8/839

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9/22/89
c.02

EXPANDED SITE INSPECTION REPORT
FOR
H.O.D. LANDFILL
ANTIOCH, ILLINOIS
U.S. EPA ID: ILD980605836
SS ID: IL2F
TDD: F05-8702-124
PAN: FIL0141XB

VOLUME 2 OF 4

EPA

HAZARDOUS SITE EVALUATION DIVISION

Field Investigation Team Zone II

CONTRACT NO.
68-01-7347

ecology and environment, inc.

International Specialists in the Environment

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SEPTEMBER 22, 1989

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
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A

APPENDIX A

REPORT OF U.S. EPA GEOPHYSICAL INVESTIGATION AT H.O.D. LANDFILL

HOD LANDFILL

ANTIOCH, ILLINOIS

GEOPHYSICAL INVESTIGATION

March 16-17, 1987

J. L. Bartlett
Technical Support Unit
Waste Management Division
United States Environmental Protection Agency
Region V

INTRODUCTION

This report contains the results of electromagnetic induction surveys completed by the U.S. EPA, Region V, at HOD Landfill (HOD) in Antioch, Illinois, Lake County (see Figure 1). The surveys were conducted on March 16-17, 1987 at the request of Doug Yeskis, U.S. EPA, Technical Support Unit, and William Borchardt, Ecology and Environment, Field Investigation Team (FIT). The purpose of the surveys was to further characterize the local geology and hydrogeology.

THEORY

Electromagnetics

Electromagnetic induction measures the electrical conductivity of the ground. Geonics electromagnetic equipment consists of an alternating current transmitter coil that produces a time varying magnetic field (primary field), which, in turn, induces small eddy currents in the earth below the instrument. Each of these eddy current loops produce a secondary magnetic field which is proportional to the magnitude of the current flowing within that loop. The secondary magnetic field together with the primary magnetic field, are intercepted by a receiver coil and results in an output voltage which is, therefore, also linearly related to the subsurface conductivity. The unit of conductivity used is the millimho-per-meter (mmho/m).

Two types of electromagnetic equipment were utilized for this survey, Geonics EM31-D and Geonics EM34-3.

The transmitter and receiver coils of the EM31-D have a fixed intercoil spacing of 3.7 meters which yields and effective depth of exploration of approximately 6 meters.

The transmitter and receiver coils of the EM34-3 have a variable intercoil spacing of 10, 20 or 40 meters which can yield an effective depth of exploration from 7.5 to 60 meters. As the intercoil spacing increases, the depth of exploration increases.

Two depths of exploration are able to be measured for each intercoil spacing. With the coils aligned vertically (horizontal dipole mode) the maximum exploration depth is .75 x intercoil spacing. With the coils aligned horizontally (vertical dipole mode), the maximum exploration depth is 1.5 x intercoil spacing. However, when conductivity values are obtained with the coils aligned vertically (horizontal dipole), the relative contribution from material near surface is large and the response falls off monotonically with depth. When the coils are aligned horizontally (vertical dipole), the near surface material makes a very small contribution to the conductivity values obtained (McNeill, 1980).

According to Benson et. al. (1982), the conductivity value resulting from electromagnetic equipment is a composite and represents the combined effects of the thickness of soil or rock layers, their depths and the specific conductivity of the materials. The instrument reading represents a combination of these effects, extending from the surface to the depth range of the instrument. The resulting values are influenced more strongly by shallow materials than by deeper layers. However, contributions to the subsurface conductivity from highly conductive materials lying at greater depths may have a significant effect on the reading.

FIELD PROCEDURES

U.S. EPA and FIT selected, based on accessibility, two areas adjacent to HOD property for the electromagnetic survey. These two areas are identified on Figure 2. A grid was established at HOD by U.S. EPA and FIT immediately prior to initiation of the surveys. The grid size was selected based on the site area and the time allotted for the survey.

On the southeast side, ON 40E is located 58.5 feet north of the southeast corner of HOD's fence and 40 feet east of the eastern fence boundary. On the northwest side, 20N 0E is located 34 feet east of the northwest corner of HOD's fence and 20 feet north of the northern fence boundary.

Measurements of the electrical conductivity of the ground were obtained using electromagnetic induction equipment, Geonics EM34-3, utilizing the 10 meter and 20 meter coil spacings, and Geonics EM31-D. Both the horizontal and vertical dipole modes were utilized with both pieces of equipment (6 conductivity values were obtained at each grid point).

RESULTS

Appendix 1 lists the field data obtained at HOD utilizing the EM31-D and the EM34-3. The data was plotted and contoured and the results are attached as Figures 3 through 8, for the southeast side, and Figures 9 through 14, for the northwest side. Figure 1 is an 8-1/2" x 11" section of the U.S.G.S. topographic map for Antioch, Illinois-Wisconsin, 7.5 minute series. The site location is marked. Figure 2 is a copy of the base map of the site prepared by FIT, indicating major features of the site and approximate locations of the surveys. The approximate location of the old stream channel is marked on Figure 2.

Several data points were eliminated from the contoured data maps (Figures 3 through 14) because of interference caused by man-made surficial objects. These data points and the known interference are listed:

Southeast survey area

60E 50N - powerline anchor on the ground at stake
Deleted from EM31-D and EM34-3 10 meter contour maps because of proximity of electromagnetic equipment to anchor

80E 50N - overhead powerlines directly above EM34-3 10 meter transmitter

Each location where readings were taken is designated on the contour maps (Figures 3 through 14) by a dot "." enclosed by a square with the conductivity reading obtained appearing to the right of the box. Following is a brief summary of the results obtained with the EM31-D and EM34-3 at HOD.

The northwest and southeast sides of HOD was surveyed to attempt to delineate a stream/gravel channel resulting from the stream which, in the past, ran through HOD property (see Figure 2). This stream has since been diverted around the landfill. This stream can be seen on the aerial photograph dated September 17, 1961, from the photographic report prepared for HOD, dated September, 1986. In addition, cross-sections provided for the Expanded Site Inspection (ESI) for HOD indicate a possible stream channel (see Figure 2.4, cross-section A-A', ESI). Therefore, an attempt will be made to identify a stream channel which may exist on the northwest and southeast sides of HOD property.

Benson, et. al., (1982) identifies the range of electrical conductivities for river sand and gravel to be .1 to 10 millimho/meter. However since conductivity values obtained by electromagnetic techniques is a composite (as explained in Theory, above), and the overlying and surrounding rock and soil contribute to conductivity values obtained at a location, it is expected that the silty clay and topsoil in this area will increase the overall apparent conductivity values of any sand/gravel unit which may be delineated.

The lowest conductivity values obtained on the southeast side occur approximately along the 200N line or at a slight angle (NW-SE) (see Figures 3 through 6). However, these changes are subtle. Notice that with increased depth of exploration (EM34-3, 20 meter coil spacing), the suspected "stream channel" becomes obscure.

On the northwest side the conductivity values increase and become very erratic with increased depth of exploration. The conductivity values exhibiting negative values are indicative of detection of a highly conductive object when utilizing electromagnetic equipment.

CONCLUSIONS

The lowest conductivity values obtained on the southeast side occur approximately along the 200N line, the approximate location is marked on Figures 3 through 6. This area, exhibiting the lowest conductivity values on the southeast side is the most likely location of an old sand/gravel channel. However, this is a subtle change in conductivity values. A sharp delineation between high (clay) and low (sand & gravel) apparent conductivity does not occur.

Figures 6 and 7, the contoured data for the EM34-3, 20 meter coil separation, do not clearly delineate this low conductivity occurrence. A possible explanation for this occurrence is that the depth of exploration of the 20 meter coil (15 meters-horizontal dipole mode, 30 meters-vertical dipole mode) exceeds the depth of the sand/gravel channel and is therefore producing conductivity values strongly related to the underlying, highly conductive, clay unit.

The data obtained on the northwest side exhibits characteristics indicative of buried materials of a highly conductive nature and therefore, it is not possible to delineate a stream channel - the highly conductive materials masks any subtle changes occurring in the underlying soil.

Since the negative values begin when utilizing the EM34-3, 10 meter intercoil spacing, vertical dipole mode, this highly conductive material appears to begin at a depth of 5.5 to 15 meters. The conductivity values obtained at shallower depths are still affected (increased) due to the highly conductive materials located at greater depths (see Theory, above).

REFERENCES

Tyagi, S., Lord, A.E., Jr., and Koerner, R.M., 1983a, Use of a very-low-frequency electromagnetic method at 9.5 kHz to detect buried drums in sandy soil: Journal of Hazardous Materials, vol. 7, p. 353-373.

Benson, R.C., Glaccum, R.A., Noel, M.R., 1982, Geophysical techniques for sensing buried wastes and waste migration, U.S. EPA Contract Number 68-03-3-50, p. 63-90.

McNeill, J.D., 1980, Electromagnetic terrain conductivity measurement at low induction numbers, Technical Note TN-6, p.6-7.

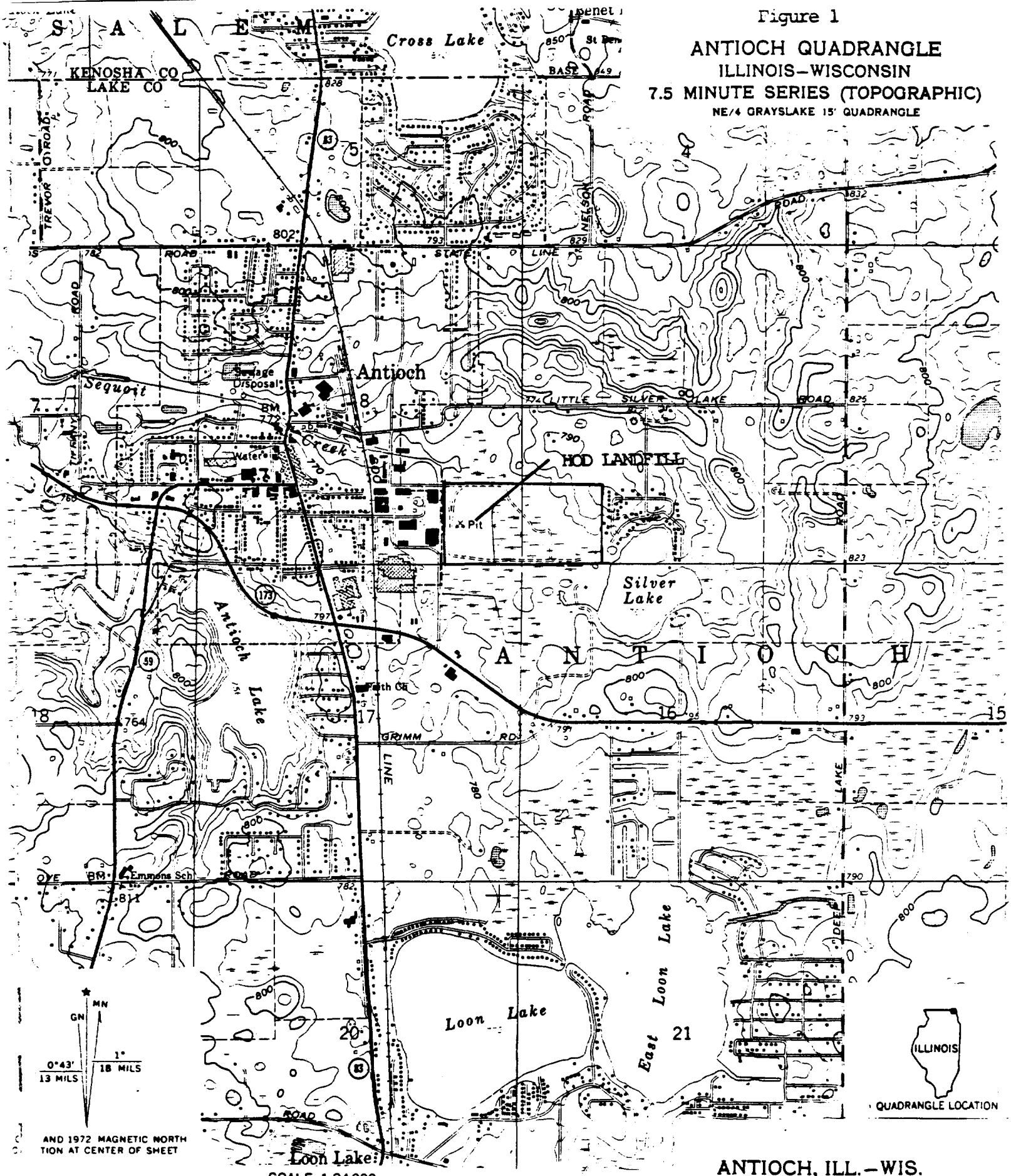
Figure 1

ANTIOCH QUADRANGLE

ILLINOIS–WISCONSIN

7.5 MINUTE SERIES (TOPOGRAPHIC)

NE/4 GRAYSLAKE 15' QUADRANGLE



CONTOUR INTERVAL 10 FEET

DOTTED LINES REPRESENT 5-FOOT CONTOURS

NATIONAL GEODETIC VERTICAL DATUM OF 1929

ANTIOCH, ILL.–WIS.

NE/4 GRAYSLAKE 15' QUADRANGLE

42088-D1-TF-024

1960

PHOTOREVISED 1972

DMA 3368 I NE–SERIES V863

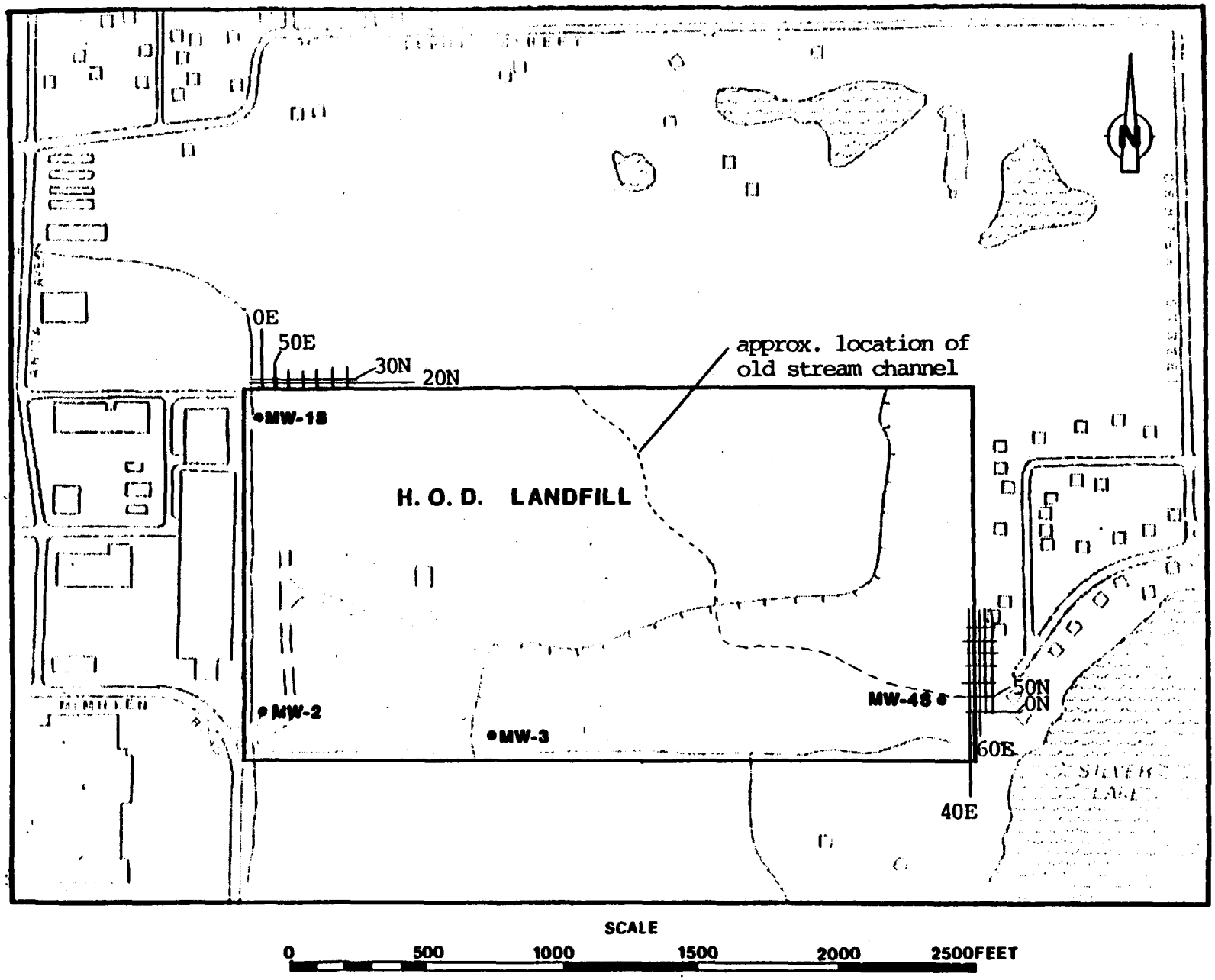
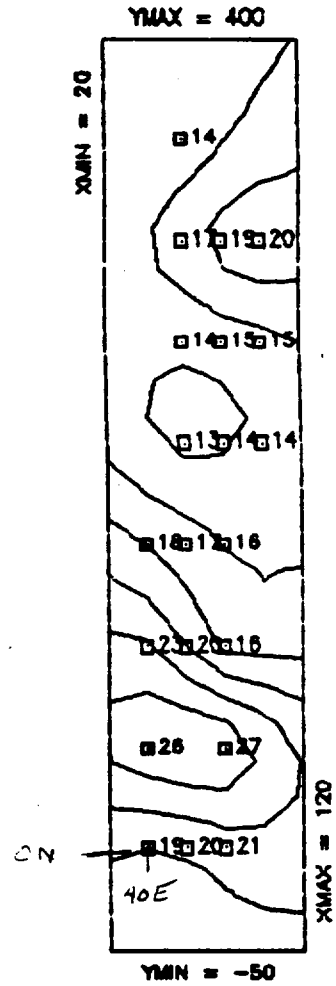


FIGURE 2-9 GROUNDWATER SAMPLE LOCATION MAP

FIGURE 2

Figure 3

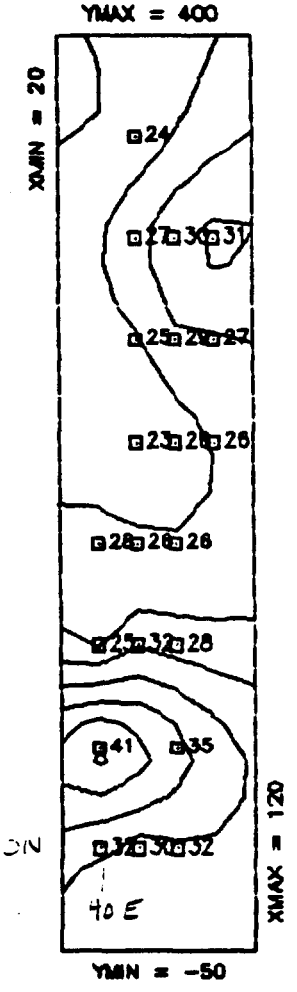


HOD LANDFILL – SE side – EM-31 horizontal

N

approx. scale: 1"=100'

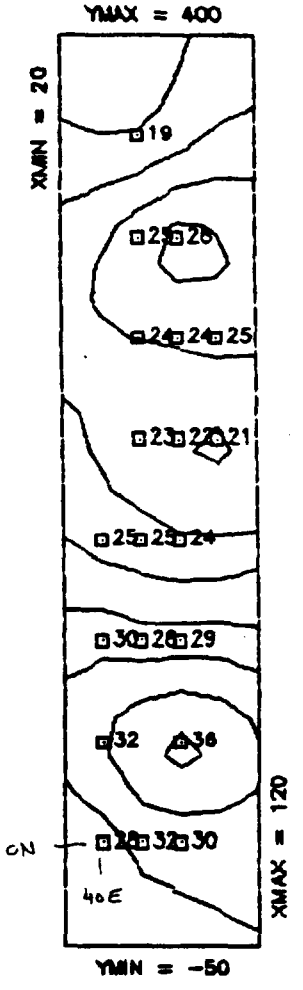
Figure 4



N HOD LANDFILL – SE side – EM-31 vertical

approx. scale: 1" = 100'

Figure 5

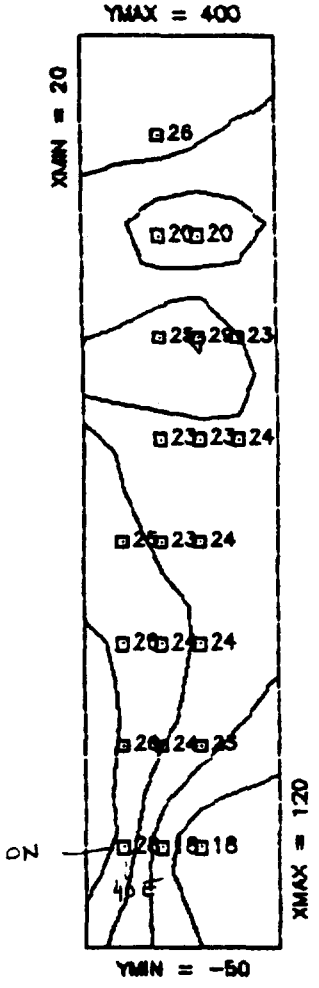


HOD LANDFILL – SE side – EM-34 10m horizontal

approx. scale: 1" = 100'

N

Figure 6

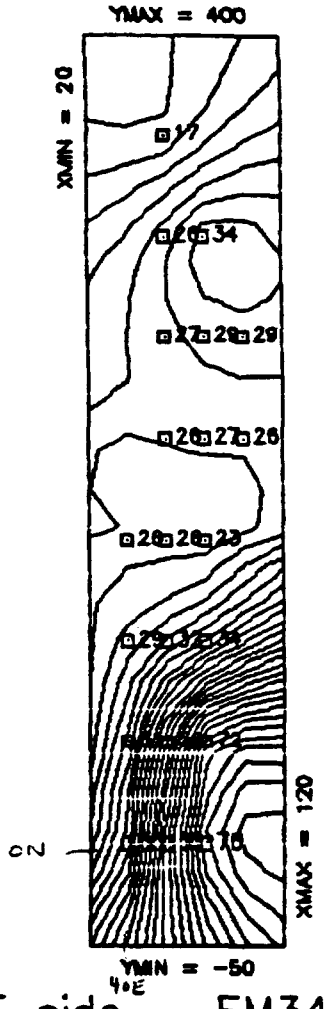


HOD LANDFILL – SE side – EM-34 10 m vertical

N

approx. scale: 1" = 100'

Figure 7



HOD LANDFILL – SE side – EM34 20m horizontal

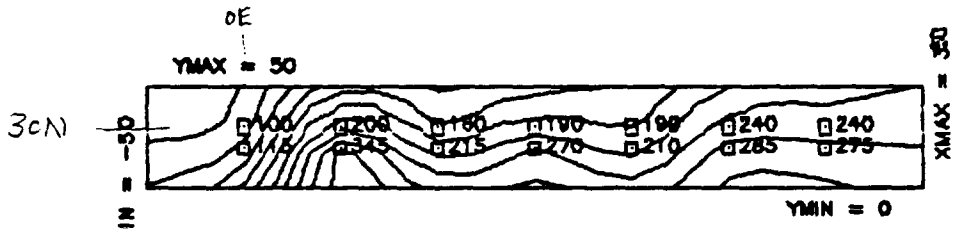
approx. scale: 1" = 100'

Figure 8

HOD LANDFILL – SE side – EM34 20m vertical

approx. scale: 1" = 100'

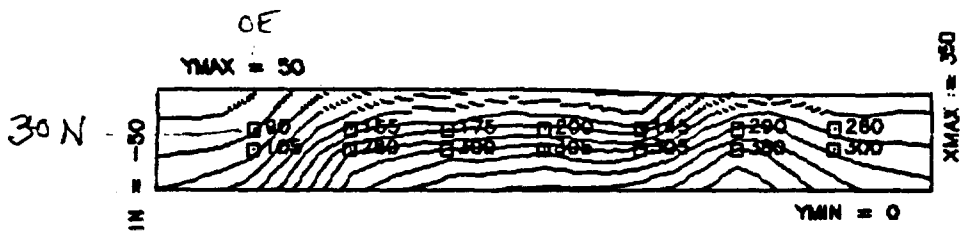
Figure 9



HOD LANDFILL – NE side – EM-31 horizontal

approx. scale: 1" = 100'

Figure 10



HOD LANDFILL – NE side – EM-31 vertical

approx. scale: 1" = 100'

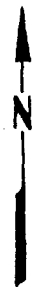
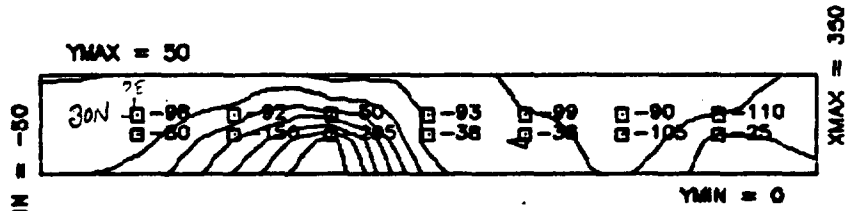


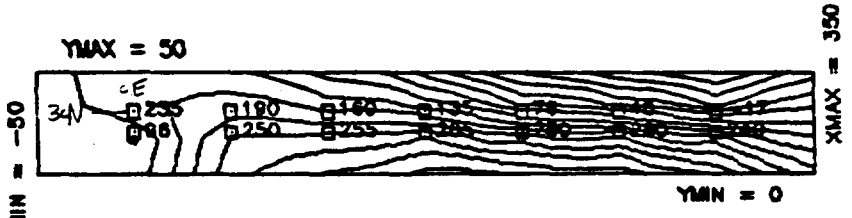
Figure 11



HOD LANDFILL – NE side – EM-34 10m vertical

approx. scale: 1" = 100'

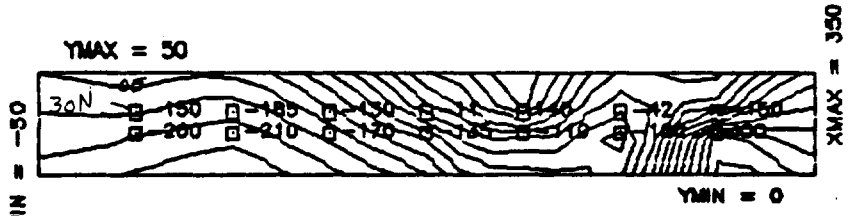
Figure 12



HOD LANDFILL – NE side – EM34 10m horizontal

approx. scale: 1" = 100'

Figure 13

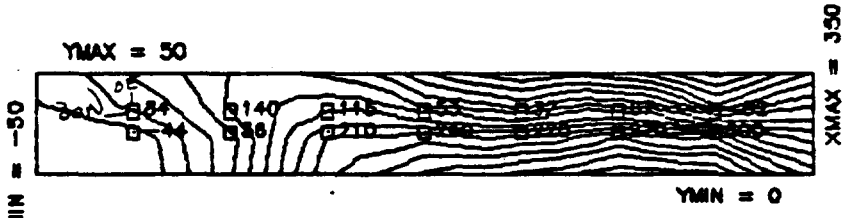


HOD LANDFILL – NE side – EM34 20m vertical

approx. scale: 1" = 100'

pe b:ne-20m-v.dat
0 20 -200

Figure 14



HOD LANDFILL – NE side – EM-34 20m horizontal

approx. scale: 1" = 100'

```
edlin        b:edlin

B:\>edlin se-31-v.dat    Southeast side, EM31-D, vertical
End of input file
*11                    East      North     mmho/m
        1:*            40         0        32
        2:             40        50        41
        3:             40       100        25
        4:             40       150        28
        5:             60         0        30
        6:             60       100        32
        7:             60       150        26
        8:             60       200        23
        9:             60       250        25
       10:             60       300        27
       11:             60       350        24
       12:             80         0        32
       13:             80        50        35
       14:             80       100        28
       15:             80       150        26
       16:             80       200        26
       17:             80       250        29
       18:             80       300        30
       19:            100       200        26
       20:            100       250        27
       21:            100       300        31
*e

B:\>edlin se-31-h.dat    Southeast side, EM31-D, horizontal
End of input file
*11                    East      North     mmho/m
        1:*            40         0        19
        2:             40        50        26
        3:             40       100        23
        4:             40       150        18
        5:             60         0        20
        6:             60       100        20
```

```
        8:          60      200       13
        9:          60      250       14
       10:          60      300       17
       11:          60      350       14
       12:          80        0       21
       13:          80       50       27
       14:          80      100       16
       15:          80      150       16
       16:          80      200       14
       17:          80      250       15
       18:          80      300       19
       19:         100      200       14
       20:         100      250       15
       21:         100      300       20
*e

B:\>edlin se-10m-v   Southeast side, EM34-3, 10 meter, vertical
New file
*q
Abort edit (Y/N)? y
B:\>
B:\>edlin se-10m-vl .dat
End of input file
*21  11                East       North    mmho/m
        1:*            40         0        28
        2:             40        50        26
        3:             40       100        26
        4:             40       150        25
        5:             60         0        18
        6:             60        50        24
        7:             60       100        24
        8:             60       150        23
        9:             60       200        23
       10:             60       250        25
       11:             60       300        20
       12:             60       350        26
       13:             80         0        18
       14:             80        50        23
       15:             80       100        24
       16:             80       150        24
       17:             80       200        23
       18:             80       250        29
       19:             80       300        20
       20:            100       200        24
       21:            100       250        23
*e

B:\>edlin se-10m-h.dat   Southeast side, EM34-3, 10 meter, horizontal
End of input file
*11                    East       North    mmho/m
        1:*            40         0        28
        2:             40        50        32
        3:             40       100        30
        4:             40       150        25
        5:             60         0        32
        6:             60       100        28
        7:             60       150        25
        8:             60       200        23
        9:             60       250        24
       10:             60       300        25
       11:             60       350        19
       12:             80         0        30
       13:             80        50        36
       14:             80       100        29
       15:             80       150        24
```

16:	80	200	22
17:	80	250	24
18:	80	300	28
19:	100	200	21
20:	100	250	25

*e

B:\>edlin se-20m-v.dat Southeast side, EM34-3, 20 meter, vertical
End of input file
*l1

	East	North	mmho/m
1:*	40	0	39
2:	40	50	37
3:	40	100	40
4:	40	150	41
5:	60	0	19
6:	60	50	21
7:	60	100	30
8:	60	150	32
9:	60	200	31
10:	60	250	27
11:	60	300	23
12:	60	350	29
13:	80	0	18
14:	80	100	22
15:	80	150	30
16:	80	200	27
17:	80	250	25
18:	80	300	23
19:	100	200	31
20:	100	250	26

*e

B:\>edlin se-20m-h.dat Southeast side, EM34-3, 20 meter, horizontal
End of input file
*l1

	East	North	mmho/m
1:*	40	0	33
2:	40	50	31
3:	40	100	29
4:	40	150	26
5:	60	0	60
6:	60	50	50
7:	60	100	32
8:	60	150	26
9:	60	200	26
10:	60	250	27
11:	60	300	26
12:	60	350	17
13:	80	0	76
14:	80	50	72
15:	80	100	34
16:	80	150	23
17:	80	200	27
18:	80	250	29
19:	80	300	34
20:	100	200	26
21:	100	250	29

*e

edlin nw-31-v.dat Northwest side, EM31-D, vertical
End of input file
*l1

	East	North	mmho/m
1:*	0	20	105
2:	50	20	280
3:	100	20	300
4:	150	20	305

7:	300	20	300
8:	0	30	90
9:	50	30	155
10:	100	30	175
11:	150	30	200
12:	200	30	145
13:	250	30	290
14:	300	30	260

*e

B:\>edlin nw-31-h.dat Northwest side, EM31-D, Horizontal
End of input file
*l1

	East	North	mmho/m
1:*	0	20	115
2:	50	20	345
3:	100	20	215
4:	150	20	270
5:	200	20	210
6:	250	20	285
7:.	300	20	275
8:	0	30	100
9:	50	30	200
10:	100	30	160
11:	150	30	190
12:	200	30	190
13:	250	30	240
14:	300	30	240

*e

B:\>edlin nw-10m-v.dat Northwest side, EM34-3, 10 meter, vertical
End of input file
*l1

	East	North	mmho/m
1:*	0	20	-80
2:	50	20	-150
3:	100	20	-295
4:	150	20	-38
5:	200	20	-38
6:	250	20	-105
7:	300	20	-25
8:	0	30	-98
9:	50	30	-92
10:	100	30	-50
11:	150	30	-93
12:	200	30	-99
13:	250	30	-90
14:	300	30	-110

*e

B:\>edlin ne w-10m-h.dat Northwest side, EM34-3, 10 meter, horizontal
End of input file
*l1

	East	North	mmho/m
1:*	0	20	96
2:	50	20	250
3:	100	20	255
4:	150	20	285
5:	200	20	250
6:	250	20	260
7:	300	20	240
8:	0	30	235
9:	50	30	190
10:	100	30	160
11:	150	30	135
12:	200	30	76
13:	250	30	46
14:	300	30	-17

```
*e

B:\>edlin nw0-1    -20m-v.dat   Northwest side, EM34-3, 20 meter
End of input file               vertical
*11                    East     North     mmho/m
        1:*             0        20       -200
        2:             50        20       -210
        3:            100        20       -170
        4:            150        20       -135
        5:            200        20       -110
        6:            250        20       -160
        7:            300        20        300
        8:              0        30       -150
        9:             50        30       -185
       10:            100        30       -130
       11:            150        30        -11
       12:            200        30        140
       13:            250        30        -42
       14:            300        30       -150
*edli

B:\>edlin nw-20m-h.dat      Northwest side, EM34-3, 20 meter, horizontal
End of input file
*11                          East  North mmho/m
        1:*                   0    20    -44
        2:                  50    20     36
        3:                  100   20     210
        4:                  150   20    240
        5:                  200   20   220
        6:                  250     20     270
        7:                  300   20     300
        8:                    0     30    84
        9:                   50   30     140
       10:                  100     30   115
       11:                  150    30   53
       12:                  200   30      32
       13:                  250   30    67
       14:                  300   30     -82
*e
```

FEB 13 RECD
1989

Additional Information on EM Survey at H.O.D. Landfill completed in March, 1987.

Doug Yeskis, Geologist
Technical Support Unit

File

Upon further review of the HOD Landfill EM geophysical report from the work completed March 16-17, 1987, missing information is provided. Unintentionally, the grid spacings were omitted, and therefore are provided by this memo. For the Southeast part of the survey, the lines running north-south are 20 feet apart and the grid lines that run east to west are 50 feet apart. The grid in the Northwest part of the site have the lines running east to west 10 feet apart, and the lines that run north to south are 50 feet apart. This information is shown in Figure 2 of the report.

cc: [redacted]
Ken Gelting, WHI

B

APPENDIX B

WELL LOGS OF THE AREA OF THE SITE

(45899—2(1-52)

Page 1 **ILLINOIS GEOLOGICAL SURVEY, URBANA** (3)

Strata	Thickness	Top	Bottom
Fill, top soil & brown clay	15		15
Clay & stones	115		130
Sand & gravel - last 6 ft. water	20		150
Bearing - W.L. 40' Red clay & small stones	82		232
Dry gravel & clay	5		237
Limestone hole			261
			TD

Cased with 8" from 0 to 237
Size hole below casing 8"
Static level from surface 40'
Tested capacity 20 gal. per min.
Water lowered to 170 ' in 6 hours.
Length of test: 6 hours.

COMPANY C. L. Wertz (Antioch)
FARM Willowdale Dairy Well NO. 2
DATE DRILLED 1944 COUNTY NO. 1927
AUTHORITY C. L. Wertz
ELEVATION 810 CO
LOCATION 100' W. line, 900' S. line SW NE
COUNTY LAKE S. S.#11976 8-46N-10E

LEW
JPH
RER No Permit

LOG OF WATER WELL

Property owner Willow Dale Dairy Well No. 3

Drilled by C. L. Wertz Year 1945

Formations passed through	Thickness	Depth of Bottom
Top soil - Fill & Brown clay	15	15
Blue clay	128	143
Sand & Gravel	7	150

COUNTY NO. 1928 No Envelope

(Continue on back if necessary)

Finished in Sand & Gravel at 143 to 150 ft.

Cased with 6" inch I.D. Steel Pipe from 0 to 143' ft.

and — inch — from — to — ft.

Size hole below casing — inch. Static level from surf. 40 ft.

Tested capacity 23 gal. per min. Temperature °F.

Water lowered to 75 ft. — in. in 4 hrs. — min.

Length of test — hrs. — min. Screen 5½" x 7' O.D. Brass -

Slot #20 Diam. Length Bottom set at ft.

(Show location in Section Plat)

Township name Antioch Elev. 810 Sec. [illegible]

Description of location Twp. [illegible]

Rge. 10 E

Signed C. L. Wertz County Lake

(13210—20M—3-55)

(3)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Clay		0	143
Sand and gravel.		143	150
			TD

Finished in sand and gravel.
Casing: 6" from 0 to 147'
Size hole below casing: 6"
Static level from surface: 50'
Tested capacity: 30 gallons per minute.
Water lowered: 30'

COMPANY C. L. Wertz
FARM Willow Dale Dairy NO. 2
DATE DRILLED August 1945 COUNTY NO. 80
AUTHORITY C. L. Wertz
ELEVATION
LOCATION Ap. NE NE SW
COUNTY LAKE

[illegible]-46N-10E

(13210—20M—3-55)

(3)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Brown clay		0	1[illegible]
Blue clay		1[illegible]	1[illegible]
Fine gravel (Water level 30'; Tested [illegible] gallons per minute at [illegible]')		1[illegible]	1[illegible]
Red clay		1[illegible]	[illegible]
Gravel		[illegible]	[illegible]
Limestone and rock		[illegible]	[illegible]
			[illegible]

Finished in rock.
Casing: 6" from 0 to 261'
Static level from surface: 30'
Tested capacity: 50 gallons per minute.
Water lowered: 60'

This well is not a good producer; another well was drilled to 3[illegible]', approximately 75' [illegible] and production is about [illegible].

[illegible]

COMPANY C. L. Wertz
FARM Willow Dale Dairy NO. 1
DATE DRILLED May 1944 COUNTY NO. 79
AUTHORITY C. L. Wertz
ELEVATION
LOCATION Ap. NE NE SW
COUNTY LAKE

[illegible]-46N-10E

REQUESTED AND MAIL ORIGINAL TO STATE
NSUMER P .TH PROT TION, 535 WEST
761. DO NO DETACH GE .OGICAL/WATER
E PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner CREGG WENNSTROM Well No. Silver Lake Rd.
Address 42066 N. Deep Lake Rd., Antioch, IL.
Driller GEORGE E. GAFFKE License No. 102-234
11. Permit No. 102976 Date 4/1/82
12. Water from Sand & Gravel (Formation) 13. County Lake
at depth 131 to 140 ft. Sec. 9.6W
14. Screen: Diam. 5 in. Twp. 46N
Length: 3 ft. Slot 10 Rge. 10E
Elev.

SHOW LOCATION IN SECTION PLAT

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	+1	137

16. Size Hole below casing: 5 in.
17. Static level 75 ft. below casing top which is 1 ft. above ground level. Pumping level ____ ft. when pumping at 15-20 gpm for ____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Topsoil	2	2
Brown Clay	10	12
Blue Clay	57	69
Gravel	3	71
Blue Clay	60	131
Sand & Gravel	9	140

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED George E. Gaffke DATE 12/14/82

9-46N-10E

(13210—20M—3-55)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Clay		0	15
Blue clay		15	12[illegible]
Sandy gravel		12[illegible]	13[illegible]
			T.

Finished in sandy gravel.
Casing: 2" from 0 to 130'.
Size hole below casing: 2"
Static level from surface: 70'
Tested capacity: [illegible] gallons per minute.
Water lowered: 6'.

COMPANY C.L. Wertz
FARM Antioch Cemetary
DATE DRILLED July 1935
AUTHORITY C.L. Wertz
ELEVATION
LOCATION [illegible]
COUNTY [illegible]

GSOC NO.
COUNTY NO. 38

JMER HEALTH PROTECTION, 535 WEST
. DO NOT DETACH GEOLOGICAL/WATER
PROPER W[illegible] LOCATIO[illegible]

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 6-23-78

10. Property owner AR-KAY BLDRS. Well No. 335 Center
Address 7550 Washington St., Gurnee, IL.
Driller J. P. LICHTER License No. 102-6
11. Permit No. 75113 Date 6/7/78
12. Water from Sand-Gravel Formation 13. County Lake
at depth 126 to 130 ft. Sec. 8
14. Screen: Diam. 5 in. Twp. 46N
Length: 3 ft. Slot 10 Rge. 10E
Elev.

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	grade	128

SHOW LOCATION IN SECTION PLAT
125'SL,125'EL
NE NW NW
(permit)

16. Size Hole below casing: 5 in.
17. Static level 70 ft. below casing top which is 1 ft. above ground level. Pumping level ____ ft. when pumping at 10 gpm for ____ hours. Sub. pump set at 100'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	10	10
Blue Clay	86	96
Sand	1	97
Blue Clay	29	126
Sand - Gravel	4	130

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED J. Lichter DATE 10/23/78

COUNTY No. 26553

LAKE 8-46N-10E

(48899—20M—2-53)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Top soil		0	3
Yellow clay		3	13
Blue clay (sand streak)		13	23
Blue clay (soft)		23	68
Blue clay (sand streak)		68	73
Sandy blue clay		73	93
Medium fine sand (dirty)		93	116
Medium coarse sand and gravel		116	128
Coarse sand and gravel		128	143
Coarse sand and gravel (dirty)		143	147
Clay		147	149
			TD

Size of Well: 28" surface to 142'.
Casing Record: 12" I.D. screen 122 to 142'
12" I.D. 122' to 2' above ground.
Water at 122 to 142'
Water head 41'
Drawn-down 12'
Yield: 800 gallons per minute.

Location: 507' S. of Ada Street and 88' E. of the east Soo line RR right of way fence.

SAMPLE SET # 23797

Location corrected by Russ Brower.

COMPANY Layne-Western NO.
FARM Village of Antioch #3 NO.
DATE DRILLED October, 1953 COUNTY NO. 1944
AUTHORITY Layne-Western
ELEVATION
LOCATION NE NE?
COUNTY LAKE

8-46N-10E

John C. Moore Corporation, Rochester, N. Y. Binder and holes in leaves, each Patent 386790

(3)

TOWN Antioch Antioch Township Map No. 10E

COMPANY Antioch Creamery No. R.

FARM Hosken No. T 46N Sec 8

AUTHORITY 770±

ELEVATION Workman

COLLECTOR DATE DRILLED

CONFIDENTIAL N.E. part of Antioch

No.	COUNTY NO. 1922	Thickness Feet	Thickness In.	Depth Feet	Depth In.
	Clay	50		50	
	Sand, sharp	5		55	
	Clay	47		102	
	Sand and gravel with boulders at base	10		112	
	Clay	32		144	
	Sand and gravel, with boulders at base	6		150	
	Clay, little sand and gravel on top of rock	90		240	
	Limestone	90		330	

No sulfur, cased to rock with 6" casing

Little water from coarse gravel on top of rock.

160 ft. of drop pipe

60 ft. to water, 20 gpm

LAKE 0708

County 56 Index No.

T.—DRILL RECORD

(30819—5M—7-34) 2 Illinois Geological Survey, Urbana.

(65600—40M—10-57)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Summary Sample Study by Lidia Selkregg 7/58.			
PLEISTOCENE SERIES			
Silt, buff, yellow, calcareous, oxidized	10		10
Silt, buff yellow, gray, calcareous, oxidized	40		50
Clay, gray, laminated, calcareous	20		70
Till, buff gray, very silty, calcareous	20		90
Sand, very fine to fine, well sorted, clean	5		95
Gravel, coarse, poorly sorted; till, brownish gray sandy, calcareous	5		100
Sand, fine; well sorted, clean	5		105
Till, gray, very silty, calcareous	10		115
Gravel, granular to coarse, clean; sand, medium to very coarse, clean	10		125
Gravel, granular to coarse, clean	5		130
Sand, very coarse, well sorted, celan; gravel coarse	5		135
Sand, as above; little fill, brownish gray, silty calcareous	5		140
Sand, fine, well sorted, clean; little gravel	5		145
Silt, brownish gray, clayey, calcareous	5		150
Location corrected by Russ Brower.			

COMPANY Layne-Western Co.

FARM Village of Antioch NO. (3)

DATE DRILLED October 1953 COUNTY NO. 1944

AUTHORITY Lidia Selkregg

ELEVATION

LOCATION NE NE

COUNTY LAKE S. S. # 23797

8-46N-10E

11

J. L. Moore Corporation, Rochester, N. Y. Binder and holes in leaves, each Patented 1-06. 360790

TOWN Antioch TOWNSHIP Antioch Map No. 3
COMPANY No. R. 10E
FARM Village No. 2 T 46N Sec. 8
AUTHORITY
ELEVATION 785+
COLLECTOR W.D.G. DATE DRILLED 1919
CONFIDENTIAL

No.	COUNTY NO.	STRATA	Thickness Feet	Thickness In.	Depth Feet	Depth In.
		Drift - sand & gravel			220	
		220' of 10" casing				
		NO ENVELOPE				

County LAKE Index No. 0308
T.—DRILL RECORD 8-46N-10E
(30210—5M—7-34) 2 Illinois Geological Survey, Urbana.

J. L. Moore Corporation, Rochester, N. Y. Binder and holes in leaves, each Patented 1-06. 360790

TOWN Antioch TOWNSHIP Antioch Map No. 3
COMPANY Chas. Thorne No. R. 10E
FARM Village No. 1 T 46N Sec. 8
AUTHORITY
ELEVATION 785+
COLLECTOR W.D.G. DATE DRILLED 1907
CONFIDENTIAL

No.	COUNTY NO.	STRATA	Thickness Feet	Thickness In.	Depth Feet	Depth In.
		Drift - well in gravel			216	
		NO ENVELOPE				

County LAKE Index No. 0308
T.—DRILL RECORD 8-46N-10E
(30210—5M—7-34) 2 Illinois Geological Survey, Urbana.

(13210—20M—3-55)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
[illegible] cl[illegible]		0	[illegible]
Blue cl[illegible]		15	1[illegible]0
[illegible]		1[illegible]0	1[illegible]2
[illegible]		[illegible]	[illegible]
[illegible]		[illegible]	[illegible]
[illegible]			[illegible]

[illegible] in limestone.
Casing: [illegible] black from 0 to [illegible]'
[illegible] level from surface: [illegible]'
[illegible] gallons per minute.
[illegible] to 130'

COMPANY [illegible]
FARM [illegible]
DATE DRILLED [illegible]
AUTHORITY C. L. [illegible]
ELEVATION
LOCATION [illegible]
COUNTY [illegible]

NO. 1
COUNTY NO. 78

[illegible]

[illegible] Rochester, N. Y. [illegible]

TOWN Antioch TOWNSHIP Antioch Map No 3
COMPANY H. Edwards No R 10E
FARM Antioch Laundry (old) No T Sec
AUTHORITY Edwards 46N 8
ELEVATION 785±
COLLECTOR B.R.M. DATE DRILLED 1930
CONFIDENTIAL Memory

No.	[illegible] 1925	Thickness Feet	Thickness In	Depth Feet	Depth In
	Soil	2		2	
	Yellow till	10		12	
	Blue till	50		66	
	Blue clay	50		120	
	Sand	3		128	

NO ENVELOPE

County Lake Index No 0308
T.—DRILL RECORD 8-46N-10E
(90919—[illegible]—11-32) Illinois Geological Survey, Urbana.

LOG OF WATER WELL

Property owner J. Horton Well No. 1

Drilled by Chas. Madson + Sons Year 1951

Formations passed through	Thickness	Depth of Bottom
Soil	0	3
Yellow Clay	10	13
blue clay	107	120
fine sand	5	125
coarse sand	6	131

COUNTY NO. 1921 No Envelope

(Continue on back if necessary)

Finished in Coarse sand at 125 to 131 ft.

Cased with 4 inch black pipe from 0 to 125 ft.

and — inch — from — to — ft.

Size hole below casing — inch. Static level from surf. 70 ft.

Tested capacity 15 gal. per min. Temperature — °F.

Water lowered to — ft. — in. in — hrs. — min.

Length of test 6 hrs. — min. Screen Clayton Marks

Slot 60 Diam. 2 in Length 6 ft Bottom set at 131 ft.

(Show location in Section Plat)

Township name Antock Elev. 790E-14 Sec. 8

Description of location NW NE Twp. 46

Rge. 10

Signed [illegible] County Lake

Copy for Illinois State Geological Survey Index:

Page 1 ILLINOIS GEOLOGICAL SURVEY, URBANA

ENGINEERING BORING	Thickness	Top	Bottom
B-13			
Fill - Brown silty Clay, Topsoil and gravel			6.0
Fill- Gray silty clay			10.0
Soft gray organic clay, very moist			13.0
Soft to stiff gray silty clay, trace sand, very moist			18.0
Firm gray fine to coarse sand and gravel, wet			38.0
Dense to very dense gray fine to coarse sand and gravel, wet			48.0
Tough to very tough gray silty clay, trace gravel, moist			55.0

Typed by Warrenville Office

Soils report with 14 boring logs filed at Warrenville

NO ENVELOPE

COMPANY Testing Service Corporation

FARM Waste Management, Inc. NO. B-13

DATE DRILLED 8-2-73 COUNTY NO. 25980

AUTHORITY Company

ELEVATION 766.3 G.L.

LOCATION 150' from E. line- 100' from S. line

COUNTY LAKE

8-46N-10E

(13210—20M—3-55) 2

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Blue clay		0	120
Sand		120	130
			TD

Finished in sand.
Casing: 4" from 0 to 127'
Size hole below casing: 4".
Static level from surface: 40'
Tested capacity: 10 gallons per minute.
Water lowered: 5'

Co[illegible] from record in office of C. L. [illegible]

COMPANY C. L. [illegible]
FARM [illegible]
DATE DRILLED August 19[illegible]
AUTHORITY C. L. [illegible]
ELEVATION
LOCATION NE SW NE
COUNTY LAKE

NO. 1
COUNTY NO. 150

[illegible]-46N-10[illegible]

John C. Moore Corporation, Rochester, N.Y. Binder and holes in leaves, each Patented 1906. 386790

TOWN Antioch TOWNSHIP Antioch
COMPANY Boysen No.
FARM Chain O'Lakes Laundry No.
AUTHORITY Boysen
ELEVATION 785 ?
COLLECTOR DATE DRILLED
CONFIDENTIAL

Map No. 3
R. 10E
T 46N
Sec. 8

No.	COUNTY NO. 1926 STRATA	Thickness Feet	Thickness In.	Depth Feet	Depth In.
	Clay	90		90	
	Sand and gravel	10		100	
	Clay	30		130	
	Gravel	10		140	

County LAKE 159 Index No. 0308
T.—DRILL RECORD
(30819—8M—7-31) 2 Illinois Geological Survey, Urbana.

(13210—20M—3-55)

5

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Repaired existing 10" well: [illegible] (to bottom of screen)			
Casing: 1[illegible]" [illegible] to [illegible]31'			
Static level from surface: [illegible]'			
Tested capacity: 20[illegible] gallons per minute.			
Water lowered: 70'			

Copied from recording [illegible]

COMPANY C. L. Wertz
FARM Antioch Village Well NO. 1
DATE DRILLED Repaired: Nov. '49 COUNTY NO. 149
AUTHORITY C. L. Wertz
ELEVATION
LOCATION [illegible] SW
COUNTY LAKE

8-46N-10[illegible]

(13210—20M—3-55)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
[illegible] clay		[illegible]	
[illegible] gravel		[illegible]	
[illegible] clay		[illegible]	
Gravel		[illegible]	
Finished in gravel.			
Casing: [illegible]" black, from 0 to [illegible]'			
Static level from surface: 30'			
Tested capacity: 10 gallons per minute.			
Water lowered: 7'			

COMPANY C. L. Wertz
FARM [illegible] NO. 1
DATE DRILLED April 194[illegible] COUNTY NO. 77
AUTHORITY C. L. Wertz
ELEVATION
LOCATION [illegible] SE
COUNTY LAKE

8-[illegible]N-10[illegible]

Strata	Thickness	Top	Bottom
SILURIAN SYSTEM			
Niagaran formation			
Dolomite, white, light gray, massive	30		260 TD

C. L. Firth Willowdale Dairy Well #2

COUNTY

Strata	Thickness	Top	Bottom
Studied by E. W. Foster, 5/52			
PLEISTOCENE SYSTEM			
Cinders & other artificial fill	10		1
Till, buff, clayey, calcareous	40		5
Till, brown, clayey, some sand grains, calcareous	40		9
As above with increasing gravel	10		10
Gravel, gray, medium and coarse, partly clean with till as above, some organic fragments	5		10
Sand, fine to coarse and gravel, fine, clean, poor sorting	5		11
Till, brownish buff, very sandy, gravelly, calcareous	15		12
Sand, brownish gray, fine to coarse, silty, poor sorting	10		13
Gravel, yellow, medium to coarse, clean	10		14
Gravel, medium and sand, fine to coarse, yellow, silty	10		15
Till, rich brown, some fine gravel, calcareous	25		18
Till, buff, sandy on till, brown, gravelly below, calcareous	45		22
Till, light buff, with dolomite chips, calcareous (Antioch)	5		23

COMPANY Willowdale Dairy Well NO. 2
FARM C. L. Farts NO.
DATE DRILLED 1944 COUNTY NO. 1927
AUTHORITY Summary Sample Study
ELEVATION 810.00
LOCATION 770
COUNTY 100' W. line, 900' S. line Sec. NE
LAKE S. R. #11076 R-16W-10N

... 35 W
... TACH GEOLOGICAL WATER
... LOCATION

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 10/4/76

10. Property owner TONY BERO Well No. _____
Address 1314 Maurine Dr., Lake Villa, IL.
Driller HENRY BOYSEN CO. License No. 102-6
11. Permit No. 52532 Date 9/22/76
12. Water from Sand (Formation) 13. County Lake
at depth 124 to 128 ft. Sec. 10
14. Screen: Diam. 5 in. Twp. 46N
Length: 3 ft. Slot 10 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	grade	126

SHOW LOCATION IN SECTION PLAT
200'NL 100'WL
NE NE NE (permit)

16. Size Hole below casing: 5 in.
17. Static level 40 ft. below casing top which is 1 ft. above ground level. Pumping level _____ ft. when pumping at 25 gpm for _____ hours. Sub. pump set at 84'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
...y	8	8
...y	27	35
Sand - Gravel	2	37
Blue Clay - Lt. Gravel	70	107
Gravel	2	109
Soft Blue Clay	6	115
Blue Clay - Gravel	9	124
Sand	4	128

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 12/27/76

COUNTY No. 24971

LAKE 10-46N-10E

...15, STATE OFFIC... BUILDING, SPRINGFIELD,
...ICAL / WATER SURV... SECTION BE SURE TO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 11-5-72

10. Property owner ROBERT BURGE Well No. _____
Address 625 CREMONA LAKE VILLA
Driller E E GROSS License No. 291
11. Permit No. M16684 Date 10/26/72
12. Water from SAND (Formation) 13. County Lake
at depth 160 to 179 ft. Sec. 9
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 ft. Slot 10 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	GAL. 11.00	0	177

SHOW LOCATION IN SECTION PLAT
SE NE NE (permit)

16. Size Hole below casing: 4 in.
17. Static level 95 ft. below casing top which is 18 ft. above ground level. Pumping level 115 ft. when pumping at 12 gpm for 2 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS TOP	DEPTH OF BOTTOM
YELLOW CLAY	0	15
BLUE CLAY	15	160
SAND	160	179

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED E E Gross DATE 11/22/72

COUNTY No. 3868

LAKE 9-46N-10E

Page 1 ILLINOIS GEOLOGICAL SURVEY, URBANA

ENGINEERING BORING	Thickness	Top	Bottom
B-10			
Black clayey and sandy topsoil			3.0
Loose gray silt, moist			8.0
Tough to very tough gray-brown s silty Clay, trace small gravel, moist			23.0
Firm gray coarse Sand and Gravel, wet			34.0
Tough gray silty clay, moist			38.0
Very tough gray silty clay, trace gravel, moist			60.0

Typed by Warrenville Office

Soils report w/14 boring logs filed at Warrenville
NO ENVELOPE

COMPANY Testing Service Corporation
FARM Waste Management, Inc. NO. B-10
DATE DRILLED 8/6/73 COUNTY NO. 25981
AUTHORITY Company
ELEVATION 765.9 G.L.
LOCATION 1300' from W. line - 100' from S. line
COUNTY LAKE

9-46N-10E

(13210—20M—3-55)

Page 1 ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Well Repaired.			
Total Depth			17[illegible]
Finished in sand.			
Casing: 3" from 0 to 16[illegible]'.			
Size of hole below casing: 3"			
Static level from surface: 6[illegible]'			
Tested capacity: [illegible] gallons per minute.			
Water lowered: 5'.			

COMPANY C. L. Wertz
FARM [illegible] NO. 1
DATE DRILLED December 1938 COUNTY NO. 4/
AUTHORITY C. L. Wertz
ELEVATION
LOCATION [illegible]
COUNTY LAKE

9-[illegible]-10E

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 9-3-68

10. Dept. Mines and Minerals permit No. NF [illegible] Year 65
11. Property owner [illegible] Well No. 1
Address ATH BOX [illegible] ANTIOCH
Driller [illegible] License No. [illegible]
12. Water from SAND (Formation) 13. County LAKE
at depth 126 to 146 ft.
14. Screen: Diam. 4 in.
Length: 2 ft. Slot 15
Sec. 9
Twp. [illegible]
Rng. [illegible]
Elev.

SHOW LOCATION IN SECTION PLAT
SW NW SW (Permit)

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	[illegible]	0	143
4	Johnson [illegible]	143	146

16. Size Hole below casing: 4 in.
17. Static level 62 ft. below casing top which is 1 ft. above ground level. Pumping level 51 ft. when pumping at 25 gpm for [illegible] hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
TOP SOIL	0	0-4
YELLOW CLAY	10	4-14
BLUE CLAY	92	14-106
FINE SAND	20	106-126
SAND (WATER BEARING)	20	126-146
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [illegible] DATE 7-19-68

COUNTY No. 2680

LAKE 9-46N-10E

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 4-15-70

10. Dept. Mines and Minerals permit No. NF 8930 Year 1970
11. Property owner M. W. Heath Well No. 1
Address Rinear Rd Antioch
Driller C. L. Wertz License No. 37
12. Water from drift (Formation) 13. County Lake
at depth 142 to 150 ft.
14. Screen: Diam. 2½ in.
Length: 36 ft. Slot 60 gauze
Sec. 9
Twp. 46N
Rng. 10E
Elev. 770

SHOW LOCATION IN SECTION PLAT
100'NL 100 of NW SW (permit)

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	11 lb galv.	0	147

16. Size Hole below casing: _____ in.
17. Static level 30 ft. below casing top which is 18" ft. above ground level. Pumping level 35 ft. when pumping at 10 gpm for 3 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Muck & clay	0	16
Blue clay sticky	120	
and hard		136
Sand	15	151
Screened from 147 to 150		
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED C. L. Wertz DATE Aug 15 70

COUNTY No. 1685

LAKE 9-46N-10E

(13210—20M—3-58)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Brown clay		[illegible]	15
Grey clay		15	175
Fine grey sand		175	255
Grey and white gravel		255	257

Finished in grey and white gravel.
Casing: 4" from 0 to 257'
Static level from surface: 45'
Tested capacity: 15 gallons per minute.

COMPANY C. L. Wertz
FARM Mercer, Louis NO. 1
DATE DRILLED October 1940 COUNTY NO. 82
AUTHORITY C. L. Wertz
ELEVATION
LOCATION NW NW SE
COUNTY LAKE

9-46N-10E

...6, STATE OFFICE ... LDING, SPRINGFIELD,
...CAL / WATER SURVEYS SECTION. BE SURE TO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 8-6-71

10. Property owner A. Kahler Well No. _____
Address 1624 - Greenwood Ave
Driller [illegible] License No. 30
11. Permit No. NF 11850 Date 8/4/71
12. Water from Sand (Formation) 13. County Lake
at depth 101 to 110 ft. Sec. 9
14. Screen: Diam. 4 in. Twp. 46N
Length: 3½ ft. Slot 15 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Gal. T & C.	0	107
	10.89 ppf		

SHOW LOCATION IN SECTION PLAT
50'SL 50'EL c
SW (permit)

16. Size Hole below casing: 4 in.
17. Static level 36 ft. below casing top which is 1 ft. above ground level. Pumping level 40 ft. when pumping at 15 gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow Clay	8	8
Blue Clay	48	56
Sandy Clay	17	73
Gravel & Clay	28	101
Sand	9	110

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 9/15/71

COD... 0.3328

LAKE

9-46N-10E

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed May 30, 1979

10. Dept. Mines and Minerals permit No. 83758 Year 1979
11. Property owner Frank Pressel Well No. 1
Address 1109 Elizabeth - Praire View, Ill
Driller C. L. Wertz License No. 57
12. Water from Drift (Formation) 13. County Lake
at depth 169 to 173 ft.
14. Screen: Diam. 3 in.
Length: 4 ft. Slot 10

Sec. 9
Twp. 46N
Rng. 10E
Elev.

SHOW LOCATION IN SECTION PLAT
500'SL.500'
NE (permit

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	11 lb galv. steel	0	169

16. Size Hole below casing: — in.
17. Static level 80 ft. below casing top which is 1 ft. above ground level. Pumping level 85 ft. when pumping at 10 gpm for 3 hours. Sub pump set at 110'

18. FORMATIONS PASSED THROUGH		THICKNESS	DEPTH OF BOTTOM
Fill muck & clay	0 - 18		
Blue clay	18 - 110		
Gravel "	110 - 140		
Grey clay	140 - 150		
Dirty sand	150 - 168		
Clean "	168 - 174		
(CONTINUE ON SEPARATE SHEET IF NECESSARY)			

SIGNED C. L. Wertz DATE May 30-79

COUNTY No. 2L SC1

LAKE 9-46N-10E

IS TO DRILLERS

REQUESTED AND MAIL ORIGINAL TO STATE ONSUMER LTH PRO TION, 535 WEST 2761. DO NOT DETACH GEOLOGICAL/WATER DE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Fred C. Hartman Well No. 1
Address R.R. Silver Lake Park - Antioch, IV
Driller C. L. Wertz License No. 57
11. Permit No. 104065 Date 9-20-82
12. Water from Drift (Formation) 13. County Lake
at depth 171 to 174 ft.
14. Screen: Diam. 3 in.
Length: 4 ft. Slot 15

Sec. 9 Sa
Twp. 46N
Rge. 10E
Elev. 790

SHOW LOCATION IN SECTION PLAT
850'N 250'W SE

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	galv. steel	0	171
	11 lb per ft.		

16. Size Hole below casing: Screened
17. Static level 50 ft. below casing top which is 1 ft. above ground level. Pumping level 55 ft. when pumping at 15 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH		THICKNESS	DEPTH OF BOTTOM
Brown clay —	0 - 08		
Gravel streak	8 - 10		
Blue clay —	10 - 95		
Muck clay —	95 - 105		
Grey clay	105 - 160		
Dirty fine sand	160 - 165		
Clean gravel	165 174		

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C. L. Wertz DATE 9-20-82

9-46N-10E

EAU OF ENVIRONMENTAL HEALTH, 535 WEST
701. DO NOT DETACH GEOLOGICAL/WATER
E PROPER WELL LOCAT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 7-78

10. Property owner R. Rottenberg Well No. _____
Address 720 Greentree, Wildwood, Ill
Driller C. L. Wertz License No. 57
11. Permit No. 75564 Date July 17-78
12. Water from Drift (Formation) 13. County Lake
at depth ____ to ____ ft. Sec. 9
14. Screen: Diam. 3 in. Twp. 46N
Length: 4 ft. Slot 12 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Galv. 11.00	0	75
			145

SHOW LOCATION IN SECTION PLAT NW NE SW (permit)

16. Size Hole below casing: screened
17. Static level 50 ft. below casing top which is 1 ft. above ground level. Pumping level 52 ft. when pumping at 12 gpm for 2 hours. Sub. pump set at 75'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown clay 0-15		
Soft smooth clay 15-70		
Gravely clay 70-95		
Sandy Firm clay 95-125		
Sand streak 125-128		
Firm clay 128-130		
Dirty sand 130-135		
Clean sand TO Fine Gravel 135-148		

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C. L. Wertz DATE July 17-78

LAKE COUNTY No. 26555 9-46N-10E

731. DO NOT DETACH GEOLOGICAL/WATER
E PROPER WELL LOCAT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 12-15-78

10. Property owner PETE GURTOWSKI Well No. _____
Address Rt. 4, Box 508, Antioch
Driller Lonny R. Hoover License No. 102-783
11. Permit No. 83103 Date December 28, 197
12. Water from Sand (Formation) 13. County Lake
at depth 113 to 115 ft. Sec. 9
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 ft. Slot #10 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Galvanized T&C	0	113
	14.81 PPF		

SHOW LOCATION IN SECTION PLAT 60'NL, 275'WL NE SW (permi

16. Size Hole below casing: 4 in.
17. Static level 80 ft. below casing top which is 1 ft. above ground level. Pumping level 90 ft. when pumping at 7 gpm for 1½ hours. Sub. pump set at 84' + 10 x 1"

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow stoney clay	23	23
Gray clay	90	113
Sand	3	116

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Lonny R. Hoover/egn DATE 2/2/79

LAKE COUNTY No. 26554 9-46N-10E

I LLE

EQUESTED AND MAIL ORIGINAL TO STATE
SUMER H TH PROTI ON, 535 WEST
61. DO NOT DETACH GEOLOGICAL/WATER
PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Fred C Hartman Well No. 1
Address R.R. Silver Lake Park - Antioch, IV
Driller C. L. Wertz License No. 57
11. Permit No. 104 CCS Date 9-20-82
12. Water from Drift Formation at depth 171 to 174 ft.
13. County Lake
Sec. 9 Sa
Twp. 46N
Rge. 10E
Elev. 790
14. Screen: Diam. 3 in.
Length: 4 ft. Slot 15

SHOW LOCATION IN SECTION PLAT
250'N, 250'W, SE/C S

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	galv steel	0	171
	11 lb per ft.		

16. Size Hole below casing: Screened
17. Static level 52 ft. below casing top which is 1 ft. above ground level. Pumping level 53 ft. when pumping at 15 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH		THICKNESS	DEPTH OF BOTTOM
Brown clay	0-08		
Gravel streak	8-10		
Blue clay	10-95		
muck clay	95-105		
Grey clay	105-160		
Dirty fine sand	160-165		
Clean gravel	165-174		

(CONTINUE ON SEPARATE SHEET IF NECESSARY) 9-40N 10E

SIGNED C. L. Wertz DATE 9-20-82

(13210—20M—3-55)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Blue clay		0	1[illegible]
Fine sand (very nice gravel at 1[illegible]')		1[illegible]	1[illegible]
Finished in very nice coarse gravel.			
Casing: [illegible] 0 to 1[illegible]'.			
Static level from surface: 7[illegible]'			
Tested capacity: 10 gallons per minute.			
Water lowered: [illegible]'			
Northeast of Antioch, Illinois			

COMPANY C. L. Wertz
FARM [illegible]ke, John NO. 1
DATE DRILLED October 1 3[illegible] COUNTY NO. 40
AUTHORITY C. L. Wertz
ELEVATION
LOCATION [illegible]
COUNTY [illegible]

9-[illegible]-1[illegible]

NSUMER HEALTH PROTECTION, 535 WEST
761. DO NOT DETACH GEOLOGICAL/WATER
E PROPER LOCATIC

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 9/11/76

10. Property owner [illegible] Well No. _____
Address [illegible]
Driller [illegible] License No. [illegible]
11. Permit No. [illegible] Date [illegible]
12. Water from [illegible] Formation 13. County [illegible]
at depth [illegible] to [illegible] ft.
14. Screen: Diam. [illegible] in.
Length: [illegible] ft. Slot [illegible]

Sec. [illegible]
Twp. [illegible]
Rge. [illegible]
Elev. _____

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
[illegible]	[illegible]	0	[illegible]
	[illegible]		

SHOW LOCATION IN SECTION PLAT
1150'NL 375'EL
SW (permit)

16. Size Hole below casing: [illegible] in.
17. Static level [illegible] ft. below casing top which is [illegible] ft. above ground level. Pumping level [illegible] ft. when pumping at [illegible] gpm for _____ hours. Sub. pump set at 105'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	8	[illegible]

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [illegible] DATE 9/24/76

COUNTY No. [illegible]

LAKE 9-46N-10E

NSUMER HEALTH PROTECTION, 535 WEST
761. DO NOT DETACH GEOLOGICAL/WATER
E PROPER LOCATIC

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 9/15/76

10. Property owner [illegible] Well No. _____
Address [illegible]
Driller [illegible] License No. [illegible]
11. Permit No. [illegible] Date [illegible]
12. Water from [illegible] Formation 13. County [illegible]
at depth [illegible] to [illegible] ft.
14. Screen: Diam. [illegible] in.
Length: [illegible] ft. Slot [illegible]

Sec. [illegible]
Twp. [illegible]
Rge. [illegible]
Elev. _____

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]		

SHOW LOCATION IN SECTION PLAT
500'NL 325'EL
SW (permit)

[illegible] hole below casing: [illegible] in.
[illegible] level [illegible] ft. below casing top which is [illegible] ft. [illegible] ground level. Pumping level [illegible] ft. when pumping at [illegible] [illegible] hours. Sub. pump set at 115'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	4	[illegible]

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [illegible] DATE 9/24/76

COUNTY No. [illegible]

LAKE 9-46N-10E

NSUMER HEALTH PROTECTION, 535 WEST
761. DO NOT DETACH GEOLOGICAL/WATER
E PROPER ELL LOCAT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Don Collens Well No. _____
Address Silver Lake Ave. Antioch, Il
Driller Charles C Madsen License No. 92-200
11. Permit No. 110624 Date 11-30-82
12. Water from SAND (Formation) 13. County LAKE
at depth 142 to 153 ft.
14. Screen: Diam. 3 in.
Length: 5 ft. Slot 010
Sec. 9.5c
Twp. 46N
Rge. 10E
Elev. _____

SHOW LOCATION IN SECTION PLAT
SE NE SW

15. Casing and Liner Pipe

Diam (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	Gal. 11 PF	0	147

16. Size Hole below casing: 3 in.
17. Static level 115 ft. below casing top which is 1 ft. above ground level. Pumping level 126 ft. when pumping at 10 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow Clay	21	21
B Clay	119	140
Sand	120	152

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Charles E Madsen DATE 9/24/84

Charles E Madsen 9 46N10E

761. DO NOT DETACH GEOLOGICAL WATER
E PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Marlin Corren Well No. _____
Address 202 Lake St. Evanston, Ill 60201
Driller C. L. Wertz License No. 27
11. Permit No. 112201 Date June 14 84
12. Water from Drift (Formation) 13. County Lake
at depth 162 to 162 ft.
14. Screen: Diam. 3 in.
Length: 45 ft. Slot 12
Sec. 9.5c
Twp. 46N
Rge. 10E
Elev. _____

SHOW LOCATION IN SECTION PLAT
650'S 5400'W
SE/c SW

15. Casing and Liner Pipe

Diam (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	Galv - 11 lt	0	
	stick		162

16. Size Hole below casing: 5 in. Screened
17. Static level 50 ft. below casing top which is 1 above ground level. Pumping level 60 ft. when pumping at 10 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown clay 0 - 19		
Blue clay Firm 19 - 36		
" " mucky 36 - 68		
Grey clay Firm 68 -		
some grit 130		
Sand stuck 130 - 135		
Clay & sand 135 - 155		
Clean sand & gravel 155 - 165		

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C. L. Wertz DATE June 14 84

46N10E

(13210—20M—3-55)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Brown cla[illegible]		0	15
Blue cl[illegible]		1[illegible]	1[illegible]
Sand to very nice gravel		1[illegible]	171

Finished in sand to very nice gravel.
Casing: [illegible]" from 0 to 171'
Static level from surface: 65'
Tested capacity: 10 gallons per minute.
Water lowered: 5'

COMPANY C. L. Wertz
FARM [illegible] Farm
DATE DRILLED May 1943
AUTHORITY C. L. Wertz
ELEVATION
LOCATION SW SE NW
COUNTY LAKE

NO. 1
COUNTY NO. 84

1[illegible]-[illegible]-10E

John C. Moore Corporation, Rochester, N. Y. Binder and holes in leaves Patented. FORM 403P09

TOWN Antioch TOWNSHIP Antioch MAP NO. 3
COMPANY Henry Boysen, Jr. NO. R. 10E
FARM Nixon, M. C. NO T. 46 N
AUTHORITY Henry Boysen, Jr.
ELEVATION
COLLECTOR
CONFIDENTIAL DATE DRILLED Dec. 1939
SE cor SW SE NW

No.	[illegible] 1943	Thickness Feet	Thickness In.	Depth Feet
	Clay, red	20		20
	Clay, blue	90		110
	Sand and gravel	45		155
	4-1/2" casing to 155'			
	Water level 62' from surface			
	Capacity tested to 10 g.p.m.			

COUNTY Lake INDEX NO. 0316
DRILL RECORD
(A6572--15M--10-39) ILLINOIS GEOLOGICAL SURVEY, URBANA

.701. DO NOT DETACH GEOLOGICAL/WATER
DE PROPER WELL LOCATION.

