2	33.90*
SA-3	13.02
SA-4	14.18
SA-5	15.12
SA-6	14.54
SA-7	10.07
SA-8	11.38
SMR-2	21.70

* DATA NOT USED FOR CONTOUR MAP

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- ▲ APPROXIMATE DEEP AQUIFER WELL LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

DEEP AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

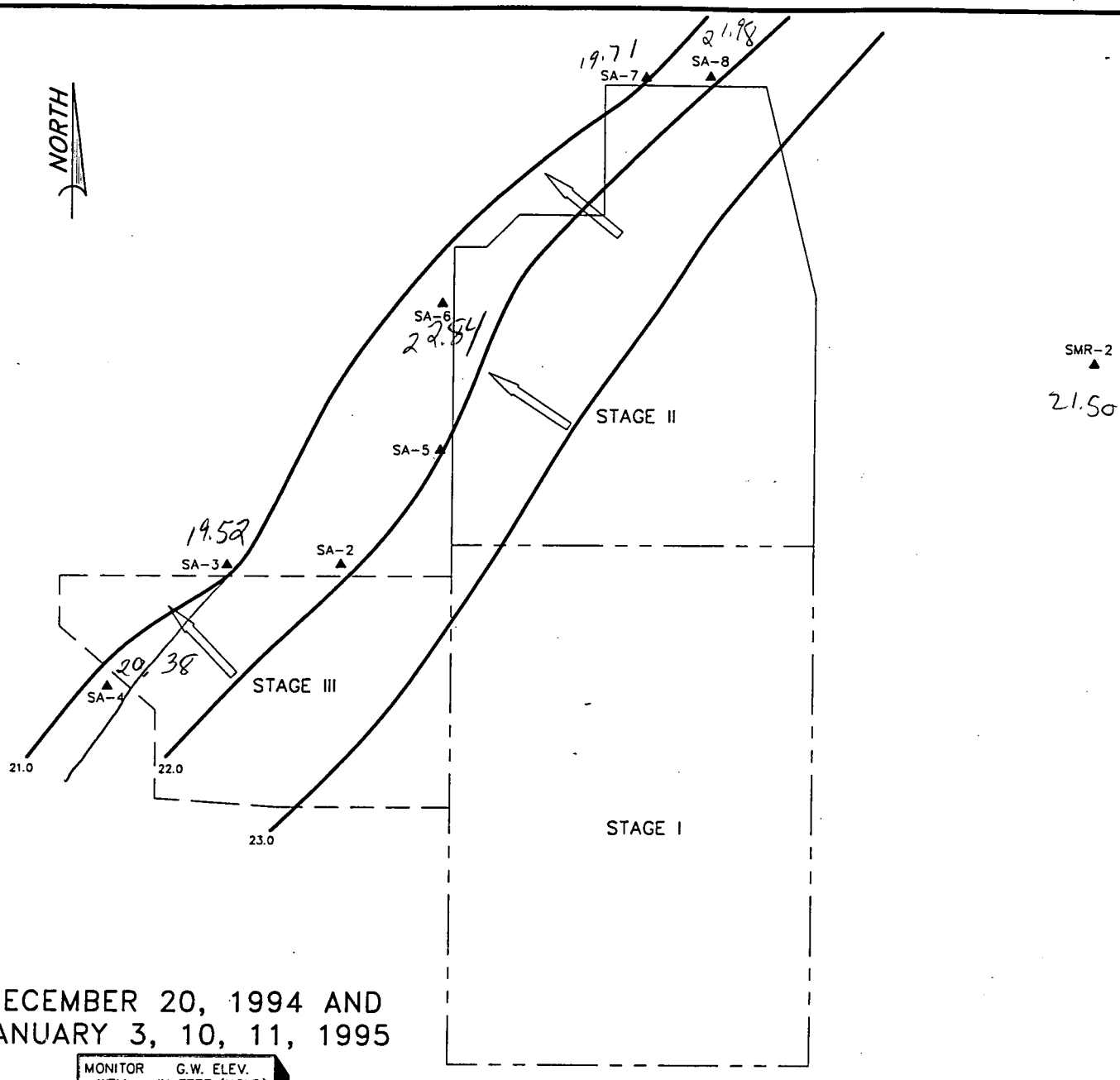
3333 LENA ROAD

BRADENTON, FLORIDA

psi ENVIRONMENTAL SERVICES
4400 - 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015
CHKD. BY: DAS	DATE: 4/15/96	DWG.: FIGURE 11

55201511.DWG



DECEMBER 20, 1994 AND JANUARY 3, 10, 11, 1995

MONITOR WELL	G.W. ELEV. IN FEET (NGVD)
SA-2	-
SA-3	19.52
SA-4	20.38
SA-5	22.02
SA-6	22.84
SA-7	19.71
SA-8	21.98
SMR-2	21.50

GRAPHIC SCALE

0 250 500 1000

SCALE: 1" = 1000'

LEGEND

- EXISTING STAGE I SLURRY WALL
- EXISTING STAGE II SLURRY WALL
- EXISTING STAGE III SLURRY WALL
- ▲ APPROXIMATE DEEP AQUIFER WELL LOCATION
- INFERRED DIRECTION OF GROUNDWATER FLOW

