WARZYN

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PROJECT
60776

REMEDIAL INVESTIGATION REPORT
FINAL

WOODSTOCK MUNICIPAL LANDFILL SITE
WOODSTOCK, ILLINOIS
VOLUME 2 OF 2

JUNE 1992

PREPARED FOR:
STEERING COMMITTEE
WOODSTOCK PRP GROUP

•••

PREPARED BY:
WARZYN INC.
CHICAGO, ILLINOIS

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LIST OF ACRONYMS

ARAR	Applicable or relevant and appropriate requirement
ATSDR	Agency for Toxic Substances and Disease Registry: A branch of the Centers for Disease Control that is responsible for preparing health assessments at sites.
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, Liability Act of 1980, also known as Superfund: Amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA).
CLP	Contract Laboratory Program
CRL	Central regional laboratory
CRP	Community relations plan
CWA	Clean Water Act
DQO	Data quality objectives: Statements that specify the data needed to support decisions regarding remedial response activities.
EMSL-LV	Environmental Monitoring Systems Laboratory, Las Vegas
EPIC	Environmental Photographic Interpretation Center
ERA	Expedited response action
ESI	Expanded site investigation
FIT	Field investigation team
FS	Feasibility study
FSP	Field sampling plan: Defines in detail the sampling and data gathering activities to be used at a site. (See SAP.)
HSP	Health and safety plan
IEPA	Illinois Environmental Protection Agency

IRIS Integrated Risk Information System

Lead agency The agency, either the EPA, Federal agency, or appropriate State agency having primary responsibility and authority for planning and executing the remediation at a site.

MCL Maximum contaminant level: Established under the Safe Drinking Water Act.

MCLG Maximum contaminant level goal: Established under the Safe Drinking Water Act.

MPRSA Marine Protection Research and Sanctuaries Act

NAAQS National Ambient Air Quality Standards

NCP National Oil and Hazardous Substances Contingency Plan

NEPA National Environmental Policy Act

NIOSH National Institute for Occupational Safety and Health

NPDES National Pollutant Discharge Elimination System

NPL National Priorities List: A list of sites identified for remediation under CERCLA.

O&M Operation and maintenance

OSHA Occupational Safety and Health Administration

OSWER Office of Solid Waste and Emergency Response

q_1* Cancer potency factor: The lifetime cancer risk for each additional mg/kg body weight per day of exposure.

PRP Potentially responsible party

QA Quality assurance

QAPP Quality assurance project plan: A plan that describes protocols necessary to achieve the data quality objectives defined for an RI. (See SAP.)

QC	Quality control
RAS	Routine analytical services
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RfD	The reference dose (RfD) is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a lifetime.
RI/FS	Remedial investigation/feasibility study
ROD	Record of Decision: Documents selection of cost-effective Superfund-financed remedy.
RPM	Remedial Project Manager: the project manager for the lead Federal agency.
SAP	Sampling and analysis plan, consisting of a quality assurance project plan (QAPP) and a field sampling plan (FSP).
SARA	Superfund Amendments and Reauthorization Act of 1986. (See CERCLA.)
SAS	Special analytical services
SDWA	Safe Drinking Water Act
SI	Site investigation
SITE	Superfund innovative technology evaluation
SOP	Standard operating procedure
SOW	Statement of Work
SPHEM	Superfund public health evaluation manual
SWDA	Solid Waste Disposal Act

TAT	Technical assistance team
TBC	To be considered
TCL	Target compound list
TDM	Technical directive memorandum
TSCA	Toxic Substances Control Act
U.S. EPA	United States Environmental Protection Agency
WPRR	Work plan revision request

Modified From: U.S. EPA, 10/88. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final. EPA/540/G-89/004, OSWER Directive 9355.3-01, October 1988.

A

APPENDIX A

GEOPHYSICAL SURVEY REPORT

Abstract

To delineate landfill boundaries and locate buried metal associated with the Woodstock Municipal Landfill Site, McHenry County, Illinois, an electromagnetic conductivity and magnetic total field surveys using a Geonics EM31 and a EG&G magnetometer were conducted over three areas of the site.