G CGICAL ID WATER SURVEYS WE RECO

Completed 7-26-74

10. Property owner Burge Thursby Well No. _____
Address RR Box 186, Lake Villa
Driller Hauser License No. 30
11. Permit No. 31651 Date 7/30/74
12. Water from Sand Formation 13. County Lake
at depth 139 to 145 ft.
14. Screen: Diam. 4 in.
Length: 3 ft. Slot 12
Sec. 16
Twp. 41N
Rge. 11E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	galv. T+C	0	142
	10.89 #/ft		

SHOW LOCATION IN SECTION PLAT
350'SL 350'EL of SE (permit)

16. Size Hole below casing: 4 in.
17. Static level 70 ft. below casing top which is 1 ft. above ground level. Pumping level 90 ft. when pumping at 6 gpm for _____ hours. Submersible pump set at 126'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow Clay	20	20
Soft gray Clay	111	131
Hard pan	8	139
sand	6	145

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED L. E. Hauser DATE 8/5/74

COUNTY No. 5000

LAKE 16-46N-10E

GEOLOGICAL AND WATER SURVEYS WELL RECORD
52701. DO NOT DETACH GEOLOGICAL WATER
IDE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 9-18-74

10. Property owner Howard Todd Well No. _____
Address RR 1 Box 114, Libertyville
Driller Hauser License No. 30
11. Permit No. 33250 Date 9/23/74
12. Water from Sand Formation 13. County Lake
at depth 127 to 130 ft.
14. Screen: Diam. 12 in.
Length: 3 ft. Slot 12
Sec. 16
Twp. 41N
Rge. 11E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	galv. T+C	0	127
	10.89 #/ft		

SHOW LOCATION IN SECTION PLAT
350'SL 1000 WL of NW (permit)

16. Size Hole below casing: 4 in.
17. Static level 60 ft. below casing top which is 1 ft. above ground level. Pumping level 60 ft. when pumping at 15 gpm for _____ hours. Submersible pump set at 80'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Glacial drift	127	127
Sand	3	130

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED L. E. Hauser DATE 9/30/74

LAKE 16-46N-10E

(13310—20M—3-55)

LOG OF WATER WELL

Property owner R. Laursen Well No. 1

Drilled by C. L. Wertz Year 1944

Formations passed through

	Thickness	Depth
Top soil & Brown clay	18	18
Grey clay & stones	167	85
Dry lime gravel	5	190
Limestone		215

Contents No. 194

(Continue on back if necessary)

Finished in Limestone at 190 to 215

Cased with 4 inch Water well pipe from 0 to 190

and — inch — from to

Size hole below casing 4 inch. Static level from surf 30

Tested capacity 6 gal. per min. Temperature

Water lowered to 50 ft. in. in 4 hrs. min

Length of test 8 hrs. min Screen

Slot — Diam. — Length Bottom set at ft.

Township name Newport Elev. 122 Sec. 16

Description of location 1000 St N. of Tw. 46 N

Rt. 173 Rge. 10 E

Signed C. L. Wertz County Lake

Index

Copy for Illinois State Geological Survey

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bott
Brown clay		0	1
Blue clay		15	[illegible]
Clean gravel		[illegible]	[illegible]

Finished in clean gravel.
Casing: 3" from 0 to [illegible]
Static level from surface: 30
Tested capacity: 20 gallons per minute.
Water lowered: 5'

Little Silver Lake

COMPANY C. L. Wertz
FARM Hemmanck, Ann
DATE DRILLED November 19[illegible]1
AUTHORITY C. L. Wertz
ELEVATION
LOCATION [illegible]
COUNTY Lake

NO. 1
COUNTY NO. 45

GEOLOGICAL WATER SURVEYS

10. Property owner
11. Permit No.
Address
Driller
12. Water from
at depth to ft.
14. Screen: Diam. in.
Length: ft. Slot
15. Casing and Liner Pipe

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED DATE

LAKE

STATE OFFICE BUILDING, SPRINGFIELD,
GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 2-73

10. Property owner Murphy Farms Well No. _____
Address Ct. 173 Antioch
Driller Weber License No. 30
11. Permit No. NE 17855 Date 2/9/73
12. Water from Sand (Formation) 13. County Lake
at depth 154 to 164 ft.
14. Screen: Diam. 4 in.
Length: 3½ ft. Slot #8
Sec. 16
Twp. 46N
Rge. 10E
Elev. _____

SHOW LOCATION IN SECTION PLAT
300'SL 850'E of NE (permi

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4	galv. T.&C.	0	161
	10.89 PPF		

16. Size Hole below casing: 4 in.
17. Static level 70 ft. below casing top which is 1 ft. above ground level. Pumping level 78 ft. when pumping at 10 gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
yellow clay	19	19
blue clay	88	107
gray clay	11	118
gravelly clay	36	154
sand	10	164

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 2/24/73

COUNTY No. 3323

LAKE 16-46N-10E

:QUESTED AND MAIL ORIGINAL TO STATE
SUMER HE' 'H PROTEC' 'N, 535 WEST
.1. DO NOT _TACH GEO. ,ICAL/WATER
PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner JOHN HOLMES Well No. _____
Address WASHINGTON ANTIOCH
Driller CHARLES MADSEN License No. 42-202
11. Permit No. 110134 Date 10-25-83
12. Water from SAND (Formation) 13. County LAKE
at depth 101 to 112 ft. Sec. 16(6) Twp. 46N Rge. 10E Elev. _____
14. Screen: Diam. 3 in.
Length: 5 ft. Slot .010

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	1-4L 11DF	0	106
1"	PLASTIC	4	94

SHOW LOCATION IN SECTION PLAT
16-12 Lugenia
Sand [illegible]

16. Size Hole below casing: 3 in.
17. Static level 31 ft. below casing top which is 1 ft. above ground level. Pumping level 47 ft. when pumping at 10 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
yellow Clay	21	21
GRAVEL & B CLAY	30	51
B CLAY	50	101
SAND	11	112

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [illegible] DATE 1/16/84

16 43N 10E

NS TO DRILLERS

I REQUESTED AND MAIL ORIGINAL TO STATE
ONSUMER ALTH PRO TION, 535 WEST
12761. DO NOT DETACH GEOLOGICAL/WATER
IDE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner WICKS HOMES by Jackson Enterprises Well No. Lincoln Ave.
Address 1819 E. Grand Ave., Lindenhurst, IL.
Driller GEORGE E. GAFEKE License No. 102-234
11. Permit No. 103455 Date 5/14/82
12. Water from Sand (Formation) 13. County LAKE
at depth 101 to 109 ft. Sec. 16.6 Twp. 46N Rge. 10E Elev. _____
14. Screen: Diam. 5 in.
Length: 3 ft. Slot 10

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	+1½	106

SHOW LOCATION IN SECTION PLAT
[illegible]

16. Size Hole below casing: 5 in.
17. Static level 50 ft. below casing top which is 1½ ft. above ground level. Pumping level _____ ft. when pumping at 20 gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	4	4
Sand to Gravel	21	25
Blue Clay	60	85
Hard Pan	10	95
Blue Clay - Gravel	6	101
Sand - Lt. Gravel	8	109

(CONTINUE ON SEPARATE SHEET IF NECESSARY) [illegible]

SIGNED [illegible] DATE 6/14/82

I REQUESTED AND MAIL ORIGINAL TO STATE
REAU OF ENVIRONMENTAL HEALTH, 535 WEST
2701. DO NOT DETACH GEOLOGICAL/WATER
DE PROPE LOCA

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 9/2/75

10. Property owner Cunningham Well No. 1
Address R.R. Antioch, Ill
Driller C. L. Wertz License No. 57
11. Permit No. 37869 Date Sept. 8-1975
12. Water from Drift (Formation) 13. County Lake
at depth 82 to 135 ft. Sec. 16
14. Screen: Diam. 5 in. Twp. 46N
Length: 42 ft. Slot 15 Rge. 10E
Elev. 820

15. Casing and Liner Pipe

Diam (In)	Kind and Weight	From (Ft)	To (Ft)
6	1120 galv	0	132

SHOW LOCATION IN SECTION PLAT
200'NL, 250'EL
NW SE
(Permit)

16. Size Hole below casing: — in. Screened
17. Static level 52 ft. below casing top which is 1 ft. above ground level. Pumping level 60 ft. when pumping at 25 gpm for 3 hours. Sub. pump set at 90'

18. FORMATIONS PASSED THROUGH	~~THICKNESS~~	DEPTH OF BOTTOM
Brown & clay 0 -	18	
Blue grey " 18 -	95	
Muck grey clay 95 -	110	
Dirty sand fine 110 -	128	
Clean " & fine 128 -	135	
gravel		

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C. L. Wertz DATE Sept 8-75

COUNTY No. 24582

LAKE 16-46N-10E

EQUESTED AN AIL ORIGINAL TO STATE
SUMER HEAL PROTECTION, 535 WEST
1. DO NOT DETACH GEOLOGICAL/WATER
PROPER W OCATIO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 4/27/76

10. Property owner RAY Schmidt Well No.
Address Rt 2 Box 126A Antioch
Driller MARTIN JURGSON License No. 102-7
11. Permit No. 46233 Date April 14, 1976
12. Water from Drift (Formation) 13. County Lake
at depth 100 to 110 ft. Sec. 24 16
14. Screen: Diam. 4 in. Twp. 46N
Length: 5 ft. Slot Rge. 10E
Elev.

15. Casing and Liner Pipe

Diam (In)	Kind and Weight	From (Ft)	To (Ft)
5"	GALV.	0	105

SHOW LOCATION IN SECTION PLAT
Lot #11, Blk.
Lagoona Subd.
SW (permit)

16. Size Hole below casing: in.
17. Static level 40 ft. below casing top which is 2 ft. above ground level. Pumping level 80 ft. when pumping at 5 gpm for 1 hours. Sub. pump set at 80'

18. FORMATIONS PASSED THROUGH	~~THICKNESS~~ TOP	DEPTH OF BOTTOM
Brown CLAY	0	3
Grey CLAY	3	35
Red CLAY	35	90
SAND & GRAVEL	90	110

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED James Hutchings DATE 4/29/76

COUNTY No. 24264

LAKE 16-46N-10E

'61. DO NOT DETACH GEOLOGICAL/WATER
E PROPER LOCAT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 7-9-77

10. Property owner RAY EDWARDS Well No. 1
Address RT 173 ANTICCH ILL
Driller C. MADSEN License No. 92-202
11. Permit No. 61121 Date 5-24-77
12. Water from SAND (Formation) 13. County LAKE
at depth 106 to 112 ft. Sec. 16
14. Screen: Diam. 2½ in. Twp. 46N
Length: 5 ft. Slot 12 Rge. 10E
Elev.

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	GAL 11PF	0	107

SHOW LOCATION IN SECTION PLAT
Lot4LagonaSub
NE SW(permit)

16. Size Hole below casing: 2½ in.
17. Static level 60 ft. below casing top which is 1½ ft. above ground level. Pumping level 84 ft. when pumping at 10 gpm for 1 hours. Sub. pump set at 84'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
PEAT	8	8
B Clay	87	95
Fine Sand	10	105
C. Sand	7	112

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C Madsen DATE

LAKE COUNTY No. 26557 16-46N-10E

761. DO NOT DETACH GEOLOGICAL/WATER
E PROPE LOCAT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 9-20-78

10. Property owner Steven Lazansky Well No.
Address 600 Piper Lane, Lake Villa
Driller Lonny R. Hoover License No. 102-783
11. Permit No. 79236 Date September 8, 1978
12. Water from sand (Formation) 13. County Lake
at depth 110 to 118 ft. Sec. 16
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 ft. Slot #15 Rge. 10E
Elev.

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Galvanized T&C	0	115
	14.81 ppf		

SHOW LOCATION IN SECTION PLAT
25'NL,50'WL
SE (permit)

16. Size Hole below casing: 4 in.
17. Static level 63 ft. below casing top which is 1 ft. above ground level. Pumping level 68 ft. when pumping at 9 gpm for 1 hours. Sub. pump set at 84'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Clay	110	110
Sand	8	118

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Lonny R. Hoover/agn DATE 10-17-78

LAKE COUNTY No. 26566 16-46N-10E

...E PROPE... LOCA...

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 12-8-77

10. Property owner ADAM BARYS Well No. 1
Address LINCOLN DR - ANTIOCH ILL
Driller C. MADSEN License No. 92-200
11. Permit No. 68143 Date 10-14-77
12. Water from Sand (Formation) 13. County LAKE
at depth 118 to 122 ft. Sec. 16
14. Screen: Diam. 2½ in. Twp. 46N
Length: 5 ft. Slot 10 Rge. 10E
Elev.

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Gal 11 RFT	0	118

SHOW LOCATION IN SECTION PLAT
Lot 16 Lagoona Su
800'SL, 400'WL S
SW (permit)

16. Size Hole below casing: 2½ in.
17. Static level 50 ft. below casing top which is 1½ ft. above ground level. Pumping level 63 ft. when pumping at 10 gpm for 2 hours Sub. pump set at 63'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Peat	12	12
Blue Clay	90	102
Fine Sand	10	112
Coarse Sand	10	122

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C Madsen DATE

LAKE COUNTY No. 26553 16-46N-10E

...N REQUESTE... ...D MAIL ORIGINAL TO STATE CONSUMER ...TH PROTECTION, 535 WEST 62761. DO ...T DETACH ...LOGICAL/WATER VIDE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Richard Good Well No. 2
Address RT 2 Box 128A Antioch Il.
Driller William D Blake License No. 92-510
11. Permit No. 94710 Date July 8, 1980
12. Water from drift (Formation) 13. County LAKE
at depth 117 to 120 ft. Sec. 16.6d
14. Screen: Diam. 3¾ in. Twp. 46N
Length: 3 ft. Slot 12 Rge. 10E
Elev.

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	T+C Galv. 11.5 wt. per ft	Surface	117

SHOW LOCATION IN SECTION PLAT
NW NE SW

16. Size Hole below casing: 3 in.
17. Static level 75 ft. below casing top which is 1 ft. above ground level. Pumping level 84 ft. when pumping at 20 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Top Soil	3	3
Yellow Clay	12	15
Blue Clay (Smooth)	18	33
Sandy Clay (Blue)	25	58
Hard Pan	20	78
Grey Clay (Silty)	37	115
Sand	5	120

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED William D Blake DATE 9-2-82
16-46N-10E

NS TO DRILLER

REQUESTED AND MAIL ORIGINAL TO STATE
ONSUMER ALTH PROTECTION, 535 WEST
52761. DO NOT DETACH GEOLOGICAL/WATER
IDE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Richard Good Well No. 2
Address RT 2 Box 128A Antioch, Il.
Driller William D Blake License No. 92-510
11. Permit No. 94710 Date July 8, 1980
12. Water from drift (Formation) at depth 117 to 120 ft.
13. County Lake
Sec. 16.6d
Twp. 46N
Rge. 10E
Elev.
14. Screen: Diam. 3 3/4 in.
Length: 3 ft. Slot 12

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4	T+C Galv. 11.0 lbs/ft	Surface	117

SHOW LOCATION IN SECTION PLAT
NW NE SW

16. Size Hole below casing: 3 in.
17. Static level 75 ft. below casing top which is 1 ft. above ground level. Pumping level 84 ft. when pumping at 20 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Top Soil	3	3
Yellow clay	12	15
Blue clay (Smooth)	18	33
Sandy clay (Blue)	25	58
Hard Pan	20	78
Grey clay (Silty)	37	115
Sand	5	120

(CONTINUE ON SEPARATE SHEET IF NECESSARY) 16-46N-10E

SIGNED William D. Blake DATE 9-2-82

NS TO DRILLER

REQUESTED AND MAIL ORIGINAL TO STATE
ONSUMER ALTH PROTECTION, 535 WEST
52761. DO NOT DETACH GEOLOGICAL/WATER
IDE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Wayne Blanchett Well No. 2
Address 22621 W. Rte 173 Antioch, Il.
Driller William D Blake License No. 92-510
11. Permit No. 101357 Date Sept. 16 81
12. Water from drift (Formation) at depth 134 to 138 ft.
13. County Lake
Sec. 16.5d
Twp. 46N
Rge. 10E
Elev.
14. Screen: Diam. 3 3/4 in.
Length: 4 ft. Slot 12

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4	T+C Galv. 11.0 lbs/ft	Surface	134

SHOW LOCATION IN SECTION PLAT
Ad 4 Lagoon
NE NE SW

16. Size Hole below casing: 3 in.
17. Static level 65 ft. below casing top which is 1 ft. above ground level. Pumping level 70 ft. when pumping at 15 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Top Soil	1	1
Yellow clay	16	17
Blue clay	12	29
Smooth clay	25	54
Sandy clay (Grey)	30	84
Hard Pan	49	133
Sand	5	138

(CONTINUE ON SEPARATE SHEET IF NECESSARY) 16-46N-10E

SIGNED William D. Blake DATE 9-7-82

IONS TO DRILLERS

ON REQUESTED AND MAIL ORIGINAL TO STATE
CONSUME EALTH PI ECTION, 535 WEST
62761. DO NOT DETACH GEOLOGICAL/WATER
VIDE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Wayne Blanchett Well No. 2
Address 22621 W. Rte 173 Antioch, IL.
Driller William D Blake License No. 92-510
11. Permit No. 101357 Date Sept. 16 81
12. Water from drift (Formation) 13. County Lake
at depth 134 to 138 ft.
14. Screen: Diam. 3 3/4 in.
Length: 4 ft. Slot 12
Sec. 16.5d
Twp. 46N
Rge. 10E
Elev.

SHOW LOCATION IN SECTION PLAT
Lot 4 Lagoona
NE NE SW

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4	T+C Galv. [illegible]	Surface	134

16. Size Hole below casing: 3 in.
17. Static level 65 ft. below casing top which is 1 ft. above ground level. Pumping level 70 ft. when pumping at 15 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Top Soil	1	1
Yellow clay	16	17
Blue clay	12	29
Smooth clay	25	54
Sandy Clay (Grey)	30	84
Hard Pan	49	133
Sand	5	138

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED William D. Blake DATE 9-7-82

QUESTED AND M ORIGINAL TO STATE
SUMER HEALTH PROTECTION, 535 WEST
1. DO NOT TACH GEOL ICAL/WATER
PROPER W. LOCATIO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner RAY NOWAK Well No.
Address 173 and Madison, Antioch
Driller Lonny R. Hoover License No. 102-783
11. Permit No. 91570 Date Nov. 16, 1979
12. Water from Sand (Formation) 13. County Lake
at depth 123 to 129 ft.
14. Screen: Diam. 4 in.
Length: 3 ft. Slot #10
Sec. 16.5c
Twp. 46N
Rge. ~~12E~~ 10E
Elev.

SHOW LOCATION IN SECTION PLAT
300's, 50E, NW/C
NW/C SE NE
SW

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4	New Galv. Steel	0	126
	T&C 14.81 PPF		

16. Size Hole below casing: 4 in.
17. Static level 63 ft. below casing top which is 1 ft. above ground level. Pumping level 65 ft. when pumping at 15 gpm for 1½ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Clay	113	113
Sandy clay	10	123
Sand	6	129

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [illegible] DATE 1/14/80

16 46N 10E

LOG OF WATER WELL

Property owner H Walton Well No. 1

Drilled by Chas Madsen & Sons Year 1952

Formations passed through	Thickness	Depth of Bottom
Soil	0	8
yellow clay	18	20
blue clay	88	108
coarse sand	4	112

Yes Envelope

Permit No. 1941 Permit issued 9/2/52

(Continued on back if necessary)

Finished in Coarse sand at 108 to 112 ft.

Cased with 2 inch Galv pipe from 0 to 108 ft.

and — inch — from — to — ft.

Size hole below casing — inch. Static level from surf 50 ft.

Tested capacity 10 gal. per min. Temperature — °F.

Water lowered to — ft. — in. in — hrs. — min.

Length of test 1 hrs. — min. Screen Midwest

Slot 60 Diam 1" Length 4' Bottom set at 112 ft.

(Show location in Section Plat)

Township name Antioch Elev. ____ Sec. 15

Description of location Rd-173 Twp. 46N

NE SW NW Rge. 10E

Signed Chas Madsen County Lake

Copy for ... LAKE ...

SUMER HEALTH P(ECTION, 535 WEST
11. DO NOT DETACH GEOLOGICAL/WATER
. PROPER' L LOCATI

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Thomas Homan Well No. 173 + Deeplo
Address 21075 North Ave. Antioch 60002
Driller George E. Gaffke License No. 102-231
11. Permit No. 114634 Date 9/7/84
12. Water from Sand + Lt. Gravel (Formation) 13. County Lake
at depth 155 to 160 ft.
14. Screen: Diam. 3 in.
Length: 5 ft. Slot 10
Sec. 16 NE
Twp. 46N
Rge. 10E
Elev. ____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
6	PVC	+1	160

SHOW LOCATION IN SECTION PLAT 50'N 200'W SE/C, NE

16. Size Hole below casing: 5 in.
17. Static level 88 ft. below casing top which is +1 ft. above ground level. Pumping level ____ ft. when pumping at 15-20 gpm for ____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	0	8
Blue Clay	20	28
Sand + Gravel	2	30
Blue Clay	44	74
Sand + Gravel	1	75
Blue Clay	65	140
Sand	1	141
Blue Clay	14	155
Sand + Lt. Gravel	5	160

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED George E. Gaffke DATE 3/27/85

16 46N 10E

NSUMER HEALTH PROTECTION, 535 WEST
761. DO NOT DETACH GEOLOGICAL WATER
E PROPERTY WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

1206 Hook Circle, Antioch Completed 7-26-77

10. Property owner Frances Graffe Well No. _____
Address 4647 S. St. Louis, Chicago, Il.
Driller Fred H. Matthesius License No. 102-88
11. Permit No. 63590 Date 7-18-77
12. Water from gravel (Formation) 13. County Lake
at depth 123 to 127 ft. Sec. 16
14. Screen: Diam. 5 in. Twp. 46N
Length: 4 ft. Slot 30 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
5	15# galv. T/C R&D		

SHOW LOCATION IN SECTION PLAT
SE SW SE
(permit)

16. Size Hole below casing: 5 in.
17. Static level 65 ft. below casing top which is 1 ft. above ground level. Pumping level 70 ft. when pumping at 20 gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	~~THICKNESS~~ T.C.P	DEPTH OF BOTTOM
clay	0	118
sand & gravel	118	127

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Fred H. Matthesius DATE 8-23-77

COUNTY No. 25933

LAKE 16-46N-10E

NSUMER HEALTH PROTECTION, 535 WEST
761. DO NOT DETACH GEOLOGICAL/WATER
E PROPERTY WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 8-11-77

10. Property owner THE RICHMOND CO. Well No. Washington & Lincoln
Address 2413 Sand Lake Rd., Lindenhurst, IL.
Driller HENRY BOYSEN CO. License No. 102-6
11. Permit No. 61040 Date 5/20/77
12. Water from Sand-Gravel (Formation) 13. County Lake
at depth 104 to 112 ft. Sec. 16
14. Screen: Diam. 5 in. Twp. 46N
Length: 3 ft. Slot 10 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
5	PVC	grade	110

SHOW LOCATION IN SECTION PLAT
75'SL 75'WL
NW NE SW
(permit)

16. Size Hole below casing: 5 in.
17. Static level 49 ft. below casing top which is 1 ft. above ground level. Pumping level _____ ft. when pumping at 10-15 gpm for _____ hours. Sub. pump set at 100'.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	7	7
Blue Clay	71	78
Blue Clay - Gravel	15	93
Blue Clay	11	104
Sand - Gravel	8	112

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED _____ DATE 12/29/77

COUNTY No. 25952

LAKE 16-46N-10E

(13210 1—3-55)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Top soil		0	12
Gravel		12	16
Blue clay		16	80
Grey clay		80	95
Red sand		95	100
Grey sand and gravel, water bearing		100	111
			[illegible]

Finished in sand and gravel.
Casing: [illegible] from 0 to 111'
Static level from surface: [illegible]
Tested capacity: 10 gallons per minute.
Water level: [illegible]'

Little Silver Lake

COMPANY C. L. Wertz
FARM [illegible], N. H.
DATE DRILLED September 1939
AUTHORITY C. L. Wertz
ELEVATION [illegible]
LOCATION [illegible]
COUNTY [illegible]

NO. 1
COUNTY NO. 44

1 - [illegible] - 1 [illegible]

LOG OF WATER WELL

Property owner Hans Hofman Well No. NF 11 CC

Drilled by C. L. Wertz Year 1966

Formations passed through Permit # [illegible]	Thickness	Depth or Bottom
0 - 15 Brown clay	15	15
15 - 80 Blue clay		
80 - 140 Hard clay		
140 - 160 Fine sand dirty		
160 - 180 Clean sand		
180 - 185 Some fine gravel		

card

Received 9-16-66

(Continue on back if necessary)

Finished in fine gravel at 181 to 185 ft

Cased with 4 inch galvanized from 0 to 181 ft

and [illegible] inch from [illegible] to [illegible] ft

Size hole below casing [illegible] inch. Static level from surface [illegible] ft

Tested capacity [illegible] gal. per min. Temperature [illegible]

Water lowered [illegible] ft. [illegible] in. in [illegible] hrs [illegible] min

Length of [illegible] hrs [illegible] min. Screen [illegible]

Slot [illegible] Diam [illegible] Length 30 Bottom set at 185 ft

(Show location in [illegible])

Township name Antioch Elev. 786 Sec. 16

Description of location 500'S and 600'W NE/[illegible] (Permit) Twp 46

Rge 10E

Signed C. L. Wertz County Lake

Copy for Illinois State Geological Survey Index:

REQUESTED AND MAIL ORIGINAL TO STATE
NSUMER HE . TH PROTE' 'ON, 535 WEST
'61. DO NO . ETACH GEL . GICAL/WATER
E PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner GORDON PERSHA Well No. _____
Address BAY VIEW DR. ANTIOCH, IL
Driller CHARLES MADSEN License No. 92-202
11. Permit No. 110136 Date 10-25-83
12. Water from SAND (Formation) 13. County LAKE
at depth ____ to 152 ft. Sec. 18
14. Screen: Diam. 3 in. Twp. 46N
Length: 5 ft. Slot .010 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	GAL PIPE	0	146
1"	PLASTIC	4	104

SHOW LOCATION IN SECTION PLAT
Lot 28 Sabrina Manor Subd
SW SE NE

16. Size Hole below casing: 3 in.
17. Static level 86 ft. below casing top which is 1 ft. above ground level. Pumping level 107 ft. when pumping at 15 gpm for 2 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
YELLOW CLAY	21	21
B CLAY	101	122
SAND	30	152

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Charles E. Madsen DATE 1/16/84

18 46N 10E

(13210—20M—3-55)

3

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Brown clay		0	15
Blue clay		15	80
Sand, dry until 110'		80	110
Dirty sand		110	130
Clean water sand and gravel		130	137
			TD

Finished in sand and gravel.
Casing: 3" from 0 to 133½'.
Size hole below casing: 3".
Static level from surface: 60'.
Tested capacity: 10 gallons per minute.
Water lowered: 5'.

COMPANY C. L. Wertz
FARM Zeigler, W. F. NO. 1
DATE DRILLED March 1936 COUNTY NO. 46
AUTHORITY C. L. Wertz
ELEVATION
LOCATION SW SE NW
COUNTY LAKE

17-46N-10E

(13310—20M—3-55)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

3

Strata	Thickness	Top	Bottom
Yellow clay		0	24
Grey clay		24	90
Sand		90	153
Gravel		153	155
			TD

Finished in gravel.
Casing: 4" galv. from 0 to 155'
Static level from surface: 70'
Tested capacity: 10 gallons per minute.
Water lowered: 5'

Copied from records in office of C. L. Wertz

COMPANY C. L. Wertz
FARM Vox, Clete
DATE DRILLED May 1953
AUTHORITY C. L. Wertz
ELEVATION
LOCATION SW SE NW
COUNTY LAKE

NO. 1
COUNTY NO. 214

17-46N-10E

(13310—20M—3-55)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

2

Strata	Thickness	Top	Bottom
Brown clay		0	1
Clay		15	14
Sand to gravel		145	16
			T

Finished in sand to gravel.
Casing: 4" from 0 to 165'
Static level from surface: 60'
Tested capacity: 10 gallons per minute.

Copied from records in office of C. L. Wertz

COMPANY C. L. Wertz
FARM Rosing, H.
DATE DRILLED September 1948
AUTHORITY C. L. Wertz
ELEVATION
LOCATION SW SW SW
COUNTY LAKE

NO. 1
COUNTY NO. 155

17-46N-10E

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

(3)

Strata	Thickness	Top	Bottom
Blue clay		0	154
Gravel		154	158
			TD

Finished in gravel.
Casing: 3½" galv. from 0 to 158'
Static level from surface: 65'
Tested capacity: 10 gallons per minute.
Water lowered: 5'

Copied from records in office of C. L. Wertz

COMPANY C. L. Wertz
FARM Newman
DATE DRILLED May 1950
AUTHORITY C. L. Wertz
ELEVATION
LOCATION NW SE NW
COUNTY LAKE

NO. 1
COUNTY NO. 154

17-46N-10E

...R SURVEYS SECT... BE SURE TO

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed November 196

10. Dept. Mines and Minerals permit No. NF 07252 Year 1969
11. Property owner Ed Kramer Well No.
Address Sunset Ridge, Antioch
Driller Hoover License No. 30
12. Water from ~~Clay~~ SAND (Formation) 13. County Lake
at depth 110 to 128 ft.
14. Screen: Diam. 5 in.
Length: 3½ ft. Slot 12
Sec. 17
Twp. 46N
Rng. 10E
Elev.

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
5	galv T+C	0	125
	4.81 ppf		

SHOW LOCATION IN SECTION PLAT
1100'SL, 900' WL of SW (Permit)

16. Size Hole below casing: 5 in.
17. Static level 68 ft. below casing top which is 1 ft. above ground level. Pumping level 68 ft. when pumping at 10 gpm for ____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
yellow clay	24	24
blue clay	60	84
gravel + clay	26	110
sand	18	128

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 12-19-69

COUNTY No. 3025

LAKE

17-46N-10E

OFF BUIL SI FIEL
ER SURVEYS SECTION. BE SURE TO

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 9-26-69

10. Dept. Mines and Minerals permit No. NF07108 Year 1969
11. Property owner HARRY LINDGRIN Well No. 1
Address RT 5 BOX 224 ANTIOCH ILL
Driller CHELENNA SONS INC. License No. 42-109
12. Water from SAND (Formation) 13. County LAKE
at depth 140 to 145 ft. Sec. 17
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 ft. Slot 20 Rng. 10E
Elev.

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	GALV STEEL #11.00	0	142
4"	JOHNSON SCREEN	142	145

SHOW LOCATION IN SECTION PLAT
SW SW SW (Permit)

16. Size Hole below casing: 4 in.
17. Static level 61 ft. below casing top which is 1 ft. above ground level. Pumping level 170 ft. when pumping at 20 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
YELLOW CLAY	20	0-20
BLUE CLAY	95	20-115
GRAVEL & CLAY	20	115-135
DIRTY SAND	5	135-140
SAND (WATER)	5	140-145
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [signature] DATE 10-18-1969

COUNTY No. 2968

LAKE 17-46N-10E

OFFICE BUILDING, SPRINGFIELD,
ER SURVEYS SECTION. SURE TO

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed November 1969

10. Dept. Mines and Minerals permit No. NF07117 Year 1969
11. Property owner Phil Haas Well No.
Address 143 Lakewood Drive Antioch
Driller Hoover License No. 30
12. Water from Sand (Formation) 13. County Lake
at depth 133 to 146 ft. Sec. 17
14. Screen: Diam. 5 in. Twp. 46N
Length 3'6" ft. Slot 12 Rng. 10E
Elev.

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
5	galv T & C.	0	143
	14.81 ppf		

SHOW LOCATION IN SECTION PLAT
550'NL, 550'WL of NW (Permit

16. Size Hole below casing: 5 in.
17. Static level 38 ft. below casing top which is 1 ft. above ground level. Pumping level 80 ft. when pumping at 8 gpm for ____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow Clay	20	20
Blue Clay	95	115
Sandy Clay	18	133
Sand	13	146
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [signature] DATE 12-5-69

COUNTY No. 3009

LAKE 17-46N-10E

U... BUILDING, ...NGFIELD,
ER SURVEYS SECTION. BE SURE TO

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

10. Dept. Mines and Minerals permit No. NF07572 Year 1969
11. Property owner RICHARD DANIELS Well No. 1
Address AT 5, DAYVILLE Rd ANTIOCH
Driller ENGLEHAM & SONS INC License No. 92-109
12. Water from SAND (Formation) 13. County LAKE
at depth 120 to 143 ft. Sec. 17
14. Screen: Diam. NONE in. Twp. 46N
Length: ____ ft. Slot ____ Rng. 10E
Elev. ____

SHOW LOCATION IN SECTION PLAT

NE SW SW (Permit)

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5"	GALV. STEEL #15	0	143
Grout:	Clay slurry 0-25'.	- Driller	

16. Size Hole below casing: ____ in.
17. Static level 55 ft. below casing top which is 1 ft. above ground level. Pumping level 60 ft. when pumping at 20 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
FILL	1	0-1
TOP SOIL	1	1-2
YELLOW CLAY	13	2-15
BLUE CLAY	10	15-25
BROWN CLAY	10	25-35
BLUE CLAY	85	35-120
SAND + GRAVEL (WATER)	23	120-143
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [signature] DATE 1-15-1970

COUNTY No. 3042

LAKE 17-46N-10E

S, STATE OFFICE BUILDING, SPRINGFIELD,
AL / WATER SURVEYS SECTION. BE SURE TO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 12-11-71

10. Property owner Bernard Jasmer Well No. 1
Address 2920 W. Paddock Waukegan, Il
Driller C. L. WERTZ License No. 37
11. Permit No. NF13123 Date Dec-11-71
12. Water from Drift (Formation) 13. County Lake
at depth 176 ft. Sec. 17
14. Screen: Diam. none in. Twp. 46N
Length: — ft. Slot — Rge. 10E
Elev. 750

SHOW LOCATION IN SECTION PLAT

700'SL 700'EL of NW (permit)

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	galv. 11 lb	0	176

16. Size Hole below casing: none in.
17. Static level 30 ft. below casing top which is 18" above ground level. Pumping level 35 ft. when pumping at 10 gpm for 3 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown clay	0 to	15
Grey "	15 to	40
Very sticky Blue clay	40 to	120
fine dirty sand	120 to	150
Wood particles in sand	150 to	155
Cleaner sand	155 to	170
Sand + fine gravel	170 to	176

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE Dec 11-71

3431

LAKE 17-46N-10E

AL / :R S YS S)N. I RE

GE[illegible]GICAL [illegible] WATER SURVEYS WEL RECO[illegible]

Completed 12-4-71

10. Property owner W. A. Mitchell Well No. _____
Address Rt 2, Bx 100, Margate Terrace, Antioch
Driller [illegible] License No. 36
11. Permit No. UF13122 Date 12/2/71
12. Water from Coarse Sand (Formation) 13. County Lake
at depth 150 to 160 ft. Sec. 17
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 3/4 ft. Slot 15 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	galv T+C	0	157
	10.89 ppf		

SHOW LOCATION IN SECTION PLAT
300'SL 350'EL
of NW (permit)

16. Size Hole below casing: 4 in.
17. Static level 85 ft. below casing top which is 1 ft. above ground level. Pumping level 85 ft. when pumping at 10 gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown Clay	12	12
blue Clay	91	103
fine sand	47	150
Coarse sand	10	160

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE 12/7/71

[illegible] 3413

LAKE 17-46N-10E

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 12-1-71

10. Dept. Mines and Minerals permit No. 12483 Year 1971
11. Property owner Dan McHanes Well No. _____
Address Bayview Rd. Antioch, Ill
Driller C. Wertz License No. 57
12. Water from Drift (Formation) 13. County Lake
at depth 144 to 147 ft. Sec. 17
14. Screen: Diam. 3 in. Twp. 46N
Length: 36 ft. Slot 15 Rng. 10E
Elev. 790

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	11 lb galv. steel	0	144

SHOW LOCATION IN SECTION PLAT
350'SL 800'WL
of NE SW
(permit)

16. Size Hole below casing: — in.
17. Static level 60 ft. below casing top which is 18 ft. above ground level. Pumping level 80 ft. when pumping at 10 gpm for 3 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS (FT.)	DEPTH OF BOTTOM
Brown clay	0 to	18
Blue clay	18 to	50
Grey clay	50 to	90
Soft grey clay	90 to	140
fine sand to	140 to	144
fine gravel	144 to	147
Very fine sand below this depth		147

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [signature] DATE Dec 1-71

[illegible] 3412

LAKE 17-46N-10E

STATE OFFICE BUILDING, SPRINGFIELD, AL / WATER SURVEYS SECTION. BE SURE TO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 7-15-72

10. Property owner CHAS GERMACK Well No. _____
Address R.R. 1 ANTIOCH ILL
Driller ART WERTZ License No. 92-81
11. Permit No. NF 14954 Date 4-21-72
12. Water from GRAVEL (Formation) 13. County LAKE Co
at depth 150 to 185' ft.
14. Screen: Diam. _____ in.
Length: _____ ft. Slot _____

Sec. 17
Twp. 46 N
Rge. 10 E
Elev. _____

SHOW LOCATION IN SECTION PLAT
SE NE NW
(permit)

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	11# STEEL	–	185'

16. Size Hole below casing: _____ in.
17. Static level 42 ft. below casing top which is 1 ft. above ground level. Pumping level 50 ft. when pumping at 10 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
BLUE CLAY	160	160
SAND + CLAY	15'	175'
SAND + GRAVEL	10	185'

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Arthur Wertz DATE 9-25-72

Permit No. 3665

LAKE 17-46N-10E

(11210—20M—3-55)

Page 1 **ILLINOIS GEOLOGICAL SURVEY, URBANA**

Strata	Thickness	Top	Bottom
Clay		0	9
Clay and sand		90	1[illegible]
Gravel		140	1[illegible]
			T

Finished in gravel.
Casing: 4" galv. from 0 to 142'
Static level from surface: 50'
Tested capacity: 10 gallons per minute.
Water lowered: 5'

Copied from records in office of C. L. Wertz

COMPANY C. L. Wertz
FARM LaPlent NO. 1
DATE DRILLED September 1954 COUNTY NO. 233
AUTHORITY C. L. Wertz
ELEVATION
LOCATION SW SE NE
COUNTY LAKE

17-46N-10E

(13210—20M—3-55)

3

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Clay		0	100
Sand		100	104
Very coarse gravel		104	106
			TD

Finished in very coarse gravel.
Casing: 6" galv. from 0 to 103'
Static level from surface: 30'
Tested capacity: 20 gallons per minute.
Water lowered: 5'

Copied from records in office of C. L. Wertz

COMPANY C. L. Wertz
FARM Hunter, Elmer
DATE DRILLED July 1949
AUTHORITY C. L. Wertz
ELEVATION
LOCATION NW SE NE
COUNTY LAKE

NO. 1
COUNTY NO. 159

17-46N-10E

(13210—20M—3-55)

3

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Brown clay		0	15
Blue clay		15	120
Fine sand to gravel		120	130
			TD

Finished in fine sand to gravel.
Casing: 4" from 0 to 130'
Static level from surface: 40'
Tested capacity: 10 gallons per minute.
Water lowered: 5'

Antioch, Illinois

COMPANY C. L. Wertz
FARM Grimm, Henry
DATE DRILLED March 1945
AUTHORITY C. L. Wertz
ELEVATION
LOCATION NE SE NW SE
COUNTY LAKE

NO. 1
COUNTY NO. 85

17-46N-10E

(13210—20M—3-55)

(3)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Brown clay		0	18
Clay		18	90
Sand		90	96
Clay		96	155
Sand to gravel.		155	161
			TD

Finished in sand to gravel.
Casing: 4" from 0 to 158'
Size hole below casing: 4"
Static level from surface: 70'
Tested capacity: 10 gallons per minute.
Water lowered: 5'

Copied from records in office of C. L. Wertz

COMPANY C. L. Wertz
FARM Grenoman
DATE DRILLED May 1950
AUTHORITY C. L. Wertz
ELEVATION
LOCATION SW NE SW
COUNTY LAKE

NO. 1
COUNTY NO. 152

17-46N-10E

(13210—20M—3-55)

(2)

Page 1

ILLINOIS GEOLOGICAL SURVEY, URBANA

Strata	Thickness	Top	Bottom
Top soil		0	7
Clay		70	10[illegible]
Sand		100	14[illegible]
Gravel		144	14[illegible]
			T

Finished in gravel.
Casing: 4" galv. from 0 to 147'
Static level from surface: 70'
Tested capacity: 10 gallons per minute.
Water lowered: 5'

Copied from records in office of C. L. Wertz

COMPANY C. L. Wertz
FARM Dwieley, T.
DATE DRILLED June 1954
AUTHORITY C. L. Wertz
ELEVATION
LOCATION NE SW NW
COUNTY LAKE

NO. 1
COUNTY NO. 232

17-46N-10E

OF BU... S ...
R SURVEYS SECTION. BE SURE TO

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 6-8-67

10. Dept. Mines and Minerals permit No. NF 2214 Year 1967
11. Property owner [illegible] Well No. 1
Address [illegible]
Driller EH GLENN & SONS INC License No. 92-109
12. Water from [illegible] (Formation) 13. County [illegible]
at depth 155 to 157 ft. Sec. 17
14. Screen: Diam. [illegible] in. Twp. 46N
Length: ____ ft. Slot ____ Rng. 10E
Elev. ____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	STEEL #1100	0	152

SHOW LOCATION IN SECTION PLAT

NW SE NE (Permit)

16. Size Hole below casing: ____ in.
17. Static level 63 ft. below casing top which is 8" ft. above ground level. Pumping level 500 ft. when pumping at 15 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
TOP SOIL	4	0-4
YELLOW CLAY	18	4-22
BLUE CLAY	80	22-102
FINE SAND	48	102-150
SAND & GRAVEL	5	150-155
GRAVEL (WATER BEARING)	2	155-157
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [signature] DATE 6-20-67

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 10-11-67

10. Dept. Mines and Minerals permit No. NF 2810 Year 1967
11. Property owner J. PITZER Well No. 1
Address RT 2 ANTIOCH
Driller EH GLENN & SONS INC License No. 92-109
12. Water from SAND (Formation) 13. County LAKE
at depth 169 to 176 ft. Sec. 17
14. Screen: Diam. 4 in. Twp. 46N
Length: 2 ft. Slot 15 Rng. 10E
Elev. ____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	GALV STEEL #1100	0	173
4	JOHNSON SCREEN	173	176

SHOW LOCATION IN SECTION PLAT

NW SW NE (Permit)

16. Size Hole below casing: 4 in.
17. Static level 53 ft. below casing top which is 8" ft. above ground level. Pumping level 60 ft. when pumping at 22 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
TOP SOIL	4	0-4
YELLOW CLAY	15	4-19
BLUE CLAY	120	19-139
FINE SAND	25	139-164
GRAVEL + CLAY	5	164-169
SAND + GRAVEL	7	169-176
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [signature] DATE 10-17-67

COUNTY No. 2423

LAKE 17-46N-10E

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 8-5-69

10. Dept. Mines and Minerals permit No. NF 06712 Year 1969
11. Property owner [illegible] J. Feiler Well No. 1
Address
Driller [illegible] License No. [illegible]
12. Water from Drift (Formation) 13. County Lake
at depth to 160 Sec 17 Sec 46N
14. Screen: Diam. [illegible] Twp. [illegible]
Length: — ft. Slot — Rng. 10E
Elev. 850

15. Casing and Liner Pipe

Diam (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5"	Galv. 15 [illegible]	0	
	Seamless		160

SHOW LOCATION IN SECTION PLAT
660' NL, 660' WL of NW
(permit)

16. Size Hole below casing [illegible] in.
17. Static level 42 ft. below casing top which is 1 ft. above ground level. Pumping level 50 ft. when pumping at 10 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Brown clay	18	18
Blue "	42	60
Sandy clay	50	110
Soft clay	20	120
Dirty sand	35	155
Coarse Sand & gravel	5	160
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [signature] DATE Aug 20-1969

COUNTY No. 2929

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

NF Completed 8-23-69

10. Dept. Mines and Minerals permit No. [illegible] Year 1969
11. Property owner CARL FISHER Well No.
Address 119 BAY VIEW RD ANTIOCH ILL
Driller ART WERTZ License No. [illegible]
12. Water from GRAVEL (Formation) 13. County LAKE
at depth 140 to 150 ft. Sec 17
14. Screen: Diam. [illegible] in. Twp. 46N
Length: [illegible] ft. Slot [illegible] Rng. 10E
Elev. [illegible]

15. Casing and Liner Pipe

Diam (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5"	SEAMLESS	—	150
	GALV STEEL		

SHOW LOCATION IN SECTION PLAT
NW/c NW SW SW
(Permit)

16. Size Hole below casing: — in
17. Static level 30 ft. below casing top which is 1 ft. above ground level. Pumping level [illegible] ft. when pumping at 10 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
GRAY CLAY	130	150
LAND + GRAVEL	20	150
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [signature] DATE Aug 20-69

COUNTY No. 2955

LAKE 17-46N-10E

OFFICE BUILDING SPRINGFIELD,
R SURVEYS SECT BE SURE TO

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed July 28, 1968

10 Dept. Mines and Minerals permit No. NE 1141 Year 1968
11. Property owner C. M. Dolat Well No. 1
Address 423 Lake St. Waukegan, Ill.
Driller C. L. Weitz License No. 5
12. Water from Drift (Formation) 13. County Lake
at depth ___ to 162 ft. Sec. 17
14. Screen: Diam. — in. Twp. 46N
Length: ___ ft. Slot ___ Rng. 10E
Elev. 732

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	15.26 per ft	0	
	galv steel		162

SHOW LOCATION IN SECTION PLAT
400' NL, 300' WL of SE (permit)

16. Size Hole below casing: Not in.
17. Static level 60 ft. below casing top which is 1 ft. above ground level. Pumping level 65 ft. when pumping at 10 gpm for 2 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Top Soil & Br. clay	0	15
Blue clay	21	36
Sandy Blue	54	90
Fine clay	72	
		162
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED C. L. Weitz DATE July 28, 1968

COUNTY No. 2779

LAKE 17-46N-10E

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

10. Dept. Mines and Minerals permit No. NE 06577 Year 1969
11. Property owner LESS Eddy Well No. 1
Address RT 2 BOX 60C Rd Antioch Ill.
Driller CHELEHAN & SONS INC License No. 92-109
12. Water from SAND (Formation) 13. County LAKE
at depth 95 to 147 ft. Sec. 17
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 ft. Slot 15 Rng. 10E
Elev. ___

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	GALV STEEL 11.00	0	144
4	JOHNSON SCREEN	144	147

SHOW LOCATION IN SECTION PLAT
SW NE SW (Permit)

16. Size Hole below casing: 4 in.
17. Static level 51 ft. below casing top which is 1 ft. above ground level. Pumping level 62 ft. when pumping at 20 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
YELLOW CLAY	23	22
BLUE CLAY	76	98
SAND.	49	149
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [illegible] DATE 7-29-69

COUNTY No. 2958

LAKE 17-46N-10E

OFFICE BUILDING, SPRINGFIELD,
SURVEYS SECTION. BE SURE TO

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 9-17-71

10. Dept. Mines and Minerals permit No. NF 11898 Year 1971
11. Property owner [illegible] Well No. [illegible]
Address [illegible]
Driller [illegible] License No. [illegible]
12. Water from [illegible] (Formation) 13. County [illegible]
at depth [illegible] to [illegible] ft.
14. Screen: Diam. [illegible] in.
Length: [illegible] ft. Slot [illegible]

Sec. 17
Twp. 46N
Rng. 10E
Elev. [illegible]

15. Casing and Liner Pipe

Diam (In)	Kind and Weight	From (Ft)	To (Ft)
[illegible]	[illegible]	C	[illegible]

SHOW LOCATION IN SECTION PLAT
[illegible] SL 650 [illegible]
of NE SW
(permit)

16. Size Hole below casing: [illegible] in.
17. Static level [illegible] ft. below casing top which is [illegible] ft. above ground level. Pumping level [illegible] ft. when pumping at [illegible] gpm for [illegible] hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [illegible] DATE Sept 17-71

COUNTY [illegible]

LAKE 17-46N-10E

GEOLOGICAL WATER SURVEYS WATER WELL RECORD

Completed 1-15-71

10. Dept. Mines and Minerals permit No. NF 09704 Year 1971
11. Property owner [illegible] Well No. 1
Address [illegible]
Driller [illegible] License No. [illegible]
12. Water from [illegible] (Formation) 13. County [illegible]
at depth [illegible] to [illegible] ft.
14. Screen: Diam. [illegible] in.
Length: [illegible] ft. Slot [illegible]

Sec. 17
Twp. [illegible]
Rng. [illegible]
Elev. [illegible]

15. Casing and Liner Pipe

Diam (In)	Kind and Weight	From (Ft)	To (Ft)
[illegible]	[illegible]	0	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

SHOW LOCATION IN SECTION PLAT
[illegible]
(permit)

16. Size Hole below casing: _____ in.
17. Static level _____ ft. below casing top which is _____ ft. above ground level. Pumping level _____ ft. when pumping at _____ gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
TOPSOIL	2	0-2
YELLOW CLAY	20	2-22
BLUE CLAY	80	22-102
SANDY CLAY	20	102-122
DIRTY SAND	10	122-132
SAND (WATER?)	7	132-139
(CONTINUE ON SEPARATE SHEET IF NECESSARY)		

SIGNED [illegible] DATE 7-21-71

[illegible]

LAKE 17-46N-10E

10, STATE OFFICE BUILDING, SPRINGFIELD, CAL./WATER SURVEYS SECTION. BE SURE TO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 9-7-72

10. Property owner Fechner Construction Well No. 1
Address 11607-W-Bluebound Rd - Wauconda - Wisc
Driller C. L. WERTZ License No. 57
11. Permit No. NF 16310 Date Sept. 6 - 72
12. Water from Drift (Formation) 13. County Lake
at depth 153 to 156 ft. Sec. 17
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 ft. Slot 10 Rge. 10E
Elev. 760

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5"	15 lb galv	0	153

SHOW LOCATION IN SECTION PLAT
300' SL 100' WL of SE NW (permit)

16. Size Hole below casing: none in.
17. Static level 40 ft. below casing top which is 15" ft. above ground level. Pumping level 50 ft. when pumping at 15 gpm for 3 hours.

18. FORMATIONS PASSED THROUGH		THICKNESS	DEPTH OF BOTTOM
Fill & Topsoil clay	0	15	
Mushy clay	15	50	
Clay gravel	50	90	
Muck clay	90	110	
Smooth "	110	145	
Sand fine	145	150	
Sand fine gravel	150	156	

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C. L. Wertz DATE Aug 6-72

COUNTY No. 3635

LAKE 17-46N-10E

REQUESTED AND MAY ORIGINAL TO STATE BUREAU OF ENVIRONMENTAL HEALTH, 535 WEST 101. DO NOT DETACH GEOLOGICAL/WATER THE PROPER WELL LOCATION

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 8-9-73

10. Property owner R. McCall Well No.
Address [illegible] Lake Villa Ill
Driller [illegible] License No. [illegible]
11. Permit No. [illegible] Date [illegible]
12. Water from Gravel (Formation) 13. County Lake
at depth 276 to 285 ft. Sec. 17
14. Screen: Diam. in. Twp. [illegible]
Length: ft. Slot Rge. 10E
Elev.

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	15# Tuf R/M Galv		

SHOW LOCATION IN SECTION PLAT
SE SE NW (permit)

16. Size Hole below casing: 5 in.
17. Static level [illegible] ft. below casing top which is 1 ft. above ground level. Pumping level [illegible] ft. when pumping at 20 gpm for hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Clay	0	100
Sand	100	260
Gravel	260	285

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [illegible] DATE 8-14-73

McHENRY COUNTY WELL & PUMP CO.
4913 W. McCULLOM LAKE RD.
McHENRY, ILLINOIS 60050

COUNTY No. 3962

LAKE 17-46N-10E

...ED AND MAIL ORIGINAL TO STATE DE-
...13, STATE OFFICE BUILDING, SPRINGFIELD,
...ICAL/WATER SURVEYS SECTION. BE SURE TO

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 11-1-73

10. Property owner [illegible] Well No. _____
Address 4037 Grandville, Dunn
Driller [illegible] License No. 30
11. Permit No. NF 19678 Date 6/21/73
12. Water from [illegible] (Formation) 13. County [illegible]
at depth 102 to 126 ft. Sec. 17
14. Screen: Diam. 5 in. Twp. 46N
Length: 3 ft. Slot 15 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	Galv T+C	0	133
	14.81 ppf		

SHOW LOCATION IN SECTION PLAT
1260'NL 720'WL of SW (permit)

16. Size Hole below casing: 5 in.
17. Static level 30 ft. below casing top which is 1 ft. above ground level. Pumping level 38 ft. when pumping at 30 gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow clay	16	16
Blue clay	86	102
Sand	24	126

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [illegible] DATE 11/5/73

COUNTY No. 24127

LAKE 17-46N-10E

(REQUESTED AND MAIL ORIGINAL TO STATE
...NSUMER HEALTH PROTECTION, 535 WEST
...61. DO NOT DETACH GEOLOGICAL/WATER
...E PROPER... LOCATI...

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 9-9-76

10. Property owner [illegible] Well No. _____
Address 1819 E Grand [illegible]
Driller [illegible] License No. [illegible]
11. Permit No. [illegible] 2442 Date 11/21/76
12. Water from [illegible] (Formation) 13. County [illegible]
at depth 102 to 117 ft. Sec. 17
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 ft. Slot 10 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Gal. T+C	0	[illegible]
	10.89 ppf		

SHOW LOCATION IN SECTION PLAT
1100'NL 1250' SW (permit)

16. Size Hole below casing: 4 in.
17. Static level [illegible] ft. below casing top which is 1 ft. above ground level. Pumping level [illegible] ft. when pumping at [illegible] gpm for _____ hours. Sub. pump set at 84'

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow clay	17	17
Blue clay	68	85
Muck	17	10[illegible]
Sand	15	117

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED [illegible] DATE [illegible]

COUNTY No. 24832

LAKE 17-46N-10E

... LOCATION. ... WATER

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 10-26-77

10. Property owner R Van Patten Well No. ____
Address 810 River Rd Antioch, Ill
Driller C.L. Wertz License No. 3-7
11. Permit No. 64611 Date Oct 27-77
12. Water from Drift (Formation) 13. County Lake
at depth 149 to 122 ft. Sec. 11
14. Screen: Diam. 3 in. Twp. 46N
Length: 4 ft. Slot 10 Rge. 10E
Elev. 760

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	galv 11 lb	0	
	galv new		122

SHOW LOCATION IN SECTION PLAT
Lot 113, Briar Terrace Subd. 400'SL, 700'E NW (permit)

16. Size Hole below casing: None in.
17. Static level 60 ft. below casing top which is 1 ft. above ground level. Pumping level 65 ft. when pumping at 10 gpm for 3 hours. Sub. pump set at 100'.

18. FORMATIONS PASSED THROUGH		THICKNESS	DEPTH OF BOTTOM
Top soil & Brown clay	0 -	18	
Blue clay & grit	18 -	60	
Smooth Blue clay	60 -	90	
Grardy clay	90 -	115	
Dirty sand	115 -	125	
Clay & sand	125 -	140	
Sand fine to	140 -		
coarse		153	

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C.L. Wertz DATE Oct 27-77

COUNTY No. 25435

LAKE 17-46N-10E

REQUESTED AND ... IL ORIGINAL TO STATE ... AU OF ENVIRONMENTAL HEALTH, 535 WEST ... 01. DO NOT DETACH GEOLOGICAL WATER ... E PROPE ... L LOC. ... N.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

Completed 9-10-77

10. Property owner Ron Anderson Well No. ____
Address R.R.5 - Box 444A Antioch, Ill
Driller C.L. Wertz License No. 3-7
11. Permit No. 66330 Date Sept. 10-77
12. Water from Drift (Formation) 13. County Lake
at depth ___ to 160 ft. Sec. 17
14. Screen: Diam. — in. Twp. 46N
Length: — ft. Slot — Rge. 10E
Elev. 750

15. Casing and Liner Pipe Lot 30 Sunset Ridge

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4"	galv. 11 lb.	0	160

SHOW LOCATION IN SECTION PLAT
Lot 30, Sunset Ridge Subd. 400'SL, 100'W NE SW (permit)

16. Size Hole below casing: None in.
17. Static level 40 ft. below casing top which is 1 ft above ground level. Pumping level 42 ft. when pumping at 10 gpm for 2 hours. Sub. pump set at 75'.

18. FORMATIONS PASSED THROUGH		THICKNESS	DEPTH OF BOTTOM
Top soil Brown clay	0 -	18	
Blue clay firm	18 -	40	
" mucky	40 -	60	
Gray clay & grit	60 -	105	
Clean fine sand	105 -	110	
Sand & clay	110 -	130	
Wood Parts & sand	130 -	145	
Sandy clay to clean	145 -		
sand & gravel		160	

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED C.L. Wertz DATE Sept 10-77

COUNTY No. 25434

LAKE 17-46N-10E

ILLINOIS GEOLOGICAL SURVEY, URBANA

TEST HOLE	Thickness	Top	Bottom
Hard brown silty clay		0	7
Gray very silty clay		7	10
Gray silt		10	16
Gray silty clay		16	23
Loose gray fine sand and silt with clay seams		23	34
[illegible] silty clay		34	39
Fine sand and silt		39	40
Gray silty clay		40	63
Gray silty sandy clay occasional sand and gravel seam		63	71
Gray silty clay		71	91
Fine sand with clay layers		91	108
Fine sand to coarse gravel some boulders		108	126
Fine to coarse sand		126	148
Very fine to medium sand		148	162
Very fine to fine silty sand		162	225
			TD

Static water level 47'

Mud loss	Mud Weight		
6"	8.9	108	126
1/2"	8.8	125	148
1/8"	8.8	148	162

NO ENVELOPE

COMPANY Layne-Western Company, Incorporated
FARM Village of Antioch NO. 1-76
DATE DRILLED July 27, 1976 COUNTY NO. 25976
AUTHORITY Company
ELEVATION
LOCATION 50' N line, 630' W line, SW NE
COUNTY LAKE

17-46N-10E

ILLINOIS GEOLOGICAL SURVEY, URBANA

Permit # 76423	Thickness	Top	Bottom
Hard brown clay		0	[illegible]
Gray silty clay		7	1[illegible]
Gray silty clay with sand seams		10	2[illegible]
Gray very silty clay		25	4[illegible]
Gray clay		40	4[illegible]
Gray sandy silty clay, traces of gravel, boulder at 48'		45	5[illegible]
Gray silty clay, sticky		54	6[illegible]
Gray sandy silty with gravel intermixed, some small sand and gravel seams		63	7[illegible]
Gray clay		76	9[illegible]
Fine sand		91	9[illegible]
Fine sand to coarse gravel		93	9[illegible]
Very fine sand and/or silt (tight)		97	10[illegible]
Fine sand to coarse gravel, tight, occasional boulders		108.5	12[illegible]
Fine to coarse sand		129	[illegible]
			TD

Hole record: 42" 0-40'
38" 40-131'

Casing: 16" -steel +3' - 109'
Screen record: 20' of 16" of stainless steel Johson fro 109'-129' slot 0.060"
Gravel pack record: 20 ton #1 & #2 Mix Northern Gravel Company 130' - 84'
Static Level 52'; pumping level 62' after 24 hours pumping at 715 gpm.

S.S. # 61822 (0 - 130')

NO ENVELOPE

COMPANY Layne-Western Company, Incorporated
FARM Village of Antioch NO. 5
DATE DRILLED September 11, 1978 COUNTY NO. 25977
AUTHORITY Company
ELEVATION
LOCATION 1355'N Line, 2100'E Line NE
COUNTY LAKE

17-46N-10E

REQUESTED AND MAIL ORIGINAL TO STATE CONSUMER HEALTH PROTECTION, 535 WEST 62761. DO NOT DETACH GEOLOGICAL/WATER WIDE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner William Morris Well No. _____
Address 23515 W. Margate Terrace Antioch
Driller C. Mindrum License No. [illegible]
11. Permit No. 96573 Date [illegible]
12. Water from Sand (Formation) 13. County Lake
at depth 131 to 136 ft. Sec. 17 SE
14. Screen: Diam. 3 in. Twp. 46N
Length: ~~[illegible]~~ 5 ft. Slot 010 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Gal Pipe	0	131

SHOW LOCATION IN SECTION PLAT
Lot 102 Antioch
SE SE NW

16. Size Hole below casing: 3 in.
17. Static level 100 ft. below casing top which is 1 ft. above ground level. Pumping level _____ ft. when pumping at _____ gpm for _____ hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow Clay	21	21
Sand	10	31
B Clay	95	126
Sand	10	136

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Charlie E Mullins DATE 9/82
17-46N-10E

TO DRILLER
REQUESTED AND MAIL ORIGINAL TO STATE CONSUMER HEALTH PROTECTION, 535 WEST 62761. DO NOT DETACH GEOLOGICAL/WATER WIDE PROPER WELL LOCATION.

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner William Morris Well No. _____
Address 23515 W. Margate Terrace Antioch
Driller C. Mindrum License No. [illegible]
11. Permit No. 96573 Date [illegible]
12. Water from Sand (Formation) 13. County Lake
at depth 131 to 136 ft. Sec. 17 SE
14. Screen: Diam. 3 in. Twp. 46N
Length: ~~[illegible]~~ 5 ft. Slot 010 Rge. 10E
Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	Gal Pipe	0	131

SHOW LOCATION IN SECTION PLAT
Lot 102 Antioch
SE SE NW

16. Size Hole below casing: 3 in.
17. Static level 100 ft. below casing top which is 1 ft. above ground level. Pumping level _____ ft. when pumping at _____ gpm for _____ hours.

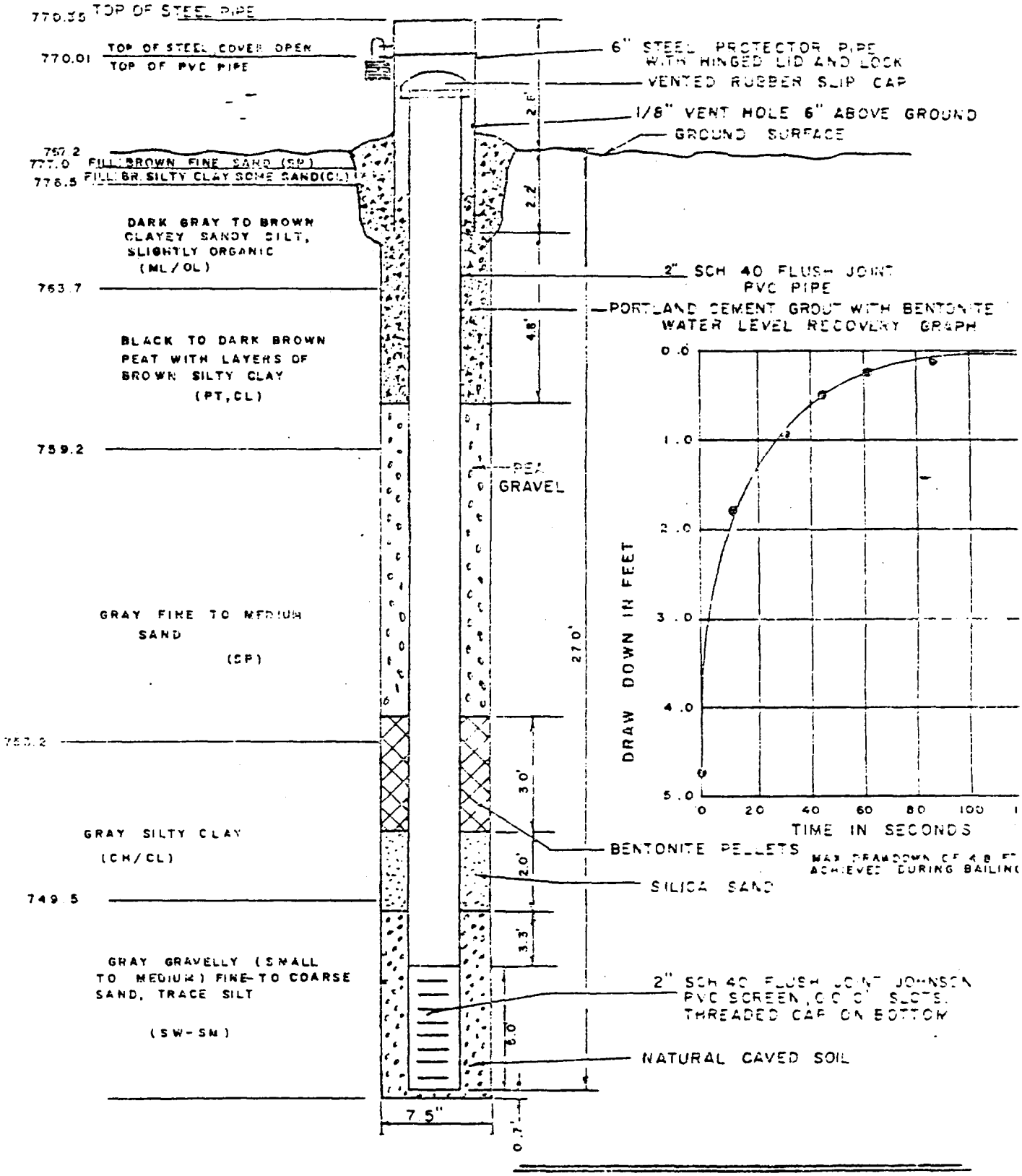
18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Yellow Clay	21	21
Sand	10	31
B Clay	95	126
Sand	10	136

(CONTINUE ON SEPARATE SHEET IF NECESSARY) 17-46N-10E

SIGNED Charlie E Mullins DATE 9/82

GROUNDWATER MONITORING WELL R-103

(NOT TO SCALE)



GROUNDWATER DATA 11-11-1985	
STATIC WATER LEVEL ELEV	763.07
TEMPERTURE (°F)	51
CONDUCTIVITY (UMHOS)	2300
PH	7.4

TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE
CAROL STREAM, ILLINOIS 60188
NOVEMBER 18 1985 L-22165

PROJECT H.C.D. LANDFILL, ANTIOCH, ILLINOIS

CLIENT WASTE MANAGEMENT, INC., 1300 WILLOW ROAD, NORTHBROOK, ILLINOIS 60062

BORING B 103 DATE STARTED 10-31-85 DATE COMPLETED 10-31-85 JOB 22,16

ELEVATIONS

GROUND SURFACE 767.2

END OF BORING 740.2

WATER TABLE

AT END OF BORING WELL INSTALLED

24 HOURS

WHILE DRILLING 8'

SAMPLE NO.	TYPE	N	WC	Q_u	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
						3"	767.0	FILL: Brown fine SAND (SP)
1	SS	5	45.7			6"	766.7	FILL: Brown very silty CLAY, some sand, trace organic (CL)
2A 2B	SS	5	22.9 58.1			3.5	763.7	Loose dark gray to brown clayey sandy SILT, slightly organic, occasional sand laminations, very moist (ML/OL)
3A 3B	SS	9	17.6 30.4					
4	SS	6	23.5					
						8.0	759.2	Black to dark brown PEAT with layers of brown silty CLAY, very moist to wet (Pt, CL)
5	SS	15						
6	SS	26						Firm gray fine to medium SAND, wet; 2" silt seam encountered at 8' (SP)
7	SS	12						
						14.0	753.2	
8	SS	2	53.8					Very soft gray silty CLAY; 3" zone of very tough silty clay encountered at 17.5' (CH/CL)
9A 9B	SS	11	26.2 --			17.7	749.5	
10	SS	22						Firm to dense gray gravelly (small to medium) fine to coarse SAND, trace silt, wet (SW-SM)
11	SS	33						
12	SS	36						
13	SS	27						
14	SS	14/6"						

End of Boring at - 27.0 Feet

MONITORING WELL INSTALLATION DATA (Also see As-Built Sketch)

1). Bore hole made by the hollowstem auger method
2). Bottom of 5.0 Johnson screen: 26.3'
3). Natural granular cave from bottom of hole to: 18'
4). Silica sand from: 18' - 16'
5). Bentonite pellets from: 16' - 13'
6). Pea gravel from: 13' - 7'
7). Concrete with bentonite from: 7' - 0'
8). 6" Steel protector pipe concreted into place over riser pipe

DISTANCE BELOW SURFACE IN FEET: 0, 5, 10, 15, 20, 25, 30, 35, 40

TESTING SERVICE CORPORATION

DRILL RIG NO. 91

G115 and G110

PROJECT H.O.D(ANDFILL SITE, ANTIOCH, ILLINOI(

CLIENT GEOTECH, INC., 224 N. Broadway, Joliet, Illinois

BORING 24 DATE STARTED 5-8-74 DATE COMPLETED 5-8-74 JOB L-10,71

ELEVATIONS

GROUND SURFACE 766.8

END OF BORING 741.8

WATER TABLE

AT END OF BORING "Dry"

24 HOURS

While drilling "Dry"

Distance Below Surface in Feet	Length Recovery	Sample No.	Type	N	WC	Q_u	% DRY	Depth	Elev.	Soil Descriptions
0										G115 Firm gray fine to coarse SAND, moist
5		1	SS	35						
								7.0		FILL - Brown silty CLAY, trace topsoil & small gravel & sand, moist
10		2	SS	6	15.8					
								13.0		Soft gray organic CLAY, trace fine sand, moist
15		3	SS	7	23.2					
						2.56		19.0		Very tough brown & gray silty CLAY, with pockets of silt, moist
20		4	SS	21	15.8	2.0*				
						5.12		23.5		Hard brown & gray silty CLAY, trace small gravel & coarse sand moist
25		5	SS	21	14.8	4.5+*			G110	
		End of Boring at 25.0 feet								* - Approximate unconfined compressic strength based on measurements wi a calibrated pocket penetrometer
30										
35										
40										

TESTING SERVICE CORPORATION

DRILL RIG NO. 60

G102

PROJECT H.O.D. (DRILL SITE, ANTIOCH, ILLINOIS)

CLIENT GEOTECH, INC., 224 N. Broadway, Joliet, Illinois

BORING 25 DATE STARTED 5-8-74 DATE COMPLETED 5-8-74 JOB L-10,718

ELEVATIONS

GROUND SURFACE 769.7

END OF BORING 744.7

WATER TABLE

AT END OF BORING -10.0'

24 HOURS

Water encountered at - 9.0' while drilling

759.7

Distance Below Surface in Feet

LENGTH	RECOVERY	SAMPLE NO.	TYPE	N	WC	Q,	γDRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
								1.0		Brown clayey TOPSOIL
		1	SS	21						Firm brown fine to coarse SAND, with small gravel, & trace clay, moist
		2	SS	10	19.5			9.0		Firm gray sandy SILT, with littl fine sand, very moist
		3	SS	22				13.5		Firm gray fine to coarse SAND & small GRAVEL, saturated
		4	SS	23				18.0		Dense gray fine to coarse SAND, with small to medium gravel, saturated
		5	SS	37						

End of Boring at 25.0 feet

TESTING SERVICE CORPORATION

DRILL RIG NO. 60

G103

PROJECT H.O.D. DRILL SITE, ANTIOCH, ILLINOIS

CLIENT GEOTECH, INC., 224 N. Broadway, Joliet, Illinois

BORING 26 DATE STARTED 5-7-74 DATE COMPLETED 5-7-74 JOB L-10,718

ELEVATIONS

GROUND SURFACE 766.9

END OF BORING 741.9

WATER TABLE

AT END OF BORING -5.0'

24 HOURS -4.0'

Water encountered at -8.0' while drilling

761.9 ▽

SAMPLE NO.	TYPE	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
						0		Black PEAT
						2.0		FILL - Brown silty CLAY, trace organic & small gravel, moist
1	SS	8	18.1			5.0		Firm gray fine to coarse SAND, saturated
2	SS	12						
3	SS	17	24.6			14.0		Tough gray silty CLAY, trace organic & shale, moist
						17.0		Firm gray fine to coarse SAND, trace small gravel, saturated
4	SS	24						
5	SS	24						

End of Boring at 25.0 feet

Distance Below Surface in Feet: 0, 5, 10, 15, 20, 25, 30, 35, 40

TESTING SERVICE CORPORATION

DRILL RIG NO. 60

PROJECT H.C.D.L FILL SITE, ANTIOCH, ILLINOIS

CLIENT GEOTECH, INC., 224 N. Broadway, Joliet, Illinois

BORING 27 DATE STARTED 5-7-74 DATE COMPLETED 5-7-74 JOB L-10,718

ELEVATIONS

GROUND SURFACE 767.0'

END OF BORING 717.0

WATER TABLE

AT END OF BORING -5.0'

24 HOURS -3.0'

Water encountered at -13.0' while drilling

SAMPLE NO.	TYPE	N	WC	Q_u	DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
						0		Black sandy TOPSOIL
						2.0		Tough brown & gray silty CLAY trace fine sand, moist
1	SS	9	18.1	1.43 2.5*				
						6.0		Dense brown clayey SAND, with some gravel, moist
2	SS	32						
						11.0		
3	SS	25	14.0	2.03 2.25*				
4	SS	22	14.4	2.62				Very tough brown silty CLAY, trace coarse sand, occasional layers of cobbles, boulders at 18.0 feet, moist
5	SS	21	11.4	2.75*				
6	SS	30	12.5	3.25*				
						33.5		Firm gray silty fine grained SAND, saturated
7	SS	12				35.0		
								Very tough gray silty CLAY, trace fine sand, moist
8	SS	35	17.7	2.98 2.75*		40.0		
								Very tough gray silty CLAY, trace fractured rock & coarse sand, boulders at 43.5 feet
9	SS	38	12.4			45.0		
								Very tough gray silty CLAY, trace fine sand & small gravel, moist
10	SS	24	13.9	2.86 1.5*				

End of Boring at 50.0 feet

Distance Below Surface in Feet: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

* - Approximate unconfined compression strength based on measurements with a calibrated pocket penetrometer

C

APPENDIX C

LOGS OF FIT-CONDUCTED SOIL BORINGS
AND
MONITORING WELL INSTALLATIONS

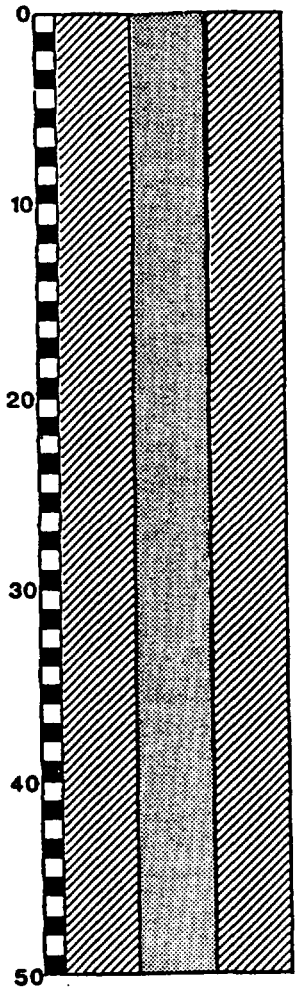
Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Boring/Well No. SB1
Location See Figure 3-2
Owner N.A.
Ground Elevation 794.68
Top of Inner Casing Elev. N.A.
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Pachowicz,
Start & Completion Dates 4-28-87, 4-29-87
Type of Rig CME 750

Method of Drilling Rotary Wash

Depth (ft) Description



Silty CLAY, trace sand and gravel

WELL DATA

Boring Diam. 4 in.
Boring Depth 50 ft.
Casing Diam. N.A.
Screen Diam. N.A.
Screen Interval N.A.
Screen Type N.A.
Well Type N.A.
Well Construction:
Filter Pack N.A.
Seal Volclay Grout
Grout Volclay Grout
Lock No. N.A.