DEEP AQUIFER GROUNDWATER ELEVATION CONTOUR MAP

LENA ROAD LANDFILL

3333 LENA ROAD

BRADENTON, FLORIDA

psi ENVIRONMENTAL SERVICES
4400 - 140th. AVENUE NORTH
SUITE 100
CLEARWATER, FLORIDA 34622

DRAWN BY: KT	SCALE: 1" = 1000'	PROJ. NO.: 552-4L015
CHKD. BY: DAS	DATE: 4/15/96	DWG.: FIGURE 12

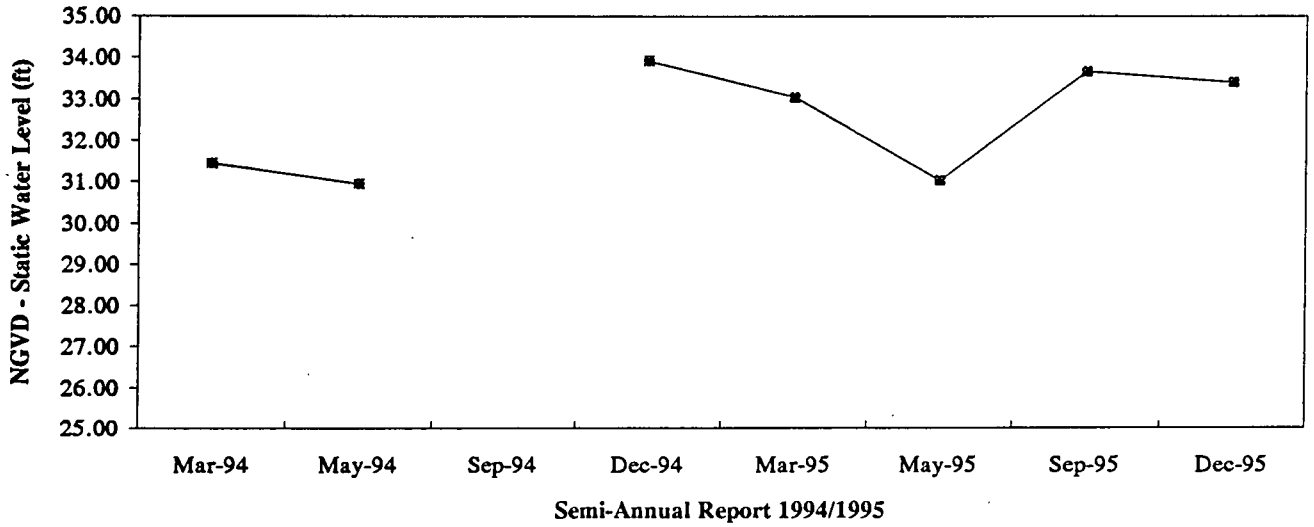
552O1512.DWG

ATTACHMENT 2

Monitoring Well Hydrographs

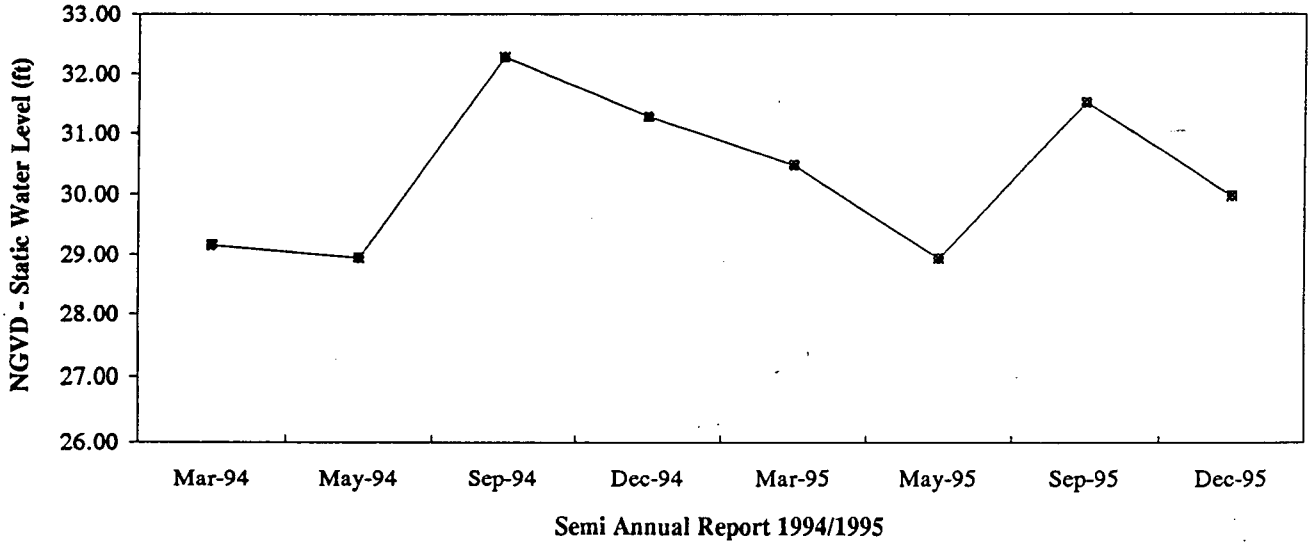
Graph 1 Monitoring Well Hydrograph

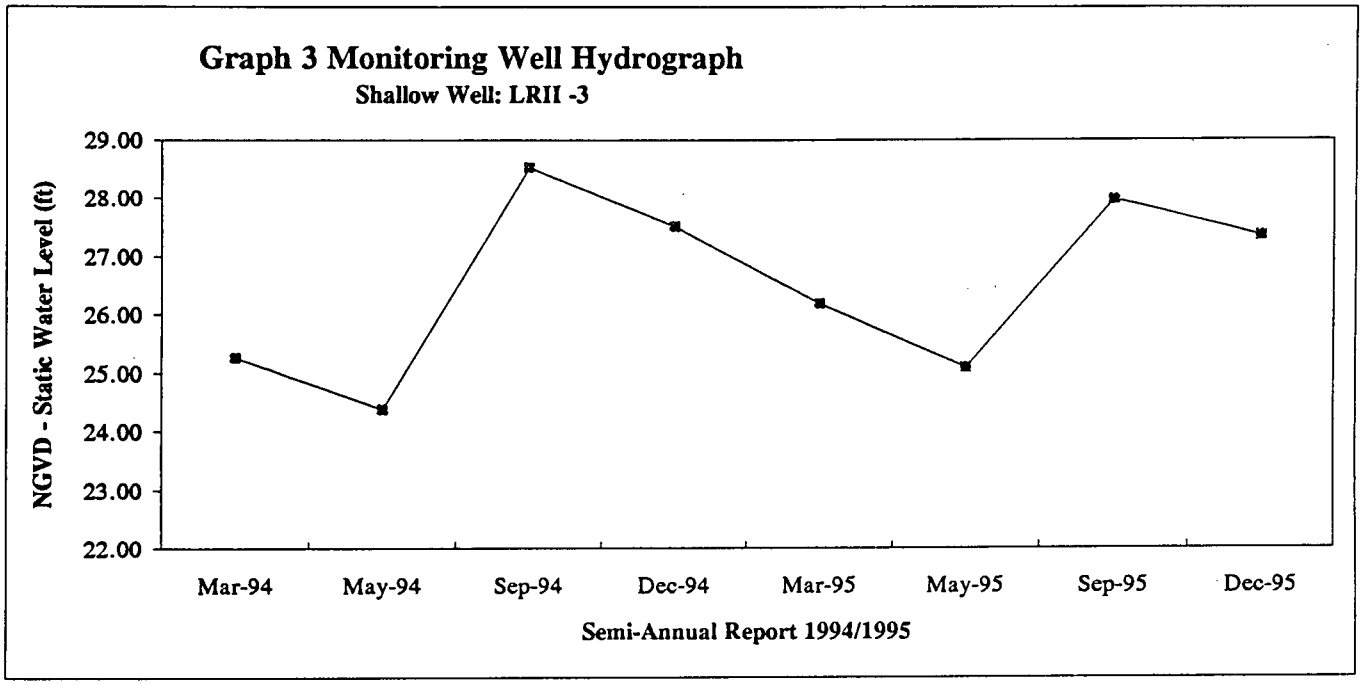
Shallow Well: LRII -1



Graph 2 Monitoring Well Hydrograph

Shallow Well: LRII-2

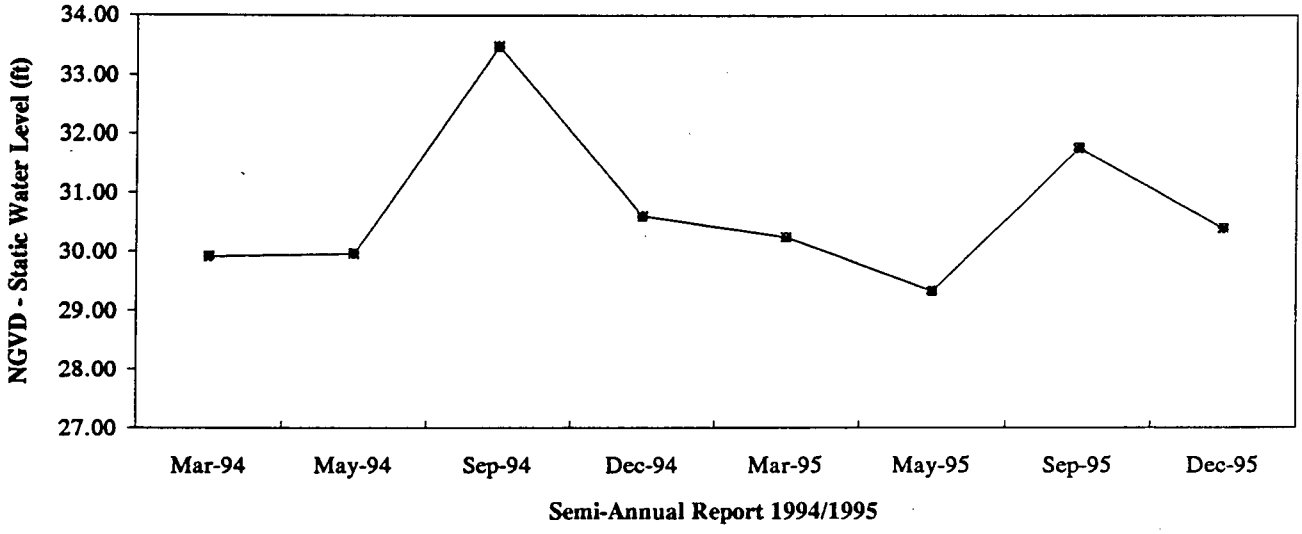




Graph 4 (LRII-4) deleted
Groundwater Data on Analytical Table

Graph 5 Monitoring Well Hydrograph

