ILLINOIS ENVIRONMENTAL PROTECTION AGENCY MEMORANDUM

DATE: July 28, 1982

TO: Delbert Haschemeyer, Deputy Director

FROM: John Student - Compliance Monitoring Section, DLPC
JDS

SUBJECT: Groundwater monitoring: preliminary trend analysis report

Refer to: 11780201-Macoupin County
Brighton/Brighton Landfill (Site #1)

11780203-Macoupin County
Brighton/Brighton Landfill #2 (Site #2)

## Introduction

DLPC Site No. 11780201-Brighton Landfill (hereafter referred to as Site #1) consists of 32.11 acres of property adjacent and to the east of the 11.36 acres DLPC Site No. 11780203 Brighton Landfill #2 (referred to as Site #2). Site #1 began operation in 1971?, was issued a Development Permit on 7/31/75, and an Operating Permit on 11/12/75. Site #2 was issued a Development Permit on 3/14/79 and and Operating Permit on 9/13/79. Both sites are a subsidiary of Com-Pack Engineering, Inc., a Missouri corporation and operated by Gene Evans.

Site #1 is located in the south half of Section 30, Township 7 North, Range 9 West, Macoupin County, Illinois. Site #2 is located in the southwest quarter of Section 30, Township 7 North, Range 9 West, Macoupin County, Illinois.

Attachment I is a map of the sites showing boundaries and boring locations. IEPA designated numbers for constructed monitoring wells are shown on another map (Attachment II). Available boring logs and monitoring well construction reports are provided in Attachments III and IV, respectively.

As a condition of the permits, ground water has been sampled and analyzed on a quarterly basis for ammonia - $NH_4$ (as nitrogen), boron - B, iron - Fe, and residue on evaporation - ROE at Site #1. In addition to these parameters, chemical oxygen demand- COD has also been analyzed quarterly at Site #2.

EPA Region 5 Records Ctr.
296443

Concentrations reported from sampling of the seven (7) required monitoring wells (G101, G103, and G104 at Site #1; G106, G107, G108, and G109 at Site #2) are tabulated in the "Trend Analysis Report"(Attachment V). The date of sample collection, the reporting laboratory, and the determined amount (in milligrams per liter) of each parameter has been tabulated in chronological order. To the right side of a listed value is the percentage the applicable "standard" limit for that parameter. At this time there are no legislated or adopted groundwater quality standards; the imposed standard limits are adopted from Public Food-Water Supply Standards. An asterisk (*) to the left of a collection denotes other parameters were analyzed in addition to the required quarterly parameters; these analyses are included in Attachment VII.

Attachment VI contains graphs which illustrate groundwater quality changes over time (data from Attachment V) among monitoring wells. For every required well and parameter, reported concentrations have been plotted by date of sample collection. Line symbols are used for comparison of monitoring wells.

## Discussion

The data contained herein should not be considered true and accurate of groundwater quality at the site each day of sample collection. This is not to mean data reported was deliberately misrepresented. It should however be understood that errors can occur in the collection, preservation, and analyses of groundwater samples (Attachment VIII). In addition inaccuracies can develop from computerized data input, programming, recall, and transferal. Data should be tested for significance and compared through methods of statistical analyses. Any final characterization of monitoring well data should be interpreted with knowledge of the site's climate, geology,geography and history. Many of these conditions have not been thoroughly researched and are not included within the scope of this preliminary assessment.

Parameters which have been analyzed on a quarterly basis for Sites #1 and #2 were selected for their "indicative" capabilities. Studies have shown that boron, iron, ammonia, and total dissolved solids (i.e., residue on evaporation) appear to be reliable parameters for indicating groundwater pollution by leachate from municipal wastes.

Three (3) wells have been installed as a part of the groundwater monitoring program at Site #1. From the information presented from Site #1 development investigations, groundwater appeared to flow toward the northeast (towards the creek). Monitoring well G101 was installed upgradient to flow and located beyond the fill boundary in the southwest portion of Site #1 (Attachment II). Wells G103 and G104 were placed downgradient to groundwater flow in the valley of the creek which cuts through the northeast portion of the site.

The shallow sandy zone from which springs (or leachate seeps) have been occurring is stratigraphically higher than G103 and G104 well head elevations. To the best of my knowledge, well G101 was screened below this shallow groundwater zone also; however, neither boring logs nor well completion reports were located for these monitoring points. It is probable that none of the wells at either site are screened at this very shallow water bearing zone.

Data in the trend analysis report (Attachment V) were collected from the original G101 and G104 wells. Reconstructed G101 and G104 wells were placed within a few feet of the original wells, but may have been screened at a different interval(s). Further research is needed to distinguish relationships.

Note the trends of the four parameters at Site #1 illustrated by graphs in Attachment VI. The plots produced for G101 (the upgradient well) indicates lower parameter concentrations were detected than in downgradient wells.

The graph of boron concentration vs/time for Site #1 is probably the more visually acceptable of all the graphs. In general the other parameters exhibit the same trends as boron. Boron was found to be less than 0.5 mg/l during 1976 and 1977. Beginning in 1978, boron increased in both downgradient wells, while remaining relatively constant in well G101. Concentrations peaked in February, 1979 with 3.2 mg/l and 14.5 mg/l reported for wells G103 and G104, respectively. By 1980 boron was decreasing as were ammonia and iron concentrations.

Preliminary comparisons with background concentrations (through statistical analysis of data from wells G104 and G103) do not confirm with 99% certainty that pollution has occurred. However, during early 1978 through 1980, a leachate plume may have migrated to and then beyond the location of monitoring wells G103 and G104. As further research and compution is suggested, I cannot conclude that a violation of the Act has occurred.

Data collected for Site #2 seems to graph out with greater irregularity than for Site #1. Parameter concentrations are usually less than those detected at Site #1. Groundwater was determined to flow towards the southeast at Site #2. Well G107 (the downgradient well) plots out with consistently higher concentrations. I have not analyzed the data to the degree as accomplished with Site #1, but I suspect an additional problem in this area.

## Conclusions and Recommendations

Groundwater may have been contaminated from onsite operations at Site #1. Samples collected from downgradient wells showed elevated concentrations of four indicative parameters during 1978-1980. Parameters were found to be relatively higher in concentration in a downgradient well than at upgradient wells at Site #2. However, insufficient data analyses have been conducted to establish the validity of the trend analysis.

The nature of the wastes disposed at Brighton #1 and #2 necessitates further investigations to be conducted at the sites and by a more complete analysis of available information. A thorough hydrogeological investigation should distinguish the relationship of the shallow water-bearing zone and deeper water bearing units. The shallow water-bearing zone may not be continuous nor a supply aquifer for any nearby water supply wells, but the zone is certainly a pathway for migration of leachate to the creek and thereby offsite.

It would become beneficial, in my opinion, to solicit consultation from the staff at the ISGS and/or ISWS. Considering the nature of wastes disposed, site operational history, and the discrepancies in borings noted from a recent IEPA investigation, the Agency should collect all available information before deciding what course of action to take in the present litigation process.

JS:mks

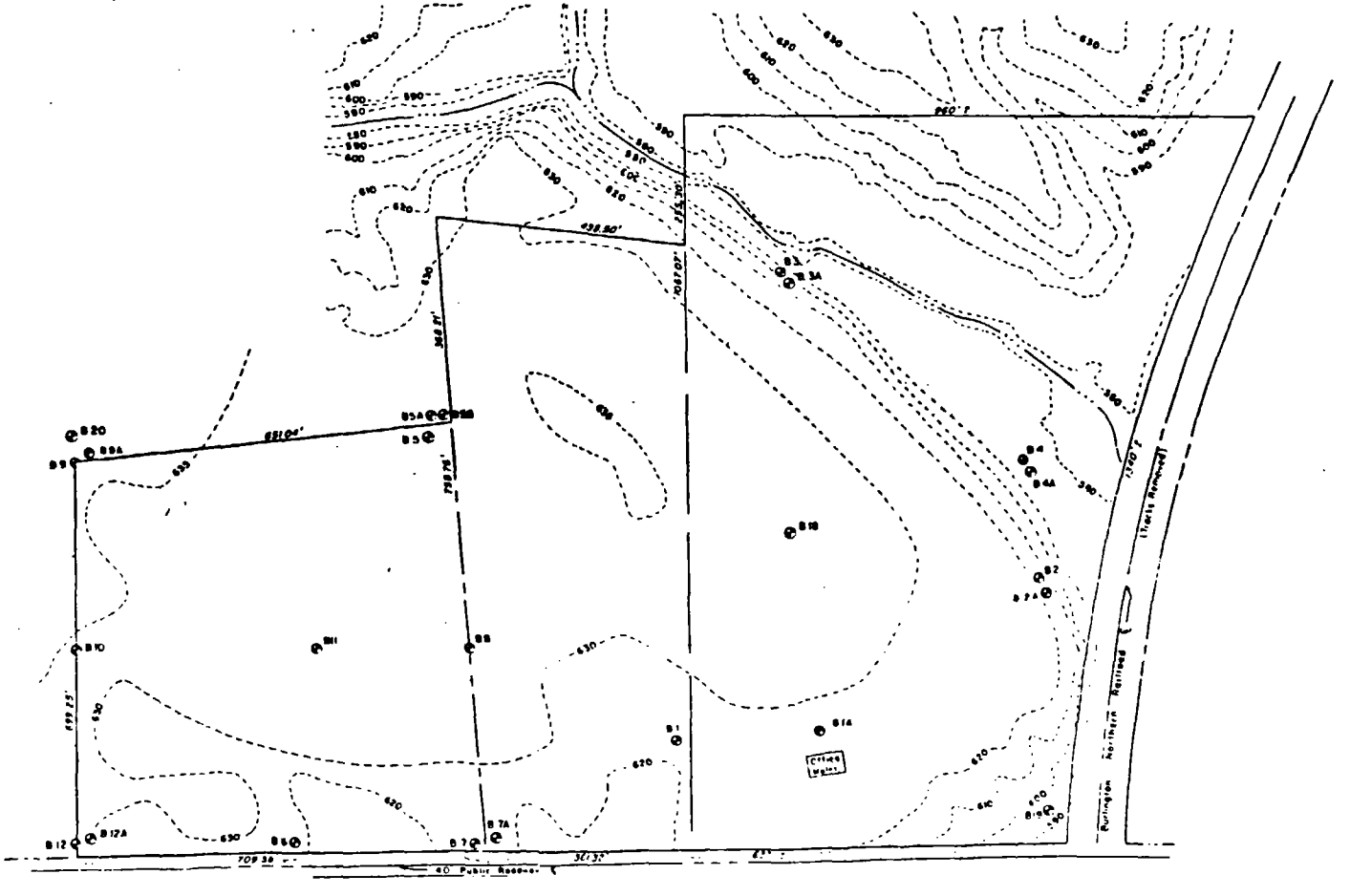
cc: Robert Kuykendall-DLPC
Michael Nechvatal-DLPC
Terry Ayers-DLPC
Division File
Southern Region

Attachments

I-map of boring locations
II-map of monitoring well locations
III-available boring logs
IV-available monitoring well construction reports
V-trend analysis report of indicative parameters
VI-graphs illustrating parameter trends
VII-additional parameters analyzed
VIII-possible causes of erroneous groundwater analyses

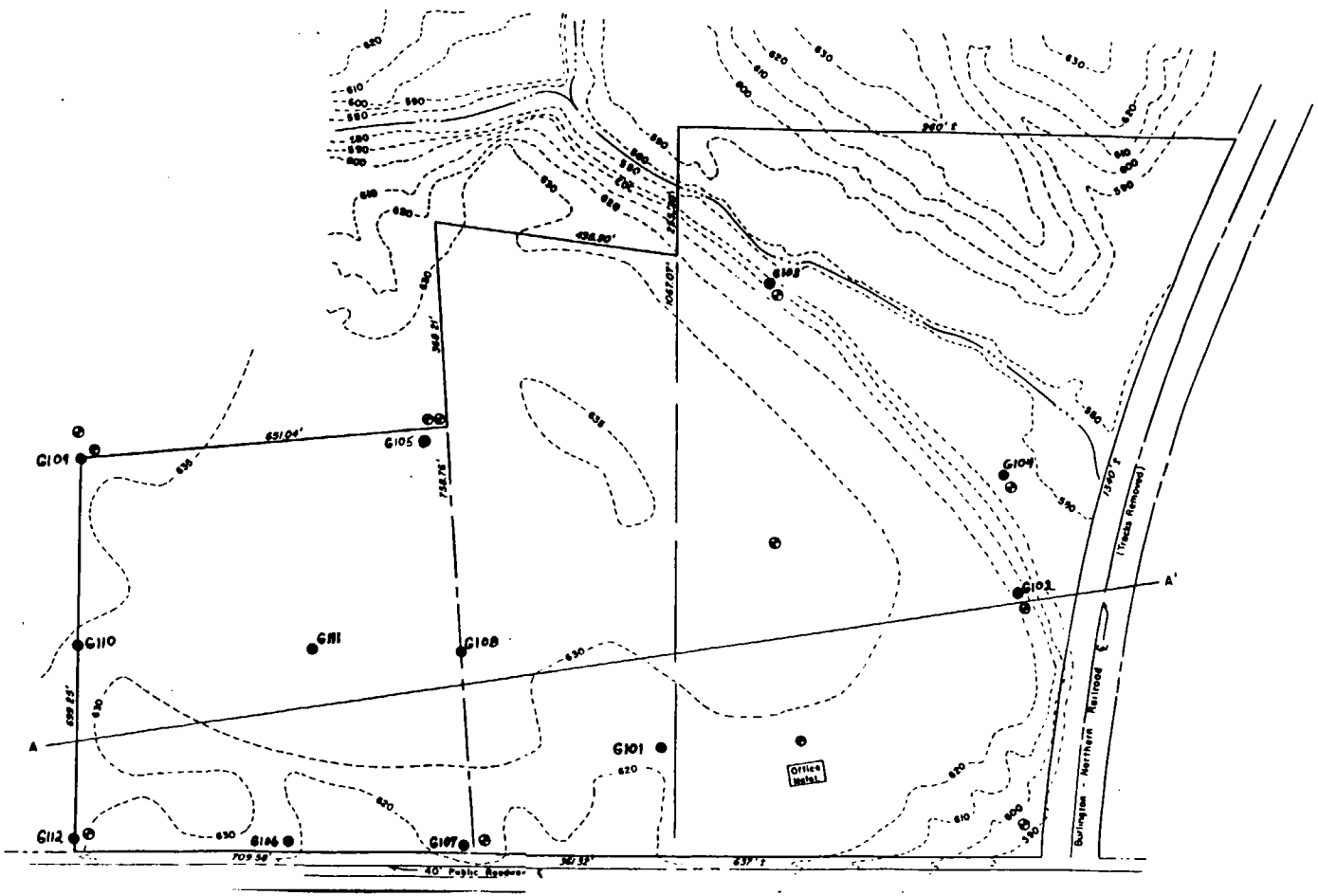
Attachment I.

| | Date | Surface Elev (ft) |
|---|---|---|
| **Raymond International Inc.** | | |
| [illegible] | 4/11/75 | 619.2 |
| [illegible] | 4/11/75 | 622.2 |
| [illegible] | 4/11/75 | 588.8 |
| [illegible] | 4/11/75 | 579.6 |
| **John Mathes & Associates** | | |
| 2A | 12/11/80 | 591.9 |
| [illegible] | 12/11/78 | 634.6 |
| 4F | 12/8/78 | 627.4 |
| 7 | 5/25/79 | 624.4 |
| 8 | 5/30/79 | 629.7 |
| 9 | [illegible]4/79 | 636.8 |
| 10 | [illegible]1/79 | 634.2 |
| 11 | [illegible]/79 | 627.1 |
| 12 | 5/30/79 | 631.2 |
| 3A | 12/30/81 | 587.7 |
| 4A | 12/30/81 | 580.3 |
| 5A | 1/5/82 | 636.8 |
| 6B | 1/5/82 | 636.8 |
| 7A | 12/20/81 | 622.8 |
| 12A | 12/15/81 | 631.2 |
| 18 | 12/28/81 | 636.1 |
| H19 | 1/6/82 | 600.9 |
| B20 | 12/17/81 | 637.7 |
| **Proposed** | | |
| 1A | | 628.0 |
| 9A | | 636.0 |




Date - 12/21/81
Traced By - PL
Revised - 6/8/82

ATTACHMENT II



ATTACHMENT III

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC.

PROJECT Brighton Landfill, Depth Expansion BORING 3A

DRILLED BY Simonson LOGGED BY Maxeiner PIEZOMETER Yes DRILLING METHOD Hollow Auger

SURFACE ELEVATION 589.7'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K, cm/sec |
|---|---|---|---|---|---|---|
| | 1 | SS | | Gray & Brown Silt LOAM w/ Organics, Oxidized Stains, Possible FILL | 2-4 | |
| 5 | 2 | SS | | Dark Gray Silt LOAM w/Oxidized Stains | 3-3 | |
| | 3 | SS | | Brown Sandy LOAM | 1-2 | |
| 10 | 4 | SS | Encountered water @ 11.5' | Brown Loamy SAND | 1/12" | $9.3 \times 10^{-7}$ |
| | 5 | SS | | -w/Gravel @ 11.5' -Trace Gravel Below 14.0' | WH/12"-1 | |
| 15 | 6 | SS | | Grayish-Brown LOAM | 2-8 | |
| | 7 | SS | | Grayish-Brown Silty CLAY | 8-11 | |
| 20 | 8 | SS | | -w/Rocky Seam @ 20.2' -w/Grayish-Brown Silt LOAM Seam From 20.2-20.5' | 6-10 | $1.6 \times 10^{-8}$ |
| | 9 | SS | | -w/Shale @ 21.5' -Trace Gravel @ 24.0' | 9-14 | |
| 25 | 10 | SS | | | 5-5 | |
| | 11 | SS | | -w/Rocky Seam Below 29.7' | 50/4" | |
| 30 | 12 | SS | | Brownish-Gray CLAY w/Shale | 7-10 | |
| | 13 | SS | | | 6-9 | $4.0 \times 10^{-9}$ |
| 35 | 14 | SS | | Contd. | 10-13 | |

SHEAR STRENGTH, TSF — BV, OP/2, QU/2 — 0, 0.5, 1.0, 1.5, 2.0, 2.5

PL + WATER ● CONTENT, % + LL — 0, 20, 40, 60, 80, 100

GROUND WATER DEPTH AT COMPLETION 10.5' AFTER _____ AFTER _____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC.

PROJECT Brighton Landfill, Depth Expansion BORING 3A Contd.

| DEPTH (FT) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL<br>SURFACE ELEVATION 589.7' | BLOWS | K cm/sec | SHEAR STRENGTH, TSF (SV, QP/2, QU/2) 0 0.5 1.0 1.5 2.0 2.5<br>PL + WATER ● CONTENT, % LL + 0 20 40 60 80 100 |
|---|---|---|---|---|---|---|---|
| | 14 | SS | | Brownish-Gray CLAY w/Shale -w/Brown Sandy CLAY Seam Below 36.9' | | | |
| | 15 | SS | | Black LIGNITE | 7-50/2½" | | |
| | 16 | SS | | | x-81 | | |
| 40 | | | | Gray Shaley CLAY | | | |
| | 17 | SS | | | x-67 | | |
| | 18 | SS | AR @ 44.5' | TOB | x-100/5" | | |
| 45 | | | | | | | |

* Remolded Permeability Sample

CONTRACT 011154 DRILLING METHOD Hollow Auger DATE DRILLED 12-29, 30-81 PIEZOMETER Yes DRILLED BY Simoncini LOGGED BY Maxeiner

GROUND WATER DEPTH AT COMPLETION 10.5' AFTER _____ AFTER _____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC

PROJECT Brighton Landfill, Depth Expansion BORING 4A

CONTRACT 811154 DRILLED BY Simoncini

DRILLING METHOD Hollow Auger LOGGED BY Maxeiner

DATE DRILLED 12-30-81 PIEZOMETER Yes

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL (SURFACE ELEVATION 580.3') | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | | | | Brown Sandy LOAM | | |
| | 1 | SS | | | 2-2 | |
| 5 | 2 | SS | | | 2-1 | |
| | 3 | SS | | | WH/18" | |
| | | | Encountered water @ 9.0' | Brown Loamy SAND | | |
| 10 | 4 | SS | | | 2-2 | $1.1 \times 10^{-7}$ |
| | | | | Brownish-Gray Silty Clay LOAM | | |
| | 5 | SS | | | 6-11 | |
| 15 | 6 | SS | | -Gray Below 15.0' | 7-11 | |
| | 7 | SS | | | 6-9 | |
| 20 | 8 | SS | | | 4-7 | $1.2 \times 10^{-8}$ |
| | 9 | SS | | | 6-8 | |
| 25 | 10 | SS | | -Trace Organics @ 26.5' | 5-10 | |
| | 11 | SS | | | 4-6 | |
| 30 | 12 | SS | | | 4-6 | $1.1 \times 10^{-8}$ |
| | 13 | SS | | -Trace Organics @ 34.0' | 5-6 | |
| 35 | 14 | SS | | Contd. | 5-6 | |

SHEAR STRENGTH, TSF: SV — DP/2 — QU/2; 0, 0.5, 1.0, 1.5, 2.0, 2.5

WATER CONTENT, %: PL + — ● — LL +; 0, 20, 40, 60, 80, 100

GROUND WATER DEPTH AT COMPLETION — AFTER ____ ____ AFTER ____ ____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC

PROJECT Brighton Landfill, Depth Expansion BORING 4A Contd.

CONTRACT 811154 DRILLING METHOD Hollow Auger DATE DRILLED 12-30-81 PIEZOMETER Yes LOGGED BY Maxeiner DRILLED BY Simoncini

| DEPTH (FT) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL (SURFACE ELEVATION 580.3') | BLOWS | K cm/sec | SHEAR STRENGTH, TSF (BV / OP/2 / QU/2) 0 0.5 1.0 1.5 2.0 2.5 — WATER CONTENT, % (PL + / LL +) 0 20 40 60 80 100 |
|---|---|---|---|---|---|---|---|
| | 14 | SS | | Gray Silty Clay LOAM | | | |
| | 15 | SS | | | 5-6 | | |
| 40 | 16 | SS | | | 5-5 | | |
| | | | | TOB | | | |
| | | | | * Remolded Permeability Sample | | | |
| 45 | | | | | | | |

GROUND WATER DEPTH AT COMPLETION — AFTER ____ ____ AFTER ____ ____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# CORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC.

PROJECT Brighton Landfill, Depth Expansion BORING 5, 5A, 5B

DRILLING METHOD Hollow Auger PIEZOMETER Yes LOGGED BY Schweigert, Maxeiner

SURFACE ELEVATION 636.8'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | 1 | SS | | Brown Silty CLAY, w/Paper, Metal, Glass Deposits, FILL | 50/1" | |
| 5 | 2 | SS | | -w/Plastic, Trace Gravel @ 4.0' | 14-13 | |
| | 3 | SS | | -w/Organics From 6.5-11.0' | 5-13 | |
| 10 | 4 | SS | | | 6-9 | |
| | 5 | SS | | | 6-9 | |
| 15 | 6 | SS | | Brown CLAY w/Oxidized Stains, Gravel, Possible FILL | 7-12 | |
| | 7 | SS | | Yellowish-Brown Silty Clay LOAM w/Oxidized Spots | 7-8 | |
| 20 | 8 | SS | | Yellowish-Brown LOAM, Trace Gravel -w/Sand Lenses @ 19.0' | 5-26 | |
| | 9 | SS | | -Brownish-Gray w/Oxidized Spots, Stains From 21.5-25.5' | 31-27 | |
| 25 | 10 | SS | | | 29-30 | |
| | 11 | SS | 5.1x $10^{-9}$ | -w/Sand Lenses @ 26.5' -Gray Below 26.5' | 24-28 | |
| 30 | 12 | SS | | | 15-21 | |
| | 13 | SS | | | 13-18 | |
| 35 | 14 | SS | 8.2x $10^{-9}$ | | 7-15 | |

Contd.

SHEAR STRENGTH, TSF: BV ___ OP/2 ___ QU/2 (0, 0.5, 1.0, 1.5, 2.0, 2.5)

WATER CONTENT % (PL, LL; 0, 20, 40, 60, 80, 100)

GROUND WATER DEPTH AT COMPLETION 37.0' (5) 55.5' (5B) AFTER 4 days 17.0' (5) AFTER ___

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC

PROJECT Brighton Landfill, Depth Expansion BORING 5, 5A, 5B Contd.

CONTRACT 780559, 811154 DATE DRILLED 12-11-78, 1-4, 5-82 DRILLED BY Simoncini, Roberts

DRILLING METHOD Hollow Auger PIEZOMETER Yes LOGGED BY Schweigert, Maxeiner

| DEPTH (FT) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL (SURFACE ELEVATION 636.8') | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | 14 | SS | | Gray LOAM, Trace Gravel | | |
| | | | | -Brownish-Gray @ 36.5' | | |
| | 1B | SS | | | 8-12 | |
| 40 | 15 | SS | | | 12-18 | |
| | | | | -Brownish-Gray @ 41.5' | | |
| | 2B | SS | | | 7-10 | |
| 45 | 16 | SS | | | 9-14 | |
| | | | | -Brownish-Gray @ 46.5' | | |
| | 3B | SS | | | 9-11 | $1.0 \times 10^{-8}$ |
| 50 | 17 | SS | | | 9-12 | |
| | | | | -Brownish-Gray From 51.5-55.5' | | |
| | 4B | SS | | | 5-7 | |
| 55 | 5B | SS | Rocky From 56.8-57.4' | | 5-7 | $1.0 \times 10^{-8}$ |
| | | | | -w/Gravel @ 56.5' | | |
| | 6B | SS | | | 9-10 | |
| 60 | 7B | SS | | | 7-12 | |
| | | | | Gray Silty Clay LOAM | | |
| | 8B | SS | | | 9-13 | |
| 65 | 9B | SS | | | 7-11 | |
| | 10B | SS | | | 8-9 | $1.0 \times 10^{-8}$ |
| 70 | 11B | SS | | | 4-8 | |

Contd.