TEST DATA

Static Water Elev. _____ Date _____
Static Water Elev. _____ Date _____
Hydraulic
Conductivity Test Yes _____ No X
Test Date _____
Results _____
Comments _____

SAMPLES FOR CHEMICAL ANALYSIS

Soils None
No. of Samples _____
Date _____
Parameters _____

Sample Depths _____

Groundwater None
No. of Samples _____
Date _____
Parameters _____

Split Samples Yes _____ No X
Recipient _____

Comments _____

REMARKS

Project Name H.O.D LANDFILL Boring Well No. SB1

Sample Depth (ft.)	Blow Count	Description
1 - 2.5	8-9-11	Clayey SILT, weak red (2.5YR 4/2), trace fine pebbles, moist.
5 - 6.5	9-18-27	Silty CLAY, yellowish brown (10YR 5/4), mottled, rootlets, heavy, oxidation, fine grained sand seam 0.5 in.
8.5 - 10	9-27-35	Silty CLAY, yellowish brown (10YR 5/4), mottled, trace rootlets, oxidation.
13.5 - 15	12-15-23	12 in. CLAY, yellowish brown (10YR 5/4), mottled, oxidation, moist. 6 in. CLAY, yellowish brown (10YR 5/4), 1/8 in. thick silt seams, moist.
18.5 - 20	8-9-12	Interbedded CLAY and SILT, gray (10YR 5/1), sand seams, yellowish brown (10YR 5/6), medium to coarse grained, moderately sorted, subangular to subrounded, moist.
23.5 - 25	15-28-30	silty CLAY, gray (10YR 5/1), trace fine to medium pebbles, subrounded to rounded, trace silt seams, moist.
28.5 - 30	11-22-29	silty CLAY, gray (10YR 5/1), trace fine pebbles. silt and sand seams.
33.5 - 35	10-15-22	No Recovery.
38.5 - 40	15-20-20	silty CLAY, gray (10YR 5/1), trace fine to medium pebbles, silt content decreases downward.
43.5 - 45	14-14-19	silty CLAY, as above.
50		END OF BORING

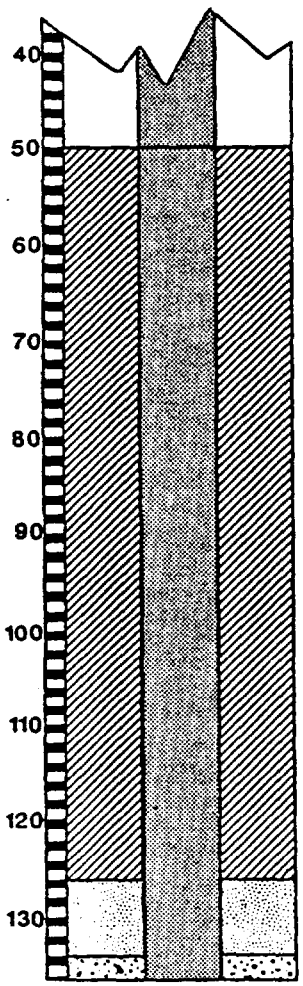
Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Boring/Well No. SB1a
Location See Figure 3-2
Owner N.A.
Ground Elevation 794.68
Top of Inner Casing Elev. N.A.
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Pachowicz, Smith
Start & Completion Dates 5-19-87,5-20-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

Depth (ft) Description



See log for SB1

Silty CLAY, trace sand and gravel, occasional silt seams

Fine to medium SAND, some silt, trace gravel

SAND and GRAVEL

WELL DATA

Boring Diam. 3 in.
Boring Depth 136.5 ft.
Casing Diam. N.A.
Screen Diam. N.A.
Screen Interval N.A.
Screen Type N.A.
Well Type N.A.
Well Construction:
Filter Pack N.A.
Seal Volclay Grout
Grout Volclay Grout
Lock No. N.A.

TEST DATA

Static Water Elev. _____ Date _____
Static Water Elev. _____ Date _____
Hydraulic
Conductivity Test Yes _____ No X
Test Date _____
Results _____
Comments _____

SAMPLES FOR CHEMICAL ANALYSIS

Soils None
No. of Samples _____
Date _____
Parameters _____

Sample Depths _____

Groundwater None
No. of Samples _____
Date _____
Parameters _____

Split Samples Yes _____ No _____
Recipient _____

Comments _____

REMARKS

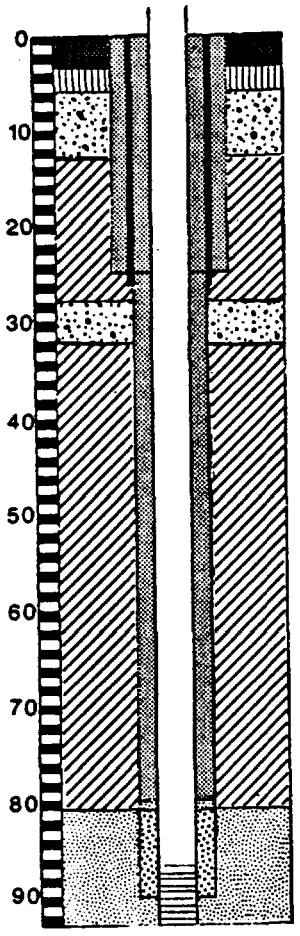
Project Name H.O.D. Landfill Boring Well No. SB1a

Sample Depth (ft.)	Blow Count	Description
0 - 50		See Log for SB1.
50 - 51.5	12-14-21	CLAY, gray (5Y 5/1), trace pebbles, trace coarse sand, moist.
55 - 56.5	8-13-18	12 in. gravelly CLAY, gray (5Y 5/1). 6 in. sandy CLAY, gray (5Y 5/1), fine to coarse sand, moist.
60 - 61.5	8-13-23	Silty CLAY, gray (5Y 5/1), trace gravel, trace sand.
65 - 66.5	10-18-23	No Recovery.
70 - 71.5	13-20-27	Silty CLAY, gray (5Y 5/1), trace pebbles, silt content decreases downward.
75 - 76.5	12-20-38	Silty CLAY, as above.
80 - 81.5	9-18-27	CLAY to silty clay, gray (5Y 5/1).
85 - 86.5	10-16-31	CLAY, as above.
90 - 91.5	12-26-34	Silty CLAY, gray (5Y 5/1), trace pebbles.
95 - 96.5	14-27-37	No Recovery.
100 - 101.5	20-24-58	Silty CLAY, gray (5Y 5/1), fine sand seams, moist.
105 - 106.5	30-42-46	Silty CLAY, dark gray (5Y 4/1), moist.
110 - 111.5	21-25-35	CLAY, dark gray (5Y 4/1), trace fine sand seams 1/8 in. thick, moist.
115 - 116.5	18-23-35	Silty CLAY, dark gray (5Y 4/1), trace fine sand seams, moist.
120 - 121.5	14-17-25	Gravelly CLAY, dark gray (5Y 4/1), some fine sand seams, moist.
125 - 126.5	38-70-66	8 in. CLAY, dark gray (5Y 4/1). 2 in. GRAVEL, dark gray (5Y 4/1), fine to coarse. 6 in. silty SAND, dark gray, fine to medium grained, moderately sorted, scattered coarse grains, subangular to rounded, quartzose with some feldspar and lithic fragments.
135 - 136.5	34-38-33	SAND, gray (5Y 5/1), medium to coarse grained, well sorted, subrounded to rounded, saturated. And GRAVEL, gray (5Y 5/1), fine to medium pebbles, subrounded to rounded, varied lithology, saturated.
136.5		END OF BORING

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Depth (ft) Description



Boring/Well No. GW1D
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 765.31
Top of Inner Casing Elev. 768.78
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Pachowicz, Smith
Start & Completion Dates 5-21-87, 5-27-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

WELL DATA

Boring Diam. 10", 0-25 ft.; 6", 25-93 ft.
Boring Depth 93 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 86.71 to 92.41
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 729.98 Date 8-3-87
Static Water Elev. 730.59 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-10-87
Results 1.80E-03 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils Yes
No. of Samples 8
Date 5-26-87
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Sample Depths 35-36.5, 40-41.5, 45-46.5 50-51.5, 55-56.5, 60-61.5, 65-66.5, 70-71.5
Groundwater Yes
No. of Samples 3 Rounds
Date 8-11-87, 4-19-88, 5-19-88
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments Only round 1 samples were split with WMII. Rounds 2 and 3 VOA only.

REMARKS

Static	Water	Elev.	730.93	Date	9-21-87
"	"	"	730.43	"	9-23-87
"	"	"	730.29	"	10-27-87
"	"	"	730.35	"	11-13-87
"	"	"	731.86	"	4-18-88
"	"	"	730.86	"	5-19-88

Project Name H.O.D Landfill Boring Well No. GW1D

Sample Depth (ft.)	Blow Count	Description
0 - 3.5		TOPSOIL, black.
3.5 - 5	4-2-3	4 in. gravelly SILT, reddish yellow (7.5YR 7/8). 4 in. clayey SILT, gray (5Y 6/1), some sand seams.
7.5 - 9	10-14-12	Silty SAND and GRAVEL, yellowish brown (10YR 5/6), very poor sorting, fine to coarse grained sand, subangular to angular gravel.
12.5 - 14	6-6-9	3 in. SAND and GRAVEL, as above, and with a 1 in. organic layer. 4 in. clayey SAND to sandy CLAY. 7 in. silty CLAY, dark grayish brown (2.5Y 4/2), some gravel.
15 - 16.5	9-11-19	Silty CLAY to clay, gray (10YR 5/1).
17.5 - 19	6-9-15	Silty CLAY, dark gray (5Y 4/1), some gravel.
25 - 26.5	6-8-7	6 in. silty SAND, dark gray (10YR 4/1), very fine to medium grained, very moist. 6 in. silty CLAY, dark gray (5YR 4/1), trace fine subangular gravel, moist.
30 - 31.5	20-12-20	GRAVEL, gray, some sand, 1 in. to 2 in. clasts, fine to medium pebbles, subangular to angular.
35 - 36.5	4-5-9	2 in. CLAY and GRAVEL, gray, fine to medium pebbles, gradational contact with lower clay. 12 in. CLAY, gray (10YR 5/1) some gravel, very tough, damp.
40 - 41.5	5-15-10	CLAY, gray (10YR 5/1), some gravel, very tough, damp.
45 - 46.5	7-3-12	6 in. clayey SILT, gray (10YR 5/1) damp. 10 in. silty CLAY, gray (10YR 5/1) some small pebbles, damp.
50 - 51.5	6-8-14	Silty CLAY, gray (10YR 5/1), trace pebbles, some silt to fine sand seams, damp.
55 - 56.5	8-12-16	Silty CLAY, gray, trace pebbles, trace silt seams, damp.
60 - 61.5	5-10-14	Silty CLAY, gray, as above.
65 - 66.5	7-10-12	CLAY, gray (10YR 5/1) with grayish brown (10YR 5/2) mottling, very plastic, tough, damp.
70 - 71.5	5-6-8	CLAY, as above, with increased mottling, microshears.
75 - 76.5	11-15-14	8 in. pebbly CLAY, gray, pebble content increasing downward, fine pebbles, very moist. 8 in. SAND, pinkish gray (7.5YR 6/2), fine to medium grained, well sorted, saturated. Upper contact is sharp.
80 - 81.5	7-18-23	9 in. pebbly CLAY, gray (10YR 5/1), saturated. 5 in. sandy CLAY, gray (5Y 5/1), 1 in. fine grained sand seam.

Project Name H.O.D. Landfill

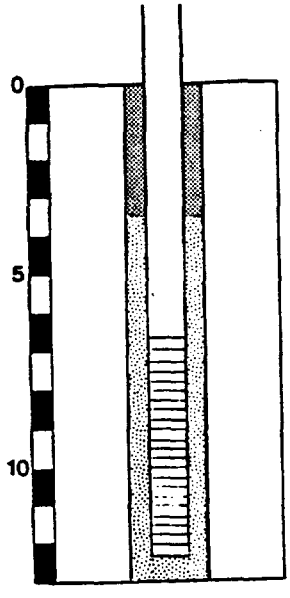
Boring Well No. GW1D

Sample Depth (ft.)	Blow Count	Description
		4 in. pebbly SAND, light gray (10YR 6/1) medium to fine grained, moderately to poorly sorted, angular to rounded, saturated.
85 - 86.5	17-23-24	SAND, gray, medium grained, well sorted, trace coarse grains, angular to subrounded, varied lithology, quartz rich, saturated.
90 - 91.5	14-15-15	SAND, as above.
93		END OF BORING.

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Depth (ft) Description



See log for GW1D

Boring/Well No. GW1S
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 765.31
Top of Inner Casing Elev. 768.60
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith
Start & Completion Dates 5-22-87, 5-22-87
Type of Rig Mobile B-61

Method of Drilling 6 1/4 in. ID Hollow Stem Auger

WELL DATA

Boring Diam. 10 in.
Boring Depth 13 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 6.71 to 12.41 ft.
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Silica Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 763.60 Date 8-3-87
Static Water Elev. 763.96 Date 9-10-87
Hydraulic Conductivity Test Yes X No
Test Date 9-10-87
Results 4.85E-04 cm/sec.
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils None
No. of Samples
Date
Parameters

Groundwater Yes
No. of Samples 3 Rounds
Date 8-11-87, 4-19-88, 5-19-88
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments Only round 1 samples were split with WMII. Rounds 2 and 3 VOA only.

REMARKS

Static	Water	Elev.	763.74	Date	9-21-87
"	"	"	763.94	"	9-23-87
"	"	"	763.76	"	10-27-87
"	"	"	763.77	"	11-13-87
"	"	"	764.20	"	4-18-88
"	"	"	763.90	"	5-19-88

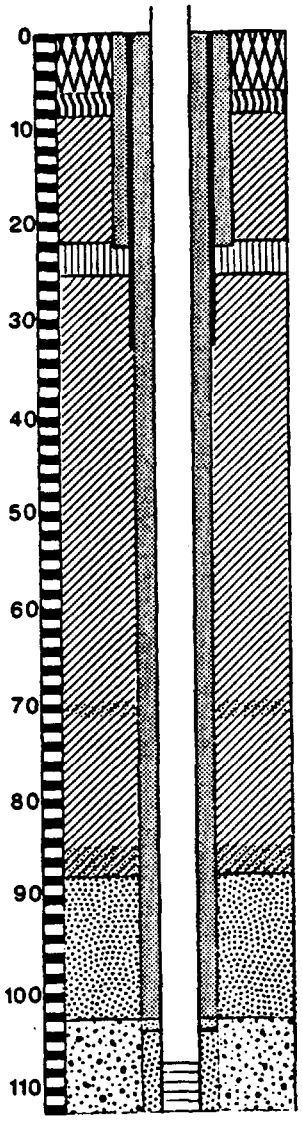
Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Boring/Well No. GW2D
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 768.19
Top of Inner Casing Elev. 770.72
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith, Pachowicz
Start & Completion Dates 5-28-87,6-16-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

Depth (ft) Description



FILL- gravel, cobbles, clay

PEAT

Silty CLAY, trace to some gravel,occasional silt seams

Clayey SILT

Silty CLAY, trace to some gravel,occasional silt seams and sandy beds

Medium to coarse SAND

SAND and GRAVEL

WELL DATA

Boring Diam. 10", 0-23 ft.; 6",23-113 ft.
Boring Depth 113 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 104.47-112.77
Screen Type PVC
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 729.32 Date 8-3-87
Static Water Elev. 730.08 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-10-87
Results 1.26E-02 cm/sec
Comments Rising Head Slug Test
Falling Head Permeability-Shelby
Tube 19-21.5 ft. 3.78E-05 cm/sec

SAMPLES FOR CHEMICAL ANALYSIS

Soils Yes
No. of Samples 11
Date 6-11-87
Parameters ABN, PCB/Pest., Volatile
Organics, Metals, Cyanide
Sample Depths 22.5-24, 24-25.5, 25.5-27
27-28.5, 28.5-30, 30-31.5, 34-35.5
36.5-38, 40-41.5, 45-46.5, 50-51.5
Groundwater None
No. of Samples
Date
Parameters

Split Samples Yes No X
Recipient

Comments OVA Readings: 1 ppm above
background at 11.5, 16.5, 34.0, 36.5
40.8, 45.0, ft

REMARKS

Static	Water	Elev.	730.16	Date	9-21-87
"	"	"	729.71	"	9-23-87
"	"	"	729.77	"	10-27-87
"	"	"	729.31	"	11-13-87
"	"	"	731.19	"	4-18-88

Project Name H.O.D. Landfill Boring Well No. GW2D

Sample Depth (ft.)	Blow Count	Description
2.5 - 4	4-2-5	FILL - gravel, cobbles, and clay, dry.
7.5 - 9	2-2-2	6 in. PEAT, black (5Y 2.5/1) to dark gray (5YR 3/1). 4 in. clayey PEAT, very dark gray (2.5YR 3/0). 4 in. silty CLAY, greenish gray (5GY 5/1), some pebbles, very moist.
11.5 - 13	3-4-7	Silty CLAY, dark gray (5Y 4/1), some silt seams, rootlets, damp.
16.5 - 18	5-6-9	Silty CLAY, dark gray (5Y 4/1), some pebbles, damp.
19 - 21.5	------	Silty CLAY, as above.
22.5 - 24	12-12-13	Clayey SILT, grayish brown (10YR 5/2), saturated.
24 - 25.5	11-9-8	6 in. SILT, grayish brown (10YR 5/2), saturated. 2 in. SAND, grayish brown (10YR 5/2), fine grained, some silt, saturated. 4 in. silty CLAY, dark gray (5Y 4/1), trace pebbles, damp.
25.5 - 27	5-13-12	Silty CLAY, dark gray (5Y 4/1), with a 3 in. saturated silt layer, damp.
27 - 28.5	8-8-12	Silty CLAY, dark gray (5Y 4/1), trace pebbles, damp.
28.5 - 30	6-7-12	Silty CLAY, gray (5YR 5/1), silt seams, trace pebbles downward, damp.
30 - 31.5	5-7-7	Silty CLAY, gray (5Y 5/1), some pebbles, damp.
34 - 35.5	4-6-6	Silty CLAY, gray (5Y 5/1), increasing clay content, damp.
36.5 - 38	5-6-8	Silty CLAY, dark gray (5Y 4/1), silt seams.
40 - 41.5	6-10-13	Silty CLAY, dark gray (5Y 4/1), trace pebbles, damp.
45 - 46.5	8-10-14	Silty CLAY, dark gray (5Y 4/1), trace pebbles, silt seams, damp.
50 - 51.5	15-14-13	Silty CLAY, dark gray (5Y 4/1), 3 in. saturated sandy silt seam, damp.
55 - 56.5	7-12-14	CLAY, dark gray (5Y 4/1), mottled, some silt seams, damp.
60 - 61.5	4-6-8	4 in. CLAY, dark gray (5Y 4/1), mottled. 14 in. silty CLAY, dark gray (5Y 4/1), sand seams, trace pebbles.
65 - 66.5	7-10-11	Silty CLAY, dark gray (5Y 4/1), 2 in. saturated clayey medium to coarse sand seam, with some pebbles, damp.
70 - 71.5	10-13-10	Silty to sandy CLAY, dark gray (5Y 4/1) some fine pebbles and medium sand, damp.
75 - 76.5	9-10-11	CLAY, grayish brown (10YR 5/2), some silt seams, damp.
80 - 81.5	4-5-7	CLAY, gray (10YR 5/1), some silt seams, trace pebbles, damp.

Project Name H.O.D. Landfill Boring Well No. GW2D

Sample Depth (ft.)	Blow Count	Description
85 - 86.5	16-14-13	Silty to sandy CLAY, grayish brown (10YR 5/2), saturated sand seams, some coarse pebbles.
90 - 91.5	18-24-25	SAND, light brown, medium to coarse grained, moderately sorted, moist.
100 - 101.5	30-48-30	SAND, grayish brown (10YR 5/2), medium to coarse grained, moderate to poor sorting, some pebbles, saturated.
105 - 106.5	136-46-35	SAND and GRAVEL, grayish brown (10YR 5/2), medium grained sand to coarse pebbles, very poor sorting, varied lithology, saturated.
112		END OF BORING.

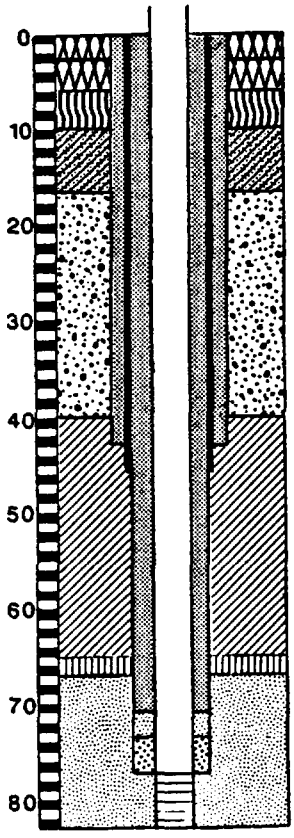
Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Boring/Well No. GW3D
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 766.91
Top of Inner Casing Elev. 769.63
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith, Pachowicz
Start & Completion Dates 5-28-87, 6-3-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

Depth (ft) Description



FILL- gravel and silty clay
FILL- refuse
PEAT
Silty SAND and silty CLAY, organic clay at top
SAND and GRAVEL
Silty CLAY, trace gravel, occasional silt seams
SILT
Fine to medium SAND, trace gravel

WELL DATA

Boring Diam. 10", 0-43 ft.; 6", 43-83 ft.
Boring Depth 83 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 77.28 - 82.58
Screen Type PVC
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 729.03 Date 8-3-87
Static Water Elev. 729.07 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-10-87 /9-21-87
Results 3.13E-03 cm/sec
3.76E-03 cm/sec
Comments: Rising Head Slug Tests

SAMPLES FOR CHEMICAL ANALYSIS

Soils Yes
No. of Samples 8
Date 6-3-87
Parameters ABN, PCB/Pest., Volatile Organics Metals, Cyanide
Sample Depths 50-51.5, 51.5-53, 53-55, 55-57, 59-61,62.5-64, 65-66.5,70-71.5

Groundwater None
No. of Samples
Date
Parameters

Split Samples Yes No X
Recipient

Comments OVA Readings: 1-2 ppm above background at 20.5 ft.

REMARKS

Static	Water	Elev.	730.77	Date	9-21-87
"	"	"	730.34	"	9-23-87
"	"	"	730.36	"	10-27-87
"	"	"	728.26	"	11-13-87
"	"	"	731.71	"	4-18-88
"	"	"	730.12	"	5-19-88

Project Name H.O.D. Landfill Boring Well No. GW3D

Sample Depth (ft.)	Blow Count	Description
0 - 2.5		FILL, clay and gravel (paving material).
2.5 - 4	2-3-4	FILL, consists of general refuse (glass, cable, cans, etc.), saturated at 3.5 ft.
7.5 - 9	1-1-2	PEAT, black (5Y 2.5/1), moist.
11.5 - 13	15-12-4	3 in. silty CLAY, dark greenish gray (5GY 4/1), moist. 12 in. silty SAND, gray (5Y 6/1), very fine grained, saturated.
15.5 - 17	9-9-9	3 in. silty CLAY, gray (5Y 5/1), some organic rich silt seams, 0.5 in. saturated sand seam. 9 in. SAND and GRAVEL, gray (5Y 5/1), poor sorting (silt to gravel), subangular, unit fines upward.
20.5 - 22	19-15-14	SAND and GRAVEL, gray (5Y 5/1), poor sorting, subangular to angular, saturated.
25.5 - 27	15-13-12	SAND and GRAVEL, light brownish gray (10YR 6/2), poor sorting, subangular to subrounded, saturated.
30.5 - 32	14-19-37	SAND and GRAVEL, light brownish gray (10YR 6/2), 3 in. medium grained sand layer, some pebbles, trace clay, saturated.
35.5 - 37	12-19-25	SAND and GRAVEL, gray (5Y 5/1), medium to coarse grained with fine pebbles, poor sorting, angular to rounded, varied lithology, saturated.
40.5 - 42	7-8-13	Silty CLAY, dark gray (5Y 4/1), damp.
43 - 44.5	10-14-20	Silty CLAY, mottled, light brownish gray (2.5Y 6/2) to light yellowish brown (2.5Y 6/4), trace very fine pebbles, tough, damp.
50 - 51.5	6-14-27	8 in. silty CLAY, gray to brown, sand and pebble content increases toward bottom. 2 in. clayey SAND, mottled, fine grained, damp.
51.5 - 53	11-14-22	Silty CLAY, light gray to brown, 2 in. sand seam, some pebbles, damp.
53 - 55	9-23-14-17	Sandy CLAY, light gray to brown, silty, occasional fine sand seams, damp.
55 - 57	7-13-14-20	Silty CLAY, light gray to brown, some sand, trace fine pebbles, damp.
57 - 59	5-10-27-33	No recovery.
59 - 61	7-11-14-20	Silty CLAY, grayish brown (10YR 5/2), some silt seams, damp.
62.5 - 64	9-13-14	Interbedded silty CLAY and SAND seams, grayish brown (10YR 5/2), 1 in. sand seams are fine grained and saturated.
65 - 66.5	17-17-18	SILT, gray (10YR 5/1), saturated.
70 - 71.5	25-27-30	SAND, grayish brown (10YR 5/2), fine grained, well sorted, saturated.

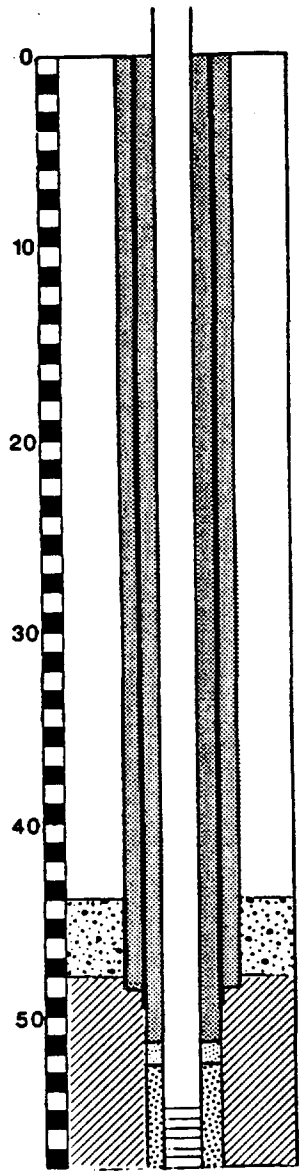
Project Name H.O.D. Landfill Boring Well No. GW3D

Sample Depth (ft.)	Blow Count	Description
75 - 76.5	14-19-17	SAND, light brownish gray (10YR 6/2), fine to medium grained, moderately sorted, subangular to subrounded, some silt seams, saturated.
80 - 81.5	12-17-21	SAND, light brownish gray (10YR 6/2), fine to medium grained, moderately sorted, some pebbles, trace clay rip-up clasts, saturated.
83		END OF BORING.

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Depth (ft) Description



See log for GW3D

SAND and GRAVEL

CLAY to sandy clay

Boring/Well No. GW3I
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 766.91
Top of Inner Casing Elev. 769.92
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Goode
Start & Completion Dates 6-3-87, 6-10-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

WELL DATA

Boring Diam. 10",0-49.5ft.;6",49.5-58.5ft
Boring Depth 58.5 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 55.0-58.0
Screen Type PVC
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 733.52 Date 8-3-87
Static Water Elev. 734.16 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-11-87
Results 7.92E-06 cm/sec
Comments Falling Head Slug Test
Falling Head Permeability-Shelby
Tube 55-57.5 ft. 7.00E-07 cm/sec

SAMPLES FOR CHEMICAL ANALYSIS

Soils None
No. of Samples
Date
Parameters

Sample Depths

Groundwater None
No. of Samples
Date
Parameters

Split Samples Yes No X
Recipient

Comments

REMARKS

Static	Water	Elev.	734.20	Date	9-21-87
"	"	"	734.46	"	9-23-87
"	"	"	733.82	"	10-27-87
"	"	"	733.89	"	11-13-87
"	"	"	734.84	"	4-18-88
"	"	"	733.64	"	5-19-88

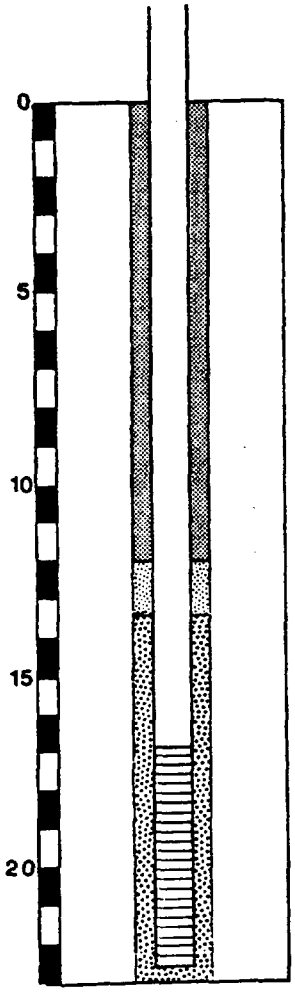
Project Name H.O.D. Landfill Boring Well No. GW3I

Sample Depth (ft.)	Blow Count	Description
0 - 44	-----	Blind Drill to 44 ft. See GW3D.
44 - 45.5	45-39-34	SAND and GRAVEL, light gray, coarse grained, dirty, very poor sorting, clasts angular to rounded, varied lithology, saturated.
49.5 - 51	5-7-10	CLAY, gray (10YR 5/1), slightly mottled, moist.
55 - 57.5	-----	CLAY, gray (10YR 5/1), some pebbles, sandy to silty at bottom, damp.
58		END OF BORING.

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Depth (ft) Description



See log for GW3D

Boring/Well No. GW3S
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 766.91
Top of Inner Casing Elev. 770.10
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith, Pachowicz
Start & Completion Dates 6-2-87,6-2-87
Type of Rig Mobile B-61

Method of Drilling 6 1/4 in. ID Hollow Stem Auger

WELL DATA

Boring Diam. 10 in.
Boring Depth 22.5 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 16.81 - 22.51
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 761.40 Date 8-3-87
Static Water Elev. 762.10 Date 9-10-87
Hydraulic Conductivity Test Yes X No
Test Date 9-10-87
Results 2.67E-02 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils None
No. of Samples
Date
Parameters

Sample Depths

Groundwater Yes
No. of Samples 2 Rounds
Date 8-11-87, 4-19-88
Parameters ABN,PCB/Pest. Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments Only round 1 samples were split with WMII. Round 2 VOA only.

REMARKS

Static	Water	Elev.	762.80	Date	9-21-87
"	"	"	762.11	"	9-23-87
"	"	"	762.17	"	10-27-87
"	"	"	762.21	"	11-13-87
"	"	"	762.81	"	4-18-88
"	"	"	762.30	"	5-19-88

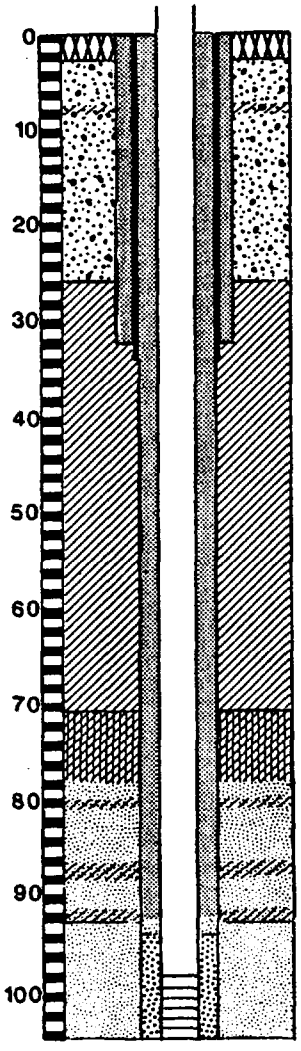
Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Boring/Well No. GW4D
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 770.80
Top of Inner Casing Elev. 772.66
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith, Pachowicz
Start & Completion Dates 6-16-87,6-23-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

Depth (ft) Description



FILL- clay and gravel

CLAY and clayey SAND

SAND and GRAVEL, some CLAY and clayey SAND

CLAY and silty clay, trace gravel, occasional sand and silt seams

Interbedded SILT and CLAY with some sand seams

Interbedded SAND and CLAY, thin bed clayey silt at base

Fine to medium SAND, some silt seams

WELL DATA

Boring Diam. 10",0-32.5 ft.;6",32.5-104.5
Boring Depth 104.5 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 98.14 - 103.84
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 729.11 Date 8-3-87
Static Water Elev. 729.13 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-11-87
Results 1.08E-03 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils Yes
No. of Samples 8
Date 6-18-87
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Sample Depths 36-38, 38-40, 40-42, 42-44 45-46.5, 47.5-49,52.5-54,55-56.5

Groundwater Yes
No. of Samples 3 Rounds
Date 8-10-87, 4-18-88, 5-19-88
Parameters ABN, PCB/Pest. Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments OVA readings: 0.4 ppm above background at 12.5 ft. Only round 1 samples were split with WMII. Rounds 2 and 3 VOA only.

REMARKS

Static	Water	Elev.	730.58	Date	9-21-87
"	"	"	730.20	"	9-23-87
"	"	"	730.07	"	10-27-87
"	"	"	728.62	"	11-13-87
"	"	"	731.24	"	4-18-88
"	"	"	730.21	"	5-19-88

Project Name H.O.D. Landfill Boring Well No. GW4D

Sample Depth (ft.)	Blow Count	Description
0 - 2.5		FILL - clay, and gravel.
2.5 - 4	3-4-5	9 in. FILL, as above, brown. 2 in. SAND and GRAVEL, brown, medium to coarse grained sand, some fine to medium sized pebbles, dry.
7.5 - 9	2-2-3	4 in. clayey SAND, brown. 7 in. CLAY, black, highly organic. 3 in. SAND and GRAVEL, brown, dry.
12.5 - 14	8-6-11	SAND and GRAVEL, dark gray, medium to coarse grained sand, some fine to medium pebbles, wet to saturated.
17.5 - 19	10-9-10	SAND and GRAVEL, gray, medium to coarse grained subangular sand, some fine to medium rounded pebbles, saturated.
22.5 - 24	10-8-10	SAND and GRAVEL, gray, medium to coarse grained subangular sand, some fine to coarse rounded pebbles, some organics, saturated.
27.5 - 29	3-5-8	Pebbly CLAY, grayish brown (10YR 5/2), some silt, damp.
30 - 32.5	------	Silty CLAY.
32.5 - 34	23-8-8	CLAY, gray, some silt, trace pebbles, 3 in. layer of medium to coarse grained sand to coarse pebbles, poorly sorted, saturated.
34 - 36	8-9-14-17	No recovery.
36 - 38	7-10-14-17	Silty CLAY, dark grayish brown (10YR 4/2), trace fine pebbles, damp.
38 - 40	6-10-14-15	Silty CLAY, as above.
40 - 42	6-10-13-18	Silty CLAY, as above.
42 - 44	7-17-13-20	Silty CLAY, dark gray (10YR 4/1), some fine pebbles, 1 in. silt seam, damp.
45 - 46.5	8-13-14	Silty CLAY, weak red (2.5YR 4/2), some small pebbles, damp.
47.5 - 49	4-6-8	CLAY, weak red (2.5YR 4/2), mottled, some silt, damp.
50 - 51.5	6-6-9	CLAY, dark gray (5Y 4/1), damp.
52.5 - 54	4-5-6	CLAY, dark gray (5Y 4/1), some silt, damp.
55 - 56.5	6-7-8	CLAY, dark gray (5Y 4/1), trace fine pebbles, trace sand, damp.
60 - 61.5	6-11-19	Clayey SILT, dark gray (5Y 4/1), trace fine gravel, moist.
65 - 66.5	11-12-21	No recovery.
70 - 71.5	8-33-40	9 in. clayey SILT, gray, damp to saturated. 6 in. SAND, gray, fine grained, saturated.

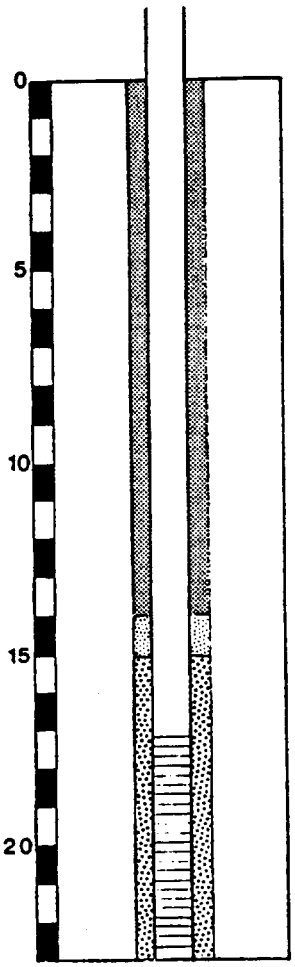
Project Name H.O.D. Landfill Boring Well No. GW4D

Sample Depth (ft.)	Blow Count	Description
75 - 76.5	13-8-31	Interbedded SILT and CLAY layers (1/8 in. to 3 in. thick), grayish brown (2.5Y 5/2), some fine pebbles, saturated to moist, respectively.
80 - 81.5	12-28-30	SAND, fine to medium grained, some silt seams, saturated.
85 - 86.5	17-23-25	No recovery.
90 - 91.5	25-30-47	8 in. SAND, fine to medium grained, saturated. 8 in. CLAY, grayish brown (2.5Y 5/2), dense, some sand, damp.
95 - 96.5	36-46-61	4 in. SAND, medium to fine grained, well sorted, subangular to rounded, mixed lithology, saturated. 7 in. CLAY, dark gray, trace silt seam, sand dike along subvertical fracture. 3 in. clayey SILT, saturated.
100 - 101.5	19-19-23	SAND, light gray, fine to medium grained with scattered coarse grains, some pebbles, subangular to rounded, trace clay rip-up clasts, saturated.
103 - 104.5	27-27-27	SAND, light gray, fine to medium grained, saturated.
104.5		END OF BORING.

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Depth (ft) Description



See log for GW4D

Boring/Well No. GW4S
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 770.80
Top of Inner Casing Elev. 773.63
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith, Pachowicz
Start & Completion Dates 6-17-87, 6-17-87
Type of Rig Mobile B-61

Method of Drilling 6 1/4 in. ID Hollow Stem Auger

WELL DATA

Boring Diam. 10 in.
Boring Depth 23 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 17.17 - 22.87
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 761.56 Date 8-3-87
Static Water Elev. 761.85 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-11-87
Results 5.27E-02 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils None
No. of Samples
Date
Parameters

Sample Depths

Groundwater Yes
No. of Samples 2 Rounds
Date 8-10-87, 4-18-88
Parameters ABN, PCB/Pest. Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments Only round 1 samples were split with WMII. Round 2 VOA only.

REMARKS

Static	Water	Elev.	761.81	Date	9-21-87
"	"	"	761.76	"	9-23-87
"	"	"	762.17	"	10-27-87
"	"	"	762.23	"	11-13-87
"	"	"	762.80	"	4-18-88
"	"	"	762.35	"	5-19-88

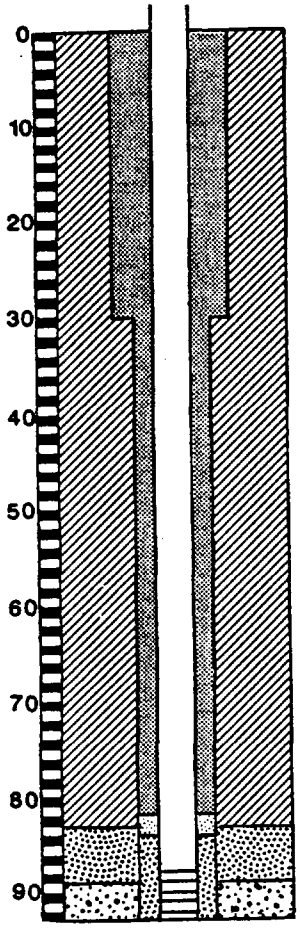
Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Boring/Well No. GW5D
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 765.18
Top of Inner Casing Elev. 767.74
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith, Bieze
Start & Completion Dates 6-25-87,6-29-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

Depth (ft) Description



CLAY and silty clay, trace gravel, occasional silt seams

Medium SAND

SAND and GRAVEL

WELL DATA

Boring Diam. 10", 0-30 ft.;6",30-93 ft.
Boring Depth 93 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 87.44-93.14
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 729.68 Date 8-3-87
Static Water Elev. 730.50 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-11-87
Results 1.57E-02 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils Yes
No. of Samples 5
Date 6-26-87
Parameters ABN, PCB/Pest. Volatile Organics, Metals, Cyanide
Sample Depths 35-36.5, 37.5-39, 42.5-44, 50-51.5, 65-66.5

Groundwater Yes
No. of Samples 1 round
Date 8-11-87
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments

REMARKS

Static	Water	Elev.	731.06	Date	9-21-87
"	"	"	730.90	"	9-23-87
"	"	"	730.99	"	10-27-87
"	"	"	730.12	"	11-13-87
"	"	"	732.04	"	4-18-88
"	"	"	730.68	"	5-19-88

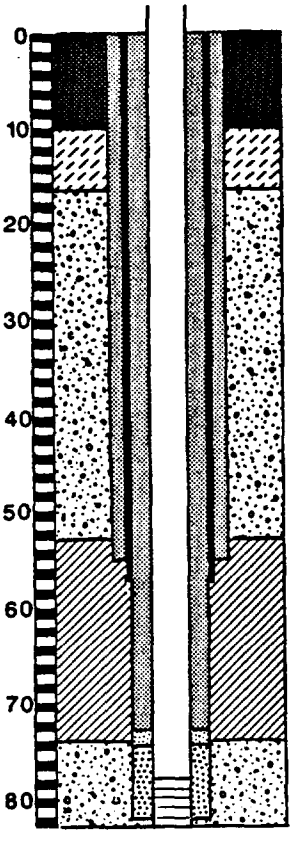
Project Name H.O.D. Landfill Boring Well No. GW5D

Sample Depth (ft.)	Blow Count	Description
0 - 2.5		CLAY and dolostone COBBLES
2.5 - 4	6-6-8	Mottled CLAY and COBBLES.
7.5 - 9	5-5-8	CLAY, mottled, light gray (10YR 7/1) to yellowish brown (10YR 5/6) trace silt, trace sand and gravel, damp.
10.5 - 12	2-3-6	Silty CLAY, gray (10YR 5/1), some fine pebbles, damp, occasional saturated silt at base.
15.5 - 17	3-6-8	Silty CLAY, gray (5Y 5/1), trace pebbles, damp.
20.5 - 22	7-13-15	CLAY, gray (10YR 5/1), mottled, some fine pebbles and silt, damp.
25.5 - 27	6-8-10	No Recovery.
30.5 - 32	6-8-13	Silty CLAY, gray (10YR 5/1), trace pebbles, some silt seams, damp.
35 - 36.5	5-9-12	Silty CLAY, gray (10YR 5/1), trace fine pebbles, damp.
37.5 - 39	5-7-15	Silty CLAY, grayish brown (10YR 5/2), trace fine pebbles, damp.
42.5 - 44	5-7-11	Silty CLAY, dark gray (5Y 4/1), trace fine pebbles, damp.
45 - 46.5	6-11-14	Silty CLAY, dark gray (5Y 4/1), mottled, some fine pebbles, some silt seams, damp.
50 - 51.5	5-7-9	Silty CLAY, dark gray (5Y 4/1), some pebbles, damp.
55 - 56.5	8-11-16	Silty CLAY, grayish brown (2.5Y 5/2), silt seams, damp.
60 - 61.5	2-4-5	CLAY, dark gray (5Y 4/1), mottled, damp.
65 - 66.5	3-8-16	Silty CLAY, olive gray (5Y 4/2), trace fine pebbles, damp.
70 - 71.5	5-6-9	CLAY, gray, some silt seams, trace fine pebbles, damp.
75 - 76.5	5-10-12	CLAY, dark grayish brown (10YR 4/2), some fine pebbles, trace sand streaks, silt and pebbles increase downward, damp.
80 - 81.5	11-11-25	Interbedded SAND, SILT, and silty CLAY, dark grayish brown (10YR 4/2), laminations are 1/8 in. to 1/4 in. thick, damp.
85 - 86.5	18-22-30	SAND, medium grained, well sorted, thin layer of fine pebbles, some fine sand, saturated.
90 - 91.5	15-20-16	SAND and GRAVEL, medium to coarse grained sand, fine pebbles, saturated.
93		END OF BORING

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Depth (ft) Description



Organic TOPSOIL

Organic CLAY, trace gravel, some sand

SAND and GRAVEL

Silty CLAY, trace sand and gravel, occasional silt seams

SAND and GRAVEL

Boring/Well No. GW6D
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 767.56
Top of Inner Casing Elev. 770.09
Drilling Firm Fox Drilling Inc.
Geologist Lombardi,Smith, Pachowicz
Start & Completion Dates 6-30-87, 7-6-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

WELL DATA

Boring Diam. 10", 0-55 ft.; 6",55-83 ft.
Boring Depth 83 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 77.47 - 83.17
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 729.77 Date 8-3-87
Static Water Elev. 730.07 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-11-87
Results 1.85E-03 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils Yes
No. of Samples 5
Date 7-6-87
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Sample Depths 59-61, 61-63, 63-65, 65-67, 69.5-71

Groundwater Yes
No. of Samples 3 Rounds
Date 8-11-87, 4-19-88, 5-19-88
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments Only round 1 samples were split with WMII. Rounds 2 and 3 VOA only.

REMARKS

Static	Water	Elev.	730.70	Date	9-21-87
"	"	"	730.33	"	9-23-87
"	"	"	730.21	"	10-27-87
"	"	"	729.60	"	11-13-87
"	"	"	731.72	"	4-18-88
"	"	"	730.59	"	5-19-88

Project Name H.O.D. Landfill Boring Well No. GW6D

Sample Depth (ft.)	Blow Count	Description
0 - 2		TOPSOIL
2 - 3.5	3-3-3	TOPSOIL, brown, highly organic, dry.
7 - 8.5	1-2-2	TOPSOIL, brown, highly organic, some pebbles, some sand, clay content increases downward.
15 - 16.5	2-3-4	CLAY, dark gray (5Y 4/1), very organic, trace pebbles, some sand, some black organics, damp.
20 - 21.5	17-13-15	SAND and GRAVEL, gray (5Y 6/1), fine to medium grained sand, fine to medium sized pebbles, very thin beds, saturated.
25 - 26.5	16-14-16	SAND and GRAVEL, gray (5Y 6/1), medium to coarse grained sand, fine pebbles, saturated.
30 - 31.5	9-12-13	SAND to silty sand, dark gray (10YR 4/1), fine to medium grained, silt increasing with depth, saturated.
35 - 36.5	15-11-12	SAND and GRAVEL, dark gray (10YR 4/1), coarse to very coarse grained sand, some fine pebbles, saturated.
40 - 41.5	20-18-21	SAND and GRAVEL, dark gray (10YR 4/1), coarse grained, fine pebbles, saturated.
45 - 46.5	25-30-40	2 in. SAND and GRAVEL, dark gray (10YR 4/1), some silt, saturated. 2 in. sandy CLAY, gray (5Y 5/1), some fine to medium pebbles, damp.
50 - 51.5	>100	No Recovery.
55 - 56.5	10-18-24	Silty CLAY, gray (10YR 5/1), silt seams, some fine pebbles, damp.
56.5	N.A.	Attempt to drive Shelby tube. Refused.
57 - 59	100-31-45-65	2 in. sandy, gravelly CLAY, grayish brown (2.5Y 5/2), saturated. 2 in. SILT, gray (10YR 5/1), damp. 4 in. silty CLAY, dark gray (5Y 4/1), mottled, some silt seams, damp.
59 - 61	11-16-25-30	Silty CLAY, dark gray (5Y 4/1), mottled, some silt seams, damp.
61 - 63	10-13-13-2	Silty CLAY, dark gray (5Y 4/1), mottled, some silt seams, some fine sand, trace fine pebbles, damp.
63 - 65	6-12-18-26	Sandy CLAY, dark gray (5Y 4/1), trace fine pebbles, damp.
65 - 67	6-10-18-26	Silty CLAY, dark gray (5Y 4/1), trace fine pebbles, some fine sand and silt seams, damp.

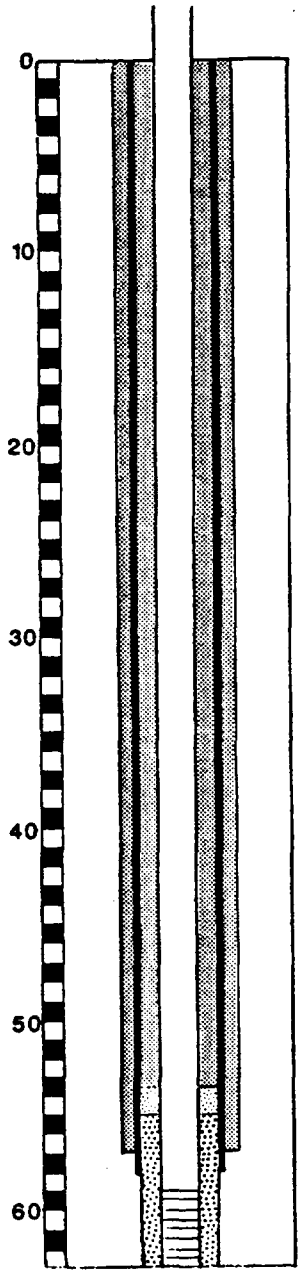
Project Name H.O.D. Landfill Boring Well No. GW6D

Sample Depth (ft.)	Blow Count	Description
69.5 - 71	5-8-10	CLAY, dark gray (5Y 4/1), trace silt and fine sand seams and stringers, damp.
72 - 73.5	7-11-46	4 in. CLAY, dark gray (5Y 4/1), trace pebbles, damp. 2 in. Sandy CLAY, dark gray (5Y 4/1), fine to coarse grained sand, damp.
74.5 - 76	20-20-26	SAND, light brownish gray (10YR 6/2), medium to coarse grained, poorly sorted, saturated.
79.5 - 81	83-72-100	SAND and GRAVEL, light brownish gray (10YR 6/2), medium to coarse grained sand, fine to medium pebbles, some bedding, saturated.
83 - 84.5	45-55-65	Interbedded fine SAND and fine PEBBLES, saturated.
84.5		END OF BORING

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Depth (ft) Description



See log for GW6D

Boring/Well No. GW6I
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 767.56
Top of Inner Casing Elev. 770.20
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith, Pachowicz
Start & Completion Dates 7-7-87, 7-10-87
Type of Rig Mobile B-61

Method of Drilling Rotary Wash

WELL DATA

Boring Diam. 10", 0-57 ft.; 6", 57-63 ft.
Boring Depth 63 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 59.06 - 62.76
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 747.16 Date 8-3-87
Static Water Elev. 747.18 Date 9-10-87
Hydraulic
Conductivity Test Yes X No
Test Date 9-10-87
Results 7.98E-06 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils None
No. of Samples
Date
Parameters

Sample Depths

Groundwater Yes
No. of Samples 3 Rounds
Date 8-12-87, 4-18-88, 5-19-88
Parameters ABN, PCB/Pest. Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments Only round 1 samples were split with WMII. Rounds 2 and 3 VOA only.

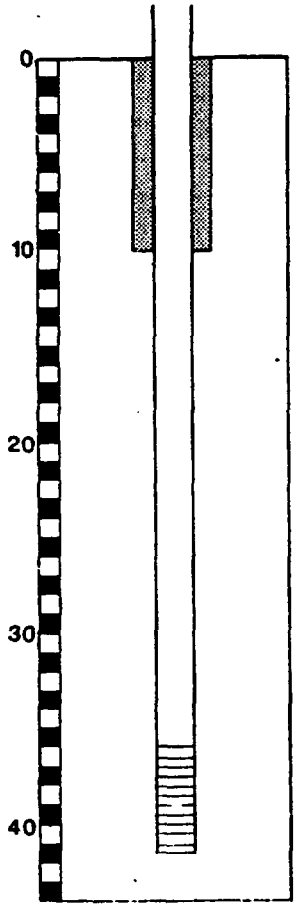
REMARKS

Static	Water	Elev.	747.34	Date	9-21-87
"	"	"	747.18	"	9-23-87
"	"	"	747.10	"	10-27-87
"	"	"	747.12	"	11-13-87
"	"	"	747.93	"	4-18-88
"	"	"	747.46	"	5-19-88

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Depth (ft) Description



See log for GW6D

Boring/Well No. GW6S
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 767.56
Top of Inner Casing Elev. 769.89
Drilling Firm Fox Drilling Inc.
Geologist Lombardi, Smith, Pachowicz
Start & Completion Dates 7-7-87, 7-10-87
Type of Rig CME-75

Method of Drilling 6 1/4 in. ID Hollow Stem Auger

WELL DATA

Boring Diam. 10 in
Boring Depth 44 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 36.0 - 41.7
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Natural Cave-In
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 761.96 Date 8-3-87
Static Water Elev. 762.63 Date 9-10-87
Hydraulic Conductivity Test Yes x No
Test Date 9-11-87
Results 6.97E-02 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils None
No. of Samples
Date
Parameters

Sample Depths

Groundwater Yes
No. of Samples 2 Rounds
Date 8-11-87, 4-18-88
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill. , Inc.

Comments Only round 1 samples were split with WMII. Round 2 VOA only.

REMARKS

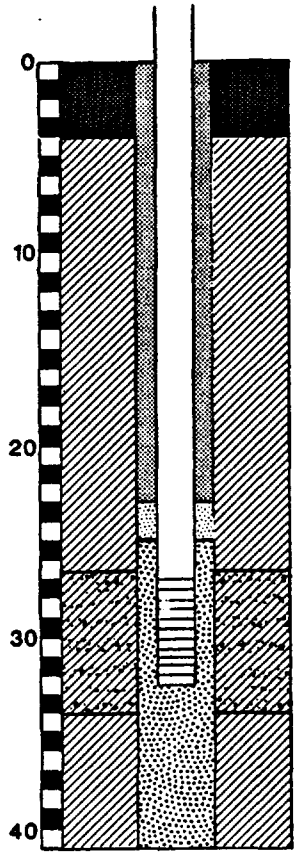
Static	Water	Elev.	762.55	Date	9-21-87
"	"	"	762.62	"	9-23-87
"	"	"	762.65	"	10-27-87
"	"	"	762.64	"	11-3-87
"	"	"	763.17	"	4-18-88
"	"	"	762.75	"	5-19-88

Project Name H.O.D. Landfill
Project No. F05-8702-124/FIL0141
ILD980605836

Date Prepared 1-12-88; rev. 5-3-89
Prepared by D. Lombardi, T. Pachowicz

Boring/Well No. GW7S
Location See Figure 3-2
Owner U.S. EPA
Ground Elevation 764.41
Top of Inner Casing Elev. 767.48
Drilling Firm Fox Drilling Inc.
Geologist Smith, Sklar, Pachowicz
Start & Completion Dates 7-14-87,7-16-87
Type of Rig CME-75
6 1/4 in ID
Method of Drilling 6 1/4 in. ID Hollow Stem Auger/Rotary Wash

Depth (ft) Description



Organic TOPSOIL

Silty CLAY, trace gravel

Interbedded CLAY and GRAVEL

CLAY, trace gravel

WELL DATA

Boring Diam. 10" OD, H.S. Auger/6" Rotary
Boring Depth 41 ft.
Casing Diam. 2 in.
Screen Diam. 2 in.
Screen Interval 26.93 - 32.63
Screen Type Stainless Steel
Well Type Monitoring
Well Construction:
Filter Pack Gravel/Sand
Seal Volclay Grout
Grout Volclay Grout
Lock No.

TEST DATA

Static Water Elev. 762.41 Date 8-3-87
Static Water Elev. 763.32 Date 9-10-87
Hydraulic Conductivity Test Yes X No
Test Date 9-11-87
Results 5.76E-03 cm/sec
Comments Rising Head Slug Test

SAMPLES FOR CHEMICAL ANALYSIS

Soils Yes
No. of Samples 4
Date 7-16-87
Parameters ABN, PCB/Pest., Volatile Organics, Metals, Cyanide
Sample Depths 24-25.5, 34-36, 37-38.5, 39.5-41

Groundwater Yes
No. of Samples 2 Rounds
Date 8-11-87; 4-18-88
Parameters ABN, PCB/Pest. Volatile Organics, Metals, Cyanide
Split Samples Yes X No
Recipient Waste Management of Ill., Inc.

Comments OVA Readings: 10 ppm above background at 8.5 ft. Only round 1 samples were split with WMII. Round 2 VOA only.

REMARKS

Static Water Elev.			763.43	Date	9-21-87
"	"	"	763.41	"	9-23-87
"	"	"	762.93	"	10-27-87
"	"	"	763.12	"	11-13-87
"	"	"	763.87	"	4-18-88

Project Name H.O.D. Landfill Boring Well No. GW7S

Sample Depth (ft.)	Blow Count	Description
0 - 3.5		TOPSOIL, black.
3.5 - 5	2-4-6	5 in. TOPSOIL, black, organic rich, dry. 1 in. silty CLAY, gray (5Y 5/1), some sand, damp.
8.5 - 10	1-1-1	Silty CLAY, very dark grayish brown (2.5Y 3/2), organic rich, moist.
14 - 15.5	1-3-6	Silty CLAY, gray (5Y 5/1), trace pebbles, moist.
19 - 20.5	—	Silty CLAY, dark gray (5Y 4/1), trace pebbles.
24 - 25.5	—	Silty CLAY, dark gray (5Y 4/1), trace fine pebbles, damp.
27 - 28.5	35-37-32	No Recovery.
29.5 - 31	20-25-40	Interbedded CLAY, dark gray (5Y 4/1) and GRAVEL, brown (10Y 5/3), fine to medium pebbles, saturated. Units are thin bedded.
32 - 33.5	10-20-25	No Recovery.
34.5 - 36	10-13-20	CLAY, dark gray (5Y 4/1), damp.
37 - 38.5	6-11-15	CLAY, dark gray (5Y 4/1), trace pebbles, moist.
39.5 - 41	—	CLAY, dark gray (5Y 4/1), damp.
41		END OF BORING

D

APPENDIX D

RESULTS OF PERMEABILITY AND GRAIN SIZE ANALYSIS TESTS OF FIT-COLLECTED SUBSURFACE SOIL SAMPLES

FOX DRILLING, INC.

500 PARK BOULEVARD, SUITE 1212 • ITASCA, ILLINOIS 60143
TELEPHONE (312) 773-4877

July 28, 1987

JUL 29 1987

DD-0084
Monitoring Wells
H.O.D. Landfill
Antioch, Illinois

Ecology and Environment, Inc.
111 West Jackson Blvd.
Chicago, Illinois 60604

Attn: Mr. Tom Pachowicz
Project Manager

Dear Tom:

Enclosed are the laboratory test results for the H.O.D. Landfill samples. The following tests were performed:

SAMPLE	TEST
HODGW31-2	Grain Size Analysis
HODGW31-3	Grain Size Analysis and Permeability.
HODGW02D	Grain Size Analysis and Permeability.

Sincerely yours;

Grover W. Fox
FOX DRILLING INC.
President

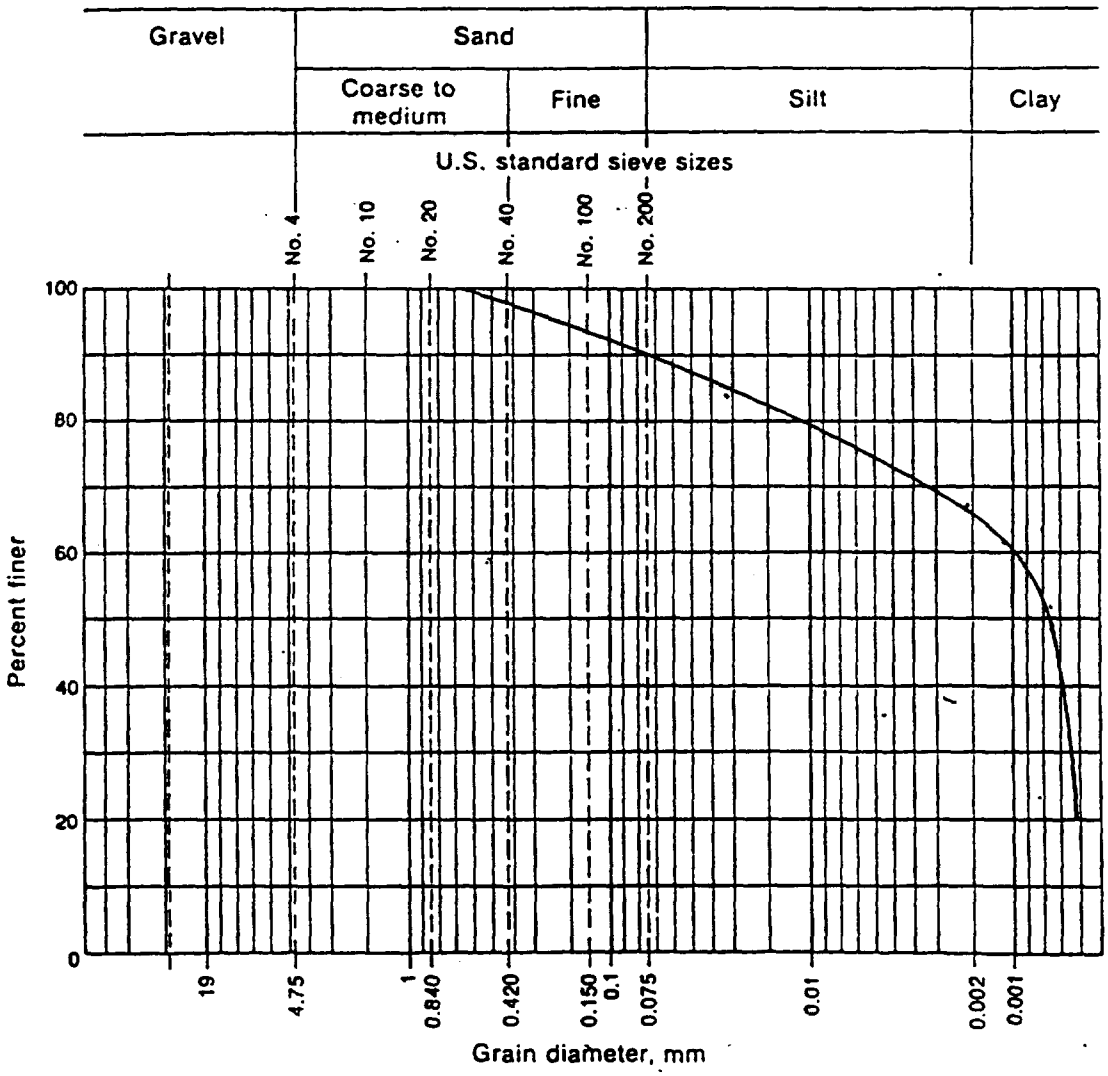
GRAIN SIZE DISTRIBUTION

Project HOD Landfill Job. No. _____

Location of Project _____ Boring No. _____ Sample No. HOD GW3I-2

Description of Soil Medium to High Plasticity Clay Depth of Sample _____

Tested By. ARB Date of Testing _____



Visual soil description _____

Soil classification:

_____ System _____

600 West Jackson Blvd., Chicago, Illinois 60606
312 - 930 - 9222

COEFFICIENT OF PERMEABILITY (Constant Head, Falling Head)

Project HOD Landfill Job No. _____

Location of Project _____

Description of Soil Low Plasticity Clay with fine to coarse gravel, Sample No. HOD 6 W3I-3 55ft to 57.5 ft.

Tested by ARB Date of Testing _____

Sample Dimensions: Diam. 7.46 cm; Area 43.72 cm²; Ht. 12.065 cm

Wt. soil + pan Init. _____ g Vol. _____ cm³

Wt.soil + pan Final _____ g Unit wt. _____ kN/m³

Wt. of Sample _____ g

Constant Head

Test data *Test data used*

Test No.	t, s	Q, cm³	T, °C	Test No.	t, s	Q, cm³	T, °C
1							
2							
3							
4							
				Average [a]			

$k_T = QL/Aht =$ _____ $\eta_T/\eta_{20} =$ _____

$=$ _____ cm/s $k_{20} = k_T\eta_T/\eta_{20} =$ _____ cm/s

Falling Head

Standpipe = [burette, other (specify)] _____

Area of standpipe, $a =$ 0.71 cm²

Test data[b] *Test data used*

Test no.	h_1, cm	h_2, cm	t, s	Q_{in}, cm³	Q_{out}, cm³	T, °C	Test no.	h_1, cm	h_2, cm	t, s	T, °C
1	99.7	98.2	3600			25					
2	98.2	87.9	26,100			25					
3											
4											
							Average	98.95	93.05	14,850	25

$\eta_T/\eta_{20} =$ 0.8694

$k_T = \frac{aL}{At} \ln h_1/h_2 = \frac{(0.71)(12.065)}{43.72\,(14,850)} \ln \frac{98.95}{93.05} =$ 8×10^{-7} cm/sec

$k_{20} = k_T\eta_T/\eta_{20} =$ $8 \times 10^{-7}\,(0.8694) =$ 7×10^{-7} cm/sec

[a]Use averaged values only if there is a small difference in test temperature, say, 1–2°C.

[b]This test can be considerably simplified by using the same values of h_1 and h_2 each time, otherwise you cannot average these values regardless of T.

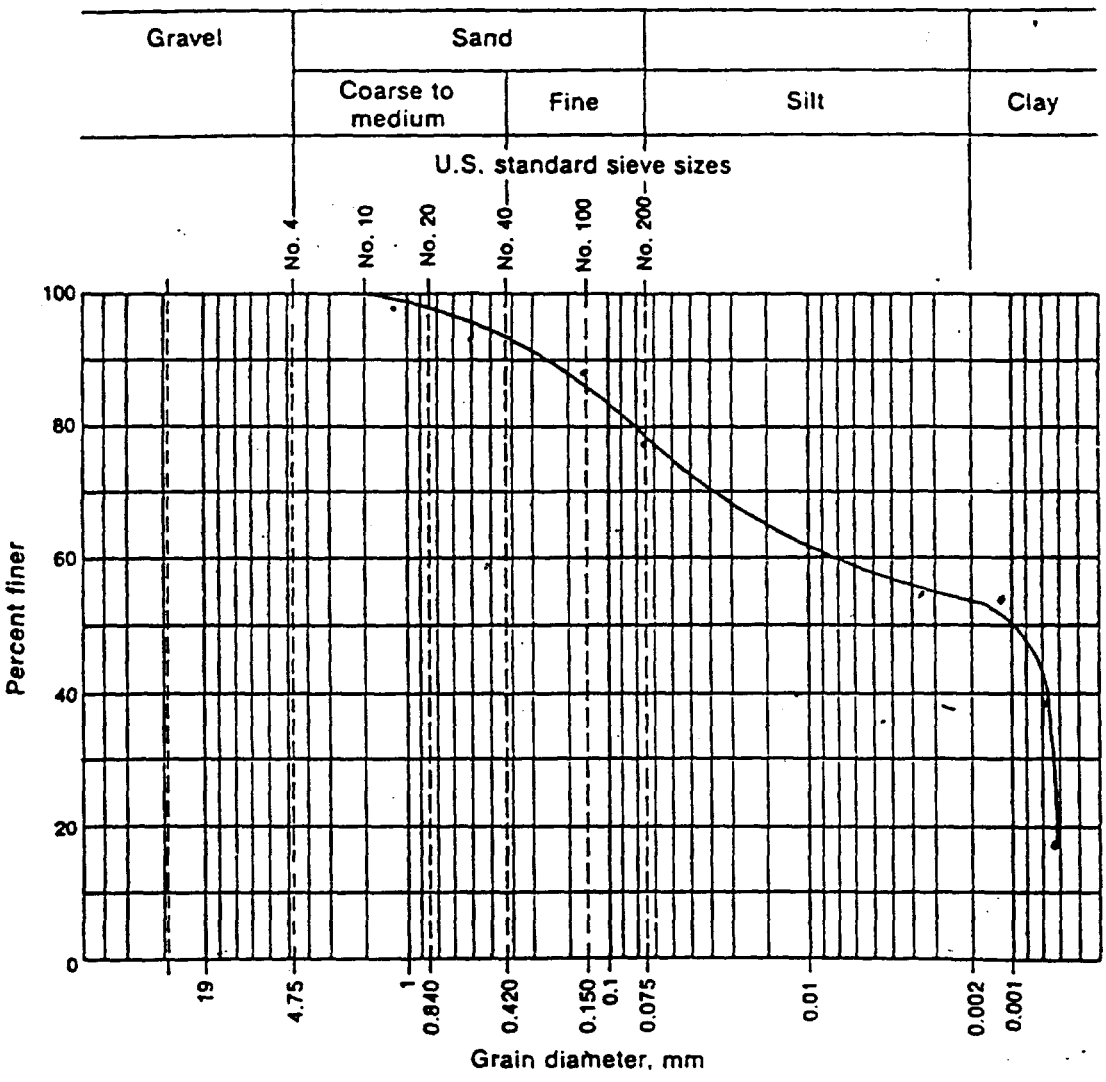
GRAIN SIZE DISTRIBUTION

Project HOD Landfill Job. No. _____

Location of Project _____ Boring No. _____ Sample No. HOD GW3I - 3

Description of Soil Low Plasticity Clay Depth of Sample 55 ft to 57.5 ft

Tested By. ARB Date of Testing _____



Visual soil description _____

Soil classification:

_____ System _____

600 West Jackson Blvd., Chicago, Illinois 60606
312 - 930 - 9222

COEFFICIENT OF PERMEABILITY (Constant Head, Falling Head)

Project HOD Landfill Job No. _____

Location of Project _____

Description of Soil Gray silt, Sample No. GW02D, 19ft to 21.5ft

Tested by ARB Date of Testing _____

Sample Dimensions: Diam. 7.46 cm; Area 43.72 cm²; Ht. 12.065 cm

Wt. soil + pan Init. _____ g

Wt.soil + pan Final _____ g

Wt. of Sample _____ g

Vol. _____ cm³

Unit wt. _____ kN/m³

Constant Head

Test data *Test data used*

Test No.	t, s	Q, cm³	T, °C	Test No.	t, s	Q, cm³	T, °C
1							
2							
3							
4							
				Average*			

$k_T = QL/Aht =$ _____ $\eta_T/\eta_{20} =$ _____

$=$ _____ cm/s $k_{20} = k_T\eta_T/\eta_{20} =$ _____ cm/s

Falling Head

Standpipe = [burette, other (specify)] _____

Area of standpipe, $a =$ 0.71 cm²

Test data[b] *Test data used*

Test no.	h_1, cm	h_2, cm	t, s	Q_{in}, cm³	Q_{out}, cm³	T, °C	Test no.	h_1, cm	h_2, cm	t, s	T, °C
1	96.5	94.9	60			25	5	91.4	90.3	60	25
2	94.9	93.8	60			25					
3	93.8	92.5	60			25					
4	92.5	91.4	60			25					
							Average	93.82	92.58	60	25

$$\eta_T/\eta_{20} = \frac{0.8694}{}$$

$$k_T = \frac{aL}{At}\ln h_1/h_2 = \frac{(0.71)(12.065)}{(43.72)(60)}\ln\frac{93.82}{92.58} = 4.34\times10^{-5} \text{ cm/sec}$$

$$k_{20} = k_T\eta_T/\eta_{20} = 4.34\times10^{-5}(.8694) = 3.78\times10^{-5} \text{ cm/sec}$$

*Use averaged values only if there is a small difference in test temperature, say, 1–2°C.

[b]This test can be considerably simplified by using the same values of h_1 and h_2 each time, otherwise you cannot average these values regardless of T.

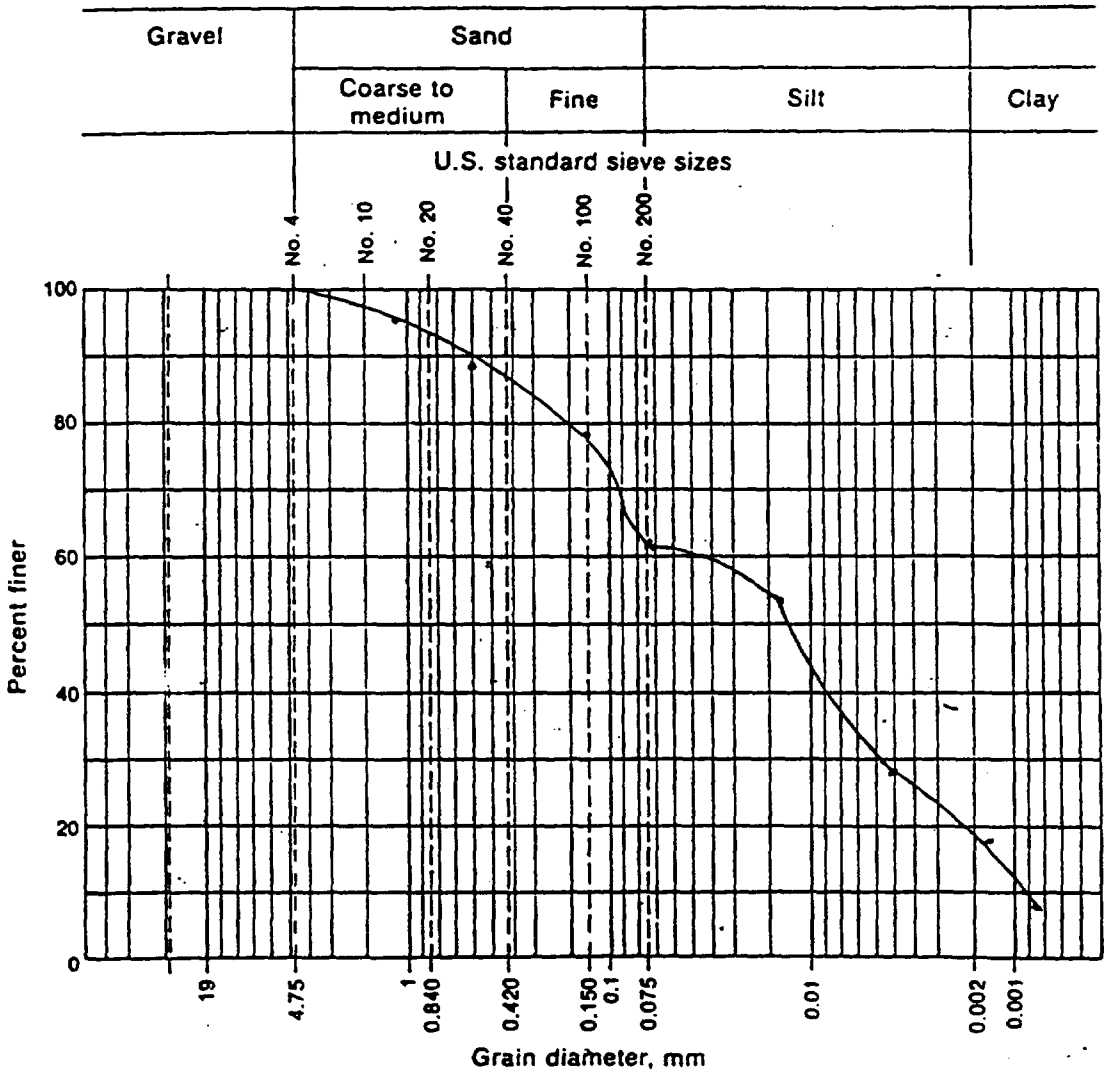
GRAIN SIZE DISTRIBUTION

Project HOD Landfill Job. No. _____

Location of Project _____ Boring No. _____ Sample No. GW02D

Description of Soil Gray Silt Depth of Sample 19 ft to 21.5 ft.