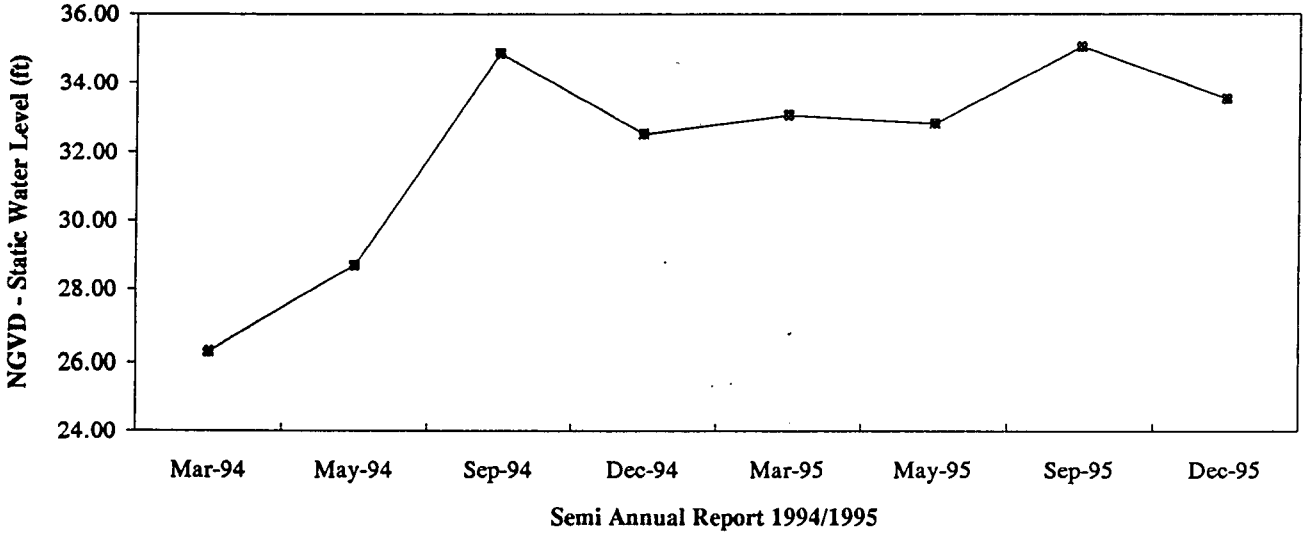
Shallow Well: LRII -5



Semi-Annual Report 1994/1995

Graph 6 Monitoring Well Hydrograph

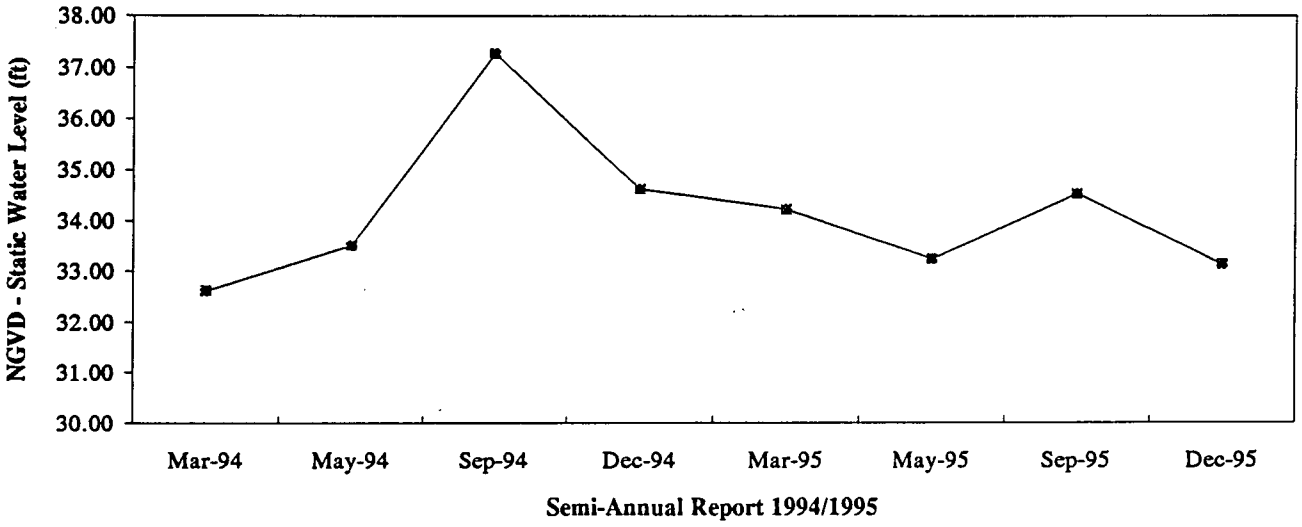
Shallow Well: MW-1



Semi Annual Report 1994/1995

Graph 7 Monitoring Well Hydrograph

Shallow Well: MW -2

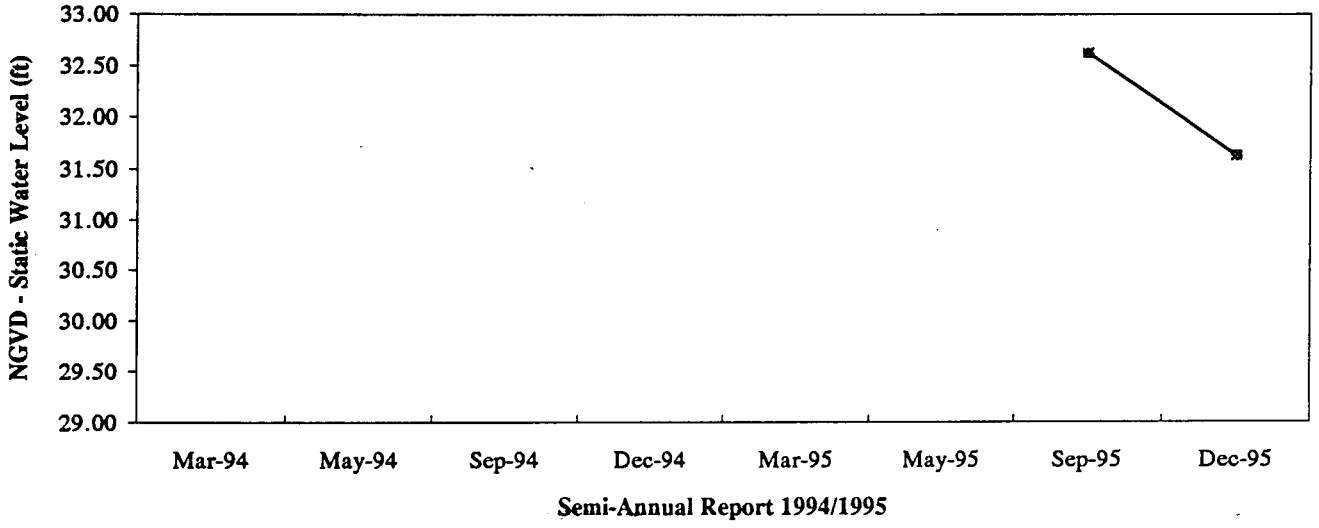


Semi-Annual Report 1994/1995

Graph 8 (MW-3) Deleted
Groundwater Data on Analytical Table

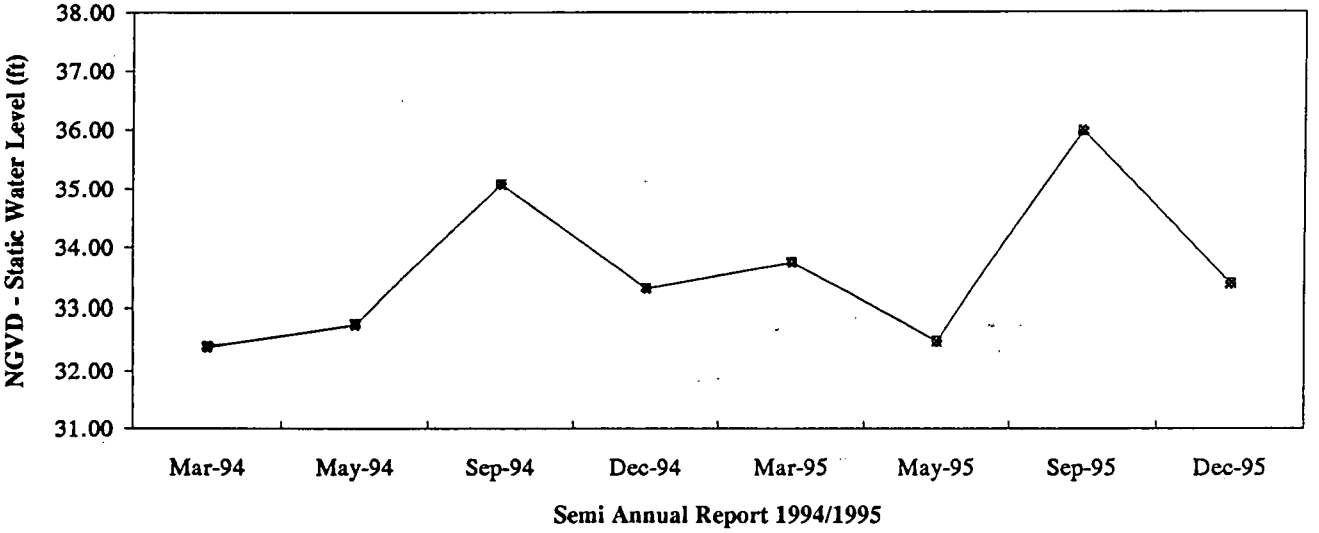
Graph 9 Monitoring Well Hydrograph

Shallow Well: MW -5



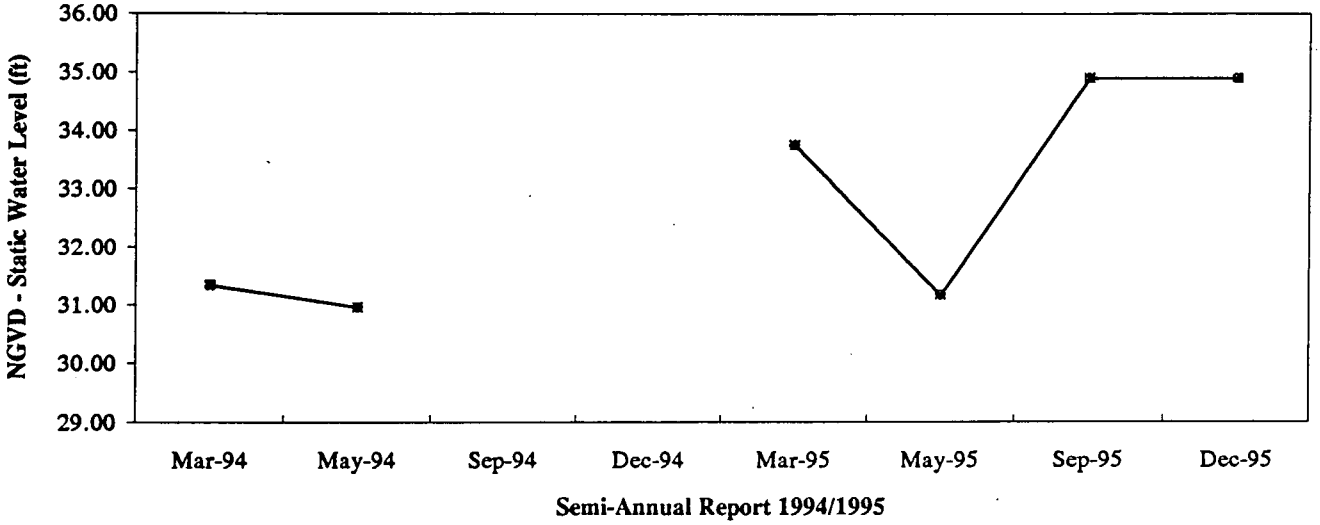
Graph 10 Monitoring Well Hydrograph

Shallow Well: MW-6



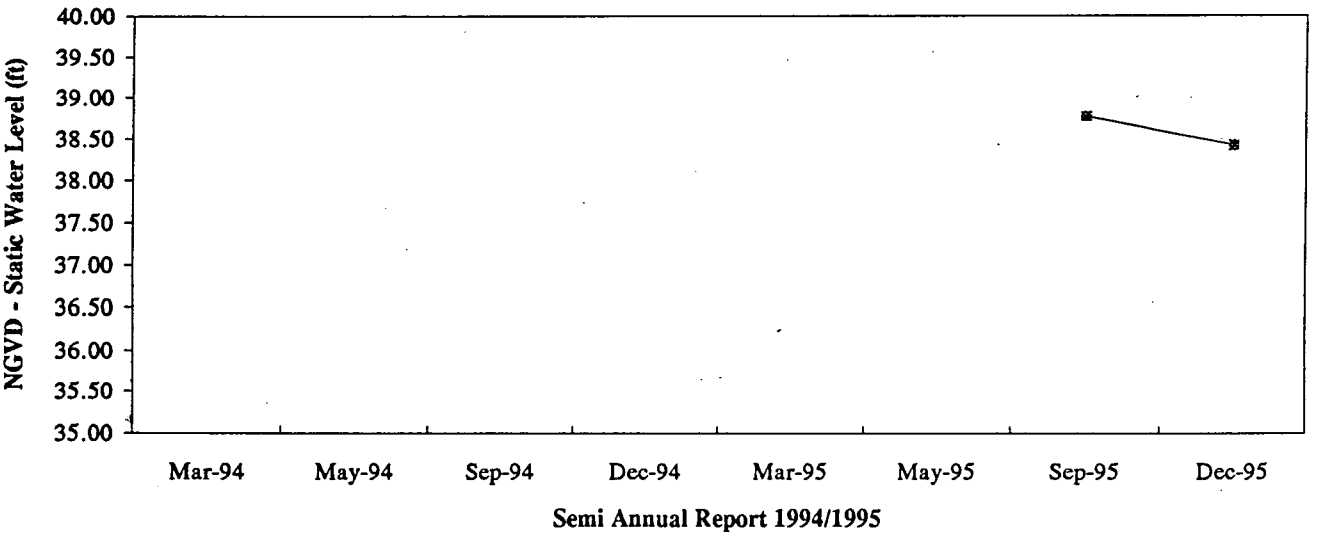
Graph 11 Monitoring Well Hydrograph

Shallow Well: CW -4