SHEAR STRENGTH, TSF — SV, OP/2, OU/2 — 0, 0.5, 1.0, 1.5, 2.0, 2.5

WATER CONTENT, % — PL, LL — 0, 20, 40, 60, 80, 100

GROUND WATER DEPTH AT COMPLETION 37.0' (5) / 55.5' (5B) AFTER 4 days 17.0' (5) AFTER

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES INC

PROJECT Brighton Landfill, Depth Expansion BORING 5, 5A, 5B Contd.

CONTRACT 780559, 811154 DATE DRILLED 12-11-78, 1-4, 5-82 DRILLED BY Simoncini, Roberts

DRILLING METHOD Hollow Auger PIEZOMETER Yes LOGGED BY Schweigert, Maxeiner

SURFACE ELEVATION 636.8'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | 11B | SS | | Gray Silty Clay LOAM | | |
| | 12B | SS | | Gray CLAY | 7-10 | |
| | | | | Yellowish-Brown Silty CLAY | | |
| 75 | 13B | SS | | | 12-15 | |
| | 14B | SS | | | 12-17 | $8.2 \times 10^{-9}$ |
| | | | | -Gray Below 79.0' | | |
| 80 | 15B | SS | | Black LIGNITE | 7-12 | |
| | 16B | SS | Very Hard Drilling @ 83.0' | Grayish-Brown Shaley CLAY | 2-18 | |
| 85 | 17B | SS | | Yellowish-Br Clayey SHALE TOB | 50/3" | |

SHEAR STRENGTH, TSF: BV ___ QP/2 ___ QU/2; 0 0.5 1.0 1.5 2.0 2.5

PL + WATER ● CONTENT, % LL +; 0 20 40 60 80 100

GROUND WATER DEPTH AT COMPLETION 37.0', (5) / 55.5' (5B) AFTER 4 days 17.0' (5) AFTER ___

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES INC

PROJECT Brighton Landfill, Depth Expansion BORING 7, 7A

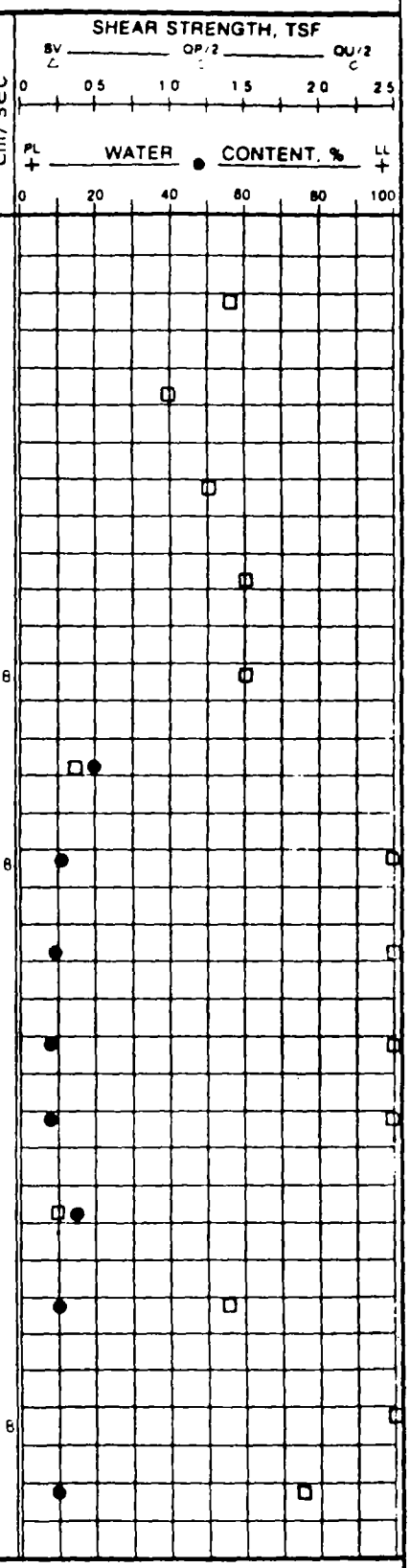
CONTRACT 790622, 811154 DRILLING METHOD Hollow Auger LOGGED BY Schaefer, Maxeiner DRILLED BY Simoncini

DATE DRILLED 5-25-79, 12-20-81 PIEZOMETER Yes

SURFACE ELEVATION 622.8'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | | | | Brown Silty CLAY w/Oxidized Spots | | |
| | 1 | SS | | -w/Fine Roots @ 1.5' | 9-9 | |
| 5 | 2 | SS | | | 6-8 | |
| | | | | -Brown & Gray @ 6.5' | | |
| | 3 | SS | | | 6-8 | |
| | | | | Brown & Gray CLAY | | |
| 10 | 4 | SS | | -w/Oxidized Spots @ 9.0' | 7-10 | |
| | 5 | SS | Encountered water @ 14.0' | -Gray w/Oxidized Stains, Trace Gravel @ 11.5' | 6-6 | $6.5 \times 10^{-8}$ |
| | | | | Brown Sandy LOAM | | |
| 15 | 6 | SS | | | 3-2 | |
| | | | | -w/Gravel Below 16.5' | | |
| | 7 | SS | | | 23-29 | $6.0 \times 10^{-8}$ |
| 20 | 8 | SS | | | 38-45 | |
| | 9 | SS | | | 50/6" | |
| | | | | -Brownish-Gray @ 24.0' | | |
| 25 | 10 | SS | | | x-94/6" | |
| | 11 | SS | | | x-50/6" | |
| | | | | Brown LOAM | | |
| | | | | -w/Gravel From 27.5-29.5' | | |
| 30 | 12 | SS | | -w/Brown Fine-Medium SAND Seam From 29.5-30.5' | x-72/6" | |
| | | | | -Brownish-Gray, Trace Gravel Below 31.5' | | |
| | 1A | SS | | | 10-16 | $1.1 \times 10^{-8}$ |
| 35 | 13 | SS | AR @ 35.0' | | 50/1/4" | |

Contd.




GROUND WATER DEPTH AT COMPLETION 14.0' (7) 41.0' (7A) AFTER 6 days 13.1'(7) After 2 days 41.0'(7A) AFTER 8 days 13.8'(7)

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC.

PROJECT Brighton Landfill, Depth Expansion BORING 7, 7A Contd.

SURFACE ELEVATION 622.8'

| DEPTH (FT) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | 15A | SS | | Brownish-Gray LOAM, Trace Gravel | | |
| | 16A | SS | | | 4-5 | |
| | | | | -w/Wood Seam From 74.3-74.4' | | |
| 75 | 17A | SS | Harder Drilling From 78.5-79.0' | | 4-6 | $9.3 \times 10^{-10}$ |
| | | | | Brownish-Gray Clay LOAM | | |
| | 18A | SS | | | 6-9 | |
| | 19A | SS | *NOTE: | TOB | ~~x 50/1"~~ | |
| 80 | | | | | | |

*NOTE: AR @ 79.2' On Apparent LIMESTONE

SHEAR STRENGTH, TSF: BV / QP/2 / QU/2 — 0, 0.5, 1.0, 1.5, 2.0, 2.5

WATER CONTENT, % — PL / LL — 0, 20, 40, 60, 80, 100

CONTRACT 311154 DATE DRILLED 5-25-79, 12-20-81 DRILLED BY Simoncini

DRILLING METHOD Hollow Auger PIEZOMETER Yes LOGGED BY Schaefer, Maxeiner

GROUND WATER DEPTH AT COMPLETION 14.0', (7) AFTER 6 days 13.1' (7) AFTER 8 days 13.8' (7

41.0' (7A) After2 days 41.0' (7A)

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

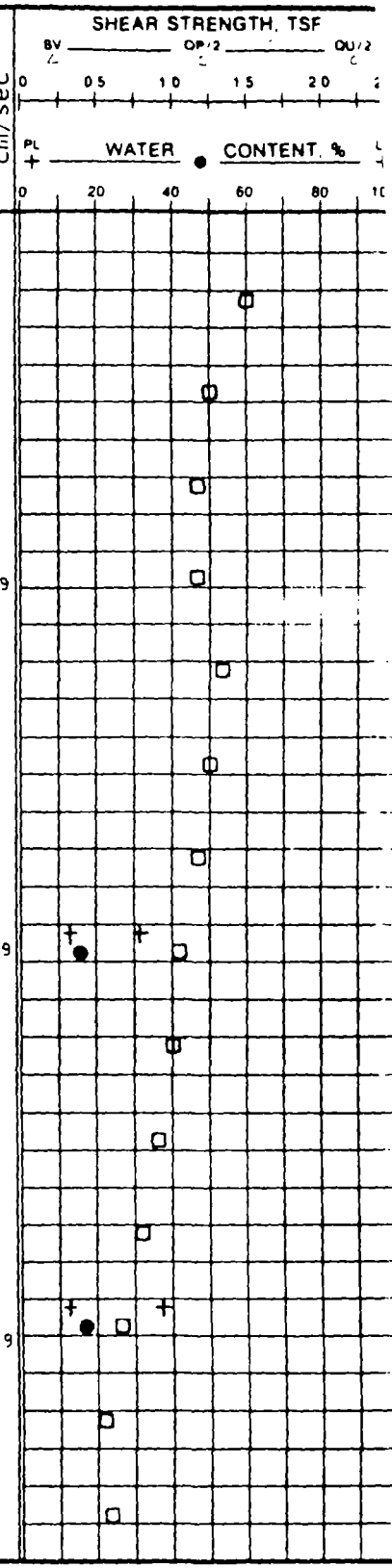
JOHN MATHES & ASSOCIATES, INC.

PROJECT Brighton Landfill, Depth Expansion BORING 7, 7A Contd.

CONTRACT 790622, 811154 DRILLING METHOD Hollow Auger PIEZOMETER Yes DATE DRILLED 5-25-79, 12-20-81 LOGGED BY Schaefer, Maxeiner DRILLED BY Simoncini

SURFACE ELEVATION 622.8'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | | | | Brownish-Gray LOAM, Trace Gravel | | |
| | 2A | SS | | | 7-11 | |
| 40 | 3A | SS | | | 7-10 | |
| | 4A | SS | | | 8-10 | |
| 45 | 5A | SS | | | 6-8 | $8.8 \times 10^{-9}$ |
| | 6A | SS | | | 7-9 | |
| 50 | 7A | SS | | | 5-8 | |
| | 8A | SS | | | 5-9 | |
| 55 | 9A | SS | | | 6-8 | $8.8 \times 10^{-9}$ |
| | 10A | SS | | | 5-9 | |
| 60 | 11A | SS | | | 5-6 | |
| | 12A | SS | | -w/Gray Clay LOAM Seam From 61.5-62.7' | 5-7 | |
| 65 | 13A | SS | | | 6-6 | $9.0 \times 10^{-9}$ |
| | 14A | SS | | | 4-7 | |
| 70 | 15A | SS | | | 4-6 | |
| | | | | Contd | | |




GROUND WATER DEPTH AT COMPLETION 14.0', (7) / 41.0' (7A) AFTER 6 days After2 days 13.1' (7) / 41.0' (7A) AFTER 8 days 13.8' (7)

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES INC

PROJECT Brighton Landfill, Depth Expansion BORING 12, 12A

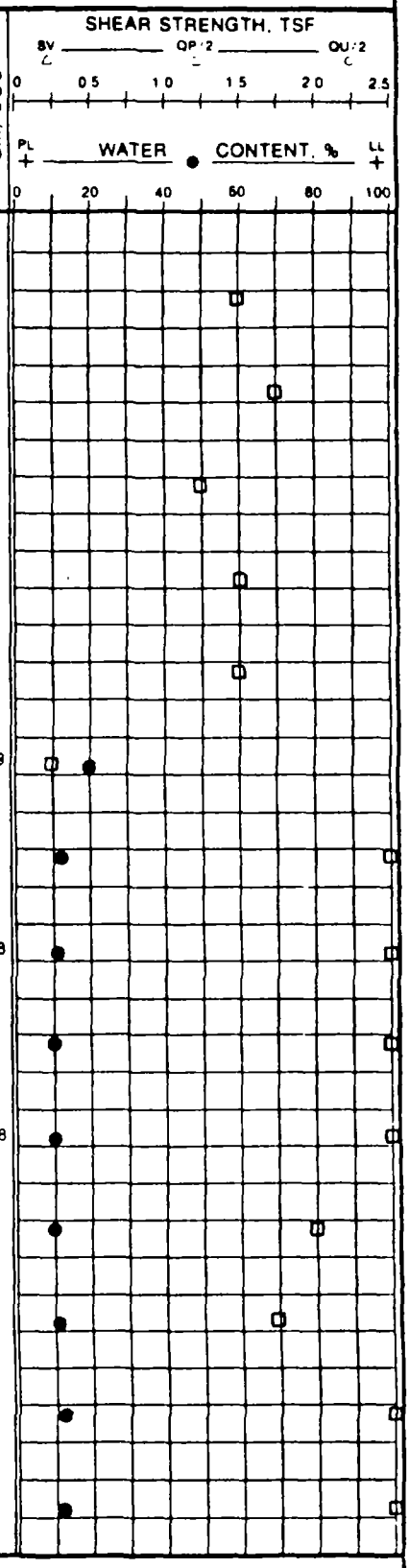
CONTRACT 790622, 811154 DRILLED BY Simoncini, Roberts

DRILLING METHOD Hollow Auger LOGGED BY Schaefer, Maxeiner

DATE DRILLED 5-30-79, 12-15-81 PIEZOMETER Yes

SURFACE ELEVATION 631.2'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | | | | Brown Silty CLAY | | |
| | | | | -w/Fine Roots @ 1.5' | | |
| | 1 | SS | | -Brown & Gray w/Oxidized Spots Below 1.5' | 5-7 | |
| 5 | 2 | SS | | -w/Oxidized Stains @ 4.0' | 7-10 | |
| | 3 | SS | | Brown & Gray CLAY w/Oxidized Spots, Stains | 5-8 | |
| 10 | 4 | SS | | | 6-8 | |
| | 5 | SS | | | 6-7 | |
| 15 | 6 | SS | | Brown Sandy LOAM w/Oxidized Spots, Trace Gravel | 1-3 | $5.0 \times 10^{-8}$ |
| | 7 | SS | | | 15-17 | |
| 20 | 8 | SS | | Brown LOAM, Trace Gravel -w/Oxidized Spots From 19.0-28.0' -Gray Below 21.5' | 16-22 | $1.7 \times 10^{-8}$ |
| | 9 | SS | | | 15-18 | |
| 25 | 10 | SS | | | 14-18 | $3.3 \times 10^{-8}$ |
| | 11 | SS | | | 17-19 | |
| 30 | 12 | SS | | | 10-13 | |
| | | | | -w/Oxidized Stains @ 31.5' | | |
| | 13 | SS | | | 10-15 | |
| | | | | -w/Oxidized Spots Below 34.0' | | |
| 35 | 14 | SS | | | 11-16 | |
| | | | | Contd. | | |




GROUND WATER DEPTH AT COMPLETION 31.7' (12) Dry (12A) AFTER 1 day 11.0'(12) After5 days 14.3'(12A) AFTER 3 days 8.0'(12)

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES INC.

PROJECT Brighton Landfill, Depth Expansion BORING 12, 12A Contd.

CONTRACT ____ DATE DRILLED ____ DRILLED BY ____ LOGGED BY Schaefer, Maxeiner

DRILLING METHOD Hollow Auger PIEZOMETER Yes

SURFACE ELEVATION 631.2'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | cm/sec |
|---|---|---|---|---|---|---|
| | 14 | SS | | Brown LOAM, Trace Gravel | | |
| | 1A | SS | | -Brownish-Gray @ 36.5' | 6-10 | $1.2 \times 10^{-8}$ |
| | | | | -Gray @ 39.0' | | |
| 40 | 15 | SS | | | 10-13 | |
| | | | | -Brownish-Gray @ 41.5' | | |
| | 2A | SS | | | 8-13 | |
| | | | | -Gray Below 44.0' | | |
| 45 | 16 | SS | | | 11-15 | |
| | 17 | SS | | | 9-15 | |
| | | | | Brownish-Gray Clay LOAM | | |
| 50 | 3A | SS | | -Trace Gravel @ 49.0' | 9-12 | $7.7 \times 10^{-9}$ |
| | 4A | SS | | | 9-16 | |
| | | | | Gray CLAY | | |
| | | | | -w/Shale @ 52.5' | | |
| 55 | 5A | SS | | -Brownish-Red From 55.0-58.0' | 15-25 | |
| | 6A | SS | | | 25-48 | |
| | | | | -w/LIGNITE Seams From 59.0-60.4' | | |
| 60 | 7A | SS | | -Brownish-Gray From 59.0'-61.7' | 30-50/5" | $3.8 \times 10^{-9}$ |
| | 8A | SS | | -Grayish-Brown From 61.7-62.3' | 36-50/3" | |
| | 9A | ~~SS~~ | *NOTE | -Brownish-Gray Below 62.3' | ~~x-50/1"~~ | |
| | | | | TOB | | |
| 65 | | | | | | |
| | | | | *NOTE: AR @ 64.0' On Apparent LIMESTONE | | |

SHEAR STRENGTH, TSF — SV, OP/2, DU/2 — 0, 0.5, 1.0, 1.5, 2.0, 2.5

WATER CONTENT, % — PL, LL — 0, 20, 40, 60, 80, 100

GROUND WATER DEPTH AT COMPLETION 31.7', (12) Dry (12A) AFTER 1 day 11.0' (12) After 5 days 14.3' (12A) AFTER 3 days 8.0' (12)

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES INC

PROJECT Brighton Landfill, Depth Expansion BORING 18

CONTRACT 811154 DRILLED BY Roberts

DRILLING METHOD Hollow Auger LOGGED BY Maxeiner

DATE DRILLED 12-23, 28-81 PIEZOMETER Yes

SURFACE ELEVATION 636.1'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K, cm/sec |
|---|---|---|---|---|---|---|
| | 1 | SS | | Brown Silt LOAM, FILL -w/Gravel, Organics From 1.5-5.5' | 5-7 | |
| 5 | 2 | SS | | -w/Plastic Below 4.0' | 7-11 | |
| | 3 | SS | | | 10-8 | |
| 10 | 4 | SS | | -w/Oxidized Spots, Stains Below 9.0' | 4-5 | |
| | 5 | SS | | Brown Silt LOAM w/Oxidized Spots, Stains, Possible FILL | 4-7 | |
| 15 | 6 | SS | | | 7-8 | |
| | 7 | SS | | | 6-9 | |
| 20 | 8 | SS | | | 6-6 | |
| | 9 | SS | | Brown LOAM, Trace Gravel -w/Oxidized Parting @ 21.5' | 7-9 | |
| 25 | 10 | SS | | | 15-17 | |
| | 11 | SS | | | 19-24 | |
| 30 | 12 | SS | | -Grayish-Brown @ 29.0' | 15-21 | |
| | 13 | SS | Encountered water @ 34.0' | | 16-20 | |
| 35 | 14 | SS | | Gray Clay LOAM, Trace Gravel Contd. | 15-18 | |

SHEAR STRENGTH, TSF — SV, OP/2, QU/2 — 0, 0.5, 1.0, 1.5, 2.0, 2.5

WATER CONTENT, % — PL, 0, 20, 40, 60, 80, 100, LL

GROUND WATER DEPTH AT COMPLETION -- AFTER ____ ____ AFTER ____ ____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES INC

PROJECT Brighton Landfill, Depth Expansion BORING 18 Contd.

CONTRACT 811154 DRILLING METHOD Hollow Auger LOGGED BY Maxeiner DRILLED BY Roberts

DATE DRILLED 12-23, 28-81 PIEZOMETER Yes

SURFACE ELEVATION 636.1'

| DEPTH (FT) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | 14 | SS | | Gray Clay LOAM, Trace Gravel | | |
| | 15 | SS | | | 11-15 | |
| 40 | 16 | SS | | | 9-13 | |
| | 17 | SS | | | 8-14 | |
| 45 | 18 | SS | | | 7-12 | |
| | 19 | SS | | | 7-11 | |
| 50 | 20 | SS | | | 9-18 | |
| | 21 | SS | | | 12-19 | |
| 55 | 22 | SS | | | 13-12 | |
| | 23 | SS | | | 8-11 | |
| 60 | 24 | SS | | | 8-10 | |
| | 25 | SS | | | 9-12 | |
| 65 | 26 | SS | | | 8-10 | |
| | 27 | SS | | | 9-15 | |
| 70 | 28 | SS | | Contd. | 7-13 | $6.5 \times 10^{-9}$ |

SHEAR STRENGTH, TSF — BV, QP/2, QU — 0, 0.5, 1.0, 1.5, 2.0

WATER CONTENT, % — 0, 20, 40, 60, 80

GROUND WATER DEPTH AT COMPLETION -- AFTER ____ AFTER ____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC

PROJECT Brighton Landfill, Depth Expansion BORING 18 Contd.

CONTRACT 811154 DATE DRILLED 12-22, 28-81 DRILLED BY Roberts

DRILLING METHOD Hollow Auger PIEZOMETER Yes LOGGED BY Maxeiner

SURFACE ELEVATION 636.1'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | 28 | SS | | Gray Clay LOAM, Trace Gravel | | |
| | 29 | SS | | Brownish-Gray Silty CLAY | 5-13 | |
| 75 | 30 | SS | | -Yellowish-Brown w/Shale Below 75.1' | 8-12 | |
| | 31 | SS | | | 12-19 | |
| 80 | 32 | SS | | | 12-16 | $6.5 \times 10^{-9}$ |
| | 33 | SS | | Black LIGNITE | 5-19 | |
| 85 | 34 | SS | AR @ 84.6' | TOB | x-75 | |
| 90 | | | | | | |

SHEAR STRENGTH, TSF — SV / OP/2 / QU/2 — 0 0.5 1.0 1.5 2.0 2.5

WATER CONTENT, % — PL + ● LL + — 0 20 40 60 80 100

GROUND WATER DEPTH AT COMPLETION -- AFTER _____ AFTER _____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES INC

PROJECT Brighton Landfill, Depth Expansion BORING 19

CONTRACT ____ DATE DRILLED ____ DRILLED BY ____

DRILLING METHOD Hollow Auger PIEZOMETER Yes LOGGED BY Maxeiner

SURFACE ELEVATION 600.9'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | | | | Brown Silty Clay LOAM | | |
| | 1 | SS | | -w/Oxidized Stains From 1.0-5.0' | 5-7 | |
| | 2 | SS | | -w/Fine SAND Seam From 4.3-4.5' | 4-4 | |
| 5 | | | | | | |
| | 3 | SS | | Grayish-Brown LOAM, Trace Gravel | 11-13 | |
| | 4 | SS | | -w/LIMESTONE Seam From 6.8-6.9' | 13-17 | |
| 10 | | | | -w/LIMESTONE Seam From 9.3-9.4' | | |
| | 5 | SS | | -Brownish-Gray From 11.0-26.0' | 9-15 | |
| | 6 | SS | | | 9-14 | |
| 15 | | | | | | |
| | 7 | SS | | | 8-11 | |
| | 8 | SS | | -w/LIMESTONE Seam From 19.8-19.9' | 13-20 | $5.0 \times 10^{-9}$ |
| 20 | | | | | | |
| | 9 | SS | | -w/LIMESTONE Seam From 22.3-22.4' | 13-18 | |
| | 10 | SS | | | 10-16 | |
| 25 | | | | -Brown From 26.0-33.5' | | |
| | 11 | SS | | | 11-16 | |
| | 12 | SS | | -w/Gray Silt LOAM Seam From 28.5-29.3'<br>-w/Silt Pockets @ 29.5' | 10-15 | $7.5 \times 10^{-9}$ |
| 30 | | | | | | |
| | 13 | SS | Rocky From 31.3-31.8' | -w/Oxidized Lenses @ 33.5' | 14-15 | |
| | 14 | SS | | | 8-13 | |
| 35 | | | | Contd. | | |

SHEAR STRENGTH, TSF — SV, OP/2, QU/2 — 0, 0.5, 1.0, 1.5, 2.0, 2.5

WATER CONTENT, % — PL, LL — 0, 20, 40, 60, 80, 100

GROUND WATER DEPTH AT COMPLETION Dry AFTER ____ ____ AFTER ____ ____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES

# RECORD OF SUBSURFACE EXPLORATION

PROJECT Brighton Landfill, Depth Expansion BORING 19 Contd.

JOHN MATHES & ASSOCIATES, INC

CONTRACT [illegible] DATE DRILLED [illegible] DRILLED BY Roberts

DRILLING METHOD Hollow Auger PIEZOMETER Yes LOGGED BY Maxeiner

SURFACE ELEVATION 600.9'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | | | | Brownish-Gray LOAM, Trace Gravel | | |
| | 15 | SS | | | 7-11 | |
| | 16 | SS | | | 9-12 | $1.3 \times 10^{-8}$ |
| 40 | | | | Gray CLAY w/Shale | | |
| | 17 | SS | | | 9-12 | |
| | 18 | SS | | -w/Limestone Fragments @ 44.0' | 7-9 | |
| 45 | | | | -Trace Gravel @ 44.5' | | |
| | 19 | SS | | Dark Gray LOAM | 5-7 | |
| | 20 | SS | | | 5-7 | |
| 50 | | | | -Gray Below 51.0' | | |
| | 21 | SS | Encountered water @ 52.5' | | 5-6 | $1.2 \times 10^{-8}$ |
| | 22 | SS | | | 4-5 | |
| 55 | | | | | | |
| | 23 | SS | | | 4-6 | |
| | 24 | SS | | Gray Silty Clay LOAM | 4-5 | |
| 60 | | | | | | |
| | 25 | SS | | | 4-6 | $5.0 \times 10^{-9}$ |
| | 26 | SS | | | 4-7 | |
| 65 | | | | TOB | | |

SHEAR STRENGTH, TSF — BV, OP/2, QU/2 — 0, 0.5, 1.0, 1.5, 2.0, 2.5

WATER CONTENT, % — PL, LL — 0, 20, 40, 60, 80, 100

GROUND WATER DEPTH AT COMPLETION Dry AFTER _____ _____ AFTER _____ _____

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC.