Tested By. ARB Date of Testing _____



Visual soil description _____

Soil classification:

_____ System _____

APPENDIX E

RESULTS OF SLUG TEST ANALYSIS
OF
FIT-INSTALLED MONITORING WELLS

PIEZOMETER TEST ANALYSIS

For Confined Aquifer (Cooper curve matching method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD1D

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 0 ft

Initial Head (start of test): 1.61 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Transmissivity of screened zone: 2.958167E-04 sq. ft/sec

Storage Coefficient: .1

TIME	HEAD(h)	(H-h/H-H0)
5	1.61	1
6	1.51	.9378882
7	1.41	.8757764
8	1.32	.8198758
9	1.25	.7763975
10	1.19	.7391305
11	1.12	.6956522
12	1.06	.6583851
13	1	.621118
14	.95	.5900621
15	.9	.5590062
16	.85	.5279503
17	.81	.5031056
18	.76	.4720497
19	.72	.447205
20	.69	.4285715
25	.52	.3229814
30	.39	.242236
35	.3	.1863354
40	.23	.1428572
45	.17	.1055901
50	.13	8.074534E-02
55	.1	.0621118
60	.08	4.968944E-02
65	.06	3.726708E-02
70	.05	.0310559
75	.04	2.484472E-02

80	.03	1.863354E-02
85	.02	1.242236E-02
90	.02	1.242236E-02
95	.01	6.21118E-03
100	.01	6.21118E-03
105	.01	6.21118E-03
110	.01	6.21118E-03
115	0	0

PIEZOMETER TEST ANALYSIS

For Unconfined Aquifer (Hvorslev method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD1SA

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 0 ft

Initial Head (start of test): 1.63 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Permeability of Aquifer: 1.594814E-05 ft/sec

TIME	HEAD(h)	(H-h/H-H0)
2	1.63	1
3	1.58	.9693252
4	1.53	.9386503
5	1.5	.9202454
6	1.47	.9018405
7	1.43	.8773006
8	1.4	.8588957
9	1.37	.8404908
10	1.35	.8282209
11	1.32	.809816
12	1.3	.797546
13	1.27	.7791411
14	1.25	.7668711
15	1.22	.7484663
16	1.2	.7361963
17	1.18	.7239264
18	1.16	.7116565
19	1.14	.6993865
20	1.12	.6871166
25	1.02	.6257669
30	.94	.5766871
35	.87	.5337423
40	.8	.4907976
45	.74	.4539878
50	.68	.4171779
55	.64	.392638
60	.59	.3619632
65	.55	.3374233
70	.51	.3128834
75	.47	.2883436

80	.44	.2699387
85	.41	.2515338
90	.39	.2392638
95	.36	.2208589
100	.34	.208589
105	.32	.196319
110	.3	.1840491
115	.28	.1717791
120	.27	.1656442
150	.19	.1165644
180	.14	8.588957E-02
210	.11	6.748466E-02
240	.08	4.907976E-02
270	.06	3.680982E-02
300	.05	3.067485E-02
330	.04	2.453988E-02
360	.04	2.453988E-02
390	.03	1.840491E-02
420	.03	1.840491E-02
450	.02	1.226994E-02
480	.02	1.226994E-02
510	.02	1.226994E-02
540	.02	1.226994E-02
570	.02	1.226994E-02
600	.02	1.226994E-02
720	.01	6.134969E-03

PIEZOMETER TEST ANALYSIS

For Confined Aquifer (Cooper curve matching method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD2D

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 40.64 ft

Initial Head (start of test): 41.69 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Transmissivity of screened zone: 2.083159E-03 sq. ft/sec

Storage Coefficient: .1

TIME	HEAD(h)	(H-h/H-H0)
.4	41.69	1
.6	41.59	.9047633
.8	41.47	.7904785
1	41.45	.7714305
1.2	41.41	.7333343
1.4	41.37	.6952382
1.6	41.29	.6190496
1.8	41.24	.5714312
2	41.16	.4952389
3	41.05	.3904763
4	40.93	.2761915
5	40.86	.2095251
6	40.8	.1523809
7	40.76	.1142848
8	40.73	8.571449E-02
9	40.71	6.666643E-02
10	40.7	5.714421E-02
11	40.69	4.761836E-02
12	40.67	2.857029E-02
13	40.66	1.904807E-02
14	40.65	9.525851E-03
15	40.65	9.525851E-03
16	40.65	9.525851E-03
17	40.65	9.525851E-03
18	40.64	0

PIEZOMETER TEST ANALYSIS

For Confined Aquifer (Cooper curve matching method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD3D

TDD #: F05-8702-124

Waste Site No.: IL0141

Static Water Level: 40.6 ft

Initial Head (start of test): 42.82 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Transmissivity of screened zone: 5.146952E-04 sq. ft/sec

Storage Coefficient: .1

TIME	HEAD(h)	(H-h/H-H0)
1.2	42.82	1
1.4	42.75	.9684686
1.6	42.71	.9504502
1.8	42.66	.927928
2	42.61	.9054059
3	42.47	.8423431
4	42.3	.7657657
5	42.14	.6936937
6	42.01	.6351347
7	41.9	.5855867
8	41.97	.617118
9	41.67	.4819816
10	41.6	.4504502
11	41.52	.4144151
12	41.46	.3873875
13	41.39	.3558561
14	41.33	.3288302
15	41.27	.3018025
16	41.22	.2792804
17	41.18	.261262
18	41.14	.2432435
19	41.09	.2207214
20	41.06	.2072084
25	40.93	.1486494
30	40.82	9.909959E-02
35	40.77	7.657743E-02
40	40.71	.0495498

45	40.68	3.603684E-02
50	40.66	2.702763E-02
55	40.64	1.801842E-02
60	40.63	1.351467E-02
65	40.62	9.009211E-03
70	40.62	9.009211E-03
75	40.61	4.505465E-03
80	40.61	4.505465E-03
85	40.61	4.505465E-03
90	40.6	0

PIEZOMETER TEST ANALYSIS

For Unconfined Aquifer (Hvorslev method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD3I

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 0 ft

Initial Head (start of test):-2.58 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 3 ft

Permeability of Aquifer: 2.59882E-07 ft/sec

TIME	HEAD(h)	(H-h/H-H0)
25	-2.58	1
30	-2.57	.996124
35	-2.57	.996124
40	-2.44	.9457364
45	-2.55	.9883721
50	-2.54	.9844961
55	-2.53	.9806201
60	-2.52	.9767442
65	-2.5	.9689923
70	-2.38	.9224807
75	-2.5	.9689923
80	-2.44	.9457364
85	-2.48	.9612404
90	-2.49	.9651163
95	-2.46	.9534884
100	-2.46	.9534884
105	-2.45	.9496124
110	-2.45	.9496124
115	-2.44	.9457364
120	-2.43	.9418605
150	-2.39	.9263567
180	-2.37	.9186046
210	-2.33	.9031008
240	-2.31	.8953489
270	-2.28	.8837209
300	-2.26	.875969
330	-2.24	.8682171
360	-2.22	.8604652
390	-2.2	.8527132
420	-2.19	.8488372

PIEZOMETER TEST ANALYSIS

For Confined Aquifer (Cooper curve matching method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD3D921

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 38.86 ft

Initial Head (start of test): 40.97 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Transmissivity of screened zone: 6.161874E-04 sq. ft/sec

Storage Coefficient: .1

TIME	HEAD(h)	(H-h/H-HO)
.8	40.97	1
1	40.9	.9668248
1.2	40.82	.9289092
1.4	40.83	.9336496
1.6	40.78	.9099514
1.8	40.72	.8815166
2	40.67	.8578185
3	40.49	.7725121
4	40.33	.6966828
5	40.2	.635071
6	40.08	.5781995
7	39.96	.5213262
8	39.87	.4786721
9	39.78	.436018
10	39.69	.3933639
11	39.62	.3601887
12	39.55	.3270135
13	39.49	.2985786
14	39.44	.2748805
15	39.38	.2464457
16	39.34	.2274879
17	39.31	.2132705
18	39.26	.1895723
19	39.22	.1706164
20	39.19	.1563971
25	39.09	.1090045
30	39.04	8.530818E-02
35	38.96	4.739263E-02
40	38.93	.0331752
45	38.9	1.895778E-02
50	38.89	1.421743E-02
55	38.88	9.478888E-03
60	38.87	4.73854E-03
65	38.86	0

450	-2.17	.8410853
480	-2.15	.8333334
510	-2.14	.8294574
540	-2.13	.8255815
570	-2.11	.8178295
600	-2.1	.8139535
720	-2.05	.7945737
840	-2.01	.7790698
960	-1.97	.7635659
1080	-1.94	.7519381
1200	-1.91	.7403101
1320	-1.87	.7248062
1440	-1.85	.7170543
1560	-1.82	.7054264
1680	-1.79	.6937985
1800	-1.77	.6860466
1920	-1.75	.6782946
2040	-1.72	.6666667
2160	-1.7	.6589148
2280	-1.68	.6511628
2400	-1.66	.6434109
2520	-1.64	.635659
2640	-1.62	.627907
2760	-1.61	.624031
2880	-1.59	.6162791
3000	-1.57	.6085272
3120	-1.55	.6007752
3240	-1.54	.5968992
3360	-1.52	.5891473
3480	-1.51	.5852714
3600	-1.49	.5775195
3720	-1.48	.5736435
3840	-1.46	.5658915
3960	-1.45	.5620156
4080	-1.43	.5542636
4200	-1.42	.5503876
4320	-1.41	.5465116
4440	-1.4	.5426357
4560	-1.39	.5387597
4680	-1.37	.5310078
4800	-1.36	.5271318
4920	-1.35	.5232558
5040	-1.34	.5193799
5160	-1.33	.5155039
5280	-1.32	.5116279
5400	-1.31	.507752
5520	-1.3	.503876
5640	-1.29	.5
5760	-1.28	.4961241
5880	-1.27	.4922481
6000	-1.26	.4883721
6600	-1.22	.4728683
7200	-1.18	.4573643
7800	-1.14	.4418605
8400	-1.1	.4263566
9000	-1.07	.4147287
9600	-1.03	.3992248
10200	-1	.3875969
10800	-.97	.375969
11400	-.94	.3643411

12000	-.91	.3527132	
12600	-.89	.3449613	
13200	-.86	.3333334	
13800	-.83	.3217054	
14400	-.81	.3139535	
15000	-.78	.3023256	
15600	-.76	.2945736	
16200	-.74	.2868217	
16800	-.72	.2790698	
17400	-.7	.2713179	
18000	-.67	.2596899	
18600	-.65	.251938	
19200	-.63	.2441861	
19800	-.61	.2364341	
20400	-.59	.2286822	
21000	-.57	.2209302	
21600	-.55	.2131783	
22200	-.53	.2054264	
22800	-.52	.2015504	
23400	-.5	.1937985	
24000	-.48	.1860465	
24600	-.41	.1589147	
25200	-.36	.1395349	
25800	-.32	.124031	
26400	-.28	.1085271	
27000	-.24	9.302326E-02	
27600	-.21	8.139535E-02	
28200	-.19	7.364341E-02	
28800	-.17	6.589148E-02	
29400	-.14	5.426357E-02	
30000	-.12	4.651163E-02	
30600	-.11	4.263566E-02	
31200	-9.000001E-02		3.488372E-02
31800	-.07	2.713179E-02	
32400	-.06	2.325582E-02	
33000	-.05	1.937985E-02	
33600	-.04	1.550388E-02	
34200	-.03	1.162791E-02	
34800	-.02	7.751938E-03	
35400	-.01	3.875969E-03	
36000	0	0	

PIEZOMETER TEST ANALYSIS

For Unconfined Aquifer (Hvorslev method)

Site:

Location: ANTIOCH IL

Test No. HOD3S

TDD #: F05-8702-124

Waste Site No.: IL0141

Static Water Level: 7.99 ft

Initial Head (start of test): 8.59 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Permeability of Aquifer: 8.761638E-04 ft/sec

TIME	HEAD(h)	(H-h/H-HO)
1.4	8.59	1
1.6	8.520001	.8833339
1.8	8.399999	.6833326
2	8.28	.483333
3	8.04	.0833336
4	8	1.666704E-02
5	8	1.666704E-02
6	7.99	0

PIEZOMETER TEST ANALYSIS

For Confined Aquifer (Cooper curve matching method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD4D

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 42.47 ft

Initial Head (start of test): 44.14 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Transmissivity of screened zone: 1.771891E-04 sq. ft/sec

Storage Coefficient: .1

TIME	HEAD(h)	(H-h/H-H0)
.6	44.14	1
.8	44.11	.9820366
1	44.1	.9760473
1.2	44.08	.9640733
1.4	44.06	.9520969
1.6	44.05	.9461076
1.8	44.04	.9401206
2	44.02	.9281442
3	43.98	.9041916
4	43.92	.8682626
5	43.89	.8502992
6	43.85	.8263466
7	43.81	.8023962
8	43.78	.7844305
9	43.74	.7604802
10	43.73	.7544909
11	43.67	.7185618
12	43.64	.7005985
13	43.61	.6826351
14	43.58	.6646718
15	43.55	.6467061
16	43.52	.6287428
17	43.49	.6107794
18	43.46	.5928138
19	43.43	.5748504
20	43.4	.556887
25	43.3	.4970054

30	43.21	.443113
35	43.12	.3892206
40	43.05	.3473046
45	42.98	.3053886
50	42.92	.2694596
55	42.87	.2395199
60	42.82	.2095802
65	42.78	.1856275
70	42.74	.1616771
75	42.71	.1437115
80	42.68	.1257481
85	42.66	.1137718
90	42.64	.1017954
95	42.61	8.383206E-02
100	42.6	7.784275E-02
105	42.58	.0658687
110	42.57	5.987939E-02
115	42.55	4.790306E-02
120	42.54	4.191603E-02
150	42.5	1.796336E-02
180	42.48	5.987026E-03
210	42.47	0

PIEZOMETER TEST ANALYSIS

For Unconfined Aquifer (Hvorslev method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD6I

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 23.02 ft

Initial Head (start of test): 26.62 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 3 ft

Permeability of Aquifer: 2.617339E-07 ft/sec

TIME	HEAD(h)	(H-h/H-H0)
1.6	26.62	1
1.8	26.59	.9916665
2	26.59	.9916665
3	26.58	.9888886
4	26.56	.9833329
5	26.55	.9805551
6	26.55	.9805551
7	26.54	.9777778
8	26.53	.9749999
9	26.53	.9749999
10	26.53	.9749999
11	26.52	.9722221
12	26.52	.9722221
13	26.52	.9722221
14	26.52	.9722221
15	26.52	.9722221
16	26.51	.9694442
17	26.51	.9694442
18	26.51	.9694442
19	26.51	.9694442
20	26.51	.9694442
25	26.5	.9666664
30	26.5	.9666664
35	26.49	.9638886
40	26.49	.9638886
45	26.49	.9638886
50	26.49	.9638886
55	26.48	.9611108
60	26.48	.9611108
65	26.48	.9611108

19	39.71	.3968247
20	39.7	.3809544
25	39.66	.317461
30	39.62	.2539676
35	39.6	.2222209
40	39.57	.1746039
45	39.56	.1587335
50	39.54	.1269868
55	39.53	.1111104
60	39.52	9.524012E-02
65	39.51	7.936373E-02
70	39.5	6.349341E-02
75	39.49	4.762309E-02
80	39.49	4.762309E-02
85	39.48	3.174671E-02
90	39.48	3.174671E-02
95	39.47	1.587638E-02
100	39.47	1.587638E-02
105	39.47	1.587638E-02
110	39.47	1.587638E-02
115	39.47	1.587638E-02
120	39.46	0

PIEZOMETER TEST ANALYSIS

For Confined Aquifer (Cooper curve matching method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD6D

TDD #: F05-8702-124

Waste Site No.: IL0141

Static Water Level: 39.46 ft

Initial Head (start of test): 40.09 ft

adius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Transmissivity of screened zone: 3.033082E-04 sq. ft/sec

Storage Coefficient: .1

TIME	HEAD(h)	(H-h/H-H0)
0	40.09	1
.2	40.09	1
.4	40.07	.9682533
.6	40.07	.9682533
.8	40.05	.9365066
1	40.05	.9365066
1.2	40.04	.9206362
1.4	40.03	.9047599
1.6	40.02	.8888896
1.8	40.01	.8730132
2	40	.8571429
3	39.98	.8253962
4	39.95	.7777791
5	39.93	.7460325
6	39.91	.7142858
7	39.88	.6666686
8	39.86	.634922
9	39.84	.6031753
10	39.82	.5714286
11	39.8	.5396819
12	39.79	.5238116
13	39.77	.4920649
14	39.76	.4761885
15	39.75	.4603181
16	39.74	.4444478
17	39.73	.4285715
18	39.72	.4127011

PIEZOMETER TEST ANALYSIS

For Confined Aquifer (Cooper curve matching method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD5D

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 37.12 ft

Initial Head (start of test): 38.44 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Transmissivity of screened zone: 2.599408E-03 sq. ft/sec

Storage Coefficient: .1

TIME	HEAD(h)	(H-h/H-H0)
.8	38.44	1
1	38.35	.9318181
1.2	38.22	.8333353
1.4	38.19	.810606
1.6	37.97	.6439413
1.8	37.88	.5757593
2	37.78	.5
3	37.5	.2878797
4	37.33	.1590931
5	37.22	7.575933E-02
6	37.17	3.787822E-02
7	37.12	0

PIEZOMETER TEST ANALYSIS

For Unconfined Aquifer (Hvorslev method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD4S

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 11.82 ft

Initial Head (start of test): 12.66 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Permeability of Aquifer: 1.735125E-03 ft/sec

TIME	HEAD(h)	(H-h/H-H0)
.8	12.66	1
1	12.49	.797619
1.2	12.29	.559524
1.4	12.12	.357143
1.6	11.99	.202381
1.8	11.91	.107143
2	11.85	.0357151
3	11.82	0

70	26.48	.9611108
75	26.48	.9611108
80	26.47	.9583329
85	26.47	.9583329
90	26.47	.9583329
95	26.47	.9583329
100	26.47	.9583329
105	26.46	.9555551
110	26.46	.9555551
115	26.46	.9555551
120	26.46	.9555551
150	26.45	.9527778
180	26.45	.9527778
210	26.44	.9499999
240	26.43	.9472221
270	26.42	.9444442
300	26.42	.9444442
330	26.41	.9416664
360	26.41	.9416664
390	26.4	.9388886
420	26.39	.9361108
450	26.39	.9361108
480	26.38	.9333329
510	26.38	.9333329
540	26.37	.9305556
570	26.37	.9305556
600	26.36	.9277777
720	26.35	.9249999
840	26.33	.9194442
960	26.31	.9138885
1080	26.29	.9083334
1200	26.28	.9055555
1320	26.26	.8999999
1440	26.24	.8944442
1560	26.23	.8916663
1680	26.22	.8888885
1800	26.2	.8833333
1920	26.19	.8805555
2040	26.17	.8749998
2160	26.16	.8722219
2280	26.15	.8694441
2400	26.14	.8666662
2520	26.12	.8611111
2640	26.11	.8583333
2760	26.1	.8555554
2880	26.09	.8527776
3000	26.08	.8499998
3120	26.07	.8472219
3240	26.05	.8416662
3360	26.04	.8388889
3480	26.03	.8361111
3600	26.02	.8333333
3720	26.01	.8305554
3840	26	.8277776
3960	25.99	.8249997
4080	25.98	.8222219
4200	25.97	.8194441
4320	25.96	.8166662
4440	25.96	.8166662

PIEZOMETER TEST ANALYSIS

For Unconfined Aquifer (Hvorslev method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD6S

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 7.27 ft

Initial Head (start of test): 8.04 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Permeability of Aquifer: 2.298834E-03 ft/sec

TIME	HEAD(h)	(H-h/H-H0)
.6	8.04	1
.8	8	.948052
1	7.8	.688312
1.2	7.59	.4155847
1.4	7.38	.1428573
1.6	7.2	-9.090932E-02
1.8	7.05	-.285714

PIEZOMETER TEST ANALYSIS

For Unconfined Aquifer (Hvorslev method)

Site: HOD LANDFILL

Location: ANTIOCH IL

Test No. HOD7S

TDD #: F05-8702-124

Waste Site No.: FIL0141

Static Water Level: 4.17 ft

Initial Head (start of test): 5.6 ft

Radius of Casing: .083 ft

Radius of Screen: .083 ft

Length of Screen: 5 ft

Permeability of Aquifer: 1.896251E-04 ft/sec

TIME	HEAD(h)	(H-h/H-HO)
1	5.6	1
1.2	5.59	.9930072
1.4	5.52	.944056
1.6	5.45	.8951048
1.8	5.39	.8531468
2	5.34	.818182
3	5.18	.7062936
4	5.04	.6083916
5	4.93	.5314684
6	4.85	.4755245
7	4.78	.4265736
8	4.72	.3846153
9	4.66	.3426572
10	4.61	.3076924
11	4.57	.2797204
12	4.54	.2587412
13	4.51	.2377624
14	4.48	.2167832
15	4.46	.2027972
16	4.44	.1888112
17	4.42	.1748252
18	4.4	.1608392
19	4.39	.153846
20	4.37	.13986
25	4.33	.111888
30	4.3	9.090918E-02
35	4.28	7.692318E-02
40	4.26	6.293718E-02
45	4.25	5.594401E-02
50	4.24	4.895084E-02

55	4.23	4.195801E-02
60	4.23	4.195801E-02
65	4.22	3.496484E-02
70	4.22	3.496484E-02
75	4.21	2.797201E-02
80	4.21	2.797201E-02
85	4.2	2.097884E-02
90	4.2	2.097884E-02
95	4.2	2.097884E-02
100	4.2	2.097884E-02
105	4.2	2.097884E-02
110	4.2	2.097884E-02
115	4.19	.013986
120	4.19	.013986
150	4.19	.013986
180	4.18	6.992835E-03
210	4.18	6.992835E-03
240	4.17	0

F

APPENDIX F

PRELIMINARY AND PRIMARY PUMP TEST DATA
AND
HYDROGEOLOGICAL CALCULATIONS

PRELIMINARY PUMP TEST DATA

Overnight Test

Input 1 = 3s
" 2 = 3i
" 3 = 3d
" 4 = 4d

READY OVERNIGHT

SE2000
Environmental Logger
09/24 19:36

Unit# 0000110 Test# 0

INPUT 1: Level (F) TOC
3s

Reference	0.000
Scale factor	20.220
Offset	0.000
SG	1.000

Step 0 09/23 18:00:02

Linear

Elapsed Time	Value
0.0000	-14.536
30.0000	-14.542
60.0000	-14.536
90.0000	-14.536
120.000	-14.536
150.000	-14.542
180.000	-14.536
210.000	-14.542
240.000	-14.536
270.000	-14.536
300.000	-14.542
330.000	-14.542
360.000	-14.542
390.000	-14.549
420.000	-14.555
450.000	-14.561
480.000	-14.568
510.000	-14.574
540.000	-14.580
570.000	-14.593
600.000	-14.593
630.000	-14.606
660.000	-14.600
690.000	-14.606
720.000	-14.606
750.000	-14.606
780.000	-14.619

END

SE2000
Environmental Logger
09/24 19:38

Unit# 0000110 Test# 0

INPUT 2: Level (F) TOC
3i

Reference	0.000
Scale factor	10.080
Offset	0.000
SG	1.000

Step 0 09/23 18:00:02

Elapsed Time	Value
0.0000	-9.023
30.0000	-9.036
60.0000	-9.036
90.0000	-9.039
120.000	-9.039
150.000	-9.039
180.000	-9.039
210.000	-9.039
240.000	-9.036
270.000	-9.036
300.000	-9.032
330.000	-9.032
360.000	-9.029
390.000	-9.029
420.000	-9.029
450.000	-9.026
480.000	-9.026
510.000	-9.023
540.000	-9.023
570.000	-9.023
600.000	-9.020
630.000	-9.020
660.000	-9.017
690.000	-9.017
720.000	-9.013
750.000	-9.010
780.000	-9.010

END

SE2000
Environmental Logger
09/24 19:40

Unit# 0000110 Test# 0

INPUT 3: Level (F) TOC
3d

Reference	0.000
Scale factor	10.050
Offset	0.000
SG	1.000

Step 0 09/23 18:00:02

Elapsed Time	Value
0.0000	-18.570
30.0000	-18.573
60.0000	-18.563
90.0000	-18.557
120.000	-18.548
150.000	-18.541
180.000	-18.532
210.000	-18.525
240.000	-18.519
270.000	-18.513
300.000	-18.506
330.000	-18.500
360.000	-18.497
390.000	-18.494
420.000	-18.490
450.000	-18.494
480.000	-18.494
510.000	-18.494
540.000	-18.490
570.000	-18.494
600.000	-18.494
630.000	-18.538
660.000	-18.747
690.000	-18.931
720.000	-19.080
750.000	-19.204
780.000	-18.979

END

SE2000
Environmental Logger
09/24 19:42

Unit# 0000110 Test# 0

INPUT 4: Level (F) TOC
4d

Reference	0.000
Scale factor	10.100
Offset	0.000
SG	1.000

Step 0 09/23 18:00:02

Elapsed Time	Value
0.0000	-13.920
30.0000	-13.923
60.0000	-13.914
90.0000	-13.904
120.000	-13.901
150.000	-13.891
180.000	-13.882
210.000	-13.875
240.000	-13.869
270.000	-13.863
300.000	-13.859
330.000	-13.850
360.000	-13.850
390.000	-13.847
420.000	-13.847
450.000	-13.847
480.000	-13.843
510.000	-13.847
540.000	-13.847
570.000	-13.850
600.000	-13.850
630.000	-13.926
660.000	-14.149
690.000	-14.321
720.000	-14.458
750.000	-14.570
780.000	-13.942

END

Drawdown
Test
3s

0.000
14.619

SE2000
Environmental Logger
09/24 19:44
Drawdown
Unit# 0000110 Test# 1
3s
INPUT 1: Level (F) TOC

Reference	0.000
Scale factor	20.220
Offset	0.000
NG	1.000

Step 0 09/24 07:24:34

Elapsed Time	Value
0.000	14.619

0.0000	-14.625
0.0083	-14.619
0.0166	-14.625
0.0250	-14.619
0.0333	-14.619
0.0416	-14.619
0.0500	-14.619
0.0583	-14.619
0.0666	-14.619
0.0750	-14.619
0.0833	-14.619
0.1000	-14.619
0.1166	-14.619
0.1333	-14.619
0.1500	-14.619
0.1666	-14.619
0.1833	-14.619
0.2000	-14.619
0.2166	-14.619
0.2333	-14.619
0.2500	-14.619
0.2666	-14.619
0.2833	-14.619
0.3000	-14.619
0.3166	-14.619
0.3333	-14.619
0.4166	-14.619
0.5000	-14.619
0.5833	-14.619
0.6666	-14.619
0.7500	-14.619
0.8333	-14.619
0.9166	-14.625
1.0000	-14.619
1.0833	-14.619
1.1666	-14.619
1.2500	-14.619
1.3333	-14.619
1.4166	-14.619
1.5000	-14.619
1.5833	-14.619
1.6666	-14.619
1.7500	-14.625
1.8333	-14.619
1.9166	-14.619
2.0000	-14.625
2.5000	-14.631
3.0000	-14.619
3.5000	-14.619
4.0000	-14.619
4.5000	-14.619
5.0000	-14.619
5.5000	-14.625
6.0000	-14.619
6.5000	-14.619
7.0000	-14.619
7.5000	-14.619
8.0000	-14.619
8.5000	-14.619
9.0000	-14.625
9.5000	-14.619
10.0000	-14.625
12.0000	-14.619
14.0000	-14.625
16.0000	-14.619
18.0000	-14.619
20.0000	-14.619
22.0000	-14.619
24.0000	-14.619
26.0000	-14.619
28.0000	-14.619
30.0000	-14.619
32.0000	-14.619
34.0000	-14.619
36.0000	-14.612
38.0000	-14.619
40.0000	-14.612
42.0000	-14.612
44.0000	-14.612
46.0000	-14.612
48.0000	-14.612
50.0000	-14.612
52.0000	-14.612
54.0000	-14.612
56.0000	-14.619
58.0000	-14.612
60.0000	-14.612
62.0000	-14.612
64.0000	-14.612
66.0000	-14.612
68.0000	-14.612
70.0000	-14.612
72.0000	-14.612
74.0000	-14.612
76.0000	-14.612
78.0000	-14.612
80.0000	-14.619
82.0000	-14.612
84.0000	-14.612
86.0000	-14.612
88.0000	-14.612
90.0000	-14.612
92.0000	-14.612
94.0000	-14.606
96.0000	-14.612
98.0000	-14.612
100.000	-14.612
110.000	-14.612
120.000	-14.619
130.000	-14.606
140.000	-14.612
150.000	-14.606
160.000	-14.612
170.000	-14.612
180.000	-14.600
190.000	-14.600
200.000	-14.619
210.000	-14.612
220.000	-14.606
230.000	-14.612
240.000	-14.606
250.000	-14.625
260.000	-14.606
270.000	-14.644
280.000	-14.612
290.000	-14.612
300.000	-14.638
310.000	-14.619
320.000	-14.619
330.000	-14.619
340.000	-14.625
350.000	-14.612
360.000	-14.625
370.000	-14.619
380.000	-14.625
390.000	-14.631
400.000	-14.631
410.000	-14.638
420.000	-14.631
430.000	-14.631
440.000	-14.631

END

$\Delta h = 0.006$

Drawdown Test

3i

SE2000
Environmental Logger
09/24 19:49

Unit# 0000110 Test# 1
3i
INPUT 2: Level (F) TOC

Reference	0.000
Scale factor	10.080
Offset	0.000
SG	1.000

Step 0 09/24 07:24:34

0.000 9.010

Elapsed Time	Value		
0.0000	-9.058		
0.0083	-9.058		
0.0166	-9.055		
0.0250	-9.055		
0.0333	-9.055		
0.0416	-9.055		
0.0500	-9.051		
0.0583	-9.055	46.0000	-9.115
0.0666	-9.055	48.0000	-9.115
0.0750	-9.055	50.0000	-9.118
0.0833	-9.051	52.0000	-9.118
0.1000	-9.055	54.0000	-9.121
0.1166	-9.055	56.0000	-9.121
0.1333	-9.055	58.0000	-9.121
0.1500	-9.055	60.0000	-9.125
0.1666	-9.055	62.0000	-9.125
0.1833	-9.055	64.0000	-9.125
0.2000	-9.055	66.0000	-9.128
0.2166	-9.055	68.0000	-9.128
0.2333	-9.051	70.0000	-9.128
0.2500	-9.055	72.0000	-9.128
0.2666	-9.055	74.0000	-9.131
0.2833	-9.055	76.0000	-9.131
0.3000	-9.051	78.0000	-9.134
0.3166	-9.055	80.0000	-9.134
0.3333	-9.055	82.0000	-9.131
0.4166	-9.061	84.0000	-9.134
0.5000	-9.061	86.0000	-9.134
0.5833	-9.061	88.0000	-9.134
0.6666	-9.061	90.0000	-9.134
0.7500	-9.058	92.0000	-9.134
0.8333	-9.061	94.0000	-9.134
0.9166	-9.061	96.0000	-9.137
1.0000	-9.061	98.0000	-9.134
1.0833	-9.058	100.000	-9.134
1.1666	-9.061	110.000	-9.134
1.2500	-9.061	120.000	-9.137
1.3333	-9.061	130.000	-9.134
1.4166	-9.061	140.000	-9.134
1.5000	-9.061	150.000	-9.134
1.5833	-9.061	160.000	-9.134
1.6666	-9.061	170.000	-9.134
1.7500	-9.061	180.000	-9.131
1.8333	-9.061	190.000	-9.128
1.9166	-9.061	200.000	-9.137
2.0000	-9.064	210.000	-9.131
2.5000	-9.064	220.000	-9.134
3.0000	-9.064	230.000	-9.131
3.5000	-9.064	240.000	-9.128
4.0000	-9.064	250.000	-9.134
4.5000	-9.067	260.000	-9.125
5.0000	-9.067	270.000	-9.137
5.5000	-9.067	280.000	-9.128
6.0000	-9.071	290.000	-9.125
6.5000	-9.071	300.000	-9.131
7.0000	-9.071	310.000	-9.125
7.5000	-9.071	320.000	-9.121
8.0000	-9.074	330.000	-9.121
8.5000	-9.074	340.000	-9.128
9.0000	-9.077	350.000	-9.121
9.5000	-9.077	360.000	-9.121
10.0000	-9.077	370.000	-9.115
12.0000	-9.080	380.000	-9.118
14.0000	-9.083	390.000	-9.121
16.0000	-9.086	400.000	-9.112
18.0000	-9.090	410.000	-9.112
20.0000	-9.090	420.000	-9.109
22.0000	-9.093	430.000	-9.102
24.0000	-9.096	440.000	-9.109
26.0000	-9.099	END	
28.0000	-9.099		
30.0000	-9.102		
32.0000	-9.106		
34.0000	-9.106		
36.0000	-9.109		
38.0000	-9.109		
40.0000	-9.109		
42.0000	-9.112		
44.0000	-9.115		

7.3 hrs

$\Delta H = 0.0$

Drawdown Test

3d

SE2000
Environmental Logger
[illegible] 09/24 [illegible]
[illegible]
[illegible]
INPUT [illegible] Level [illegible] TOC

Reference	0.000
Scale factor	10.050
Offset	0.000
SG	1.000

Step 0 09/24 07:24:34

0.000
18.979

Elapsed Time	Value	
0.0000	-17.844	
0.0083	-17.844	
0.0166	-17.841	.003
0.0250	-17.841	
0.0333	-17.841	
0.0416	-17.841	
0.0500	-17.844	
0.0583	-17.841	
0.0666	-17.841	
0.0750	-17.841	
0.0833	-17.841	
0.1000	-17.841	
0.1166	-17.841	
0.1333	-17.841	
0.1500	-17.841	
0.1666	-17.841	.003
0.1833	-17.838	.006
0.2000	-17.838	
0.2166	-17.838	
0.2333	-17.838	
0.2500	-17.838	
0.2666	-17.838	
0.2833	[illegible]	
0.3000	[illegible]	.006
0.3166	[illegible]	.01
0.3333	[illegible]	
0.4166	[illegible]	
0.5000	-17.834	.01
0.5833	-17.831	.013
0.6666	-17.828	.016
0.7500	-17.828	.016
0.8333	-17.825	.019
0.9166	-17.825	.019
1.0000	-17.822	.022
1.0833	-17.819	
1.1666	-17.819	
1.2500	-17.815	
1.3333	-17.815	
1.4166	-17.812	
1.5000	-17.812	
1.5833	-17.809	
1.6666	-17.809	
1.7500	-17.806	
1.8333	-17.806	
1.9166	-17.803	
2.0000	-17.800	
2.5000	-17.793	
3.0000	-17.784	
3.5000	-17.768	
4.0000	-17.762	
4.5000	-17.752	
5.0000	-17.743	
5.5000	-17.733	
6.0000	-17.724	
6.5000	-17.714	
7.0000	-17.708	
7.5000	-17.698	
8.0000	-17.692	
8.5000	-17.686	
9.0000	-17.673	
9.5000	-17.670	
10.0000	-17.660	
12.0000	-17.628	
14.0000	-17.603	
16.0000	-17.578	
18.0000	-17.552	
20.0000	-17.530	
22.0000	-17.508	
24.0000	-17.489	
26.0000	-17.467	
28.0000	-17.448	
30.0000	-17.429	
32.0000	-17.413	
34.0000	-17.397	
36.0000	-17.381	
38.0000	-17.365	
40.0000	-17.353	
42.0000	-17.334	
44.0000	-17.321	
46.0000	-17.308	
48.0000	-17.296	
50.0000	-17.286	
52.0000	-17.274	
54.0000	-17.258	
56.0000	-17.251	
58.0000	-17.242	
60.0000	-17.229	
62.0000	-17.217	
64.0000	-17.210	
66.0000	-17.201	
68.0000	-17.191	
70.0000	-17.182	
72.0000	-17.175	
74.0000	-17.166	
76.0000	-17.159	
78.0000	-17.147	
80.0000	-17.144	
82.0000	-17.134	
84.0000	-17.128	
86.0000	-17.121	
88.0000	-17.112	
90.0000	-17.106	
92.0000	-17.099	
94.0000	-17.093	
96.0000	-17.087	
98.0000	-17.080	
100.000	-17.071	
110.000	-17.042	
120.000	-17.020	
130.000	-16.992	
140.000	-16.973	
150.000	-16.957	
160.000	-16.938	
170.000	-16.925	
180.000	-16.900	
190.000	-16.865	
200.000	-16.805	
210.000	-16.719	
220.000	-16.637	
230.000	-16.561	
240.000	-16.488	
250.000	-16.427	
260.000	-16.358	
270.000	-16.317	
280.000	-16.250	
290.000	-16.202	
300.000	-16.168	
310.000	-16.117	
320.000	-16.072	
330.000	-16.041	
340.000	-16.006	
350.000	-15.965	
360.000	-15.933	
370.000	-15.895	
380.000	-15.870	
390.000	-15.876	
400.000	-15.917	
410.000	-15.962	
420.000	-16.000	
430.000	-16.031	
440.000	-16.066	

END

Δt = 7.3 hrs

Δh = 1.778 ft. = s

Q = 525 gpm

r =

Drawdown Test

4d

SE2000
Environmental Logger
09/24 20:00

Unit# 0000110 Test# 1

INPUT 4: Level (F) TOC

Reference	0.000
Scale factor	10.100
Offset	0.000
SG	1.000

Step 0 09/24 07:24:34

Elapsed Time	Value
0.0000	0.130
0.0083	0.130
0.0166	0.130
0.0250	0.130
0.0333	0.130
0.0416	0.130
0.0500	0.130
0.0583	0.130
0.0666	0.130
0.0750	0.130
0.0833	0.130
0.1000	0.133
0.1166	0.130
0.1333	0.133
0.1500	0.133
0.1666	0.133
0.1833	0.133
0.2000	0.133
0.2166	0.133
0.2333	0.133
0.2500	0.133
0.2666	0.133
0.2833	0.133
0.3000	0.133
0.3166	0.133
0.3333	0.133
0.4166	0.136
0.5000	0.136
0.5833	0.140
0.6666	0.140
0.7500	0.140
0.8333	0.140
0.9166	0.143
1.0000	0.143
1.0833	0.146
1.1666	0.146
1.2500	0.149
1.3333	0.146
1.4166	0.149
1.5000	0.149
1.5833	0.152
1.6666	0.152
1.7500	0.152
1.8333	0.152
1.9166	0.156
2.0000	0.156
2.5000	0.162
3.0000	0.168
3.5000	0.175
4.0000	0.181
4.5000	0.184
5.0000	0.191
5.5000	0.197
6.0000	0.203
6.5000	0.207
7.0000	0.213
7.5000	0.219
8.0000	0.222
8.5000	0.229
9.0000	0.235
9.5000	0.238
10.0000	0.245
12.0000	0.261
14.0000	0.280
16.0000	0.296
18.0000	0.315
20.0000	0.331
22.0000	0.343
24.0000	0.359
26.0000	0.372
28.0000	0.385
30.0000	0.398
32.0000	0.417
34.0000	0.423
36.0000	0.436
38.0000	0.445
40.0000	0.455
42.0000	0.468
44.0000	0.477
46.0000	0.484
48.0000	0.496
50.0000	0.506
52.0000	0.515
54.0000	0.525
56.0000	0.528
58.0000	0.538
60.0000	0.547
62.0000	0.554
64.0000	0.560
66.0000	0.570
68.0000	0.576
70.0000	0.582
72.0000	0.589
74.0000	0.595
76.0000	0.601
78.0000	0.611
80.0000	0.617
82.0000	0.624
84.0000	0.627
86.0000	0.636
88.0000	0.640
90.0000	0.646
92.0000	0.649
94.0000	0.656
96.0000	0.659
98.0000	0.665
100.000	0.671
110.000	0.697
120.000	0.723
130.000	0.745
140.000	0.752
150.000	0.777
160.000	0.796
170.000	0.789
180.000	0.820
190.000	0.872
200.000	0.939
210.000	1.060
220.000	1.136
230.000	1.203
240.000	1.270
250.000	1.277
260.000	1.417
270.000	1.375
280.000	1.490
290.000	1.525
300.000	1.515
310.000	1.621
320.000	1.652
330.000	1.687
340.000	1.716
350.000	1.751
360.000	1.761
370.000	1.831
380.000	1.837
390.000	1.737
400.000	1.783
410.000	1.691
420.000	1.659
430.000	1.621
440.000	1.586

END

$\Delta h = 1.580$

Recovery Test

3s

SE2000
Environmental Logger
09/24 20:06
Recovery
Unit# 0000110 Test# 2
3s
INPUT 1: Level (F) TOC

Reference	0.000
Scale factor	20.220
Offset	0.000
SG	1.000

Step 0 09/24 15:24:18

Elapsed Time	Value
0.0000	0.000
0.0083	0.000
0.0166	0.000
0.0250	0.000
0.0333	0.000
0.0416	0.006
0.0500	0.006
0.0583	0.006
0.0666	0.006
0.0750	0.006
0.0833	0.006
0.1000	0.006
0.1166	0.006
0.1333	0.006
0.1500	0.012
0.1666	0.012
0.1833	0.012
0.2000	0.012
0.2166	0.012
0.2333	0.012
0.2500	0.012
0.2666	0.012
0.2833	0.012
0.3000	0.012
0.3166	0.012
0.3333	0.012
0.4166	0.012
0.5000	0.006
0.5833	0.006
0.6666	0.006
0.7500	0.006
0.8333	0.006
0.9166	0.006
1.0000	0.000
1.0833	0.000
1.1666	0.000
1.2500	0.000
1.3333	0.000
1.4166	0.006
1.5000	0.000
1.5833	0.006
1.6666	0.000
1.7500	0.006
1.8333	0.006
1.9166	0.000
2.0000	0.000
2.5000	0.000
3.0000	0.006
3.5000	0.012
4.0000	0.019
4.5000	0.012
5.0000	0.012
5.5000	0.006
6.0000	0.006
6.5000	0.000
7.0000	-0.006
7.5000	0.000
8.0000	0.006
8.5000	0.006
9.0000	0.012
9.5000	0.019
10.0000	0.019
12.0000	0.012
14.0000	0.006
16.0000	0.000
18.0000	0.000
20.0000	0.012
22.0000	0.006
24.0000	0.006
26.0000	0.000
28.0000	0.000
30.0000	0.006
32.0000	0.006
34.0000	-0.006
36.0000	0.006
38.0000	0.006
40.0000	0.006
42.0000	0.006
44.0000	0.000
46.0000	0.000
48.0000	0.006
50.0000	0.000
52.0000	0.006
54.0000	-0.006
56.0000	0.000
58.0000	-0.006
60.0000	-0.006
62.0000	-0.025
64.0000	-0.019
66.0000	-0.012
68.0000	-0.012
70.0000	-0.012
72.0000	-0.019
74.0000	-0.012
76.0000	-0.012
78.0000	-0.012
80.0000	-0.012
82.0000	-0.019
84.0000	-0.012
86.0000	-0.012
88.0000	-0.012
90.0000	-0.012
92.0000	-0.012
94.0000	-0.012
96.0000	-0.012
98.0000	-0.012
100.000	-0.012
110.000	-0.012
120.000	-0.012
130.000	-0.012
140.000	-0.012
150.000	* 14.632
160.000	14.632
170.000	14.632 end
180.000	14.632
190.000	14.632
200.000	14.632
210.000	14.632

END

*Transducer pulled after 140 min.

Recovery Test

3i

SE2000
Environmental Logger
09/24 20:10

Unit# 0000110 Test# 2

INPUT 3: Level (F) TOC

Reference	0.000
Scale factor	10.080
Offset	0.000
SG	1.000

Step 0 09/24 15:24:18

Elapsed Time	Value
0.0000	0.000
0.0083	0.003
0.0166	0.003
0.0250	0.006
0.0333	0.006
0.0416	0.006
0.0500	0.006
0.0583	0.006
0.0666	0.006
0.0750	0.006
0.0833	0.006
0.1000	0.006
0.1166	0.003
0.1333	0.006
0.1500	0.006
0.1666	0.006
0.1833	0.003
0.2000	0.006
0.2166	0.003
0.2333	0.006
0.2500	0.006
0.2666	0.006
0.2833	0.006
0.3000	0.006
0.3166	0.006
0.3333	0.006
0.4166	0.003
0.5000	0.000
0.5833	0.000
0.6666	0.000
0.7500	0.000
0.8333	0.003
0.9166	0.003
1.0000	0.003
1.0833	0.000
1.1666	0.000
1.2500	0.003
1.3333	0.003
1.4166	0.003
1.5000	0.000
1.5833	0.003
1.6666	0.003
1.7500	0.003
1.8333	0.006
1.9166	0.003
2.0000	0.003
2.5000	0.000
3.0000	0.003
3.5000	0.006
4.0000	0.009
4.5000	0.009
5.0000	0.009
5.5000	0.009
6.0000	0.012
6.5000	0.000
7.0000	-0.006
7.5000	0.012
8.0000	0.025
8.5000	0.038
9.0000	0.050
9.5000	0.054
10.0000	0.060
12.0000	0.095
14.0000	0.108
16.0000	0.120
18.0000	0.130
20.0000	0.139
22.0000	0.133
24.0000	0.133
26.0000	0.133
28.0000	0.130
30.0000	0.133
32.0000	0.133
34.0000	0.123
36.0000	0.136
38.0000	0.133
40.0000	0.136
42.0000	0.136
44.0000	0.133
46.0000	0.130
48.0000	0.139
50.0000	0.130
52.0000	0.139
54.0000	0.171
56.0000	0.200
58.0000	0.203
60.0000	0.209
62.0000	0.206
64.0000	0.212
66.0000	0.219
68.0000	0.225
70.0000	0.235
72.0000	0.241
74.0000	0.251
76.0000	0.263
78.0000	0.266
80.0000	0.273
82.0000	0.276
84.0000	0.292
86.0000	0.295
88.0000	0.305
90.0000	0.311
92.0000	0.317
94.0000	0.321
96.0000	0.327
98.0000	0.333
100.000	0.336
110.000	0.365
120.000	0.364
130.000	0.406
140.000	0.448
150.000	0.419
160.000	0.435
170.000	0.454
180.000	0.467
190.000	0.479
200.000	0.492
210.000	* ~~0.163~~ end

END

*Transducer pulled after 200 min.

Recovery
Test
3d

SE2000
Environmental Logger
09/24 20:15
Recovery
Unit# 0000110 Test# 2
3d
INPUT 3: Level (F) TOC

Reference	0.000
Scale factor	10.050
Offset	0.000
SG	1.000

Step 0 09/24 15:24:18

Elapsed Time	Value
0.0000	-0.025
0.0083	-0.025
0.0166	-0.025
0.0250	-0.025
0.0333	-0.022
0.0416	-0.022
0.0500	-0.019
0.0583	-0.019
0.0666	-0.015
0.0750	-0.015
0.0833	-0.015
0.1000	-0.012
0.1166	-0.009
0.1333	-0.006
0.1500	-0.003
0.1666	0.000
0.1833	0.003
0.2000	0.006
0.2166	0.009
0.2333	0.009
0.2500	0.012
0.2666	0.015
0.2833	0.019
0.3000	0.022
0.3166	0.025
0.3333	0.022
0.4166	0.028
0.5000	0.025
0.5833	0.025
0.6666	0.019
0.7500	0.015
0.8333	0.012
0.9166	0.006
1.0000	-0.003
1.0833	-0.009
1.1666	-0.015
1.2500	-0.022
1.3333	-0.025
1.4166	-0.034
~~1.5000~~ 1.5000	-0.041
1.5833	-0.047
1.6666	-0.057
1.7500	-0.060
1.8333	-0.063
1.9166	-0.076
2.0000	-0.082
2.5000	-0.126
3.0000	-0.171
3.5000	-0.212
4.0000	-0.253
4.5000	-0.301
5.0000	-0.342
5.5000	-0.389
6.0000	-0.430
6.5000	-0.481
7.0000	-0.529
7.5000	-0.557
8.0000	-0.592
8.5000	-0.627
9.0000	-0.662
9.5000	-0.700
10.0000	-0.735
12.0000	-0.852
14.0000	-0.960
16.0000	-1.052
18.0000	-1.134
20.0000	-1.197
22.0000	-1.264
24.0000	-1.321
26.0000	-1.375
28.0000	-1.422
30.0000	-1.457
32.0000	-1.495
34.0000	-1.536
36.0000	-1.552
38.0000	-1.584
40.0000	-1.609
42.0000	-1.632
44.0000	-1.654
46.0000	-1.673
48.0000	-1.692
50.0000	-1.708
52.0000	-1.723
54.0000	-1.746
56.0000	-1.755
58.0000	-1.777
60.0000	-1.787
62.0000	-1.809
64.0000	-1.815
66.0000	-1.829
68.0000	-1.838
70.0000	-1.844
72.0000	-1.860
74.0000	-1.869
76.0000	-1.872
78.0000	-1.885
80.0000	-1.891
82.0000	-1.907
84.0000	-1.907
86.0000	-1.917
88.0000	-1.920
90.0000	-1.926
92.0000	-1.933
94.0000	-1.942
96.0000	-1.948
98.0000	-1.955
100.000	-1.961
110.000	-1.980
120.000	-2.002
130.000	-2.009
140.000	-2.034
150.000	-2.047
160.000	-2.066
170.000	-2.072
180.000	-2.085
190.000	-2.094
200.000	-2.101
210.000	-2.173

END

Recovery
Test
4d

SE2000
Environmental Logger
09/24 20:19

Unit# 0000110 Test# 2

INPUT 4: Level (F) TOC

Reference	0.000
Scale factor	10.100
Offset	0.000
DS	1.000

Step 0 09/24 15:24:18

Elapsed Time	Value	drawdown
0.0000	-0.035	0.000
0.0083	-0.035	
0.0166	-0.038	
0.0250	-0.038	
0.0333	-0.038	
0.0416	-0.035	
0.0500	-0.035	
0.0583	-0.035	
0.0666	-0.035	
0.0750	-0.038	
0.0833	-0.038	
0.1000	-0.038	
0.1166	-0.038	
0.1333	-0.038	
0.1500	-0.041	
0.1666	-0.038	
0.1833	-0.041	
0.2000	-0.041	
0.2166	-0.041	
0.2333	-0.041	
0.2500	-0.047	
0.2666	-0.050	
0.2833	-0.054	
0.3000	-0.054	
0.3166	-0.054	
0.3333	-0.057	
0.4166	-0.073	
0.5000	-0.089	.054
0.5833	-0.108	
0.6666	-0.130	
0.7500	-0.149	
0.8333	-0.168	
0.9166	-0.191	
1.0000	-0.207	.172
1.0833	-0.232	
1.1666	-0.251	
1.2500	-0.270	.235
1.3333	-0.289	
1.4166	-0.308	
1.5000	-0.328	.293
1.5833	-0.347	
1.6666	-0.363	
1.7500	-0.375	
1.8333	-0.391	
1.9166	-0.404	
2.0000	-0.420	.385
2.5000	-0.509	.474
3.0000	-0.560	
3.5000	-0.600	.565
4.0000	-0.652	
4.5000	-0.697	.662
5.0000	-0.729	
5.5000	-0.761	
6.0000	-0.793	.758
6.5000	-0.824	
7.0000	-0.875	.840
7.5000	-0.891	
8.0000	-0.904	
8.5000	-0.920	.885
9.0000	-0.939	
9.5000	-0.958	.923
10.0000	-0.974	
12.0000	-1.035	1.000
14.0000	-1.089	1.054
16.0000	-1.127	1.092
18.0000	-1.168	1.133
20.0000	-1.194	1.159
22.0000	-1.219	1.184
24.0000	-1.248	1.213
26.0000	-1.277	
28.0000	-1.296	1.261
30.0000	-1.308	
32.0000	-1.331	1.296
34.0000	-1.350	1.315
36.0000	-1.359	
38.0000	-1.372	
40.0000	-1.385	1.350
42.0000	-1.401	
44.0000	-1.410	
46.0000	-1.426	
48.0000	-1.436	
50.0000	-1.449	1.414
52.0000	-1.458	
54.0000	-1.474	
56.0000	-1.477	
58.0000	-1.500	
60.0000	-1.506	1.471
62.0000	-1.528	
64.0000	-1.528	
66.0000	-1.531	
68.0000	-1.522	
70.0000	-1.528	1.493
72.0000	-1.544	
74.0000	-1.547	
76.0000	-1.551	
78.0000	-1.554	
80.0000	-1.560	1.525
82.0000	-1.573	
84.0000	-1.576	
86.0000	-1.575	
88.0000	-1.582	
90.0000	-1.589	1.554
92.0000	-1.592	
94.0000	-1.596	
96.0000	-1.601	
98.0000	-1.605	
100.000	-1.609	1.573
110.000	-1.621	
120.000	-1.633	1.598
130.000	-1.652	
140.000	-1.659	
150.000	-1.675	
160.000	-1.684	
170.000	-1.691	1.656
180.000 *	11.892	
190.000	11.892	
200.000	11.892	
210.000	11.892	

* Transducer pulled after 170 min.

$\Delta h = 1.656$ (+)

SE1000B
Environmental Logger
IS 09/25 11:22
pre pump test
Unit# 00376 Test# 0

INPUT 1: Level (F) TOC

Reference 0.00
Scale factor 5.05
Offset 0.00

Step# 0 09/21 17:35

Time	Elapsed Time	Value
	0.0000	0.00
1835	60.0000	0.00
1935	120.000	0.00
2035	180.000	- 0.00
9-21	240.000	- 0.00
2235	300.000	- 0.01
	360.000	- 0.01
2435	420.000	- 0.02
	480.000	- 0.03
0235	540.000	- 0.03
	600.000	- 0.04
0435	660.000	- 0.04
	720.000	- 0.04
9-22 0635	780.000	- 0.04
	840.000	- 0.05
0835	900.000	- 0.05
	960.000	- 0.05
1035	1020.00	- 0.04
	1080.00	- 0.04
1235	1140.00	- 0.03
	1200.00	- 0.03
1435	1260.00	- 0.02
	1320.00	- 0.01
1635	1380.00	- 0.01
	1440.00	- 0.00
1835	1500.00	- 0.00
	1560.00	- 0.00
2035	1620.00	0.00
	1680.00	0.00
2235	1740.00	- 0.00
	1800.00	- 0.00
2435	1860.00	- 0.00
	1920.00	- 0.00
0235	1980.00	- 0.01
	2040.00	- 0.01
0435	2100.00	- 0.01
9-23	2160.00	- 0.01
0635	2220.00	- 0.01
	2280.00	- 0.01
0835	2340.00	- 0.02
	2400.00	- 0.02
1035	2460.00	- 0.01
	2520.00	- 0.00
1235	2580.00	0.00
	2640.00	0.00
1435	2700.00	0.01
	2760.00	0.02
1635	2820.00	0.03
	2880.00	0.03
1835	2940.00	0.04
	3000.00	0.05
2035	3060.00	0.05
	3120.00	0.05
2235	3180.00	0.05
	3240.00	0.05
2435	3300.00	0.04
	3360.00	0.04
0235	3420.00	0.05
9-24	3480.00	0.04
0435	3540.00	0.04
	3600.00	0.04
0635	3660.00	0.04
	END	

SE1000B
IS Environmental Logger
09/25 11:17
During Pump Test
Unit# 00376 Test# 1

INPUT 1: Level (F) TOC

Reference 0.00
Scale factor 5.05
Offset 0.00

Step# 0 09/24 06:59

Elapsed Time	Value
0.0000	0.00
15.0000	0.00
0730 30.0000	0.00
45.0000	0.00
0800 60.0000	0.00
75.0000	0.00
0830 90.0000	0.01
105.000	0.01
0900 120.000	0.00
135.000	0.01
0930 150.000	0.01
165.000	0.01
1000 180.000	0.01
195.000	0.01
1030 210.000	0.01
225.000	0.02
1100 240.000	0.02
255.000	0.02
1130 270.000	0.02
285.000	0.03
1200 300.000	0.03
315.000	0.03
1230 330.000	0.04
345.000	0.03
1300 360.000	0.03
375.000	0.03
1330 390.000	0.04
405.000	0.03
1400 420.000	0.04
435.000	0.04
1430 450.000	0.04
465.000	0.04
1500 480.000	0.04
495.000	0.04
1530 510.000	0.04
525.000	0.04
1600 540.000	0.05
555.000	0.05
1630 570.000	0.05
585.000	0.05
1700 600.000	0.05
615.000	0.05
1730 630.000	0.05
645.000	0.05
1800 660.000	0.05
675.000	0.05
1830 690.000	0.05
705.000	0.05
1900 720.000	0.05
735.000	0.05
END	

SE1000B
Environmental Logger
1D 09/25 11:25
Pre Pump Test
Unit# 00376 Test# 0

INPUT 2: Level (F) TOC

Reference 0.00
Scale factor 10.08
Offset 0.00

Step# 0 09/21 17:35

Elapsed Time	Value
0.0000	0.00
60.0000	0.01
120.000	0.03
180.000	0.06
240.000	0.08
300.000	0.11
360.000	0.13
420.000	0.14
480.000	0.15
540.000	0.16
600.000	0.17
660.000	0.18
720.000	0.18
780.000	0.15
840.000	0.10
900.000	0.04
960.000	0.02
1020.00	0.01
1080.00	0.00
1140.00	0.02
1200.00	0.04
1260.00	0.07
1320.00	0.09
1380.00	0.11
1440.00	0.14
1500.00	0.16
1560.00	0.18
1620.00	0.21
1680.00	0.23
1740.00	0.24
1800.00	0.25
1860.00	0.26
1920.00	0.27
1980.00	0.27
2040.00	0.27
2100.00	0.26
2160.00	0.22
2220.00	0.15
2280.00	0.09
2340.00	0.03
2400.00	0.01
2460.00	0.06
2520.00	0.06
2580.00	0.08
2640.00	0.10
2700.00	0.11
2760.00	0.13
2820.00	0.14
2880.00	0.15
2940.00	0.17
3000.00	0.19
3060.00	0.21
3120.00	0.23
3180.00	0.23
3240.00	0.24
3300.00	0.25
3360.00	0.25
3420.00	0.26
3480.00	0.26
3540.00	0.26
3600.00	0.22
3660.00	0.16

END

SE1000B
Environmental Logger
1D 09/25 11:20
During Pump Test
Unit# 00376 Test# 1

INPUT 2: Level (F) TOC

Reference 0.00
Scale factor 10.08
Offset 0.00

Step# 0 09/24 06:59

Elapsed Time	Value
0.0000	0.14
15.0000	0.12
30.0000	0.12
45.0000	0.11
60.0000	0.12
75.0000	0.12
90.0000	0.13
105.000	0.15
120.000	0.15
135.000	0.16
150.000	0.19
165.000	0.20
180.000	0.20
195.000	0.20
210.000	0.22
225.000	0.22
240.000	0.25
255.000	0.25
270.000	0.27
285.000	0.29
300.000	0.33
315.000	0.34
330.000	0.38
345.000	0.39
360.000	0.42
375.000	0.45
390.000	0.47
405.000	0.49
420.000	0.52
435.000	0.54
450.000	0.56
465.000	0.56
480.000	0.58
495.000	0.59
510.000	0.59
525.000	0.61
540.000	0.58
555.000	0.58
570.000	0.56
585.000	0.54
600.000	0.54
615.000	0.53
630.000	0.52
645.000	0.51
660.000	0.50
675.000	0.50
690.000	0.50
705.000	0.49
720.000	0.48
735.000	0.48

END

Time/Date Test Began: 1987

WATER LEVEL MEASUREMENTS (Field) Well #: 1D

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
9/21			38.6			Doug Yeskis
~1300			40.00	1.96	38.04	↓
			39.50	1.50	38.00	
			39.52	1.49	38.01	↓
9/24			38.80	0.46	38.34	Doug Yeskis
853			39.30	0.95	38.35	& Bob Kay
			39.60	1.24	38.36	↓
9/24			40.50	1.78	38.72	Doug Yeskis
1953			40.70	2.00	38.70	↓
			40.80	2.08	38.72	↓
			To TIC			

Time/Date Test Began: 1987

WATER LEVEL MEASUREMENTS (Field) Well #: 1S

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
9/21			6.00	1.47	4.53	Doug Yeskis
~1300			5.50	~~1.04~~ 0.98	4.52	↓
			5.50	0.98	4.52	↓
9/24			5.30	0.64	4.66	Doug Yeskis & Bob
853			5.40	0.74	4.66	↓ Kay
9/24			6.50	1.73	4.77	Doug Yeskis
1949			6.80	2.06	4.74	↓
			7.00	2.25	4.75	↓
		to TIC				

Time/Date test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 2d

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER TOIC	Name
9/24		41.65	43.4	1.27	42.13	Bob Kay
14:28			43.6	1.48	42.12	" "
		(Recovery)				" "
16:00		41.70	42.20	0.58	41.62	" "
		~~41.6~~	42.60	0.99	41.61	" "
6:38					41.42	Phil Smith

Time/Date test Began: 9/24/87 1524 (Recovery)

WATER LEVEL MEASUREMENTS (Field) Well #: 3I

Location of Project H.O.D.

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	Name
9/24/87			36.30	0.58	35.82	Doug Yeskes
1406			36.50	0.77	35.83	"
1618			36.50	0.57	35.93	DJY/RTK
1619			36.70	0.76	35.94	DJY
9/24/87			~~36.50~~			
1737			37.00	0.80	36.20	Doug Yeskes/T. Sullivan
			37.50	1.29	36.21	"
18:50					36.32	Tom Sullivan

Time/Date test Began: 9/24/87 1524 (Recovery)

WATER LEVEL MEASUREMENTS (Field) Well #: 3S

Location of Project H.O.D.

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	Name
9/24/87			8.8	0.65	8.15	Doug Yeskes
1402			8.9	0.75	8.15	
9/24/87			8.7	0.55	8.15	Doug Yeskes
1605			8.8	0.66	8.14	"
1729			8.7	0.55	8.15	"
9/24/87			8.9	0.76	8.14	"

Time/Date test Began: 9/24/87 1524 (Recovery)

WATER LEVEL MEASUREMENTS (Field) Well #: 3 D

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
9/25/87			43.10	0.95		Doug Yeskis
1400			43.30	1.16		" " "
			~~40.00~~	~~0.62~~		
9/25/87			43.40	3.23	40.17	Doug Yeskis
1615			43.60	3.41	40.19	" " "
9/24/87			41.00	1.2	39.80	"
1730			41.50	1.62	39.88	"
9/24/87					39.78	Tom Sullivan
18:47						

Time/Date Test Began: 9/24/87

WATER LEVEL MEASUREMENTS (Field) Well #: 4S

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
2:30pm					11.83'	Dan Jurbardi
~~16:~~						
16:10			12.40	0.57	11.83	Bob Kay
			12.60	0.77	11.83	" "
1802			12.40	0.57	11.83	D. Yeskes, T. Sullivan
"			12.70	0.87	11.83	"

Time/Date Test Began: 9/24/87

WATER LEVEL MEASUREMENTS (Field) Well #: 4d

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
9/24/87						
16:08			43.70	0.48	43.22	Bob KAY
			44.00	0.78	43.22	" "
9/24/87			43.50	0.53	42.97	D. Yeskes, T. Sullivan
1757			43.80	0.83	42.97	"
9/24/87			43.50	0.55	42.96	Doug Yeskis
1835			43.71	0.77	42.94	"

Time/Date Test Began: 9/24/87

WATER LEVEL MEASUREMENTS (Field) Well #: 4d

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
2:25					44.71'	Dan Jurbardi

Time/Date Test Began: 9/24/87

WATER LEVEL MEASUREMENTS (Field) Well #: 50

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
2:18					38.01'	Don Ferbrandi
4:16					37.63	Phil Smith
5:49p					37.41	Phil Smith

Time/Date test Began: 2:02 9/24/87

WATER LEVEL MEASUREMENTS (Field) Well #: 6I

Location of Project H.O.D. Dan Jorabtadi

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER TOIC	Name
2:02 pm					23.05'	Dan Jorabtadi
4:05 pm					23.07'	Phil Smith
5:36 pm					23.08	Phil Smith

Time/Date Test Began: 9/24/87

WATER LEVEL MEASUREMENTS (Field) Well #: 6S

Location of Project H.O.D.

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER TOIC	Name
2:05 pm					7.33'	Dan Jorabtadi
4:05 pm					7.34	Phil Smith
5:40 pm					7.34	Phil Smith

Time/Date Test Began: 9/24/87

WATER LEVEL MEASUREMENTS (Field) Well #: 6d

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
2:10 PM					41.06'	Dave Lombardi
4:10 PM					40.50	Phil Smith
5:30 pm					40.28	Phil Smith

PRIMARY PUMP TEST DATA

(Measurements Taken With a Steel Tape)

AND

VILLAGE OF ANTIOCH MUNICIPAL WELL

PUMPING RECORDS

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 1D-USEPA

Location of Project: H.O.D.

Time/Date	ΔT	Recorder Reading	Tape Reading at— Meas. point	Tape Reading at— Water level	Depth to Water	Name
12/17/87 1625		0.28	39.00	0.65	38.35	Yeskis
↓			39.20	0.84		↓
			39.40	1.04		
1659		0.04	39.00	0.81	38.19	Yeskis
2300		0.17			38.52	Yeskis/Ellison
↓		↓			38.52	↓
0305	12/18				38.53	Ellison, Smith, Earle
0445		TOIC			38.55	SMITH/MEYERS
0446		"			38.55	"
0914		"	39.00	0.47	38.53	Earle/Meyers/Sutton
0915		"	39.00	0.48	38.52	" "
12/18/87						
1830			steel tape		38.43	Kay/Yeskis
~~0214~~	12/19				38.44	" (TIC)
0214			—	—	38.41	Ellison, Smith, Earle
0547		.02			38.38	Smith, Earle
0805		.09			38.20	Smith/Ellison
		.55 - by lake				Ellison
		.52 - downstream				
W.P. water level =		2.55	Temp.			
		2.96				
		2.96				

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: MW-1D m.p. is TIC

Location of Project: _____

Time/Date	ΔT Temp.	Recorder Reading	Tape Reading at— Meas. point	Tape Reading at— Water level	Depth to Water	Name	
12/14/87	9°C						
~1830			39.00	.79	38.31	Yeskis	Steel Tape
2051		-0.04	(TIC)		38.16	Kay/Breen	Electr Tape
2345		-0.05	"		37.44	Kay/Breen	"
12/15/87 0240		-0.10	"		—	"	"
0329		-0.14	(TIC) 41.00	2.90	38.10	"	Steel tape
1720	9°C	-0.21	(TIC) 38.50	.42	38.08	"	steel tape
2115	not taken	—	(TIC) 38.70	.58	38.12	Breen/Meyers	steel tape
2355	10°C	-0.13	(TIC) 39.00	.84	38.16	Kay/Breen/Meyers	"
12/15 0805		—	—	—	37.83	Smith/Ellison	elec
" 1410		—	—	—	36.06	"	
12/16 0410		—	—	—	38.00	"	elec
0410		—	39.00	1.00	38.00	"	
0710		—	—	—	35.98	"	elec
0930		—	—	—	37.76	"	
1235	10°C	-0.39	38.50	.61	37.89	Kay/Meyers	
1550	10°C	-0.26	38.50	.48	38.02	"	
1955	10°C	-0.13	39.20	1.00	38.20	Yeskis/Meyers	
		↓	39.10	0.90	↓		
			39.30	1.10			
12/17/87 ~~85~~	N/A				38.26	Yeskis	
900					38.27	↓	
↓					38.25		

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 2D - USEPA (Pre. City well #4)

Location of Project H.O.D., Pre-pump test/ ~~background~~ pump test

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1/14/87						
2306		4.983	(TIC)	E.T.	41.22	Kay/Breen
1/15/87						
0135	input vol 10.99/.59	5.026	41.50	.37	41.13	Kay/Breen
0300	10.60/.60	5.123	41.50	.45	41.05	Kay/Breen
0745	—	5.306	TOIC		40.78	Smith/Ellison
1425	10.57/.59	5.300	TOIC	—	40.82	Smith/Ellison
1700	10.60/.60	5.304	TOC		41.31	Kay/Breen
TOC is .12' above TOIC or TIC						
2030		5.232	43.20	.96	41.34	Kay/Breen/Meyers
1/16 0250		6.478	10.63/63	—	39.64	Smith/Ellison elec tape
0655		6.750	10.64/64	—	39.28	"
0920		5.826	10.64/64	—	40.33	Smith/Ellison elec
1210			41.50	0.80	40.70	Meyers/Sutton
1220	input vol 10.63/.60	5.434				Kay/Meyers
1221		5.413				Kay/Meyers
1522		—	41.0	.06	40.93	Kay/Meyers
1524	10.60	5.215				Kay/Meyers

1st min. → every 6 sec
1st-2nd min. → every 12 sec
2 - 10 min → every 30 sec

10 - 20 → 60s
20-100 → 5m
100 - 200 → 20m

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project H.O.D., City well #4 pump test, pumping Phase

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name Meyers
12/17			~~Pump on~~			
	0	—	41.20	1.31	39.89	
~~before transducer~~			Pump on			
	0	9.47	1			
	6 sec	10.34				
	12	10.38				
	18	10.35				
	24	—				
	30	10.35				
	36	"				
	42	"				
	48	"				
	54	"				
1 min	60	"				
1.12	72	—				
1.24	84	—				
1.36	96	10.36				
1.48	108	"				
2 ~~1.60~~	120	"				
2.3	150	10.37				
3	180	10.37				
3.3	210	10.38				
4	240	10.38				

3 10 11
41.20
- 1.31
39.89

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project HOD, City Well #4 Pumptest, Pumping Phase

Time/ Date	Δ T	Recorder Reading	Tape Reading at— Meas. point	Water level	Depth to Water	Name Meyers
4.3	270	10.39				
5	300	10.39				
5.3	330	10.40				
6	360	—				
6.3	390	10.41				
7	420	—				
7.3	450	—	41.2	1.1	40.1	
8	480	—				
8.3	510	10.43				
9	540	10.43				
9.3	570	10.44				
(10)	600	10.44				
	11 min.	10.45				
	12	10.46				
	13		41.2	.95	40.25	
	14	10.48				
	15	10.49				
	16	10.50				
	17	10.51				
	18	10.52	41.2	.84	40.36	
	19	10.53				
	20	10.54				
	25	10.59	41.0	.59	40.41	

Time/Date Test Began: _____ DVCV20.