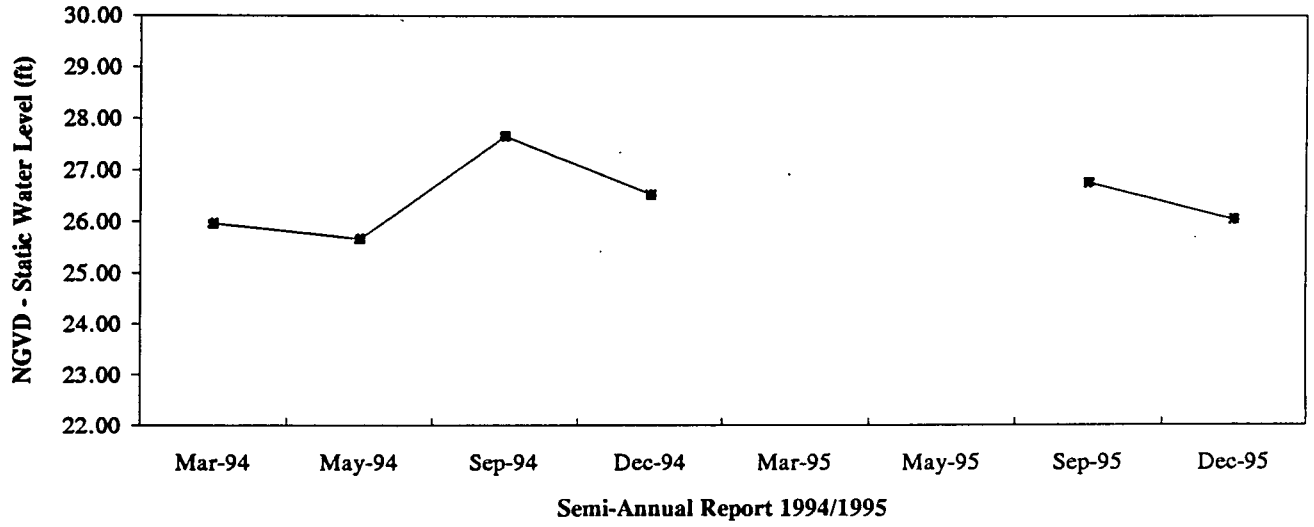
Graph 12 Monitoring Well Hydrograph

Shallow Well: CW-5A



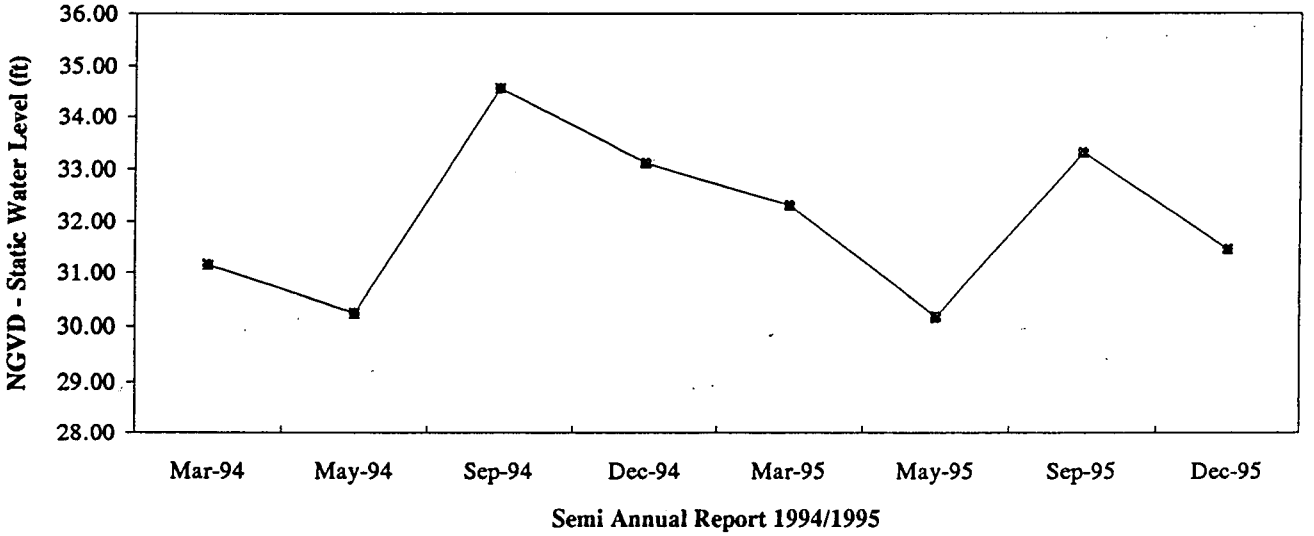
Graph 13 Monitoring Well Hydrograph

Shallow Well: GC -1A



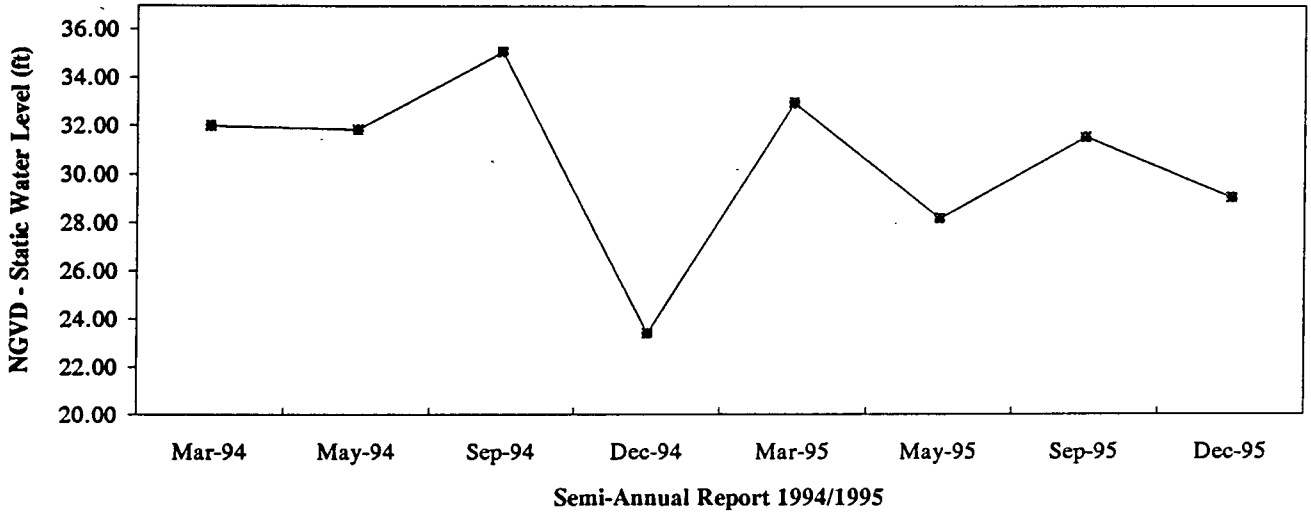
Graph 14 Monitoring Well Hydrograph

Shallow Well: GC-2



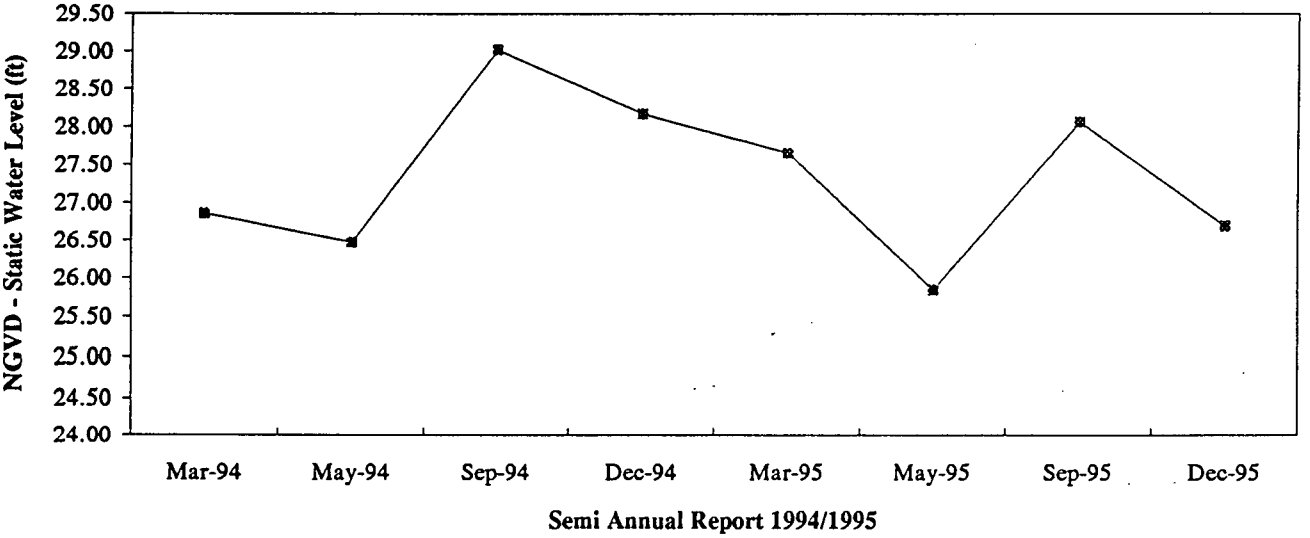
Graph 15 Monitoring Well Hydrograph

Shallow Well: GC -3



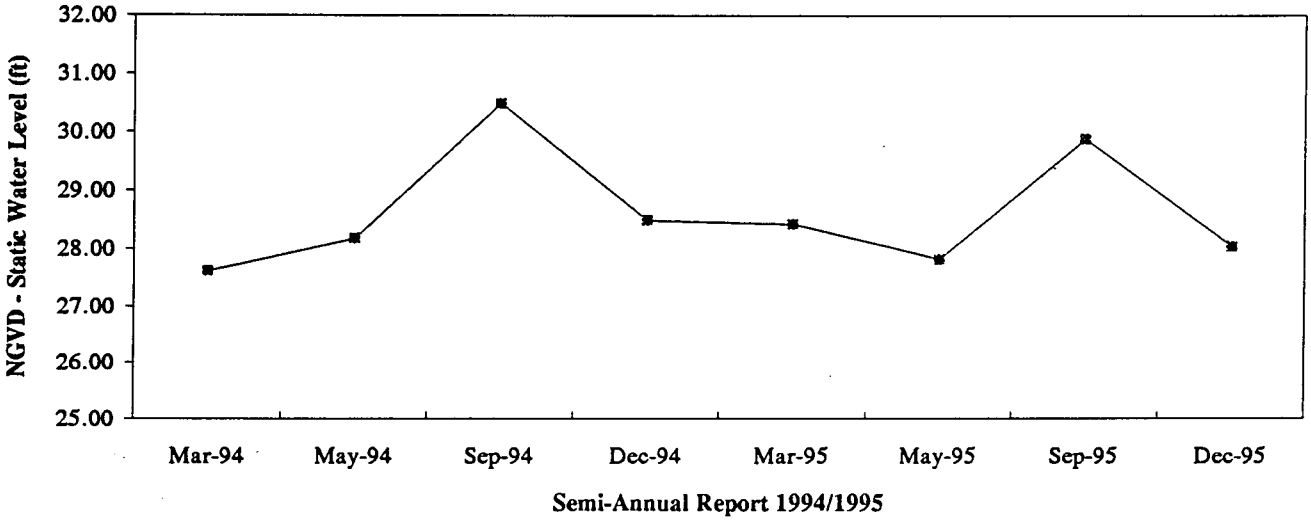
Graph 16 Monitoring Well Hydrograph

Shallow Well: GC-4



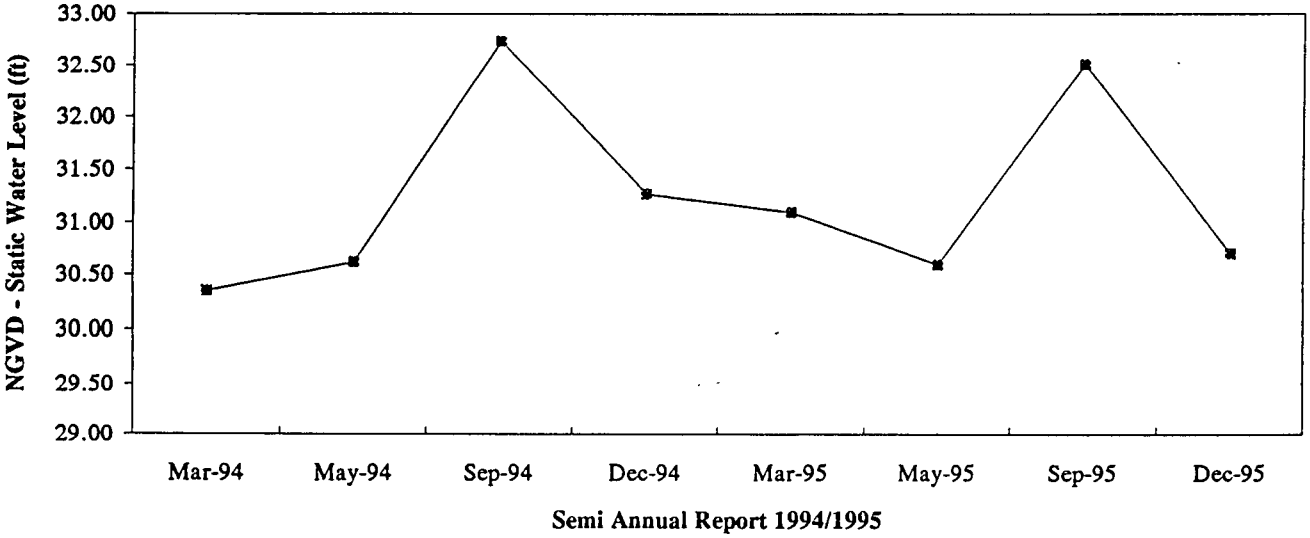
Graph 17 Monitoring Well Hydrograph

Shallow Well: GC -5



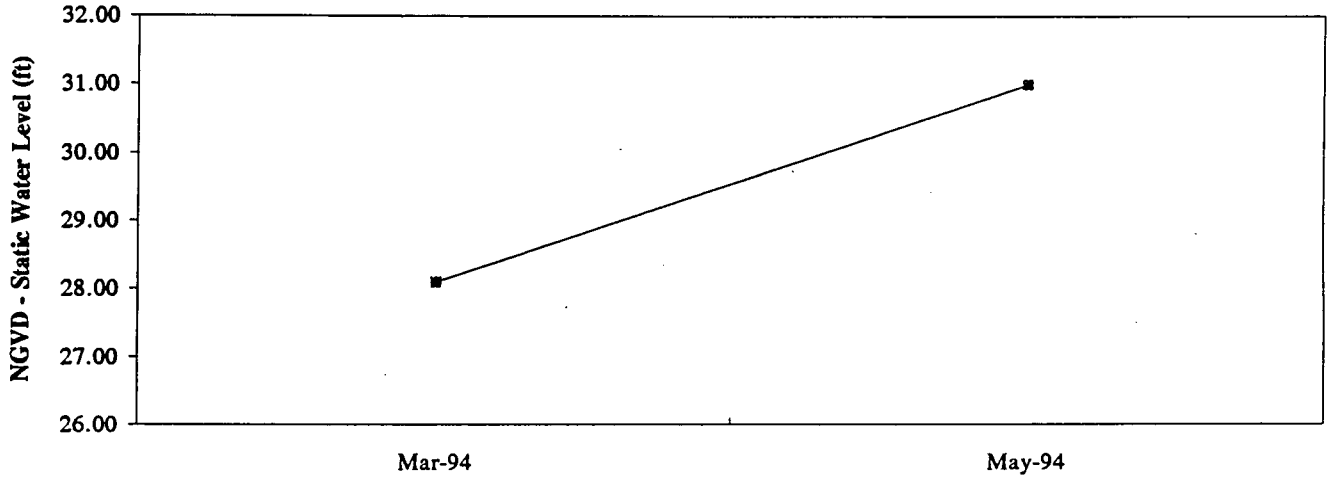
Graph 18 Monitoring Well Hydrograph

Shallow Well: GC-6



Graph 19 Monitoring Well Hydrograph