Interpretation of the EM survey effectively delineated the landfill boundary in the southeast corner of the site, a broad geophysical anomaly located in the southwest corner of the site that could be associated with a container area, and apparently two types of fill material along the northern extent of the site. No obvious fill boundary was located along the northern extent that reflected the presence of in-situ soils. A small area located along the southern border of the site may define the landfill boundary and show signs of leachate seepage.

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Report on the Electromagnetic and Magnetic Surveys Conducted at

the

Woodstock Municipal Landfill Site McHenry County, Illinois

for

Warzyn Engineering, Inc. Addison, Illinois

by

Fromm Applied Technology
Mequon, Wisconsin
July 20, 1990

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Introduction

From June 26 through June 28 and July 9th, 1990, electromagnetic (EM) and total field magnetic geophysical surveys were conducted over three areas of the Woodstock Municipal Landfill Site, McHenry County, Illinois. The magnetic survey was not included in the work plan but was utilized to complement the EM survey in Area B. Primary objectives of the services as described under section SUBTASK 6B - GEOPHYSICAL SURVEY of approved Work Plan (project number 60776) are: "(1) to attempt to identify possible leachate seeps and groundwater contamination and (2) to map anomalies in a landfill area where U.S. EPA suspects past disposal of containerized waste."

Geophysics was conducted in three areas to accomplish these objectives. **Figure 1: Site Map of Geophysical Survey Areas for the Woodstock Municipal Landfill Site** locates these three areas, Areas A, B, and C, and the approximate orientation of the coordinate system used for the geophysical surveys.

Overview of Geophysical Theory

A brief tutorial in geophysical methods and theory is provided here for those who are unfamiliar with Electromagnetic and Magnetic Surveys. In electromagnetic surveys, a transmitter produces an electromagnetic field

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which induces a current into the ground. This induced current generates its own electromagnetic field which is a reflection of the soils' bulk conductance. This synthesized field is detected by a receiver which translates the amplitude and phase of the electromagnetic field into a numerical value of conductance. Electrical conductors, generally iron, less than ten feet deep will result in field distortion and yield "zero" or negative values of conductance. Hence, shallow metallic objects are easily identified by their negative or "zero" value of conductance. If the metallic object(s) is/are too deep for field distortion then the EM may lead to an abnormally high value of conduc tance.

Electromagnetic methods can be used to effectively map out variations in soil conductivities. However, they do not absolutely indicate the depth of burial or the type of metallic object that is buried. For example, an electromagnetic survey generally could not distinguish between a couple of barrels, buried concrete with steel reinforcing rod, a small engine block, or a kitchen appliance. Furthermore, these methods cannot define the actual form or shape of the metallic objects. However, they can provide an approximation of the horizontal extent of the metallic object(s), whatever the form. Penetration of the electromagnetic (EM) gear can range from the

surface (near surface metallic objects can inhibit deeper penetrations) to approximately fifteen feet.

A magnetometer is used in a magnetic survey to measure the earth's magnetic field. In this study, a proton magnetometer was used to measure the intensity of the earth's total field at discrete grid points. Readings were taken at an elevation of about 6 feet above ground level. The earth's local magnetic field is easily distorted by the presence of ferrous materials, thus creating mappable variations or anomalies that locate only the presence of buried ferrous objects. The depth of investigation possible with magnetic's can theoretically be as deep as sixty feet for a 1000 pounds of iron.

Methodology

The coordinate system that was used at the site for the geophysics was clearly marked in the field. Wooden stakes were placed in the ground by Warzyn Personnel, approximately every 100 feet.

Originally on all three areas, a grid system was to be established where traverses were spaced 25 feet apart with a station spacing of 25 feet. However, in the field, Warzyn personnel and Versar, the U.S. EPA oversight contractor, agreed to a traverse spacing of 50 feet with a

station spacing of 20 feet. Furthermore, after an "in the field" evaluation of the initial data, Area B's 300 foot by 300 foot grid was shifted 125 feet to the east and 200 feet to the south, effectively creating a grid system with 20 by 25 foot centers.