PROJECT Brighton Landfill, Depth Expansion BORING 20

DRILLED BY Roberts LOGGED BY Maxeiner DATE DRILLED PIEZOMETER Yes DRILLING METHOD Hollow Auger

SURFACE ELEVATION 637.7'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec | SHEAR STRENGTH, TSF (BV, QP/2, QU/2) 0 0.5 1.0 1.5 2.0 2.5 / PL + WATER CONTENT, % LL + 0 20 40 60 80 100 |
|---|---|---|---|---|---|---|---|
| | | | | Brown Silty Clay LOAM | | | |
| | 1 | SS | | | 6-9 | | |
| | | | | -w/Oxidized Stains Below 4.0' | | | |
| 5 | 2 | SS | | | 7-11 | | |
| | | | | Brownish-Gray Silt LOAM w/ Oxidized Spots | | | |
| | 3 | SS | | | 13-15 | | |
| | | | | Brown Silty Clay LOAM | | | |
| 10 | 4 | SS | | | 10-14 | | |
| | | | | -w/Silt Pockets, Oxidized Stains @ 11.5' | | | |
| | 5 | SS | | | 7-9 | | |
| | | | | Brown Clay LOAM | | | |
| 15 | 6 | SS | | Brown Sandy Clay LOAM | 4-4 | | |
| | 7 | SS | | | 15-26 | | |
| | | | | Brown LOAM, Trace Gravel | | | |
| 20 | 8 | SS | | | 21-33 | | |
| | | | | Gray Clay LOAM | | | |
| | 9 | SS | | -w/Gravel, Oxidized Partings @ 21.5' | 19-28 | | |
| | | | | -Trace Gravel Below 24.0' | | | |
| 25 | 10 | SS | | | 20-27 | | |
| | 11 | SS | | | 13-18 | | |
| 30 | 12 | SS | | | 9-14 | | |
| | 13 | SS | | | 8-13 | | |
| | | | | -w/Chert Fragment @ 34.0' | | | |
| 35 | 14 | SS | | | 8-11 | | |
| | | | | Cont'd | | | |

GROUND WATER DEPTH AT COMPLETION -- AFTER 3 days 60.5' AFTER

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

JOHN MATHES & ASSOCIATES, INC.

PROJECT Brighton Landfill, Depth Expansion BORING 20 Contd.

LOGGED BY Maxeiner

PIEZOMETER Yes

DRILLING METHOD Hollow Auger

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES. | DESCRIPTION OF MATERIAL (SURFACE ELEVATION 637.7') | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | 14 | SS | | Gray Clay LOAM, Trace Gravel | | |
| | 15 | SS | | | 7-12 | |
| 40 | 16 | SS | | | 7-10 | |
| | | | | -w/Organics @ 41.5' | | |
| | 17 | SS | | | 7-11 | |
| 45 | 18 | SS | | | 6-10 | |
| | | | | Gray Silty CLAY | | |
| | 19 | SS | | | 5-8 | |
| | | | | -Trace Gravel Below 49.0' | | |
| 50 | 20 | SS | | | 6-8 | |
| | 21 | SS | Encountered water @ 52.0' | Gray LOAM w/Organics | 7-8 | $8.4 \times 10^{-8}$ |
| | | | | Gray Silty CLAY | | |
| 55 | 22 | SS | | | 7-11 | |
| | | | | -Brownish-Gray @ 56.5' | | |
| | 23 | SS | | | 7-10 | |
| | | | | -Trace Gravel Below 59.0' | | |
| 60 | 24 | SS | | | 7-10 | |
| | 25 | SS | | Brownish-Gray Clay LOAM, Trace Gravel | 6-10 | $9.8 \times 10^{-9}$ |
| | | | Encountered water @ 66.25' | Gray Loamy SAND | | |
| 65 | 26 | SS | | Gray Sandy Clay LOAM | 6-7 | |
| | 27 | SS | | Gray Loamy SAND -w/Gray Silty CLAY Seam From 69.5-70.0' | 18-23 | |
| 70 | 28 | SS | | Contd. | 21-16 | $1.2 \times 10^{-6}$ |

SHEAR STRENGTH, TSF — BV ____ QP/2 ____ QU/2 — 0 0.5 1.0 1.5 2.0 2.5

WATER CONTENT, % — PL + ● LL + — 0 20 40 60 80 100

GROUND WATER DEPTH AT COMPLETION -- AFTER 3 days 60.5' AFTER

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

# RECORD OF SUBSURFACE EXPLORATION

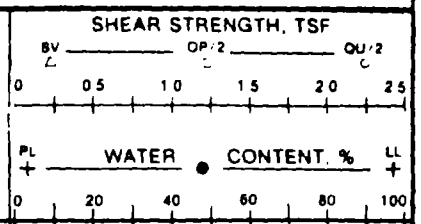
JOHN MATHES & ASSOCIATES, INC

PROJECT Brighton Landfill, Depth Expansion BORING 20 Contd.

DRILLED BY Roberts
LOGGED BY Maxeiner
DATE DRILLED
PIEZOMETER Yes
DRILLING METHOD Hollow Auger
CONTRACT

SURFACE ELEVATION 637.7'

| DEPTH (FT.) | SAMPLE NUMBER | SAMPLE TYPE | NOTES | DESCRIPTION OF MATERIAL | BLOWS | K cm/sec |
|---|---|---|---|---|---|---|
| | 28 | SS | | Gray Loamy SAND | | |
| | 29 | SS | Rocky Drilling From 74.0-75.0' | Gray Silt LOAM | 8-13 | $1.1 \times 10^{-8}$ |
| 75 | 30 | SS | | Grayish-Brown Silty CLAY w/Gravel | 50/2" | |
| | 31 | SS | | Gray Silty Clay LOAM, Trace Gravel | 11-16 | |
| 80 | 32 | SS | | | 9-11 | |
| | 33 | SS | | Brownish-Gray Silt LOAM, Trace Gravel | 9-13 | |
| 85 | 34 | SS | | | 7-10 | |
| | 35 | SS | | | 5-8 | |
| 90 | 36 | SS | | -Gray Below 89.0' | 4-6 | $1.3 \times 10^{-8}$ |
| | 37 | SS | | | 8-12 | |
| | | | | TOB | | |
| 95 | | | | | | |

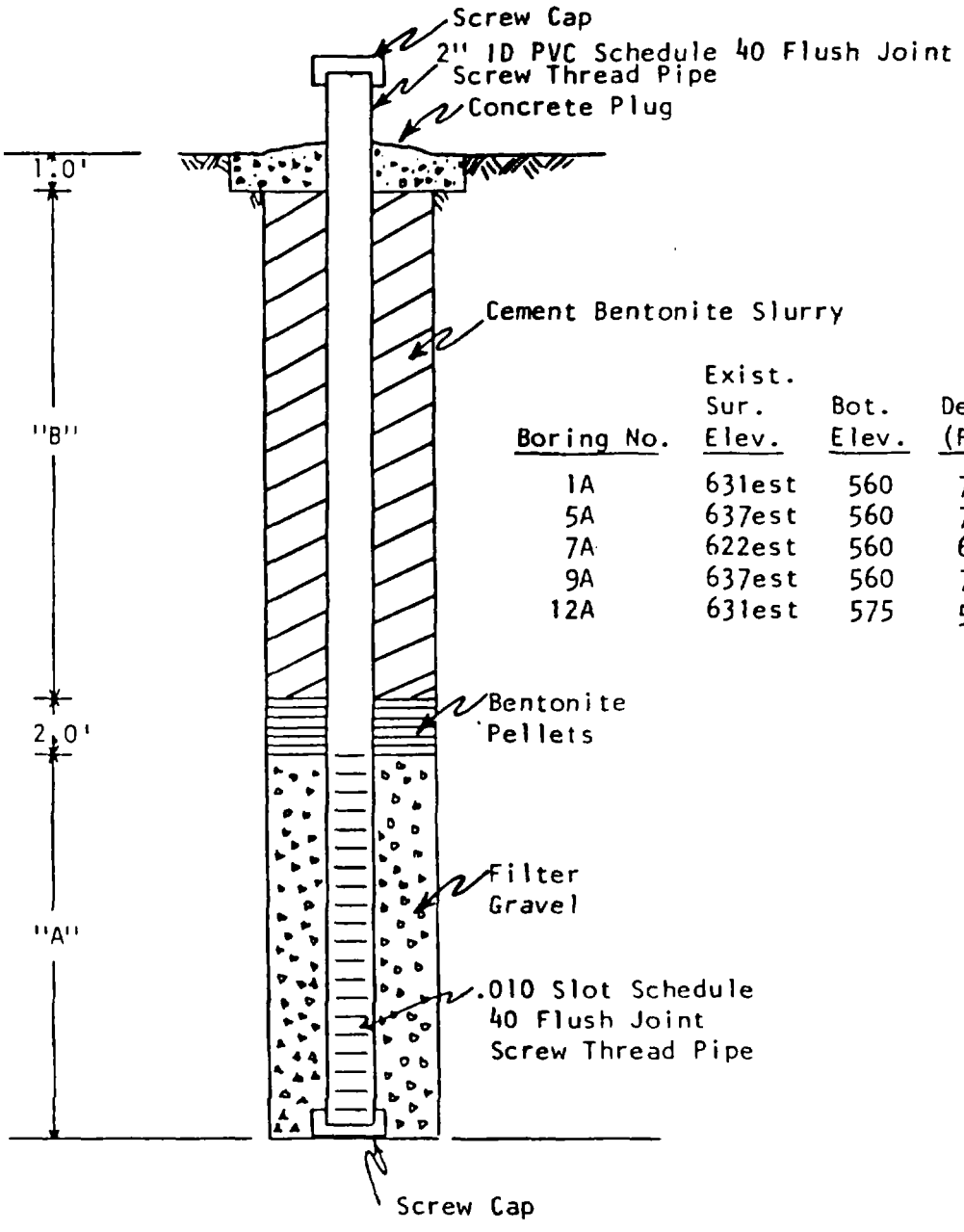



GROUND WATER DEPTH AT COMPLETION -- AFTER 3 days 60.5' AFTER

SCALE 1" = 5.0'

JOHN MATHES & ASSOCIATES, INC.

ATTACHMENT IV



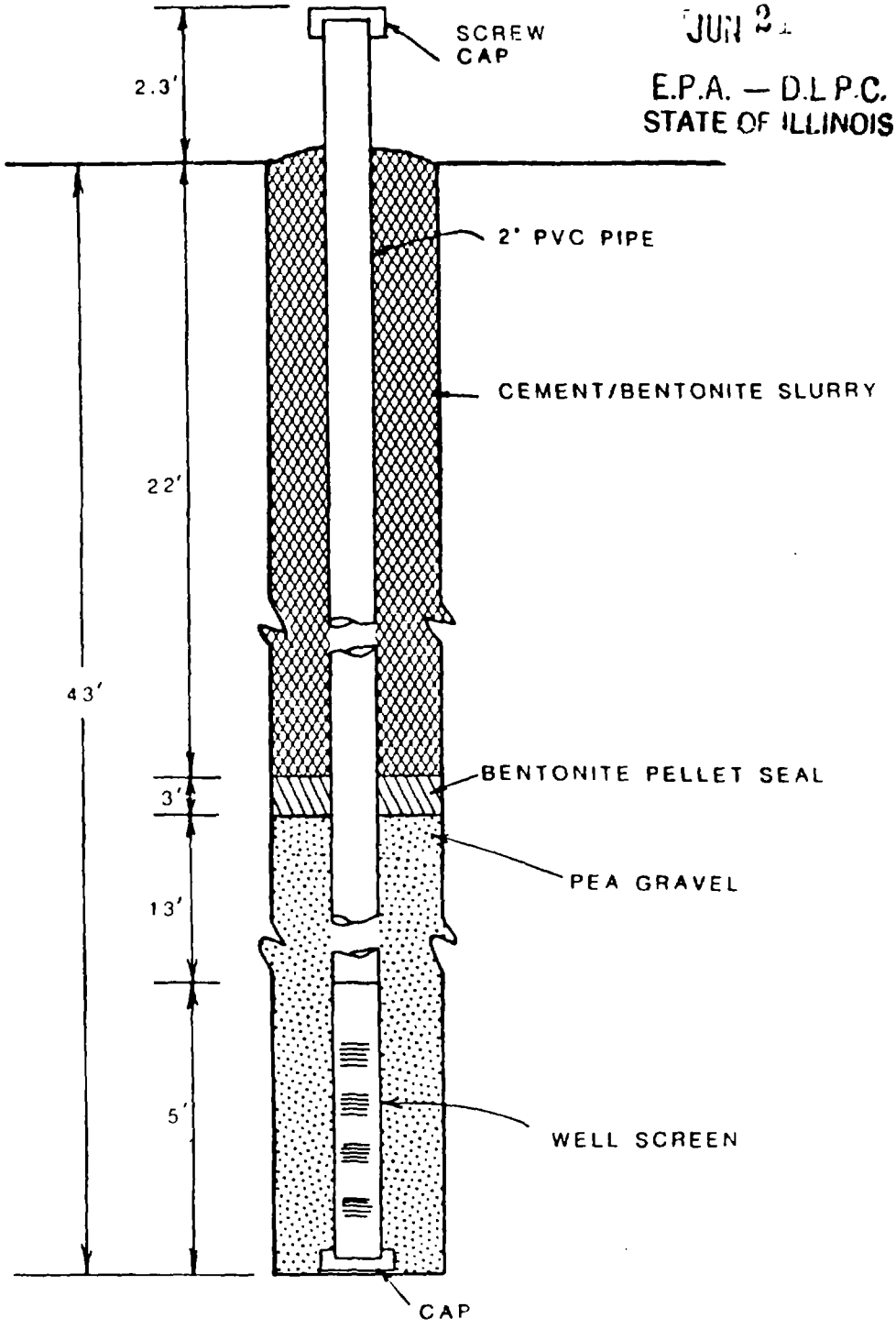

| Boring No. | Exist. Sur. Elev. | Bot. Elev. | Depth (Ft.) | "A" (Ft.) | "B" (Ft.) |
|---|---|---|---|---|---|
| 1A | 631est | 560 | 71 | 20 | 48 |
| 5A | 637est | 560 | 77 | 22 | 52 |
| 7A | 622est | 560 | 62 | 22 | 37 |
| 9A | 637est | 560 | 77 | 20 | 54 |
| 12A | 631est | 575 | 56 | 15 | 38 |

TYPICAL SECTION
DEEP GROUNDWATER
MONITORING WELL
BRIGHTON LANDFILL
INC

JOHN MATHES & ASSOCIATES, INC.

BORING B-1

RECEIVED
JUN 2
E.P.A. — D.L.P.C.
STATE OF ILLINOIS



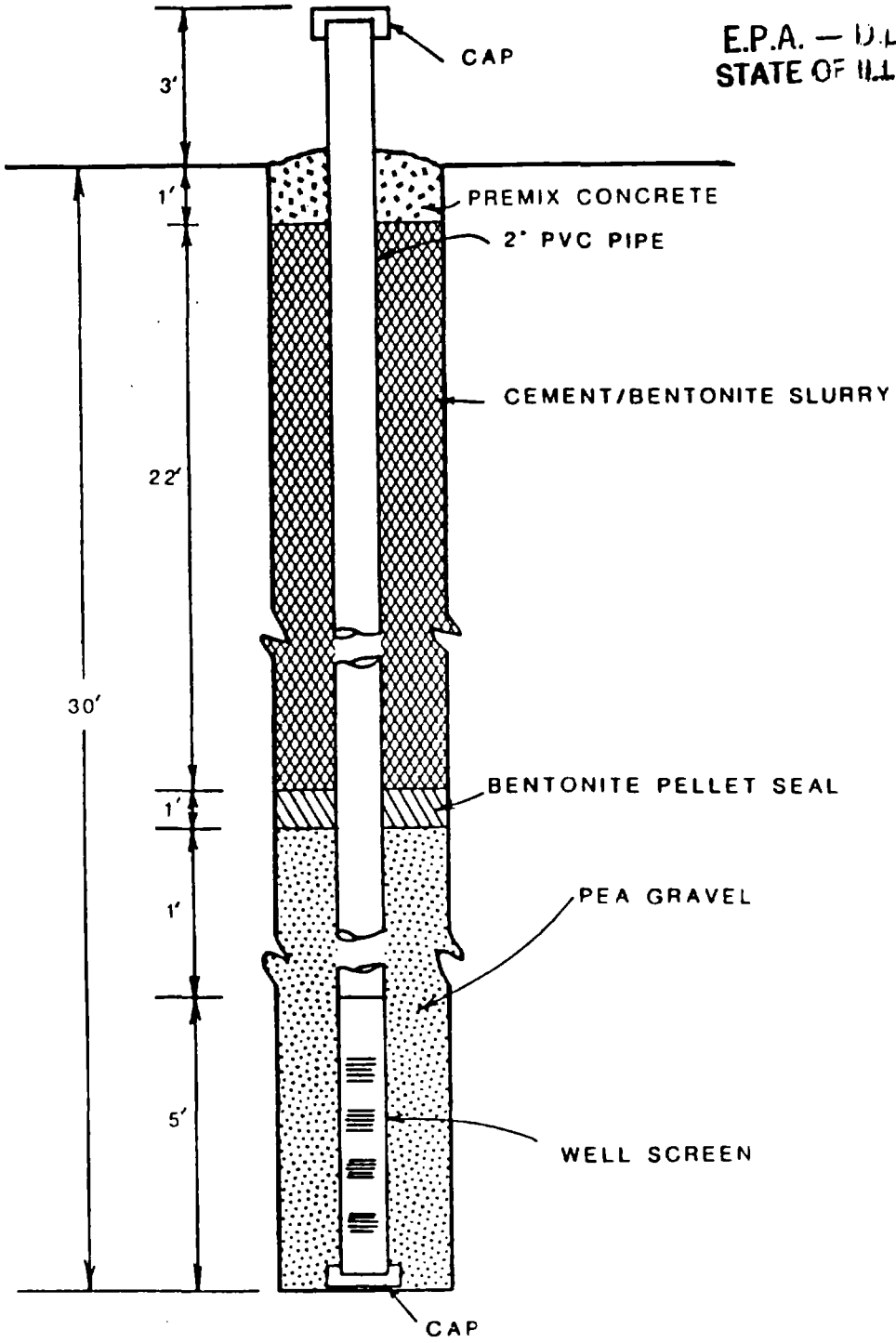

NOT TO SCALE

PIEZOMETER SKETCH

JOHN MATHES & ASSOCIATES, INC.

RECEIVED
JUN 2
E.P.A. — D.L.P.C.
STATE OF ILLINOIS

BORING B-4



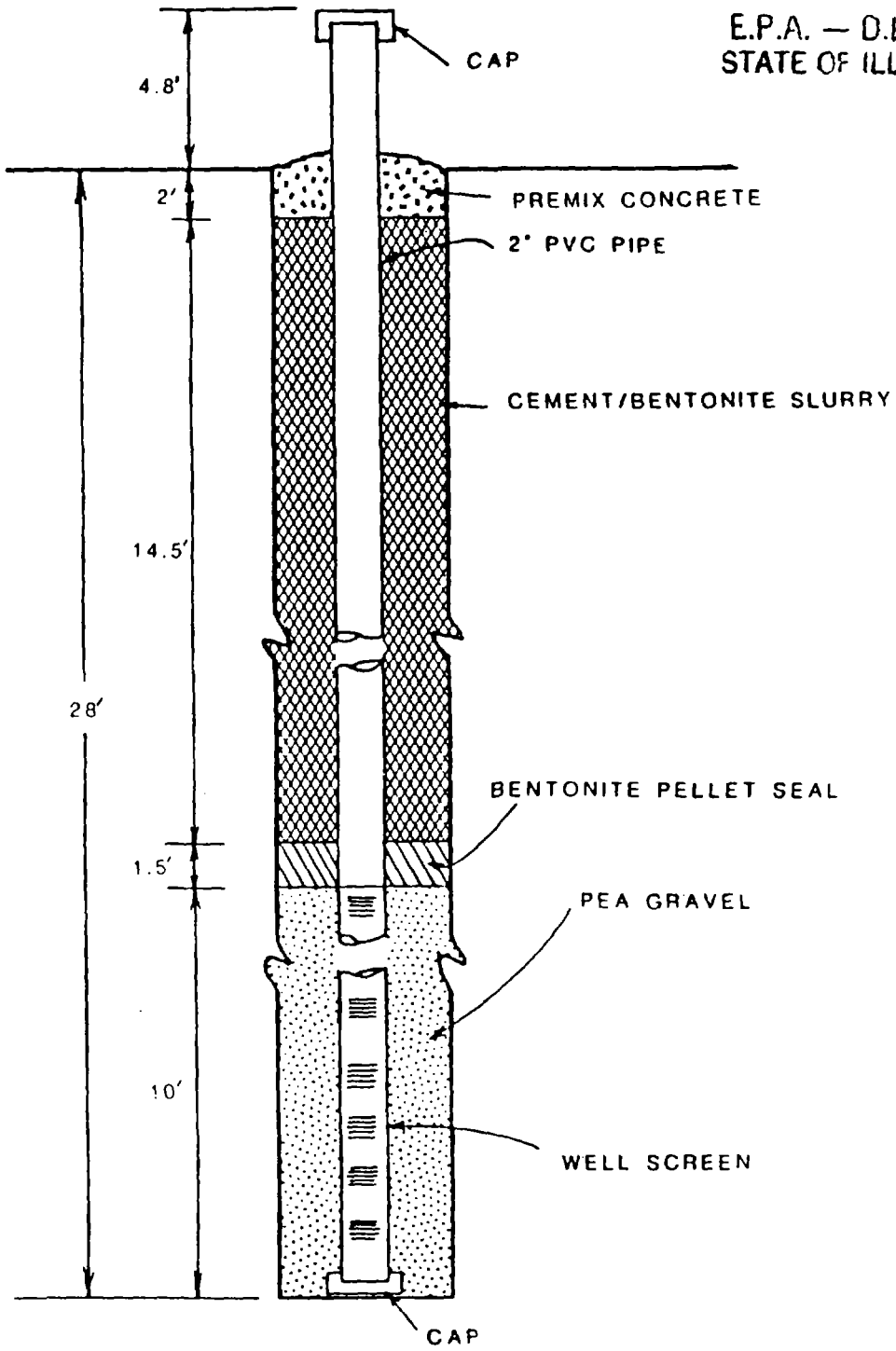

—NOT TO SCALE—

PIEZOMETER SKETCH

JOHN MATHES & ASSOCIATES, INC.