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project HOD, City Well #4 pumptest, Pumping phase

Time/ Date	Δ T	Recorder Reading	Tape Reading at— Meas. point	Water level	Depth to Water	Name Meyers
	30 min	11.04				
	35	11.09	41.0	.42	40.58	← 40.58 taken betw. 30 & 35
	40	11.14				
	45	11.19	41.0	.28	40.72	taken betw. 45 and 50
	50	11.24				×
	55	11.29				
1 hr.	60	11.34	42.0	1.17	40.83	taken betw. 60+6
1.05	65	11.39				×
1.10	70	11.44				input voltage steady at 10.61
1.15	75	5.276	41.5	.58	40.92	at 1.18.25 transducer 75.25
1.20	80	5.249				×
1.25	85	5.228				
1.3	90	5.208	41.70	.75	40.95	→ (5.188 = transducer)
1.35	95	5.174				×
1.4	100	5.154	41.2	.2	41.0	at 1.42 hrs.
2.0	120	5.091	41.5	.47	41.03	at 1.46
2.2	140	5.036	41.5	.43	41.07	at 2.06
2.4	160					voltage input 10.60
3 hr.	180	4.951	41.6	0.60	41.00	yeskis
3.5	200	4.882	41.50	.22	41.28	Meyers
4	230	4.860				voltage input 10.59
4.30	260	4.823	42.0	.63	at 5.11 hrs. 41.37	meyers
5	290	4.798	41.4	.02	41.38	volt. = 10.60 at 5.10 hrs. Meyers

41.96
1.17
40.83

41.50
.58

5.25

41.4
.02
38

41.50
.58
40.92

*0 → time

100 min × 1 hr / 60 min

*61A → data

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project HOD, City well #4 pump test, Pumping Phase

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name Meyers
5.3 320	~~250~~	4.786		10.62/.60	41.41	Meyers @ 5.35
6 350	~~280~~	4.752	voltage	10.60/.60	41.42	at 6.06 Meyers
6.3 380	~~310~~	4.737	voltage input	10.60/.60	41.45	at 6:34 Meyers
7 410	~~340~~	4.722	voltage input	10.57/.60	41.46	at 7.04 Meyers
7.3 440	~~370~~					
8 470	~~400~~					
8.3 500	~~430~~					
9 530	~~460~~					
9.3 560	~~490~~					
10 590	~~520~~					
10.3 620	~~550~~					
11 650	~~580~~					
11.3 680	~~610~~					
12 710	~~640~~					
12.3 740	~~670~~					
13 770	~~700~~					
13.3 800						
14 830						
14.3 860						
15 890						
15.3 920						
16 950						
16.3 980						
17 1010						

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project HOD, City Well #4 pump test, Pumping Phase

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/17						
1935	540	4.659	volt. input	10.61/.61		
1950	555		41.60	.09	41.51	R. Kay
			41.70	.19	41.51	(TOC)
2200	685	4.612	Input Volt. 10.62			Kay
			41.70	.15	41.55	Kay (TOC)
			41.80	.24	41.56	"
12/18 0250	983	4.607			41.56	ELLISON, SMITH, EARL
0435		4.624			41.40	SMITH/MEYERS
0835	volt. input 10.59/.60 1310	4.622	42.0	.45	41.55	Meyers

Time/Date Test Began: 12/18

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project HOD, City well #4 pumptest, Recovery Phase

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1022	voltage input 10.60	4.592	42.0	.42	41.58	Meyers
	0 sec	4.580				
	6	"				
	12	4.583				
	18	4.581				
	24	4.586				
	30	4.588				
	36	4.587				
	42	4.589				
	48	4.593				
	54	4.599				
	60	4.594				
	1.12 min	4.598				
	1.24	4.604				
	1.36	4.611				
	1.48	4.620				
	2.0	4.628				
	2.15	4.648				
	3	4.670				
	3.15	4.691				
	4	4.708				
	4.15	4.729				
	5	4.748				

City Well #5, turned on at 11:09

Time/Date Test Began: 12/18

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project HOD, City Well #4 Pumptest, Recovery Phase

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
	5.50		42.0	.62	41.38	Meyers
	6	4797				
	6.15	4811				
	7	4827				
	7.15	4842				
	8	4858				
	8.15	4870				
	9	4884				
	9.15	4897				
	10	4910				
	11	4930				
	12	4971	42.0	.81	41.19	
	13	4986				
	14	4995				
	15	4999				
	16	5007	42.0	.85	41.15	
	17	5007				
	18	5004				
	19	5004				
	20	5.052				
	25	5.033	42.0	.83	41.17	volt. input 10.56/160
	30	5.041	41.5	.31	41.19	at 32 min.
	35	5.028				

Time/Date Test Began: 12/18

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project HOD, City well #4 pump test, recovery Phase

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
	40 min	5.017				Meyers
	45	4996	42.1	.88	41.12	at 41 min
	50	4994	42.0	.77	41.23	at 45 min.
	55	4995				input voltage 10.60
	1 hour	4990	41.5	.26	41.24	at 52 min.
	1.05 hr	4.988	42.0	.76	41.24	at 57 min.
	1.10 min	4.972				volt. input 10.62/.60 at 1.06 hr
	1.15 min	4.966	42.0	.76	41.24	at 1.09 hr.
	1.20 min	4.960	42.0	.73	41.27	at 1.18 hr.
	1.25 m	4.958	41.50	.22	41.28	at 1.27 hr.
	1h30 m	4.957				
	1h35 m	4.956	42.0	.72	41.28	at 1.37 hr
	1h40 m	4.953	41.80	.52	41.28	at 1.42 hr.
	~~2.0~~					
	~~2.1~~					
	2.4					
	3 hr.					
	~~3.3~~					
	~~4~~					
	~~4.3~~					
	~~5~~					
	~~5.3~~					
	6					

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 2D

Location of Project HOD, City Well #4 pump test, Recovery Phase

Time/ Date	Δ T (min)	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/18/88						
13:07	127	4.940	volt 10.59			KAY
1430		4.918	volt 10.58	1.60		KAY
1435			41.06	.30	41.30	KAY (TOC)
1437			41.07	.40	41.30	"
1518		4.907	—	—	41.30	Earle/Meyers (TOC)
1622		4.953	volt 10.58	1.60		KAY
1630			41.50	.20		KAY (TOC)
1632			41.55	.205		"
~~1632~~		~~4.930~~	~~volt 10.~~			~~KAY~~ load Read (RJK)
2125		4.882	volt 10.57	1.60		Kay
2128			41.50	.16	41.34	KAY (TOC)
2130			41.70	.36	41.34	"
12/19						
0045		4.88	input volt 10.59			
0050			42.6	1.39	41.21	Yes KES (TIC)
0053			43.2	1.98	41.21	"

Time/Date Test Began: _____ 1

WATER LEVEL MEASUREMENTS (Field) Well #: 35

Location of Project H.O.D. PRe-aquifer test data

Time/Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	Name
12/14/87						
2034		1.3448	volt =	10.61		RTK
23:24		1.3505	volt =	10.59/60		KAY/GREEN
2:00		1.3729	volt =	10.62/60		KAY/GREEN
3:13		1.4320	VOLT =	1060		KAY/GREEN
0715		1.3830	volt =	10.60	6' 7.5"	Smith/Ellison
1020		1.3427	=	10.60	—	Smith
0155		1.2719	volt	10.60		Ellison/Smith
1690		1.2567	volt	10.60/.60		Kay
2011		1.2753	volt	10.60/.60	~~35.951~~	Breen/Kay/Meyers
2330		1.2953	volt	10.62/60		BREEN/KAY/MEYERS
0620				—	not taken —	
0725		1.3122	10.60/.60			Ellison
0910		1.3100	10.62/62	—	—	Smith/Ellison
1155		1.3179	Volt. 10.60/.60			Meyers/KAY
1450		1.3039	Volt 10.62/.60			"
1512		1.255				Kay
1757		1.2160	Volt: 10.60/.60			Earl, KAY
2010	Transducers	re-calibed, MW-15 moved				
2010		.4029	volt 10.60/	10.60		Earl/Kay
12/17/87						
0755		.3717	volt 10.60/.60			Kay

Time/Date Test Began: _____ 2

WATER LEVEL MEASUREMENTS (Field) Well #: MW-35

Location of Project HOD Landfill, pumping phase, city well #4 tes

Time/Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	TAPE READING AT— Water level	DEPTH TO WATER	Name
	Pump on					
0945	0	.373				
1030		.370				
	6m 45s	.386				
	7m 15s	.389				
	9m 15s	.385				
	14m 15s	.328				
	19m 30s	.317				
	23m 30s	.322				
	25m 30s	.318				
	28.00	.322				
	36 m	.319				
	42m	.318				
	51m 30s					
	53m	.312				
	61m	.316				
	83m	.323				
	90 m	.325				
	100m	.323				
	130m	.320				
	145	.326				
1315	160	.325				
1345	180	.331				

Time/Date Test Began: [redacted]

WATER LEVEL MEASUREMENTS (Field) Well #: MW-35

Location of Project HOD. Landfill, Pump test, City well #4

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1316	191	.3368				KAY
1355	200	.3355	input volt, 10.59	/.59		
1430	235	.338				
1450	255	.3452	input voltage 10.59	/.59		
1525	290	.3473	input volts 10.56	/10.60		
1637	362	.336	input volts 10.66	/.60		
1733		.347	Input volts	10.65/.60		
1910	515	.346	"	10.58/.60		
2135		.337	volt, 10.62	/.60		
2356	801	.348	volt,	10.63/.60		KAY
12/18 0250	975	.324	volt	10.58/.60		EARLE, ELLISON SMITH
[illegible]		.17672				SMITH/MEYERS
0818		.11205	Volt 10.62	/.60		EARLE/MEYERS
[illegible]		.2353				EARLE/MEYERS
1039	1430	.34805	volt 10.56	/.60		KAY
12/18/87		Pump	OFF			
	0s	.3623				KAY
	3m	.3517				
	5m	.3717				
	8m	.360				
	11	.354				
	16	.3629				
	20m	.3592				

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 35

4

Location of Project HOD Landfill, Recovery Phase, City Well #4 Pump Test

Time/ Date	Δ T (min)	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
	25m	.3604				Kay
	30m	.3747				
	35m	.3781				
	40m	.3607				
	45m	.3740				
	50m	.3740				
	55m	.3718	volt.	10.60		
	62m	.3768				
(my watch)	12:10	70m	.3776			
	12:25	85m	.3823	volt.	10.60	
	90m	.3859	volt	10.60		
	95m	.3860				
(my watch)	1240	100	.3889	volt	10.60	
	1328	148	.37899	volt	10.59	
	1408		.3806	volt	10.59	
	1616		.3843	volt	10.60	
	2050		.3657	volt	10.59	
12/19	0018		.3547	volt	10.58/.60	Earle
	0326		.34903	volt.	10.59	
	0700		.34505	volt	10.52/.60	
	0756		.21392	"	10.60	
	0757		.35604	"	10.60	
	0811		.35190			

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 35

Location of Project _____

12/19 Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
0906		.34107				
0955		.3432	VOH	10.59		

1

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 3I

Location of Project H.O.D., Pre-aquifer test data

Time/Date	ΔT	Recorder Reading	Tape Reading at— Meas. point	Tape Reading at— Water level	Depth to Water	Name
12/14/87 20:27					36.14	
2035		6.0176	input volt = 10.61			RTK
2325		5.9868		volt = 10.59/60	36.04	KAY/BREEN
12/15/87 2:03		5.9978		volt = 10.62/60		KAY/BREEN
3:15		5.9786		volt = 10.60		KAY/BREEN
0715		6.0327		volt = 10.60	35.88	Smith/Ellison
1020		6.0734		volt = 10.60	—	Smith
0155				volt = 10.62	35.81	Smith/Ell.
1640		6.0952	Volt 10.60/.60			Kay
1645			TOIC = .8	from TOC	35.98	Kay/Breen/Meyers
2011			Electric tape		35.92	Kay/Breen/Meyers
2013		6.0791	Volt. 10.60/.60			
2017		—	36.5	0.7	35.80	Breen/Mayer
2:27		6.0680	VOLT 10.62/60			BREEN KAY/MEYERS
2332			36.2	.39	35.81	"
12/16 0345		—	—	—	35.88	Smith/Ellison elec.
0620		—	—	—	35.84	Smith/Ellison elec.
0725		6.1360	10.60/.60 volt	—	—	Ellison
0910		6.1837 10.62/.62 v	—	—	35.76	Ellison/Smith
1157		6.2266	volt. 10.60/.60			Meyers/Kay
1200		—	36.20	.54	35.66	Kay/Meyers
1452		6.2390	volt 10.62/.60			Kay/meyers
1513		6.2469				Kay

2

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 3I

Location of Project HOD Landfill Pre & Pumping Phase City Well #

Time/Date	ΔT	Recorder Reading	Tape Reading at— Meas. point	Tape Reading at— Water level	Depth to Water	Name aquifer test data
12/16 1515		—	36.0	0.35	35.65	Kay/Meyers
1755		6.225	Volt 10.64/.60			
1805		—	36.0	0.33	35.67	Earl/Kay/Mt
2009		~~6~~ Transducers Re-calibrated				
2009		6.0209	volt. 10.60/.60			Kay/Earl
2015			36.0	0.34	35.66	KAY/Earl
12/17						
0745			36.0	0.21	35.79	Kay
			36.2	0.41	35.79	Kay
0754		5.943	volt 10.60/.60			Kay
	0		36.20 / 36.40	.40 / .60	35.80 / 35.80	(TOC) Kay
0945	0	5.907				Kay
1030	0	5.903				
Pump on	2m 20	5.92				
	6m 15s	5.94				
	7m 45s	5.957				
	8m 45s	5.966				
	14m 45s	5.984				
1053			36.00	(TIC) .38	35.62	smith
	19m 45s	5.993				KAY
	24m 00s	6.004				
	26m 00s	6.009				
	29m 00s	6.019				

Time/Date Test Began: _____ 3

WATER LEVEL MEASUREMENTS (Field) Well #: MW-3I

Location of Project HOD, Pumping Phase, City well #4 Test

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
	37m	6.048				
	42m	6.063				
	47m		36.00	(TIC) .45	35.55	
	50m 30s	6.071				
~	53m		36.00	.46	35.54	(TIC) Vaskie
	61m	6.086				
	83m	6.106				
	90	6.114				
	93	—	36.00	.43	35.57	(TIC) Kay
	100	6.118				
	130	6.140				
1300	145	6.138				
1310	155	—	36.00	.53	35.47	(TIC) Kay
1314	159		36.10	.63	35.47	(TIC) Kay
1315	160	6.127				
1335	180	6.131				
1348	193	6.133				
1355	200	6.136	input voltage 10.59/6.59			
1404			36.00	.52	35.48	Kay (TIC)
			36.10	.62	35.48	"
1430	235	6.116				
1450	255	6.113	input voltage 10.59/6.59			
1525	290	6.106	input volt. 10.56/.60			

4

Time/Date test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: MW-3I

Location of Project HOD, Pumping Phase, City well #4 test

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1535	300	—	36.00	0.48	35.52	Kay (TIC)
"		—	36.10	0.57	35.53	"
1637	362	6.058				
1642			36.00	.42	35.58	Kay (TIC)
1643			36.10	.52	35.58	Kay
1733		6.0132	input volts 10.55/.60			"
1910	515	5.9648	input volts 10.58/.60			"
1922			36.00	0.28	35.72	Kay (TOC)(TIC)
1925			36.10	0.38	35.72	"
2135		5.847	volt 10.69/.60			KAY
2143			36.00	0.15	35.85	Kay (TIC)
2147			36.10	0.24	35.86	"
2355		5.724	volt	10.63/.60		
12/18 0250	975	5.5994			35.72	[illegible]
0515	10.58/.60	5.4688			35.74	SMITH/MEYERS
0824		5.3486	[illegible]			[illegible]
0840	10.64/.60	5.3360	37.0	.15	36.85	EARLE
0859			37.0	.54		
1025	1430	5.274	input	volts 10.66	1.60	KAY
1033			37.00	.57	36.43	KAY (TIC)
1035			37.10	.67	36.43	"

5

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: MW-3I

Location of Project HOD Landfill Recovery Phase, City Well #4 Pump Test

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/17/87	Pump off					
	0	5.253				KAY
	3m	5.222				
	5m	5.217				
	8m	5.199				
	11m	5.182				
	16	5.168				
	20m	5.150				
	25m	5.130				
	30m	5.119				
	35m	5.116				
	40m	5.096				
	45m	5.089				
	50m	5.082				
	55m	5.071	volt 10.60			
	58m		37.0	.35	36.65	KAY (TIC)
			37.1	.45	36.65	"
	62m	5.056				
12:10	70m	5.0459				
12:25	85m	5.031	volt	10.60		
	90	5.023	volt	10.60		
	95	5.019				
1240	100	5.016	volt	10.60		

6

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 3I

Location of Project HOD, Recovery Phase, City Well #4 test

Time/ Date	(min) ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1328	148	4.989	volt 10.59			KAY
1408		4.983	volt 10.59			
1412			37.20	.46	36.74	KAY (TIC)
1413			37.30	.56	36.74	"
1615		5.003	volt	10.60		KAY
2055		5.078	volt	10.59		"
2100			37.00	.36	36.64	KAY (TIC)
2105			37.10	.46	36.64	"
12/19 0020		5.151	volt	10.58/.60		KAY
0030			37.00	.44	36.56	
			37.10	.55	36.55	
0327		~~6.5.2064~~			~~36.66~~	Ellison, Smith, [illegible]
0328					36.64	" TOC
0700		5.2759			36.58	
0745		5.2801			36.55	
0754		5.2801				
0758		5.2840				
0803		5.2840	(38.72)	Hermit		
0812		5.2889				
0855			~~38.72~~			
0904			37.00	.54	36.46	
0906		5.3162	37.00	.54	36.46	
09		5.2984	38.72 Hermit	Hermit 37.0	Plaza .55	36.45

Time/Date test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 3 I

Location of Project HUD CHY WELL #4 TEST RECOVERY PHASE

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1055		5.357	UOH	10.59		KAY
1100			37.00	.65		KAY (TIC)
			37.10	.76		"

1

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 3D

Location of Project H.O.D.

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1/14/87 2025					39.69	
2035		6.5357	volt.	10.69		RTK
2325		6.5174	volt =	10.59/60	39.70	KAY/BREEN
1/15/87 2:01		6.5657	volt =	10.60/60		KAY/BREEN
3:14		6.5785	volt =	10.60		KAY/BREEN
0715		6.7542	volt =	10.60	39.10	Smith/Ellison
		[illegible]	[illegible]	[illegible]	~~[illegible]~~	Smith
0155		[illegible]			39.14	Ellison/Smith
1640		6.7222	volt 10.60/.60			Kay
1645		—	TDIC =	.34 from TDC	39.52	Kay/Breen/Meyers
2012	Electric tape				39.57	Kay/Breen/Meyers
2014		6.6500	volt. 10.60/.60			
2020		—	40.5	.98	39.52	Breen/Sutton
2021		—	40.0	.45	39.53	Breen/Sutton
2328		6.5974	VOLT 10.62/60			BREEN/KAY/MEYERS
2334			40.2	.59	39.61	"
1/16 0340		not taken, Lock Frozen		—	36.39	Smith/Ellison elec
0620		—	—	—	36.08	Smith/Ellison
0725		7.8800	10.60 volt 1.60	—	—	Ellison
0910		7.3326 10.62/.62	—	—	38.57	Ellison/Smith
1155 ~~1155~~		6.9951	volt 10.60/.60			Kay/Meyers
1201		—	39.30	no mark		Kay/Meyers
1201		—	39.50	.29	39.[illegible]	Kay/Meyers

2

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: MW-3D

Location of Project

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1450		6.7947	volt 10.62/60			Meyers/Kay
1513		6.7849				Kay
1515		—	40.0	.61	39.39	Kay/Meyers
1755		6.6400	Volt. 10.69/.60			" "
1803		—	40.0	.42	39.58	Earle/Kay
2011	Transducers re-calibrated					
2011		6.627	volt 10.60/.60			Earle/Kay
2014			40.0	.37	39.68	
12/17 0754			40.0	.95	39.05	Ellison
0756		7.276	volt. 10.60/.60			Kay
1030		7.480				

3

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 3 D

Location of Project HOD, Pumping Phase, City well #4 test

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
			39.60	.80	38.80	Kay
945	0	7.426	40.0	1.19	38.80	Kay Pump on
	.1	7.51				
	.2	7.52				
	.3	7.54				
	.4	7.54				
	.5	7.55				
	.6	7.55				
	.7	7.55				
	.8	7.55				
	.9	7.54				
	1.0	.54				
	1.2	.53				
	1.4	.51				
	1.6	.50				
	1.8	.48				
	2.0	.46				
	2.5	.41				
	3.0	.37				
	3.5	.32				
	4.0	.28				
	4.5	.23				
	5.0	.186				

39.50 - .72 = 39.78 (TOC)
Trans. Reads 7.45/7.46

1009

H.O.D.

4

Time/Date test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: [illegible]

Location of Project HOD Landfill, Pumping Phase City Well #4 Test

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
	5.5	7.140				KAY
	6.0	7.099				
	6.5	7.055				
	7.0	7.018				
	7.5	6.977				
	8.0	6.936				
	8.5	6.895				
	9.0	6.855				
	9.5	6.822				
	10.0	6.790				
	11	6.7[illegible]6		11.5 min		6.7[illegible]
	12	~~.716~~ 6.65				
	13	6.58				
	14	6.54				[illegible]
	15	6.48				[illegible]
	16	6.425				(TIC)
	17	6.373				
	18	6.330				
	19	6.290				
	20	6.250				
	25	6.072				
	30	5.954				[illegible]
	35	5.843				[illegible]

115.[illegible]

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: MW-3D

Location of Project HOD, Pumping Phase, City Well #4 aquifer test

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
	40	5.743				KAY
	45	5.674				↓
	50	5.6059				↓
	55	5.534				↓
	65	—	41.00	.27	40.73	Yeskis (TOC)
	60 m	5.481				KAY
11:4	65	5.434				↓
	70	5.382				↓
	75					↓
	83	5.277				↓
12:00	85	5.271				
	87	—	41.30	.32	40.98	Kay (TOC)
	90	5.241				↓
	95	5.2107				↓
12:15	100	5.1814	voltage has	been	constant 10.60/.59	
12:45	130	5.053	volt. adjusted		10.58/.60	Kay
1300	145	4.994	volt.	10.60/.60		Kay
1305	150	—	41.30	.05	41.25	Kay (TOC)
1315	160	4.952				↓
1335	180	4.911				↓
1348	192	4.885				↓
1355	200	4.859	input volt 10.59/.59			
			41.40	0.02	[illegible]8	Kay (TOC)

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: MW-3D

Location of Project HOD Landfill, Pumping Phase, City Well #4 aquifer test

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1400			41.50	.12	41.38	Kay (TOC)
1430	235	4.806	input volt. 10.59/.59			↓
1450	255	4.798	input volt. 10.59/.59			↓
1525	290	4.748	input volt 10.56/.60			↓
1530	295	—	41.60	0.08	41.52	Kay (TOC)
1530	295	—	41.70	0.18	41.52	" "
1637	362	4.661	input volts 10.66/.60			
1645			41.80	0.21	41.59	Kay/Meyers (TOC)
1647			41.90	0.31	41.59	"
1734		4.615	Input volts 10.66/.60			KAY
1910		4.5742	"	" 10.58/.60		"
1912			41.70	0.00	41.70	KAY (TOC)
1915			41.80	0.10	41.70	"
2135		4.502	volt 10.64/.60			
2140			41.90	0.14	41.76	Kay (TOC)
2142			42.00	0.24	41.76	"
2355		4.487	Volt	10.63/.60		
12/18 0.051		4.5005			41.40	[illegible]
0511	volt 10.58/.60	4.5276			41.71	SMITH/MEYERS
0823	volt 10.64 10.60	4.4971	42.0	.60	41.40	EARLE/MEYERS } TIC
0834			42.0	.60	41.40	" " } TIC
0835			42.0	.61	41.39	" " } TIC

A[illegible] MEASUREMENT MADE [illegible] TIC [illegible]

USING TOC MEASUREMENTS ON FOLLOWING PAGE

7

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 3D

Location of Project HOD Landfill, City Well #4 aquifer test

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
0815			42.0	.29	41.71	
0842			42.0	.29	41.71	
1025		4.456	vo HS 10.56/	.60		
1029			42.0	.25	41.75	Kay (TOC)
1030			42.10	.35	41.75	"
12/15/87	Pump	off				
~~TEST~~	0	4.450	input v.4	10.60/.60		
	6s	4.436				
	12s	.442				
	18s	~~4.40~~				
	24s	.38				
	30s	.38				
	36	.37				
	42	.38				
	48	.38				
	54	4.39				
	1m	.39				
	1m12s	.41				
	1m24s	.42				
	3.6s	.44				
	4.8s	.45				
	2m00s	4.47				

5

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 3D

Location of Project HOD Landfill, Recovery Phase, City Well #4 aquifer test

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
	2.5m	4.518	vo H. 10.59/	.59		RAY
	3.0	.569				
	3.5	.618				
	4.0	4.675				
	4.5	.723				
11:05	5.0	.774				
	5.5	4.823				
	6.0	4.872				
	6.5	4.913	vo H	10.59/.59		
	7.0	4.958				
	7.5	4.994				
	8.0	5.035				
	8.5	5.073				
	9.0	5.118				
	9.5	5.151				
	10	5.184				
	11	5.249				
	12	5.312				
	13	5.378				
	14	5.441				
	15	5.493				
	16	5.543				
	1	5.582				

Pump at City Well #5 turned on at 11:09

9

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: MW-3D

Location of Project HOD Landfill Recovery Phase of City Well 4, pump test

Time/ Date	ΔT (min)	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
	18	5.623				KAY
	19	5.665				
	20m	5.703				
my watch) 11:25	25m	5.847				
	30m	5.969				
	~32m		40.90	.64	40.26	Kay (TOC)
	~34m		41.10	.87	40.23	"
	35m	6.068				
	40m	6.094				
	45m	6.153				
	50m	6.188				
	~52m		40.80	.74	40.06	KAY (TOC)
	~53m		40.90	.84	40.06	"
	55m	6.221	VOH 10.60			
	60m	6.237				
	65m	6.2598				
my watch) 12:10	70m	6.274				
12:25	85	6.309	VOH 10.60			
	90	6.317	VOH	10.60		
	95	6.329				
my watch) 1240	100	6.336	VOH	10.60		
1328	148	6.374	VOH	10.59		
1408	188	6.397	VOH	10.59		

10

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: MW-3D

Location of Project HOD, City Well #4 test, Recovery Phase

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1415	195	—	40.70	.84	39.86	KAY (TOC)
		—	40.80	.92	39.88	"
1420	200	—	40.85	.99	39.86	"
1615	315	6.428	VOH	10.60		
2054		6.417	VOH	10.59		
2105			40.40	.55	39.85	KAY (TOC)
2108			40.50	.66	39.84	"
12/19 0020		6.423	VOH 10.58/.60			KAY
0324		6.4440			39.78	EARLE, ELLIS, S...
0329					39.82	" " "
0700		6.9849			39.22	
0702		7.0369			39.21	
0737		7.2049				
0745		7.2049			~~36.55~~ 39.03	Duplicated [illegible]
0753					39.02	duplicated
0757		7.2942				
0759		7.2702				
0804		7.2702				
0811		7.3053				
0817			~~40.0~~	~~.16~~	~~39.0~~	
0822			39.0	.10	38.90	
0902		7.4527	39.0	.23	38.77	[illegible]
0913		7.4704				

11

Time/Date test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 3D

Location of Project HOD City Well #4 TEST RECOVERY PHASE

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1055		7.418	VOH	10.59		KAY
			39.00	0.10	38.90	KAY (TOC)
			39.10	0.21	38.91	"

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: WMI Well #2

Location of Project H.O.D.

Time/Date	Δ T	Recorder Reading	Tape Reading at— Meas. point	Water level	Depth to Water	Name
1455			TOC 11.70	.53	11.17	Kay/Earl/Sutton
[illegible]						
2830			TOC 11.50	0.29	11.21	Kay
11:50			12.00	0.77	11.23	Sutton
0[illegible]:53			11:50	0.28	11:22	Sutton

Time/Date Test Began: 12/17/87 @ 10:35

WATER LEVEL MEASUREMENTS (Field) Well #: WMI well #2

Location of Project _____

Time/Date	Δ T	Recorder Reading	Tape Reading at— Meas. point	Water level	Depth to Water	Name
12/17/87		—				Sutton *
10:41	6.0 min		11.50	0.29		" *
1108	33		11.60	0.40		Yeskis from TOC
11:08	33		11.60	0.40		
12:00	85		11.50	0.32		
12:01	86		11.60	0.43		
12:48	133		11.50	.33		Yeskis
↓			11.60	.43		
1408	213	11.17	11.50	.34		Yeskis
↓			11.60	.43		
1550	315	11.18	11.50	0.34		
			11.60	0.43		
1720	405		11.60	0.43		Kay/Meyers
1720	405		11.70	0.54		"
1921	526	11.18	11.60	0.42	11.18	Yeskis TOC
			11.70	0.52	11.18	
2211	696	11:18	~~11.60~~	~~0.52~~	DJY	Yeskis
			11.60	0.42	11.18	
			11.70	0.51	11.19	
0210	935	~~TOC~~ TOC	10.00	.13	9.87	Smith/Earl/[illegible]
			11.19			
0545	1150	TOC	12.0	.80	10.2	SMITH/EARL E/[illegible]

* Difficult to read (new) steel tape (chalk doesn't stick well [illegible] glare).

Time/Date Test Began: 12/17/87 @ 10:35

WATER LEVEL MEASUREMENTS (Field) Well #: MWI Well #2

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/18/87						
0753			11.0	.32	10.68	Earle
0755			11.0	.32	10.68	"
0759		11.18	11.0	.32	10.68	Earle/Meyers
1030		11.18	11.4	0.22	11.18	Yeskis
↓			11.6	0.43	11.17	↓
			~~11.0~~	~~.34~~		
	0	Recovery test				
	21		11.00	0.34	10.66	Sutton TOC
	25	11.16	11.60	0.43	11.17	Yeskis/Sutton
1158		11.15	11.80	0.64	11.16	Yeskis
↓			11.60	0.45	11.15	↓
1227		11.14	11.60	0.46	11.14	Yeskis
			11.80	.65	11.15	
↓			11.90	.76	11.14	↓
1303		11.15	11.60	0.45	11.15	
			12.00	0.85	11.15	↓
1427		11.15	11.60	0.44		
			11.80	0.64		
1531		11.15				

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: WMI #2

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/18/87		1617	11.4	0.44		Yeskis
1635		↓	11.6	0.64		↓
2130		11.15	11.6	0.41		Yeskis
			11.8	0.60		~~Smith/Earle/Ellison~~
12/19 0050			12.0	.80	11.20	Smith/Earle
0817			12.0	.81	11.19	Smith/Ellison/Earle
0001			12.0	.82	11.18	Smith/Ellison

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: HOPGW45

Location of Project

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
0430	—	—	TOIC	—	10.65	Ellison
0845		—	TOIC		10.73	Ellison/Smith
1610		—	~~TOIC~~		~~10.81~~	~~MEYERS/BREEN~~
2000		—	TOIC		10.82	Breen
2002		—	11.50	.68	10.82	Kay/Sutton/Mapes
2319		—	11.20	.42	10.78	KAY/BREEN/MEYERS
10/16 0325		—	—	—	10.65	Smith/Ellison elec
0325		—	11.00	.25	10.75	" steel
0615		—	TOIC	—	10.77	Smith/ELLISON elec
0905		—	TOIC	—	10.67	" elec
1143		—	11.00	.24	10.76	Kay/Mayers
1440		—	11.20	.43	10.77	"
1745		—	11.20	.42	10.78	Earle/Kay/Meyers
12/17 1210		—	11.2	.36	10.82	Yeskis/Sutton
↓			11.5	.68		
			11.5	.69		
1244			11.3	.48		Yeskis
↓			11.8	.98		
1411			11.3	0.48		Yeskis
			11.5	0.71		
			11.7	0.89		
1558			11.3	0.49		Yeskis
			11.5	0.69	10.81	

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: MW-45

Location of Project

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1716	—	—	11.40	0.6	10.80	Kay (TIC)
1720	—	—	11.50	0.7		Kay/Meyers
1734			11.40	0.60		Yeskis
↓			11.50	0.70		
			~~11.55~~	~~0.64~~	DJY	trouble recording
2225			11.45	0.64	10.81	Yeskis
↓			11.55	0.74	10.81	
12/18 0205	transducer		45		11.19	Smith/Kay/Ellison
215					10.76	"
215					10.71	"
0540					10.82	SMITH/MEYERS
~~0753~~			~~11.0~~	~~.32~~	~~10.68~~	~~EARLE~~
~~0755~~			~~11.0~~	~~.32~~	~~10.68~~	~~EARLE~~
~~0759~~		~~11.18~~	~~11.0~~	~~.32~~	~~10.68~~	[illegible]
0802			11.0	.17	10.83	Earle/Meyers
0803			11.0	.17		"
1715			11.5	.70	10.80	Yeskis/Kay
1715			11.65	.85	10.80	"
0309		11.16	~~11.16~~			
12/19 0317					10.81	ELLISON, SMITH, EARLE
0615		11.16			10.82	Smith/Earle
0957		11.17			10.82	Smith/Ellison

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 4D

Location of Project H.O.D

Time/ Date	Δ T	Recorder Reading	Tape reading at— Meas. point	Water level	Depth to water	Name
12/15 1430		—	TOIC		41.00	Ellison
0845		—	TOIC		41.00	Ellison/Smith
1640			TOIC		42.26	MEYERS/BREEN
1955		—	TOIC		41.51	Kay/Breen/Meyers/Smith
1958		—	42.0	no mark	—	Kay/Smith/Meyers
2000			42.20	.15	42.35	Kay/Meyers
2318			42.5	.11	42.39	BREEN/MEYERS/KAY
12/16 0325			—	—	41.51	Smith/Ellison elec
0325			41.00	.51	41.49	Smith/Ellison steel
0615			—	—	41.12	" elec
0905			—	—	41.39	Smith/Ellison elec
1137		—	41.5	no mark		Kay/Meyers
1138		—	43.0	1.03	41.97	Kay/Meyers
1138		—	43.0	1.1	41.90	Kay/Meyers
1438		—	41.5	NO MARK		"
1438		—	42.0	NO MARK		"
1438		—	42.5	.31	42.19	"
1745		—	42.60	.24	42.36	[illegible]
12/17 0240			TOIC	—	42.62	Smith/Ellison steel
			42.6	.9	41.80	[illegible]
			42.6	.22	41.78	[illegible]
0820		5.175	volt 10	.66/.66		

Time/Date Test Began: 1032 12/17/87

WATER LEVEL MEASUREMENTS (Field) Well #: 4D

Location of Project H.O.D

Time/ Date	Δ T	Recorder Reading	Tape reading at— Meas. point	Water level	Depth to water	Name
12/17 1102			44.00	1.01	42.09	Doug Yeskis
↓			43.50	.48	43.02	
			43.70	.65	43.05	
1155			44.50	1.00		Yeskis
↓			44.70	1.19		
1240			44.00	0.31		Yeskis
↓			44.20	0.51		
1402		44.75	44.50	0.63	43.87	Yeskis
			44.70	0.82	43.88	
1548		44.88	44.60	0.60		Yeskis
			44.75	0.74		
1710			44.50	0.23		KAY (TIC)
			44.60	0.34		
1920		44.90	44.60	0.47		Yeskis TIC
			44.60	0.49		
			44.80	0.68		
2200		45.04	44.60	0.48	← may have bech 0.38	
			44.40	0.58		
			45.00	0.78		
			45.20	0.99		
12/18 205	transducer				45.01	Smith/Ellison/Earle
215	steel tape				44.24	"

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 4D

Location of Project _____

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
0535		44.98			44.17	SMITH/MEYERS
0800		44.92	45.0	.81	44.19	[illegible]
0801			45.0	.83	44.17	"
~~0802~~	~~(4S well)~~		~~11.0~~	~~.[illegible]~~		
~~0803~~	~~(well 4S)~~		~~11.0~~	~~.[illegible]~~		
~~10/24~~ 1024		44.96	45.0	.77		Yeskas
			45.2	.97		

Data Logger stopped @ 1043 on 12/18/87

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Fixed Sheets Well #: 4D —USEPA

Location of Project H.O.D

12/18/87

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/17/87	~~.06~~ initial →	2.7460				
~~06~~ sec	6 sec					
12 sec	12 sec		Hermit		started	
	18 sec			25 sec	late	
	24 sec					
	30 sec	2.781			John's	Hermit
	36 sec				started 2.5 min.	
	42 sec	2.82			late.	
	48 sec					
	54 sec	2.871				
	60 sec					
	72 sec	2.935				
	84 sec					
	96 sec					
	108 sec					
2 min	120 sec	3.097				
	150 sec	→ ~~130~~ sec = ~~3.097~~ 3.159				
3 min	180 sec	160 sec = 2.232				
	210 sec	3.333				
4 min	240 sec	3.381				
	270 sec					
5 min	300 sec					
	330 sec					
6 min	360 sec	3.589				

Time/Date Test Began: Fixed Sheets

WATER LEVEL MEASUREMENTS (Field) Well #: 4D - USBPM

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
118						
7 min	390 sec					
	420 sec	3.613				
8 min	450 sec	3.683 → voltage readjusted				
	480 sec	3.663				
	510 sec	3.961				
9 min	540 sec	3.711				
	570 sec	3.732				
10 min	600 sec	3.746				
11	min	3.774				
	12 min	3.810				
	13 min	3.841		↑ reading interval every sec		
	15 min	3.895		↓ reading interval every 5 sec		
	16 min	3.920		on data logger		
	21 min	4.007	43.5	0.52	42.98	
	24 min	4.043				
	29 min	4.090 →	voltage readjusted			

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 4D

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/13/91 1136	30 min	4.101				
	33 min	4.125				
1140		4.160				
1145		4.175				
1153		4.193				
1157		4.203	43.5	0.71	42.79	
		43.41 - Insitu				
1205		4.220				
1206		4.228				
		43.47 - In situ				
1210		4.225				
1223		4.244	43.5	0.75	42.75	
		43.45 - In Situ				
1230		~~4.24~~				
		4.251	43.5	0.76	42.74	
			43.6	0.96	42.64 ← ?	
1240		4.257				
1300		4.266	43.5	0.78	42.72	yellow
	Hand →	43.44	43.7	0.98	42.72	↓
1305		4.272				
1417		4.282	43.6	0.79		yellow
		43.43	43.7	0.99		
1536		4.289				
		43.42				

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 4D -USEPA

Location of Project H.O.D Recovery

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/18/87 1626		4.297				
1645			~~42.10~~	~~.45~~		KAY (TIC)
			~~42.20~~	~~.50~~		
			~~42.40~~	~~.45~~		
			~~[illegible]~~			
			43.30	.62	42.67	KAY (TIC)
			43.[illegible]	.9[illegible]	42.52	"
1705			43.46	.72		Yuskis (TIC)
			43.20	.92		"
1710		4.314	vol	10.21		(CRRIX)
1710		43.42				(~~CRR~~ HERMIT)
12/19/87 1710		4.300	43.40	0.71		Yeskis
✓		43.42	-Hermit	43.40	-0.91	✓
317		43.39	—	~~—~~	42.65	Smith/Ellison/Earl
0645	4.8841	43.36	—	—	42.10	Smith/Earl
0957	~~[illegible]~~	~~[illegible]~~	42.38		41.70	Smith/Ellison
					41.72	" "
					41.73	" "

Time/Date Test Began: HOD GW 5D.- PUMP TEST

WATER LEVEL MEASUREMENTS (Field) Well #:

Location of Project RECOVERY STARTED 12/18/87 @ 1015S

Time/Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/18 12/19 0512			38.0	.26	37.74	ELLISON, EARLE
0730		TOIC	38.0	.25	37.75	EARLE/MEYERS
0731		TOIC	38.0	.26	37.74	"
1440		TOIC	—	—	37.16	"
1441		TOIC			37.15	"
12/18, ~~1950~~		TIC	38.00	1.03	36.97	KAY (TIC)
1950		"	39.10	2.13	36.97	"
2345		"	38.00	.95	37.05	"
12/19/87		"	38.05	1.00	37.05	"
0302		"			37.02	EARLE, ELLISON + SMITH
0620		"			36.93	EARLE, SMITH
0936		"			36.52	Smith, Ellison

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: HODGW 5d

Location of Project

Time/Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/15 0855		—	TOIC		36.35	Smith/Ellison
1300		—	TOIC		36.48	Smith/Ellison
1558		—	TOIC		36.56	Breen/Meyers/Kay
1930		—	TOIC		36.64	Breen/Meyers/Kay/Sa
1930			36.7	0.08	36.62	Breen/Meyers/Kay
2307		—	37.0	.22	36.78	Breen/Meyers/Kay
12/16 0250		—	—	—	36.58	Smith/Ellison elr
0250		—	37.00	.66	36.34	" steel
0545		—	—	—	35.75	Smith/Ellison elr
0845		—	—	—	36.26	"
1125		—	36.8	no mark		Kay/Meyers
1126		—	37.1	.70	36.4	"
1415		—	36.8	.23	36.57	"
1720		—	37.0	.28	36.72	Kay/Meyers/Earle
12/17						
1622		—	38.00	.45	37.55	Kay (Reproducer
1858			38.00	0.35	37.65	Yerkie/Kay
			38.10	0.45	37.55	
2330			38.00	.49	37.51	Smith/Kay
"			38.10	.36	37.74	"
"			38.10	.36	37.74	"
12/18 0145					37.49	Smith, Earle
0147					37.79	"

Time/Date Test Began: 12/17/87 / 10:32 TEST BEGAN WATCH FAILED - DE - STARTED 4'30" INTO TEST

WATER LEVEL MEASUREMENTS (Field) Well #: 65

Location of Project

Time/Date	Δ T	Recorder Reading	Tape Reading at— Meas. point	Water level	Depth to Water	Name
12/17 1101		36.24				JDE
1103			—	—	6.71	
11:24 ~~1120~~	52'	36.32	—	—	6.71	JDE
11:42		36.24	—	—	6.69	
11:54		36.27	—	—	6.69	
12:15		36.23	—	—	6.68	
13:03		36.17	—	—	6.66	
13:09		36.25				
13:32		DATA LOGGER STARTED				
1340		36.22	—	—	6.66	
1410		36.23			6.66	
1525		3.661			6.68	Yeskis/Meyers
1527					6.68	"
1819		37.08			6.68	Yeskis/Kay
1831					6.67	"
2300		37.49	6.90	.28	6.62	Smith/Kay (TIC)
			7.00	.38	6.62	"
0130		37.00			6.64	SMITH, EARLE
0455		37.07	7.10	.39	6.61	EARLE, ELLISON
0715	10:55	37.23	7.00	.40	6.60	EARLE/MEYERS

TEST START - 10:32

STOP WATCH - FAILURE RESTARTED 4'30" INTO TEST

Time/Date Test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 65

Location of Project H.O.D.

Time/Date	Δ T	Recorder Reading	Tape Reading at— Meas. point	Water level	Depth to Water	Name
12/15 0[illegible]		—	TOIC		6.3[illegible]	Smith/Ellison
1335			"		5.87	Sm[illegible]
1545			"		6.69	KAY/BREEN/MEYERS
1915		—	TOIC		6.70	"
1915			7.70	1.0	6.7	"
1915			6.9	0.2	6.7	"
2241			7.5	.82	6.68	"
12/16 0200			—	—	6.61	Smith/Ellison elec.
0200			7.00	.33	6.67	" steel
0535			—	—	6.65	Smith/Ellison elec
0825			—	—	6.67	"
1105		—	7.0	.32	6.68	Kay/Meyers
1425		—	6.80	.11	6.69	"
1737		—	7.0	~~.33~~	~~6.99~~	Earle/Kay/Meyers
[illegible]			"	.3	6.70	"
2250			—	—	6.72	Smith/Ellison steel
(4:00) 8:30		36.38				
4:30 INT TEST						
10:32		STARTED PUMP TEST.				
		STOP WATCH FAILED, IT STARTED				
		4' 30' INTO TEST				

12/18/87 Pump test HOD ANTIOCH

Time/Date Test Began: RECOVERY

WATER LEVEL MEASUREMENTS (Field) Well #: 6S

Location of Project

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
1047		37.20	—	—	~~37.20~~	EARLE
~~11:04~~						
10:58		RECOVERY STARTED				
11:04		37.27	—	—	6.56	
11:15		37.29				
11:32		37.45			6.55	
11:47		37.45			6.55	
12:18		37.65			6.54	
12:45		37.68				
1416		37.56	—	—	6.53	Earle/Meyers
1807		37.32			6.58	Yeskis ~~Chan~~
12/19/87					6.58	Turned tape over
0001		37.31			6.60	Yeskis
					6.60	↓
	Note	37.63	← after Kay corrected @ 2035 on 12/18/87			
0242		37.10			6.60	EES
0243		37.13			6.60	
0634		37.29			6.60	
0915		37.25			6.62	Smith/Ellison
"		"			6.61	"

Pump TEST

RUN TAPE TO 22'

Time/Date test Began: 12/17/82 PUMP TEST START ≈ 10:32 HOD

WATER LEVEL MEASUREMENTS (Field) Well #: 6I

Location of Project HOD

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
11:14 ~~11:18~~	~~36'~~		—	—	22.68	
11:40			—	—	22.68	
11:51			—	—	22.68	
12:09			—	—	22.67	
12:31					22.67	
12:44			—	—	22.68	
13:01			—	—	22.69	
1340					22.68	
1521		~~22.66~~ TOIC	—	—	22.68	Yeskis/Meyers
1815		22.68			22.69	Yeskis/Kay
1817					22.69	"
2258			23.00	.34	22.66	Kay/Smith
			23.10	.44	22.66	"
2300		22.64				
0126		22.74			22.74	
0127					22.73	
0446		22.75	23.0	.28	22.72	Ellison, Earle
0455			23.0	.29	22.71	" "
0712		22.75	23.0	.30	22.70	EARLE/MEYERS
1013		22.77	—	—	22.73	Ellison/Smith

Time/Date test Began:

WATER LEVEL MEASUREMENTS (Field) Well #: 6I

Location of Project H.O.D

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
12/15 0905		—	TOIC		22.76	Smith/Ellison
1335		—	TOIC		22.45	Smith/Ellison
1543? → 1343		—	TOIC		22.58'	Breen/Kay/Meyers
1908		—	TOIC		22.50	"
1910			23.0	0.48	22.52	"
2240			23.5	0.97	22.53	"
12/16 0200		—	—	—	22.58	Smith/Ellison elec
0200		—	23.50	0.93	22.57	" steel
0535		—	—	—	22.48	Smith/Ellison elec
0825		—	—	—	22.56	"
1103		—	22.7	.13	22.57	Kay/Meyers
1425		—	23.0	.43	22.57	"
1735		—	22.70	.13	22.57	Earle/Kay/Meyers
2245		—	—	—	22.66	Smith/Ellison steel
12/17 0145		—	—	—	22.64	Smith/Ellison steel
0950		—	~~23.00~~	~~1.52~~		
0955			~~22.0~~	~~2.7~~	~~19.3~~	EARLE
1005			—	—	22.69	EARLE
~~2250~~ INTO TEST 4:30 10132	PUMP TEST STARTED STOP WATCH					
	FAILED, RE-STARTED 4'30' INTO TEST					
10151	(19')		—	—	22.68	JOE

22.73 12/18/82

HOD ANTICH Pump test

Time/Date test Began: 10:58 RECOVERY

WATER LEVEL MEASUREMENTS (Field) Well #: 6 ±

Location of Project _____

Time/ Date	ΔT	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
10:58	RECOVERY		PHASE	STARTED		EARLE
11:06		HERMIT LOOK O	—	—	22.72	
11:16			-	-	22.72	
11:30		22.72	-	-	22.71	
11:37		22.73	-	-	22.72	
11:46		22.72		-	22.72	
12:05		22.72				
12:15		22.72	—	—	22.72	
12:34		22.72				
12:45		22.73				
1:15		22.72			22.76	Earle/Meyers
2011		22.71			22.75	Yeakis
					22.76	
2336		22.72			22.76	Yeakis
					22.76	
0232		22.71			22.74	ELIASON, SMITH, EARLE
0632		—			22.73	
0910		—			22.73	Smith/Eliason

@ 10.50/.60

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 6D

Location of Project H.O.D.

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name	
11/15 0925		—	[illegible]		38.06	Smith/Ellison	
13[illegible]		—	TOIC		37.15	Smith/Ellison	
1543		—	TOIC		39.54	KAY/BREEN/MEYERS	
1908		—	TOIC		39.40	"	
1[illegible]		—	39.70	0.10	39.60	"	
2240			40.00	.35	39.65	"	
2/16 0200			—	—	39.18	Smith/Ellison	elec. tape
0200			39.50	.22	39.28	Smith/Ellison	steel tape
0535			TOIC	—	38.69	Smith/Ellison	elec.
0825			TOIC	—	39.03	"	elec
1102		—	39.4	.18	39.22	Kay/Meyers	
[illegible]		—	40.0	.56	39.44	"	
173[illegible]		—	40.0	.40	39.60	Earle/Kay/Meyers	
2230		—	TOIC	—	39.34	Smith/Ellison	steel
12/17 0145			TOIC	—	39.56	Smith/Ellison	steel
0958			40.0	.72	~~39.28~~	EARLE	
1014			—	—	~~39.20~~	EARLE	
10:32	START TEST · STOP WATCH FAILURE						
			RE-STARTED WATCH AT 4'30"				
			INTO TEST				
10:46			—	—	39.42	JOE	

WATCH FAILURE
RE-STARTED
4'30" INTO TEST

PUMP TEST START 10:32
12/17/87

Time/Date Test Began: HOD

WATER LEVEL MEASUREMENTS (Field) Well #: 6D

Location of Project _____

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
11/15			—	—	39.71	JOE
11:32			—	—	39.73	JOE
11:47					39.87	JOE.
12:05					39.94	JOE
12:15					39.91	JOE
12:27					40.02	
12:38					40.02	JOE
12:59					40.10	JOE
13:13					40.14	
13:37					40.18	
13:52				*	~~42.0~~	40.20
13:54					~~42.0~~	40.20
13:58					~~42.2~~	40.20
14.03					~~42.0~~	40.24
15:25					40.34	Yeskis/Meyers
15:28		40.30			40.34	"
1807					40.48	Yeskis/Kay
1812		"			40.48	"
1813		40.42				
2250			41.00	.40	40.54	Smith/Kay/TTC
			41.10	.56	40.54	"
2300		40.54				
12/18 0117					40.62	EARLE, SMITH

* ERROR ON MEASUREMENT BY JOE

(1)

Time/Date Test Began: 12/10/87

WATER LEVEL MEASUREMENTS (Field) Well #: 6D

Location of Project

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
0124		40.53	—	—	40.61	EARLE, SMITH
0440		40.55	41.0	.43	40.57	ELLISON, EARLE
0710		40.56	41.0	.48	40.52	EARLE/MEYERS
0711		40.58	41.0	.47	40.53	"
1010		—	—	—	40.60	Ellison/Smith steel
1010		40.59	—	—	40.59	"
1012			—	—	40.59	" steel
	RECOVERY		PHASE		(10:58	STARTED)
11:01	5	HERMIT DORMIT			40.56	EARLE
11:08	10	"			40.42	
11:12	14				40.37	
11:21	23				40.27	
11:23	25				40.25	
11:27	29	40.21				
11:29	31				40.21	
11:35	37	40.16			40.17	
11:43	45	40.12			40.14	
11:51	53	40.06			40.07	
12:06	68	40.04				
12:18	80	40.02				
12:23	85	40.01				
12:31	93	40.01			40.03	

(2)

Time/Date Test Began: 12/10/87 DOH Pump TEST ANTIOCH

WATER LEVEL MEASUREMENTS (Field) Well #: 6D

Location of Project

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
		RECOVERY		STARTED	10:58	
12:33	95	40.0				
12:39	101	39.99			39.96	
1413	185 ~~316~~	39.93			39.90	Earle/Meyers
1956	343	39.92			39.95	Yeskis
					39.95	
2350	577	39.90			39.96	Yeskis
					39.97	
12/11 0235	742	39.89			39.93	Ellison, Smith, Earle
0236	743	"			39.93	
					39.67	
0630					39.67	
0908					39.22	Ellison/Smith

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: HODGW75

Location of Project _____

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
0900		—	TOIC		3.23'	Smith/Ellison
1315		—	TOIC		2.83'	Smith/Ellison
1623		—	TOIC		2.97'	Kay/Breen/Meyers
1943		—	TOIC		3.12	Kay/Breen/Meyers
1945		—	3.50	0.41	3.09	Kay/Breen/Meyers
2300		—	3.40	0.21	3.19	KAY/BREEN/MEYERS
11/16 0305		—	—	—	3.27	Smith/Ellison elec.
0305		—	4.00	.73	3.27	" steel
0600		—	TOIC	—	3.30	Smith/Ellison elec
0850		—	TOIC	—	3.38	"
1120		—	3.8	.44	3.36	Kay/Meyers
1410		—	3.6	.19	3.41	Kay/Meyers
1715		—	3.8	.3	3.5	Kay/Meyers/Earle
12/17/87						
1610		—	3.80	.18	3.62	Kay (Reproducing)
1842		—	3.80	0.16	3.64	Kay & Yeski
			3.90	.30	3.60	
			4.0	.39	3.61	
			4.30	.68	3.22	
2320			4.80	.23	3.57	Smith/Kay
0320			4.10	.53	3.57	"
0155					3.60	SMITH, ELLISON, EARLE
0520			4.10	.40	3.60	ELLISON, EARLE

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 75

Location of Project _____

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
0738	TOIC		4.00	.45	3.55	Earle/Meyers
1430			—	—	3.43	"
1431	TOIC		—	—	3.42	"
1432	TOIC		—	—	3.43	"
(RECOVERY STARTED				12/18 @	10:58	
12/18/87						
1940	TIC		4.10	.66	3.44	KAY
			~~4.20~~	~~.78~~		—
1942	TIC		4.20	.77	3.43	KAY
2330	TIC		3.90	.46	3.44	"
			4.00	.56	3.44	"
0253					3.45	ELLISON, SMITH, EA
0255					3.45	" " "
0935					3.43	Smith/Ellison

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: _____

Location of Project _____

Time/ Date	Δ T	Recorder Reading	TAPE READING AT— Meas. point	Water level	DEPTH TO WATER	Name
0609					3.46	EARE, SMITH

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: MW-15 m.p. is TIC

Location of Project _____

Time/ Date	~~ΔT~~ Temp	Recorder Reading	Tape Reading at— Meas. point	Tape Reading at— Water level	Depth to Water	Name	
12/14/87	8°C						
~ 1830			5.00	.69	4.31	Yeskis	Steel Tape
2051		0.35	(TIC)		3.77	Kay/Breen	Electric Tape
2345		0.33	"		4.18	"	"
12/15/87 0240		0.31	"		—	"	"
0329		0.29	"		4.18	"	"
1720	6°C	0.28	4.60	.34	4.~~06~~ 2 [illegible]	"	Steel tape
2115	not taken	—	4.50	.23	4.27	Breen/Meyers	Steel tape
2355	6°C	0.30	4.50	.23	4.27	Kay/Breen/Meyers	"
12/15 0805		—	—	—	4.16	Smith/Ellison	elec
12/15 1410		—	—	—	4.27	"	elec
12/16 0410		—	—	—	4.34	"	elec
0410		—	5.00	.70	4.30	"	steel
0710		—	—	—	4.34	"	elec
0930		—	—	—	4.40	"	elec
1235	6°C	0.30	5.30	1.0	4.30	Kay/Meyers	Steel tape
1550	6°C	0.31	4.70	.41	4.29	"	
1955	7°C	0.31	5.00	0.64	4.36	Yeskis/Meyers	Steel tape
		↓	5.20	0.84	↓		
			5.40	1.04			
12/17/87 850	8°C				4.36	Yeskis	
↓					4.36	↓	

Time/Date Test Began: _____

WATER LEVEL MEASUREMENTS (Field) Well #: 15-USEPA well

Location of Project H.O.D.

Time/ Date	ΔT	Recorder Reading	Tape Reading at— Meas. point	Tape Reading at— Water level	Depth to Water	Name
12/17/87 1625		~~0.07~~	5.00	0.67	4.33	Yeskis
		0.28	5.20	0.85		↓
			5.40	1.05	4.35	
1659		0.29	5.00	0.65	4.35	Yeskis
			5.20	0.85	4.35	↓
2300		0.27			4.35	Yeskis/Ellison
					4.35	↓
0315		TIC staff = .00 " .53			4.32	Ellison, Smith
0447		TO IC	staff = .00		4.32	Smith/Meyers
0448		"	"	.55	4.32	"
0910			4.50	0.24	4.26	[illegible]
0910	7°C		4.50	0.22	4.28	"
0915	.59	(by Lake)				
0917	.55					
12/18/87						
1830		—	Steel tape		4.31	Yeskis/Kay (TI
1831	—	—	"	"	4.32	"
0216	(.55)				4.31	Ellison, Smith, Ellison
	(.53) By Lake				~~4.31~~	
0545		~~.02~~ .25			4.31	Smith, Ellison
0550		.55				"
		.52 — By Lake				"
0805		.25			4.32	Smith/Ellison

PROJECT: H.O.D.

WELL ID #: Municipal Well #4

Date	Time	PUMP On/Off	Discharge	Depth to Water	Name
12/14/87	2019	off			Kay / Breen
	2300	off			Kay / Breen
12/15/87	0130	off			Kay / Breen
	0240	off			Kay / Breen
	0505	OFF			Smith / Ellison
	0830	OFF			Smith / Ellison
	1010	OFF			Smith / Ellison
	0245	OFF			Smith
	1525	off			RAY / Breen / Meyers
	1718	off			Meyers / Sutton
	1900	off			Kay / Meyers
	2228	off		543810	Kay / Breen / Meyers
12/16/87	0817	off	—	—	Smith / Ellison

PROJECT:

WELL ID #: ANTIOCH #4

hundreds of gal. Total Discharge

Date	Time	PUMP On/Off	Discharge	Depth to Water	Name	
12/17	1033	START ON	550-600 gpm	~40'	Smith	
	1100	on	"	"	Smith	
	1125	on	"	~39	Smith	
	1137	on	~550 gpm	~38	Yeskis	
	1227	on	550-600	~38	Yeskis / Sutton	544456
	1305	on	550-600	~38	Yeskis	544616
	1350	on	"	"	Yeskis	544914
	1420	on	"	"	Yeskis	545083
	1509	on	"	~38	Yeskis / Meyers	545361
	1604	on	"	"	Yeskis	545672
	1656	on	"	"	Kay	545941
	1752	on	~550	—	Yeskis	546285
	1910	on	550-600	38	Yeskis	546719
	1948	on	"	—	Yeskis	546939
	2125	on	"	38		547488
	2333	on	"	38	Ellison	548214
12/18	0100	on	"	~37	Smith	548716
	0400	on	"	~37	Smith	549715
	0702	on	"	~38	Ellison	550714
	0810	on	"	~38	Smith	551115
	920	on	"		Yeskis	551479
	1057	turned OFF	—	~~552032~~	Smith	552032
	1130	OFF	—	~52	Smith	552032
	1300	off	—	~52	Yeskis	552032
	1920	off	—		Yeskis	552032

PROJECT: H.O.D.

WELL ID #: Municipal Well #3.

Date	Time	Pump On/Off	Total Discharge	Depth to Water	Name
12/14/87	2115	off			RTK
	2335	off			KAY/Breen
12/15/87	0225	off			KAY
	0500	OFF			Smith/Ellison
	0700	OFF			Smith/Ellison
	1243	OFF			Smith/Ellison
	1655	OFF			Meyers/SUTTON
	2046	off	273923 gallons		Kay/Sutton
12/16/87	0015	off	"		Kay
	0420	OFF	273923 gallons		Smith
	0946	OFF	"	"	Ellison
	1254	off	"	"	Kay/Meyers
	1604	OFF	"	"	Kay/Meyers/Sutton
	2316	off	"	"	Smith/Ellison
12/17/87	0510	off	"	"	Ellison
	0650	off	"	"	Ellison
	1223	off	"	55ft	Yeskis/Sutton
	1353	off	"	"	Yeskis
	1513	off	"	56/55ft	Yeskis/Meyers
	1731	"	"	55ft	Yeskis
	1945	"	"	"	Yeskis
	2338	"	"	56ft	Ellison
12/18/87	0640	"	"	55ft	Ellison
	0904	"	"	55ft	Ellison

PROJECT: _____

WELL ID #: _____

Date	Time	Pump On/Off	Discharge	Depth to Water	Name
12/18/87					
1546		off	—	54ft	Yeskis 273923
2135		"	—	"	KAY
12/19					
0105		off	—	55 ft.	Smith 273923

12/18 Recovery Test

Time after test starts — water levels

10 min	55 ft.	Smith
12 min	55 ft.	"
20 min	55 ft	"
30 min	55 ft.	"
45 min	55 ft	"

PROJECT: H.O.D.

WELL ID #: Municipal Well #5

Date	Time	Pump On/Off	Discharge	Volume H_2O ~~Depth to Water~~ through pipe at this time (meter Reading)	Name
12/14/87	1812	on	700 gpm		Doug Yeskis
	2120	on	700 gpm		Bob Kay
	2318	on	700 gpm		Kay/Breen
12/15/87	0035	on	700 gpm		Kay/Breen
	0150	on	700 gpm		Kay/Breen
	0255	on	700 gpm		Kay/Breen
	0400	on	"		Kay
	0450	on	700 gpm		Smith/Ellison
	0700	on	700 gpm		Ellison/Smith
	1240	on	700 gpm		Smith/Ellison
	1708	on	700 gpm		Meyers/Sutton
	2053	on	700 gpm	95191 gallons	Kay/Sutton
12/16/87	0033	off	—	96569 gallons	Kay
12/16/87	0109	off	—	"	Smith/Ellison
	0428	off	—	"	Smith/Ellison
	0651	off	—	"	" "
	0750	on	~~700 gpm~~	96892 gal	" "
	0945	on	700 gpm	97751	Smith/Ellison
	1300	on	700 gpm	99116 gal	Kay/Sutton/Meyers
For the last digit on the gallon meter to move 1 complete cycle takes ~1 minute 30 seconds					(RTK)
	1608	on	700 gpm	100456	Kay/Meyers/Sutton
	2252	on		103350	Kay/Earle/Yeskis
12/17/87	0355	on	700 gpm	105508	Smith/Ellison

add 00 to each

PROJECT:

WELL ID #: Municipal Well #5

Date	Time	Pump On/Off	Discharge	Total Discharge ~~Depth to Water~~	Name
12/17/87	0515	off	—	106053	Ellison/Smith
	0635	off	—	106053	Smith/Ellison
	1218	off	—	106053	Yeskis/Sutton
	1310	off		106053	Yeskis
	1603	off	—	"	Yeskis
	1726	off	—	"	Yeskis
	2118	off	—	"	Yeskis
	2342	off	—	"	Ellison
12/18/87	0030	off	—	"	Smith/Ellison
	0410	off	—	"	Earle/Meyers
	0906	off	—	"	Ellison
*	1109	on	700 gpm	"	Ellison
	1145	on	700 gpm	106303	Ellison
	1321	on	700 gpm	107006	Ellison
	1541	on	~700 gpm	108009	Yeskis
	1733	on	~700 gpm	108816	
	1906	on	"	109488	Kay
	2145	on	"	110613	"
	2256	"	"	111128	"
12/19/87	0155	on	700 gpm	112426	Smith
	0350	on	700 gpm	113206	Ellison
	0711	off	—	113818	Ellison
	0833	off	—	113818	Ellison

add 00 to each end

* leave switch set to auto.

) Note the meter is in hundreds of gpm

Sequoit Creek Stage
by well Point #3

Date	Time	Measurement Outside WP03	Measurement inside WP03
12/17/87	915	2.14 ft	3.02 ft
	1635	2.16 ft	—
	2315	2.16 ft	3.01 ft
12/18/87			
	917	2.15 ft	—
	1852	2.16 ft	2.98 ft
12/19/87	216	2.15 ft	—
	550	2.15 ft	—
	805	2.18 ft	2.96 ft
	1039	2.18 ft	2.98 ft

Silver Lake Stage

Date	Time	Measurement	
12/16/87	~1500	0.98 ft	
12/17/87	915	1.01 ft	
	1635	1.01 ft	
	2315	1.00 ft	
12/18/87	915	1.01 ft	2 More Staff reading
	1852	1.04 ft	
12/19/87	216	1.07 ft	315
	550	1.08 ft	& on 12/18/87
	805	1.05 ft	447
	1035	1.04 ft	

PRIMARY PUMP TEST TRANSDUCER DATA

HODGWIS
MON - SAT

SE1000B
Environmental Logger
12/19 14:36

Unit# 00376 Test# 1

INPUT 2: Level (F) TOC
USEDA #15

Reference	0.00
Scale factor	5.05
Offset	0.00

Step# 0 12/14 19:00

Elapsed Time		Value
0.0000	12/14	0.34
30.0000		0.34
60.0000		0.35
90.0000		0.35
120.000		0.35
150.000		0.35
180.000		0.35
210.000		0.34
240.000		0.35
270.000		0.33
300.000		0.34
330.000	12/15	0.33
360.000		0.32
390.000		0.32
420.000		0.31
450.000		0.31
480.000		0.28
510.000		0.29
540.000		0.29
570.000		0.26
600.000		0.26
630.000		0.23
660.000		0.23
690.000		0.23
720.000		0.23
750.000		0.22
780.000		0.22
810.000		0.21
840.000		0.22
870.000		0.21
900.000		0.22
930.000		0.22
960.000		0.22
990.000		0.23
1020.00		0.24
1050.00		0.24
1080.00		0.24
1110.00		0.26
1140.00		0.26
1170.00		0.27
1200.00		0.27
1230.00		0.28
1260.00		0.28
1290.00		0.29
1320.00		0.29
1350.00		0.28
1380.00		0.28
1410.00		0.29
1440.00		0.29
1470.00		0.29
1500.00		0.29
1530.00		0.29
1560.00		0.30
1590.00		0.32
1620.00		0.33
1650.00		0.35
1680.00		0.36
1710.00		0.37
1740.00		0.38
1770.00	12/16	0.30
1800.00		0.30
1830.00		0.30
1860.00		0.30
1890.00		0.30
1920.00		0.31
1950.00		0.31
1980.00		0.33
2010.00		0.37
2040.00		0.39
2070.00		0.40
2100.00		0.39
2130.00		0.40
2160.00		0.76
2190.00		0.78
2220.00		0.80
2250.00		0.81
2280.00		0.80
2310.00		0.77
2340.00		0.41
2370.00		0.38
2400.00		0.37
2430.00		0.36
2460.00		0.35
2490.00		0.35
2520.00		0.31
2550.00		0.31
2580.00		0.31
2610.00		0.31
2640.00		0.31
2670.00		0.31
2700.00		0.31
2730.00		0.31
2760.00		0.31
2790.00		0.31
2820.00		0.31
2850.00		0.31
2880.00		0.33
2910.00		0.31
2940.00		0.31
2970.00		0.31
3000.00		0.31
3030.00		0.32
3060.00		0.31
3090.00		0.31
3120.00		0.32
3150.00		0.31
3180.00		0.31
3210.00	12/17	0.31
3240.00		0.31
3270.00		0.31
3300.00		0.31
3330.00		0.31
3360.00		0.31
3390.00		0.31
3420.00		0.31
3450.00		0.31
3480.00		0.30
3510.00		0.30
3540.00		0.31
3570.00		0.30
3600.00		0.31
3630.00		0.31
3660.00		0.31
3690.00		0.31
3720.00		0.31
3750.00		0.31
3780.00		0.31
3810.00		0.31
3840.00		0.30
3870.00		0.30
3900.00		0.30
3930.00		0.29
3960.00		0.29
3990.00		0.29
4020.00		0.29
4050.00		0.29
4080.00		0.29
4110.00		0.29
4140.00		0.29
4170.00		0.28
4200.00		0.29
4230.00		0.28
4260.00		0.28
4290.00		0.28
4320.00		0.28
4350.00		0.28
4380.00		0.28
4410.00		0.28
4440.00		0.28
4470.00		0.28
4500.00		0.28
4530.00		0.27
4560.00		0.27
4590.00		0.26
4620.00		0.26
4650.00	12/18	0.26
4680.00		0.26
4710.00		0.26
4740.00		0.26
4770.00		0.26
4800.00		0.26
4830.00		0.26
4860.00		0.26
4890.00		0.26
4920.00		0.26
4950.00		0.26
4980.00		0.25
5010.00		0.25
5040.00		0.25
5070.00		0.25
5100.00		0.25
5130.00		0.25
5160.00		0.25
5190.00		0.25
5220.00		0.25
5250.00		0.25
5280.00		0.25
5310.00		0.24
5340.00		0.24
5370.00		0.23
5400.00		0.23
5430.00		0.23
5460.00		0.23
5490.00		0.23
5520.00		0.23
5550.00		0.23
5580.00		0.23
5610.00		0.23
5640.00		0.23
5670.00		0.23
5700.00		0.23
5730.00		0.23
5760.00		0.24
5790.00		0.24
5820.00		0.24
5850.00		0.24
5880.00		0.24
5910.00		0.24
5940.00		0.24
5970.00		0.25
6000.00		0.25
6030.00		0.25
6060.00		0.25
6090.00	12/19	0.25
6120.00		0.25
6150.00		0.25
6180.00		0.25
6210.00		0.25
6240.00		0.25
6270.00		0.25
6300.00		0.25
6330.00		0.25
6360.00		0.25
6390.00		0.25
6420.00		0.25
6450.00		0.25
6480.00		0.25
6510.00		0.25
6540.00		0.25
6570.00		0.25
6600.00		0.26
6630.00		0.25
6660.00		0.25
6690.00		0.25
6720.00		0.25
6750.00		0.24
6780.00		0.24
6810.00		0.24

END

HODGW1d

M-Set

SE1000B
Environmental Logger
12/19 14:27

Unit# 00376 Test# 1

INPUT 1: Level (F) TOC

Reference 0.00
Scale factor 10.08
Offset 0.00

Step# 0 12/14 19:00
USEPA #1D

Elapsed Time	Value
0.0000	- 0.01
30.0000	- 0.03
60.0000	- 0.03
90.0000	- 0.03
120.000	- 0.04
150.000	- 0.04
180.000	- 0.03
210.000	- 0.04
240.000	- 0.04
270.000	- 0.05
300.000 12 MID NIGHT	- 0.05
330.000	- 0.06
360.000	- 0.07
390.000	- 0.08
420.000	- 0.09
450.000	- 0.10
480.000	- 0.12
510.000	- 0.15
540.000	- 0.15
570.000	- 0.17
600.000	- 0.19
630.000	- 0.22
660.000	- 0.24
690.000	- 0.25
720.000	- 0.26
750.000	- 0.28
780.000	- 0.29
810.000	- 0.30
840.000	- 0.31
870.000	- 0.32
900.000	- 0.32
930.000	- 0.32
960.000	- 0.32
990.000	- 0.32
1020.00	- 0.31
1050.00	- 0.30
1080.00	- 0.31
1110.00	- 0.29
1140.00	- 0.28
1170.00	- 0.25
1200.00	- 0.25
1230.00	- 0.24
1260.00	- 0.23
1290.00	- 0.22
1320.00	- 0.22
1350.00	- 0.21
1380.00	- 0.20
1410.00	- 0.19
1440.00	- 0.18
1470.00	- 0.17
1500.00	- 0.16
1530.00	- 0.15
1560.00	- 0.16
1590.00	- 0.15
1620.00	- 0.14
1650.00	- 0.14
1680.00	- 0.14
1710.00	- 0.13
1740.00 MIDNIGHT	- 0.13
WED 1770.00	- 0.13
1800.00	- 0.14
1830.00	- 0.16
1860.00	- 0.18
1890.00	- 0.22
1920.00	- 0.25
1950.00	- 0.29
1980.00	- 0.31
2010.00	- 0.37
2040.00	- 0.40
2070.00	- 0.44
2100.00	- 0.46
2130.00	- 0.50
2160.00	- 0.51
2190.00	- 0.53
2220.00	- 0.55
2250.00	- 0.54
2280.00	- 0.52
2310.00	- 0.50
2340.00	- 0.48
2370.00	- 0.46
2400.00	- 0.45
2430.00	- 0.42
2460.00	- 0.40
2490.00	- 0.39
2520.00	- 0.38
2550.00	- 0.36
2580.00	- 0.34
2610.00	- 0.31
2640.00	- 0.29
2670.00	- 0.27
2700.00	- 0.26
2730.00	- 0.24
2760.00	- 0.22
2790.00	- 0.20
2820.00	- 0.18
2850.00	- 0.17
2880.00	- 0.15
2910.00	- 0.13
2940.00	- 0.12
2970.00	- 0.12
3000.00	- 0.10
3030.00	- 0.08
3060.00	- 0.07
3090.00	- 0.05
3120.00	- 0.06
3150.00	- 0.04
3180.00 THU	- 0.04
3210.00	- 0.04
3240.00	- 0.03
3270.00	- 0.02
3300.00	- 0.01
3330.00	- 0.00
3360.00	- 0.00
3390.00	0.00
3420.00	0.00
3450.00	0.01
3480.00	0.01
3510.00	0.01
3540.00	0.02
3570.00	0.00
3600.00	- 0.00
3630.00	- 0.02
3660.00	- 0.05
3690.00	- 0.09
3720.00	- 0.12 SAT
3750.00	- 0.15
3780.00	- 0.18
3810.00 start pump	- 0.21
3840.00	- 0.23
3870.00	- 0.22
3900.00	- 0.20
3930.00	- 0.17
3960.00	- 0.14
3990.00	- 0.11
4020.00	- 0.09
4050.00	- 0.06
4080.00	- 0.03
4110.00	- 0.01
4140.00	0.00
4170.00	0.02
4200.00	0.04
4230.00	0.06
4260.00	0.07
4290.00	0.09
4320.00	0.11
4350.00	0.12
4380.00	0.13
4410.00	0.15
4440.00	0.16
4470.00	0.17
4500.00	0.17
4530.00	0.18
4560.00	0.17
4590.00	0.17
4620.00	0.17
4650.00	0.18
4680.00	0.18
4710.00	0.19
4740.00	0.19
4770.00	0.19
4800.00	0.19
4830.00	0.20
4860.00	0.19
4890.00	0.20
4920.00	0.19
4950.00	0.18
4980.00	0.18
5010.00	0.19
5040.00	0.20
5070.00	0.20
5100.00	0.21
5130.00	0.21
5160.00	0.21
5190.00	0.20
5220.00	0.20
5250.00	0.21
5280.00	0.21
5310.00	0.19
5340.00	0.16
5370.00	0.13
5400.00	0.11
5430.00	0.11
5460.00	0.09
5490.00	0.08
5520.00	0.07
5550.00	0.07
5580.00	0.07
5610.00	0.07
5640.00	0.07
5670.00	0.08
5700.00	0.08
5730.00	0.07
5760.00	0.07
5790.00	0.07
5820.00	0.07
5850.00	0.07
5880.00	0.06
5910.00	0.07
5940.00	0.07
5970.00	0.07
6000.00	0.07
6030.00	0.07
6060.00	0.07
6090.00	0.06
6120.00	0.06
6150.00	0.06
6180.00	0.05
6210.00	0.05
6240.00	0.05
6270.00	0.04
6300.00	0.04 NOON
6330.00	0.03
6360.00	0.03
6390.00	0.02
6420.00	0.01
6450.00	- 0.00
6480.00	- 0.03
6510.00	- 0.07
6540.00	- 0.09
6570.00	- 0.14
6600.00	- 0.17
6630.00	- 0.22
6660.00	- 0.25
6690.00	- 0.27
6720.00	- 0.28
6750.00	- 0.29
6780.00	- 0.29
6810.00	- 0.29