A Geonics EM 31D Electromagnetic Terrain Conductivity Meter was used to obtain conductivity measurements. Some of the readings were taken at or near ground level, for greater penetration in an attempt to acquire a "zero" conductivity reading. "Zero" conductivity readings are caused by the presence of metallic objects at depth. If a "zero" conductivity value was not obtained, then a standard EM reading was taken at waist height. Inphase readings were also obtained because the inphase component of the EM equipment can often be more sensitive to buried metal then the normally obtained conductivity measurements. Variances of the inphase component from background is often caused by buried metal. All electromagnetic data was recorded on a OMNIDATA data logger with a Geonic's DL55 interface and later up loaded into a computer system.

Total field magnetic measurements were taken with an EG&G 856 proton magnetometer at an approximate height of six feet. The magnetic data was stored on its internal memory and later up loaded into a computer system. A base station

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was occupied at station 200 South 100 East. The contoured magnetic data is the difference between field readings and linearly interpolated time dependent base station readings.

A computer generated contour maps normally yield simple computer extrapolated contour lines that extend into unsurveyed areas, areas that contain few or no geophysical readings. Areas that have questionable validity are not addressed in this report. Computer extrapolated areas were blanked out to the extent possible and any remaining non-blanked areas can be found by determining where contour lines may have extended past surveyed areas. The easiest way to determine unblanked areas is to compare the maps showing the station locations with their contour maps to determine which contour lines extend beyond geophysically surveyed areas. The actual source area of anomalies created from contouring the data should be located by referencing the data set, see appendices .

Conclusions

Electromagnetic Survey of Area A

The objective of conducting an EM survey in Areas A and C was to delineate, if possible, the landfill boundaries, Area C is discussed later in the report. The survey

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boundaries in Area A were determined by the fence line along the east and south borders. The northern boundary was placed well within the landfill. The western boundary was extended as far as possible into the marshy area along the west side of the landfill. **Figure 2: EM Station Locations for Area A** indicates the spatial extent and EM station locations for this area. The landfill boundary is apparent for Area A in **Figure 3: EM Conductivity Map of Area A (-10 to 75 mmhos/m)** and appears to be defined by the 25 millimho per meter contour line, which is not continuous but extends as far as 1480 south 1160 east. High conductivities are generally seen trending towards the north and are probably due to an increase thickness of fill material or saturated thickness of leachate. In addition, the conductivity measurements indicate the possible presence of buried metal at approximately 1400 south 1150 east. **Figure 4: EM Inphase Map of Area A (-15 to 15 ppt)** supports this interpretation and also shows possible indications of additional buried metal at approximately 1450 south 1200 east, 1350 south 1150 east, and 1100 south 1250 east. The sources causing these anomalies are unknown. Any deflection of the inphase response from background can often be due to buried metal. The activity seen in Figure 4 also coincides with the approximate fill boundaries described in Figure 3.

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Electromagnetic Survey of Area B

Area B's survey boundaries were well defined in the work plan. After data was collected, the grid system for Area B was shifted to the southeast effectively creating a higher resolution survey area than Areas A and C. Figure 5: EM Station Locations for Area B indicates where EM readings were obtained for this area. The same stations were reoccupied for the magnetometer survey, which was conducted in addition to the scope of work.

Interpretation of the EM and Magnetic surveys from this area indicates that a major portion of Area B contains buried metal. The northern end of this is not characterized by large amounts of buried metal.

The 30 millimho per meter contour line in Figure 6a: EM Conductivity Map of Area B (30 to 100 mmhos/m) seems to define a zone of landfill material towards the north. Also, the anomaly seen extending from approximately 1050 south 320 east to 1020 south 220 east appears to be landfill material with buried metal associated with it. The rest of the "bulls eye" type anomalies seen in Figure 6a could be fill or indications of metal buried too deep for the EM equipment to functionally detect. The 30 to 40 millimho per meter gradation seen along the southern border (1300 south) of Area B did not visually appear to

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be landfill, in the field, and could be a transitional zone going from fill material to a relatively high conductivity soil.