RECEIVED
JUN 21
E.P.A. — D.L.P.C.
STATE OF ILLINOIS

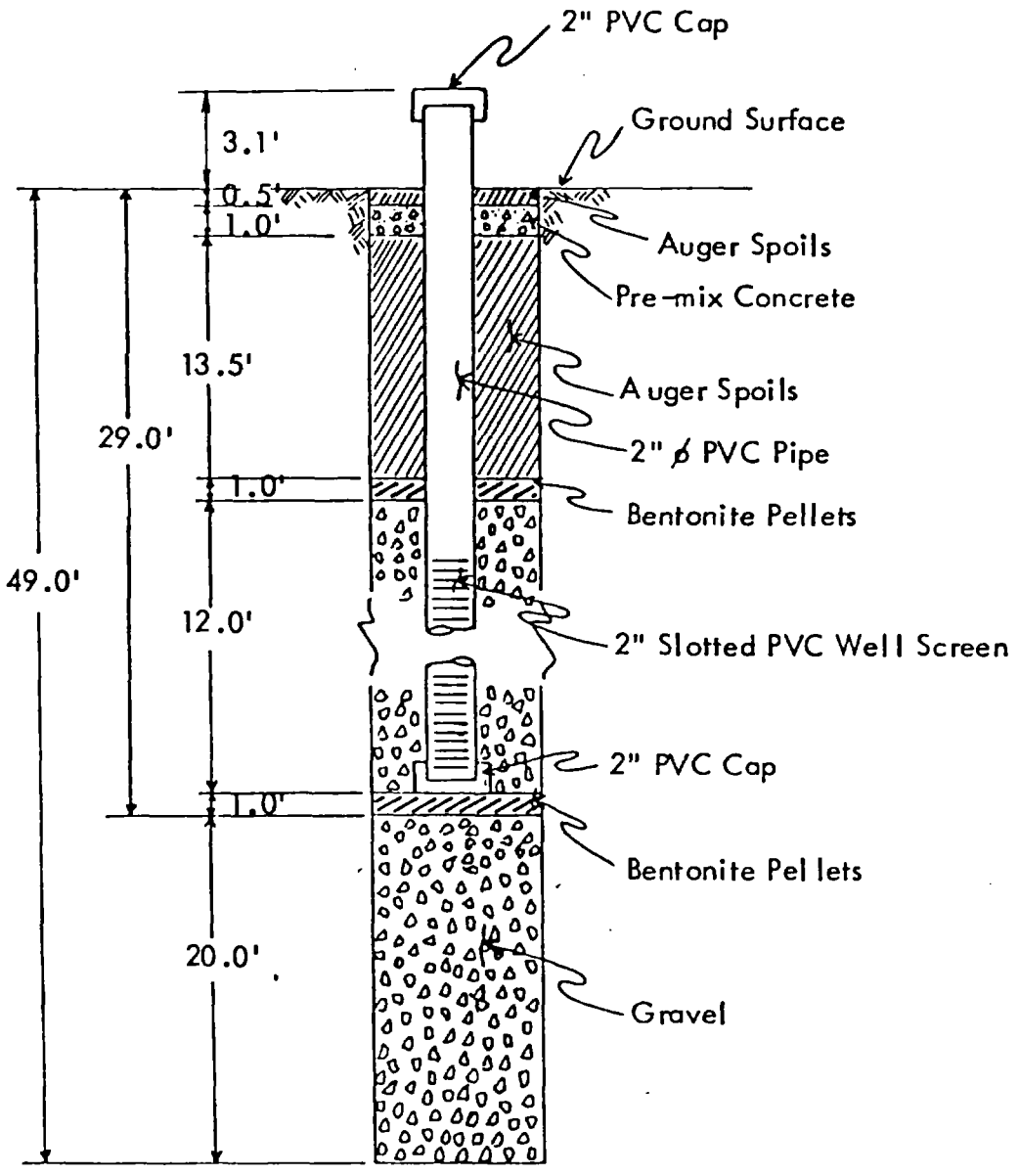
BORING B-5




— NOT TO SCALE —

**PIEZOMETER SKETCH**

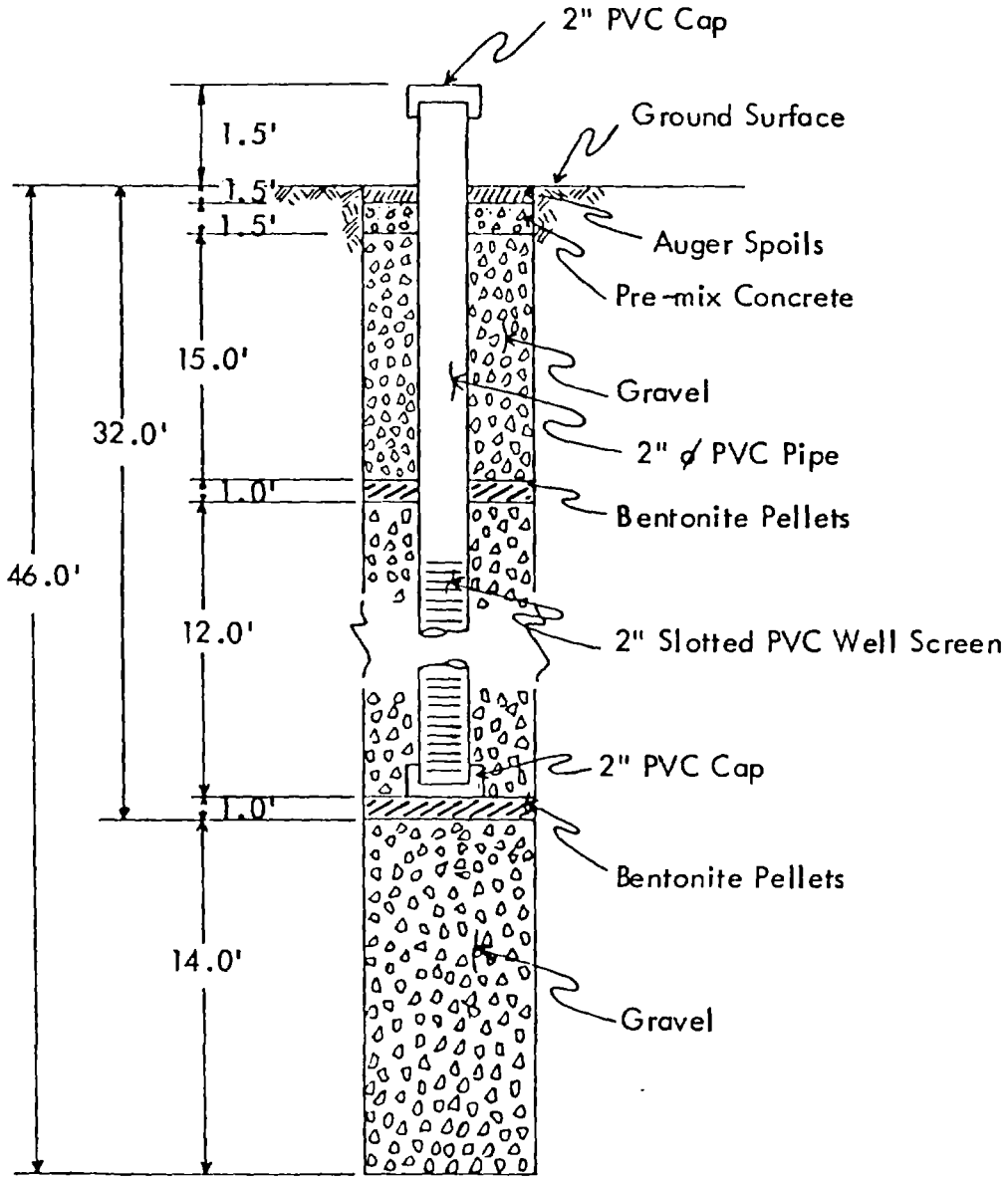
JOHN MATHES & ASSOCIATES, INC.




Not to Scale

MONITOR WELL SKETCH

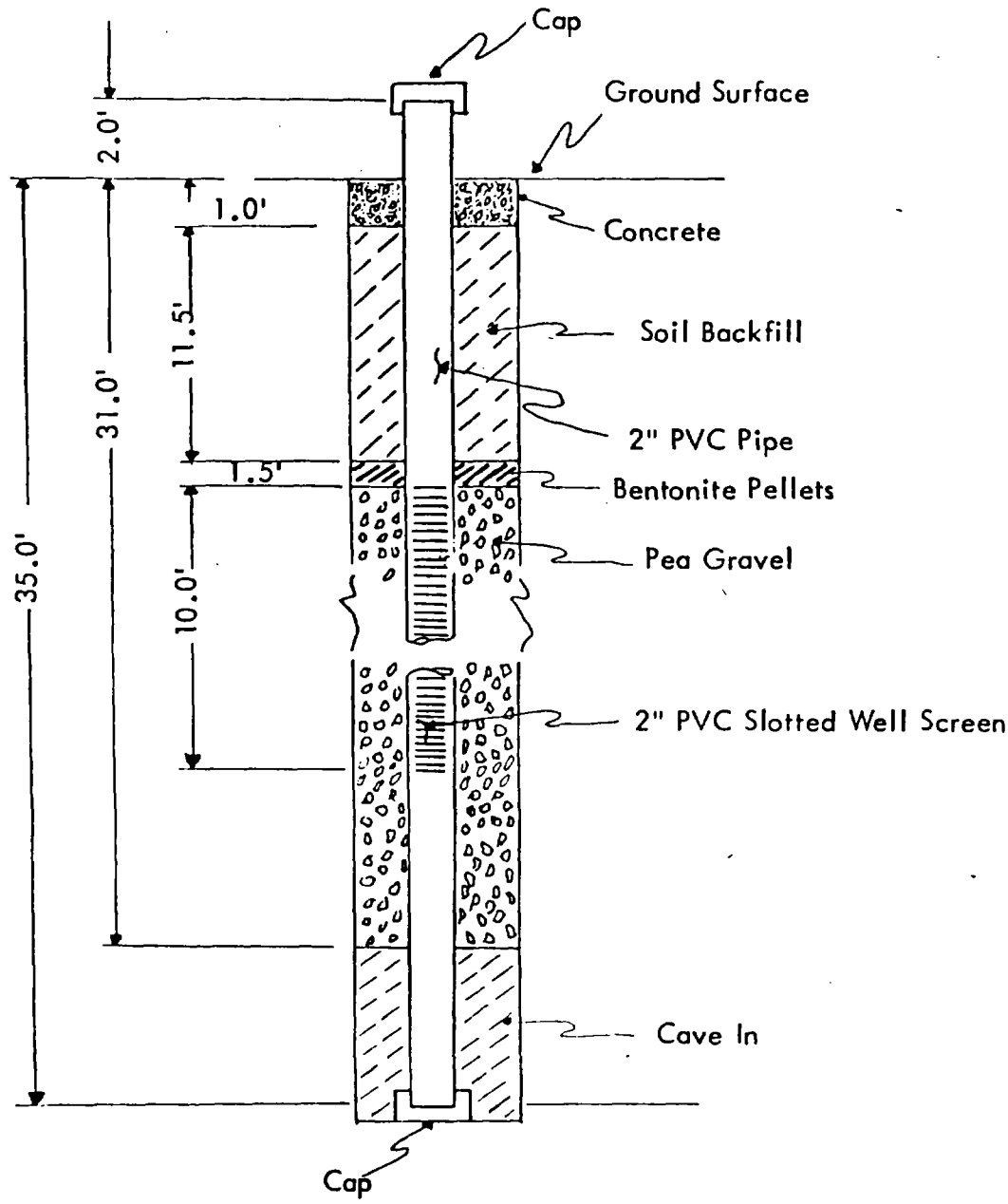
Boring 5
Brighton Landfill Addition
Brighton, Illinois




Not to Scale

MONITOR WELL SKETCH

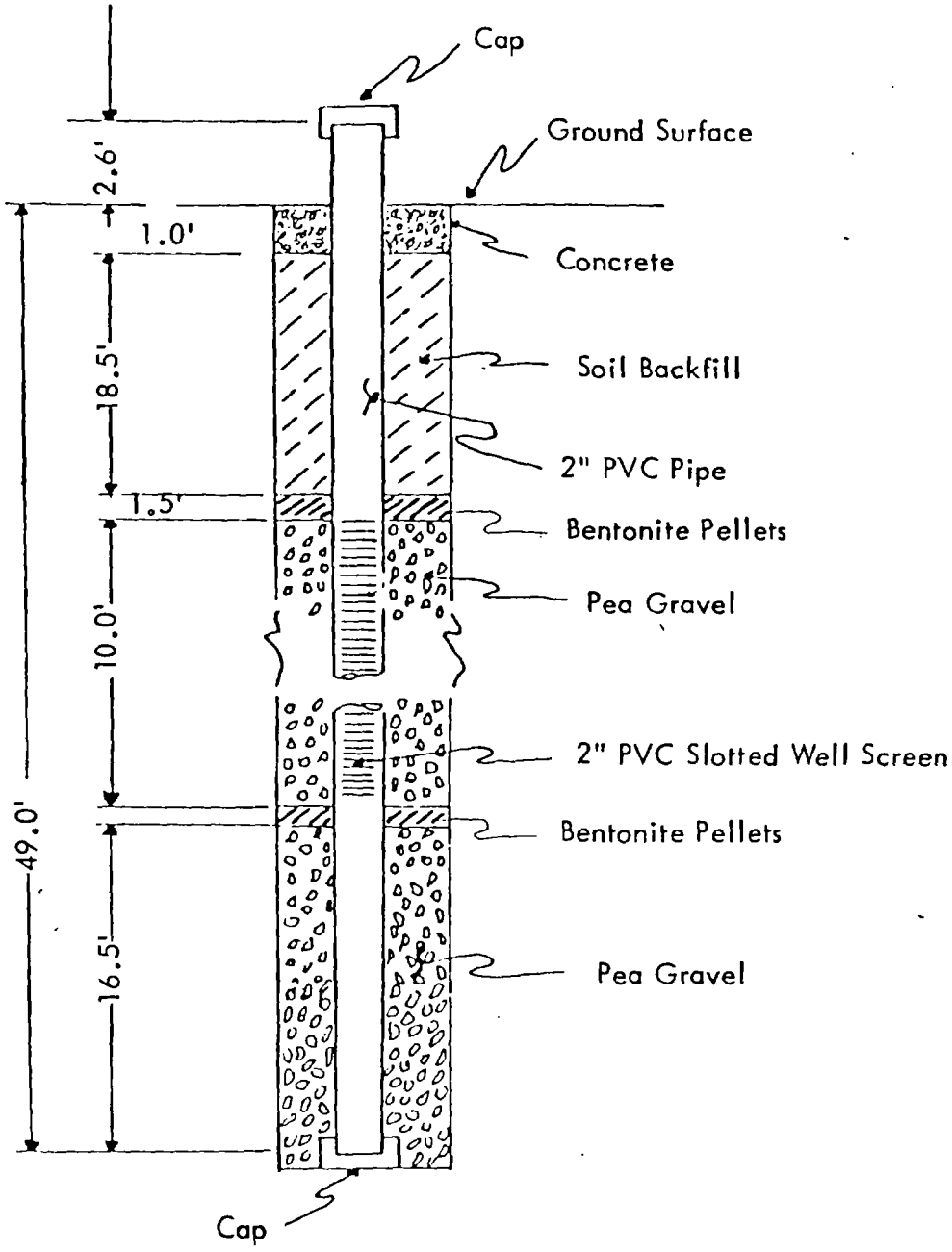
Boring 6
Brighton Landfill Addition
Brighton, Illinois




Not to Scale

PIEZOMETER INSTALLATION SKETCH

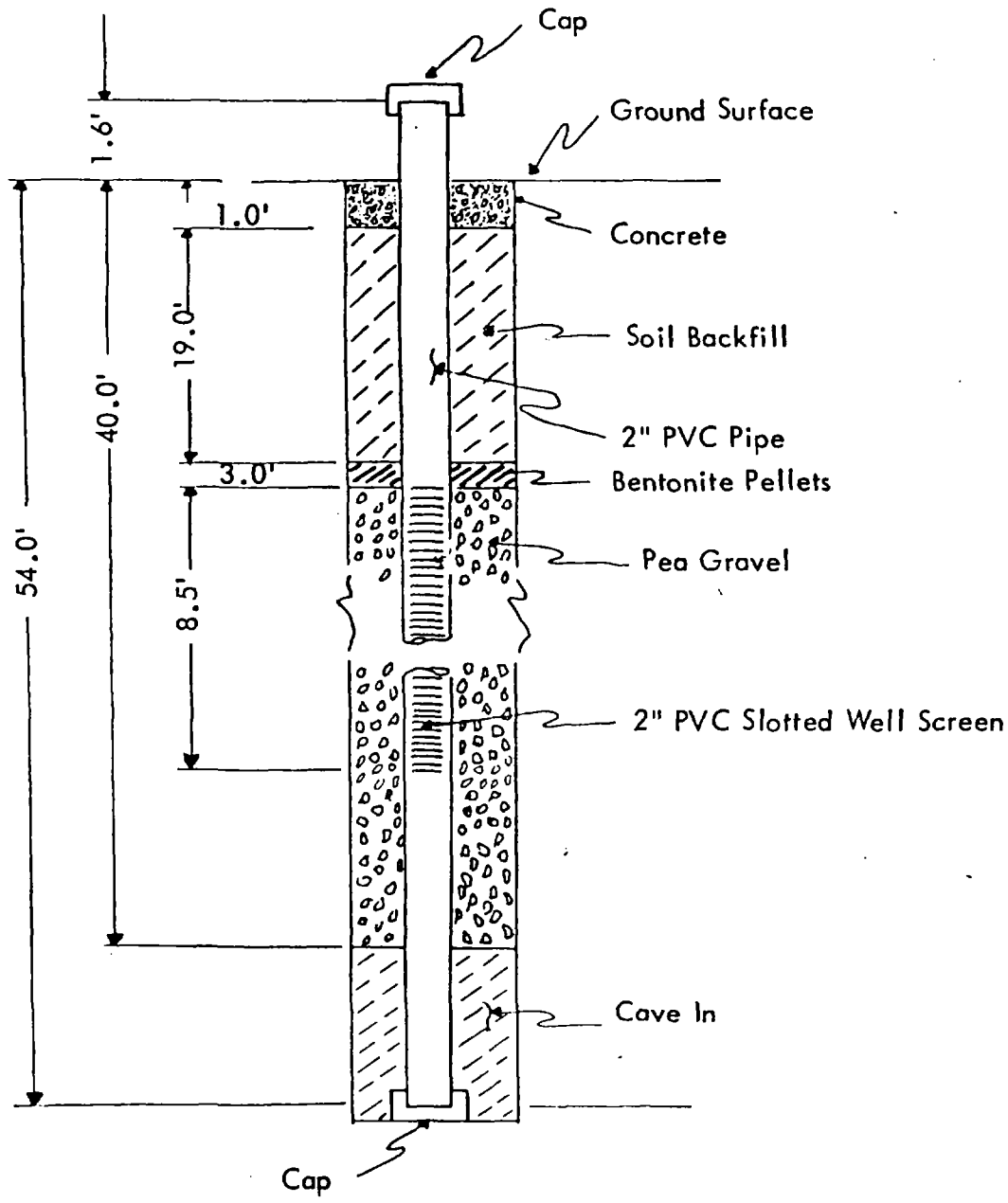
B-7
Brighton Landfill Addition
Brighton, Illinois




NOT TO SCALE

PIEZOMETER INSTALLATION SKETCH

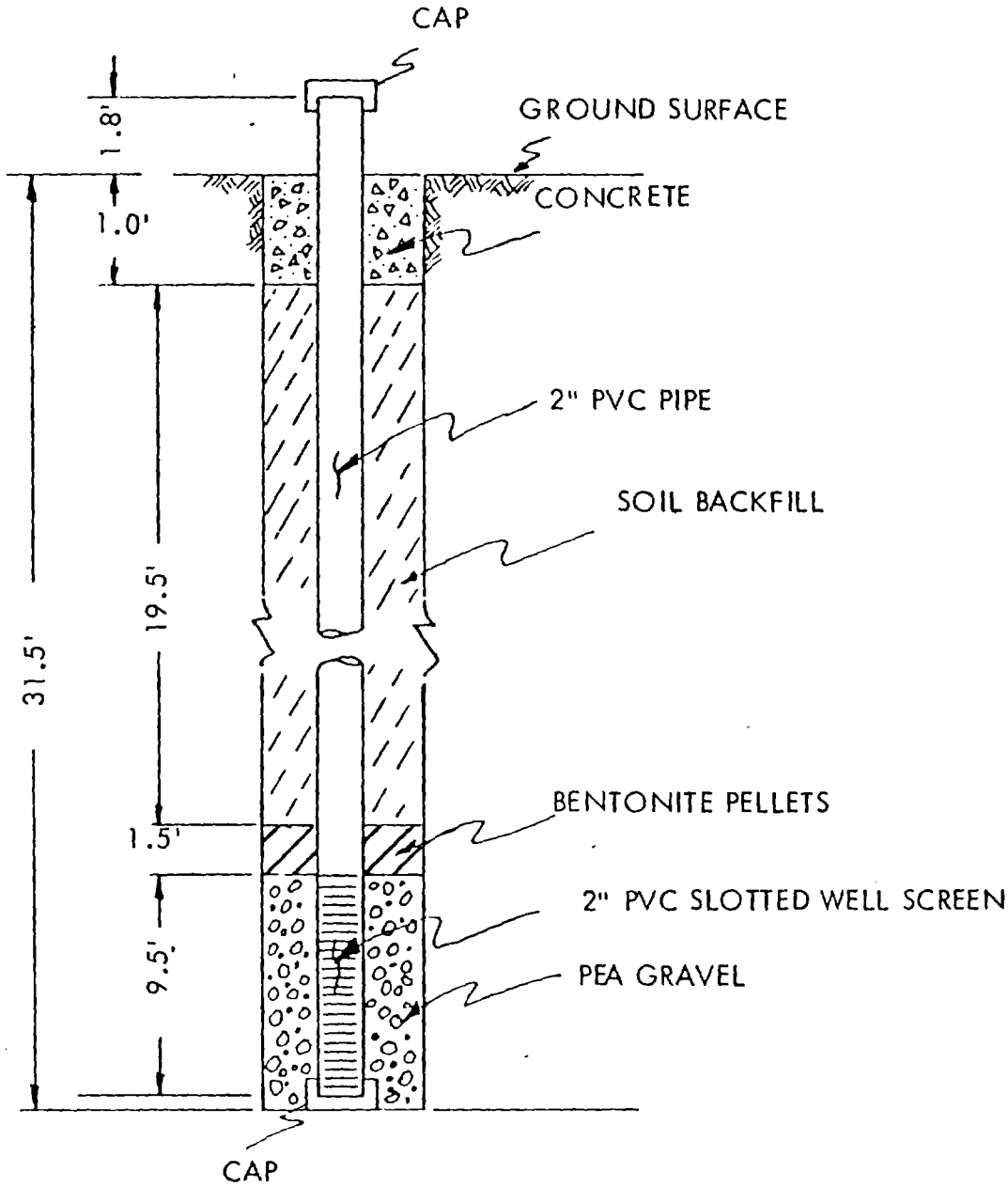
B-8
Brighton Landfill Addition
Brighton, Illinois




NOT TO SCALE

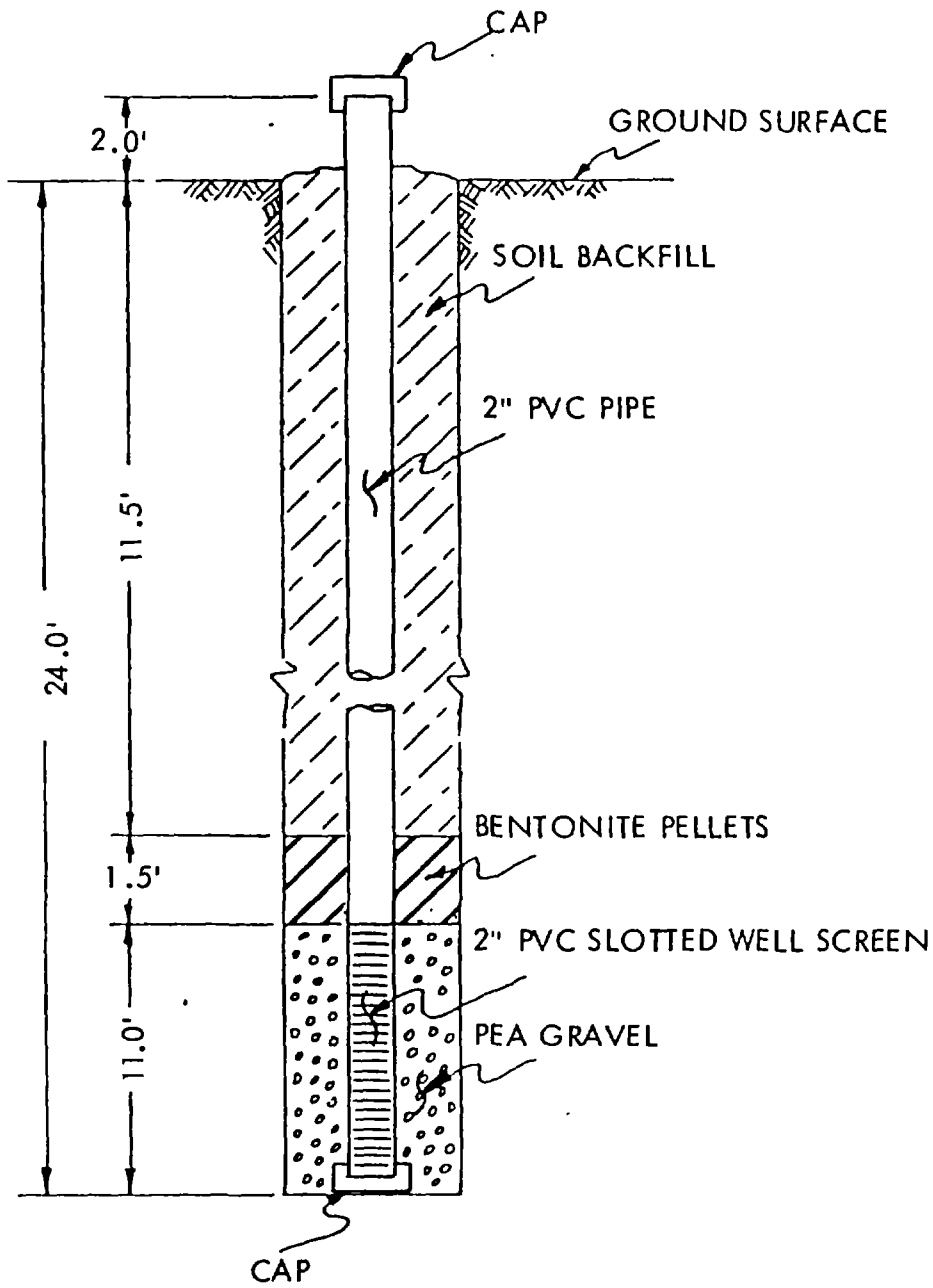
PIEZOMETER INSTALLATION SKETCH

B-9
Brighton Landfill Addition
Brighton, Illinois



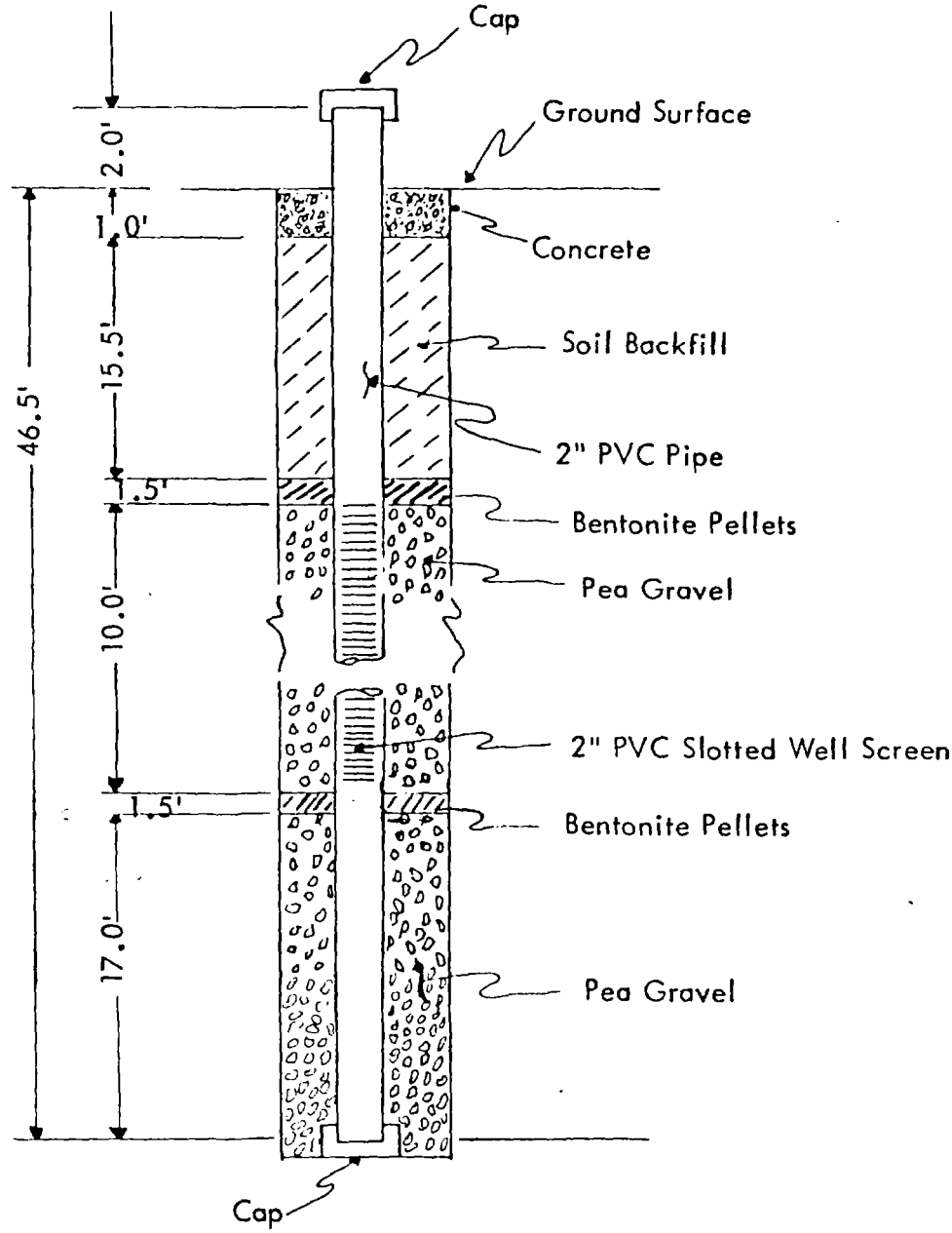

Not to Scale

PIEZOMETER INSTALLATION SKETCH
B-10
BRIGHTON LANDFILL ADDITION
BRIGHTON, ILLINOIS




Not to Scale

PIEZOMETER INSTALLATION SKETCH
B-11
BRIGHTON LANDFILL ADDITION
BRIGHTON, ILLINOIS




NOT TO SCALE

PIEZOMETER INSTALLATION SKETCH

B-12
Brighton Landfill Addition
Brighton, Illinois

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: S SITE NUMBER: 11780201 FILE HEADING: BRIGHTON/BRIGHTON LF MONITOR POINT: G101