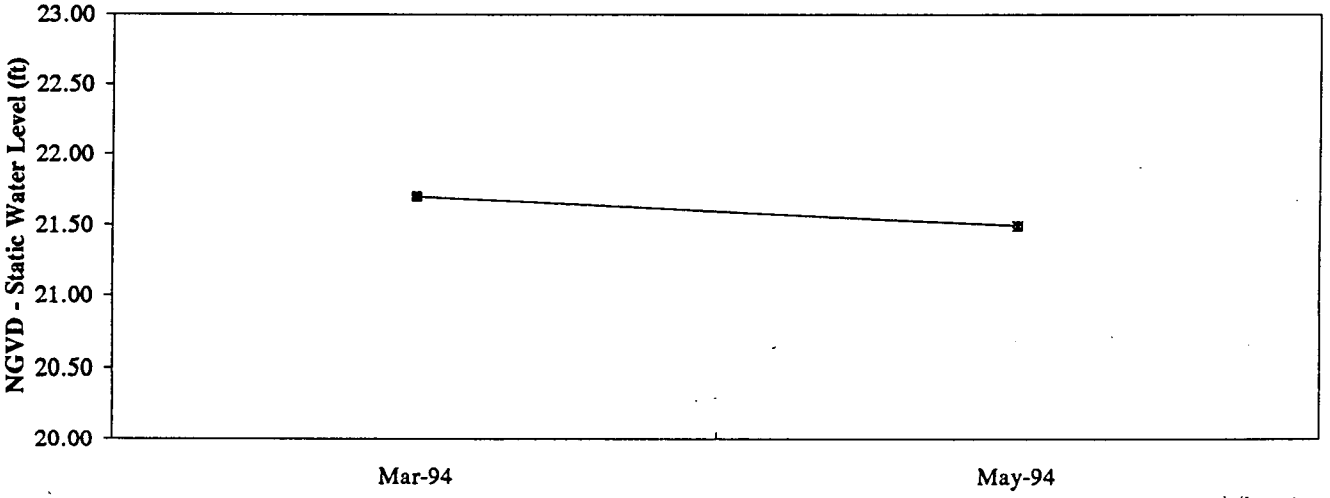
Shallow Well: SMR -1



Semi-Annual Report 1994/1995

Graph 20 Monitoring Well Hydrograph

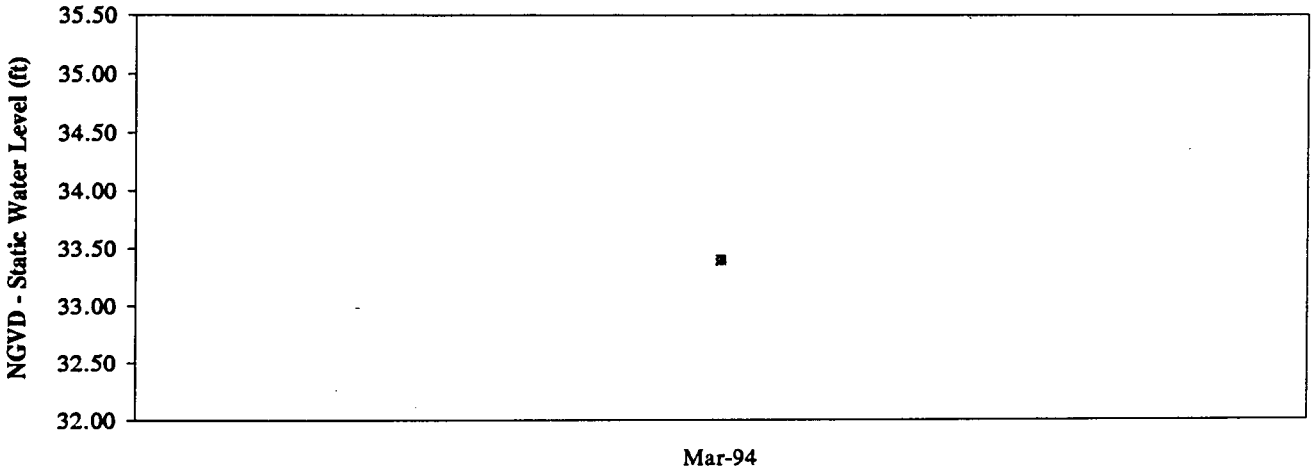
Deep Well: SMR-2



Semi Annual Report 1994/1995

Graph 21 Monitoring Well Hydrograph

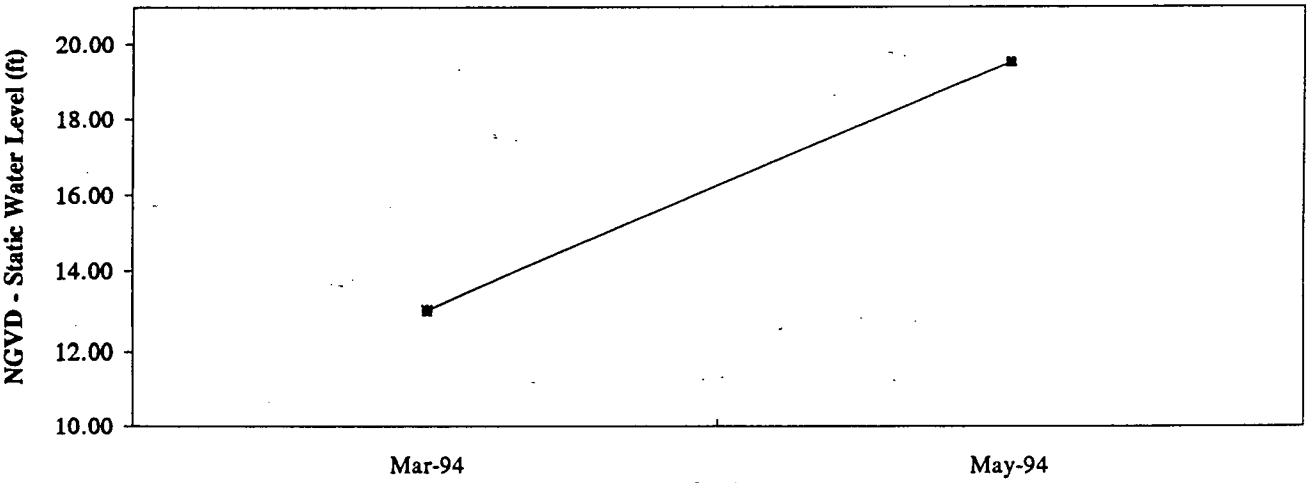
Deep Well: SA -2



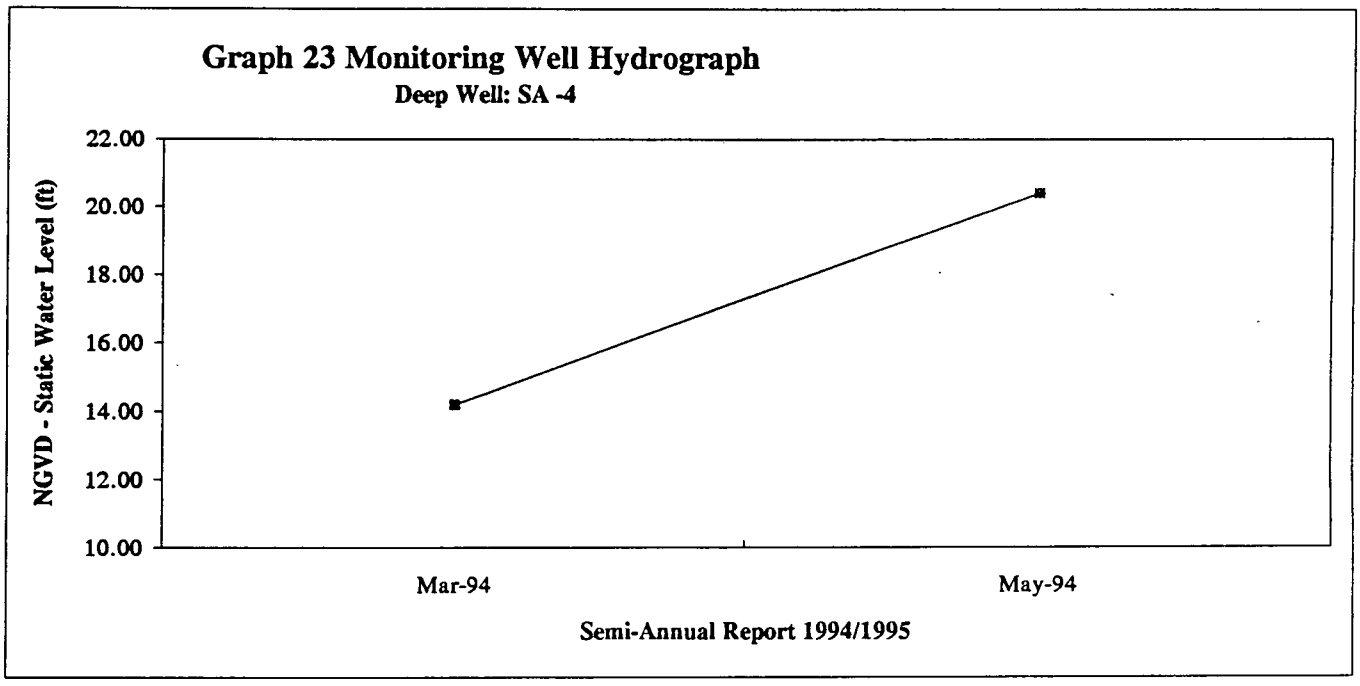
Semi-Annual Report 1994/1995

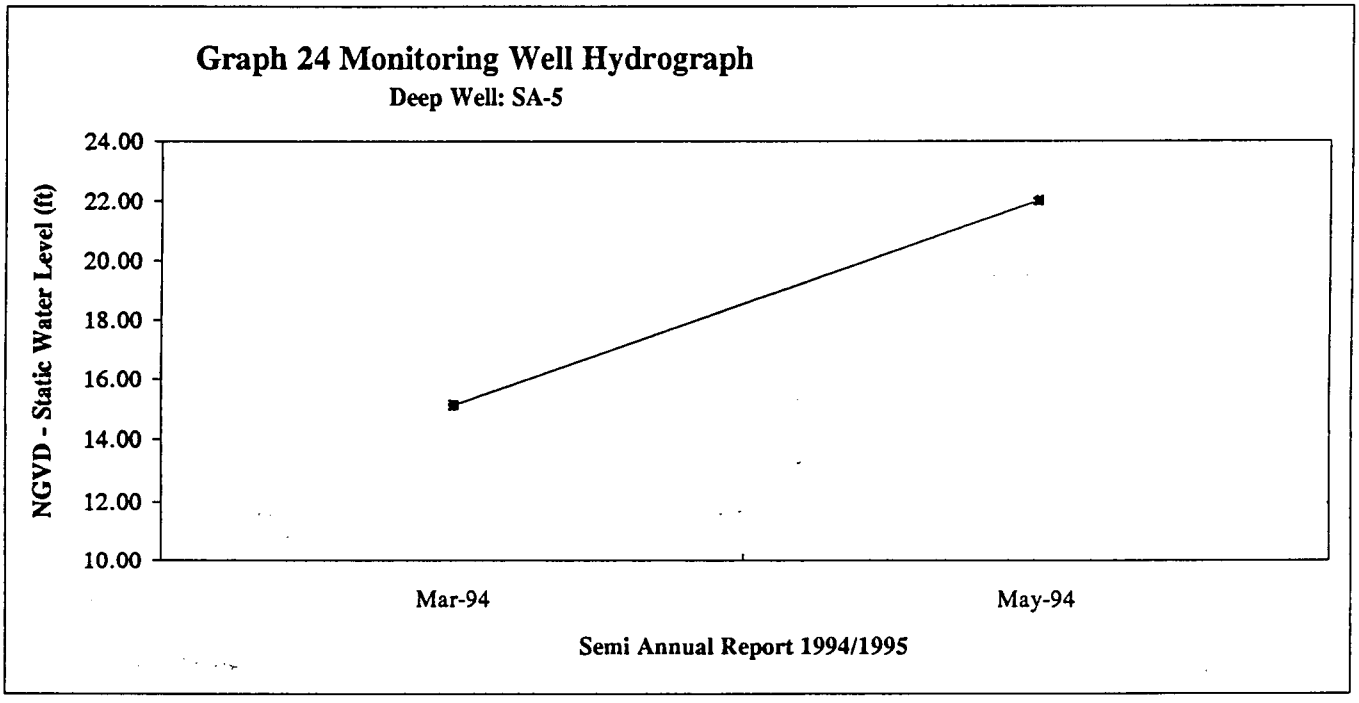
Graph 22 Monitoring Well Hydrograph

Deep Well: SA-3



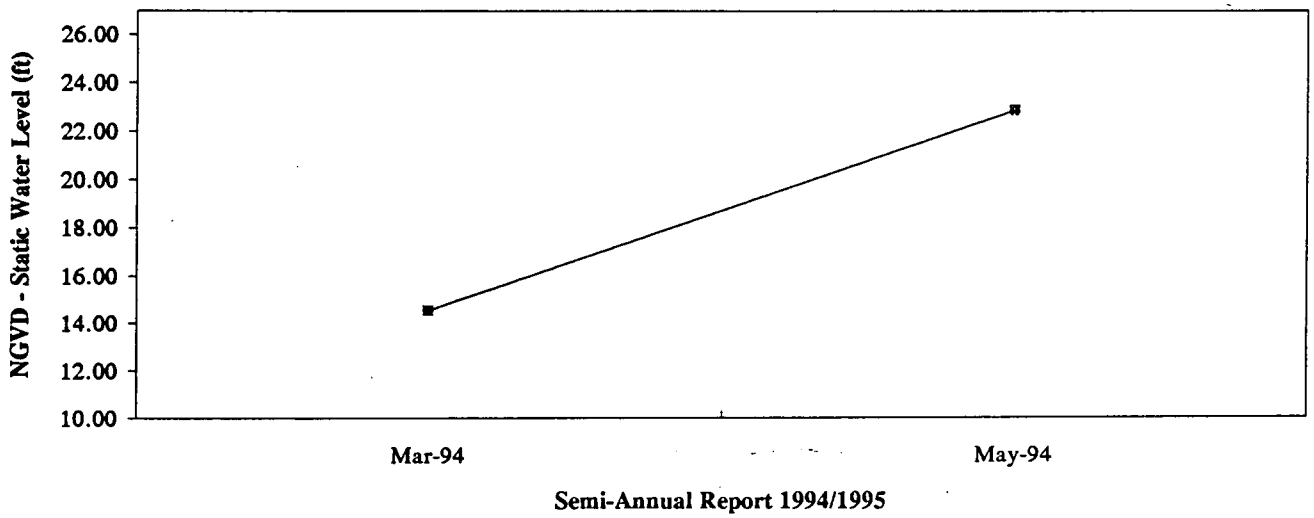
Semi Annual Report 1994/1995


Graph 23 Monitoring Well Hydrograph
Deep Well: SA -4
NGVD - Static Water Level (ft)
22.00
20.00
18.00
16.00
14.00
12.00
10.00
Mar-94
May-94
Semi-Annual Report 1994/1995