The primary objective for conducting a EM survey in Area B was to geophysically detect a possible buried container area. Electromagnetic indications of buried metal should be seen in the Inphase data set and in Figure 6c: EM Conductivity Map of Area B (-100 to 20 mmhos/m). The large negative trending anomalies seen in this figure are all strong indications of buried metal. Four strong anomalies are seen from 850 south 300 east to 1000 south 300 east. The largest one of these anomalies could possibly be a westerly extension of the large anomaly seen trending from 1000 south 550 east to 1175 south 350 east. The areas delineated by the 7 ppt contour line in Figure 7a: EM Inphase Map of Area B (7 to 35 ppt) deviate from background and are anomalous. Figure 7b: EM Inphase Map of Area B (-35 to -7 ppt) aggrees extremely well with Figure 6b and delineates approximately the same boundaries that indicate buried metal. However, Figure 7b more strongly indicates the presence of buried metal along the northern boundary (800 south) and at approximately 1200 south 550 east.

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Total Field Magnetic Survey of Area B

Interpretation of the magnetometer survey supports the presence of buried metal at the same locations that EM anomalies delineated. Because EM techniques are not as inherently sensitive to buried ferrous metal as magnetic methods, magnetic anomalies are spatially larger than EM anomalies and do not usually delineate anomalies accurately. However, magnetic methods can be used to detect buried ferrous metal at greater depths than EM techniques. Anomalies seen in **Figure 8a: Total Field Mag. Map of Area B (300 to 3900 gammas)** are primarily associated with large negative anomalies seen in **Figure 8b: Total Field Mag. Map of Area B (-300 to 9900 gammas)**. This positive - negative inversion is a common signature typical of buried ferrous metal. Figure 8b implies that the EM anomaly seen at 1000 south 300 east is a westerly extension of the larger EM anomaly. In addition, Figure 8b strongly indicates relatively large amounts of buried ferrous metal at approximately 975 south 275 east, 1075 south 250 east, 1025 south 575 east, and 1050 south 550 east. It is believed that because the combination of Figures 8a and 8b closely resemble the EM anomalies indicating buried metal, the source of these anomalies should be less than 20 feet.

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Summary of Area B

One major geophysical anomaly probably associated with buried metal was indicated in the center portion of the site, trending from 1000 south 550 east to 1175 south 400 east with a possible smaller anomaly towards the west being an extension of this larger one, one medium sized anomaly at approximately 1200 south 550 east (partially due to some surface metal), and many smaller anomalies seen in several of the figures. Each of these anomalies are may be caused by some type of buried metal. In contrast, it appears that the northern quarter of Site B is relatively clear of buried metal and is primarily landfill material, thickening towards the north. In addition, the southern most portion of the site (1300 south), except for the southeast corner, indicates a transition from fill to a non-fill conditions, north to south respectfully. However, the conductivities in the non-fill areas are higher than expected, which could result from naturally increasing soil conductivities or leachate seepage.

Electromagnetic Survey of Area C

Area C was geophysically investigated for the same reason as Area A, to locate fill boundaries. As with the previous two areas, A and B, the EM survey area can be seen in the map showing the EM station locations, **Figure 9: EM Station Locations for Area C**. The survey area was defined as being

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an approximately 200 foot wide strip that paralleled the northern boundary of the site (defined by a fence line). The east and west borders were restricted by a marshy area. All of survey Area C appears to be fill material. This area does not exhibit electromagnetic characteristics similar to Area A and it indicates two types of fill material. A line from approximately -300 south 750 east to 200 south 550 east divides the fill into two areas, east and west. Conductivity values are highly variable in the east area, which is typical of buried metal. The survey of the fill area to the west indicates few buried metal anomalies but conductivity values are somewhat elevated, perhaps caused by leachate. These relatively high but slowly fluctuating conductivity measurements suggest that this area contains a lesser amount of electromagnetically detectable municipal fill than the eastern portion of Area C. **Figure 11: EM Inphase Map of Area C (-30 to 10 ppt)** supports the conclusion that a greater amount of buried metal exists in the eastern portion of Area C than in the west. Seven localized buried metal anomalies have been identified in the western portion of the site; the approximate locations are: 50 south 75 east, 75 south 250 east, 150 south 250 east, -50 south 450 east, 50 south 500 east, 175 south 500 east, and 75 south 600 east.