| COLLECTION DATE | LAB | PARAMETER 1 NH4 | | PARAMETER 2 P | | PARAMETER 3 FE | | PARAMETER 4 BOD | | PARAMETER 5 | PARAMETER 6 | PARAMETER 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | 1.0000 | | 500.0000 | | | | |
| 04/21/76 | PRI | 0.3300 | 22% | 0.1000 | 10% | 0.9000 | 90% | 220.0000 | 44% | | | |
| *05/15/76 | EPA | | % | 0.1000 | 10% | 26.4000 | 999% | | % | | | |
| 07/27/76 | PRI | 1.5700 | 104% | 0.1000 | 10% | 0.9000 | 90% | 351.0000 | 70% | | | |
| 12/20/76 | PRI | 10.9000 | 726% | 0.0000 | 0% | 2.2000 | 220% | 341.0000 | 68% | | | |
| 02/11/77 | PRI | 3.8000 | 253% | 0.0000 | 0% | 1.1000 | 110% | 472.0000 | 94% | | | |
| 05/05/77 | PRI | 14.2000 | 946% | 0.0000 | 0% | 0.9000 | 90% | 660.0000 | 132% | | | |
| 07/08/77 | PRI | 1.2600 | 84% | 0.07 | % | 3.19 | % | 700.0000 | 140% | | | |
| 10/13/77 | PRI | 6.1000 | 406% | 0.0000 | 0% | 1.9000 | 190% | 700.0000 | 140% | | | |
| 12/13/77 | EPA | 1.8500 | 123% | 0.1000 | 10% | 14.8000 | 999% | 860.0000 | 172% | | | |
| 01/25/78 | PRI | 1.0000 | 66% | 0.1000 | 10% | 3.2000 | 320% | 834.0000 | 166% | | | |
| 05/02/78 | PRI | 1.0000 | 66% | 0.06 | % | < 0.02 | % | 827.0000 | 165% | | | |
| 08/10/78 | PRI | 1.0000 | 66% | 0.2000 | 20% | 2.9000 | 290% | 850.0000 | 170% | | | |
| 09/12/78 | EPA | 0.2000 | 13% | 0.2000 | 20% | 2.5000 | 250% | 860.0000 | 172% | | | |
| 10/27/78 | PRI | 1.0000 | 66% | 0.2 | % | 3.09 | % | 795.0000 | 159% | | | |
| 02/26/79 | PRI | 1.0000 | 66% | 0.6000 | 60% | 1.64 | % | 880.0000 | 176% | | | |
| 06/29/79 | PRI | 0.5000 | 33% | 0.3000 | 30% | 4.2000 | 420% | 920.0000 | 184% | | | |
| 10/10/79 | PRI | 0.5000 | 33% | 0.4000 | 40% | 0.72 | % | 917.0000 | 183% | | | |
| 01/14/80 | PRI | 0.5000 | 33% | 0.1000 | 10% | 1.2000 | 120% | 790.0000 | 158% | | | |
| 04/03/80 | PRI | 0.5000 | 33% | 0.2000 | 20% | 1.2000 | 120% | 781.0000 | 156% | | | |
| 07/31/80 | PRI | 0.1100 | 7% | 0.32 | % | 1.4 | % | 820.0000 | 164% | | | |
| 09/30/80 | PRI | 1.0000 | 66% | 0.37 | % | 0.88 | % | 500.0000 | 100% | | | |
| 12/09/80 | PRI | 1.0000 | 66% | 0.34 | % | 5.10 | % | 840.0000 | 168% | | | |

ATTACHMENT V.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: S SITE NUMBER: 11780201 FILE HEADING: BRIGHTON/BRIGHTON LF MONITOR POINT: G101

| COLLECTION DATE | LAB | PARAMETER 1 NH4 | | PARAMETER 2 H | | PARAMETER 3 FE | | PARAMETER 4 BOD | | PARAMETER 5 | PARAMETER 6 | PARAMETER 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | 1.0000 | | 500.0000 | | | | |
| 04/01/81 | PRI | 1.1800 | 78% | 0.5000 | 50% | 0.2000 | 20% | 864.0000 | 172% | | | |
| 07/07/81 | PRI | 1.4500 | 96% | 0.0000 | 0% | 0.02 | % | 858.0000 | 171% | | | |
| 10/28/81 | PRI | 6.3000 | 420% | 0.0000 | 0% | 0.07 | % | 823.0000 | 164% | | | |
| 01/12/82 | PRI | 2.6200 | 174% | 0.1000 | 10% | 0.0000 | 0% | 793.0 | % | | | |
| 04/07/82 | PRI | 0.7800 | 52% | 1.0000 | 100% | 0.5 | % | 1013.0000 | 202% | | | |

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: S SITE NUMBER: 11780201 FILE HEADING: BRIGHTON/BRIGHTON LF MONITOR POINT: G103

| COLLECTION DATE | LAB | PARAMETER 1 NH4 | | PARAMETER 2 B | | PARAMETER 3 FE | | PARAMETER 4 NOE | | PARAMETER 5 | PARAMETER 6 | PARAMETER 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | 1.0000 | | 500.0000 | | | | |
| 04/21/76 | PRI | 0.3200 | 21% | 0.2000 | 20% | 0.1000 | 10% | 454.0000 | 90% | | | |
| *05/15/76 | EPA | | % | 0.2000 | 20% | 0.8000 | 80% | | % | | | |
| 07/27/76 | PRI | 3.2700 | 218% | 0.1000 | 10% | 1.7000 | 170% | 483.0000 | 96% | | | |
| 12/20/76 | PRI | 9.6000 | 640% | 0.1000 | 10% | 0.1000 | 10% | 500.0000 | 100% | | | |
| 02/11/77 | PRI | 3.6000 | 240% | 0.1000 | 10% | 3.1000 | 310% | 523.0000 | 104% | | | |
| 05/05/77 | PRI | 12.7000 | 846% | 0.1000 | 10% | 1.4000 | 140% | 506.0000 | 101% | | | |
| 07/08/77 | PRI | 0.0400 | 2% | 0.23 | % | 0.01 | % | 490.0000 | 98% | | | |
| 10/13/77 | PRI | 5.0000 | 333% | 0.2000 | 20% | 0.5000 | 50% | 534.0000 | 106% | | | |
| 12/13/77 | EPA | 6.8000 | 453% | 0.4000 | 40% | 3.7000 | 370% | 510.0000 | 102% | | | |
| 01/25/78 | PRI | 1.6000 | 106% | 0.3000 | 30% | 8.7000 | 870% | 494.0000 | 98% | | | |
| 05/02/78 | PRI | 1.0000 | 66% | 0.2000 | 20% | 1.3000 | 130% | 493.0000 | 98% | | | |
| 08/10/78 | PRI | 1.0000 | 66% | 0.3000 | 30% | 4.7000 | 470% | 492.0000 | 98% | | | |
| 09/12/78 | EPA | 1.8000 | 120% | 0.4000 | 40% | 3.8000 | 380% | 515.0000 | 103% | | | |
| 10/27/78 | PRI | 0.1 | % | 0.94 | % | 2.05 | % | 475.0000 | 95% | | | |
| 02/26/79 | PRI | 1.0000 | 66% | 3.2000 | 320% | 28.0000 | 999% | 480.0000 | 96% | | | |
| 06/29/79 | PRI | 0.5000 | 33% | 0.5000 | 50% | 34.0000 | 999% | 480.0 | % | | | |
| 10/10/79 | PRI | 0.5000 | 33% | 1.2000 | 120% | 7.78 | % | 484.0000 | 96% | | | |
| 01/14/80 | PRI | 0.5000 | 33% | 0.3000 | 30% | 29.4000 | 999% | 424.0000 | 84% | | | |
| 04/03/80 | PRI | 0.5000 | 33% | 0.35 | % | 230.0000 | 999% | 485.0000 | 97% | | | |
| 07/31/80 | PRI | 0.2600 | 17% | 0.32 | % | 4.87 | % | 398.0000 | 79% | | | |
| 09/30/80 | PRI | 1.0000 | 66% | 0.43 | % | 5.82 | % | 464.0000 | 92% | | | |
| 12/09/80 | PRI | 7.2800 | 485% | 0.45 | % | 8.32 | % | 468.0000 | 93% | | | |

PROG: LPGW430
LIST: LPGWP430

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT

REGION: S SITE NUMBER: 11780201 FILE HEADING: BRIGHTON/BRIGHTON LF MONITOR POINT: G103

| COLLECTION DATE | LAB | PARAMETER 1 NH4 | | PARAMETER 2 B | | PARAMETER 3 FE | | PARAMETER 4 KDE | | PARAMETER 5 | PARAMETER 6 | PARAMETER 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | 1.0000 | | 500.0000 | | | | |
| 04/01/81 | PRI | 0.6400 | 42% | 0.3000 | 30% | 0.2000 | 20% | 453.0000 | 90% | | | |
| 07/07/81 | PRI | 1.0000 | 66% | 0.0000 | 0% | 0.36 | % | 400.0000 | 80% | | | |
| 10/28/81 | PRI | 2.2500 | 150% | 0.7000 | 70% | 0.03 | % | 362.0000 | 72% | | | |
| 01/12/82 | PRI | 0.3700 | 24% | 0.3000 | 30% | 0.0000 | 0% | 417.0000 | 83% | | | |
| 04/07/82 | PRI | 0.0900 | 6% | 0.8000 | 80% | 0.05 | % | 462.0000 | 92% | | | |
| 05/17/82 | TERA | | | | | 42.0 | | | | | | |

| | | CD | CRT | CU | PB | MG | MN | NI | ZN |
|---|---|---|---|---|---|---|---|---|---|
| 05/17/82 | TERA | 0.2 | 0.04 | 3.6 | 0.0 | 36.0 | 2.2 | 2.3 | 2.1 |

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: S SITE NUMBER: 11780201 FILE HEADING: BRIGHTON/BRIGHTON LF MONITOR POINT: G104

| COLLECTION DATE | LAB | PARAMETER 1 NH4 | | PARAMETER 2 B | | PARAMETER 3 FE | | PARAMETER 4 KOE | | PARAMETER 5 | PARAMETER 6 | PARAMETER 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | 1.0000 | | 500.0000 | | | | |
| 04/21/76 | PRI | 0.7900 | 52% | 0.1000 | 10% | 1.8000 | 180% | 454.0000 | 90% | | | |
| * 05/15/76 | EPA | | % | 0.1000 | 10% | 1.8000 | 180% | | % | | | |
| 07/27/76 | PRI | 0.9900 | 66% | 0.2000 | 20% | 0.4000 | 40% | 458.0000 | 91% | | | |
| 12/20/76 | PRI | 10.5000 | 700% | 0.3000 | 30% | 0.7000 | 70% | 470.0000 | 94% | | | |
| 02/11/77 | PRI | 1.3000 | 86% | 0.2000 | 20% | 0.7000 | 70% | 552.0000 | 110% | | | |
| 05/05/77 | PRI | 13.4000 | 893% | 0.2000 | 20% | 0.4000 | 40% | 474.0000 | 94% | | | |
| 07/08/77 | PRI | 0.6400 | 42% | | % | | % | 330.0000 | 66% | | | |
| 10/13/77 | PRI | 4.0000 | 266% | 0.1000 | 10% | 6.6000 | 660% | 333.0000 | 66% | | | |
| 12/13/77 | EPA | 7.2000 | 480% | 0.4000 | 40% | 14.5000 | 999% | 485.0000 | 97% | | | |
| 01/25/78 | PRI | 3.6000 | 240% | 0.4000 | 40% | 14.4000 | 999% | 305.0000 | 61% | | | |
| 05/02/78 | PRI | 41.0000 | 999% | 1.6000 | 160% | 33.6000 | 999% | 1760.0000 | 352% | | | |
| 08/10/78 | PRI | 35.0000 | 999% | 1.6000 | 160% | 37.0000 | 999% | 1270.0000 | 254% | | | |
| 09/12/78 | EPA | | % | | % | | % | | % | | | |
| 10/27/78 | PRI | 34.0000 | 999% | 1.92 | % | 14.7000 | 999% | 1130.0000 | 226% | | | |
| 02/26/79 | PRI | 32.6000 | 999% | 14.5000 | 999% | 10.8000 | 999% | 990.0000 | 198% | | | |
| 06/29/79 | PRI | 0.5000 | 33% | 1.5000 | 150% | 9.0000 | 900% | 490.0000 | 98% | | | |
| 10/10/79 | PRI | 9.5000 | 633% | 1.3000 | 130% | 4.06 | % | 622.0000 | 124% | | | |
| 01/14/80 | PRI | 12.5000 | 833% | 0.8000 | 80% | 21.1000 | 999% | 816.0000 | 163% | | | |
| 04/03/80 | PRI | 0.5000 | 33% | 3.2000 | 320% | 1.4000 | 140% | 1590.0000 | 318% | | | |
| 07/31/80 | PRI | 6.8000 | 453% | 0.9 | % | 9.29 | % | 685.0000 | 137% | | | |
| 09/30/80 | PRI | 6.4000 | 560% | 0.92 | % | 13.5000 | 999% | 588.0000 | 117% | | | |
| 12/09/80 | PRI | 1.0000 | 66% | 0.67 | % | 7.26 | % | 668.0000 | 133% | | | |

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: 5 SITE NUMBER: 11780201 FILE HEADING: BRIGHTON/BRIGHTON LF MONITOR POINT: G104

| COLLECTION DATE | LAB | PARAMETER 1 NH4 | | PARAMETER 2 K | | PARAMETER 3 FE | | PARAMETER 4 PDE | | PARAMETER 5 | PARAMETER 6 | PARAMETER 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | 1.0000 | | 500.0000 | | | | |
| 04/01/81 | PRI | 5.8000 | 386% | 0.3000 | 30% | 0.2000 | 20% | 642.0000 | 128% | | | |
| 07/07/81 | PRI | 0.5900 | 39% | 0.0000 | 0% | 0.20 | % | 145.0000 | 29% | | | |
| 10/28/81 | PRI | 2.1000 | 140% | 0.5000 | 50% | 0.18 | % | 229.0000 | 45% | | | |
| 01/12/82 | PRI | 2.4500 | 163% | 0.6000 | 60% | 0.0000 | 0% | 582.0000 | 116% | | | |
| 04/07/82 | PRI | 2.9800 | 198% | 1.0000 | 100% | 0.0000 | 0% | 563.0000 | 112% | | | |
| 05/17/82 | IEPA | | | | | 120.0 | | | | | | |

| | | CD | CRT | CU | PB | MG | MN | NI | ZN |
|---|---|---|---|---|---|---|---|---|---|
| 05/17/82 | IEPA | 0.02 | 0.21 | 1.5 | 0.0 | 140.0 | 6.1 | 0.3 | 1.1 |

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: S SITE NUMBER: 11780203 FILE HEADING: BRIGHTON L F #2 MONITOR POINT: G107

| COLLECTION DATE | LAB | PARAMETER 1 NH4 | | PARAMETER 2 N | | PARAMETER 3 COD | | PARAMETER 4 FE | | PARAMETER 5 MOE | | PARAMETER 6 | | PARAMETER 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | | | 1.0000 | | 500.0000 | | | | | |
| * 09/18/79 | EPA | 0.1500 | 10% | 0.1000 | 10% | 255.0000 | % | 87.0000 | 999% | 700.0000 | 140% | | | | |
| 10/10/79 | PRI | 0.5000 | 33% | 0.55 | % | 72.0000 | % | 7.38 | % | 961.0000 | 192% | | | | |
| * 12/02/79 | PRI | 0.5000 | 33% | 0.14 | % | 440.0000 | % | 286.0000 | 999% | 800.0000 | 160% | | | | |
| 01/14/80 | PRI | 0.5000 | 33% | 0.6000 | 60% | 124.0000 | % | 79.9000 | 999% | 658.0000 | 131% | | | | |
| 04/13/80 | PRI | 0.5 | % | 0.8 | % | 20.0 | % | 58.3 | % | 502.0 | % | | | | |
| 07/31/80 | PRI | 0.1000 | 6% | 0.77 | % | 49.0000 | % | 170.05 | % | 710.0000 | 142% | | | | |
| 09/30/80 | PRI | 1.0000 | 66% | 0.37 | % | 41.0000 | % | 318.0000 | 999% | 650.0000 | 130% | | | | |
| 12/09/80 | PRI | 1.0000 | 66% | 0.15 | % | 32.0000 | % | 510.0 | % | 760.0000 | 152% | | | | |
| 04/01/81 | PRI | 0.5400 | 36% | 2.7000 | 270% | 4.0000 | % | 0.4000 | 40% | 1416.0000 | 283% | | | | |
| 07/07/81 | PRI | 0.4700 | 31% | 0.0000 | 0% | 1.0000 | % | 0.27 | % | 951.0000 | 190% | | | | |
| 10/28/81 | PRI | 0.3800 | 25% | 0.3000 | 30% | 35.0000 | % | 0.02 | % | 1352.0000 | 270% | | | | |
| 01/12/82 | PRI | 0.1400 | 9% | 0.0000 | 0% | 12.0000 | % | 0.0000 | 0% | 951.0000 | 190% | | | | |
| 04/07/82 | PRI | 0.0700 | 4% | 1.4000 | 140% | 19.0000 | % | 0.0000 | 0% | 1350.0000 | 270% | | | | |
| 05/17/82 | IEPA | | | | | | | 75.0 | | | | | | | |

| | | CD | CRT | CU | PB | MG | MN | NI | ZN |
|---|---|---|---|---|---|---|---|---|---|
| 05/17/82 | IEPA | 0.0 | 0.14 | 0.26 | 0.56 | 250.0 | 2.9 | 0.2 | 0.6 |

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: S SITE NUMBER: 11780203 FILE HEADING: BRIGHTON L F #2 MONITOR POINT: G106

| COLLECTION DATE | LAB | PARAMETER 1 BOD | | PARAMETER 2 B | | PARAMETER 3 COD | | PARAMETER 4 FE | | PARAMETER 5 RDE | | PARAMETER 6 | PARAMETER 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | | | 1.0000 | | 500.0000 | | | |
| *09/18/79 | EPA | 0.5500 | 36% | 0.3000 | 30% | 100.0000 | % | 160.0000 | 999% | 2090.0000 | 418% | | |
| 10/16/79 | PRI | 0.5000 | 33% | 0.92 | % | 140.0000 | % | 1.10 | % | 2110.0000 | 422% | | |
| *12/02/79 | PRI | 0.5000 | 33% | 0.3 | % | 123.0000 | % | 2.9000 | 290% | 2175.0000 | 435% | | |
| 01/14/80 | PRI | 0.5000 | 33% | 0.3000 | 30% | 99.0000 | % | 1.5000 | 150% | 2045.0000 | 409% | | |
| 04/03/80 | PRI | 0.5000 | 33% | 1.6000 | 160% | 10.0000 | % | 0.3000 | 30% | 859.0000 | 171% | | |
| 07/31/80 | PRI | 0.4000 | 26% | 0.68 | % | 50.0000 | % | 6.69 | % | 2038.0000 | 407% | | |
| 09/30/80 | PRI | 1.0000 | 66% | 0.58 | % | 62.0000 | % | 7.87 | % | 2080.0000 | 416% | | |
| 12/09/80 | PRI | 1.0000 | 66% | 0.36 | % | 64.0000 | % | 3.69 | % | 1950.0000 | 390% | | |
| 04/01/81 | PRI | 0.7500 | 50% | 0.1000 | 10% | 10.0000 | % | 0.2000 | 20% | 2004.0000 | 400% | | |
| 07/07/81 | PRI | 1.3400 | 89% | 0.0000 | 0% | 31.0000 | % | 0.13 | % | 2007.0000 | 401% | | |
| 10/28/81 | PRI | 2.3000 | 153% | 0.6000 | 60% | 36.0000 | % | 0.21 | % | 1929.0000 | 385% | | |
| 01/12/82 | PRI | 0.5300 | 35% | 0.1000 | 10% | 38.0000 | % | 0.0000 | 0% | 1894.0000 | 378% | | |
| 04/07/82 | PRI | 0.1800 | 12% | 0.1000 | 10% | 7.0000 | % | 0.0000 | 0% | 2135.0000 | 427% | | |
| 05/17/82 | IEPA | | | | | | | 65.0 | | | | | |

| | | CD | CRT | CU | PB | MG | MN | NI | ZN |
|---|---|---|---|---|---|---|---|---|---|
| 05/17/82 | IEPA | 0.01 | 0.04 | 0.7 | 0.21 | 310.0 | 4.9 | 0.1 | 0.9 |

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: S SITE NUMBER: 11780203 FILE HEADING: BRIGHTON L F #2 MONITOR POINT: G109

| COLLECTION DATE | LAB | PARAMETER 1 NH4 | | PARAMETER 2 B | | PARAMETER 3 COD | | PARAMETER 4 FE | | PARAMETER 5 BOD | | PARAMETER 6 | | PARAMETER 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | | | 1.0000 | | 500.0000 | | | | | |
| * 09/18/79 | EPA | 1.3000 | 86% | 0.2000 | 20% | 320.0000 | % | 42.0000 | 999% | 1880.0000 | 376% | | | | |
| 10/10/79 | PRI | 0.5000 | 33% | 0.53 | % | 36.0000 | % | 0.28 | % | 1670.0000 | 334% | | | | |
| * 12/02/79 | PRI | 0.5000 | 33% | 0.36 | % | 70.0000 | % | 9.9000 | 990% | 1979.0000 | 395% | | | | |
| 01/14/80 | PRI | 0.5000 | 33% | 0.25 | % | 75.0000 | % | 2.6000 | 260% | 1346.0000 | 269% | | | | |
| 04/03/80 | PRI | 0.5000 | 33% | 0.0000 | 0% | 11.0000 | % | 55.6000 | 999% | 621.0000 | 124% | | | | |
| ) 07/31/80 | PRI | 0.2000 | 13% | 0.66 | % | 89.0000 | % | 63.72 | % | 2958.0000 | 591% | | | | |
| 09/30/80 | PRI | 1.0000 | 66% | 0.19 | % | 63.0000 | % | 6.70 | % | 2320.0000 | 464% | | | | |
| 12/09/80 | PRI | 1.0000 | 66% | 0.1 | % | 30.0000 | % | 1.12 | % | 2074.0000 | 414% | | | | |
| 04/01/81 | PRI | 0.4700 | 31% | 0.5000 | 50% | 13.0000 | % | 0.1000 | 10% | 2790.0000 | 558% | | | | |
| 07/07/81 | PRI | 0.2800 | 18% | 0.0000 | 0% | 18.0000 | % | 0.10 | % | 1878.0000 | 375% | | | | |
| 10/28/81 | PRI | 1.5700 | 104% | 0.3000 | 30% | 8.0000 | % | 0.05 | % | 1217.0000 | 243% | | | | |
| 01/12/82 | PRI | 0.0000 | 0% | 0.0000 | 0% | 21.0000 | % | 0.0000 | 0% | 1512.0000 | 302% | | | | |
| 04/07/82 | PRI | 0.6000 | 53% | 2.0000 | 200% | 6.0000 | % | 0.0000 | 0% | 1592.0000 | 318% | | | | |
| 05/17/82 | IEPA | | | | | | | 28.0 | | | | | | | |

| | | CD | CRT | CU | PB | MG | MN | NI | ZN |
|---|---|---|---|---|---|---|---|---|---|
| ) 05/17/82 | IEPA | 0.0 | 0.03 | 0.41 | 0.22 | 140.0 | 1.2 | 0.0 | 0.3 |