Graph 24 Monitoring Well Hydrograph
Deep Well: SA-5
NGVD - Static Water Level (ft)
24.00
22.00
20.00
18.00
16.00
14.00
12.00
10.00
Mar-94
May-94
Semi Annual Report 1994/1995

Graph 25 Monitoring Well Hydrograph

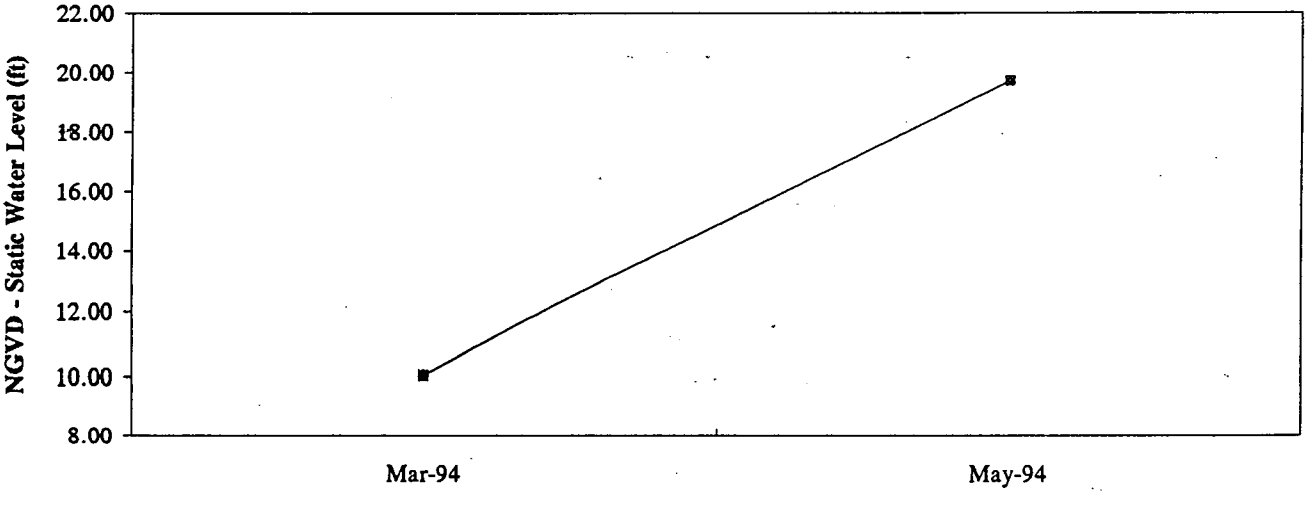
Deep Well: SA -6



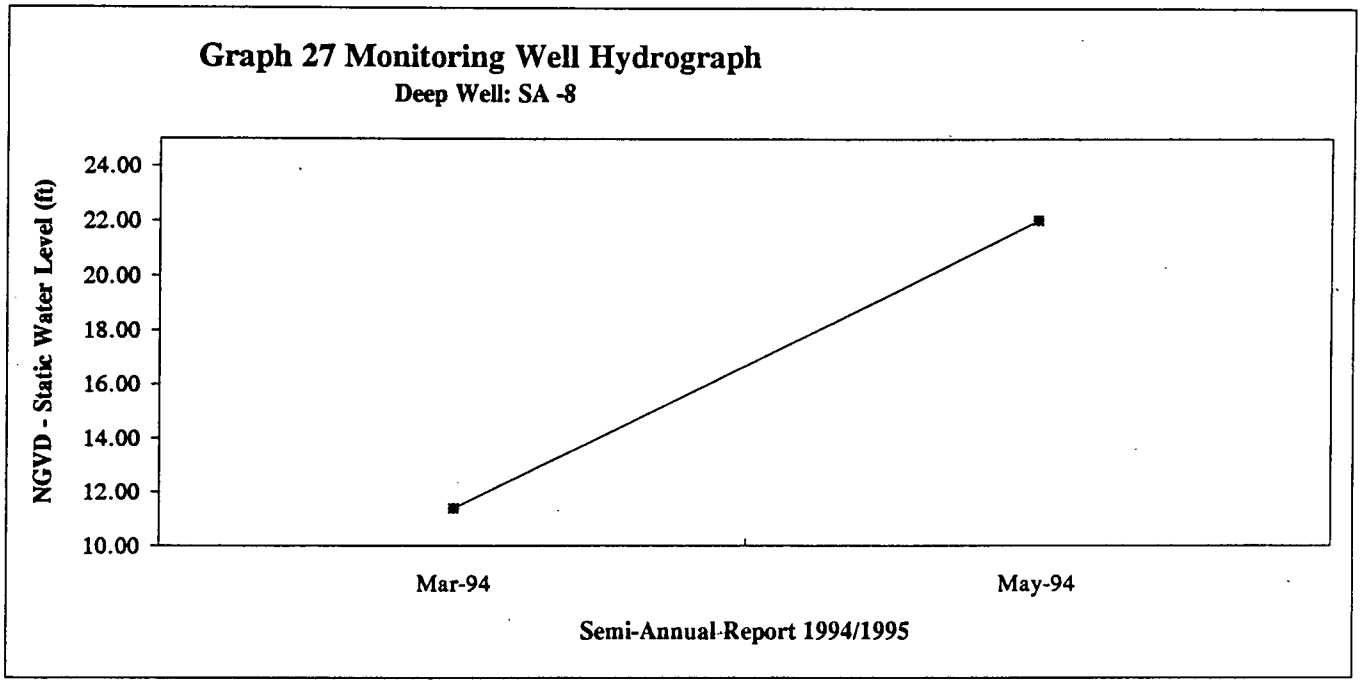
Semi-Annual Report 1994/1995

Graph 26 Monitoring Well Hydrograph

Deep Well: SA-7



Semi Annual Report 1994/1995


Graph 27 Monitoring Well Hydrograph
Deep Well: SA -8
NGVD - Static Water Level (ft)
24.00
22.00
20.00
18.00
16.00
14.00
12.00
10.00
Mar-94
May-94
Semi-Annual Report 1994/1995

ATTACHMENT 3

Groundwater Sampling Data

TABLE 1 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: LRII-1 Total Well Depth: 21.12 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	30.94	33.69	-	32.65
Conductivity (umho/cm)	365	300	300	400
pH (S.U.)	6.4	6.2	6.19	6.05
DO (mg/l)	1	1.6	1.1	0.1
Turbidity (NTU)	0.4	3.1	-	0.05
Temperature (C)	25.9	23.2	25.7	24.6
Color/Sheen (C.U.)	-	clear, yellow	-	brown
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.71	0.82
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	0.005	0.005	0.004	0.004
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	25.9	23.2	20.8	35.9
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	22.2	22	24.3
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	19.9	17.9	18.5	20.6
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	314	219	332	346
TOC (mg/l)	18.8	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	0.24 (1)

1 - All EPA 8260 parameters below detection limits except for concentration listed 1,4 Dichlorobenzene.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 2 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: LRII-2 Total Well Depth: 22.83 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	28.95	31.28	-	30.99
Conductivity (umho/cm)	135	120	110	120
pH (S.U.)	6.40	5.90	5.45	5.85
DO (mg/l)	1.0	2.6	0.4	0.7
Turbidity (NTU)	0.50	32.00	-	1.00
Temperature (C)	23.8	24.1	26.3	27.3
Color/Sheen (C.U.)	-	cloudy	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.09	0.12
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	8.15	79.0	7.40	8.28
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	6.18	6.18	4.49
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	4.69	4.37	<1.50	4.08
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	0.013	BDL
TDS (mg/l)	123	79	456	68
TOC (mg/l)	4.80	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.39 (1)	BDL

1 - All EPA 8260 parameters below detection limits except for concentration listed
Trichloromethane

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 3 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: LRII-3 Total Well Depth: 22.61 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	24.38	27.28	-	28.51
Conductivity (umho/cm)	150	285	248	290
pH (S.U.)	4.80	4.60	4.22	5.40
DO (mg/l)	1.4	0.9	0.6	0.5
Turbidity (NTU)	2.70	0.30	-	1.40
Temperature (C)	23.8	24.1	25.5	27.2
Color/Sheen (C.U.)	-	clear	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.11	0.16
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	BDL	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	15.6	23.6	10.4	17.3
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	6.28	4.21	4.15
Lead (mg/l)	BDL	BDL	BDL	BDL
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	19.5	46.1	39.8	46.1
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	242	236	204	194
TOC (mg/l)	6.00	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 4 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: LRII-4 **Total Well Depth: 22.50 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	25.47	27.74	-	-
Conductivity (umho/cm)	380	340	310	300
pH (S.U.)	6.30	6.30	6.03	6.37
DO (mg/l)	0.0	0.7	1.4	36.0
Turbidity (NTU)	7.30	3.30	-	0.06
Temperature (C)	24.0	24.6	25.6	28.7
Color/Sheen (C.U.)	-	clear	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.07	0.08
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	BDL	BDL	BDL	0.004
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	15.20	23.70	5.88	10.20
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	4.27	3.26	2.96
Lead (mg/l)	BDL	BDL	BDL	BDL
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	10.30	9.97	9.98	8.64
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	275	237	150	252
TOC (mg/l)	24.90	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 5 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: LRII-5 Total Well Depth: 22.78 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	29.95	30.60	-	32.28
Conductivity (umho/cm)	190	275	260	260
pH (S.U.)	-	5.90	5.99	5.74
DO (mg/l)	0.5	1.8	1.9	2.2
Turbidity (NTU)	1.20	2.10	-	0.36
Temperature (C)	25.0	23.4	26.5	26.6
Color/Sheen (C.U.)	-	clear	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.27	0.27
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	BDL	BDL	BDL	0.004
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	16.2	17.7	12.6	18.3
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	5.02	4.45	5.17
Lead (mg/l)	BDL	BDL	BDL	0.004
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	-	BDL	BDL
Sodium (mg/l)	8.34	10.90	9.89	8.99
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	-	BDL	BDL
Zinc (mg/l)	BDL	0.035	BDL	BDL
TDS (mg/l)	246	209	124	256
TOC (mg/l)	13.20	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.55	1.56(1)

1 - All EPA 8260 parameters below detection limits except for concentration listed
Trichloromethane

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 6 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: MW-1 **Total Well Depth: 14.53 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	28.68	32.51	-	35.29
Conductivity (umho/cm)	240	140	165	170
pH (S.U.)	-	5.00	5.42	4.99
DO (mg/l)	0.9	1.9	0.3	0.3
Turbidity (NTU)	4.30	4.70	-	3.29
Temperature (C)	24.5	24.7	27.7	29.2
Color/Sheen (C.U.)	-	clear, gold	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	1.20	1.29
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	0.012	0.013
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	49.70	5.50	5.13	11.50
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	4.87	4.56	4.13
Lead (mg/l)	-	BDL	BDL	-
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	17.0	9.0	6.5	5.1
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	0.018	0.008	BDL
TDS (mg/l)	157	129	120	138
TOC (mg/l)	8.20	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).
"-" - Not analyzed or sampled for this parameter.