A more precise fill boundary was expected to be found in Area C. The lack of definition suggests that this area is

primarily fill material. The origin of the fill could not be determined and is considered to be different for the eastern and western portions of the site.

Summary of All the Geophysics Conducted

Interpretation of the geophysics lead to the following generalized conclusions:

1) The EM survey conducted in Area A effectively delineated the landfill boundary. In addition, it delineated several areas associated with buried metal.

2) Area B appears to be primarily fill material with a large amount of buried metal found in the center. The southern portion of this area potentially delineated a fill boundary. However, the high conductivities in this possible non-fill area may indicate signs of leachate.

3) Area C does not show a clean fill boundary like Area A. Instead, the conductivities throughout this area are relatively high and suggest two types of fill material. The eastern portion of Area C is characteristic of municipal fill and buried metal. The western portion of this area appears to be filled. Seven strong indications of buried metal were identified.

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Quality Assurance / Quality Control

In order to maintain a high level of certainty that equipment was operating as expected, base station readings were obtained. The EM base station was located at station 1500 south 1200 east and was able to consistently sustain a base station reading of 19 millimhos per meter. The purpose of the magnetometer base station, located at station 200 south 100 east, is not to show repeatability. On the contrary, magnetometer base station readings are taken to correct field readings for naturally occurring fluctuations in the earth's magnetic field. In this survey, the base station only varied by +/- 13 gammas from 57253 gammas. The magnetic data has been corrected for these fluctuations, but, for all practical purposes was not required.

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STANDARD DISCLAIMER

The objective of any geophysical survey is to define the existence and configuration of features at depth. However, these features may bear a highly complex relationship to the geophysical measurements recorded. Therefore, conclusions drawn, no matter how logically deduced, should not be misconstrued as fact. We shall not and will not, except in the case of gross or willful negligence on our part, be liable or responsible for any losses, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, employees and agents or by anyone else not related to Fromm Applied Technology who might base interpretations and opinions on our geophysical surveys.

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Geophysical Figures

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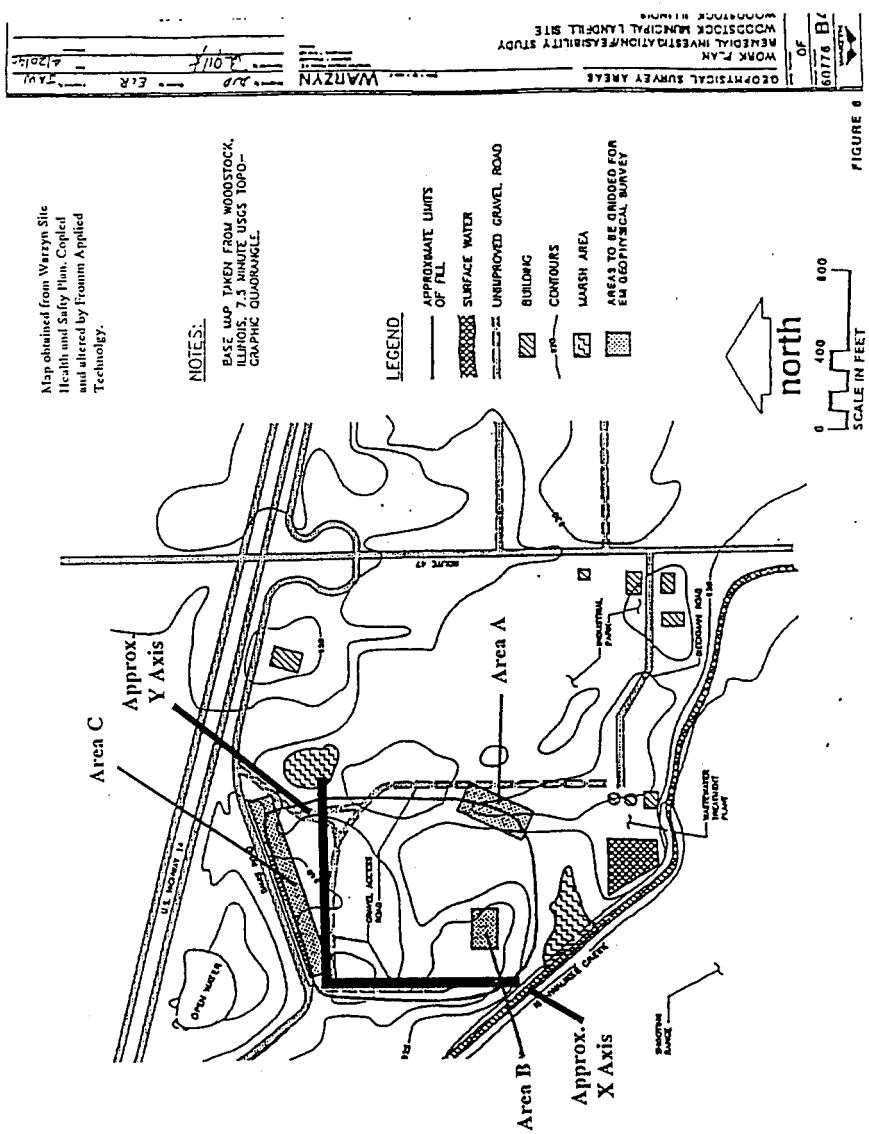