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
LANDFILL WATER QUALITY SYSTEM - TREND ANALYSIS REPORT



REGION: 9 SITE NUMBER: 11780203 FILE HEADING: BRIGHTON L F #2 MONITOR POINT: G108

| COLLECTION DATE | LAB | PARAMETER 1 OHH | | PARAMETER 2 H | | PARAMETER 3 COD | | PARAMETER 4 FE | | PARAMETER 5 RDE | | PARAMETER 6 | | PARAMETER 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STANDARD | | 1.5000 | | 1.0000 | | | | 1.0000 | | 500.0000 | | | | | |
| *09/18/79 | EPA | 0.1000 | 6% | 0.1000 | 10% | 45.0000 | % | 2.4000 | 240% | 1000.0000 | 200% | | | | |
| 10/19/79 | PRI | 0.5000 | 33% | 2.1000 | 210% | 30.0000 | % | 1.68 | % | 960.0000 | 192% | | | | |
| *12/02/79 | PRI | 0.5000 | 33% | 0.1000 | 10% | 29.0000 | % | 2.1000 | 210% | 927.0000 | 185% | | | | |
| 01/14/80 | PRI | 0.5000 | 33% | 0.1000 | 10% | 66.0000 | % | 2.1000 | 210% | 834.0000 | 166% | | | | |
| 04/03/80 | PRI | 0.5000 | 33% | 0.4000 | 40% | 9.0000 | % | 1.3000 | 130% | 2020.0000 | 404% | | | | |
| 07/31/80 | PRI | 0.1000 | 6% | 0.17 | % | 28.0000 | % | 5.47 | % | 904.0000 | 180% | | | | |
| 09/30/80 | PRI | 1.0000 | 66% | 0.66 | % | 16.0000 | % | 3.63 | % | 1010.0000 | 202% | | | | |
| 12/09/80 | PRI | 1.0000 | 66% | 0.21 | % | 15.0000 | % | 4.08 | % | 961.0000 | 192% | | | | |
| 04/01/81 | PRI | 0.5900 | 39% | 0.1000 | 10% | 12.0000 | % | 0.1000 | 10% | 1023.0000 | 204% | | | | |
| 07/07/81 | PRI | 0.4000 | 26% | 0.0000 | 0% | 39.0000 | % | 0.23 | % | 492.0000 | 98% | | | | |
| 10/28/81 | PRI | 0.6400 | 42% | 0.5000 | 50% | 19.0000 | % | 0.09 | % | 1092.0000 | 218% | | | | |
| 01/12/82 | PRI | 0.0000 | 0% | 0.0000 | 0% | 28.0000 | % | 0.0000 | 0% | 367.0000 | 73% | | | | |
| 04/07/82 | PRI | 0.5600 | 37% | 0.0000 | 0% | 171.0000 | % | 0.0000 | 0% | 992.0000 | 198% | | | | |
| 05/10/82 | IEPA | | | | | | | 61.0 | | | | | | | |

| | | CD | CRT | CU | PB | MG | MN | NI | ZN |
|---|---|---|---|---|---|---|---|---|---|
| 05/17/82 | IEPA | 0.63 | 0.06 | 1.0 | 0.25 | 290.0 | 6.7 | 0.2 | 18 |

| COLLECTION DATE | LAB | PARAMETER 1 | PARAMETER 2 | PARAMETER 3 | PARAMETER 4 | PARAMETER 5 | PARAMETER 6 | PARAMETER 7 |
|---|---|---|---|---|---|---|---|---|