TABLE 7 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: MW-2 Total Well Depth: 13.97 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	33.50	34.61	-	35.88
Conductivity (umho/cm)	185	198	220	270
pH (S.U.)	-	4.90	5.16	5.49
DO (mg/l)	0.5	N/A	0.6	0.7
Turbidity (NTU)	1.20	1.70	-	2.09
Temperature (C)	24.0	24.5	27.3	29.1
Color/Sheen (C.U.)	-	clear	-	clear
LABROATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.29	0.30
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	28.7	21.2	12.7	37.9
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	3.61	3.35	4.00
Lead (mg/l)	-	0.001	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	0.004
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	45.6	23.1	20.7	22.4
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	0.014	0.018	BDL
TDS (mg/l)	217	161	288	216
TOC (mg/l)	18.60	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.09 (1)	BDL

1 - All EPA 8260 parameters below detection limits except for concentration listed
Trichloromethane

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 8 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: MW-3 **Total Well Depth: 13.97 ft**	SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	29.53	32.95	-	-
Conductivity (umho/cm)	1025	405	290	310
pH (S.U.)	-	5.40	5.52	5.10
DO (mg/l)	0.3	1.5	2.5	0.6
Turbidity (NTU)	7.50	3.80	-	1.47
Temperature (C)	22.5	23.0	25.8	26.0
Color/Sheen (C.U.)	-	clear	-	yellow
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.09	0.14
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	0.002	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	100.0	-	72.6	91.2
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	9.33	6.75	6.98
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	0.0004	BDL	BDL
Nitrate (as N mg/l)	<0.01	-	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	52.7	61.6	45.7	51.0
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	0.026	0.020	BDL
TDS (mg/l)	380	-	246	368
TOC (mg/l)	10.20	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 9 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: MW-5 Total Well Depth: 21.42 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	33.40	-	-	32.74
Conductivity (umho/cm)	380	295	190	220
pH (S.U.)	-	6.30	6.27	6.28
DO (mg/l)	0.1	1.1	2.0	1.2
Turbidity (NTU)	27.20	25.50	-	1.00
Temperature (C)	24.0	24.5	26.5	28.2
Color/Sheen (C.U.)	-	cloudy, yellow	-	y/w/c/dy
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	4.01	3.60
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	27.7	19.7	15.3	18.7
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	2.95	1.87	2.46
Lead (mg/l)	-	BDL	0.002	0.003
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	23.9	22.2	14.9	12.5
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	0.026	0.017	BDL
TDS (mg/l)	248	213	88	186
TOC (mg/l)	28.00	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	See note (1)

1 - All EPA 8260 parameters below detection limits except for
0.14 ug/l Trichloromethane and 0.37 ug/l Benzene

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 10 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: MW-6 **Total Well Depth: 20.72 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	32.74	33.32	-	35.55
Conductivity (umho/cm)	180	128	90	130
pH (S.U.)	-	5.50	5.66	5.19
DO (mg/l)	0.0	1.5	1.9	1.7
Turbidity (NTU)	12.10	28.60	-	3.02
Temperature (C)	24.0	24.5	26.9	26.7
Color/Sheen (C.U.)	-	cloudy, yellow	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.16	0.16
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	0.01	BDL	0.003
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	14.00	7.50	1.09	14.30
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	5.42	4.53	6.33
Lead (mg/l)	-	BDL	0.001	-
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	145.0	10.9	6.33	8.37
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	0.022	0.013	BDL
TDS (mg/l)	142	138	16	188
TOC (mg/l)	16.20	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.58 (1)	3.73 (1)

1 - All EPA 8260 parameters below detection limits except for concentration listed
Trichloromethane

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 11 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: CW-4 Total Well Depth: 17.91 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	30.96	-	-	34.93
Conductivity (umho/cm)	1220	-	850	1100
pH (S.U.)	-	-	6.50	6.41
DO (mg/l)	0.9	-	1.1	1.7
Turbidity (NTU)	2.61	-	-	2.20
Temperature (C)	22.0	-	26.0	26.7
Color/Sheen (C.U.)	-	-	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.19	0.23
Antimony (mg/l)	BDL	-	-	BDL
Arsenic (mg/l)	-	-	0.027	0.030
Barium (mg/l)	BDL	-	0.18	BDL
Beryllium (mg/l)	BDL	-	BDL	BDL
Cadmium (mg/l)	BDL	-	BDL	BDL
Chlorides (mg/l)	167	-	191	214
Chromium (mg/l)	BDL	-	BDL	BDL
Cobalt (mg/l)	BDL	-	BDL	BDL
Copper (mg/l)	BDL	-	BDL	BDL
Iron (mg/l)	-	-	5.00	6.25
Lead (mg/l)	-	-	BDL	-
Mercury (mg/l)	BDL	-	BDL	BDL
Nitrate (as N mg/l)	<0.01	-	BDL	BDL
Nickel (mg/l)	BDL	-	BDL	BDL
Selenium (mg/l)	BDL	-	BDL	BDL
Silver (mg/l)	-	-	BDL	BDL
Sodium (mg/l)	51.4	-	53.1	57.7
Thallium (mg/l)	BDL	-	BDL	BDL
Vanadium (mg/l)	-	-	BDL	BDL
Zinc (mg/l)	BDL	-	BDL	0.020
TDS (mg/l)	1010	-	410	1150
TOC (mg/l)	16.90	-	-	-
EPA 8260 (ug/l)	BDL	-	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 12 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: CW-5A **Total Well Depth: 11.92 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	-	-	-	39.01
Conductivity (umho/cm)	-	-	340	430
pH (S.U.)	-	5.91	6.18	6.32
DO (mg/l)	-	-	6.2	1.5
Turbidity (NTU)	-	-	-	2.80
Temperature (C)	-	-	26.3	28.1
Color/Sheen (C.U.)	-	-	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	0.01	0.16	0.47
Antimony (mg/l)	-	BDL	BDL	BDL
Arsenic (mg/l)	-	0.007	BDL	0.005
Barium (mg/l)	-	BDL	BDL	BDL
Beryllium (mg/l)	-	BDL	BDL	BDL
Cadmium (mg/l)	-	BDL	BDL	BDL
Chlorides (mg/l)	-	-	29.3	51.6
Chromium (mg/l)	-	BDL	BDL	BDL
Cobalt (mg/l)	-	-	BDL	BDL
Copper (mg/l)	-	0.06	BDL	BDL
Iron (mg/l)	-	9.37	0.64	2.19
Lead (mg/l)	-	0.002	BDL	0.002
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	-	BDL	BDL	BDL
Nickel (mg/l)	-	BDL	BDL	BDL
Selenium (mg/l)	-	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	-	34.0	23.4	25.9
Thallium (mg/l)	-	BDL	BDL	BDL
Vanadium (mg/l)	-	-	BDL	BDL
Zinc (mg/l)	-	-	0.013	0.002
TDS (mg/l)	-	-	248	398
TOC (mg/l)	-	-	BDL	-
EPA 8260 (ug/l)	-	-	0.35 (1)	3.73 (1)

1 - All EPA 8260 parameters below detection limits except for concentration listed
Trichloromethane

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 13 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: GC-1A **Total Well Depth: 23.76 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	25.66	-	-	26.75
Conductivity (umho/cm)	900	405	230	700
pH (S.U.)	6.80	6.50	6.30	6.30
DO (mg/l)	0.0	1.1	0.9	4.1
Turbidity (NTU)	8.00	4.50		2.10
Temperature (C)	22.0	19.5	26.2	26.7
Color/Sheen (C.U.)	-	cloudy		clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	2.43	17.10
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	0.022	0.01	0.020
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	125.00	22.70	1.43	22.10
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	51.5	2.2	29.7
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	53.7	51.1	13.1	32.4
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	0.653	0.413
TDS (mg/l)	653	332	132	457
TOC (mg/l)	17.70	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	See note (1)

1 - All EPA 8260 parameters below detection limits except for 0.52 ug/l 1,4 Dichlorobenzene, 0.05 ug/l 1,2 Dichlorobenzene, 0.21 ug/l Benzene and 2.44 ug/l Chlorobenzene.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 14 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: GC-2 **Total Well Depth: 18.03 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	33.39	33.24	-	32.61
Conductivity (umho/cm)	455	390	380	400
pH (S.U.)	6.30	6.00	6.27	6.14
DO (mg/l)	0.0	1.8	0.8	0.8
Turbidity (NTU)	7.20	1.40	-	1.15
Temperature (C)	24.3	24.5	26.5	26.0
Color/Sheen (C.U.)	-	clear	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.33	0.26
Antimony (mg/l)	BDL	BDL	BDL	0.055
Arsenic (mg/l)	BDL	0.048	0.052	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	40.4	29.9	19.1	33.7
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	36.7	26.8	28.5
Lead (mg/l)	BDL	BDL	BDL	BDL
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	22.2	24.0	19.7	20.1
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	0.060	BDL	BDL
TDS (mg/l)	311	296	260	288
TOC (mg/l)	14.70	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.68 (1)	0.49 (2)

1 - All EPA 8260 parameters below detection limits except for concentration listed Trichloromethane.

2 - All EPA 8260 parameters below detection limits except for concentration listed Dichlorobenzene.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 15 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: GC-3 Total Well Depth: 22.58 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	28.71	30.88	-	30.10
Conductivity (umho/cm)	475	375	360	400
pH (S.U.)	6.60	6.10	6.40	6.19
DO (mg/l)	1.3	1.0	1.3	2.0
Turbidity (NTU)	173.0	2.9	-	0.3
Temperature (C)	23.0	23.4	27.6	26.2
Color/Sheen (C.U.)	-	clear	-	clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.21	0.18
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	0.004	0.005
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	19.8	24.0	24.9	24.2
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	8.71	6.62	6.17
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	20.3	20.3	18.5	18.8
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	BDL	BDL	BDL	BDL
Zinc (mg/l)	-	BDL	BDL	BDL
TDS (mg/l)	290	284	250	268
TOC (mg/l)	8.30	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.55 (1)	See note (2)

1 - All EPA 8260 parameters below detection limits except for concentration listed Trichloromethane

2 - All EPA 8260 parameters below detection limits except for 0.32 ug/l 1,4 Dichlorobenzene, and 0.85 ug/l Trichloromethane.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 16 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: GC-4 Total Well Depth: 22.18 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	27.58	28.23	-	27.56
Conductivity (umho/cm)	410	365	330	300
pH (S.U.)	8.3	6.4	6.45	6.31
DO (mg/l)	0.6	1.3	0.9	2.3
Turbidity (NTU)	0.3	0.7	-	0.65
Temperature (C)	23.5	23.5	26.8	24.6
Color/Sheen (C.U.)	-	Cloudy	-	Clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.18	0.14
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	0.009	0.008	0.011
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	27.5	24.5	24.7	23.2
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	15.8	11.7	12.1
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	20.3	19.9	18.2	18.9
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	275	215	296	246
TOC (mg/l)	10.6	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.44 (1)	See note (2)

1 - All EPA 8260 parameters below detection limits except for concentration listed Trichloromethane

2 - All EPA 8260 parameters below detection limits except for 0.32 ug/l 1,4 Dichlorobenzene, and 0.85 ug/l Trichloromethane.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 17 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: GC-5 **Total Well Depth: 22.02 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	28.18	28.45	-	29.78
Conductivity (umho/cm)	255	380	192	160
pH (S.U.)	-	6.3	5.73	5.89
DO (mg/l)	0.3	1.7	0.4	2.1
Turbidity (NTU)	>200	3.4	-	4.29
Temperature (C)	25	25.6	28.4	30.3
Color/Sheen (C.U.)	-	Clear/Yellow	-	Yellow
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	1.78	1.43
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	BDL	0.004
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	12.1	17.5	14.5	11.1
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	3.71	1.85	1.36
Lead (mg/l)	-	0.002	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	13.4	15.6	18.9	11.3
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	0.018	BDL	BDL
TDS (mg/l)	204	275	296	180
TOC (mg/l)	38.5	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	0.85 (1)

1 - All EPA 8260 parameters below detection limits except for concentration listed Trichloromethane.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 18 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: GC-6 Total Well Depth: 22.40 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	30.62	31.27	-	32.21
Conductivity (umho/cm)	185	330	230	200
pH (S.U.)	-	5.3	5.76	5.83
DO (mg/l)	0.5	1.2	0.1	4.8
Turbidity (NTU)	0.6	11.9	-	0.98
Temperature (C)	25.0	25.5	27.9	29.6
Color/Sheen (C.U.)	-	Clear/gold	-	Yellow
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	1.01	0.81
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	0.002	BDL	0.004
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	24.2	18.3	11.2	21.4
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	3.88	2.04	1.81
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	8.25	12.0	6.83	5.79
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	0.028	BDL	BDL
TDS (mg/l)	219	274	184	190
TOC (mg/l)	11.8	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).
"-" - Not analyzed or sampled for this parameter.

TABLE 19 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Shallow Monitoring Well: SMR-1 Total Well Depth: 22.88 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	28.10	30.98	-	-
Conductivity (umho/cm)	205	165	200	180
pH (S.U.)	7.6	5.4	5.23	5.67
DO (mg/l)	0.6	1.2	0.8	2.3
Turbidity (NTU)	3.9	4.1	-	0.3
Temperature (C)	23.3	23.0	24.2	25.1
Color/Sheen (C.U.)	-	Clear	-	Clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.23	0.24
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	BDL	BDL	BDL	0.006
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	21.8	17.3	14.0	17.2
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	8.25	6.73	7.25
Lead (mg/l)	-	BDL	BDL	0.006
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	0.07	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	20.4	16.9	21.2	17.4
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	BDL	BDL	BDL	BDL
Zinc (mg/l)	-	0.029	BDL	BDL
TDS (mg/l)	170	176	114	188
TOC (mg/l)	18.4	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).
"-" - Not analyzed or sampled for this parameter.