Figure 1: Site Map of Geophysical Survey Areas for the Woodstock Municipal Landfill Site

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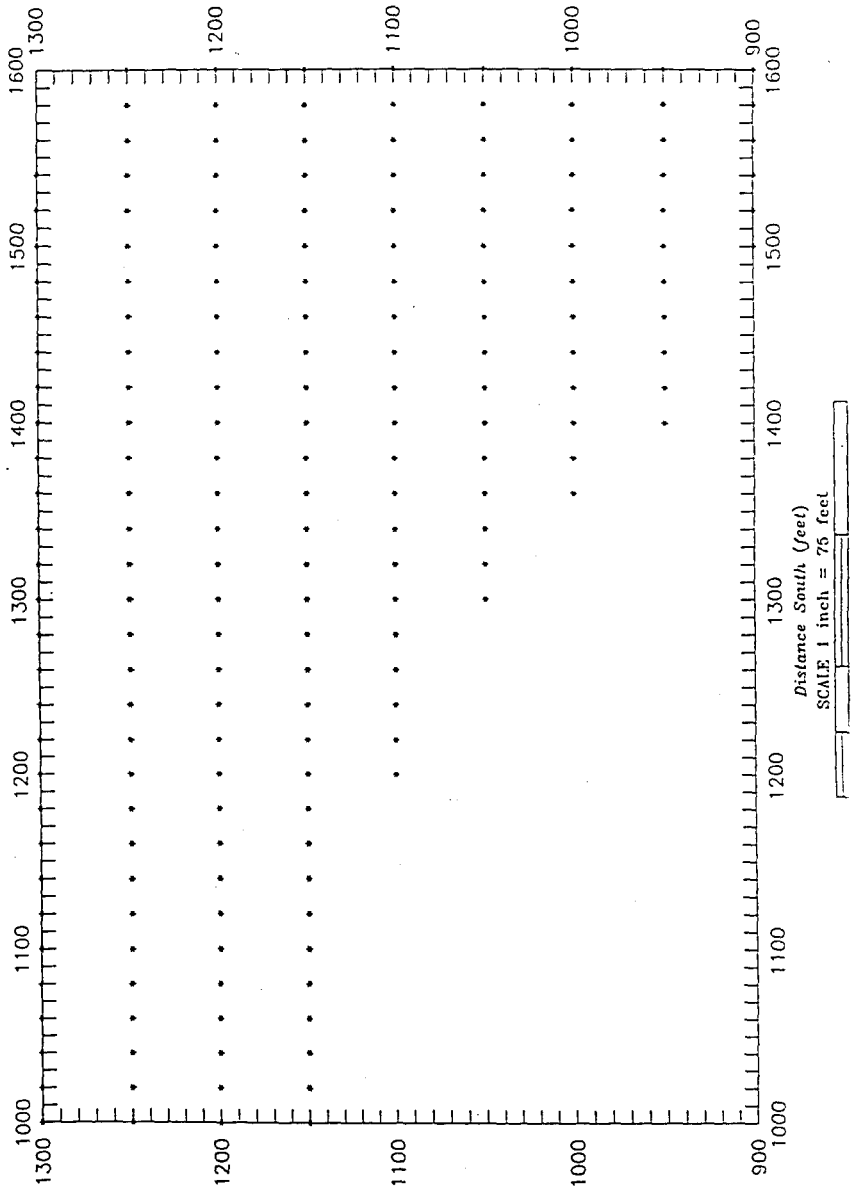