TOTAL RECORDS READ 20,696

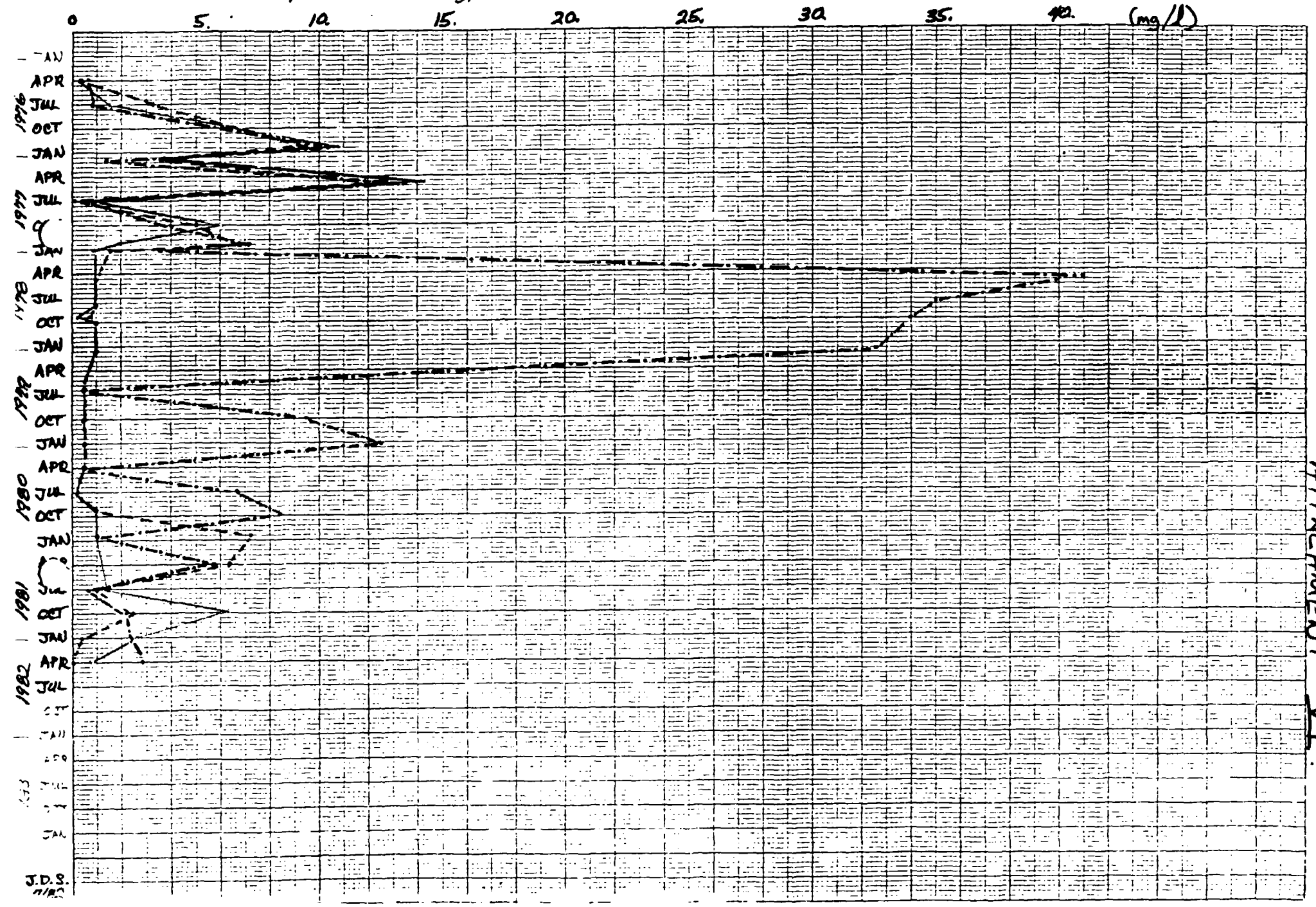
TOTAL CARDS READ 7

SITE Brighton/Brighton LF #1 LPC# 11780201

PARAMETER Ammonia $NH_4$ LIMIT 1.5 mg/l

KEY

—— G101 - - - G103 —·—·— G104



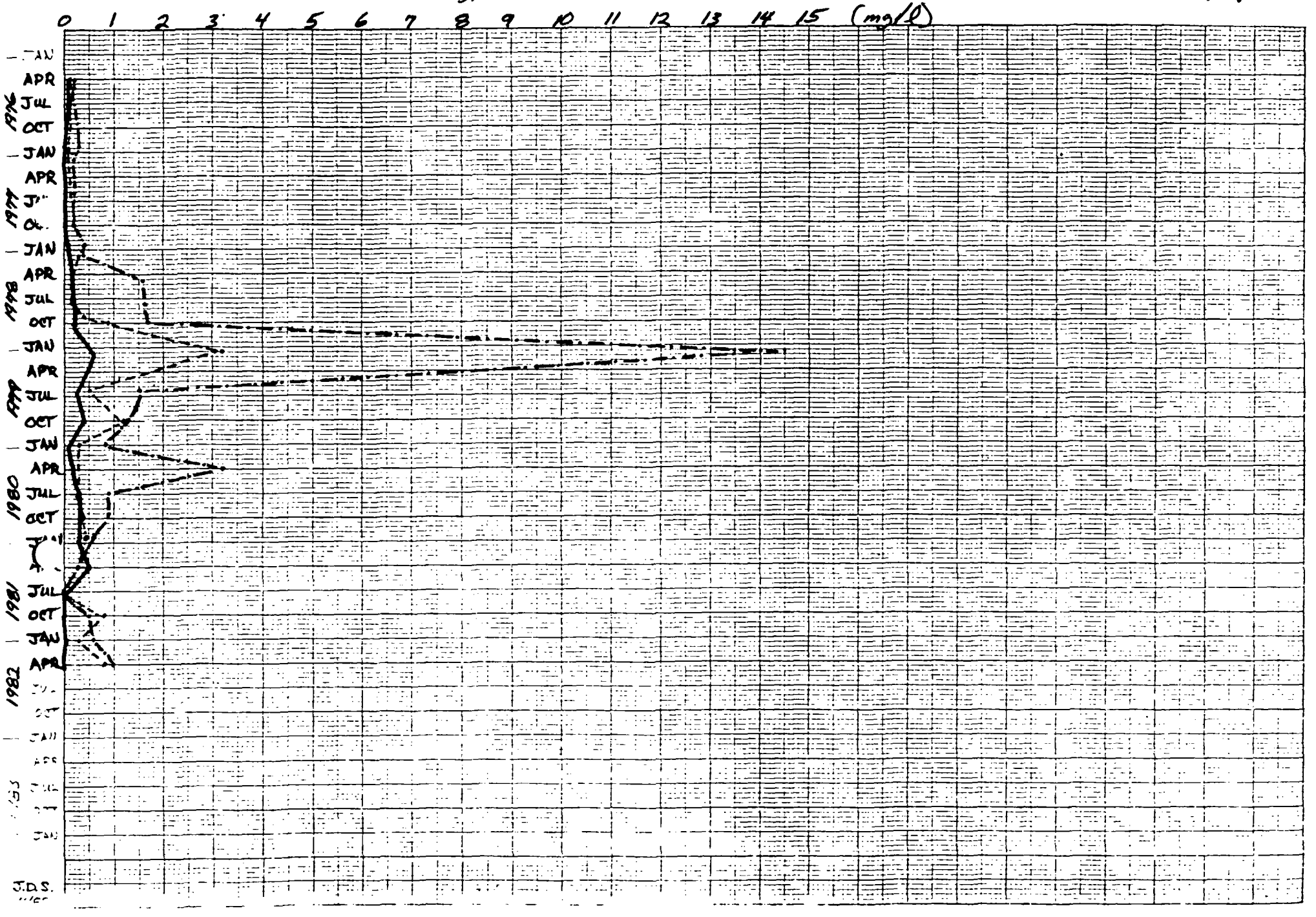

ATTACHMENT VI

SITE Brighton/Brighton L.F. #1 LPC # 11780201

PARAMETER Boron B LIMIT 1.0 mg/l

KEY

—— G101 ----G103 —·—·— G104

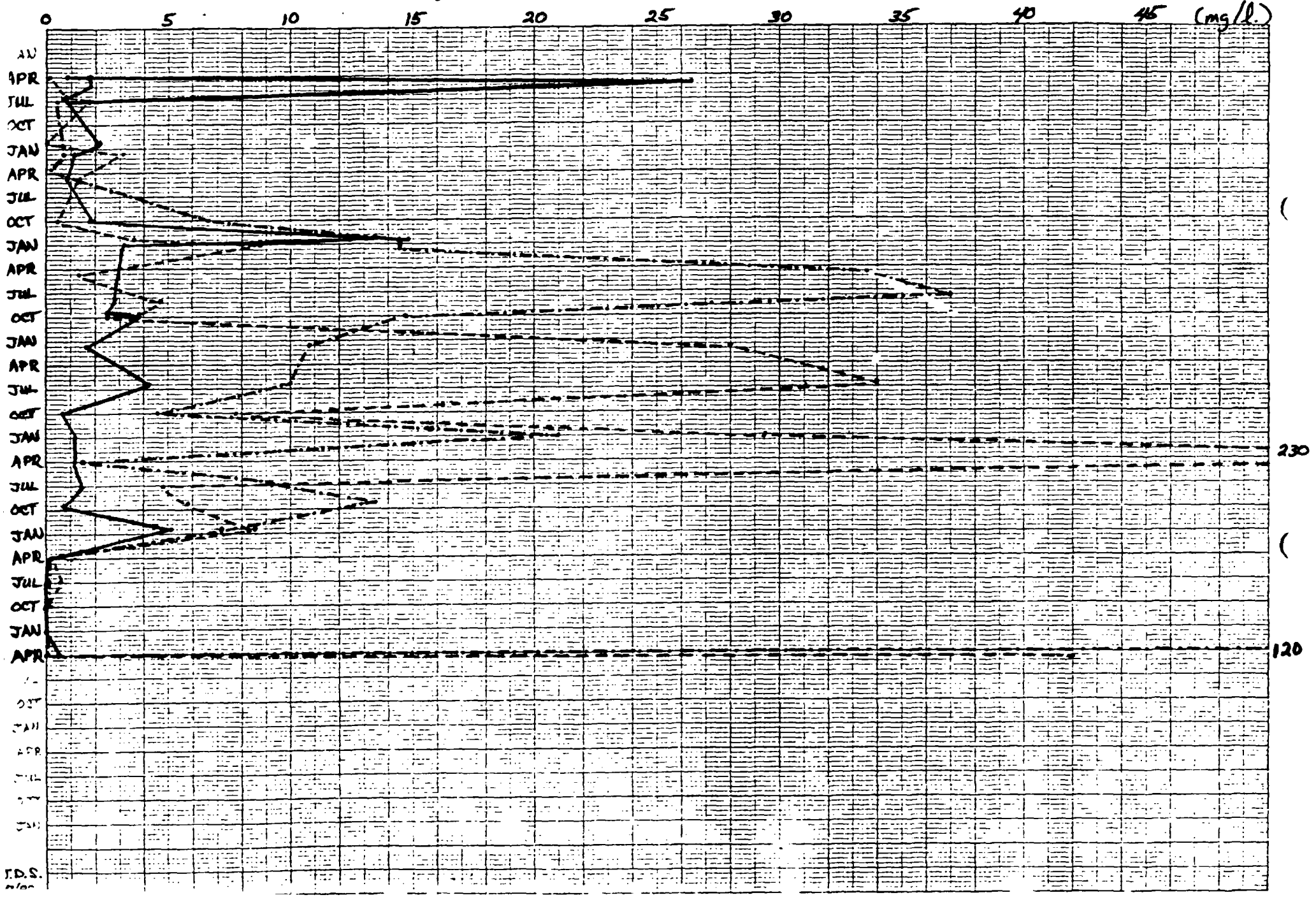


SITE Brighton/Brighton L.F. #1 LPC #1780201

PARAMETER Iron Fe UNIT 1.0 mg/l

KEY

—— G101 ----- G103 -.-.-.- G104

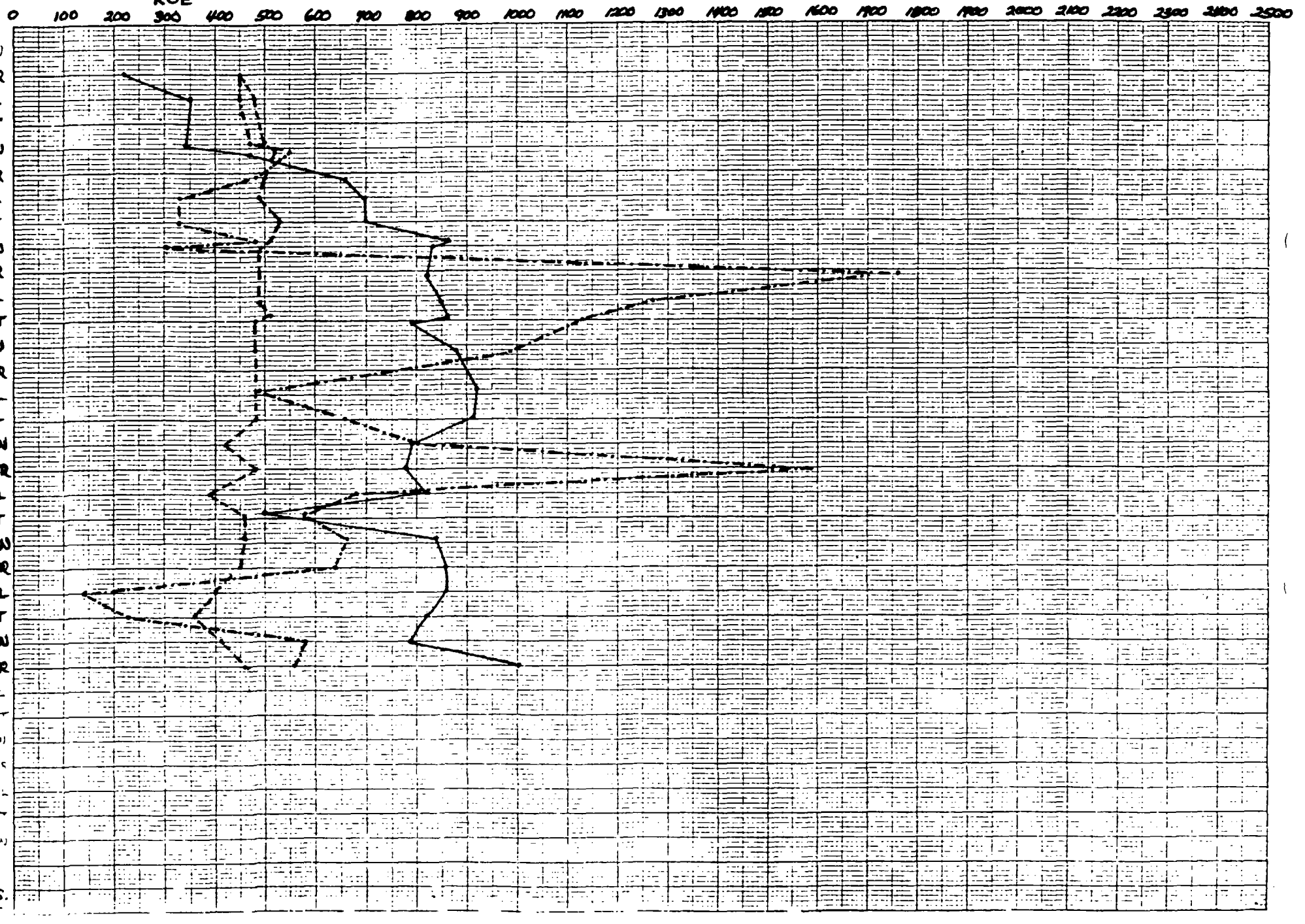


SITE Brighton/Brighton LF #1 LPC # 11780201

PARAMETER Residue on Evaporation ROE LIMIT 500. mg/l

KEY

—— G101 ---- G103 -·-·- G104

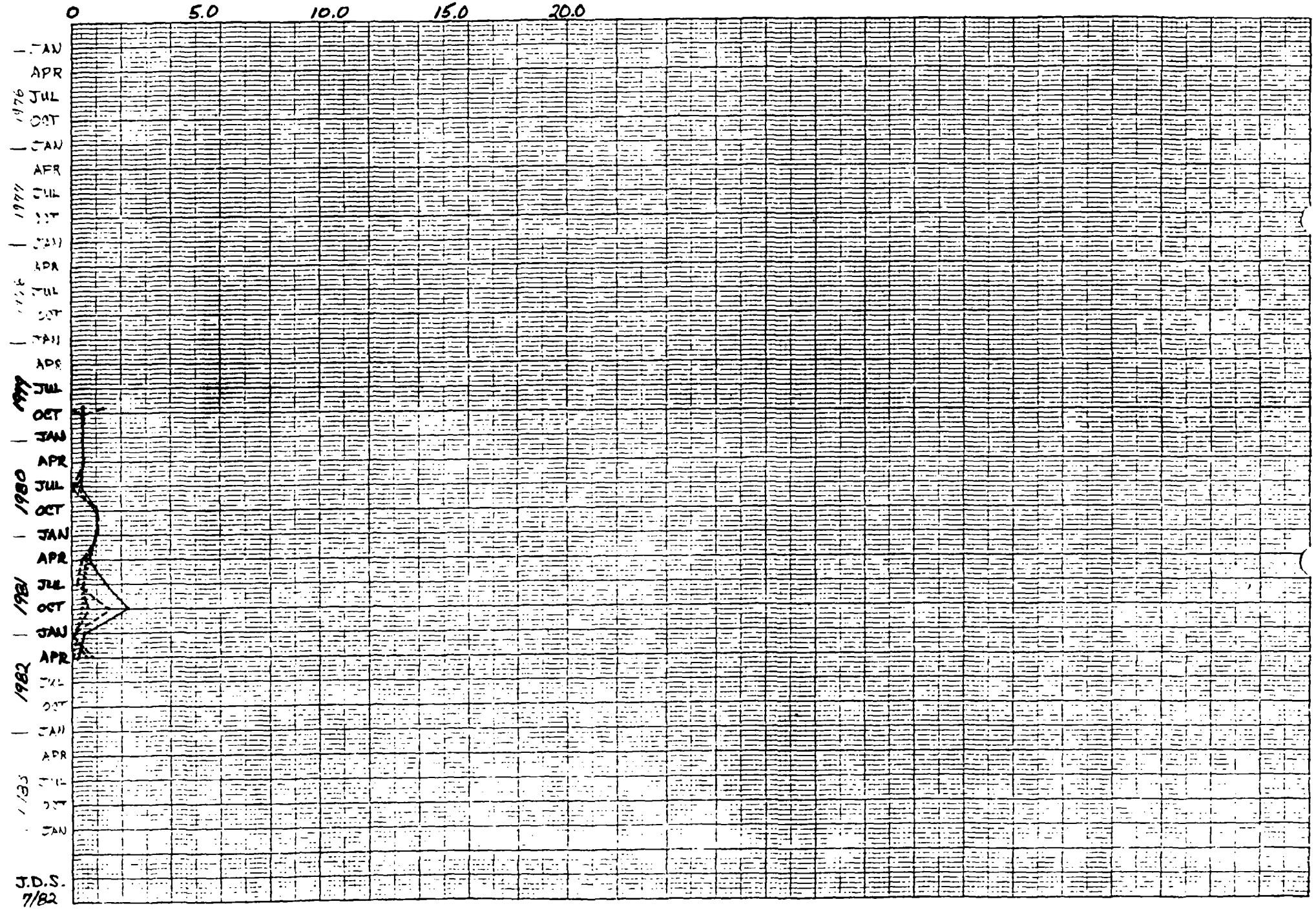


SITE Brighton/Brighton L.F. #2 LPC # 11780203

PARAMETER Ammonia $NH_4$ LIMIT 1.5

KEY

—— G106 ····· G107 -·-·- G108 ----- G109

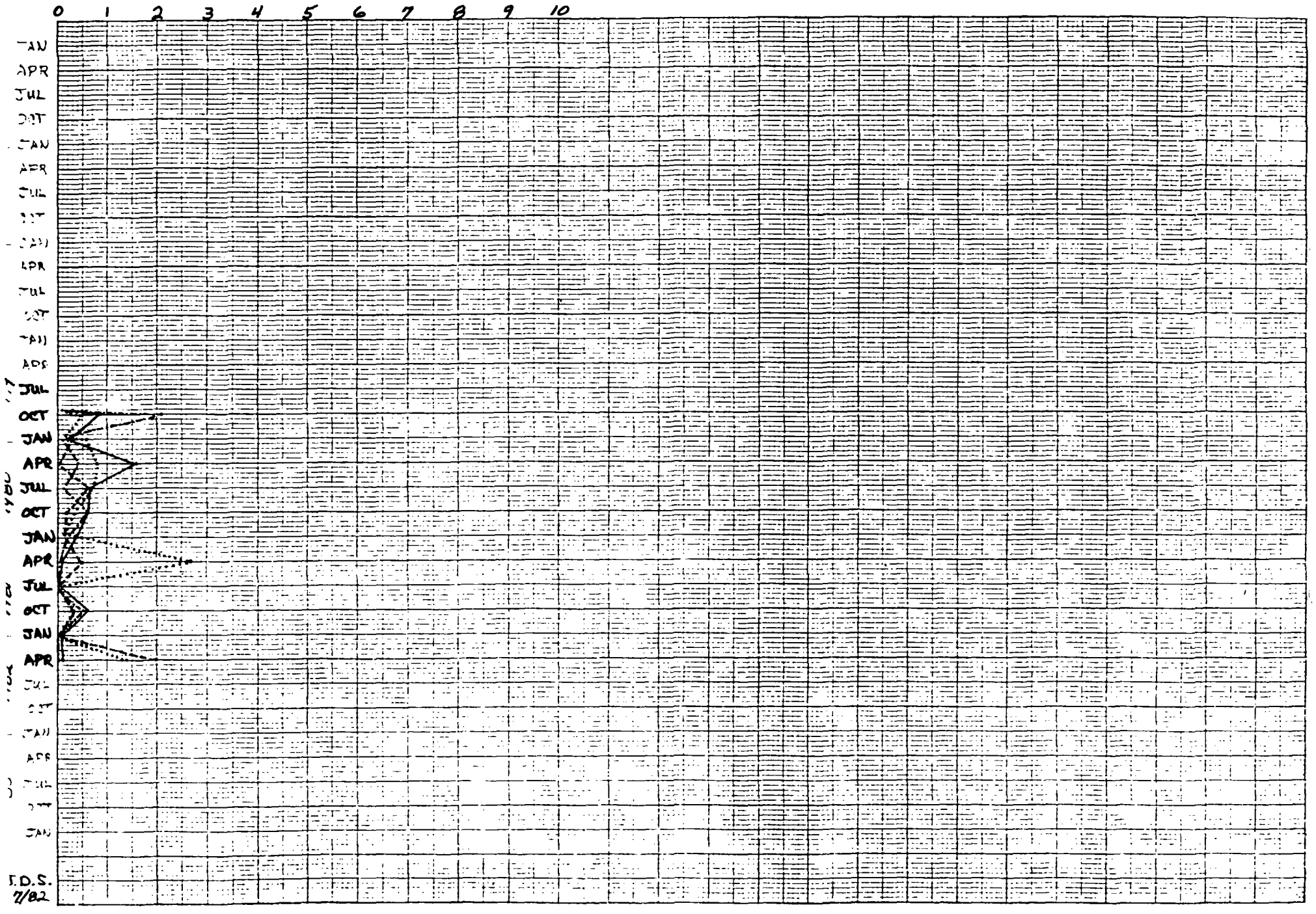


SITE Brighton/Brighton L.F. #2 LPC # 11780203

PARAMETER Boron B LIMIT 1.0

KEY

—— G106 ····· G107 -·-·- G108 ----- G109



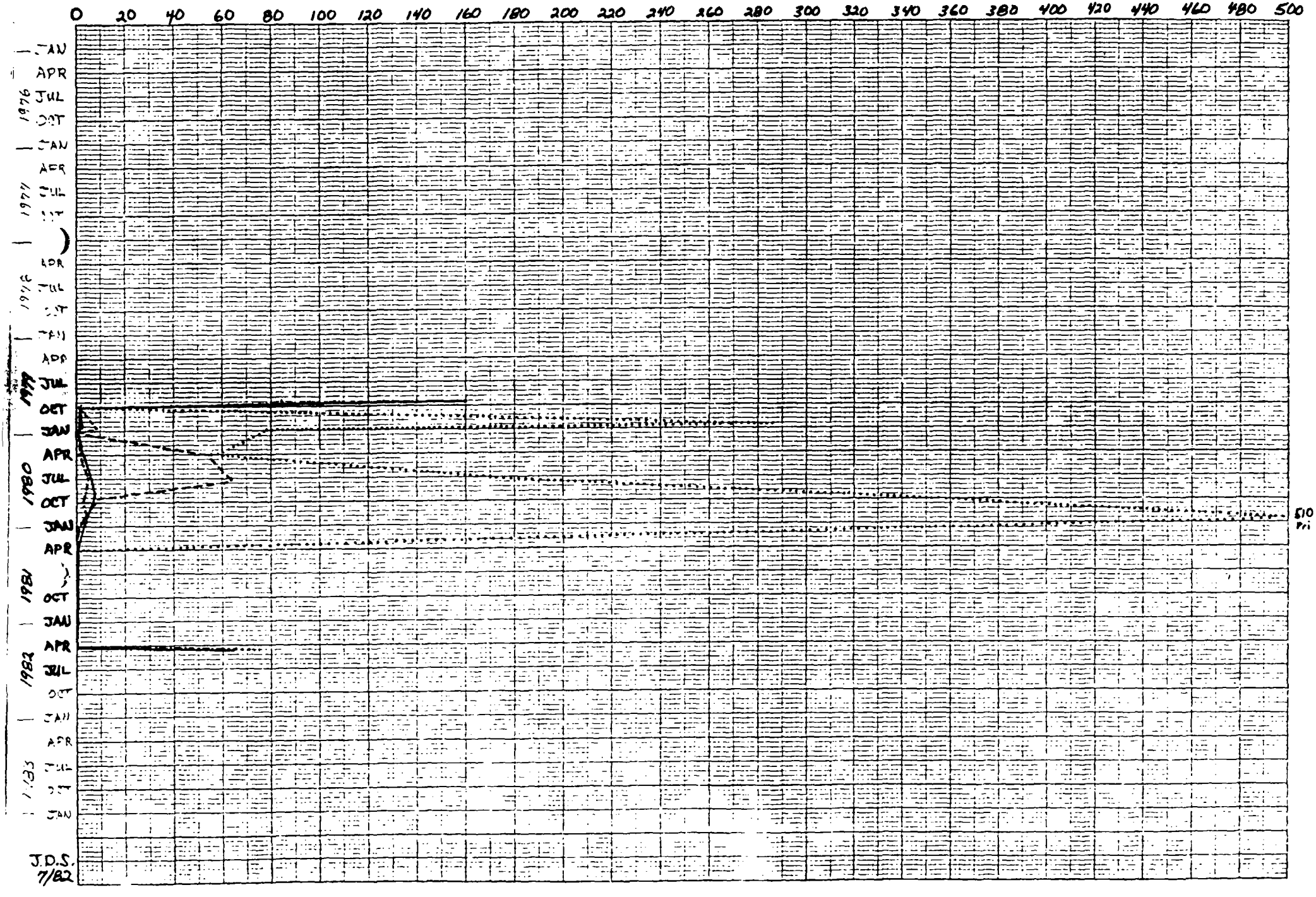

F.D.S.
7/82

SITE Brighton/Brighton L.F. #2 LPC # 11780203

PARAMETER Iron Fe LIMIT 1.0

KEY

—— G106 ..... G107 -.-.-.- G108 - - - - G109



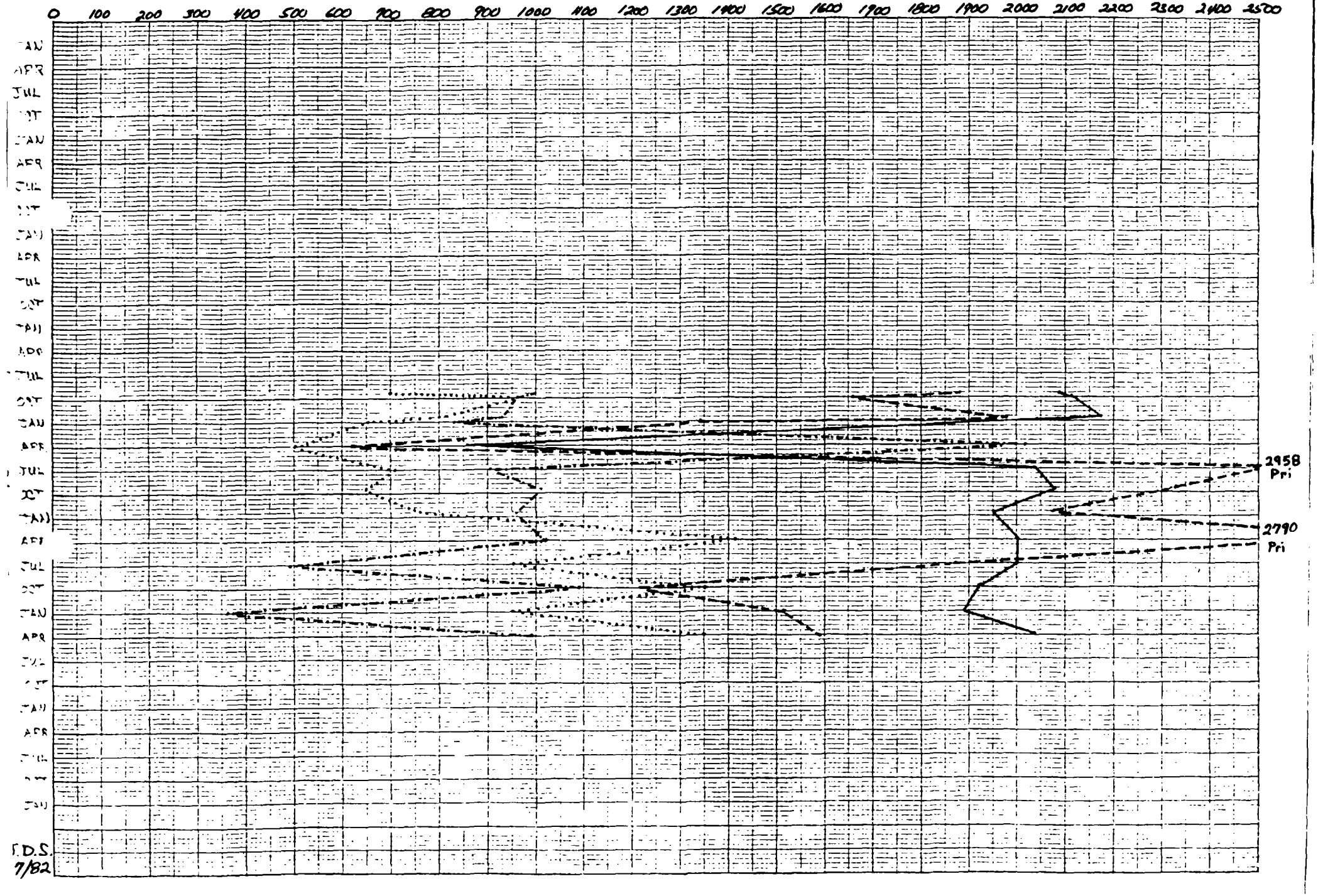

J.D.S.
7/82

SITE Brighton/Brighton L.F. #2 LPC # 11780203

PARAMETER ROE LIMIT 500

KEY

—— G106 ····· G107 —·—·— G108 — — — G109



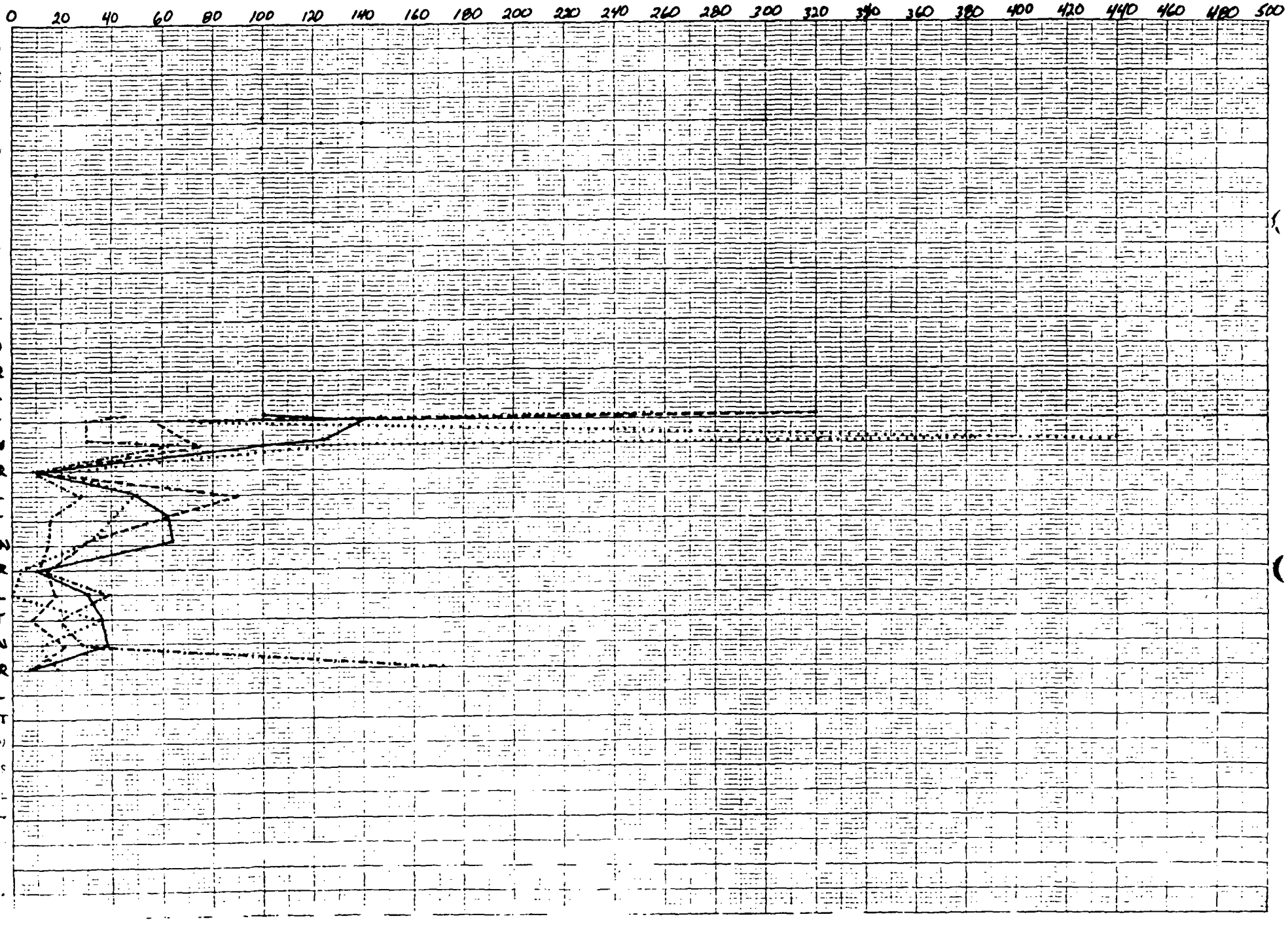

F.D.S.
7/82

SITE: Brighton/Brighton L.F. #2 LPC # 11780203

PARAMETER: COD LIMIT: Not established

KEY

—— G106 ..... G107 -.-.-.- G108 ----- G109




T.D.S.
7/82

Site # 11780201
County: Macoupin
Brighton/Brighton Landfill #1

| Parameters | Effluent Standards | (Surface) Water Quality Standards | Public Food Processing Water Supply Standards | | | |
|---|---|---|---|---|---|---|
| Date of Collection | | | | 5/15/76 | 5/15/76 | 5/15/76 |
| Laboratory | | | | IEPA | IEPA | IEPA |
| Depth to Water | | | | | | |
| Monitoring Point | | | | G101 | G103 | G104 |
| Alkalinity | NE | NE | NE | .000 | .000 | .000 |
| Ammonia (as N) | NE | 1.5 | 1.5 | | | |
| Arsenic (total) | 0.25 | 1.0 | 0.05 | | | |
| Barium (total) | 2.0 | 5.0 | 1.0 | | | |
| BOD-5 | 30 | NE | NE | | | |
| Boron (total) | NE | 1.0 | 1.0 | .1 | .2 | .1 |
| Cadmium (total) | 0.15 | 0.05 | 0.010 | .0100 | .01 | ( |
| COD | NE | NE | NE | | 9.00 | 266 |
| Chloride | NE | 500 | 250 | 4.00 | 4.00 | 12.00 |
| Chromium (total) | NE | NE | 0.05 | | | |
| Chromium (Cr+6) | 0.3 | 0.05 | 0.05 | | | |
| Copper (total) | 1.0 | 0.02 | 0.02 | | | |
| Cyanide (total) | 0.10 | 0.025 | 0.025 | | | |
| Dissolved Oxygen | NE | 5.0 | 4.0 | | | |
| Fecal Coliform (#/100 ml) | 400 | 400 | 400 (2000) | | | |
| Fluoride | 15.0 | 1.4 (5) | 1.4 | | | |
| Hardness | NE | NE | NE | 580.000 | 320.000 | 316.000 |
| Iron (total) | 2.0 | 1.0 | 1.0 | 26.4 | .8 | 1.8 |
| Iron (dissolved) | 0.5 | NE | NE | | | |
| Lead (total) | 0.1 | 0.05 | 0.05 | .1000 | .06 | .01 |
| Magnesium | NE | NE | NE | 51.0000 | 33.00 | 30.0 |
| Manganese (total) | 1.0 | 1.0 | 0.15 | .91 | .31 | 2.34 |
| Mercury (total) | 0.0005 | 0.0005 | 0.0005 | | | |
| Nickel (total) | 1.0 | 1.0 | 1.0 | | | ( |
| Nitrate-Nitrite | NE | NE | 10.0 | | | |
| Oil | 15.00 | NE | 0.1 | | | |
| pH (units) | 5-10 | 6.5-9.0 | 6.5-9.0 | 7.4 | 7.7 | 7.8 |
| Phenols | 0.3 | 0.1 | 0.001 | .0060 | .0050 | |
| Phosphorus | 1.0 | 0.05 | 0.05 | | | |
| Potassium | NE | NE | NE | 11.0000 | 1.7 | 2.0 |
| R.O.E. (180°C) (TDS) | 3500 | 1000 | 500 | | | |
| Selenium | 1.0 | 1.0 | 0.01 | | | |
| Silica | NE | NE | NE | | | |
| Silver | 0.1 | 0.005 | 0.005 | | | |
| Sodium | NE | NE | NE | 15.0000 | 59.00 | 69.0 |
| SC (umhos/cm) | NE | NE | NE | | | |
| Sulfate | NE | 500 | 250 | 56.0000 | 56.00 | 21.00 |
| Sulfide | NE | NE | NE | | | |
| TSS | 15.0 | NE | NE | | .5 | .1 |
| Zinc | 1.0 | 1.0 | 1.0 | 1.6 | .5 | .1 |

ATTACHMENT VII.

Site # 11780203
County: Macoupin
Brighton/Brighton Landfill #2

| | | | Date of Collection | 9/18/79 | 9/18/79 | 9/18/79 |
|---|---|---|---|---|---|---|
| | | | Laboratory | IEPA | IEPA | IEPA |
| | | | Depth to Water | 20.4 | 18.2 | 17.8 |
| | | | Monitoring Point | G105 | G106 | G107 |
| Parameters | Effluent Standards | (Surface) Water Quality Standards | Public Food Processing Water Supply Standards | | | |
| Alkalinity | NE | NE | NE | 710.000 | 820.00 | 470.000 |
| Ammonia (as N) | NE | 1.5 | 1.5 | .6500 | .55 | .15 |
| Arsenic (total) | 0.25 | 1.0 | 0.05 | .018 | .013 | .01 |
| Barium (total) | 2.0 | 5.0 | 1.0 | 1.3 | 1.4 | .9 |
| BOD-5 | 30 | NE | NE | 12.000 | 3.00 | |
| Boron (total) | NE | 1.0 | 1.0 | .1 | .3 | .1 |
| Cadmium (total) | 0.15 | 0.05 | 0.010 | .02+ | .05 | .02 |
| COD | NE | NE | NE | 56.00 | 100.00 | 255.000 |
| Chloride | NE | 500 | 250 | 19.0 | 8.000 | 6.000 |
| Chromium (total) | NE | NE | 0.05 | .230 | .2300 | .16 |
| Chromium (Cr+6) | 0.3 | 0.05 | 0.05 | | | |
| Copper (total) | 1.0 | 0.02 | 0.02 | .54 | .58 | .38 |
| Cyanide (total) | 0.10 | 0.025 | 0.025 | | | |
| Dissolved Oxygen | NE | 5.0 | 4.0 | | | |
| Fecal Coliform (#/100 ml) | 400 | 400 | 400 (2000) | | | |
| Fluoride | 15.0 | 1.4 (5) | 1.4 | .2 | .2 | .4 |
| Hardness | NE | NE | NE | 540.00 | 950.00 | 490.00 |
| Iron (total) | 2.0 | 1.0 | 1.0 | 160.00 | 160.00 | 87.00 |
| Iron (dissolved) | 0.5 | NE | NE | | | |
| Lead (total) | 0.1 | 0.05 | 0.05 | .4 | 1.100 | .400 |
| Magnesium | NE | NE | NE | 440.00 | 580.00 | 410.00 |
| Manganese (total) | 1.0 | 1.0 | 0.15 | 12.00 | 11.00 | 6.9 |
| Mercury (total) | 0.0005 | 0.0005 | 0.0005 | | .0001 | .001 |
| Nickel (total) | 1.0 | 1.0 | 1.0 | .4 | .4 | .3 |
| Nitrate-Nitrite | NE | NE | 10.0 | .2 | .2 | 3.90 |
| Oil | 15.00 | NE | 0.1 | | | |
| pH (units) | 5-10 | 6.5-9.0 | 6.5-9.0 | 7.2 | 7.1 | 7.6 |
| Phenols | 0.3 | 0.1 | 0.001 | .015 | .005 | .005 |
| Phosphorus | 1.0 | 0.05 | 0.05 | | | |
| Potassium | NE | NE | NE | 7.8000 | 10.000 | 4.500 |
| R.O.E. (180°C) (TDS) | 3500 | 1000 | 500 | 2550.00 | 2090.00 | 700.00 |
| Selenium | 1.0 | 1.0 | 0.01 | | | |
| Silica | NE | NE | NE | | | |
| Silver | 0.1 | 0.005 | 0.005 | .01 | .01 | .01 |
| Sodium | NE | NE | NE | 140.00 | 350.00 | 52.00 |
| SC (umhos/cm) | NE | NE | NE | | | |
| Sulfate | NE | 500 | 250 | 160.00 | 880.00 | 97.0000 |
| Sulfide | NE | NE | NE | | | |
| TSS | 15.0 | NE | NE | | | |
| Zinc | 1.0 | 1.0 | 1.0 | .8 | 1.400 | .5 |

Site # 11780203
County: Macoupin
Brighton/Brighton Landfill #2

| Parameters | Effluent Standards | (Surface) Water Quality Standards | Public Food Processing Water Supply Standards | | | |
|---|---|---|---|---|---|---|
| Date of Collection | | | | 9/18/79 | 9/18/79 | 9/18/79 |
| Laboratory | | | | IEPA | IEPA | IEPA |
| Depth to Water | | | | 16.2 | 22.5 | 17.0 |
| Monitoring Point | | | | G108 | G109 | G110 |
| Alkalinity | NE | NE | NE | 400.00 | 340.00 | 420.00 |
| Ammonia (as N) | NE | 1.5 | 1.5 | .1 | 1.3 | .15 |
| Arsenic (total) | 0.25 | 1.0 | 0.05 | .003 | .017 | .013 |
| Barium (total) | 2.0 | 5.0 | 1.0 | .2 | .3 | .2 |
| BOD-5 | 30 | NE | NE | | 5.0 | |
| Boron (total) | NE | 1.0 | 1.0 | .100 | .2 | .1 |
| Cadmium (total) | 0.15 | 0.05 | 0.010 | .000 | .01 | .01 |
| COD | NE | NE | NE | 45.000 | 320.00 | 280.00 |
| Chloride | NE | 500 | 250 | 21.000 | 55.000 | 11.00 |
| Chromium (total) | NE | NE | 0.05 | | .04 | .04 |
| Chromium (Cr+6) | 0.3 | 0.05 | 0.05 | | | |
| Copper (total) | 1.0 | 0.02 | 0.02 | .48 | .44 | .37 |
| Cyanide (total) | 0.10 | 0.025 | 0.025 | | | |
| Dissolved Oxygen | NE | 5.0 | 4.0 | | | |
| Fecal Coliform (#/100 ml) | 400 | 400 | 400 (2000) | | | |
| Fluoride | 15.0 | 1.4 (5) | 1.4 | .3 | .5 | .4 |
| Hardness | NE | NE | NE | 550.00 | 520.00 | 810.00 |
| Iron (total) | 2.0 | 1.0 | 1.0 | 2.4 | 42.00 | 29. |
| Iron (dissolved) | 0.5 | NE | NE | | | |
| Lead (total) | 0.1 | 0.05 | 0.05 | .6 | .2 | .2 |
| Magnesium | NE | NE | NE | 56.00 | 81.0 | 140.0 |
| Manganese (total) | 1.0 | 1.0 | 0.15 | .63 | 1.9 | 3.1 |
| Mercury (total) | 0.0005 | 0.0005 | 0.0005 | .0001 | .0001 | .000 |
| Nickel (total) | 1.0 | 1.0 | 1.0 | | .1 | .100 |
| Nitrate-Nitrite | NE | NE | 10.0 | 1.6 | 23.0 | .0 |
| Oil | 15.00 | NE | 0.1 | | | |
| pH (units) | 5-10 | 6.5-9.0 | 6.5-9.0 | 7.4 | 7.6 | 7.5 |
| Phenols | 0.3 | 0.1 | 0.001 | | | .005 |
| Phosphorus | 1.0 | 0.05 | 0.05 | | | |
| Potassium | NE | NE | NE | 2.7 | 9.0 | 6.9 |
| R.O.E. (180°C) (TDS) | 3500 | 1000 | 500 | 1000.00 | 1880.0 | 1280.00 |
| Selenium | 1.0 | 1.0 | 0.01 | | .002 | |
| Silica | NE | NE | NE | | | |
| Silver | 0.1 | 0.005 | 0.005 | | | |
| Sodium | NE | NE | NE | 88.00 | 420.00 | 72. |
| SC (umhos/cm) | NE | NE | NE | | | |
| Sulfate | NE | 500 | 250 | 350.00 | 870.00 | 520.00 |
| Sulfide | NE | NE | NE | | | |
| TSS | 15.0 | NE | NE | | | |
| Zinc | 1.0 | 1.0 | 1.0 | | | .1 |