END

SE1000B
Environmental Logger
12/19 00:06

Unit# 00372 Test# 1
Pumping Area

INPUT 2: Level (F) TOC
USEPA #6I

Reference	22.69
Scale factor	10.10
Offset	0.00

Step# 0 12/17 10:34

started 4.5 min. after test began

Elapsed Time	Value
0.0000	22.69
0.0033	22.69
0.0066	22.69
0.0099	22.69
0.0133	22.69
0.0166	22.69
0.0200	22.53
0.0233	22.55
0.0266	22.56
0.0300	22.56
0.0333	22.54
0.0500	22.69
0.0666	22.69
0.0833	22.69
0.1000	22.69
0.1166	22.69
0.1333	22.69
0.1500	22.69
0.1666	22.69
0.1833	22.69
0.2000	22.69
0.2166	22.69
0.2333	22.70
0.2500	22.69
0.2666	22.69
0.2833	22.49
0.3000	22.50
0.3166	22.51
0.3333	22.51
0.4167	22.69
0.5000	22.69
0.5833	22.69
0.6667	22.69
0.7500	22.69
0.8333	22.69
0.9167	22.69
1.0000	22.69
1.0833	22.69
1.1667	22.69
1.2500	22.69
1.3333	22.69
1.4166	22.69
1.5000	22.69
1.5833	22.69
1.6667	22.69
1.7500	22.69
1.8333	22.69
1.9167	22.69
2.0000	22.69
2.5000	22.69
3.0000	22.69
3.5000	22.69
4.0000	22.69
4.5000	22.69
5.0000	22.69
5.5000	22.69
6.0000	22.69
6.5000	22.69
7.0000	22.69
7.5000	22.69
8.0000	22.69
8.5000	22.69
9.0000	22.69
9.5000	22.69
10.0000	22.69
12.0000	22.69
14.0000	22.69
16.0000	22.69
18.0000	22.69
20.0000	22.69
22.0000	22.70
24.0000	22.69
26.0000	22.69
28.0000	22.69
30.0000	22.69
32.0000	22.69
34.0000	22.69
36.0000	22.69
38.0000	22.69
40.0000	22.69
42.0000	22.69
44.0000	22.68
46.0000	22.68
48.0000	22.68
50.0000	22.69
52.0000	22.69
54.0000	22.69
56.0000	22.69
58.0000	22.69
60.0000	22.68
62.0000	22.69
64.0000	22.69
66.0000	22.68
68.0000	22.69
70.0000	22.69
72.0000	22.68
74.0000	22.68
76.0000	22.68
78.0000	22.65
80.0000	22.68
82.0000	22.68
84.0000	22.67
86.0000	22.69
88.0000	22.69
90.0000	22.68
92.0000	22.69
94.0000	22.68
96.0000	22.67
98.0000	22.68
100.000	22.67
110.000	22.67
120.000	22.68
130.000	22.67
140.000	22.66
150.000	22.67
160.000	22.67
170.000	22.67
180.000	22.68
190.000	22.67
200.000	22.68
210.000	22.68
220.000	22.67
230.000	22.68
240.000	22.66
250.000	22.66
260.000	22.66
270.000	22.66
280.000	22.66
290.000	22.66
300.000	22.66
310.000	22.66
320.000	22.67
330.000	22.66
340.000	22.66
350.000	22.67
360.000	22.67
370.000	22.67
380.000	22.67
390.000	22.67
400.000	22.67
410.000	22.67
420.000	22.68
430.000	22.68
440.000	22.68
450.000	22.68
460.000	22.68
470.000	22.69
480.000	22.69
490.000	22.69
500.000	22.69
510.000	22.69
520.000	22.69
530.000	22.70
540.000	22.69
550.000	22.70
560.000	22.70
570.000	22.70
580.000	22.70
590.000	22.70
600.000	22.71
610.000	22.71
620.000	22.71
630.000	22.71
640.000	22.71
650.000	22.71
660.000	22.71
670.000	22.72
680.000	22.72
690.000	22.72
700.000	22.72
710.000	22.72
720.000	22.72
730.000	22.72
740.000	22.64
750.000	22.72
760.000	22.72
770.000	22.72
780.000	22.72
790.000	22.73
800.000	22.73
810.000	22.73
820.000	22.73
830.000	22.73
840.000	22.73
850.000	22.73
860.000	22.73
870.000	22.74
880.000	22.74
890.000	22.74
900.000	22.74
910.000	22.74
920.000	22.74
930.000	22.74
940.000	22.74
950.000	22.75
960.000	22.74
970.000	22.74
980.000	22.75
990.000	22.75
1000.00	22.75
1100.00	22.76
1200.00	22.76
1300.00	22.76
1400.00	22.77

END

HODGW6I
Pumping

SE1000B
Environmental Logger
12/18 23:56

Unit# 00372 Test# 1
Pumping Phase

INPUT 1: Level (F) TOC
USEPA 6D

Reference 39.20
Scale factor 10.08
Offset 0.00

Step# 0 12/17 10:34

Elapsed Time	Value	dd*
0.0000	39.17	
0.0033	39.17	
0.0066	39.18	
0.0099	39.18	
0.0133	39.18	
0.0166	39.18	
0.0200	39.18	
0.0233	39.13	
0.0266	39.14	
0.0300	39.13	
0.0333	39.14	
0.0500	39.18	
0.0666	39.18	
0.0833	39.18	
0.1000	39.18	
0.1166	39.18	
0.1333	39.18	
0.1500	39.18	
0.1666	39.18	
0.1833	39.18	
0.2000	39.18	
0.2166	39.18	
0.2333	39.15	
0.2500	39.18	
0.2666	39.18	
0.2833	39.15	
0.3000	39.15	
0.3166	39.15	
0.3333	39.15	
0.4167	39.18	
0.5000	39.18	
0.5833	39.18	
0.6667	39.18	
0.7500	39.18	
0.8333	39.18	
0.9167	39.18	
1.0000	39.18	
1.0833	39.18	.01
1.1667	39.19	
1.2500	39.19	
1.3333	39.19	
1.4166	39.19	
1.5000	39.19	
1.5833	39.19	.02
1.6667	39.20	
1.7500	39.20	
1.8333	39.20	
1.9167	39.20	
2.0000	39.20	
2.5000	39.20	.03
3.0000	39.21	.04
3.5000	39.22	.05
4.0000	39.23	.06
4.5000	39.24	.07
5.0000	39.25	.08
5.5000	39.26	.09
6.0000	39.27	
6.5000	39.27	.10
7.0000	39.28	.11
7.5000	39.29	.12
8.0000	39.30	.13
8.5000	39.31	.14
9.0000	39.32	.15
9.5000	39.33	.16
10.0000	39.33	.16
12.0000	39.36	.19
14.0000	39.39	.22
16.0000	39.42	.25
18.0000	39.44	.27
20.0000	39.47	.30
22.0000	39.49	.32
24.0000	39.51	.34
26.0000	39.54	.37
28.0000	39.56	.39
30.0000	39.57	.40
32.0000	39.59	.42
34.0000	39.61	.44
36.0000	39.62	.45
38.0000	39.64	.47
40.0000	39.65	.48
42.0000	39.67	.50
44.0000	39.68	.51
46.0000	39.70	.53
48.0000	39.72	.55
50.0000	39.73	.56
52.0000	39.74	.57
54.0000	39.75	.58
56.0000	39.75	.58
58.0000	39.78	.61
60.0000	39.80	
62.0000	39.80	.63
64.0000	39.81	.64
66.0000	39.82	.65
68.0000	39.83	.66
70.0000	39.84	.67
72.0000	39.85	.68
74.0000	39.86	.69
76.0000	39.87	.70
78.0000	39.88	.71
80.0000	39.89	.72
82.0000	39.89	.72
84.0000	39.90	.73
86.0000	39.91	.74
88.0000	39.93	.76
90.0000	39.93	.76
92.0000	39.94	
94.0000	39.94	.77
96.0000	39.95	.78
98.0000	39.96	
100.000	39.96	.79
110.000	40.00	.83
120.000	40.02	.85
130.000	40.05	.88
140.000	40.07	.90
150.000	40.10	.93
160.000	40.12	.95
170.000	40.14	.97
180.000	40.16	.99
190.000	40.17	1.00
200.000	40.21	1.
210.000	40.21	1.04
220.000	40.22	1.05
230.000	40.24	1.07
240.000	40.25	1.08
250.000	40.26	1.09
260.000	40.27	1.10
270.000	40.28	.11
280.000	40.29	
290.000	40.29	.12
300.000	40.30	.13
310.000	40.31	.14
320.000	40.32	.15
330.000	40.32	.15
340.000	40.33	.16
350.000	40.34	.17
360.000	40.35	.18
370.000	40.36	
380.000	40.36	.19
390.000	40.37	1.20
400.000	40.38	.21
410.000	40.39	
420.000	40.39	.22
430.000	40.40	.23
440.000	40.41	.24
450.000	40.42	
460.000	40.42	1.25
470.000	40.43	
480.000	40.43	.26
490.000	40.44	
500.000	40.44	.27
510.000	40.45	
520.000	40.45	.28
530.000	40.46	.29
540.000	40.47	1.30
550.000	40.47	1.30
560.000	40.48	.31
570.000	40.49	
580.000	40.49	.32
590.000	40.50	
600.000	40.50	
610.000	40.50	.33
620.000	40.51	
630.000	40.51	
640.000	40.51	.34
650.000	40.52	
660.000	40.52	
670.000	40.52	.35
680.000	40.53	
690.000	40.53	
700.000	40.53	
710.000	40.53	.36
720.000	40.54	
730.000	40.54	
740.000	40.54	
750.000	40.54	
760.000	40.54	
770.000	40.54	
780.000	40.54	.37
790.000	40.55	
800.000	40.55	
810.000	40.55	
820.000	40.55	
830.000	40.55	
840.000	40.55	
850.000	40.55	
860.000	40.55	.38
870.000	40.56	
880.000	40.56	
890.000	40.53	
900.000	40.56	
910.000	40.56	
920.000	40.56	
930.000	40.56	
940.000	40.56	
950.000	40.56	
960.000	40.56	
970.000	40.56	
980.000	40.55	
990.000	40.55	
1000.00	40.55	
1100.00	40.56	
1200.00	40.56	
1300.00	40.57	
1400.00	40.59	

END

HODGW 6d
Pumping

* dd - drawdown

SE1000B
Environmental Logger
12/18 16:49

Unit# 00361 Test# 1
Pumping Phase
INPUT 1: Level (F) TOC

Reference 42.62
Scale factor 20.22
Offset 0.00

Step# 0 12/17 10:33
USEPA #4D

Elapsed Time	Value	drawdown
0.0000	42.51	
0.0033	42.51	
0.0066	42.51	
0.0099	42.51	
0.0133	42.51	
0.0166	42.51	
0.0200	42.51	
0.0233	42.51	
0.0266	42.51	
0.0300	42.52	
0.0333	42.52	
0.0500	42.52	
0.0666	42.52	
0.0833	42.51	
0.1000	42.52	
0.1166	42.53	
0.1333	42.52	
0.1500	42.52	
0.1666	42.52	
0.1833	42.52	
0.2000	42.52	
0.2166	42.52	
0.2333	42.52	.01
0.2500	42.53	
0.2666	42.53	
0.2833	42.53	
0.3000	42.53	
0.3166	42.53	
0.3333	42.53	.02
0.4167	42.54	.03
0.5000	42.55	.04
0.5833	42.56	.05
0.6667	42.58	.07
0.7500	42.60	.09
0.8333	42.62	.11
0.9167	42.64	.13
1.0000	42.66	.15
1.0833	42.68	.17
1.1667	42.70	.19
1.2500	42.73	.22
1.3333	42.74	.23
1.4166	42.76	.25
1.5000	42.77	.26
1.5833	42.79	.28
1.6667	42.81	.30
1.7500	42.83	.32
1.8333	42.85	.34
1.9167	42.86	.35
2.0000	42.88	.37
2.5000	42.97	.46
3.0000	43.04	.53
3.5000	43.10	.59
4.0000	43.15	.64
4.5000	43.20	.69
5.0000	43.24	.73
5.5000	43.27	.76
6.0000	43.31	.80
6.5000	43.34	.83
7.0000	43.37	.86
7.5000	43.40	.89
8.0000	43.42	.91
8.5000	43.45	.94
9.0000	43.47	.96
9.5000	43.49	.98
10.0000	43.51	1.00
12.0000	43.59	1.08
14.0000	43.65	1.14
16.0000	43.70	1.19
18.0000	43.75	1.24
20.0000	43.80	1.29
22.0000	43.84	1.33
24.0000	43.88	1.37
26.0000	43.91	1.40
28.0000	43.95	1.44
30.0000	43.97	1.46
32.0000	44.00	1.49
34.0000	44.03	1.52
36.0000	44.05	1.54
38.0000	44.08	1.57
40.0000	44.11	1.60
42.0000	44.12	1.61
44.0000	44.14	1.63
46.0000	44.16	1.65
48.0000	44.18	1.67
50.0000	44.20	1.69
52.0000	44.21	1.70
54.0000	44.23	1.72
56.0000	44.25	1.74
58.0000	44.26	1.75
60.0000	44.28	1.77
62.0000	44.29	1.78
64.0000	44.30	1.79
66.0000	44.32	1.81
68.0000	44.33	1.82
70.0000	44.34	1.83
72.0000	44.35	1.84
74.0000	44.37	1.86
76.0000	44.38	1.87
78.0000	44.39	1.88
80.0000	44.37	1.86
82.0000	44.41	1.90
84.0000	44.42	1.91
86.0000	44.44	1.93
88.0000	44.44	1.93
90.0000	44.45	1.94
92.0000	44.46	1.95
94.0000	44.47	1.96
96.0000	44.48	
98.0000	44.48	1.97
100.000	44.50	1.99
110.000	44.53	2.02
120.000	44.57	2.06
130.000	44.60	2.09
140.000	44.63	2.12
150.000	44.64	2.13
160.000	44.67	2.16
170.000	44.70	2.19
180.000	44.71	2.20
190.000	44.72	2.21
200.000	44.74	2.23
210.000	44.75	2.24
220.000	44.77	2.26
230.000	44.78	2.27
240.000	44.80	2.29
250.000	44.81	2.30
260.000	44.82	2.31
270.000	44.83	2.32
280.000	44.85	2.34
290.000	44.86	2.35
300.000	44.87	2.36
310.000	44.87	2.36
320.000	44.89	
330.000	44.89	
340.000	44.89	2.38
350.000	44.90	2.39
360.000	44.91	2.40
370.000	44.92	
380.000	44.92	2.41
390.000	44.93	2.42
400.000	44.94	
410.000	44.94	
420.000	44.94	
430.000	44.94	2.43
440.000	44.96	
450.000	44.96	
460.000	44.96	2.45
470.000	44.97	
480.000	44.98	
490.000	44.98	
500.000	44.98	
510.000	44.98	
520.000	44.99	
530.000	44.99	
540.000	45.00	
550.000	45.00	
560.000	45.01	
570.000	45.01	
580.000	45.01	
590.000	45.01	
600.000	45.02	
610.000	45.03	
620.000	45.03	
630.000	45.03	
640.000	45.03	
650.000	45.03	
660.000	45.03	
670.000	45.03	
680.000	45.03	
690.000	45.03	
700.000	45.03	
710.000	45.04	
720.000	45.04	
730.000	45.04	
740.000	45.03	
750.000	45.03	
760.000	45.04	
770.000	45.03	
780.000	45.03	
790.000	45.03	
800.000	45.03	
810.000	45.03	
820.000	45.03	
830.000	45.03	
840.000	45.03	
850.000	45.03	
860.000	45.03	
870.000	45.03	
880.000	45.03	
890.000	45.03	
900.000	45.03	
910.000	45.02	
920.000	45.02	
930.000	45.02	
940.000	45.01	
950.000	45.01	
960.000	45.02	
970.000	45.01	
980.000	45.00	
990.000	45.00	
1000.00	45.00	
1100.00	44.98	
1200.00	44.94	
1300.00	44.92	
1400.00	44.94	

END

HODGW 4d
Pumping

HODGW 4d
Recovery

SE1000B
Environmental Logger
12/19 13:14

Unit# 00361 Test# 2
Recovery
INPUT 1: Level (F) TOC
USEPA 4D
Reference 44.96
Scale factor 20.22
Offset 0.00

Step# 0 12/18 10:58

Elapsed Time (adjusted time)		Value
0.0000		47.23
0.0033		47.23
0.0066		47.23
0.0099		47.23
0.0133		47.23
0.0166		47.23
0.0200		47.23
0.0233		47.23
0.0266		47.23
0.0300		47.23
0.0333		47.23
0.0500	.47	47.23
0.0666		47.22
0.0833		47.22
0.1000	.52	47.22
0.1166		47.21
0.1333		47.21
0.1500		47.21
0.1666	.59	47.21
0.1833		47.20
0.2000	.62	47.20
0.2166		47.19
0.2333		47.19
0.2500	.68	47.19
0.2666		47.18
0.2833	.70	47.18
0.3000		47.17
0.3166		47.17
0.3333	.75	47.17
0.4167	.84	47.15
0.5000	.92	47.12
0.5833	1.00	47.10
0.6667	1.09	47.08
0.7500	1.17	47.06
0.8333	1.25	47.04
0.9167	1.34	47.01
1.0000	1.42	47.00
1.0833	1.50	46.98
1.1667	1.59	46.96
1.2500	1.67	46.94
1.3333	1.75	46.93
1.4166	1.84	46.91
1.5000	1.92	46.89
1.5833	2.00	46.87
1.6667	2.09	46.85
1.7500	2.17	46.84
1.8333	2.25	46.83
1.9167	2.34	46.81
2.0000	2.42	46.80
2.5000	2.92	46.71
3.0000	3.42	46.66
3.5000	3.92	46.61
4.0000	4.42	46.55
4.5000	4.92	46.52
5.0000	5.42	46.48
5.5000	5.92	46.44
6.0000	6.42	46.41
6.5000	6.92	46.38
7.0000	7.42	46.36
7.5000		46.32
8.0000		46.30
8.5000		46.28
9.0000		46.26
9.5000		46.24
10.0000		46.22
12.0000		46.14
14.0000		46.08
16.0000		46.04
18.0000		45.99
20.0000		45.97
22.0000		45.94
24.0000		45.92
26.0000		45.90
28.0000		45.88
30.0000		45.86
32.0000		45.85
34.0000		45.83
36.0000		45.82
38.0000		45.82
40.0000		45.81
42.0000		45.81
44.0000		45.80
46.0000		45.79
48.0000		45.79
50.0000		45.78
52.0000		45.77
54.0000		45.77
56.0000		45.75
58.0000		45.76
60.0000		45.75
62.0000		45.75
64.0000		45.75
66.0000		45.75
68.0000		45.75
70.0000		45.74
72.0000		45.74
74.0000		45.74
76.0000		45.74
78.0000		45.74
80.0000		45.74
82.0000		45.74
84.0000		45.73
86.0000		45.73
88.0000		45.73
90.0000		45.73
92.0000		45.73
94.0000		45.72
96.0000		45.72
98.0000		45.72
100.000		45.72
110.000		45.72
120.000		45.69
130.000		45.71
140.000		45.71
150.000		45.71
160.000		45.71
170.000		45.70
180.000		45.70
190.000		45.70
200.000		45.70
210.000		45.70
220.000		45.70
230.000		45.70
240.000		45.70
250.000		45.70
260.000		45.70
270.000		45.70
280.000		45.70
290.000		45.70
300.000		45.70
310.000		45.69
320.000		45.69
330.000		45.70
340.000		45.69
350.000		45.69
360.000		45.70
370.000		45.70
380.000		45.70
390.000		45.70
400.000		45.70
410.000		45.70
420.000		45.70
430.000		45.70
440.000		45.70
450.000		45.70
460.000		45.70
470.000		45.70
480.000		45.70
490.000		45.70
500.000		45.70
510.000		45.70
520.000		45.70
530.000		45.70
540.000		45.70
550.000		45.70
560.000		45.70
570.000		45.70
580.000		45.70
590.000		45.70
600.000		45.70
610.000		45.70
620.000		45.70
630.000		45.70
640.000		45.70
650.000		45.70
660.000		45.70
670.000		45.70
680.000		45.70
690.000		45.70
700.000		45.70
710.000		45.70
720.000		45.70
730.000		45.70
740.000		45.70
750.000		45.70
760.000		45.70
770.000		45.70
780.000		45.70
790.000		45.70
800.000		45.70
810.000		45.69
820.000		45.69
830.000		45.69
840.000		45.69
850.000		45.69
860.000		45.69
870.000		45.69
880.000		45.69
890.000		45.68
900.000		45.68
910.000		45.68
920.000		45.68
930.000		45.67
940.000		45.67
950.000		45.67
960.000		45.67
970.000		45.67
980.000		45.67
990.000		45.67
1000.00		45.67
1100.00		45.64
1200.00		45.01
1300.00		44.66
1400.00		44.81

END

SE1000B
Environmental Logger
12/18 16:58

Unit# 00361 Test# 1
Pumping Phase
INPUT 2: Level (F) TOC
WMI #2
Reference 11.18
Scale factor 10.05
Offset 0.00

Step# 0 12/17 10:33

Elapsed Time	Value
0.0000	11.19
0.0033	11.19
0.0066	11.19
0.0099	11.19
0.0133	11.19
0.0166	11.19
0.0200	11.19
0.0233	11.19
0.0266	11.19
0.0300	11.19
0.0333	11.19
0.0500	11.19
0.0666	11.19
0.0833	11.19
0.1000	11.20
0.1166	11.08
0.1333	11.19
0.1500	11.19
0.1666	11.19
0.1833	11.19
0.2000	11.19
0.2166	11.19
0.2333	11.19
0.2500	11.19
0.2666	11.19
0.2833	11.19
0.3000	11.19
0.3166	11.19
0.3333	11.19
0.4167	11.19
0.5000	11.19
0.5833	11.19
0.6667	11.18
0.7500	11.19
0.8333	11.19
0.9167	11.19
1.0000	11.19
1.0833	11.19
1.1667	11.19
1.2500	11.18
1.3333	11.19
1.4166	11.19
1.5000	11.19
1.5833	11.19
1.6667	11.19
1.7500	11.19
1.8333	11.19
1.9167	11.20
2.0000	11.20
2.5000	11.20
3.0000	11.20
3.5000	11.20
4.0000	11.20
4.5000	11.20
5.0000	11.21
5.5000	11.21
6.0000	11.21
6.5000	11.21
7.0000	11.20
7.5000	11.20
8.0000	11.21
8.5000	11.21
9.0000	11.21
9.5000	11.20
10.0000	11.20
12.0000	11.21
14.0000	11.21
16.0000	11.21
18.0000	11.21
20.0000	11.20
22.0000	11.21
24.0000	11.20
26.0000	11.21
28.0000	11.21
30.0000	11.21
32.0000	11.21
34.0000	11.21
36.0000	11.21
38.0000	11.21
40.0000	11.20
42.0000	11.20
44.0000	11.20
46.0000	11.19
48.0000	11.20
50.0000	11.20
52.0000	11.20
54.0000	11.20
56.0000	11.20
58.0000	11.20
60.0000	11.20
62.0000	11.19
64.0000	11.20
66.0000	11.19
68.0000	11.19
70.0000	11.19
72.0000	11.20
74.0000	11.20
76.0000	11.20
78.0000	11.19
80.0000	11.19
82.0000	11.19
84.0000	11.19
86.0000	11.20
88.0000	11.19
90.0000	11.18
92.0000	11.19
94.0000	11.18
96.0000	11.18
98.0000	11.19
100.000	11.19
110.000	11.19
120.000	11.19
130.000	11.19
140.000	11.18
150.000	11.18
160.000	11.18
170.000	11.18
180.000	11.18
190.000	11.18
200.000	11.18
210.000	11.17
220.000	11.18
230.000	11.18
240.000	11.18
250.000	11.18
260.000	11.18
270.000	11.18
280.000	11.18
290.000	11.18
300.000	11.18
310.000	11.18
320.000	11.18
330.000	11.18
340.000	11.18
350.000	11.18
360.000	11.18
370.000	11.18
380.000	11.18
390.000	11.18
400.000	11.18
410.000	11.18
420.000	11.18
430.000	11.18
440.000	11.18
450.000	11.18
460.000	11.18
470.000	11.18
480.000	11.18
490.000	11.18
500.000	11.18
510.000	11.18
520.000	11.18
530.000	11.18
540.000	11.18
550.000	11.18
560.000	11.18
570.000	11.18
580.000	11.18
590.000	11.18
600.000	11.18
610.000	11.18
620.000	11.18
630.000	11.18
640.000	11.18
650.000	11.18
660.000	11.18
670.000	11.18
680.000	11.18
690.000	11.18
700.000	11.19
710.000	11.18
720.000	11.18
730.000	11.18
740.000	11.18
750.000	11.18
760.000	11.18
770.000	11.18
780.000	11.18
790.000	11.18
800.000	11.19
810.000	11.19
820.000	11.19
830.000	11.19
840.000	11.18
850.000	11.18
860.000	11.18
870.000	11.18
880.000	11.19
890.000	11.19
900.000	11.18
910.000	11.18
920.000	11.18
930.000	11.18
940.000	11.19
950.000	11.20
960.000	11.19
970.000	11.19
980.000	11.19
990.000	11.19
1000.00	11.19
1100.00	11.19
1200.00	11.18
1300.00	11.18
1400.00	11.18

END

WMI-2
Pumping

SE1000B
Environmental Logger
12/19 13:22

Unit# 00361 Test# 2 Recovery

INPUT 2: Level (F) TOC
WMI #2

Reference 11.18
Scale factor 10.05
Offset 0.00

Step# 0 12/18 10:58

Elapsed Time	Value
0.0000	11.17
0.0033	11.17
0.0066	11.18
0.0099	11.17
0.0133	11.17
0.0166	11.17
0.0200	11.17
0.0233	11.17
0.0266	11.17
0.0300	11.17
0.0333	11.18
0.0500	11.17
0.0666	11.17
0.0833	11.17
0.1000	11.18
0.1166	11.18
0.1333	11.18
0.1500	11.18
0.1666	11.18
0.1833	11.18
0.2000	11.18
0.2166	11.18
0.2333	11.18
0.2500	11.18
0.2666	11.17
0.2833	11.18
0.3000	11.17
0.3166	11.18
0.3333	11.18
0.4167	11.18
0.5000	11.18
0.5833	11.18
0.6667	11.18
0.7500	11.18
0.8333	11.18
0.9167	11.18
1.0000	11.18
1.0833	11.18
1.1667	11.18
1.2500	11.18
1.3333	11.18
1.4166	11.18
1.5000	11.18
1.5833	11.18
1.6667	11.18
1.7500	11.18
1.8333	11.18
1.9167	11.18
2.0000	11.17
2.5000	11.16
3.0000	11.15
3.5000	11.15
4.0000	11.15
4.5000	11.15
5.0000	11.15
5.5000	11.15
6.0000	11.15
6.5000	11.15
7.0000	11.15
7.5000	11.15
8.0000	11.15
8.5000	11.15
9.0000	11.16
9.5000	11.16
10.0000	11.15
12.0000	11.15
14.0000	11.15
16.0000	11.16
18.0000	11.17
20.0000	11.17
22.0000	11.16
24.0000	11.16
26.0000	11.17
28.0000	11.12
30.0000	11.17
32.0000	11.15
34.0000	11.15
36.0000	11.15
38.0000	11.17
40.0000	11.16
42.0000	11.15
44.0000	11.16
46.0000	11.15
48.0000	11.15
50.0000	11.15
52.0000	11.15
54.0000	11.15
56.0000	11.15
58.0000	11.15
60.0000	11.16
62.0000	11.16
64.0000	11.14
66.0000	11.14
68.0000	11.14
70.0000	11.12
72.0000	11.15
74.0000	11.14
76.0000	11.14
78.0000	11.15
80.0000	11.15
82.0000	11.14
84.0000	11.14
86.0000	11.15
88.0000	11.16
90.0000	11.15
92.0000	11.16
94.0000	11.16
96.0000	11.15
98.0000	11.15
100.000	11.15
110.000	11.15
120.000	11.15
130.000	11.16
140.000	11.16
150.000	11.15
160.000	11.15
170.000	11.16
180.000	11.15
190.000	11.15
200.000	11.15
210.000	11.15
220.000	11.15
230.000	11.15
240.000	11.15
250.000	11.15
260.000	11.15
270.000	11.15
280.000	11.15
290.000	11.15
300.000	11.15
310.000	11.15
320.000	11.15
330.000	11.15
340.000	11.17
350.000	11.17
360.000	11.16
370.000	11.16
380.000	11.16
390.000	11.16
400.000	11.16
410.000	11.16
420.000	11.16
430.000	11.16
440.000	11.16
450.000	11.16
460.000	11.16
470.000	11.16
480.000	11.16
490.000	11.16
500.000	11.16
510.000	11.16
520.000	11.16
530.000	11.16
540.000	11.16
550.000	11.16
560.000	11.16
570.000	11.16
580.000	11.16
590.000	11.16
600.000	11.16
610.000	11.16
620.000	11.16
630.000	11.16
640.000	11.15
650.000	11.16
660.000	11.16
670.000	11.16
680.000	11.16
690.000	11.15
700.000	11.15
710.000	11.15
720.000	11.15
730.000	11.15
740.000	11.15
750.000	11.15
760.000	11.15
770.000	11.15
780.000	11.15
790.000	11.15
800.000	11.15
810.000	11.15
820.000	11.15
830.000	11.16
840.000	11.16
850.000	11.16
860.000	11.15
870.000	11.15
880.000	11.16
890.000	11.16
900.000	11.16
910.000	11.15
920.000	11.15
930.000	11.15
940.000	11.16
950.000	11.15
960.000	11.16
970.000	11.15
980.000	11.16
990.000	11.16
1000.00	11.16
1100.00	11.16
1200.00	11.17
1300.00	11.17
1400.00	11.15

END
READY

WMI-2
Recovery

Pre - Test
WMI-2
4d
6i
6d

12/17/87

SE1000B
Environmental Logger
12/18 14:32

Unit# 00361 Test# 0
Pretest

INPUT 1: Level (F) TOC
USEPA #4D

Reference	42.62
Scale factor	20.22
Offset	0.00

Step# 0 12/17 02:40

	Elapsed Time	Value
0240	0.0000	42.62
0310	30.0000	42.63
0340	60.0000	42.63
[illegible]	90.0000	42.65
0440	120.000	42.65
0510	150.000	42.66
[illegible]	180.000	42.51
0640	210.000	42.32
[illegible]	240.000	42.17
[illegible]	270.000	42.06
0740	300.000	41.97
0810	330.000	41.89
[illegible]	360.000	41.83

END
READY

SE1000B
Environmental Logger
12/18 14:34

Unit# 00361 Test# 0
Pre-test

INPUT 2: Level (F) TOC
WMI #2

Reference	11.18
Scale factor	10.05
Offset	0.00

Step# 0 12/17 02:40

	Elapsed Time	Value
0240	0.0000	11.18
310	30.0000	11.18
340	60.0000	11.19
410	90.0000	11.19
440	120.000	11.18
510	150.000	11.18
540	180.000	11.18
610	210.000	11.19
640	240.000	11.19
710	270.000	11.19
740	300.000	11.19
810	330.000	11.20
[illegible]	360.000	11.21

SE1000B
Environmental Logger
12/18 23:52
Pre-Test

Unit# 00372 Test# 0

INPUT 1: Level (F) TOC
USEPA 6D

Reference	39.86
Scale factor	10.08
Offset	0.00

Step# 0 12/17 02:47

Elapsed Time	Value
0.0000	39.86
30.0000	39.86
60.0000	39.87
90.0000	39.87
120.000	39.87
150.000	39.88
180.000	39.80
210.000	39.69
240.000	39.59
270.000	39.50
300.000	39.43
330.000	39.36
360.000	39.30

END

SE1000B
Environmental Logger
12/18 23:53
Pre Test

Unit# 00372 Test# 0

INPUT 2: Level (F) TOC
USEPA 6I

Reference	22.64
Scale factor	10.10
Offset	0.00

Step# 0 12/17 02:47

Elapsed Time	Value
0.0000	22.64
30.0000	22.64
60.0000	22.65
90.0000	22.65
120.000	22.66
150.000	22.66
180.000	22.67
210.000	22.67
240.000	22.67
270.000	22.68
300.000	22.68
330.000	22.69
360.000	22.69

END

12/17/87 → 12/18/87

Logger off: 0653 - 12/18/87

Drawdown Data: Well 3D

Reading #	(Ft) Reading	#	(Ft) Reading	#	(Ft) Reading	#	(Ft) Reading	#	(Ft) Reading
201	41.16	162	630 41.19	123	240 40.89	84	50 40.12	45	175 00 38.57
200	.17	161	620 .18	122	230 .88	83	48 .09	44	1.6667 .26
199	1000 .19	160	610 .18	121	220 .86	82	46 .07	43	1.5833 .25
198	.19	159	600 .17	120	210 .84	81	44 .04	42	1.5000 .24
197	.18	158	590 .17	119	200 .82	80	42 .01	41	1.4166 .24
196	.20	157	580 .16	118	190 .80	79	40 39.97	40	1.3333 .23
195	.20	156	570 .16	117	180 .80	78	38 .94	39	1.2500 .23
194	.20	155	560 .16	116	170 .78	77	36 .90	38	1.1667 .22
193	940 .20	154	550 .15	115	160 .75	76	34 .85	37	1.083 .22
192	930 .20	153	540 .14	114	150 .75	75	32 .79	36	1.000 .21
191	920 .20	152	530 .14	113	140 .69	74	30 .76	35	.9167 .21
190	910 .21	151	520 .13	112	130 .66	73	28 .71	34	.8333 .21
189	900 .21	150	510 .13	111	120 .62	72	26 .65	33	.7500 .20
188	890 .21	149	500 .12	110	110 .57	71	24 .59	32	.6667 .20
187	880 .21	148	490 .12	109	100 .53	70	22 .52	31	.5833 .20
186	870 .21	147	480 .11	108	98 .51	69	20 .44	30	.5000 .20
185	860 .21	146	470 .10	107	96 .50	68	18 .35	29	.4167 .19
184	850 .21	145	460 .10	106	94 .49	67	16 .25	28	.3333 .20
183	840 .20	144	450 .09	105	92 .48	66	14 .15	27	.3166 .20
182	830 .20	143	440 .09	104	90 .47	65	12 .02	26	.3000 .20
181	820 .20	142	430 .08	103	88 .53	64	10 00 38.95	25	.2833 .20
180	810 .20	141	420 .07	102	86 .44	63	9.5 .92	24	.2666 .20
179	800 .20	140	410 .07	101	84 .43	62	9.0 .88	23	.2500 .20
178	790 .20	139	400 .06	100	82 .42	61	8.5 .85	22	.2333 .21
177	780 .20	138	390 .06	99	80 .40	60	8.0 .81	21	.2166 .21
176	770 .20	137	380 .05	98	78 .39	59	7.5 .77	20	.2000 .21
175	760 .20	136	370 .04	97	76 .37	58	7.0 .73	19	.1833 .21
174	750 .20	135	360 .03	96	74 .36	57	6.5 .69	18	.1666 .21
173	740 .20	134	350 .02	95	72 .34	56	6.0 .64	17	.1500 .22
172	730 .20	133	340 .02	94	70 .33	55	5.5 .60	16	.1333 .22
171	720 .20	132	330 .00	93	68 .31	54	5.0 .56	15	.1166 .22
170	710 .20	131	320 .00	92	66 .29	53	4.5 .51	14	.1000 .23
169	700 .20	130	310 40.98	91	64 .27	52	4.0 .46	13	.0833 .23
168	690 .20	129	300 .97	90	62 .25	51	3.5 .42	12	.0666 .23
167	680 .20	128	290 .96	89	60 .23	50	3.0 .37	11	.0500 .24
166	670 .19	127	280 .95	88	58 .22	49	2.5 .33	10	.0333 .24
165	660 .19	126	270 .94	87	56 .20	48	2.0 .29	9	.03 .24
164	650 .19	125	260 .93	86	54 .17	47	1.9167 .28	8	.1266 .24
163	640 .19	124	250 .91	85	52 .15	46	1.8333 .27	7	.0233 .24

	#	(Ft) Reading
.0200	6	38.24
.0166	5	.24
.0133	4	.24
.0099	3	.24
.0066	2	.24
.0033	1	.24
0.0000	0	.24

Settings

Transducer Scale Factor	10.02
Units	0 (Feet)
I.D. #	03
Initial Water Level Setting	39.29 Ft
Sampling Mode	0

.OK, ea

Well [redacted]
Pg. 1

OK, ea
INPUT
V

Julian Dec. 14 | Time Hr. & min. | reading.

01	0001.	02	0348.	03	2010.	04	5.003
01	0001.	02	0348.	03	2030.	04	5.000
01	0001.	02	0348.	03	2045.	04	5.002
01	0001.	02	0348.	03	2100.	04	5.004
01	0001.	02	0348.	03	2115.	04	5.003
01	0001.	02	0348.	03	2130.	04	5.000
01	0001.	02	0348.	03	2145.	04	4.986
01	0001.	02	0348.	03	2200.	04	4.977
01	0001.	02	0348.	03	2215.	04	4.980
01	0001.	02	0348.	03	2230.	04	4.982
01	0001.	02	0348.	03	2245.	04	4.982
01	0001.	02	0348.	03	2300.	04	4.983
01	0001.	02	0348.	03	2315.	04	4.970
01	0001.	02	0348.	03	2330.	04	4.981
01	0001.	02	0348.	03	2345.	04	4.983
01	0001.	02	0348.	03	2400.	04	4.983
01	0001.	02	0349. (Dec. 15)	03	0015.	04	4.984
01	0001.	02	0349.	03	0030.	04	4.987
01	0001.	02	0349.	03	0045.	04	4.996
01	0001.	02	0349.	03	0100.	04	5.000
01	0001.	02	0349.	03	0115.	04	5.005
01	0001.	02	0349.	03	0130.	04	5.017
01	0001.	02	0349.	03	0145.	04	5.011
01	0001.	02	0349.	03	0200.	04	5.023
01	0001.	02	0349.	03	0215.	04	5.035
01	0001.	02	0349.	03	0230.	04	5.048
01	0001.	02	0349.	03	0245.	04	5.059
01	0001.	02	0349.	03	0300.	04	5.104
01	0001.	02	0349.	03	0315.	04	5.115

OK, ed

well 2D
Pg. 2

01	0001.	02	0349.	03	0330.	04	5.113
01	0001.	02	0349.	03	0345.	04	5.109
01	0001.	02	0349.	03	0400.	04	5.120
01	0001.	02	0349.	03	0415.	04	5.142
01	0001.	02	0349.	03	0430.	04	5.172
01	0001.	02	0349.	03	0445.	04	5.186
01	0001.	02	0349.	03	0500.	04	5.192
01	0001.	02	0349.	03	0515.	04	5.207
01	0001.	02	0349.	03	0530.	04	5.236
01	0001.	02	0349.	03	0545.	04	5.289
01	0001.	02	0349.	03	0600.	04	5.264
01	0001.	02	0349.	03	0615.	04	5.258
01	0001.	02	0349.	03	0630.	04	5.264
01	0001.	02	0349.	03	0645.	04	5.261
01	0001.	02	0349.	03	0700.	04	5.268
01	0001.	02	0349.	03	0715.	04	5.282
01	0001.	02	0349.	03	0730.	04	5.300
01	0001.	02	0349.	03	0745.	04	5.319

Dec. 15

OK, ed

well 2D
pg. 3

OK, ed
INPUT

Missing Data from 12/15 7:45 to 1636

01	0001.	02	0349.	03	1636.	04	5.312
		Dec. 15					
01	0001.	02	0349.	03	1645.	04	5.310
01	0001.	02	0349.	03	1700.	04	5.309
01	0001.	02	0349.	03	1715.	04	5.297
01	0001.	02	0349.	03	1730.	04	5.291
01	0001.	02	0349.	03	1745.	04	5.291
01	0001.	02	0349.	03	1800.	04	5.292
01	0001.	02	0349.	03	1815.	04	5.296
01	0001.	02	0349.	03	1830.	04	5.289
01	0001.	02	0349.	03	1845.	04	5.285
01	0001.	02	0349.	03	1900.	04	5.274
01	0001.	02	0349.	03	1915.	04	5.259
01	0001.	02	0349.	03	1930.	04	5.252
01	0001.	02	0349.	03	1945.	04	5.254
01	0001.	02	0349.	03	2000.	04	5.243
01	0001.	02	0349.	03	2015.	04	?5.239
01	0001.	02	0349.	03	2030.	04	5.251
01	0001.	02	0349.	03	2045.	04	5.256
01	0001.	02	0349.	03	2100.	04	5.250
01	0001.	02	0349.	03	2115.	04	5.240
01	0001.	02	0349.	03	2130.	04	5.242
01	0001.	02	0349.	03	2145.	04	5.244
01	0001.	02	0349.	03	2200.	04	5.237
01	0001.	02	0349.	03	2215.	04	?1.227
01	0001.	02	0349.	03	2230.	04	5.220
01	0001.	02	0349.	03	2245.	04	5.212
01	0001.	02	0349.	03	2300.	04	5.208
01	0001.	02	0349.	03	2315.	04	5.196

OK, ed

Well 2D
Pg. 4

```
01 0001.  02 0349.  03 2330.  04 5.188
01 0001.  02 0349.  03 2345.  04 5.197
01 0001.  02 0349.  03 2400.  04 5.201
01 0001.  02 0350.  03 0015.  04 5.248
                Dec. 16
01 0001.  02 0350.  03 0029.  04 5.488
01 0001.  ?2 0350.  03 0031.  04 5.518
01 0001.  02 0350.  03 0045. ?04 5.694
01 0001.  02 0350.  03 0100.  04 5.840
01 0001.  02 0350.  03 0115.  04 5.945
01 0001.  02 0350.  ?3 0130.  04 6.02e
01 0001.  02 0350.  03 0131.  04 6.026
01 0001.  02 0350.  03 0145.  04 6.104
01 0001.  02 0350.  03 0200.  04 6.161
01 0001.  02 0350. ?03 0215.  04 6.233
01 0001?  02 0350.  03 0229.  04 6.282
01 0001.  02 0350.  03 0231.  04 6.290
01 0001.  02 0350.  03 0245.  04 6.339
01 0001.  02 0350.  03 0300.  04 6.374
01 0001.  02 0350.  03 0315.  04 6.422
01 ?001.  02 0350. ?03 ?330.  04 6.453
01 0001.  02 0350.  03 0331.  04 6.459
01 ?001. ?02 0350.  03 0343.  04 6.45o
01 0001.  02 0350.  03 034o.  04 6.491
01 0001.  02 0350.  03 0400.  ?4 6.516
01 0001.  02 0350.  03 0415.  04 6.554
01 0001.  02 0350.  03 0417.  04 6.558
01 0002.
01 0020.  02 6.558
01 0020.  02 6.559
01 0020.  02 6.557
01 0020.
```

Disregard

***From PRIMOS: maximum inactive time limit exceeded.

JDEARLE (user 39) logged out Tuesday, 29 Dec 87 15:10:1o.

OK, ED

Well 2D
pg. 5

OK, ED
INPUT

Missing Data from
Dec. 16 from 4:17 to 12:18

01	0001.	02	0350.	03	1218.	04	5.446
			Dec. 16				
01	0001.	02	0350.	03	1219.	04	5.429
01	0001.	02	0350.	03	1221.	04	5.415
01	0001.	02	0350.	03	1230.	04	5.413
01	0001.	02	0350.	03	1245.	04	5.397
01	0001.	02	0350.	03	1250.	04	5.395
01	0001.	02	0350.	03	1300.	04	5.381
01	0001.	02	0350.	03	1315.	04	5.365
01	0001.	02	0350.	03	1330.	04	5.347
01	0001.	02	0350.	03	1345.	04	5.328
01	0001.	02	0350.	03	1400.	04	5.312
01	0001.	02	0350.	03	1415.	04	5.295
01	0001.	02	0350.	03	1430.	04	5.276
01	0001.	02	0350.	03	1445.	04	5.260
01	0001.	02	0350.	03	1500.	04	5.247
01	0001.	02	0350.	03	1515.	04	5.230
01	0001.	02	0350.	03	1530.	04	5.211
01	0001.	02	0350.	03	1545.	04	5.194
01	0001.	02	0350.	03	1600.	04	5.185
01	0001.	02	0350.	03	1615.	04	5.174
01	0001.	02	0350.	03	1630.	04	5.160
01	0001.	02	0350.	03	1645.	04	5.146
01	0001.	02	0350.	03	1700.	04	5.132
01	0001.	02	0350.	03	1715.	04	5.118
01	0001.	02	0350.	03	1730.	04	5.102
01	0001.	02	0350.	03	1745.	04	5.093
01	0001.	02	0350.	03	1800.	04	5.079
01	0001.	02	0350.	03	1815.	04	5.064
01	0001.	02	0350.	03	1830.	04	5.055

OK, ED

Well 2D
pg. 6

01	0001.	02	0350.	03	1845.	04	5.044
01	0001.	02	0350.	03	1900.	04	5.035
01	0001.	02	0350.	03	1915.	04	5.029
01	0001.	02	0350.	03	1930.	04	5.021
01	0001.	02	0350.	03	1945.	04	5.012
01	0001.	02	0350.	03	2000.	04	5.002
01	0001.	02	0350.	03	2015.	04	4.998
01	0001.	02	0350.	03	2030.	04	4.990
01	0001.	02	0350.	03	2045.	04	4.980
01	0001.	02	0350.	03	2100.	04	4.971
01	0001.	02	0350.	03	2115.	04	4.965
01	0001.	02	0350.	03	2130.	04	4.954
01	0001.	02	0350.	03	2145.	04	4.948
01	0001.	02	0350.	03	2200.	04	4.942
01	0001.	02	0350.	03	2215.	04	4.936
01	0001.	02	0350.	03	2230.	04	4.927
01	0001.	02	0350.	03	2245.	04	4.923
01	0001.	02	0350.	03	2300.	04	4.913
01	0001.	02	0350.	03	2315.	04	4.912
01	0001.	02	0350.	03	2330.	04	4.914
01	0001.	02	0350.	03	2345.	04	4.909
01	0001.	02	0350.	03	2400.	04	4.904
01	0001.	02	0351.	03	0015.	04	4.901
01	0001.	02	0351.	03	0030.	04	4.897
01	0001.	02	0351.	03	0045.	04	4.893
01	0001.	02	0351.	03	0100.	04	4.889
01	0001.	02	0351.	03	0115.	04	4.885
01	0001.	02	0351.	03	0130.	04	4.883

Dec. 17

OK, ed

well 2D
Pg-7

OK, ed
INPUT
? 4.590

Missing Data from
12/17/87 1:30 to 12/18/87 10:04

010001. 02 0352. 03 1004. 04 4.591

Dec. 18

01 0001. 02 0352. 03 1010. 04 4.592

01 0001. 02 0352. 03 1015. 04 4.585

01 0001. 02 0352. 03 1030. 04 4.585

01 0001. 02 0352. 03 1045. 04 4.586

01 0001. 02 0352. 03 1242. 04 4.950

01 0001. 02 0352. 03 1245. 04 4.946

01 0001. 02 0352. 03 1300. 04 4.936

01 0001. 02 0352. 03 1315. 04 4.933

01 0001. 02 0352. 03 1330. 04 4.927

01 0001. 02 0352. 03 1345. 04 4.925

01 0001. 02 0352. 03 1400. 04 4.922

01 0001. 02 0352. 03 1415. 04 4.918

01 0001. 02 0352. 03 1430. 04 4.911

01 0001. 02 0352. 03 1445. 04 4.913

01 0001. 02 0352. 03 1500. 04 4.909

01 0001. 02 0352. 03 1515. 04 4.904

01 0001. 02 0352. 03 1530. 04 4.908

01 0001. 02 0352. 03 1545. 04 4.904

01 0001. 02 0352. 03 1600. 04 4.910

01 0001. 02 0352. 03 1615. 04 4.907

01 0001. 02 0352. 03 1630. 04 4.918

01 0001. 02 0352. 03 1645. 04 4.919

01 0001. 02 0352. 03 1700. 04 4.910

01 0001. 02 0352. 03 1715. 04 4.904

01 0001. 02 0352. 03 1730. 04 4.901

01 0001. 02 0352. 03 1745. 04 4.896

01 0001. 02 0352. 03 1800. 04 4.892

01 0001. 02 0352. 03 1815. 04 4.891

OK, ea

```
01 0001.  02 0352.  03 1830.  04 4.890
01 0001.  02 0352.  03 1845.  04 4.889
01 0001.  02 0352.  03 1900.  04 4.887
01 0001.  02 0352.  03 1915.  04 4.885
01 0001.  02 0352.  03 1930.  04 4.883
01 0001.  02 0352.  03 1945.  04 4.883
01 0001.  02 0352.  03 2000.  04 4.881
01 0001.  02 0352.  03 2015.  04 4.880
01 0001.  02 0352.  03 2030.  04 4.880
01 0001.  02 0352.  03 2045.  04 4.879
01 0001.  02 0352.  03 2100.  04 4.877
01 0001.  02 0352.  03 2115.  04 4.874
01 0001.  02 0352.  03 2130.  04 4.886
01 0001.  02 0352.  03 2145.  04 4.884
01 0001.  02 0352.  03 2200.  04 4.882
01 0001.  02 0352.  03 2215.  04 4.881
01 0001.  02 0352.  03 2230.  04 4.882
01 0001.  02 0352.  03 2245.  04 4.882
01 0001.  02 0352.  03 2300.  04 4.880
01 0001.  02 0352.  03 2315.  04 4.881
01 0001.  02 0352.  03 2330.  04 4.880
01 0001.  02 0352.  03 2345.  04 4.880
01 0001.  02 0352.  03 2400.  04 4.877
01 0001.  02 0353.  03 0015.  04 4.878
```

Dec. 19

```
01 0001.  02 0353.  03 0030.  04 4.879

JDEARLE (user 39) logged out Wednesday, 30 Dec 87 09:50:08.
Time used: 01h 10m connect, 01m 17s CPU, 00m 11s I/O.

          COST FOR I/O TIME = $      0.0928
          COST FOR CPU TIME = $      0.6419
   COST FOR CONNECTION TIME = $      2.3444

TOTAL COST FOR THIS SESSION = $      3.0792
```

01 0001. 02 0352. 03 1942.
01 0002.
01 0099. 02 37.30
01 0099. 02 37.29

348 = Dec. 14, 1987

ANTIOCH [redacted] DATA

	JULIAN DATE	HOUR/ MIN	SECONDS	VALUE (FT H2O ABOVE TRANS)
01+0104.	02+0348.14	03+1753.	04+051.2	05+1.322
01+0104.	02+0350.	03+1510.	04+022.2	05+1.259
01+0104.	02+0350.	03+1755.	04+026.2	05+1.249
01+0104.	02+0350.	03+1758.	04+017.2	05+1.245
01+0104.	02+0350.16	03+2011.	04+035.2	05+0.403
01+0104.	02+0351.	03+0803.	04+038.2	05+0.372
01+0104.	02+0351.	03+0824.	04+000.2	05+0.373
01+0104.	02+0351.	03+0842.	04+040.2	05+0.375
01+0104.	02+0351.	03+0901.	04+020.2	05+0.372
01+0104.	02+0351.	03+0944.	04+059.2	05+0.369
01+0104.	02+0351.	03+1000.	04+051.2	05+0.375
01+0104.	02+0351.	03+1015.	04+000.2	05+0.372
01+0104.	02+0351.	03+1030.	04+004.2	05+0.375 pumping begins
01+0104.	02+0351.	03+1045.	04+018.2	05+0.386
01+0104.	02+0351.	03+1101.	04+040.2	05+0.321
01+0104.	02+0351.	03+1110.	04+020.2	05+0.322
01+0104.	02+0351.	03+1216.	04+000.2	05+0.325
01+0104.	02+0351.	03+1230.	04+000.2	05+0.323
01+0104.	02+0351.	03+1245.	04+000.2	05+0.322
01+0104.	02+0351.	03+1300.	04+000.2	05+0.325
01+0104.	02+0351.	03+1315.	04+000.2	05+0.335
01+0104.	02+0351.17	03+1330.	04+000.2	05+0.337

should be 0 not 1

OK, ed

01+0104.	02+0351.	03+1345.	04+000.2	05+0.336
01+0104.	02+0351.	03+1357.	04+000.2	05+0.335
01+0104.	02+0351.	03+1731.	04+037.2	05+0.346
01+0104.	02+0351.17	03+1910.	04+000.2	05+0.346
01+0104.	02+0352.	03+1043.	04+013.2	05+0.342
01+0104.	02+0352.18	03+1051.	04+029.2	05+0.351
01+0104.	02+0352.	03+1100.	04+009.2	05+0.337
01+0104.	02+0352.	03+1114.	04+026.2	05+0.364
01+0104.	02+0352.	03+1122.	04+045.2	05+0.357
01+0104.	02+0352.	03+1135.	04+010.2	05+0.370
01+0104.	02+0352.	03+1147.	04+030.2	05+0.377
01+0104.	02+0352.	03+1200.	04+035.2	05+0.375
01+0104.	02+0352.	03+1613.	04+008.2	05+0.386
01+0104.	02+0353.	03+0954.	04+053.2	05+0.343
01+0104.	02+0353.19	03+1010.	04+028.2	05+0.355

No Data for log. sampling

OK, ec

OK, ec
INPUT

Julian Date

(Hour Minute Seconds)

Value, Ft. H_2O Above Transducer

01+0102.	02+0533.	03+1047.	04+052.0	05+2.743
01+0102.	02+0533.	03+1100.	04+0000.	05+2.745
01+0102.	02+0533.	03+1100.	04+058.0	05+2.855
01+0102.	02+0533.	03+1101.	04+020.0	05+2.953
01+0102.	02+0533.	03+1101.	04+059.0	05+3.097
01+0102.	02+0533.	03+1102.	04+030.0	05+3.188
01+0102.	02+0533.	03+1103.	04+021.0	05+3.300
01+0102.	02+0533.	03+1104.	04+021.0	05+3.400
01+0102.	02+0533.	03+1105.	04+021.0	05+3.478
01+0102.	02+0533.	03+1105.	04+040.0	05+3.500
01+0102.	02+0533.	03+1107.	04+022.0	05+3.600
01+0102.	02+0533.	03+1109.	04+022.0	05+3.700
01+0102.	02+0533.	03+1111.	04+047.0	05+3.800
01+0102.	02+0533.	03+1115.	04+015.0	05+3.900
01+0102.	02+0533.	03+1119.	04+030.0	05+4.000
01+0102.	02+0533.	03+1130.	04+0000.	05+4.101
01+0102.	02+0533.	03+1145.	04+0000.	05+4.174
01+0102.	02+0533.	03+1148.	04+035.0	05+4.191
01+0102.	02+0533.	03+1152.	04+010.0	05+4.200
01+0102.	02+0533.	03+1200.	04+0000.	05+4.209
01+0102.	02+0533.	03+1215.	04+0000.	05+4.234
01+0102.	02+0533.	03+1230.	04+0000.	05+4.251
01+0102.	02+0533.	03+1245.	04+0000.	05+4.260
01+0102.	02+0533.	03+1300.	04+0000.	05+4.265
01+0102.	02+0533.	03+1315.	04+0000.	05+4.271
01+0102.	02+0533.	03+1330.	04+0000.	05+4.273
01+0102.	02+0533.	03+1345.	04+0000.	05+4.277
01+0102.	02+0533.	03+1400.	04+0000.	05+4.279
01+0102.	02+0533.	03+1415.	04+0000.	05+4.282

35 Dec. 18

Just Recovery Phase

Well [redacted] Recovery Only

OK, ed

4D
pg. 2

01+0102.	02+0533.	03+1430.	04+0000.	05+4.282
01+0102.	02+0533.	03+1445.	04+0000.	05+4.284
01+0102.	02+0533.	03+1500.	04+0000.	05+4.284
01+0102.	02+0533.	03+1515.	04+0000.	05+4.286
01+0102.	02+0533.	03+1530.	04+0000.	05+4.288
01+0102.	02+0533.	03+1545.	04+0000.	05+4.287
01+0102.	02+0533.	03+1600.	04+0000.	05+4.293
01+0102.	02+0533.	03+1615.	04+0000.	05+4.295
01+0102.	02+0533.	03+1630.	04+0000.	05+4.297
01+0102.	02+0533.	03+1645.	04+0000.	05+4.296
01+0102.	02+0533.	03+1700.	04+0000.	05+4.297
01+0102.	02+0533.	03+1715.	04+0000.	05+4.294
01+0102.	02+0533.	03+1730.	04+0000.	05+4.361
01+0102.	02+0533.	03+1745.	04+0000.	05+4.355
01+0102.	02+0533.	03+1800.	04+0000.	05+4.330
01+0102.	02+0533.	03+1815.	04+0000.	05+4.322
01+0102.	02+0533.	03+1830.	04+0000.	05+4.317
01+0102.	02+0533.	03+1845.	04+0000.	05+4.314
01+0102.	02+0533.	03+1900.	04+0000.	05+4.314
01+0102.	02+0533.	03+1915.	04+0000.	05+4.312
01+0102.	02+0533.	03+1930.	04+0000.	05+4.311
01+0102.	02+0533.	03+1945.	04+0000.	05+4.311
01+0102.	02+0533.	03+2000.	04+040.0	05+4.310
01+0102.	02+0533.	03+2016.	04+0000.	05+4.309
01+0102.	02+0533.	03+2031.	04+0000.	05+4.307
01+0102.	02+0533.	03+2046.	04+0000.	05+4.305
01+0102.	02+0533.	03+2101.	04+0000.	05+4.302
01+0102.	02+0533.	03+2116.	04+0000.	05+4.303
01+0102.	02+0533.	03+2131.	04+0000.	05+4.296
01+0102.	02+0533.	03+2145.	04+0000.	05+4.293

OK, ea

4D
Pg. 3

01+0102.	02+0533.	03+2200.	04+0000.	05+4.290
01+0102.	02+0533.	03+2215.	04+0000.	05+4.290
01+0102.	02+0533.	03+2230.	04+0000.	05+4.289
01+0102.	02+0533.	03+2245.	04+0000.	05+4.289
01+0102.	02+0533.	03+2300.	04+0000.	05+4.287
01+0102.	02+0533.	03+2315.	04+0000.	05+4.286
01+0102.	02+0533.	03+2330.	04+0000.	05+4.287
01+0102.	02+0533.	03+2345.	04+0000.	05+4.286
01+0102.	02+0001.	03+0000.	04+0000.	05+4.285
01+0102.	02+0001.	03+0015.	04+0000.	05+4.286
01+0102.	02+0001.	03+0030.	04+0000.	05+4.286
01+0102.	02+0001.	03+0045.	04+0000.	05+4.286
01+0102.	02+0001.	03+0100.	04+0000.	05+4.285
01+0102.	02+0001.	03+0115.	04+0000.	05+4.287
01+0102.	02+0001.	03+0130.	04+0000.	05+4.288
01+0102.	02+0001.	03+0145.	04+0000.	05+4.288
01+0102.	02+0001.	03+0200.	04+0000.	05+4.291
01+0102.	02+0001.	03+0215.	04+0000.	05+4.293
01+0102.	02+0001.	03+0230.	04+0000.	05+4.294
01+0102.	02+0001.	03+0245.	04+0000.	05+4.296
01+0102.	02+0001.	03+0300.	04+0000.	05+4.297
01+0102.	02+0001.	03+0315.	04+0000.	05+4.285
01+0102.	02+0001.	03+0330.	04+0000.	05+4.299
01+0102.	02+0001.	03+0345.	04+0000.	05+4.302
01+0102.	02+0001.	03+0400.	04+0000.	05+4.306
01+0102.	02+0001.	03+0415.	04+0000.	05+4.307
01+0102.	02+0001.	03+0430.	04+0000.	05+4.308
01+0102.	02+0001.	03+0445.	04+0000.	05+4.311
01+0102.	02+0001.	03+0500.	04+0000.	05+4.315
01+0102.	02+0001.	03+0515.	04+0000.	05+4.318

354 [illegible]

OK, e.c

4D
Pg. 4

01+0102.	02+0001.	03+0530.	04+0000.	05+4.364
01+0102.	02+0001.	03+0545.	04+0000.	05+4.479
01+0102.	02+0001.	03+0600.	04+0000.	05+4.585
01+0102.	02+0001.	03+0615.	04+0000.	05+4.680
01+0102.	02+0001.	03+0630.	04+0000.	05+4.766
01+0102.	02+0001.	03+0645.	04+0000.	05+4.838
01+0102.	02+0001.	03+0700.	04+0000.	05+4.905
01+0102.	02+0001.	03+0715.	04+0000.	05+4.962
01+0102.	02+0001.	03+0730.	04+0000.	05+5.021
01+0102.	02+0001.	03+0745.	04+0000.	05+5.071
01+0102.	02+0001.	03+0800.	04+0000.	05+5.119
01+0102.	02+0001.	03+0815.	04+0000.	05+5.162
01+0102.	02+0001.	03+0830.	04+0000.	05+5.201
01+0102.	02+0001.	03+0845.	04+0000.	05+5.241
01+0102.	02+0001.	03+0900.	04+0000.	05+5.274
01+0102.	02+0001.	03+0915.	04+0000.	05+5.309
01+0102.	02+0001.	03+0930.	04+0000.	05+5.327
01+0102.	02+0001.	03+0945.	04+0000.	05+5.251
01+0102.	02+0001.	03+1000.	04+0000.	05+5.163
01+0102.	02+0001.	03+1015.	04+0000.	05+5.094
01+0102.	02+0001.	03+1030.	04+0000.	05+5.038
01+0102.	02+0001.	03+1051.	04+010.0	05+5.016
01+0102.	02+0001.	03+1054.	04+010.0	05+4.997
01+0102.	02+0001.	03+1057.	04+010.0	05+4.982

End

OK, ed

351st day of year Dec. 17

Julian Date

```
OK, ed
INPUT
01 0001.   02 0351.   03 1232.
01 0002.
01 0099.   02 36.17
01 0099.   02 36.18
01 0001.   02 0351.   03 1240.
01 0002.
01 0099.   02 36.29
01 0099.   02 36.29

01 0001.   02 0351.   03 1250.
01 0002.
01 0099.   02 36.21
01 0099.   02 36.24

01 0001.   02 0351.   03 1300.
01 0002.
01 0099.   02 36.29
01 0099.   02 36.32

01 0001.   02 0351.   03 1315.
01 0002.
01 0099.   02 36.35
01 0099.   02 36.29

01 0001.   02 0351.   03 1330.
01 0002.
01 0099.   02 36.28
01 0099.   02 36.28

01 0001.   02 0351.   03 1345.
01 0002.
01 0099.   02 36.25
01 0099.   02 36.29

01 0001.   02 0351.   03 1400.
01 0002.
01 0099.   02 36.23
01 0099.   02 36.24

01 0001.   02 0351.   03 1415.
01 0002.
01 0099.   02 36.32
01 0099.   02 36.31

01 0001.   02 0351.   03 1430.
01 0002.
01 0099.   02 36.44
01 0099.   02 36.44

01 0001.   02 0351.   03 1445.
01 0002.
01 0099.   02 36.52
01 0099.   02 36.52

01 0001.   02 0351.   03 1501.
01 0002.
01 0099.   02 36.47
01 0099.   02 36.47
```

hour & min

reading @ 30 sec.

reading @ 60 sec.

Value in Ft. H_2O lab.

should be 3.6

• Data For

• AND FOR CL

Pg. 1

OK, ea

well
6S
pg.2

```
01 0001.  02 0351.  03 1515.
01 0002.
01 0099.  02 36.51
01 0099.  02 36.52

01 0001.  02 0351.  03 1530.
01 0002.
01 0099.  02 36.64
01 0099.  02 36.63

01 0001.  02 0351.  03 1545.
01 0002.
01 0099.  02 36.66
01 0099.  02 36.66

01 0001.  02 0351.  03 1601.
01 0002.
01 0099.  02 36.63
01 0099.  02 36.64

01 0001.  02 0351.  03 1617.
01 0002.
01 0099.  02 36.74
01 0099.  02 36.75

01 0001.  02 0351.  03 1630.
01 0002.
01 0099.  02 36.73
01 0099.  02 36.73

01 0001.  02 0351.  03 1645.
01 0002.
01 0099.  02 36.79
01 0099.  02 36.80

01 0001.  02 0351.  03 1700.
01 0002.
01 0099.  02 36.90
01 0099.  02 36.90

01 0001.  02 0351.  03 1715.
01 0002.
01 0099.  02 36.99
01 0099.  02 36.98

01 0001.  02 0351.  03 1730.
01 0002.
01 0099.  02 37.02
01 0099.  02 37.02

01 0001.  02 0351.  03 1745.
01 0002.
01 0099.  02 37.02
01 0099.  02 37.03

01 0001.  02 0351.  03 1800.
01 0002.
01 0099.  02 37.05
01 0099.  02 37.05
```

OK'ed

well
65
pg3

```
01 0001.  02 0351.  03 1815.
01 0002.
01 0099.  02 37.06
01 0099.  02 37.07

01 0001.  02 0351.  03 1833.
01 0002.
01 0099.  02 37.11

01 0001.  02 0351.  03 1910.
01 0002.
01 0099.  02 37.21
01 0099.  02 37.21

01 0001.  02 0351.  03 1925.
01 0002.
01 0099.  02 37.21
01 0099.  02 37.22

01 0001.  02 0351.  03 1945.
01 0002.
01 0099.  02 37.13
01 0099.  02 37.13

01 0001.  02 0351.  03 2000.
01 0002.
01 0099.  02 37.11
01 0099.  02 37.11

01 0001.  02 0351.  03 2015.
01 0002.
01 0099.  02 37.19

01 0099.  02 37.20
01 0001.  02 0351.  03 2030.
01 0002.
01 0099.  02 37.20
01 0099.  02 37.20

01 0001.  02 0351.  03 2045.
01 0002.
01 0099.  02 37.18
01 0099.  02 37.18

01 0001.  02 0351.  03 2100.
01 0002.
01 0099.  02 37.21
01 0099.  02 37.20

01 0001.  02 0351.  03 2115.
01 0002.
01 0099.  02 37.24
01 0099.  02 37.24

01 0001.  02 0351.  03 2130.
01 0002.
01 0099.  02 37.26
01 0099.  02 37.25
```

OK, ed

Well 6S pg 4

```
01 0001.  02 0351.  03 2145.
01 0002.
01 0099.  02 37.30
01 0099.  02 37.30

01 0001.  02 0351.  03 2308.
01 0002.
01 0099.  02 37.51
01 0099.  02 37.51

01 0001.  02 0351.  03 2320.
01 0002.
01 0099.  02 37.52
01 0099.  02 37.53
01 0001.  02 0351.  03 2321.
01 0002.
01 0099.  ?2 37.53
01 0001.  02 0351.  03 2340.
01 0002.
01 0099.  02 37.53
0q 0099.  02 37.5?
01 0001.  02 0351.  03 2348.
01 0002.
01 0099.  02 37.48
01 0099.  02 37.49
01 0001.  02 0351.  03 2352.
01 0002.
01 0099.  02 37.50
01 0099.  02 37.??
01 0001.  02 0351.  03 2356.
01 0002.
01 0099.  02 37.48
01 0099.  0? 37.48
01 0001.  02 0351.  03 2400.
01 0002.
01 0099.  02 37.47
01 0099.  02 37.46
01 0001.  02 0352.  03 0016.
01 0002.
01 0099.  02 37.40
01 0099.  02 37.41

01 0001.  02 0352.  03 0030.
01 0002.
01 0099.  02 37.29
01 0099.  02 37.28

01 0001.  02 0352.  03 0045.
01 0002.
01 0099.  02 37.20
01 0099.  02 37.20

01 0001.  02 0352.  03 0100.
01 0002.
01 0099.  02 37.12
01 0099.  02 37.10

01 0001.  02 0352.  03 0115.
01 0002.
01 0099.  02 37.04
```

OK, ed

Well
6 S
pg 5

```
01 0099.  02 37.03

01 0002.
01 0099.  02 36.99
01 0099.  02 36.99

01 0001.  02 0352.  03 0146.
01 0002.
01 0099.  02 37.03
01 0099.  02 37.03

01 0001.  02 0352.  03 0150.
01 0002.
01 0099.  02 37.02
01 0099.  02 37.02

01 0001.  ?2 0352.  03 0202.
01 0002.
01 0099.  02 37.03
01 0099.  02 37.04

0? 0001.  02 0352.  03 0215.
?01 0002.
01 0099.  02 37.01

01?0?01. ?02 0352.  03 0230.
01 0002.
01 0099.  02 37.04
01 0099.  02 37.05

01 0001.  02 0352.  03 0412.
01 0002.
01 0099.  02 36.99
01 0099.  02 36.98

01 0001.  02 0352.  03 0428.
01 0002.
01 0099.  02 36.94
01 0099.  02 36.95

01 0001.  02 0352.  03 0445.
01 0002.
01 0099.  02 37.01
01 0099.  02 37.01

01 0001.  02 0352.  03 0503.
01 0002.
01 0099.  02 37.07
01 0099.  02 37.08

01 0001.  02 0352.  03 0515.
01 0002.
01 0099.  02 37.13
01 0099.  02 37.13

01 0001.  02 0352.  03 0530.
01 0002.
01 0099.  02 37.13
01 0099.  02 37.14
```

OK, ed

Well 6S pg. 6

```
01 0001.  02 0352.  03 0546.
01 0002.
01 0099.  02 37.14
01 0099.  02 37.14

01 0001.  02 0352.  03 0600.
01 0002.
01 0099.  02 37.16
01 0099.  02 37.17

01 0001.  02 0352.  03 0614.
01 0002.
01 0099.  02 37.16
01 0099.  02 37.15

01 0001.  02 0352.  03 0628.
01 0002.
01 0099.  02 37.13
01 0099.  02 37.13

01 0001.  02 0352.  03 0642.
01 0002.
01 0099.  02 37.16
01 0099.  02 37.16

01 0001.  02 0352.  03 0656.
01 0002.
01 0099.  02 37.19
01 0099.  02 37.19

01 0001.  02 0352.  03 0710.
01 0002.
01 0099.  02 37.23
01 0099.  02 37.23

01 0001.  02 0352.  03 0724.
01 0002.
01 0099.  02 37.39
01 0099.  02 37.39

01 0001.  02 0352.  03 0738.
01 0002.
01 0099.  02 37.34
01 0099.  02 37.34

01 0001.  02 0352.  03 0752.
01 0002.
01 0099.  02 37.31
01 0099.  02 37.31

01 0001.  02 0352.  03 0806.
01 0002.
01 0099.  02 37.29
01 0099.  02 37.28

01 0001.  02 0352.  03 0820.
01 0002.
01 0099.  02 37.24
01 0099.  02 37.24
```

OK, ec

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01 0001.  02 0352.  03 0834.
01 0002.
01 0099.  02 37.26
01 0099.  02 37.27

01 0001.  02 0352.  03 0848.
01 0002.
01 0099.  02 37.21
01 0099.  02 37.21

01 0001.  02 0352.  03 0902.
01 0002.
01 0099.  02 37.26
01 0099.  02 37.26

01 0001.  02 0352.  03 0916.
01 0002.
01 0099.  02 37.26
01 0099.  02 37.26

01 0001.  02 0352.  03 0930.
01 0002.
01 0099.  02 37.23
01 0099.  02 37.24

01 0001.  02 0352.  03 0944.
01 0002.
01 0099.  02 37.24
01 0099.  02 37.24

01 0001.  02 0352.  03 0958.
01 0002.
01 0099.  02 37.26
01 0099.  02 37.25

01 0001.  02 0352.  03 1012.
01 0002.
01 0099.  02 37.23
01 0099.  02 37.23

01 0001.  02 0352.  03 1026.
01 0002.
01 0099.  02 37.22
01 0099.  02 37.22

01 0001.  02 0352.  03 1040.
01 0002.
01 0099.  02 37.15
01 0099.  02 37.16

01 0001.  02 0352.  03 1054.
01 0002.
01 0099.  02 37.15
01 0099.  02 37.15

01 0001.  02 0352.  03 1108.
01 0002.
01 0099.  02 37.23
01 0099.  02 37.23
```

well
6S
Pg. 7

OK, eo

well
6s pg.8

```
01 0001.  02 0352.  03 1122.
01 0002.
01 0099.  02 37.31
01 0099.  02 37.32

01 0001.  02 0352.  03 1136.
01 0002.
01 0099.  02 37.29
01 0099.  02 37.30

01 0001.  02 0352.  03 1150.
01 0002.
01 0099.  02 37.45
01 0099.  02 37.45

01 0001.  02 0352.  03 1204.
01 0002.
01 0099.  02 37.58
01 0099.  02 37.59

01 0001.  02 0352.  03 1218.
01 0002.
01 0099.  02 37.64
01 0099.  02 37.66

01 0001.  02 0352.  03 1232.
01 0002.
01 0099.  02 37.70
01 0099.  02 37.70

01 0001.  02 0352.  03 1406.
01 0002.
01 0099.  02 37.62
01 0099.  02 37.63

01 0001.  02 0352.  03 1420.
01 0002.
01 0099.  02 37.53
01 0099.  02 37.56

01 0001.  02 0352.  03 1434.
01 0002.
01 0099.  02 37.55
01 0099.  02 37.56

01 0001.  02 0352.  03 1448.
01 0002.
01 0099.  02 37.55
01 0099.  02 37.55

01 0001.  02 0352.  03 1502.
01 0002.
01 0099.  02 37.55
01 0099.  02 37.54

01 0001.  02 0352.  03 1516.
01 0002.
01 0099.  02 37.48
01 0099.  02 37.49
```

OK, eb

well: 65
pg. 9

```
01 0001.  02 0352.  03 1530.
01 0002.
01 0099.  02 37.53
01 0099.  02 37.55

01 0001.  02 0352.  03 1544.
01 0002.
01 0099.  02 37.49
01 0099.  02 37.50

01 0001.  02 0352.  03 1558.
01 0002.
01 0099.  02 37.59
01 0099.  02 37.60

01 0001.  02 0352.  03 1612.
01 0002.
01 0099.  02 37.62
01 0099.  02 37.62

01 0001.  02 0352.  03 1626.
01 0002.
01 0099.  02 37.59
01 0099.  02 37.58

01 0001.  02 0352.  03 1640.
01 0002.
01 0099.  02 37.60
01 0099.  02 37.61

01 0001.  02 0352.  03 1654.
01 0002.
01 0099.  02 37.53
01 0099.  02 37.52

01 0001.  02 0352.  03 1708.
01 0002.
01 0099.  02 37.48
01 0099.  02 37.47

01 0001.  02 0352.  03 1722.
01 0002.
01 0099.  02 37.43
01 0099.  02 37.43

01 0001.  02 0352.  03 1736.
01 0002.
01 0099.  02 37.38
01 0099.  02 37.37

01 0001.  02 0352.  03 1750.
01 0002.
01 0099.  02 37.29
01 0099.  02 37.29

01 0001.  02 0352.  03 1804.
01 0002.
01 0099.  02 37.30
01 0099.  02 37.30
```

OK, ed

well. 6S
Pg. 10