TABLE 20 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Deep Monitoring Well: SMR-2 Total Well Depth: 150.00 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	21.70	21.50	-	-
Conductivity (umho/cm)	625	575	430	500
pH (S.U.)	7.6	7.5	7.21	7.03
DO (mg/l)	0.0	1.2	1.0	1.6
Turbidity (NTU)	0.4	0.6	-	0.13
Temperature (C)	99.9	23.9	24.1	24.7
Color/Sheen (C.U.)	-	Clear/gold	-	Clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.28	0.27
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	BDL	BDL	BDL	0.004
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	99.9	93.3	87.8	102
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	0.04	0.03	BDL
Lead (mg/l)	-	BDL	BDL	0.006
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	0.07	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	61.3	54.7	53.4	61.6
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	BDL	BDL	BDL	BDL
Zinc (mg/l)	-	BDL	BDL	BDL
TDS (mg/l)	411	431	370	420
TOC (mg/l)	6.8	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).
"-" - Not analyzed or sampled for this parameter.

TABLE 21 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Deep Monitoring Well: SA-2 **Total Well Depth: 154.93 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	33.39	-	-	-
Conductivity (umho/cm)	475	400	370	300
pH (S.U.)	7.4	7.0	7.05	7.07
DO (mg/l)	0.0	0.9	0.4	0.3
Turbidity (NTU)	2.8	7.2	-	2.1
Temperature (C)	24.6	24.9	25.0	24.1
Color/Sheen (C.U.)	-	Cloudy/gold	-	Cloudy
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.3	0.31
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	BDL	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	35.3	41.3	13.7	34.9
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	0.63	0.14	0.22
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	28.0	22.6	27.6	30.5
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	353	278	324	280
TOC (mg/l)	18.4	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.51 (1)	BDL

1 - All EPA 8260 parameters below detection limits except for concentration listed Trichloromethane.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 22 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Deep Monitoring Well: SA-3 **Total Well Depth: 163.02 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	13.02	19.52	-	-
Conductivity (umho/cm)	600	470	400	400
pH (S.U.)	8.7	7.3	6.92	7.21
DO (mg/l)	0.8	1.5	0.6	0.1
Turbidity (NTU)	7.3	2.4	-	11.5
Temperature (C)	24.0	24.4	24.9	23.7
Color/Sheen (C.U.)	-	Clear/gold	-	Clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.23	0.27
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	44.7	26.9	33.1	27.9
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	1.57	0.59	2.38
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	35.9	23.3	31.8	26.7
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	447	384	288	374
TOC (mg/l)	19.4	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.34 (1)	0.03 (1)

1 - All EPA 8260 parameters below detection limits except for concentration listed Trichloromethane.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 23 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Deep Monitoring Well: SA-4 **Total Well Depth: 143.78 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	14.18	20.38	-	-
Conductivity (umho/cm)	650	455	340	600
pH (S.U.)	7.5	7.3	7.1	6.98
DO (mg/l)	1.7	1.3	0.3	1.4
Turbidity (NTU)	0.2	0.6	-	0.65
Temperature (C)	23.5	23.8	23.3	24.3
Color/Sheen (C.U.)	-	Clear	-	Clear
LABORATORY PARMETERS				
Total Ammonia as N (mg/l)	-	-	0.27	0.25
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	BDL	0.004
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	58.1	59.7	54.2	66.9
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	0.11	BDL	0.04
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	14.3	59.5	56.9	61.4
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	0.009	BDL
TDS (mg/l)	440	409	324	464
TOC (mg/l)	14.8	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).
"-" - Not analyzed or sampled for this parameter.

TABLE 24 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Deep Monitoring Well: SA-5 **Total Well Depth: 153.02 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARMETERS				
NDVD - Static Water Level (ft)	15.12	22.02	-	-
Conductivity (umho/cm)	600	550	420	400
pH (S.U.)	7.5	7.4	7.18	8.36
DO (mg/l)	1.1	0.6	0.5	3.5
Turbidity (NTU)	0.3	0.3	-	0.1
Temperature (C)	22.8	23.7	24.8	24.6
Color/Sheen (C.U.)	-	Clear/gold	-	Clear
LABORATORY PARMETERS				
Total Ammonia as N (mg/l)	-	-	0.26	0.32
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	BDL	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	71.7	68.0	59.1	66.4
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	BDL	0.05	0.14
Lead (mg/l)	BDL	BDL	BDL	BDL
Mercury (mg/l)	-	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	53.2	49.5	50.3	52.3
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	444	371	316	340
TOC (mg/l)	8.1	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.55 (1)	0.72 (2)

1 - All EPA 8260 parameters below detection limits except for concentration listed Trichloromethane.

2 - All EPA 8260 parameters below detection limits except for concentration listed 1,4 - Dichlorobenzene.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 25 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Deep Monitoring Well: SA-6 **Total Well Depth: 153.04 ft**	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARMETERS				
NGVD - Static Water Level (ft)	14.54	22.84	-	-
Conductivity (umho/cm)	750	625	650	700
pH (S.U.)	-	7.3	7.11	6.93
DO (mg/l)	-	1.8	0.9	0.7
Turbidity (NTU)	32.0	0.2	-	2.09
Temperature (C)	24.0	23.5	25.5	25.9
Color/Sheen (C.U.)	-	Clear/gold	-	Clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.28	0.25
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	39.7	49.1	50	53.6
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	0.06	BDL	BDL
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	35.5	35.1	43.3	45.0
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	397	558	256	582
TOC (mg/l)	-	-	-	-
EPA 8260 (ug/l)	BDL	BDL	0.63 (1)	BDL

1 - All EPA 8260 parameters below detection limits except for concentration listed Trichloromethane.

BDL - Below Laboratory Detection Limit (variable by parameter).

"-" - Not analyzed or sampled for this parameter.

TABLE 26 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Deep Monitoring Well: SA-7 Total Well Depth: 152.97 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARMETERS				
NGVD - Static Water Level (ft)	10.07	19.71	-	-
Conductivity (umho/cm)	420	370	340	320
pH (S.U.)	7.7	7.6	7.2	8.28
DO (mg/l)	1.4	1.1	0.2	1.2
Turbidity (NTU)	0.3	1.1	-	0.1
Temperature (C)	24.0	24.7	24.0	26.5
Color/Sheen (C.U.)	-	Clear/yellow	-	Clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.21	0.29
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	-	BDL	BDL	BDL
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	56.9	53.8	45.5	54.7
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	0.05	BDL	0.04
Lead (mg/l)	-	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	35.5	37.6	38.1	39.2
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	BDL	BDL
TDS (mg/l)	313	290	296	245
TOC (mg/l)	9.8	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	1.04 (1)

1 - All EPA 8260 parameters below detection limits except for concentration listed 1,4 - Dichlorobenzene.

BDL - Below Laboratory Detection Limit (variable by parameter).

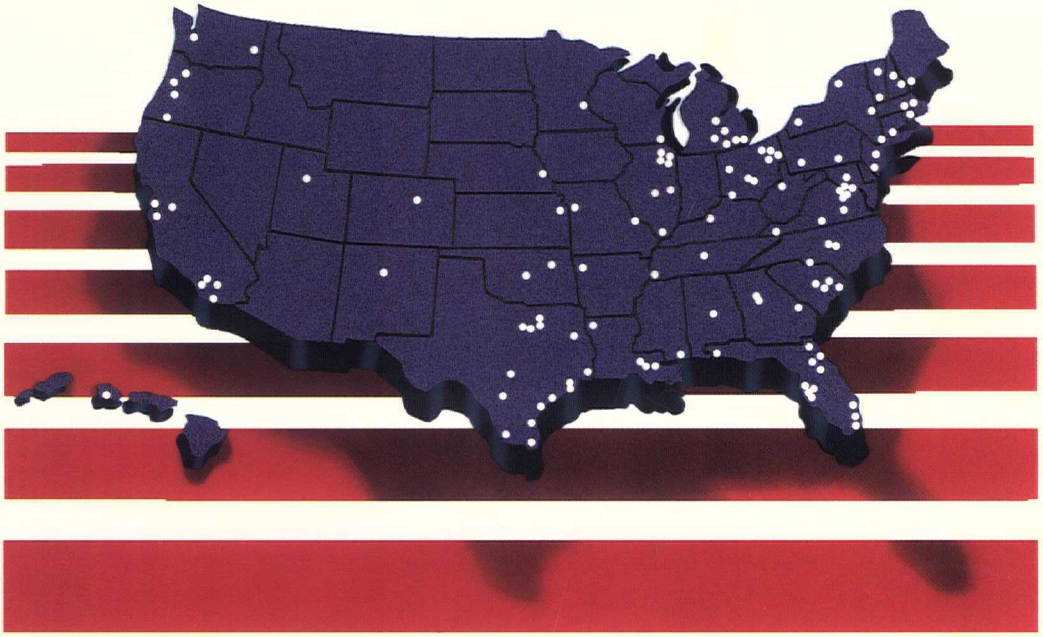
"-" - Not analyzed or sampled for this parameter.

TABLE 27 LENA ROAD LANDFILL SEMI-ANNUAL GROUNDWATER SAMPLING

Deep Monitoring Well: SA-8 Total Well Depth: 153.38 ft	1994/1995 SAMPLING EVENT (see text for dates)			
HALF-YEAR	H1-94	H2-94	H1-95	H2-95
FIELD PARAMETERS				
NGVD - Static Water Level (ft)	11.38	21.98	-	-
Conductivity (umho/cm)	430	1625	335	400
pH (S.U.)	7.9	11.7	7.73	7.26
DO (mg/l)	0	1.3	1.6	17.0
Turbidity (NTU)	0.7	2.8	-	0.43
Temperature (C)	23.0	25.3	24.6	27.2
Color/Sheen (C.U.)	-	Clear	-	Clear
LABORATORY PARAMETERS				
Total Ammonia as N (mg/l)	-	-	0.22	0.2
Antimony (mg/l)	BDL	BDL	BDL	BDL
Arsenic (mg/l)	BDL	0.005	BDL	0.004
Barium (mg/l)	BDL	BDL	BDL	BDL
Beryllium (mg/l)	BDL	BDL	BDL	BDL
Cadmium (mg/l)	BDL	BDL	BDL	BDL
Chlorides (mg/l)	54.3	44.9	46.7	57.6
Chromium (mg/l)	BDL	BDL	BDL	BDL
Cobalt (mg/l)	BDL	BDL	BDL	BDL
Copper (mg/l)	BDL	BDL	BDL	BDL
Iron (mg/l)	-	0.03	BDL	BDL
Lead (mg/l)	BDL	BDL	BDL	BDL
Mercury (mg/l)	BDL	BDL	BDL	BDL
Nitrate (as N mg/l)	<0.01	<0.01	BDL	BDL
Nickel (mg/l)	BDL	BDL	BDL	BDL
Selenium (mg/l)	BDL	BDL	BDL	BDL
Silver (mg/l)	-	BDL	BDL	BDL
Sodium (mg/l)	42.0	36.1	39.3	40.5
Thallium (mg/l)	BDL	BDL	BDL	BDL
Vanadium (mg/l)	-	BDL	BDL	BDL
Zinc (mg/l)	BDL	BDL	0.011	BDL
TDS (mg/l)	320	429	242	324
TOC (mg/l)	4.6	-	-	-
EPA 8260 (ug/l)	BDL	BDL	BDL	BDL

BDL - Below Laboratory Detection Limit (variable by parameter).
"-" - Not analyzed or sampled for this parameter.

Providing information to build on from offices nationwide



psi Environmental Geotechnical Construction

Consulting • Engineering • Testing

1-800-548-7901

Construction Testing and Quality Control • Dedicated Project Testing and Inspection • Materials Testing and Certification
Nondestructive Examination and Testing • Roof and Pavement Consulting • Geotechnical Engineering and Drilling Services
Environmental and Asbestos Consulting • Analytical Services • Training Programs