Site # 11780203
County: Macoupin
Brighton/Brighton Landfill #2

| | | | Date of Collection | 12/2/79 | 12/2/79 | 12/2/79 |
|---|---|---|---|---|---|---|
| | | | Laboratory | Private | Private | Private |
| | | | Depth to Water | 17.00 | 19.0 | 16.8 |
| | | | Monitoring Point | G106 | G107 | G108 |
| Parameters | Effluent Standards | (Surface) Water Quality Standards | Public Food Processing Water Supply Standards | | | |
| Alkalinity | NE | NE | NE | 862.000 | 481.00 | 395.00 |
| Ammonia (as N) | NE | 1.5 | 1.5 | .5 | .5 | .5 |
| Arsenic (total) | 0.25 | 1.0 | 0.05 | | | |
| Barium (total) | 2.0 | 5.0 | 1.0 | | | |
| BOD-5 | 30 | NE | NE | | | |
| Boron (total) | NE | 1.0 | 1.0 | | .14 | .1 |
| Cadmium (total) | 0.15 | 0.05 | 0.010 | | | |
| COD | NE | NE | NE | 123.00 | | 29.00 |
| Chloride | NE | 500 | 250 | 12.00 | | 20.00 |
| Chromium (total) | NE | NE | 0.05 | .03 | .440 | .02 |
| Chromium (Cr+6) | 0.3 | 0.05 | 0.05 | | | |
| Copper (total) | 1.0 | 0.02 | 0.02 | .04 | .4800 | .19 |
| Cyanide (total) | 0.10 | 0.025 | 0.025 | | | |
| Dissolved Oxygen | NE | 5.0 | 4.0 | | | |
| Fecal Coliform (#/100 ml) | 400 | 400 | 400 (2000) | | | |
| Fluoride | 15.0 | 1.4 (5) | 1.4 | | | |
| Hardness | NE | NE | NE | | 3110.00 | 436.00 |
| Iron (total) | 2.0 | 1.0 | 1.0 | | 286.00 | 2.1 |
| Iron (dissolved) | 0.5 | NE | NE | | | |
| Lead (total) | 0.1 | 0.05 | 0.05 | .001 | 4.4 | .013 |
| Magnesium | NE | NE | NE | 90.00 | 880.00 | 48.00 |
| Manganese (total) | 1.0 | 1.0 | 0.15 | 1.4 | 11.600 | .53 |
| Mercury (total) | 0.0005 | 0.0005 | 0.0005 | .0001 | .0003 | .0001 |
| Nickel (total) | 1.0 | 1.0 | 1.0 | | | |
| Nitrate-Nitrite | NE | NE | 10.0 | | | |
| Oil | 15.00 | NE | 0.1 | | | |
| pH (units) | 5-10 | 6.5-9.0 | 6.5-9.0 | 7.0 | 6.7 | 7.1 |
| Phenols | 0.3 | 0.1 | 0.001 | .02 | .0200 | .02 |
| Phosphorus | 1.0 | 0.05 | 0.05 | | | |
| Potassium | NE | NE | NE | 7.1000 | 25.6000 | 4.5 |
| R.O.E. (180°C) (TDS) | 3500 | 1000 | 500 | 2175.000 | 800.000 | 927.00 |
| Selenium | 1.0 | 1.0 | 0.01 | | | |
| Silica | NE | NE | NE | | | |
| Silver | 0.1 | 0.005 | 0.005 | | | |
| Sodium | NE | NE | NE | 540.00 | 64.000 | 200.00 |
| SC (umhos/cm) | NE | NE | NE | | | |
| Sulfate | NE | 500 | 250 | 2065.00 | 73.00 | 290.00 |
| Sulfide | NE | NE | NE | | | |
| TSS | 15.0 | NE | NE | | | |
| Zinc | 1.0 | 1.0 | 1.0 | .15 | 1.4 | .29 |

Site # 11780203
County: Macoupin
Brighton/Brighton Landfill #2

| Parameters | Effluent Standards | (Surface) Water Quality Standards | Public Food Processing Water Supply Standards | | | |
|---|---|---|---|---|---|---|
| Date of Collection | | | | 12/2/79 | 5/17/82 | 5/17/82 |
| Laboratory | | | | Private | IEPA | IEPA |
| Depth to Water | | | | 23.2 | 15.7 | 9.9 |
| Monitoring Point | | | | G109 | G110 | G112 |
| Alkalinity | NE | NE | NE | 330.00 | | |
| Ammonia (as N) | NE | 1.5 | 1.5 | .5 | | |
| Arsenic (total) | 0.25 | 1.0 | 0.05 | | | |
| Barium (total) | 2.0 | 5.0 | 1.0 | | | |
| BOD-5 | 30 | NE | NE | | | |
| Boron (total) | NE | 1.0 | 1.0 | .36 | | |
| Cadmium (total) | 0.15 | 0.05 | 0.010 | | .01 | .0 |
| COD | NE | NE | NE | 70.00 | | |
| Chloride | NE | 500 | 250 | 58.0000 | | |
| Chromium (total) | NE | NE | 0.05 | .03 | | |
| Chromium (Cr+6) | 0.3 | 0.05 | 0.05 | | .18 | .03 |
| Copper (total) | 1.0 | 0.02 | 0.02 | .43 | 2.5 | .37 |
| Cyanide (total) | 0.10 | 0.025 | 0.025 | | | |
| Dissolved Oxygen | NE | 5.0 | 4.0 | | | |
| Fecal Coliform (#/100 ml) | 400 | 400 | 400 (2000) | | | |
| Fluoride | 15.0 | 1.4 (5) | 1.4 | | | |
| Hardness | NE | NE | NE | 567.00 | | |
| Iron (total) | 2.0 | 1.0 | 1.0 | 9.9 | 140.0 | 19.0 |
| Iron (dissolved) | 0.5 | NE | NE | | | |
| Lead (total) | 0.1 | 0.05 | 0.05 | 1.03 | .14 | .0 |
| Magnesium | NE | NE | NE | 78.00 | 340.0 | 72.0 |
| Manganese (total) | 1.0 | 1.0 | 0.15 | .79 | 6.7 | 2.6 |
| Mercury (total) | 0.0005 | 0.0005 | 0.0005 | .0001 | | |
| Nickel (total) | 1.0 | 1.0 | 1.0 | | .3 | .0 |
| Nitrate-Nitrite | NE | NE | 10.0 | | | |
| Oil | 15.00 | NE | 0.1 | | | |
| pH (units) | 5-10 | 6.5-9.0 | 6.5-9.0 | 6.8 | | |
| Phenols | 0.3 | 0.1 | 0.001 | .0200 | | |
| Phosphorus | 1.0 | 0.05 | 0.05 | | | |
| Potassium | NE | NE | NE | 9.00 | | |
| R.O.E. (180°C) (TDS) | 3500 | 1000 | 500 | 1979. | | |
| Selenium | 1.0 | 1.0 | 0.01 | | | |
| Silica | NE | NE | NE | | | |
| Silver | 0.1 | 0.005 | 0.005 | | | |
| Sodium | NE | NE | NE | 420.00 | | |
| SC (umhos/cm) | NE | NE | NE | | | |
| Sulfate | NE | 500 | 250 | 2330.00 | | |
| Sulfide | NE | NE | NE | | | |
| TSS | 15.0 | NE | NE | | | |
| Zinc | 1.0 | 1.0 | 1.0 | 1.00 | 1.4 | .2 |

ATTACHMENT VIII

# POSSIBLE CAUSES OF ERRONEOUS GROUNDWATER ANALYSES

I. Sample collection

A. Monitoring well design, construction and location

1. construction material: sorption/leaching of organics/inorganics from casing materials

2. material penetrated: elevated parameters resulting from leaching of past fill, pre-disposal/storage site activities, or site anomalous materials

3. installation procedure: possible contaminant introduction from drilling tools, filtering material, seals and/or backfill

4. filtering and packer (seal) design: insufficient water yield or silting of casing; inadequate ground-surface water segregation

5. piezometer slot size, length, and depth setting: improper design to physical properties of aquifer, dilution of contaminant plume, contaminants not detected due to density stratification, aquifer may not be same aquifer as in "control" well(s) and not realized

6. proximity to other (off-site) pollutant sources: problem of differentiation/identification of point source.

B. Sampling procedure

1. error in procedure for obtaining sample: failure to eliminate stagnant water from well prior to collection of sample

2. collection: use of contaminated/incorrect/leaching/sorbing devices when obtaining sample

3. holding bottles: could be contaminated/incorrect/leaching/sorbing/non-preserving

4. filtering of inorganics: suspended material must be filtered prior to analysis; device could be contaminating/incorrect/misused; non-filtered samples will be misrepresentative

5. non-filtering of organics: organic samples should not be filtered; possible leaching/sorbing from device

6. changing of personnel who collect samples.

II. Preservation of representative samples

A. Increase/reduction/elimination of parameter concentration

1. variation/error in preservation technique(s): may also interfere with detection of specific parameter(s)

2. error in sample holding time

3. filtering/non-filtering

4. sorption/leaching from sample container.

III. Laboratory analyses

A. Improper laboratory procedures

1. methodology inappropriate for required accuracy

2. poor quality control: sample contamination

3. improper calibration/malfunction in equipment.

B. Variations of laboratory procedures among laboratories

1. tests used

2. equipment

3. personnel.

C. Interference from other parameter(s) in high concentrations

D. Human error in recording/reporting results.

SHW-12

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Thomas Lechien
Registered Agent
Com-Pak Engineering, Inc.
Brighton Landfill Division
111 West Washington Street
Belleville, Illinois 62220

Re: Complaint and Compliance Order
Brighton Landfill Division
ILD 000667139

Dear Mr. Lechien:

Enclosed please find a Complaint and Compliance Order which specifies this Agency's determination of certain violations by Com-Pak Engineering, Inc., Brighton Landfill Division, of the Resource Conservation and Recovery Act (RCRA) as amended, 42 U.S.C. §6901 et seq., based on inspections of the facility located at Craig Lake Road, Brighton, Illinois.

The Complaint and Compliance Order states the reasons for such a determination, establishes a compliance schedule and assesses a civil penalty for the violations as set forth in the Complaint and Compliance Order. This Complaint and Compliance Order is issued pursuant to Section 3008 of RCRA, 42 U.S.C. §6928.

Accompanying the Complaint and Compliance Order is a Notice of Opportunity for Hearing. Should you desire to contest the allegations herein, and the assessed penalty, a written request for a hearing is required to be filed with the Regional Hearing Clerk, U.S. EPA Region V, 230 South Dearborn Street, Chicago, Illinois 60604, within 30 days from receipt of this Complaint and Compliance Order. A copy of your hearing request should also be sent to Mr. Richard Mednick, Office of Regional Counsel, U.S. Environmental Protection Agency, at the same address.

Regardless of whether you choose to request a hearing within the prescribed time limit following service of the Complaint and Compliance Order, you are extended an opportunity to request an informal settlement conference.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

| | | |
|---|---|---|
| IN THE MATTER OF:<br><br>CON-PAK ENGINEERING, INC.<br>BRIGHTON LANDFILL DIVISION<br>CRABB LAKE ROAD<br>BRIGHTON, ILLINOIS 62017<br>ILD 000667139 | )<br>)<br>)<br>)<br>)<br>)<br>) | DOCKET NO.<br><br>COMPLAINT AND<br>COMPLIANCE ORDER |

**PREAMBLE**

This Complaint and Compliance Order is filed pursuant to Section 3008(a)(1) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6928(a)(1), and the United States Environmental Protection Agency's Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation or Suspension of Permits, 40 CFR Part 22. The Complainant is the Director of the Waste of Management Division, Region V, United States Environmental Protection Agency (hereinafter U.S. EPA). The Respondent is Con-Pak Engineering, Inc., Brighton Landfill Division.

This Complaint and Compliance Order is based on information available to U.S. EPA, including reports based on compliance inspections of the Respondent's facility conducted by the Illinois Environmental Protection Agency (IEPA) on September 15, 1983 and March 22, 1984, and the Respondent's Part B permit application. At the time of the inspections, violations of applicable State regulations were identified. Based upon the Part B permit application, violations of applicable Federal regulations have been identified.

Pursuant to Section 3008(a)(1) of RCRA, 42 U.S.C. §6928(a)(1), and based on information obtained during the compliance inspections and information contained in the Part B permit application submittals, it has been determined that Respondent is in violation of Subtitle C of RCRA, Section

3004, 42 U.S.C. §6924; of the Illinois Environmental Protection Act, Ill. Rev. Stat. 1982, Ch. 111 1/2, §1001 et seq., as amended; of regulations adopted by the Illinois Pollution Control Board, including 35 Ill. Adm. Code §725.190, §725.191, §725.192, §725.193, and §725.194; and of Federal regulations set forth at 40 CFR §270.10.

## JURISDICTION

Jurisdiction for this action is conferred upon U.S. EPA by Sections 1006(a), §2002(a)(1), §3006(b) and §3008(a)(2) of RCRA; 42 U.S.C. §6905(a), §6912(a)(1), §6926(b) and §6928(a)(2), respectively.

On May 17, 1982, the State of Illinois was granted Phase I Interim Authorization by the Administrator of U.S. EPA pursuant to Section 3006(b) of RCRA, 42 U.S.C. §6926(b), to administer a hazardous waste program in lieu of the Federal program. See 47 Fed. Reg. 21,043 (1982). As a result, facilities in Illinois qualifying for interim status under 40 CFR §270.70 are regulated under the Illinois provisions found at 35 Ill. Adm. Code Part 720 et. seq. rather than the Federal regulations set forth at 40 CFR Part 265. Section 3008(a)(2) of RCRA, 42 U.S.C. §6928(a)(2), provides that U.S. EPA may enforce state regulations in those states authorized to administer a hazardous waste program. In matters related to the issuance of final RCRA permits, the Federal regulations set forth at 40 CFR Parts 124, 264, 270 and 271 remain applicable.

DETERMINATIONS

1. Section 3010 of RCRA, 42 U.S.C. §6930, requires any person who generates or transports hazardous waste, or who owns or operates a facility for the treatment, storage, or disposal of hazardous waste to notify U.S. EPA of such activity within 90 days of the promulgation of regulations under Section 3001 of RCRA, 42 U.S.C. §6921. Section 3010 of RCRA also provides that no hazardous waste subject to U.S. EPA regulation may be transported, treated, stored, or disposed of unless the required notification has been given.

2. U.S. EPA published regulations concerning the generation, transportation, and treatment, storage or disposal of hazardous waste on May 19, 1980. These regulations are codified at 40 CFR Parts 260 through 265. Notification to U.S. EPA of hazardous waste handling was required in most instances no later than August 18, 1980.

3. Section 3005 of RCRA, 42 U.S.C §6925, requires U.S. EPA to publish regulations requiring each person owning or operating a hazardous waste treatment, storage or disposal facility to obtain a RCRA permit. Such regulations were published on May 19, 1980 and are codified at 40 CFR Parts 124, 270 and 271. The regulations require persons who treat, store, or dispose of hazardous waste to submit Part A of the permit application in most instances no later than November 19, 1980.

4. Section 3005(e) of RCRA, 42 U.S.C. §6925(e), provides that an owner or operator of a facility shall be treated as having been issued a permit pending final administrative disposition of the permit application provided that: (1) the facility was in existence on November 19, 1980; (2) the require-

ments of Section 3010(a) of RCRA, 42 U.S.C. §6930(a), concerning notification of hazardous waste activity have been complied with; and (3) application for a permit has been made. This statutory authorization to operate, pending final action on the permit, is known as interim status. U.S. EPA regulations implementing these provisions are found at 40 CFR Part 270.

5. On and subsequent to November 19, 1980, Respondent has owned and operated a facility located at Craig Lake Road, Brighton, Illinois 62017. Respondent is a Missouri corporation, whose registered agent in Illinois is Thomas Lechien.

6. On August 15, 1980, Respondent submitted a notification of hazardous waste activity at the Craig Lake Road facility as required by Section 3010(a) of RCRA, 42 U.S.C. §6930(a).

7. On November 18, 1980, Respondent filed a RCRA Part A permit application as required by Section 3005(a) of RCRA, 42 U.S.C. §6925(a) and 40 CFR §270.1(b), to treat, store or dispose of hazardous waste at the Craig Lake Road facility. The Part A permit application indicates the Craig Lake Road facility to be a landfill.

8. As a result of the determinations set forth in items 5, 6, and 7, it has been determined that Respondent's Craig Lake road facility has interim status pursuant to Section 3005(e) of RCRA, 42 U.S.C. §6925(e), and may operate as a hazardous waste management facility under the interim status provisions of 40 CFR §270.70.

9. On or after November 19, 1980, Respondent operated a hazardous waste landfill (see 35 Ill. Adm. Code §720.110) which accepted EP toxic hazardous waste (see 35 Ill. Adm. Code §721.124), hazardous waste from nonspecific sources (see 35 Ill. Adm. Code §721.131), and hazardous wastes from specifi sources (see 35 Ill. Adm. Code §721.132).

10. On September 16, 1983, and March 22, 1984, representatives of the Illinois Environmental Protection Agency (IEPA) inspected Respondent's Craig Lake Road facility to determine compliance with the Illinois Environmental Protection Act, Ill. Rev. Stat. 1982, Ch. 111-1/2, §1001 et seq., as amended, and regulations adopted by the Illinois Pollution Control Board, including 35 Ill. Adm. Code Part 725. During these inspections, Respondent's Craig Lake Road facility was determined to be in violation of monitoring requirements set forth at 35 Ill. Adm. Code §725.190, §725.191, §725.192, §725.193 and §725.194. Specifically, the following violations were identified:

a. Failure to establish an upgradient well capable of monitoring the uppermost aquifer, as required by 35 Ill. Adm. Code §725.191(a)(1).

b. Failure to establish downgradient wells of appropriate depth to detect migration of contaminants, as required by 35 Ill. Adm. Code §725.191(a)(2).

c. Failure to construct the monitor wells in a proper manner to insure collection of representative samples from the appropriate aquifer flow zone, as required by 35 Ill. Adm. Code §725.191(c).

d. Failure to develop and follow a sampling and analysis plan, as required by 35 Ill. Adm. Code §725.192.

e. Failure to prepare an outline of a groundwater quality assessment program, as required by 35 Ill. Adm. Code §725.193(a).

f. Failure to submit groundwater monitoring analysis in a timely manner, as required by 35 Ill. Adm. Code §725.194(a)(2)(A).

g. Failure to separately identify in the laboratory analysis dated December 31, 1982, that the lead and coliform levels in well #3, and the nitrate and coliform levels in well #9 exceeded the U.S. EPA Drinking Water Standards (40 CFR 265, Appendix III), as required by 35 Ill. Adm. Code §725.194(a)(2)(A).

11. In a compliance inquiry letter dated November 28, 1983, and in a pre-enforcement conference letter dated April 24, 1984, IEPA notified Respondent of the violations observed during the September 15, 1983 and March 22, 1984 inspections, and IEPA instructed the Respondent to remedy such violations. Respondent failed to adequately respond to these letters.

12. The provisions of 40 CFR §270.10(e) allow the Regional Administrator to require submission of a Part B permit application by an existing hazardous waste management facility. The owner or operator shall be allowed at least six months from the date of request to submit this application. Failure to furnish a requested Part B application, or failure to furnish in full the information required by the Part B application are grounds for termination of interim status under 40 CFR Part 124.

13. The provisions of 40 CFR §124.3(d) allow the Regional Administrator to deny a RCRA permit and take enforcement action if an applicant fails or refuses to correct deficiencies in a permit application.

14. On August 3, 1983, pursuant to 40 CFR §270.10, U.S. EPA required the Respondent to submit a Part B permit application for the treatment, storage or disposal of hazardous waste at the Craig Lake Road facility. The due date for this submision was January 31, 1984. The submission was recieved on February 17, 1984. The Part B permit application indicates the Craig Lake Road facility to be a landfill.

15. As a result of deficiencies in the Part B permit application, U.S. EPA requested further information from the Respondent on April 19, 1984. The due date for this submission was June 19, 1984. The submission was received with incomplete information June 26, 1984.

16. Deficiencies in the Part B permit application pertaining to the protection of the groundwater are as follows:

    a. Respondent failed to supply an adequate summary of interim status groundwater monitoring data, as required by 40 CFR §270.14(c)(1).

    b. Respondent failed to identify the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, as required by 40 CFR §270.14(c)(2).

    c. Respondent failed to determine groundwater flow direction and rate, as required by 40 CFR §2^ 14(c)(2).

    d. Respondent failed to identify on a topographical map the proposed

e. Respondent failed to describe any plume of contamination, including the extent and concentrations of the constituents listed at 40 CFR PART 261, Appendix VIII, as required by 40 CFR §270.14(c)(4).

f. Respondent failed to supply detailed plans and an engineering report describing the proposed groundwater monitoring program, as required by 40 CFR §270.14(c)(5).

**ORDER AND CONDITIONS**
**FOR CONTINUED OPERATION OR CLOSURE**

Respondent having been initially determined to be in violation of Section 3004 of RCRA and 35 Ill. Adm. Code Part 725, the following compliance order pursuant to Section 3008(a)(1) of RCRA, 42 U.S.C. §6928(a)(1), is entered:

1) Respondent shall, within thirty (30) days from receipt of this order, provide U.S.EPA with a plan and implementation schedule for a groundwater monitoring program capable of providing the information required under 40 CFR§270.14(c)(1) through §270.14(c)(5). This program should be sufficient to adequately describe any plume of contamination including the extent and concentration of any constituent listed at 40 CFR§261, Appendix VIII. Immediately upon U.S. EPA approval of the plan and schedule, Respondent shall implement the groundwater monitoring program.

2) Respondent shall, within thirty(30) days from implementation of the groundwater monitoring program, submit the information obtained from this program along with conclusions and proposals for a monitoring program under 40 CFR§264, subpart F, as required by 40 CFR§270.14(c), to U.S. EPA as a subsequent Part B submission.

3) Respondent shall, within thirty (30) days after completion of this program submit an interim status groundwater monitoring program to the IEPA. Such a program must comply with all IEPA interim status groundwater monitoring requirements set forth at 35 Ill. Adm. Code 725 Subpart F. After IEPA approval

of the interim status groundwater monitoring program, and subsequent to the program initiated pursuant to 40 CFR §270.14, Respondent shall fully implement the interim status groundwater monitoring program. The interim status program shall remain in effect until such time as U.S.EPA makes a final determination on the Respondent's Part B permit application.

Notwithstanding any other provision of this Order, an enforcement action may be brought pursuant to Section 7003 of RCRA, 42 U.S.C. §6973, or any other applicable statutory authority, should U.S. EPA find that the handling, storage, treatment, transportation, or disposal of solid or hazardous waste at the facility may present an imminent and substantial endangerment to human health or the environment.

The Respondent shall notify U.S. EPA in writing upon achieving compliance with this Order and any part thereof. This notification shall be submitted not later than forty five (45) days from receipt of this Order to the U.S. EPA, Region V, Waste Management Division, 230 South Dearborn Street, Chicago, Illinois 60604, Attention: Technical, Permits, and Compliance Section.

## ASSESSMENT OF PENALTY

Based upon the violations cited herein, and pursuant to Section 3008(c) and (g) of RCRA, 42 U.S.C. §6928(c) and (g), U.S. EPA assesses a penalty of FORTY

ONE THOUSAND DOLLARS ($41,000) against the Respondent. The proposed penalty has been set at the indicated level based upon an analysis of the seriousness of the violations cited herein and the conduct of the Respondent.

Payment shall be submitted within 60 days of entry of this Order in the form of a certified or cashier's check made payable to the Treasury of the United States of America, and shall be remitted to Ms. Mary Langer, (5C-16), Regional Hearing Clerk, U.S. EPA, 230 S. Dearborn Street, Chicago, Illinois 60604.

Failure to comply with any requirement of this Order shall subject Respondent to liability for a civil penalty of not more than $25,000.00 per day for each day of such violation.

NOTICE OF OPPORTUNITY FOR HEARING

The above named Respondent is hereby notified that the above Complaint and Compliance Order may become final, or a default order entered upon motion, unless said Respondent has requested in writing a hearing not later than 30 days from the date this Order is served. You have the right to request a hearing to contest any material factual allegation set forth in the Complaint and Compliance Order or the appropriateness of any proposed penalty.

To avoid having the Complaint and Compliance Order become final without further proceedings, you must file a written answer to this Complaint and Compliance Order with the Regional Hearing Clerk, U.S. EPA Region V, 230 South Dearborn Street, Chicago, Illinois 60604, within 30 days of your receipt of this notice. A copy of this answer and any subsequent document filed in this action should be sent to the Office of Regional Counsel at the same address to the attention of Mr. Richard Medwick, Assistant Regional

Counsel.

Respondent's answer should clearly and directly admit, deny, or explain each of the factual allegations of which Respondent has any knowledge. Said answer should contain: (1) a definite statement of the facts, circumstances or arguments which constitute the grounds of defense; and (2) a concise statement of the facts which you intend to place at issue. The denial of any material fact or the raising of any affirmative defense shall be considered as a request for a hearing.

A copy of the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation or Suspension of Permits accompanies this Complaint and Compliance Order. (40 CFR Part 22; 45 Fed. Reg. 24,357 (1980), as amended by 45 Fed. Reg. 79,898 (1980). These regulations are applicable to all proceedings to this administrative action including the filing of any answer.

## SETTLEMENT CONFERENCE

Whether or not you request a hearing, you may confer informally with U.S. EPA concerning (1) whether the alleged violations in fact occurred as set forth above, or (2) the appropriateness of the compliance schedule or penalty.

You may request an informal settlement conference at any time by contacting Mr. Kevin Pierard at telephone number (312) 886-0994, however, any such request will not effect the thirty day time limit for responding with an answer to this Complaint and Compliance Order and requesting a formal hearing on the violations alleged herein. U.S. EPA encourages all parties to pursue the possibilities of settlement through informal conferences.

Dated this Day of 1984

DATED this _____ day of _____ 1984

_____
[illegible], Director
Waste Management Division
U.S. Environmental Protection Agency
Region V

CERTIFICATE OF SERVICE

I hereby certify that I have caused copies of the foregoing Complaint and Compliance Order to be served upon the persons designated below on the date below, by causing said copies to be deposited in the U.S. Mail, First Class and certified return receipt requested, postage prepaid, at Chicago, Illinois in envelopes addressed to:

Mr. Thomas Lechien
Registered Agent
111 West Washington Street
Belleville, Illinois 62220

Gene Evans, President
Gen-Pak Engineering, Inc.
111 West Washington Street
Belleville, Illinois 62220

I have further caused the original of the Complaint and Compliance Order, and this Certificate of Service to be served in the office of the Regional Hearing Clerk located in the Office of Regional Counsel, U.S. EPA, Region V at 230 South Dearborn Street, Chicago, Illinois 60604, on the date below.

These are said person's last address known to the subscriber.

Dated this _____ day of _____, 1984.

_____
Denise Roape, Secretary
Technical, Permits, and
Compliance Section