```
01 0001.   02 0352.   03 1818.
01 0002.
01 0099.   02 37.35
01 0099.   02 37.33

01 0001.   02 0352.   03 1832.
01 0002.
01 0099.   02 37.32
01 0099.   02 37.31

01 0001.   02 0352.   03 1846.
01 0002.
01 0099.   02 37.33
01 0099.   02 37.33

01 0001.   02 0352.   03 1900.
01 0002.
01 0099.   02 37.33
01 0099.   02 37.32

01 0001.   02 0352.   03 1914.
01 0002.
01 0099.   02 37.32
01 0099.   02 37.32

01 0001.   02 0352.   03 1928.
01 0002.
01 0099.   02 37.30
01 0099.   02 37.30

01 0001.   02 0352.   03 1942.
01 0002.
01 0099.   02 37.30
01 0099.   02 37.29
```

348 = Dec. 14, 1987

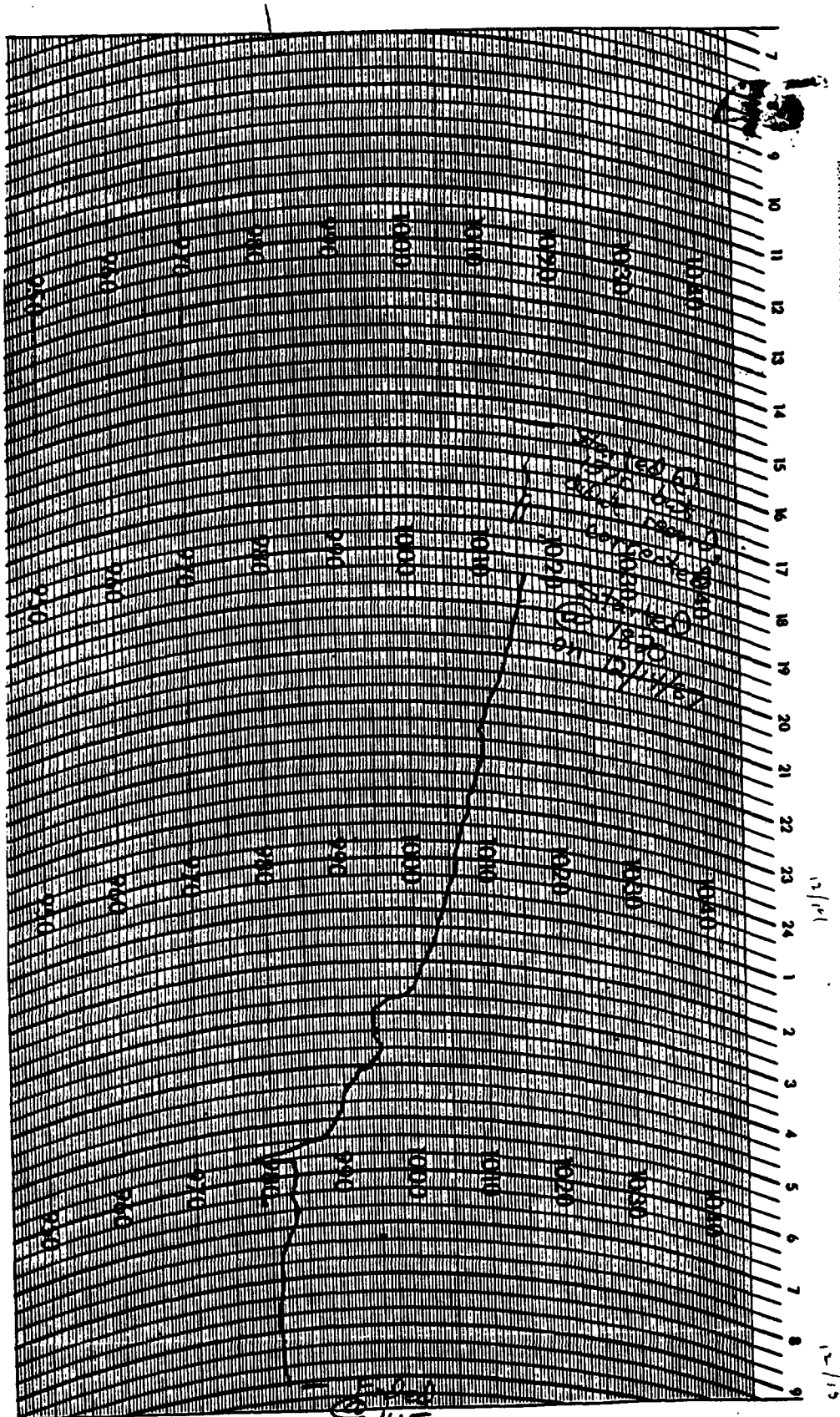
ANTIOCH 3S DATA

	JULIAN DATE	HOUR/ MIN	SECONDS	VALUE (FT H2O ABOVE TRANS)
01+0104.	02+0348.	03+1753.	04+051.2	05+1.322
01+0104.	02+0350.	03+1510.	04+022.2	05+1.259
01+0104.	02+0350.	03+1755.	04+026.2	05+1.249
01+0104.	02+0350.	03+1758.	04+017.2	05+1.245
01+0104.	02+0350.	03+2011.	04+035.2	05+0.403
01+0104.	02+0351.	03+0803.	04+038.2	05+0.372
01+0104.	02+0351.	03+0824.	04+000.2	05+0.373
01+0104.	02+0351.	03+0842.	04+040.2	05+0.375
01+0104.	02+0351.	03+0901.	04+020.2	05+0.372
01+0104.	02+0351.	03+0944.	04+059.2	05+0.369
01+0104.	02+0351.	03+1000.	04+051.2	05+0.375
01+0104.	02+0351.	03+1015.	04+000.2	05+0.372
01+0104.	02+0351.	03+1030.	04+004.2	05+0.375
01+0104.	02+0351.	03+1045.	04+018.2	05+0.386
01+0104.	02+0351.	03+1101.	04+040.2	05+0.321
01+0104.	02+0351.	03+1110.	04+020.2	05+0.322
01+0104.	02+0351.	03+1216.	04+000.2	05+0.325
01+0104.	02+0351.	03+1230.	04+000.2	05+0.323
01+0104.	02+0351.	03+1245.	04+000.2	05+0.322
01+0104.	02+0351.	03+1300.	04+000.2	05+0.325
01+0104.	02+0351.	[illegible]		

should be 0 not 1

PRIMARY PUMP TEST DATA

(Barometric Measurements)

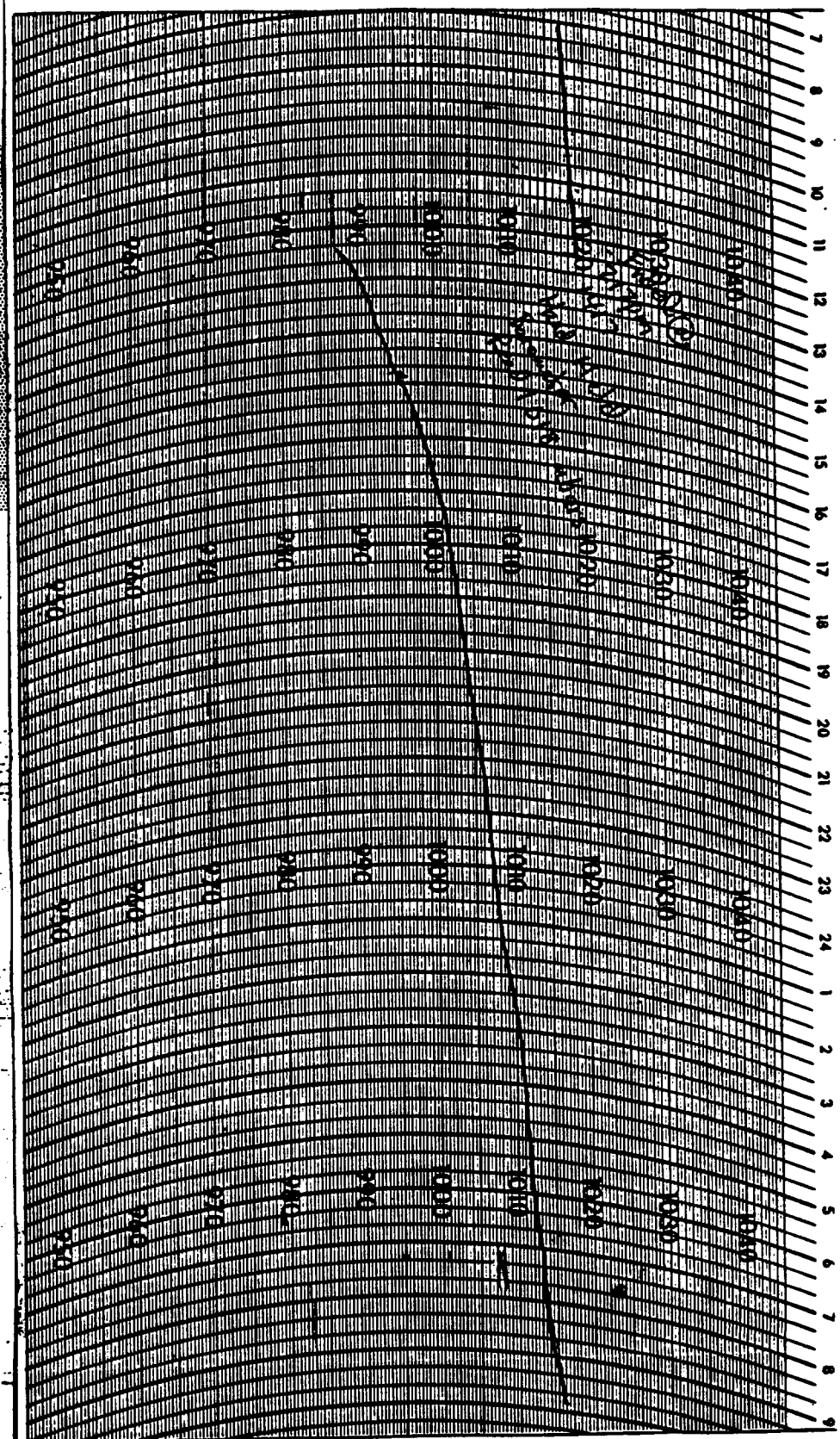


1115
On 12/15/87

WEATHERtronics BAROMETRIC PRESSURE Chart No. 70103

DAILY 945 to 1045

station H.O.D. Municiple Well#4 date on 12/14/87 date off 12/15/87 1115

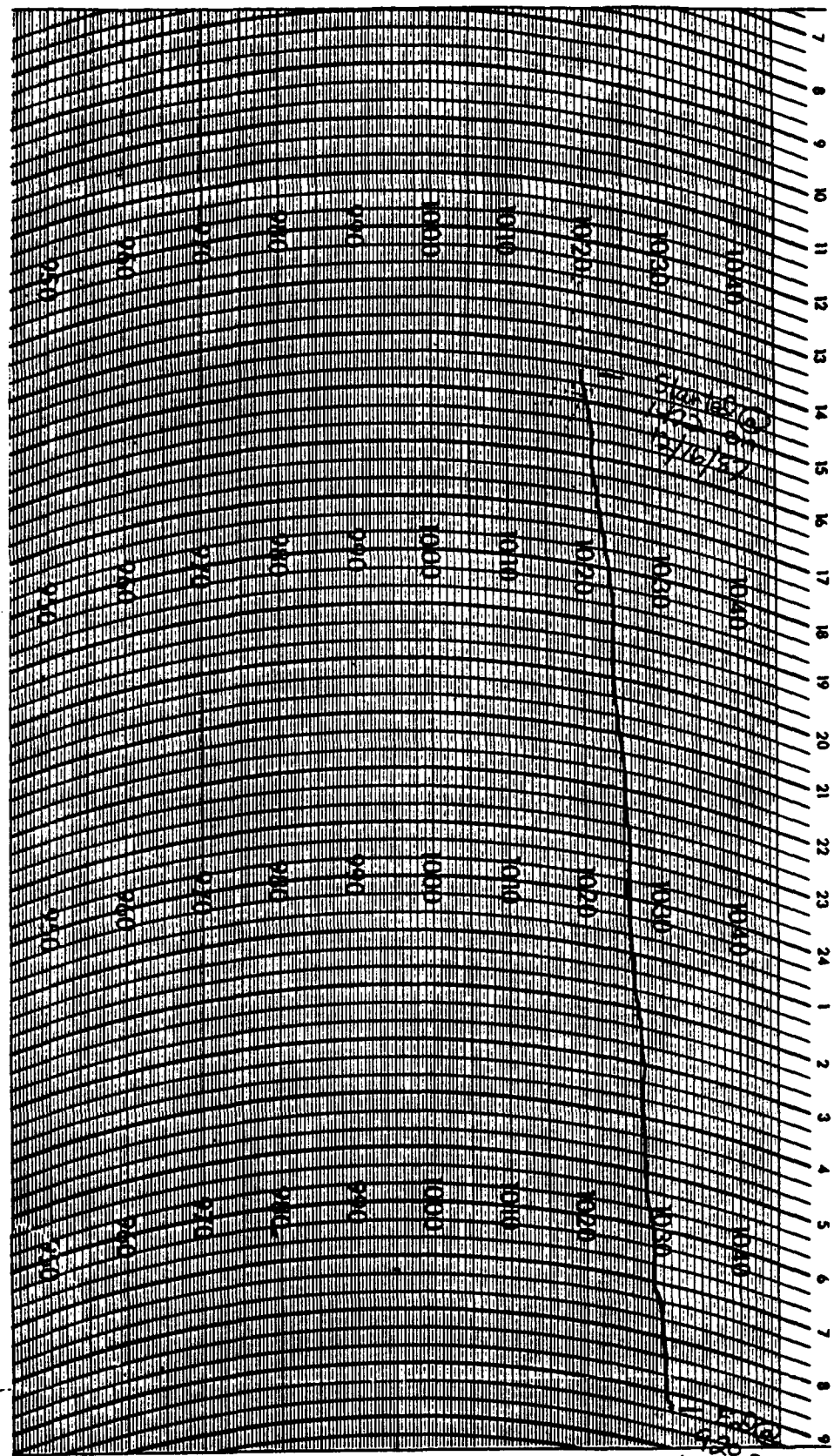


WEATHERtronics
DAILY

BAROMETRIC PRESSURE
945 to 1045

Chart No. 70103

station Well house 4 Antioch, IL date on 12/15/87 date off 12/16/87



12/16 WED

12/17 THU

WEATHERtronics

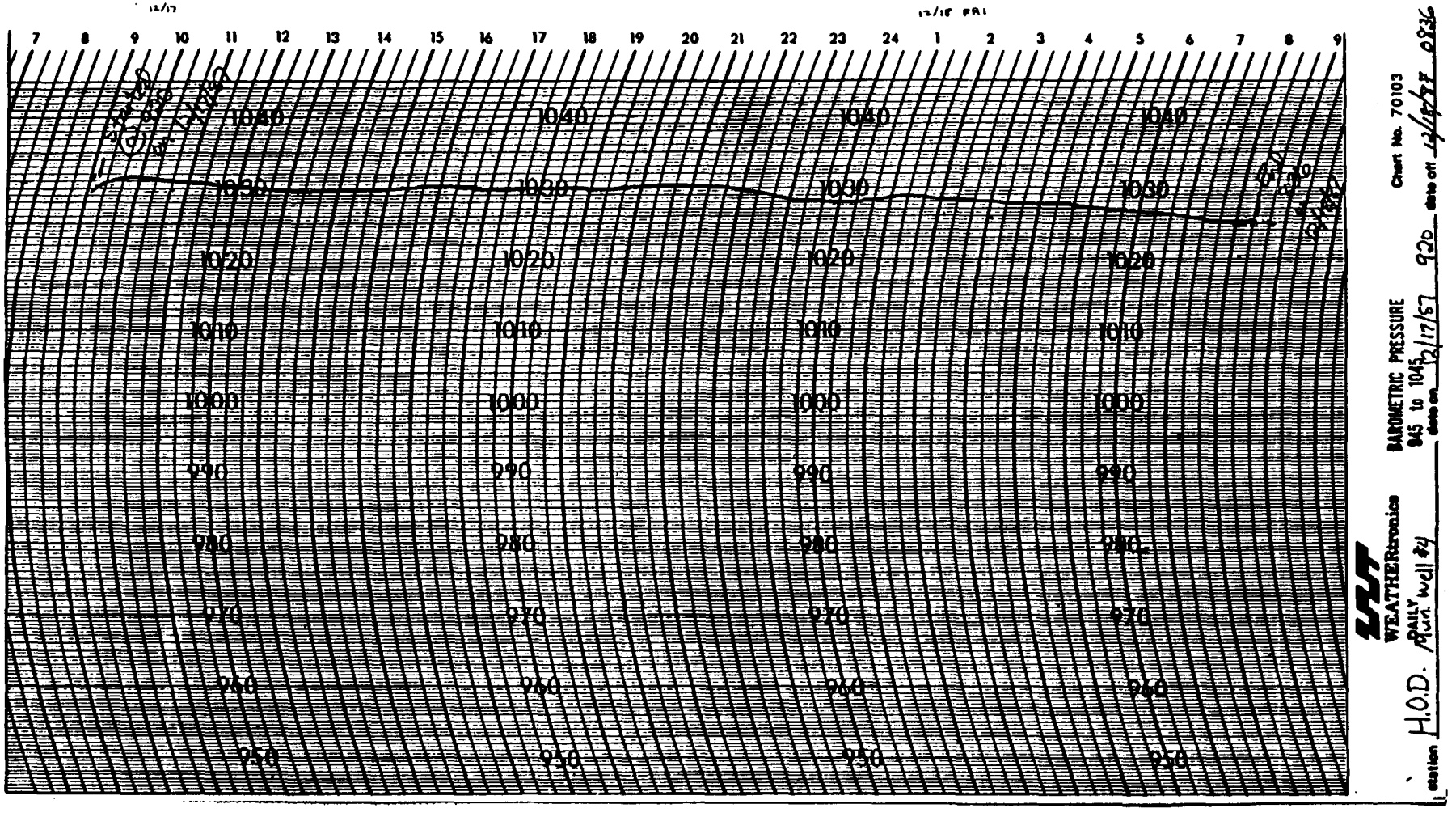
DAILY

BAROMETRIC PRESSURE

945 to 1045

Chart No. 70103

station H.O.D by Mun. Well #4 date on 12/16/87 @ 1422 date off Stopped @ 920 10/17/87 on 10/17/87

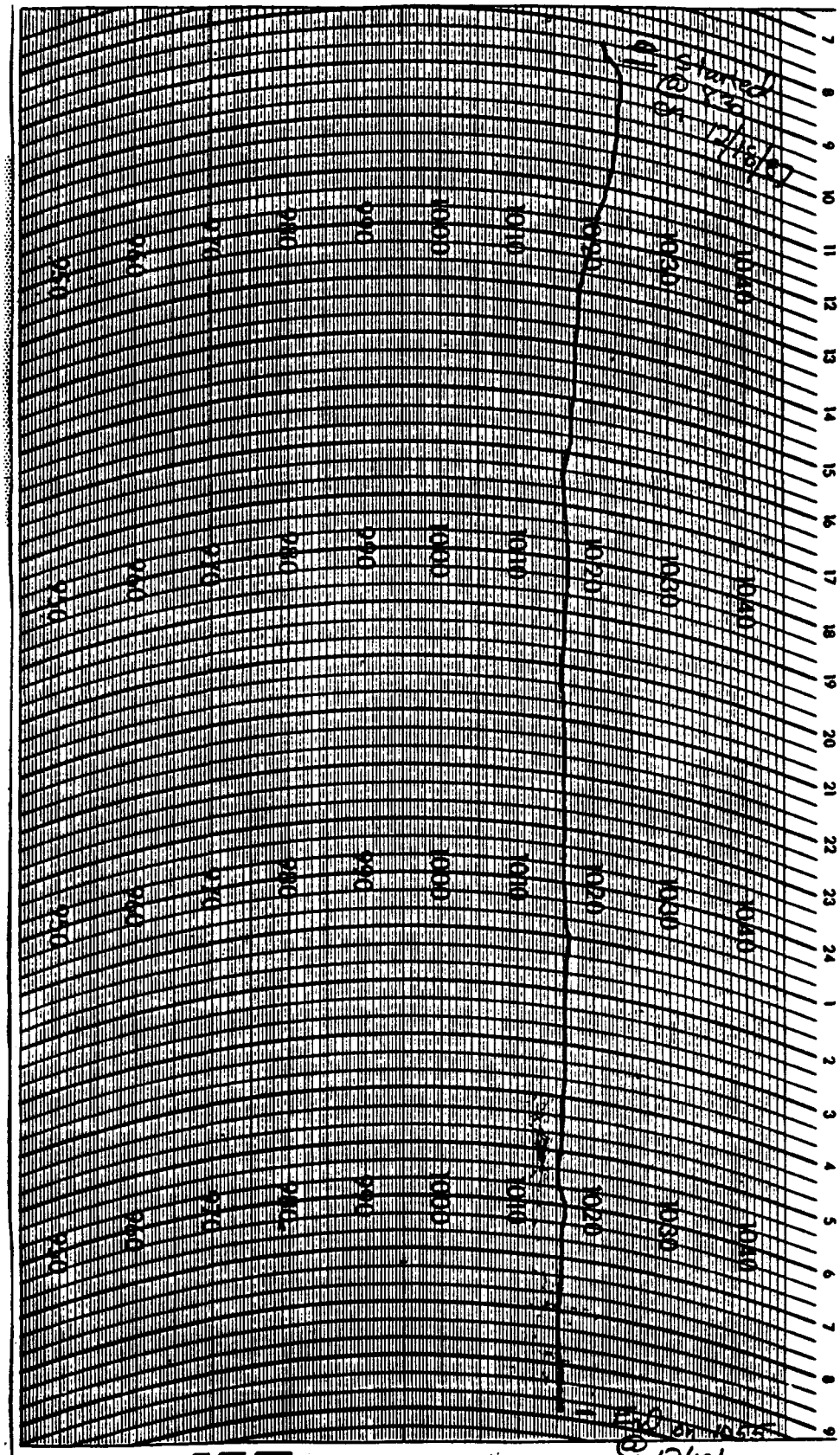


WEATHERtronics

BAROMETRIC PRESSURE
945 to 1045

Chart No. 70103

station H.O.D. DAILY Main well #4 date on 12/17/87 920 date off 12/18/88 0836



WEATHERtronics

DAILY

BAROMETRIC PRESSURE 845 to 1045

Chart No. 70103

station HOD Municipale Well #4 date on 12/18/87 0830 date off 12/19/1055

PRIMARY PUMP TEST CALCULATIONS

HANTUSH - JACOB METHOD CALCULATIONS

	leakance (r)	S Ft	t/r^2 ($\frac{day}{Ft^2}$)	$1/u$	$L(u,r)$	b' Ft	r Ft.
GW 1D	.5	.53	9.8×10^{-9}	1	1	68.10	3460
GW 4D	.05	.54	3.6×10^{-9}	1	1	52.50	400
GW 3D	.13	1.02	2.75×10^{-9}	1	1	29.50	100
GW 6D	.05	.30	2.2×10^{-9}	1	1	26.25	1150
GW 2D	.07	.44	5.4×10^{-9}	1	1	82.75	750

Eq.

$$T = \frac{Q}{4\pi s} L(u,v) \qquad T = \frac{(gpm)(min/day)(1.0)}{4\pi (Ft)(7.48\ gal/Ft^3)}$$

$$S = 4T \frac{t/r^2}{1/u}$$

$$\frac{K'}{b'} = 4T \frac{v^2}{r^2} = \frac{S(v^2/u)}{t}$$

K' = hydraulic conductivity of confining bed
b' = thickness of confining bed

GW 1D

$$T = \frac{(550\ g/min)(1440\ min/day)(1.0)}{4\pi\ (.53\ Ft.)(7.48\ g/Ft^3)}$$

$$= 15{,}900\ Ft^2/day$$

$$S = 4(15{,}900\ Ft^2/day) \cdot \frac{(9.8 \times 10^{-9}\ day/Ft^2)}{1}$$

$$= 6.23 \times 10^{-4}$$

$$\frac{K'}{b'} = 4(15{,}900\ Ft^2/day) \cdot \frac{(.5)^2}{(3460\ Ft)^2}$$

$$= 0.0013\ day^{-1}$$

$$K' = (.0013\ day^{-1})(68.10\ Ft) = .089\ \frac{Ft}{day}$$

GW 4D

$$T = \frac{550(1440)(1.0)}{4\pi\ (.54)(7.48)}$$

$$= 15{,}600\ Ft^2/day$$

$$S = 4(15{,}600)(3.6 \times 10^{-9})$$

$$= 2.25 \times 10^{-4}$$

$$K' = 4(15{,}600) \cdot \frac{(.05)^2}{(400)^2} \cdot 52.50$$

$$= .051\ Ft/day$$

GW3d

$$T = \frac{(550)(1440)(1.0)}{4\pi(102)(7.48)}$$

$$= 8260 \text{ Ft}^2/\text{day}$$

$$S = 4(8260)(2.75 \times 10^{-7})$$

$$= .0091$$

$$= 4(8260)\frac{(.13)^2}{(100)^2}(29.50)$$

$$= 1.65 \text{ Ft/day}$$

GW6D

$$T = \frac{550(1440)(1.0)}{4\pi(.30)(7.48)}$$

$$= 28,100 \text{ Ft}^2/\text{day}$$

$$S = 4(28,100)(2.2 \times 10^{-9})$$

$$= 2.47 \times 10^{-4}$$

$$K' = 4(28100)\frac{(.05)^2}{(1150)^2}(26.25)$$

$$= .0056 \text{ Ft/day}$$

GW2D

$$T = \frac{550(1440)(1.0)}{4\pi(.44)(7.48)}$$

$$= 19,100 \text{ Ft}^2/\text{day}$$

$$S = 4(19,100)(5.4 \times 10^{-9})$$

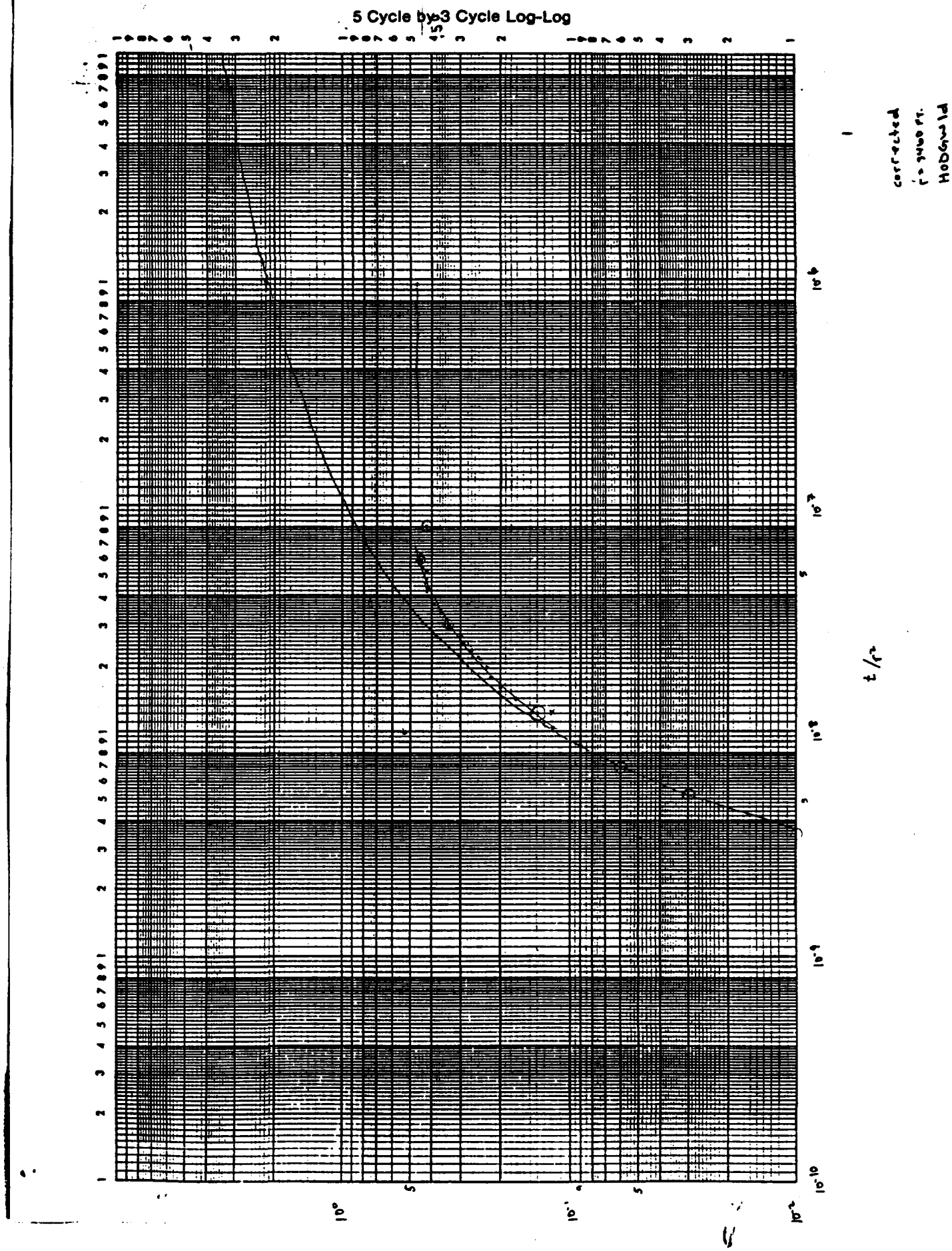
$$= 4.12 \times 10^{-4}$$

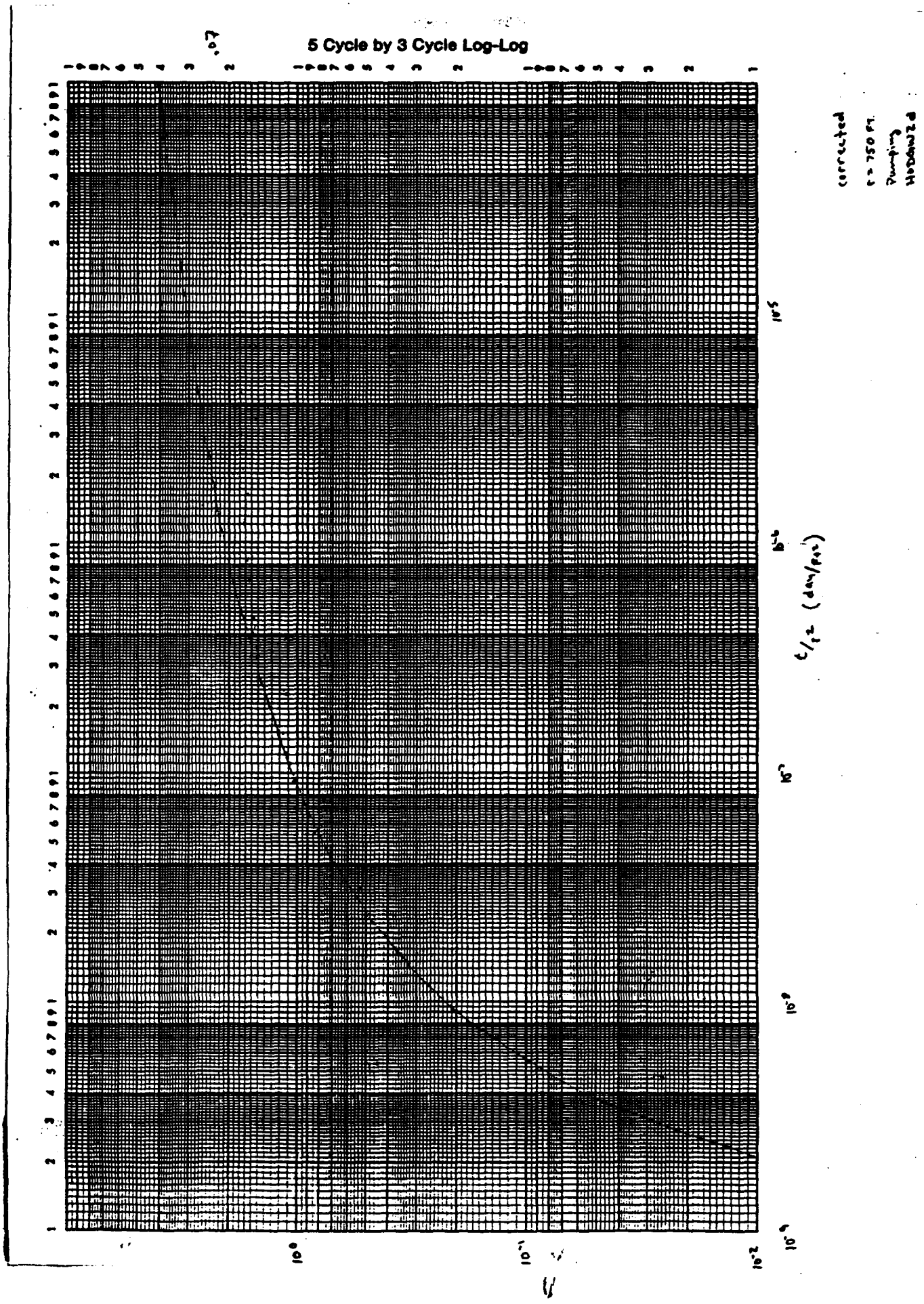
$$K' = 4(19100)\frac{(.07)^2}{(750)^2}(82.75)$$

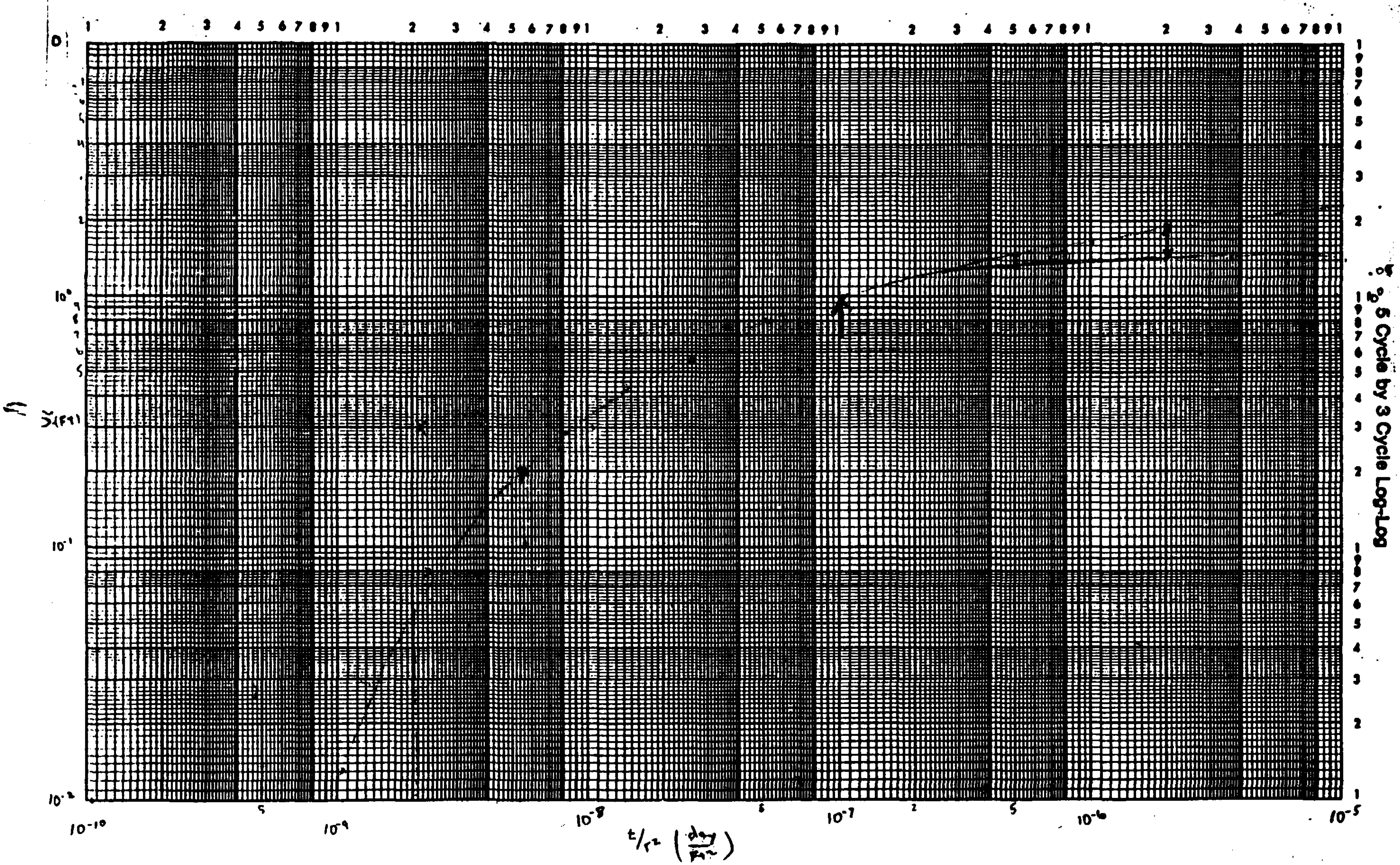
$$= .055 \text{ Ft/day}$$

SUMMARY TABLE

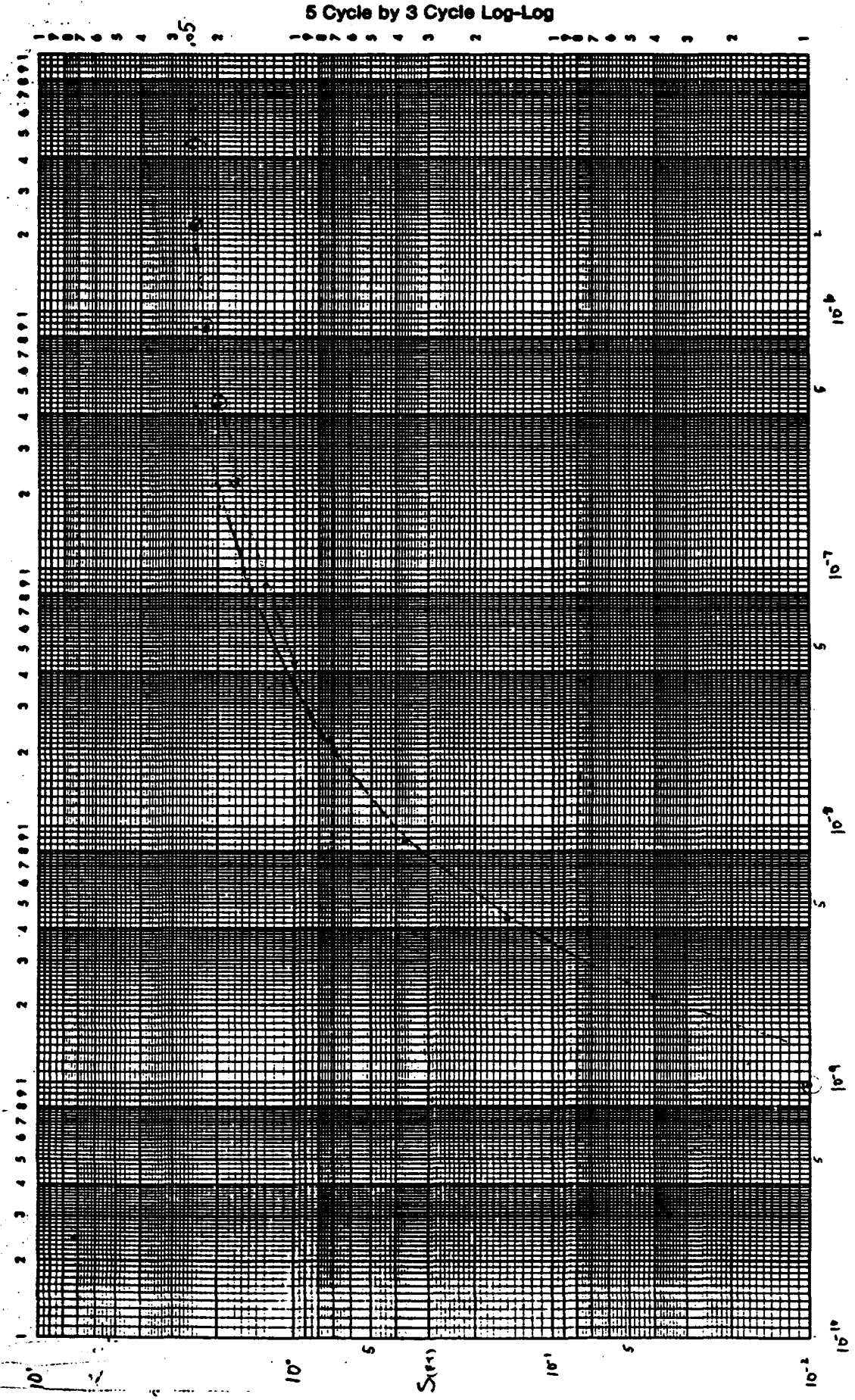
	T (Ft²/day)	S	K' (Ft/day)
GW1D	15,900	6.23×10^{-4}	.089
GW2D	19,100	4.12×10^{-4}	.055
GW6D	28,100	2.47×10^{-4}	.006
GW3D	8,260	9.10×10^{-3}	1.65
GW4D	15,600	2.25×10^{-4}	.051


5 Cycle by 3 Cycle Log-Log
corrected
HODGWld
t/r²


5 Cycle by 3 Cycle Log-Log
corrected
t = 750 FT.
Pumping
HODGWIZD
t/r² (day/ft²)

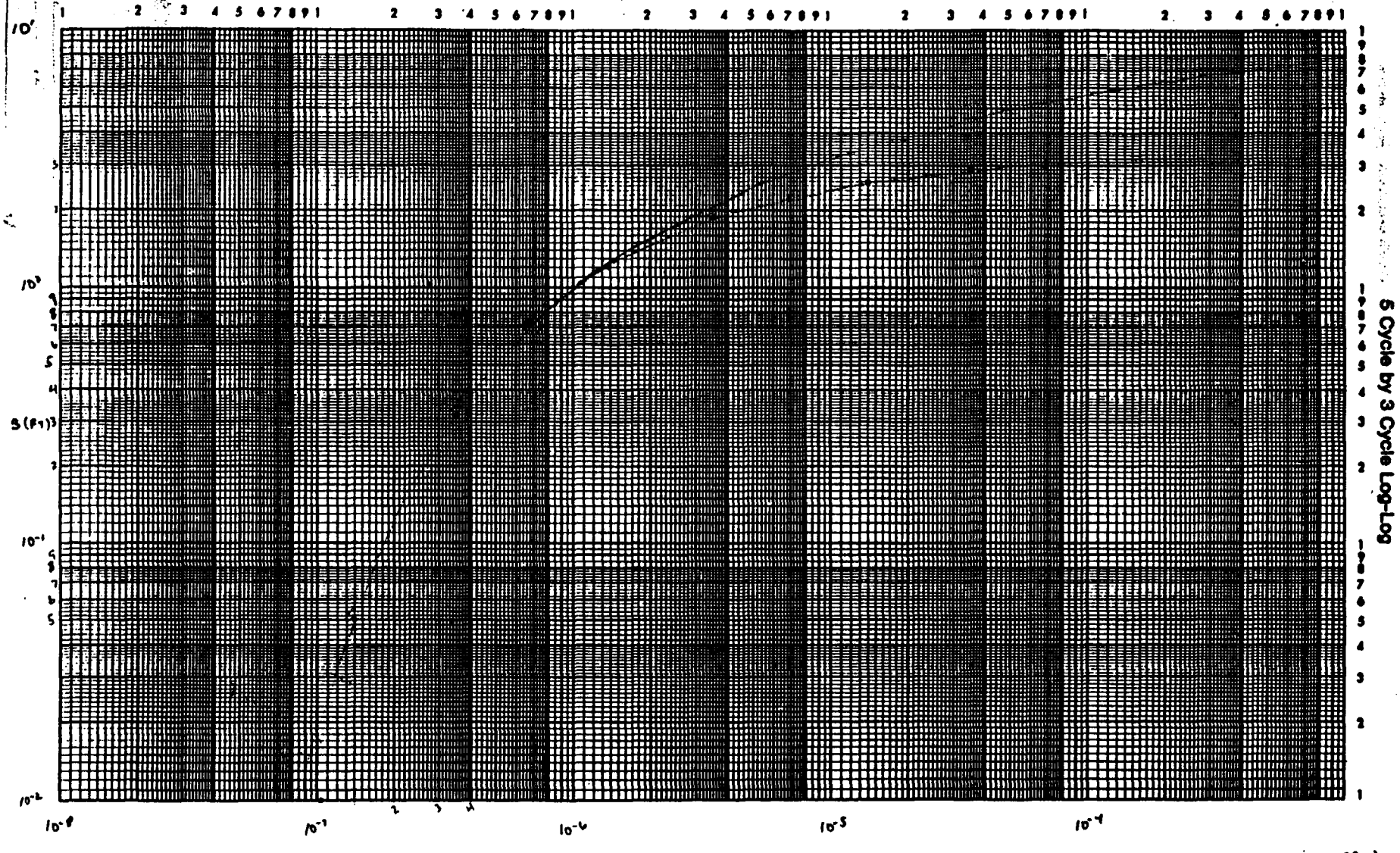

5 Cycle by 3 Cycle Log-Log
10^-10
10^-9
10^-8
10^-7
10^-6
10^-5
10^-2
10^-1
10^0

5 Cycle by 3 Cycle Log-Log



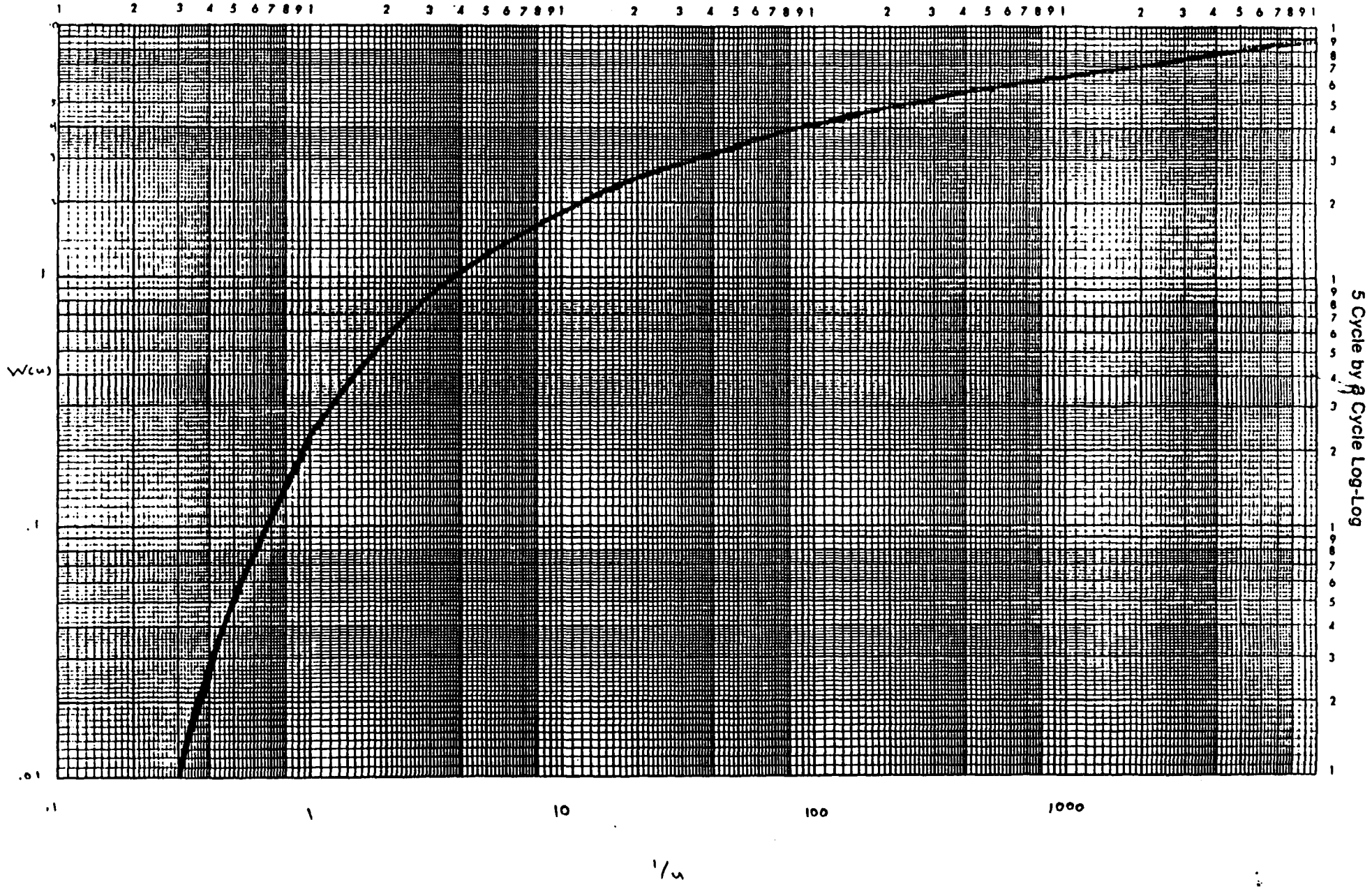
$t/r^2 \left(\frac{\text{days}}{\text{FT}^2}\right)$

Corrected
HOD6W4d
r = 400FT



Barometric effect
CORRECTED
HODGW3d
(r > 100 Ft)

THEIS TYPE CURVE



Ratio Method Notes

HODGW3a - 3i

$$\frac{S'}{S} = \frac{0.151}{2.90} = 0.052 \qquad t = 500 \text{ min}$$

$$t_D = \frac{Tt}{S r^2}$$

T and S cannot be determined due to partial penetration effects.

HODGW6d - 6i

$t = 1000$ min $= .694$ day

$$\frac{S'}{S} = \frac{.12}{1.44} = 8.33 \times 10^{-2}$$

$$t_D = \frac{Tt}{S r^2} = \frac{28{,}100\ (.694)}{2.47 \times 10^{-4}\ (1150)^2} = \frac{19{,}500}{327} = 59.6$$

$t_D' = 2.6 \times 10^{-1}$ (from Fig. 3)

$$\alpha' = \left[r^2/t\right] t_D' = \left[(11.7)^2/.694\right] .26 = 51.28 \ \frac{ft^2}{day} \text{ (DIFFUSIVITY OF CLAY)}$$

$$K' = \alpha'(S_s')$$

S_s' value is not known

HOD GW 6d - 6i

$t = 500$ min $= .347$ day

$$\frac{S'}{S} = \frac{.02}{1.29} = 1.55 \times 10^{-2}$$

$$t_D = \frac{Tt}{Sr^2} = \frac{28{,}100\ (.347)}{(2.47 \times 10^{-4})(1150^2} = 29.85$$

$$t_D' = 1.1 \times 10^{-1} \quad \text{(from Fig. 3)}$$

$$\alpha' = \left(\frac{r^2}{t}\right) t_D' = \left[(11.7)^2/.347\right] .11 = 43.39 \quad ft^2/day$$

Image well Analysis

$$r_i = r_r \sqrt{\frac{t_i}{t_r}}$$ law of times

r_i = radius of image well
r_r = radius of obs. well
t_i = time of S_i after boundary takes effect
t_r = time of S_r (random) before boundary takes effect
S_i = drawdown

	GW 6d	GW 2d	GW 1d
①	r_r = 1150 Ft.	r_r = 750 Ft.	r_r = 3460 Ft
	$t_i = 1.2 \times 10^{-6}$ min S_i = .30	$t_i = 1.20 \times 10^{-6}$ S_i = .50	$t_i = 7 \times 10^{-8}$ S_i = .31
	$t_r = 9 \times 10^{-9}$	$t_r = 2.50 \times 10^{-8}$ S_r = .50	$t_r = 2.18 \times 10^{-8}$
	$r_i = 1150 \sqrt{\frac{1.2 \times 10^{-6}}{9 \times 10^{-9}}}$	$r_i = 750 \sqrt{\frac{1.20 \times 10^{-6}}{2.50 \times 10^{-8}}}$	$r_i = 3460 \sqrt{\frac{7.0 \times 10^{-8}}{2.18 \times 10^{-8}}}$
	= 13,300 Ft	= 5200 Ft	= 6200 Ft.
	= 2.52 mi	= 0.98 mi	= 1.17 mi.
②	r_r = 1150	r_r = 750 Ft.	r_r = 3460 Ft.
	$t_i = 4.00 \times 10^{-7}$	$t_i = 9.00 \times 10^{-7}$ S_i = .35	$t_i = 5.60 \times 10^{-8}$ S_i = .24
	$t_r = 3.00 \times 10^{-9}$	$t_r = 1.58 \times 10^{-8}$	$t_r = 2.68 \times 10^{-8}$
	$r_i = 1150 \sqrt{\frac{4 \times 10^{-7}}{3 \times 10^{-9}}}$	$r_i = 750 \sqrt{\frac{9.00 \times 10^{-7}}{1.58 \times 10^{-8}}}$	$r_i = 3460 \sqrt{\frac{5.60 \times 10^{-8}}{2.68 \times 10^{-8}}}$
	= 13,300 Ft.	= 5700 Ft.	= 5000 Ft.
	= 2.52 mi.	= 1.08 mi.	= 0.95 mi.
avg	r_i = 13,300 Ft.	r_i = 5450 Ft.	r_i = 5500 Ft.
	= 2.52 mi.	= 1.03 mi.	= 1.06 mi.

REDUCED PUMP TEST

AND

HYDROGEOLOGICAL DATA AND FIGURES

WATER LEVEL CHANGES IN MONITORING WELLS GW1S AND GW1D (Feet)*
(September 21 through 24, 1987)

Date	Time	Transducer Time (Minutes)	Well GW1S	GW1D
9/21	1835	1115	0.00	-0.01
	2235	1355	+0.01	-0.11
9/22	0235	1595	+0.03	-0.16
	0635	1835	+0.04	-0.15
	1035	2075	+0.04	+0.01
	1435	2315	+0.02	-0.07
	1835	2555	0.00	-0.16
	2235	2795	0.00	-0.24
9/23	0235	3035	+0.01	-0.27
	0635	3275	+0.01	-0.15
	1035	3515	+0.01	-0.06
	1435	3755	-0.01	-0.11
	1835	3995	-0.04	-0.17
	2235	4235	-0.05	-0.23
9/24	0235	4475	-0.05	-0.26
	0635	4715	-0.04	-0.16

* Datum = 0.00
\+ Indicates a rise in water level.
\- Indicates a drop in water level.

Source: Ecology and Environment, Inc. 1989.

WATER LEVEL CHANGES IN MONITORING WELLS
GW3S, GW3I, GW3D, GW2D, AND GW4D (Feet)*
(September 23 through 24, 1987)

Time	Transducer Time (minutes)	Well GW3S	GW3I	GW3D	GW2D	GW4D
1700	1020	--	--	--	0.00	--
1800	1080	0.000	0.000	0.000	-0.02	0.000
1900	1140	0.000	+0.013	-0.007	-0.04	-0.006
2000	1200	0.000	+0.016	-0.022	-0.05	-0.019
2100	1260	0.000	+0.016	-0.038	-0.07	-0.038
2200	1320	0.000	+0.013	-0.051	-0.08	-0.051
2300	1380	+0.006	+0.009	-0.064	-0.10	-0.061
2400	1440	+0.006	+0.006	-0.073	-0.10	-0.070
0100	1500	+0.019	+0.006	-0.080	-0.11	-0.073
0200	1560	+0.032	+0.003	-0.076	-0.10	-0.077
0300	1620	+0.044	0.000	-0.080	-0.10	-0.073
0400	1680	+0.055	-0.003	-0.076	-0.10	-0.070
0500	1740	+0.064	-0.006	+0.177	-0.55	+0.229
0600	1800	+0.070	-0.010	+0.510	-0.93	+0.538
0700	1860	+0.083	-0.013	+0.409	--	+0.022

* Datum = 0.000, except for well GW2D (datum = 0.00).
\+ Indicates a rise in water level.
\- Indicates a drop in water level.
-- Data not available.

Source: Ecology and Environment, Inc. 1989.

DRAWDOWN DATA, PRELIMINARY PUMP TEST
(September 24, 1987)

	Drawdown (Feet)						
Time (Minutes)	GW3S	GW3I	GW3D	GW2D	GW4D	GW1S	GW1D
0	0.000	0.000	0.000	0.00	0.000	0.00	0.00
25	+0.006	+0.48	-1.135	-0.38	+0.749	**	**
50	0.000	+0.088	-1.501	-0.58	+0.984	**	**
100	-0.007	+0.121	-1.816	-0.76	+1.216	**	**
180	*	**	*	*	*	-0.01	-0.06
200	-0.013	+0.127	-2.066	-1.34	+1.433	**	**
360	*	*	*	*	*	-0.03	-0.28
465	+0.012	+0.099	-2.913	-2.40	+2.205	**	**

* Data not used in analysis.
** Data not available.
\+ Indicates a rise in water level.
\- Indicates a drop in water level.

Source: Ecology and Environment, Inc. 1989.

PRELIMINARY PUMP TEST RECOVERY DATA (Feet)

Time (Minutes)	GW3S	GW3I	GW3D	Well GW4D	GW2D	GW1S	GW1D
0	0.000	0.000	0.000	0.000	0.00	0.00	0.00
0.2	-0.012	-0.006	-0.006	+0.006	-0.01	*	*
0.5	-0.006	0.000	-0.025	+0.054	-0.01	*	*
1	0.000	-0.003	+0.003	+0.207	0.00	*	*
2	0.000	-0.003	+0.082	+0.385	+0.04	*	*
5	-0.006	-0.009	+0.342	+0.694	+0.12	*	*
10	-0.019	-0.060	+0.735	+0.939	+0.20	*	*
20	-0.012	-0.139	+1.197	+1.159	+0.26	*	*
50	0.000	-0.130	+1.708	+1.414	+0.36	*	*
100	+0.012	-0.336	+1.961	+1.573	+0.43	*	*
170	*	**	**	+1.656	**	*	*
180	*	**	**	*	+0.49	-0.01	+0.02
200	*	-0.492	+2.101	*	+0.50	*	*
210	*	*	+2.173	*	+0.50	**	**
300	*	*	*	*	*	-0.01	+0.04

* Data not available.

** Data not used in analysis.

\+ Indicates a rise in water level.

\- Indicates a drop in water level.

Source: Ecology and Environment, Inc. 1989.

PRIMARY PUMP TEST WATER LEVEL MEASUREMENTS
(December 14 through 19, 1987)

Well	Date	Time	Water Level (Feet)*	Graph Time**
GW2D	12/14	2306	41.22	1386
	12/15	0135	41.13	1535
		0300	41.05	1620
		0745	40.78	1905
		1425	40.82	2305
		1700	41.19	2460
		2030	41.34	2670
	12/16	0350	39.64	3110
		0655	39.28	3295
		0920	40.33	3440
		1210	40.70	3610
		1522	40.93	3802
	12/17	1030	39.89	4950
		1041	40.25	4961
		1134	40.83	5014
		1534	41.38	5254
		1950	41.51	5510
		2200	41.56	5640
	12/18	0258	41.56	5938
		0435	41.40	6035
		0825	41.55	6265
		1022	41.58	6382
		1127	41.19	6447
		1157	41.24	6477
		1435	41.30	6595
		2130	41.34	7050
	12/19	0050	41.21	7250
GW3S***	12/14	2034	0.00	1234
		2324	+0.01	1404
	12/15	0200	+0.03	1560
		0313	+0.09	1633
		0715	+0.04	1675
		1020	0.00	2060
		1355	-0.07	2275
		1640	-0.09	2440
		2011	-0.07	2651
		2330	-0.05	2850
	12/16	0725	-0.03	3325
		0910	-0.03	3430
		1155	-0.03	3595
		1450	-0.04	3770
		1512	-0.09	3792
		1757	-0.10	3957
		2010	0.00	4090

(CONT.)

Well	Date	Time	Water Level (Feet)*	Graph Time**
GW3S	12/17	0755	-0.03	4795
		0945	-0.03	4905
		1240	-0.08	5080
		1430	-0.06	5190
		1637	-0.07	5317
		1910	-0.06	5470
		2135	-0.06	5615
		2356	-0.05	5756
	12/18	0250	-0.07	5930
		0819	-0.07	6259
		1025	-0.05	6385
		1210	-0.02	6490
		1408	-0.02	6608
		2050	-0.04	7010
	12/19	0018	-0.05	7218
		0326	-0.05	7406
		0811	-0.05	7691
GW3I	12/14	2027	36.14	1227
		2325	36.04	1405
	12/15	0715	35.88	1875
		1355	35.81	2275
		1645	35.98	2445
		2011	35.92	2651
		2017	35.80	2657
		2332	35.81	2852
	12/16	0345	35.88	3105
		0620	35.84	3260
		0910	35.76	3430
		1200	35.66	3600
		1515	35.65	3795
		1805	35.67	3965
	12/17	0745	35.79	4785
		1053	35.62	4973
		1310	35.47	5110
		1535	35.52	5255
		1922	35.72	5482
		2143	35.85	5623
	12/18	0250	35.73	5930
		0515	35.74	6075
		0848	36.85	6288
		1033	36.43	6393
		1412	36.74	6612
		2100	36.64	7020
	12/19	0030	36.56	7230
		0328	36.64	7408
		0700	36.58	7620
		0906	36.46	7746
GW3D	12/14	2025	39.69	1225

(CONT.)

Well	Date	Time	Water Level (Feet)*	Graph Time**
GW3D		2325	39.70	1405
	12/15	0715	39.10	1875
		1355	39.14	2275
		1645	39.52	2445
		2012	39.57	2652
		2334	39.61	2854
	12/16	0910	38.57	3430
		1201	39.31	3601
		1515	39.39	3795
		1803	39.58	3963
		2014	39.68	4094
	12/17	0754	39.05	4796
		0945	38.80	4905
		1131	40.39	5011
		1305	40.91	5105
		1530	41.18	5250
		1645	41.25	5325
		1912	41.36	5472
		2140	41.66	5620
	12/18	0251	41.40	5931
		0511	41.37	6071
		0823	41.40	6263
		1030	41.41	6390
		1135	39.89	6455
		1415	39.52	6615
		2105	39.51	7025
	12/19	0324	39.78	7404
		0700	39.22	7620
		0901	38.77	7741
GW4S	12/15	0845	10.73	1965
		1430	10.65	2310
		1640	10.81	2440
		2000	10.82	2640
		2319	10.78	2839
	12/16	0325	10.75	3085
		0615	10.77	3255
		0905	10.67	3425
		1143	10.76	3583
		1440	10.77	3760
		1745	10.78	3945
	12/17	1210	10.82	5050
		1411	10.82	5171
		1716	10.80	5356
		2225	10.81	5665
	12/18	0215	10.76	5895
		0540	10.82	6100
		0802	10.83	6242
		1715	10.80	6795

(CONT.)

Well	Date	Time	Water Level (Feet)*	Graph Time**
GW4S	12/19	0317	10.81	7397
		0957	10.82	7797
G102	12/16	1855	11.17	4015
	12/17	0830	11.21	4830
		0953	11.22	4913
		1041	11.21	4961
		1248	11.17	5088
		1408	11.16	5168
		1550	11.16	5270
		1921	11.18	5481
		2211	11.18	5651
	12/18	0545	11.20	6105
		1030	11.18	6390
		1227	11.14	6507
		1427	11.16	6627
		1635	10.96	6755
		2130	11.19	7050
	12/19	0317	11.19	7397
		0650	11.20	7610
		1001	11.18	7801
GW4D	12/15	0845	41.00	1965
		1430	41.00	2310
		1640	42.26	2440
		2000	42.35	2640
		2318	42.39	2838
	12/16	0325	41.49	3085
		0615	41.12	3255
		0905	41.39	3425
		1138	41.97	3578
		1438	42.19	3758
		1745	42.36	3945
	12/17	0240	42.62	4485
		0820	42.09	4820
		1102	43.02	4982
		1240	43.69	5080
		1402	43.87	5162
		1548	44.00	5268
		1920	44.13	5480
		2200	44.21	5520
	12/18	0215	44.24	5895
		0535	44.17	6095
		0800	44.19	6240
		1118	42.98	6438
		1157	42.79	6477
		1300	42.72	6540
		1645	42.52	6765
		2110	42.69	7030
	12/19	0317	42.65	7397

(CONT.)

Well	Date	Time	Water Level (Feet)*	Graph Time**
GW4D		0951	41.70	7791
GW5D	12/15	0855	36.35	1975
		1300	36.48	2220
		1558	36.56	2398
		1930	36.62	2610
		2307	36.78	2827
	12/16	0250	36.34	3050
		0545	35.75	3225
		0845	36.26	3405
		1126	36.40	3566
		1415	36.57	3735
		1720	36.72	3920
	12/17	1622	37.55	5302
		1858	37.55	5458
		2330	37.74	5730
	12/18	0145	37.79	5865
		0512	37.74	6072
		0731	37.74	6211
		1440	37.16	6640
		1950	36.97	6950
		2345	37.05	7185
	12/19	0302	37.02	7382
		0620	36.93	7580
		0936	36.52	7776
GW6S	12/15	0905	6.33	1985
		1335	5.87	2255
		1545	6.69	2385
		1915	6.70	2595
		2241	6.68	2801
	12/16	0200	6.67	3000
		0535	6.65	3215
		0825	6.67	3385
		1105	6.68	3545
		1425	6.69	3745
		1737	6.70	3937
		2250	6.72	4250
	12/17	1107	6.71	4981
		1215	6.68	5055
		1340	6.66	5140
		1525	6.68	5245
		1819	6.68	5419
		2300	6.62	5700
	12/18	0130	6.64	5850
		0455	6.61	6055
		0715	6.60	6195
		1104	6.56	6424
		1416	6.53	6616
		1807	6.58	6847

(CONT.)

Well	Date	Time	Water Level (Feet)*	Graph Time**
GW6S	12/19	0001	6.60	7201
		0243	6.60	7363
		0634	6.60	7594
		0915	6.61	7755
GW6I	12/15	0905	22.76	1985
		1335	22.45	2255
		1543	22.58	2387
		1908	22.50	2588
		2240	22.53	2800
	12/16	0200	22.57	3000
		0535	22.48	3215
		0825	22.56	3385
		1103	22.57	3543
		1425	27.57	3745
		1735	22.57	3935
		2245	22.66	4245
	12/17	0145	22.64	4425
		1005	22.69	4825
		1140	22.68	5020
		1301	22.69	5101
		1521	22.68	5241
		1815	22.69	5415
		2258	22.66	5698
	12/18	0127	22.73	5847
		0455	22.71	6055
		0712	22.70	6192
		1013	22.73	6373
		1106	22.72	6426
		1215	22.72	6495
		1415	22.76	6615
		2011	22.75	6971
		2336	27.76	7176
	12/19	0237	22.74	7357
		0632	22.73	7592
		0910	22.73	7750
GW6D	12/15	0905	38.06	1985
		1335	37.15	2255
		1545	39.54	2385
		1908	39.60	2588
		2240	39.65	2800
	12/16	0200	39.28	3000
		0535	38.69	3215
		0825	39.03	3385
		1102	39.22	3542
		1430	39.44	3750
		1735	39.60	3935
		2230	39.84	4230

(CONT.)

Well	Date	Time	Water Level (Feet)*	Graph Time**
GW6D		1046	39.42	4966
		1115	39.71	4995
		1215	39.91	5055
		1313	40.14	5113
		1525	40.34	5245
		1807	40.48	5407
		2250	40.54	5690
	12/18	0124	40.61	5844
		0440	40.57	6040
		0711	40.51	6191
		1012	40.59	6372
		1101	40.56	6421
		1135	40.17	6455
		1239	39.96	6519
		1413	39.90	6613
		1956	39.95	6956
		2350	39.96	7190
	12/19	0235	39.93	7355
		0630	39.67	7590
		0908	39.22	7748
GW7S	12/15	0900	3.23	1980
		1315	2.83	2235
		1623	2.97	2423
		1945	3.09	2625
		2300	3.19	2820
	12/16	0305	3.27	3065
		0600	3.30	3240
		0850	3.38	3410
		1120	3.36	3560
		1410	3.41	3730
		1715	3.5	3915
		1842	3.61	4002
		2320	3.57	4280
	12/17	0155	3.60	4435
		0520	3.60	4640
		0738	3.55	4778
		1432	3.43	5192
	12/18	1942	3.43	6942
		2330	3.44	7170
	12/19	0255	3.45	7375
		0609	3.46	7569
		0935	3.43	7775
GW1S	12/14	1830	4.31	1110
		2051	3.77	1251
		2345	4.18	1425
	12/15	0329	4.18	1649
		0805	4.16	1925
		1410	4.27	2290

(CONT.)

Well	Date	Time	Water Level (Feet)*	Graph Time**
GW1S		1720	4.26	2489
		2115	4.27	2715
		2355	4.27	2875
	12/16	0410	4.30	3130
		0710	4.34	3310
		0930	4.40	3450
		1235	4.30	3635
		1550	4.29	3830
		1955	4.36	4075
	12/17	0850	4.36	4850
		1625	4.35	5305
		2307	4.35	5707
	12/18	0315	4.32	5955
		0447	4.32	6047
		0910	4.28	6310
		1831	4.32	6871
	12/19	0216	4.31	7336
		0545	4.31	7545
		0805	4.32	7685
GW1D	12/14	1830	38.31	1110
		2051	38.16	1251
		2345	37.44	1425
	12/15	0329	38.10	1649
		0805	37.83	1925
		1410	36.06	2290
		1720	38.08	2489
		2115	38.12	2715
		2355	38.16	2875
	12/16	0410	38.00	3130
		0710	35.98	3310
		0930	37.76	3450
		1235	37.89	3635
		1550	38.02	3830
		1955	38.20	4075
	12/17	0900	38.26	4860
		1625	38.35	5305
		1659	38.19	5339
		2300	38.52	5700
	12/18	0305	38.53	5945
		0446	38.55	6046
		0915	38.52	6315
		1830	38.43	6870
	12/19	0214	38.41	7334
		0547	38.38	7547
		0805	38.20	7685

* Top of inside casing. (All water levels were measured with a steel tape.)

** The graph time corresponds to the time axes presented in Figures 4-11 through 4-23.

*** Water level measurements for well GW3S represent fluctuations recorded using a USGS-owned Microswitch pressure transducer (datum = 0.00).

Source: Ecology and Environment, Inc. 1989.

PRIMARY PUMP TEST DRAWDOWN DATA
(December 17 through 18, 1987)

Well	Time (Minutes)	Drawdown (Feet)*	Barometric Correction (Feet)	Corrected Drawdown (Feet)*
GW3S	0.2	--	---	---
	0.5	--	---	---
	1	--	---	---
	2	--	---	---
	6.75	-0.016	---	---
	9.25	-0.015	---	---
	19	+0.053	---	---
	53	+0.058	---	---
	100	+0.047	---	---
	200	+0.034	---	---
	515	+0.024	---	---
	975	+0.041	---	---
	1430	+0.022	---	---
GW3I	2.33	-0.017	---	-0.017
	6.25	-0.037	---	-0.37
	9.75	-0.063	0.0021	-0.061
	19.75	-0.090	0.0042	-0.086
	50.5	-0.168	0.0084	-0.160
	100	-0.215	0.016	-0.199
	200	-0.233	0.024	-0.209
	515	+0.151	0.024	+0.175
	975	+0.537	0.056	+0.593
	1430	+0.862	0.042	+0.904
GW3D	0.2	0.00	---	---
	0.5	-0.04	---	-0.04
	1	-0.03	---	-0.03
	2	+0.05	---	+0.05
	5	+0.32	---	+0.32
	10	+0.71	0.0021	+0.71
	20	+1.20	0.0042	+1.20
	50	+1.88	0.0084	+1.89
	100	+2.29	0.016	+2.31
	200	+2.58	0.024	+2.60
	500	+2.88	0.024	+2.90
	1000	+2.95	0.056	+3.01
GW1D	30	-0.02	0.0084	-0.01
	60	-0.01	0.0084	0.00
	90	+0.01	0.016	+0.03
	120	+0.04	0.018	+0.06
	210	+0.12	0.024	+0.14

(CONT.)

Well	Time (Minutes)	Drawdown (Feet)*	Barometric Correction (Feet)	Corrected Drawdown (Feet)*
GW1D	510	+0.32	0.024	+0.34
	990	+0.40	0.056	+0.46
	1380	+0.41	0.0042	+0.41
GW2D	7.5	+0.21	---	+0.21
	13	+0.36	0.0021	+0.36
	18	+0.47	0.0042	+0.47
	45	+0.83	0.0084	+0.84
	100	+1.11	0.016	+1.13
	180	+1.11	0.024	+1.13
	260	+1.48	0.024	+1.50
	555	+1.62	0.018	+1.64
	983	+1.67	0.048	+1.72
	1310	+1.66	0.0042	+1.66
G102	0.2	0.00	---	---
	0.5	0.00	---	---
	1	0.00	---	---
	2	+0.01	---	---
	5	+0.02	---	---
	10	+0.01	---	---
	20	+0.01	---	---
	50	+0.01	---	---
	100	0.00	---	---
	200	-0.01	---	---
	500	-0.01	---	---
	1000	0.00	---	---
GW4D	0.2	+0.01	---	+0.01
	0.5	+0.04	---	+0.04
	1	+0.15	---	+0.15
	2	+0.37	---	+0.37
	5	+0.73	---	+0.73
	10	+1.00	0.0021	+1.00
	20	+1.29	0.0042	+1.29
	50	+1.69	0.0084	+1.70
	100	+1.99	0.016	+2.01
	200	+2.23	0.024	+2.25
	500	+2.47	0.024	+2.49
	1000	+2.49	0.056	+2.55
	1400	+2.43	0.0042	+2.43
GW6I	0.2	0.00	---	0.00
	0.5	0.00	---	0.00
	1	0.00	---	0.00
	2	0.00	---	0.00

(CONT.)

Well	Time (Minutes)	Drawdown (Feet)*	Barometric Correction (Feet)	Corrected Drawdown (Feet)*
GW6I	5	0.00	---	0.00
	10	0.00	0.0021	0.00
	20	0.00	0.0042	0.00
	50	0.00	0.0084	+0.01
	100	-0.02	0.016	0.00
	200	-0.01	0.024	+0.01
	500	0.00	0.024	+0.02
	1000	+0.06	0.056	+0.12
	1440	+0.08	0.042	+0.12
GW6D	0.2	+0.01	---	+0.01
	0.5	+0.01	---	+0.01
	1	+0.01	---	+0.01
	2	+0.03	---	+0.03
	5	+0.08	---	+0.08
	10	+0.16	0.0021	+0.16
	20	+0.30	0.0042	+0.30
	50	+0.56	0.0084	+0.57
	100	+0.79	0.016	+0.81
	200	+1.00	0.024	+1.02
	500	+1.27	0.024	+1.29
	1000	+1.38	0.056	+1.44
	1400	+1.42	0.0042	+1.42

* Datum = 0.000.
-- Data not available.
--- Not applicable.
\+ Indicates a rise in water level.
\- Indicates a drop in water level.

Note: All water level changes were measured by data loggers, except well GW3I, which was measured with a steel tape.

Source: Ecology and Environment, Inc. 1989.

BAROMETRIC CORRECTIONS FOR PRIMARY PUMP TEST DRAWDOWN DATA
(December 17 through 18, 1987)

Date	Time	Barometric Fluctuation (mb)	Correction Value* (Feet)
12/17	1033 to 1110	-.5	-0.008
	1130 to 1210	-1	-0.016
	1210 to 1300	-1.5	-0.024
	1510 to 1540	-1	-0.016
	1620 to 1700	-1.5	-0.024
	1930 to 2000	-1	-0.016
	2100 to 2200	-1.5	-0.024
	2200 to 2230	-2	-0.032
	2230 to 2245	-2.5	-0.040
	2245 to 2310	-3	-0.048
	2340 to 2400	-3	-0.048
12/18	2420 to 2445	-2.5	-0.040
	0100 to 0120	-2	-0.032
	0120 to 0140	-2.5	-0.040
	0220 to 0240	-3	-0.048
	0300 to 0320	-3.5	-0.056
	0430 to 0450	-4	-0.064
	0450 to 0550	-5	-0.08
	0550 to 0640	-4.5	-0.072
	0640 to 0710	-6	-0.096
	0710 to 0740	-7.5	-0.120
	0740 to 1030	-.5	-0.008

* Correction values were added to measured drawdown values.

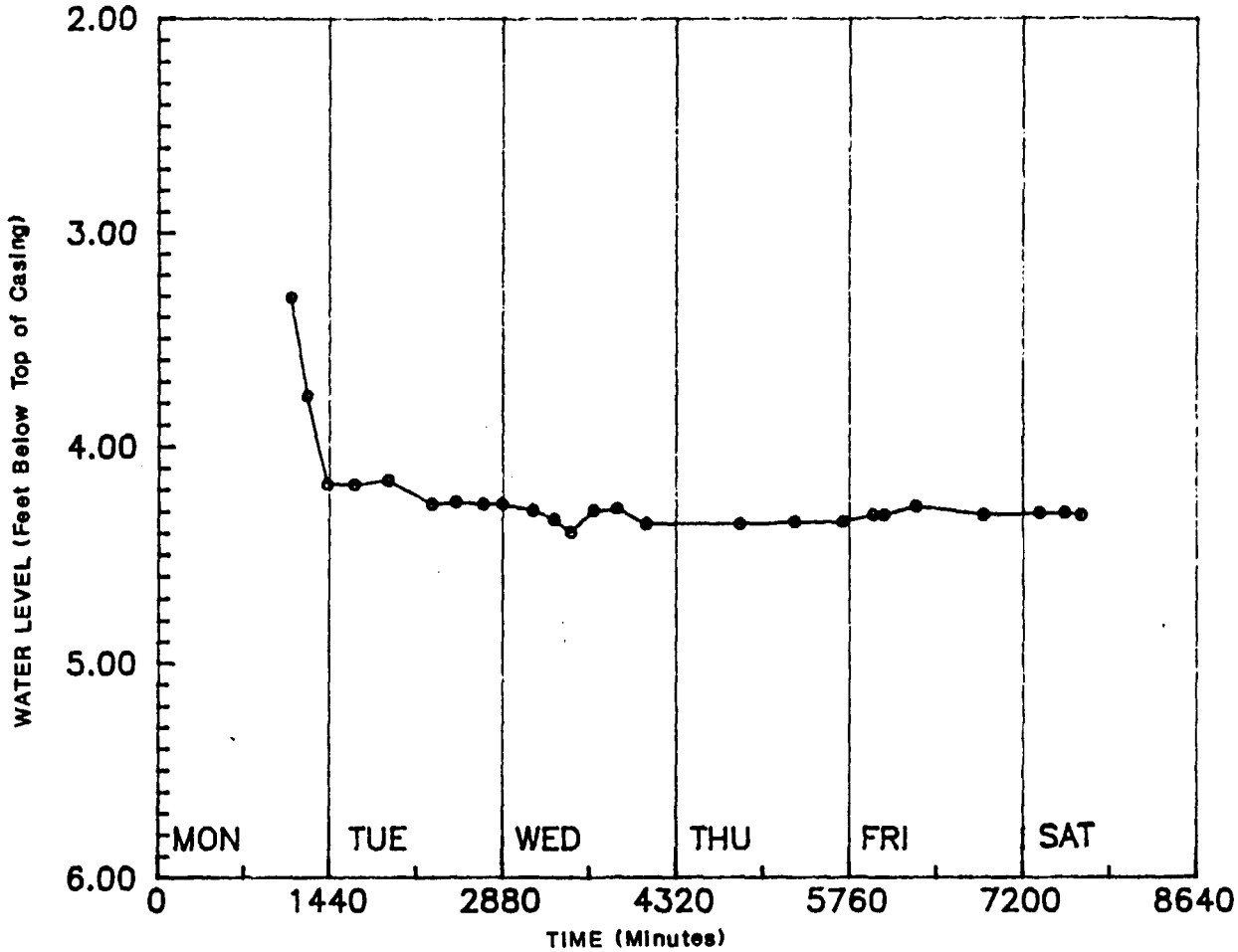
Source: Ecology and Environment, Inc. 1989.

DISTANCE-DRAWDOWN VALUES FOR MONITORING WELLS GW1D, GW2D, AND GW6D

(December 17 through 18, 1987)

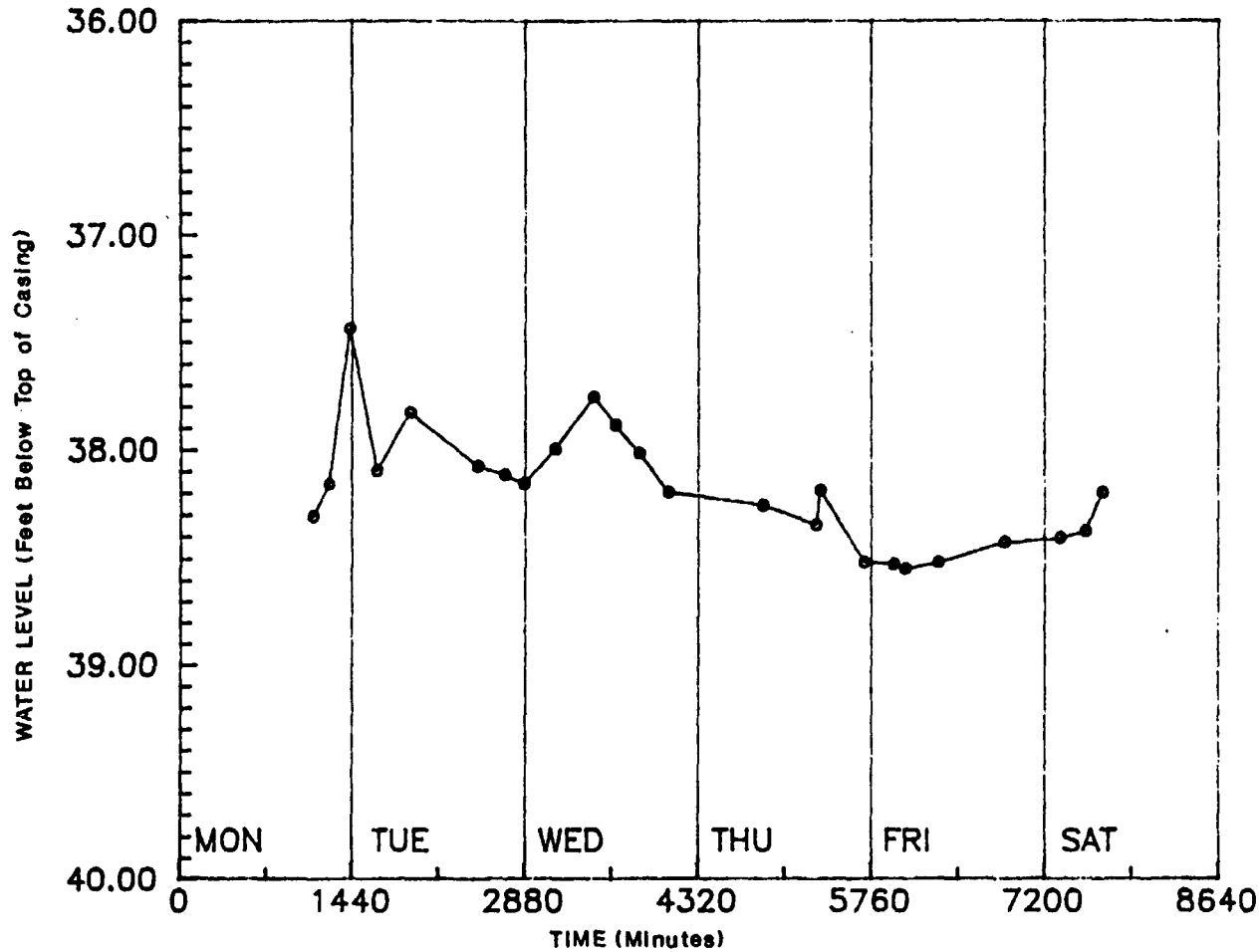
	Well		
Time (Minutes)	GW1D	GW2D	GW6D
50	.01	.87	.57
100	.04	1.13	.81
500	.34	1.62	1.29
1000	.46	1.72	1.44
1400	.42	1.66	1.42

Source: Ecology and Environment, Inc. 1989.



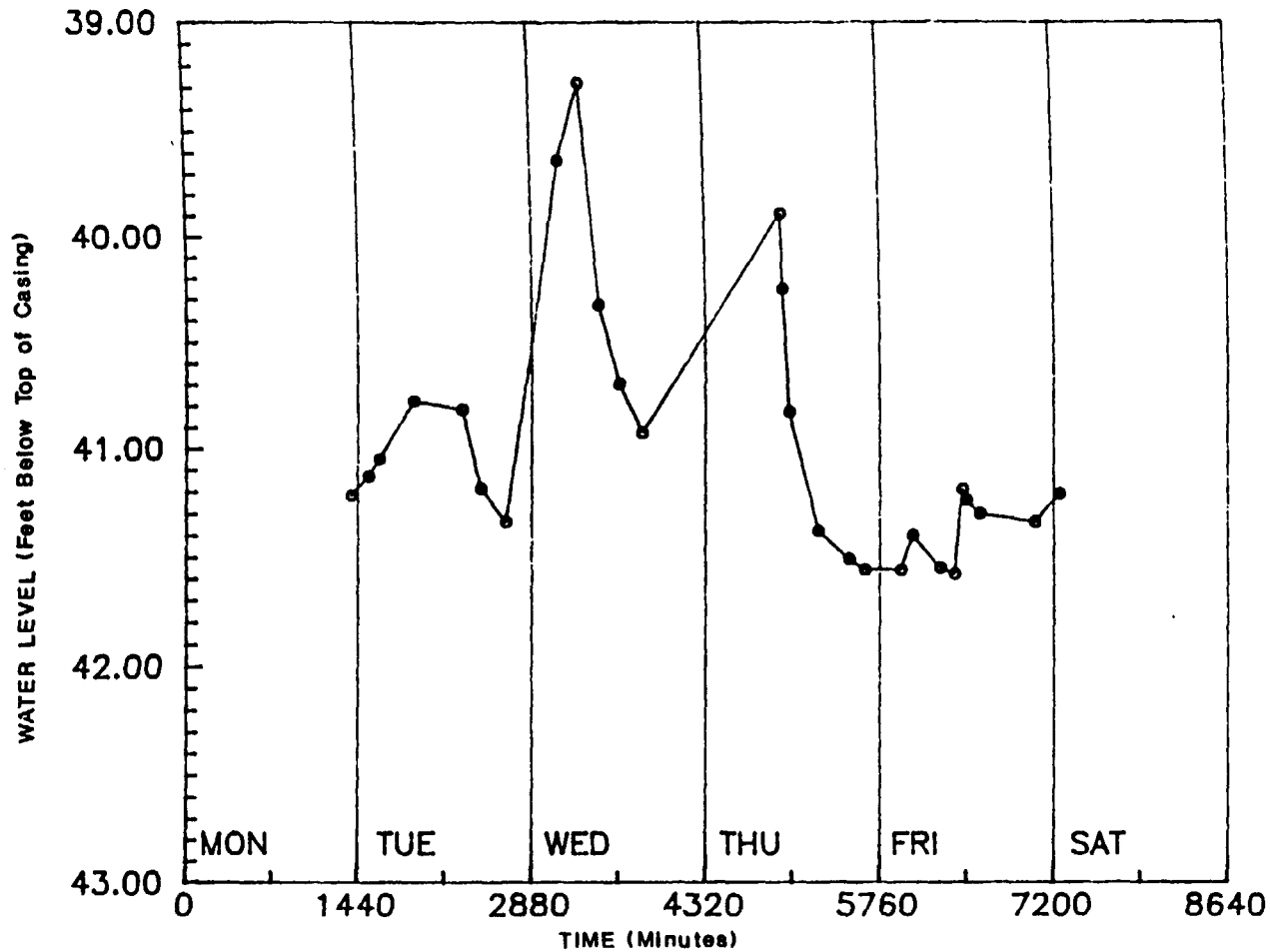
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW1S
(Week of December 14 Through 19, 1987)



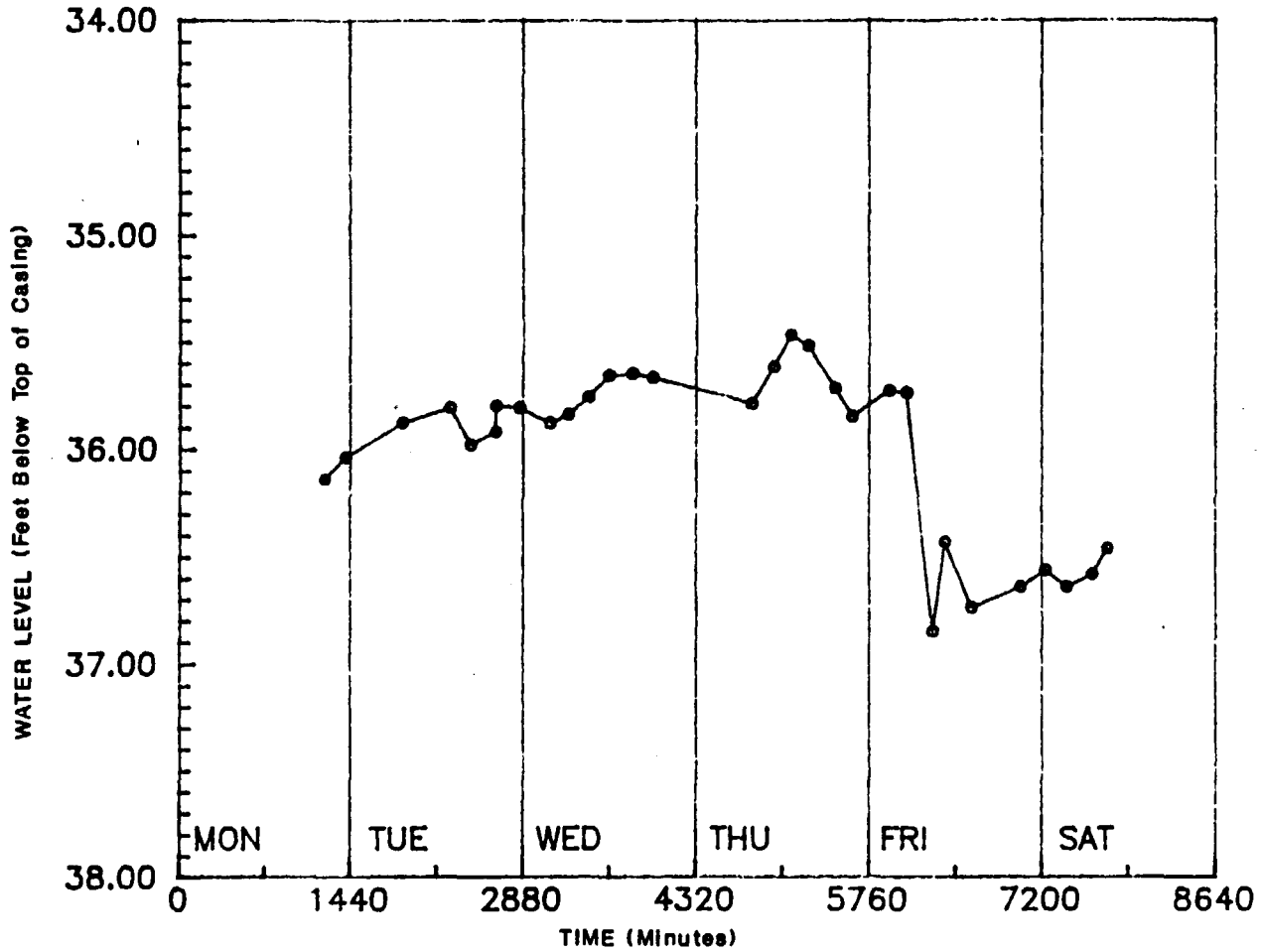
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW1D
(Week of December 14 Through 19, 1987)



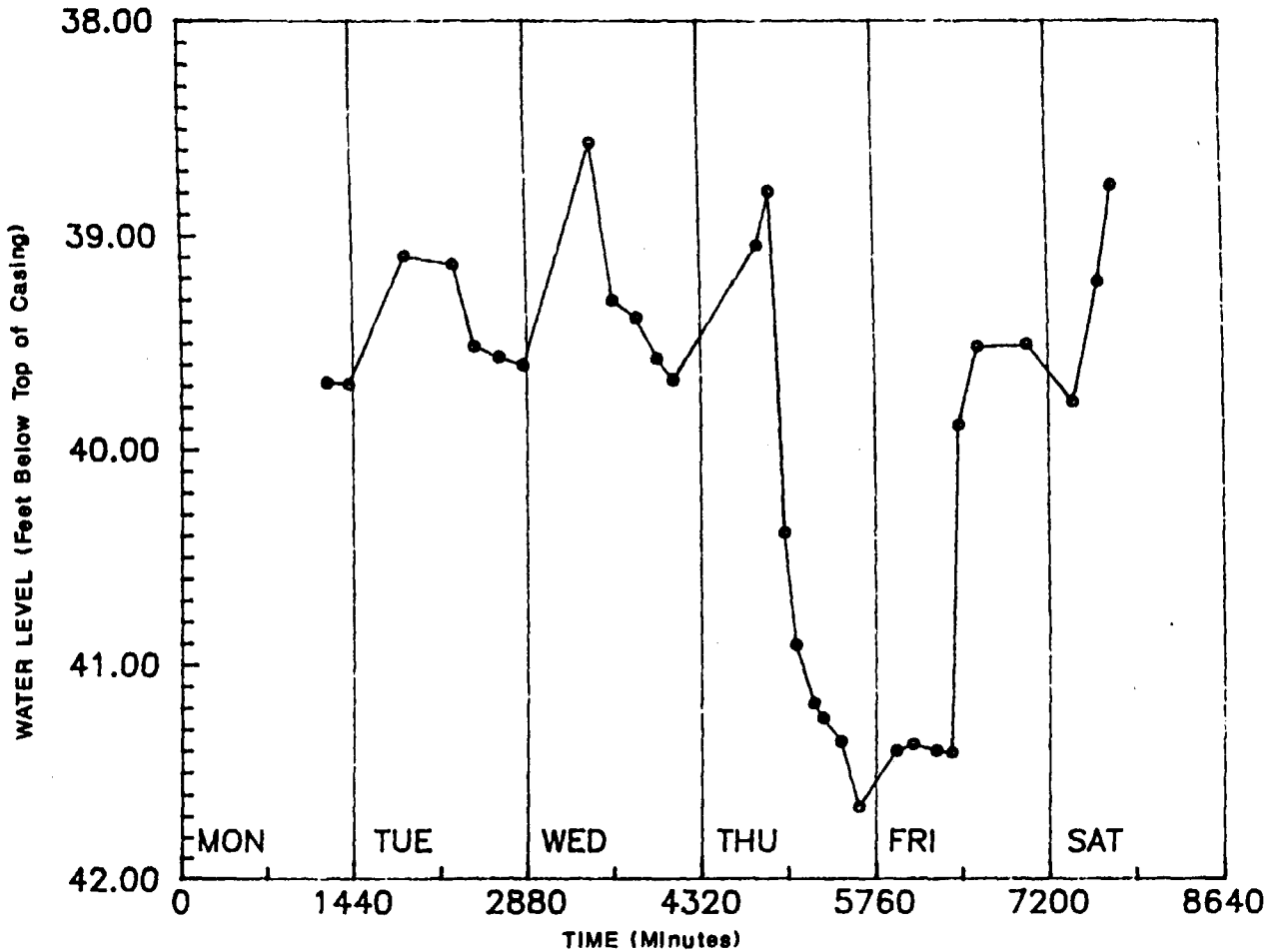
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW2D
(Week of December 14 through 19, 1987)



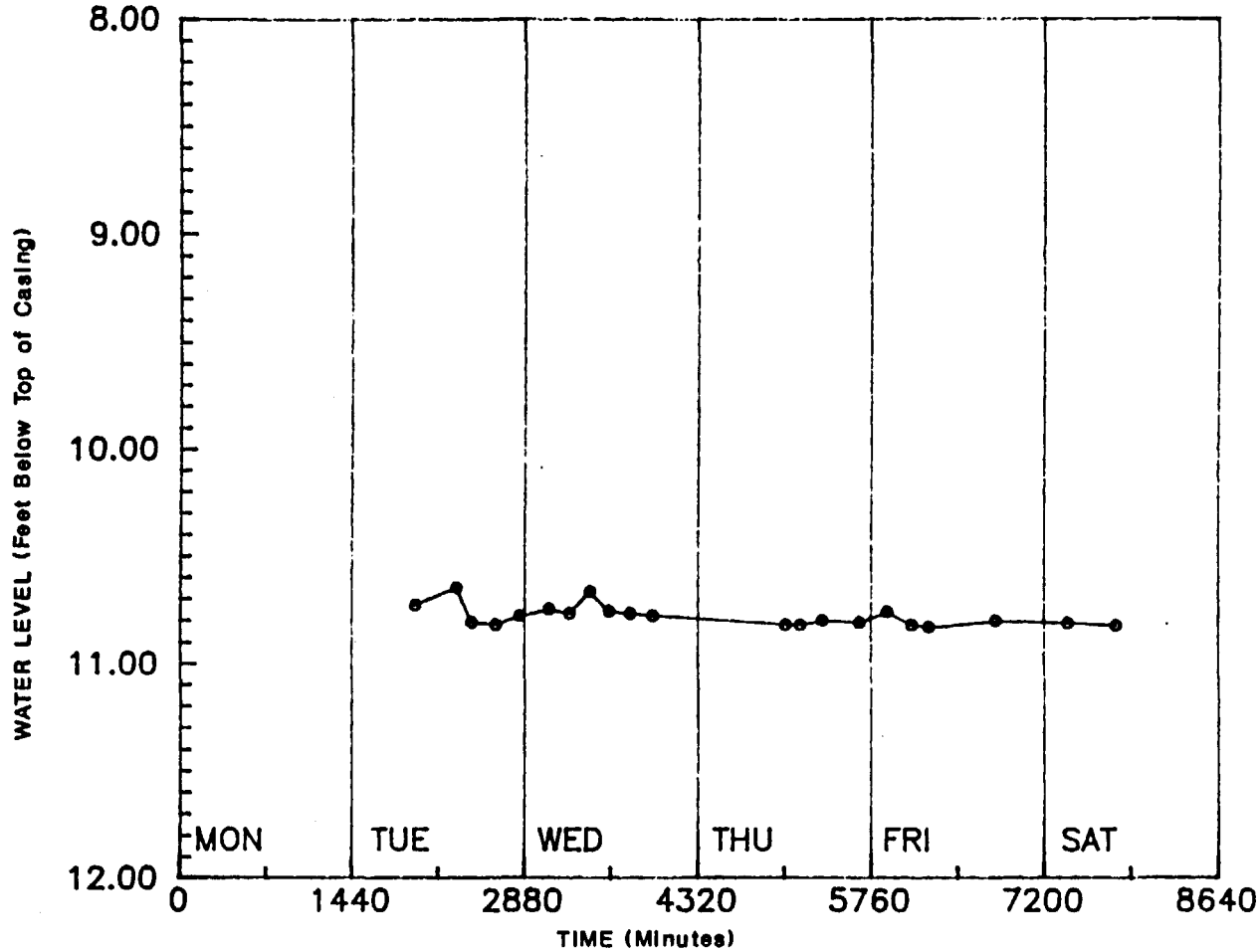
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW31
(Week of December 14 through 19, 1987)



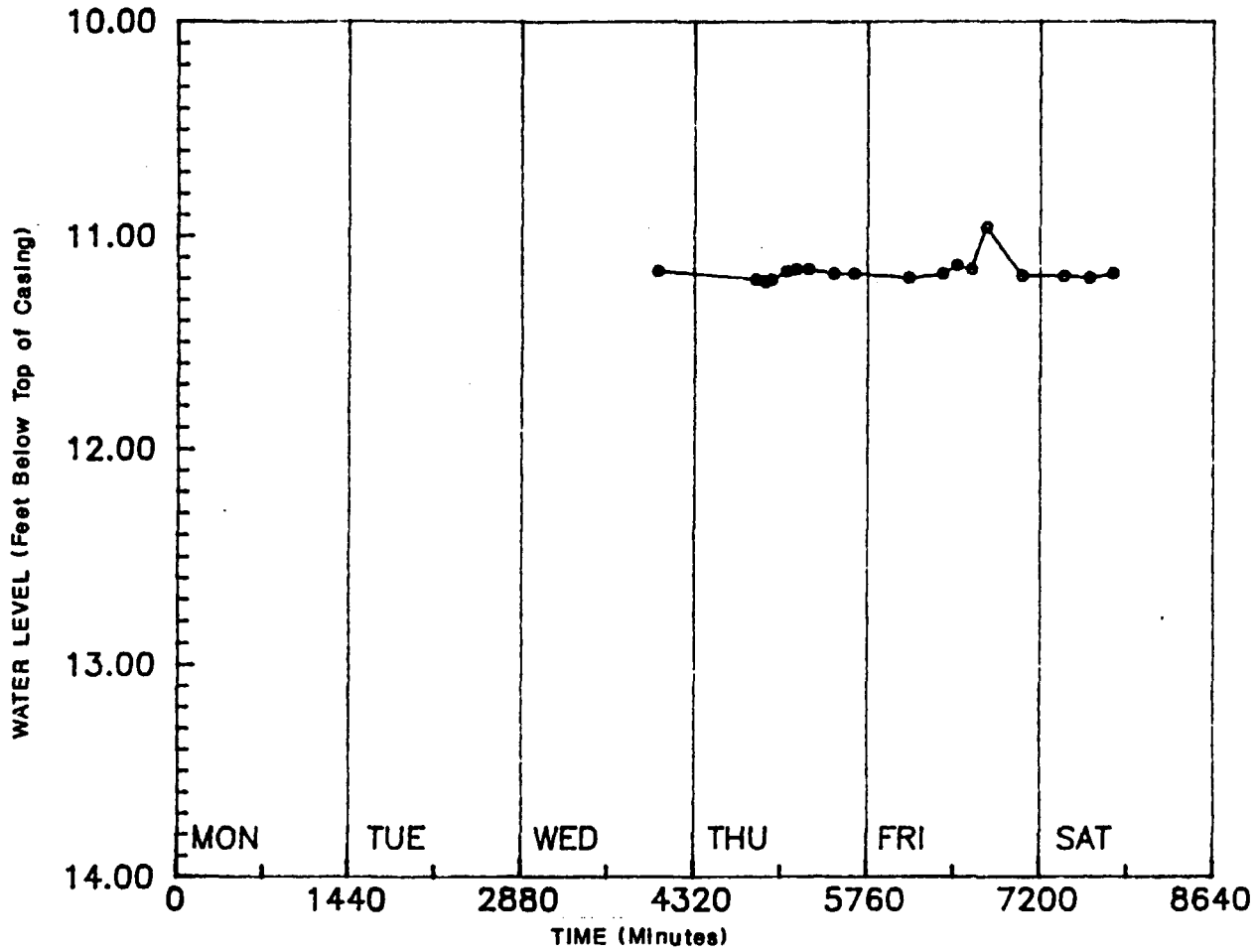
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW3D
(Week of December 14 through 19, 1987)



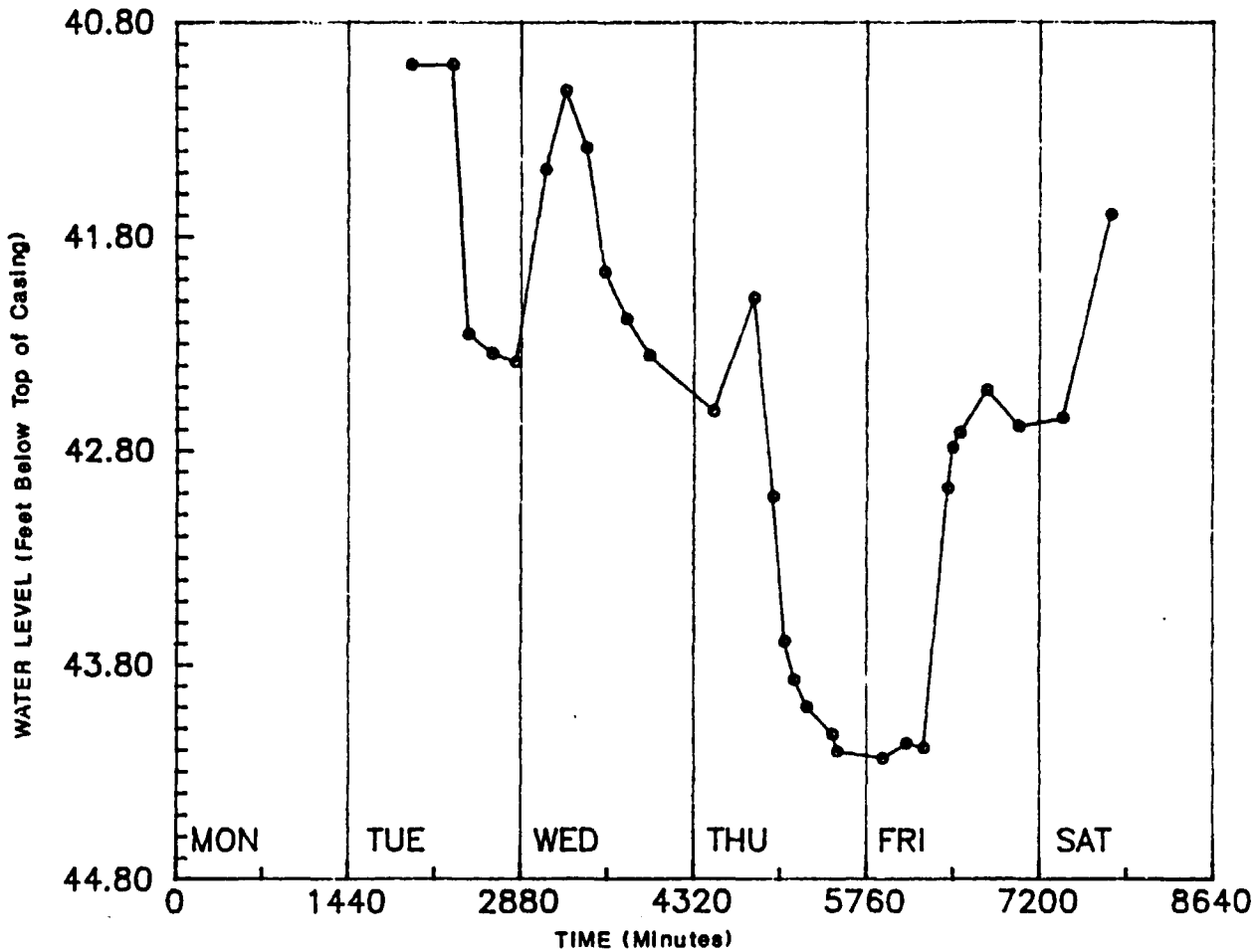
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW4S
(Week of December 14 through 19, 1987)



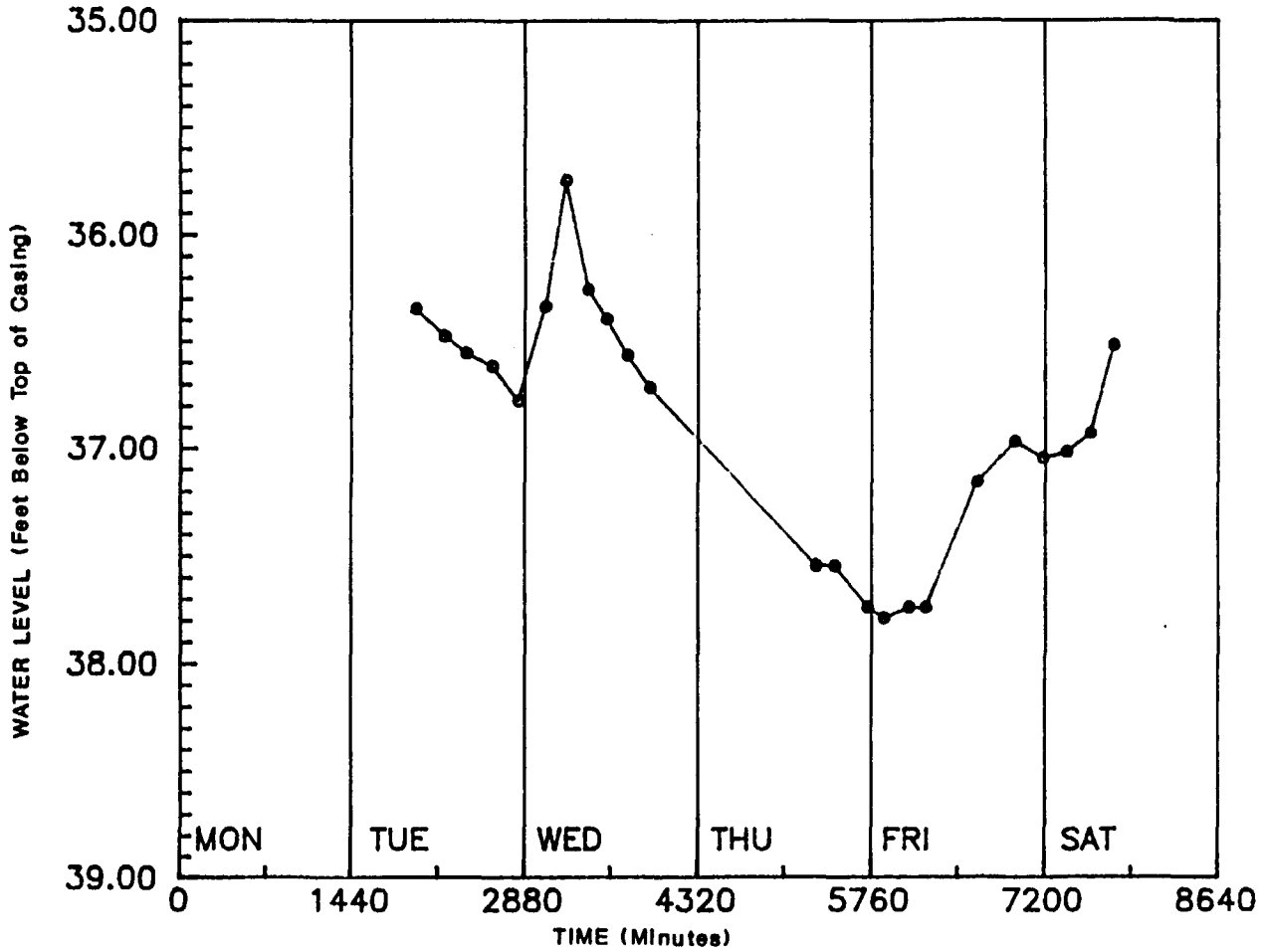
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL G102
(Week of December 14 through 19, 1987)



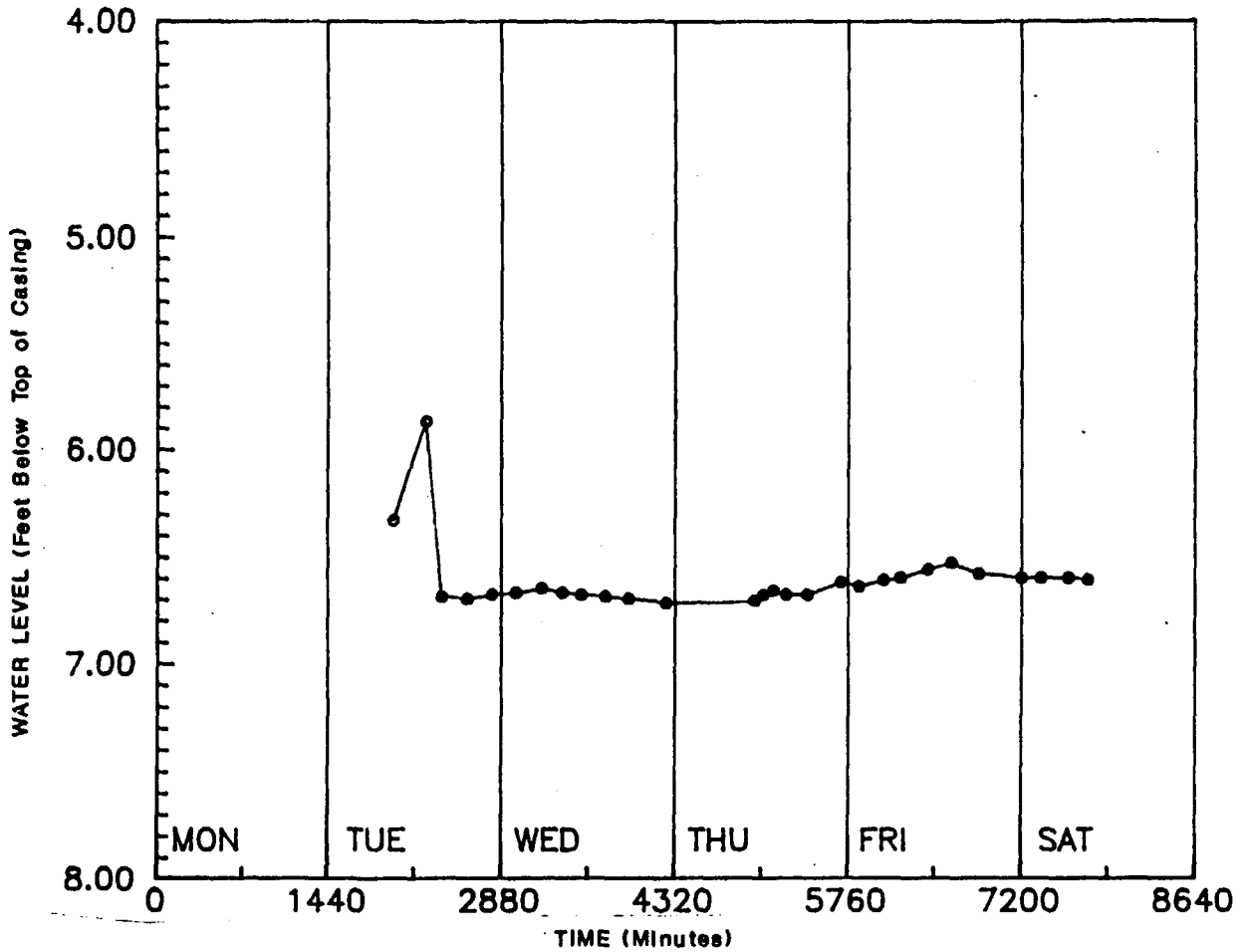
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW4D
(Week of December 14 through 19, 1987)



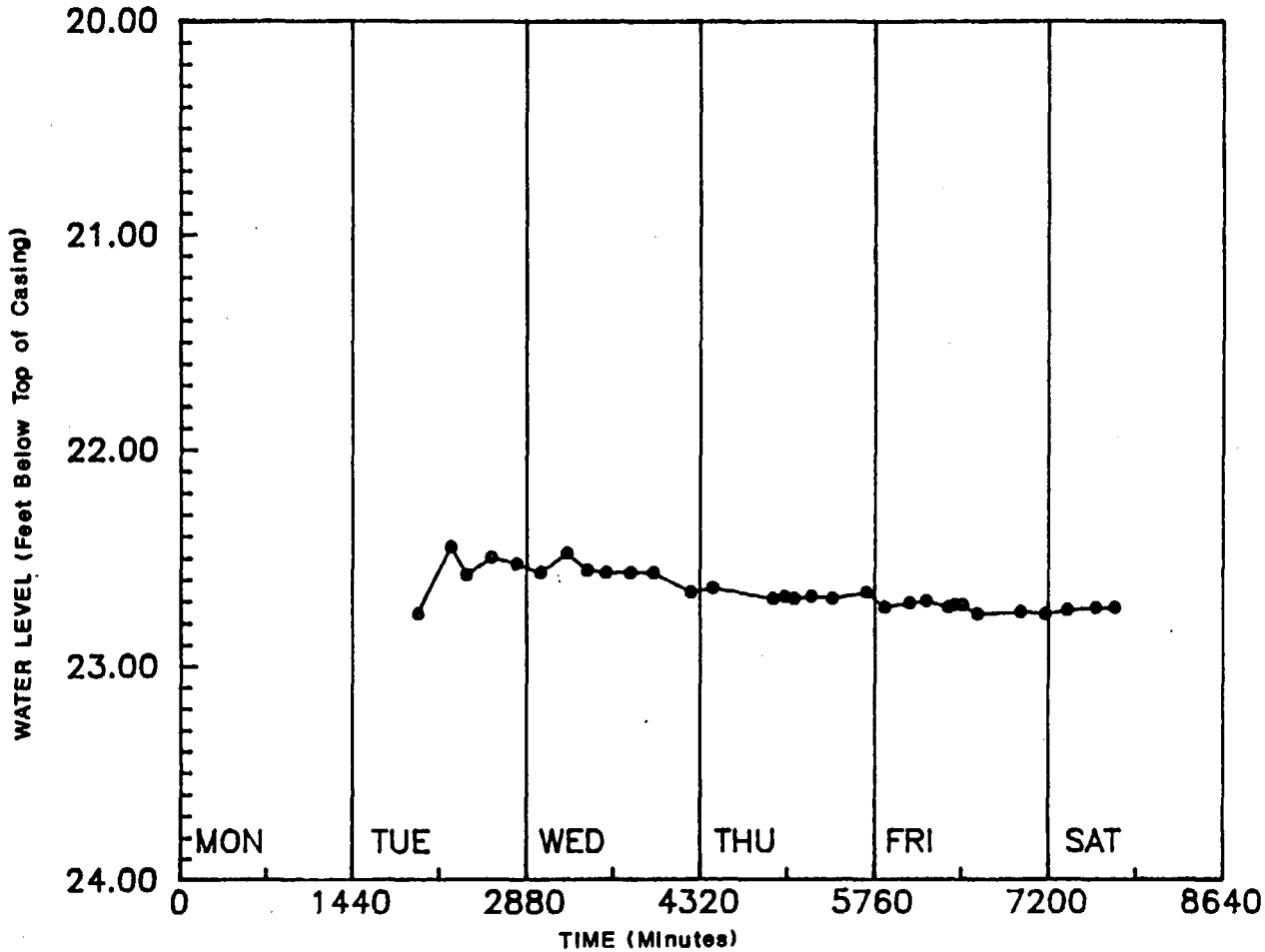
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW5D
(Week of December 14 through 19, 1987)



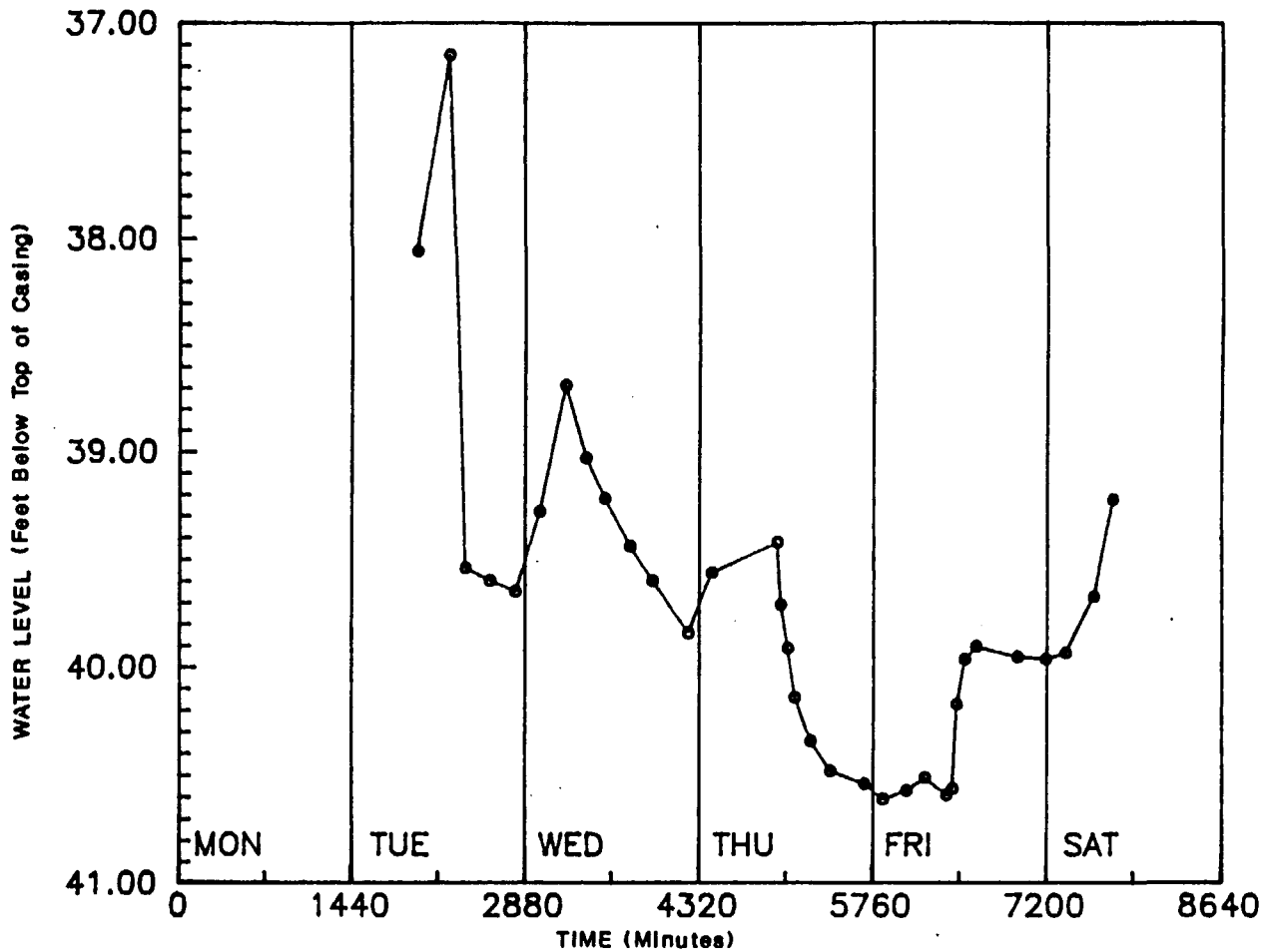
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW6S
(Week of December 14 through 19, 1987)



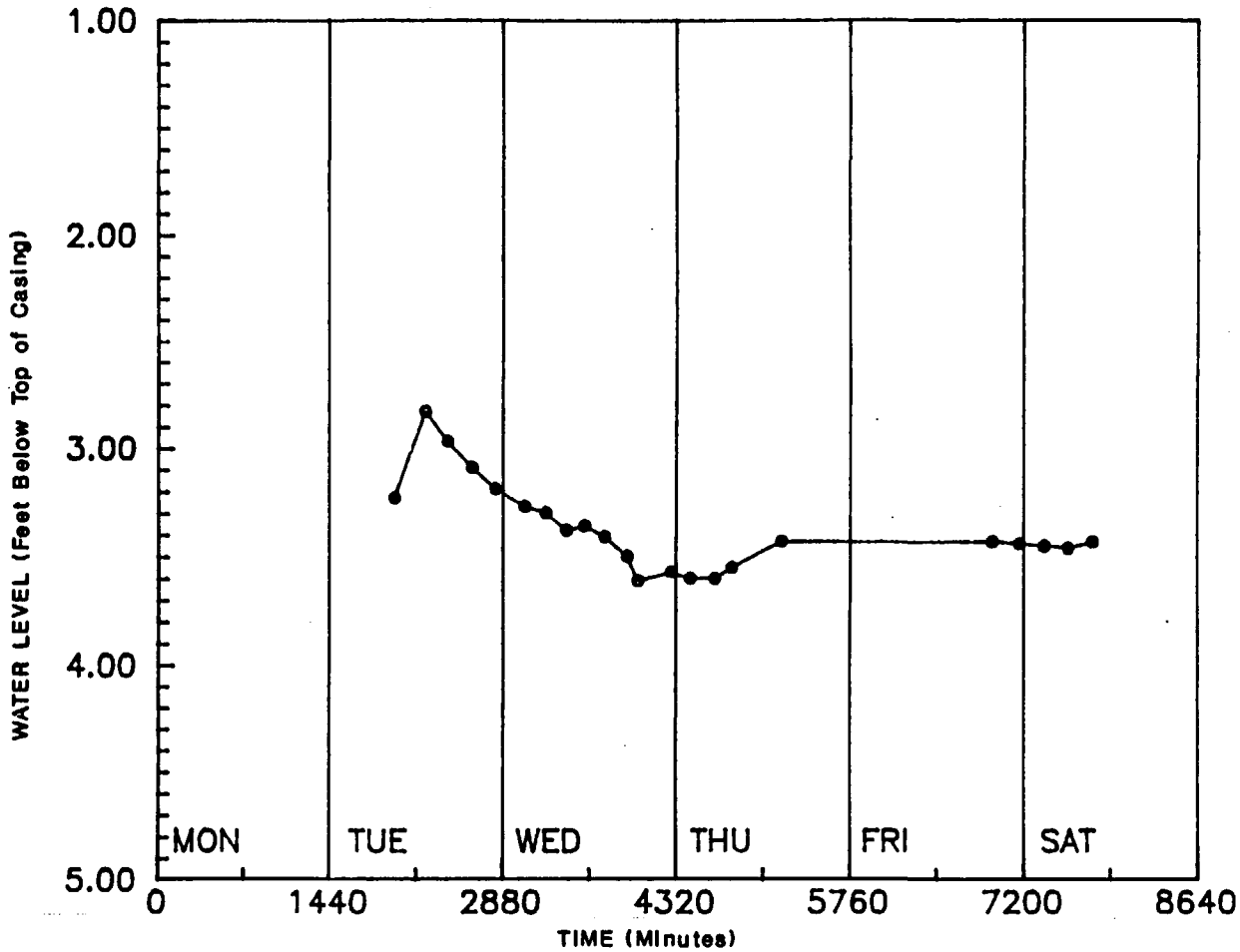
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVEL OF MONITORING WELL GW61
(Week of December 14 through 19, 1987)



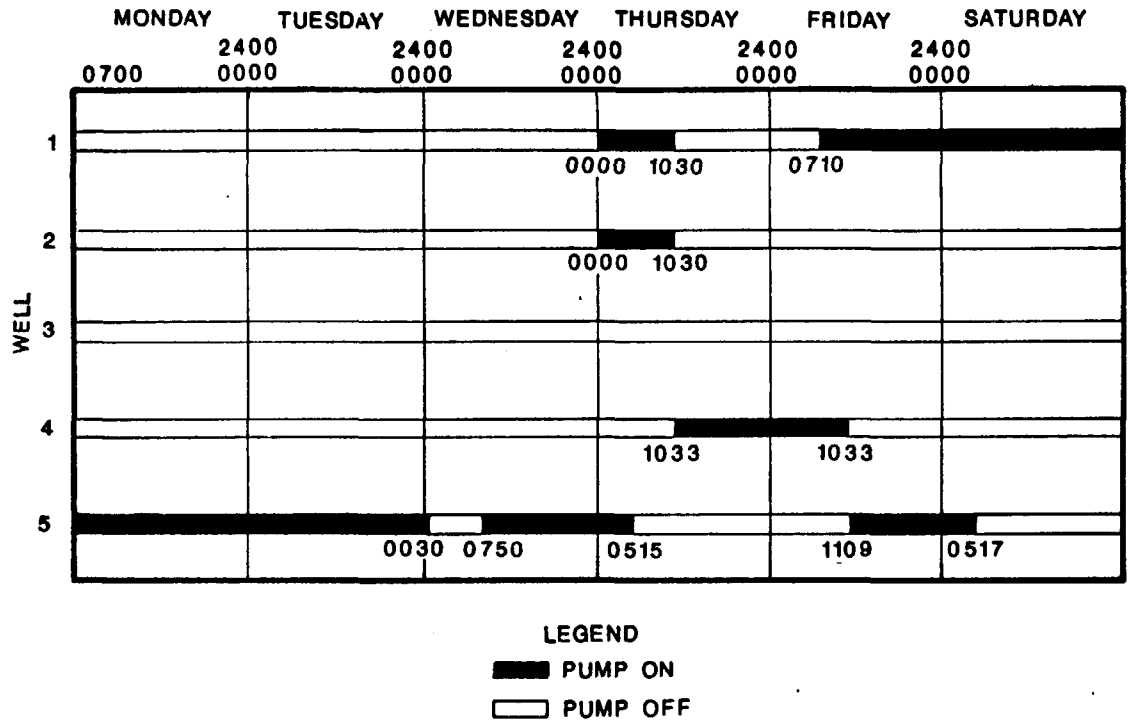
SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW6D
(Week of December 14 through 19, 1987)

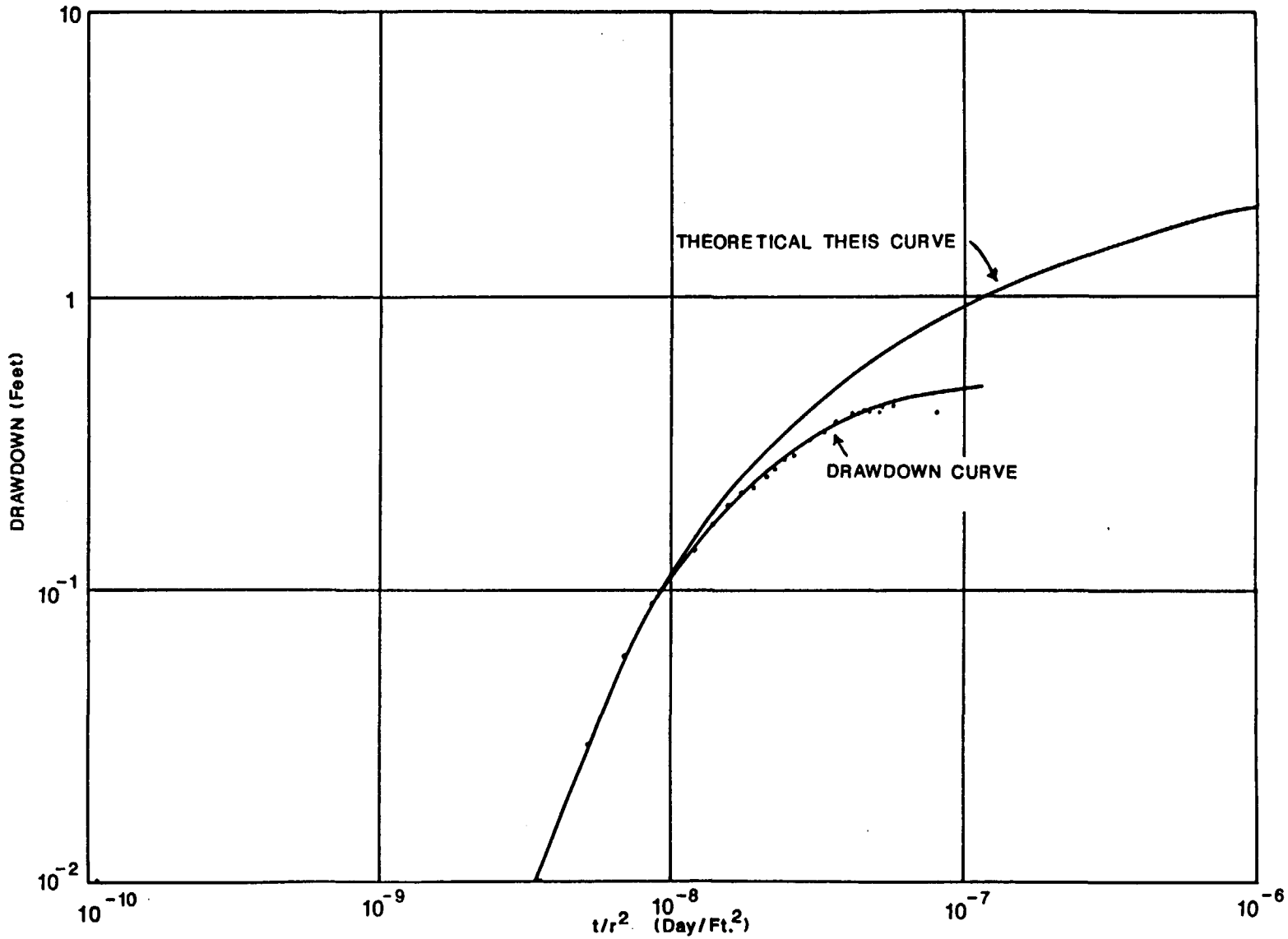


SOURCE: Ecology and Environment, Inc. 1989.

WATER LEVELS OF MONITORING WELL GW7S
(Week of December 14 through 19, 1987)

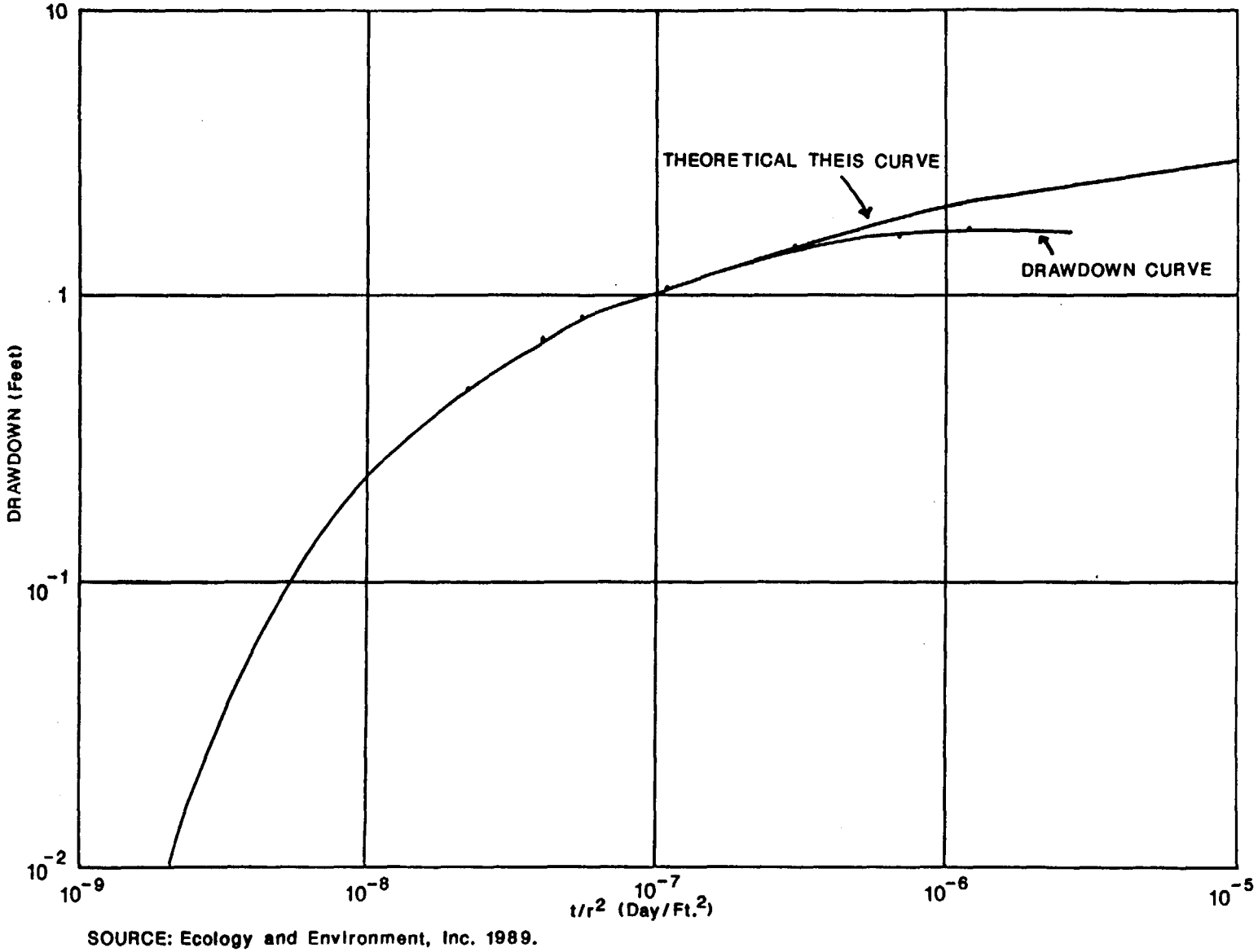


PUMPING SCHEDULE OF VILLAGE OF ANTIOCH
MUNICIPAL WELLS (December 14 Through 19, 1987)



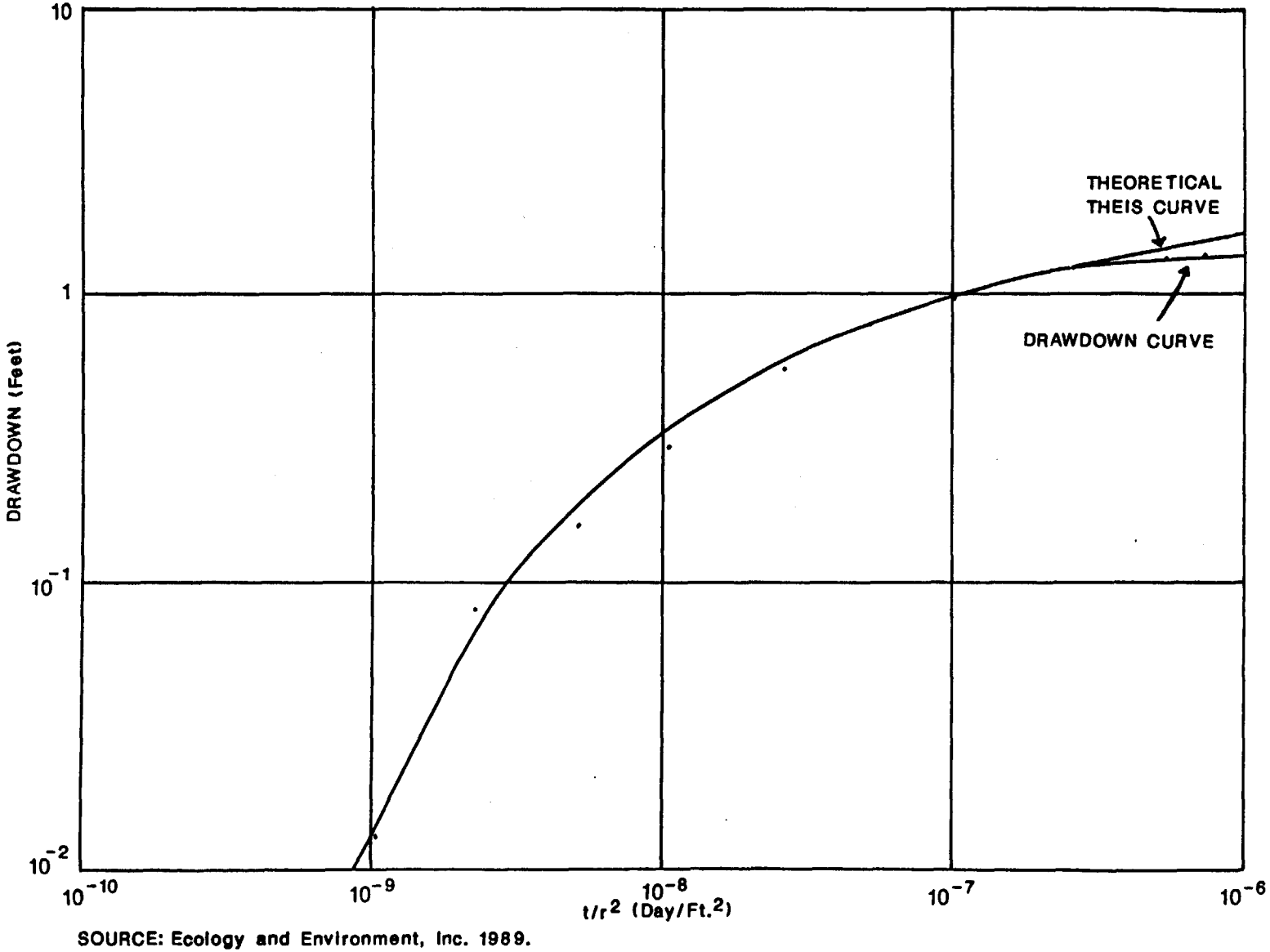
SOURCE: Ecology and Environment, Inc. 1989.

TIME-DRAWDOWN CURVE FOR MONITORING WELL GW1D (December 17, 1987)



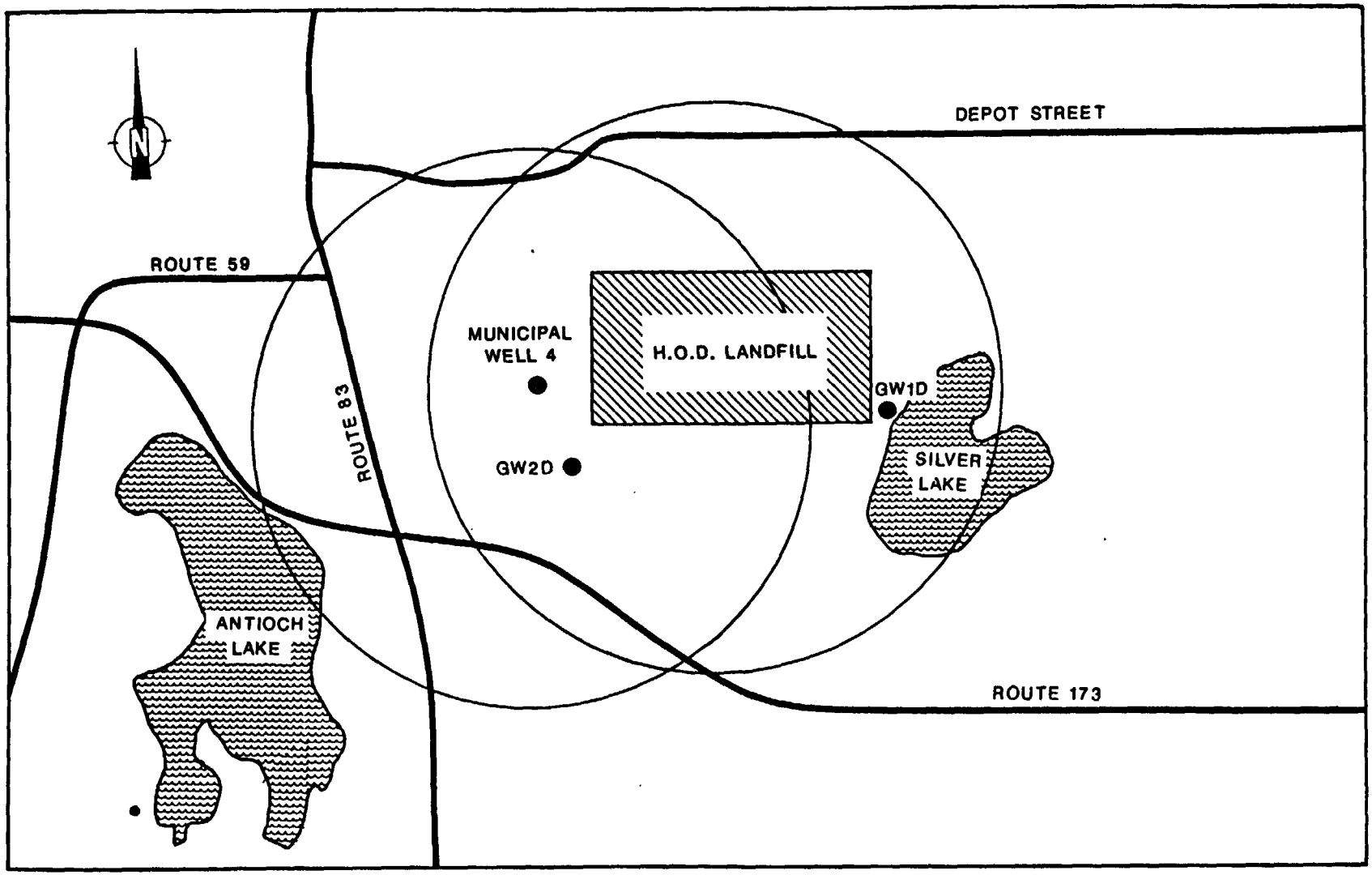
SOURCE: Ecology and Environment, Inc. 1989.

TIME-DRAWDOWN CURVE FOR MONITORING WELL GW2D (December 17, 1987)



SOURCE: Ecology and Environment, Inc. 1989.

TIME-DRAWDOWN CURVE FOR MONITORING WELL GW6D (December 17, 1987)

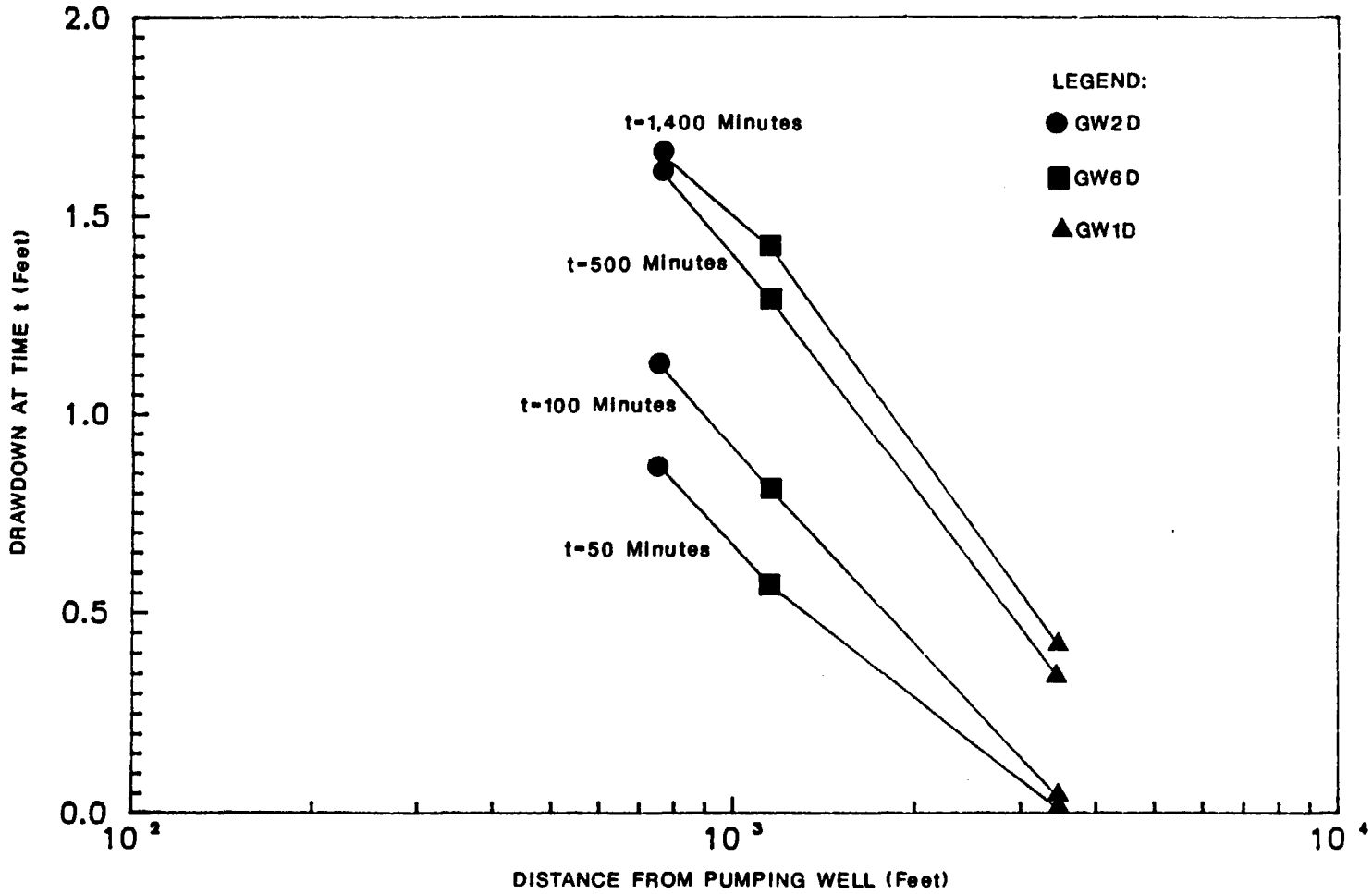


SOURCE: Ecology and Environment, Inc. 1989.

SCALE

0 1000 2000 3000 4000 FEET

IMAGE WELL ANALYSIS FOR MONITORING WELLS GW1D AND GW2D (December 18, 1987)



SOURCE: Ecology and Environment, Inc. 1989.

DISTANCE-DRAWDOWN CURVES FOR MONITORING WELLS GW1D, GW2D, AND GW6D
(December 17 and 18, 1987)