Figure 2: EM Station Locations for Area A

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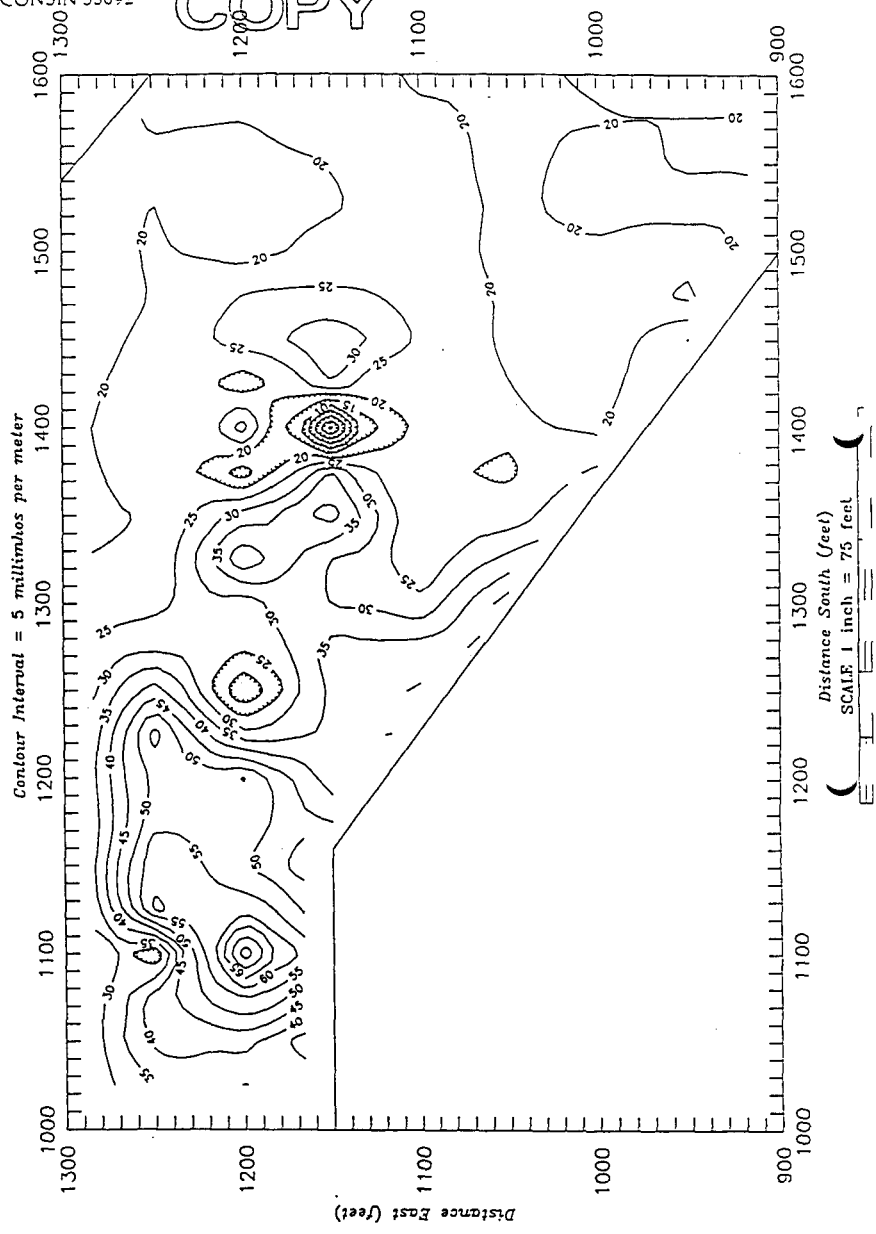

Figure 3: EM Conductivity Map of Area A (-10 to 75 mmhos/m)

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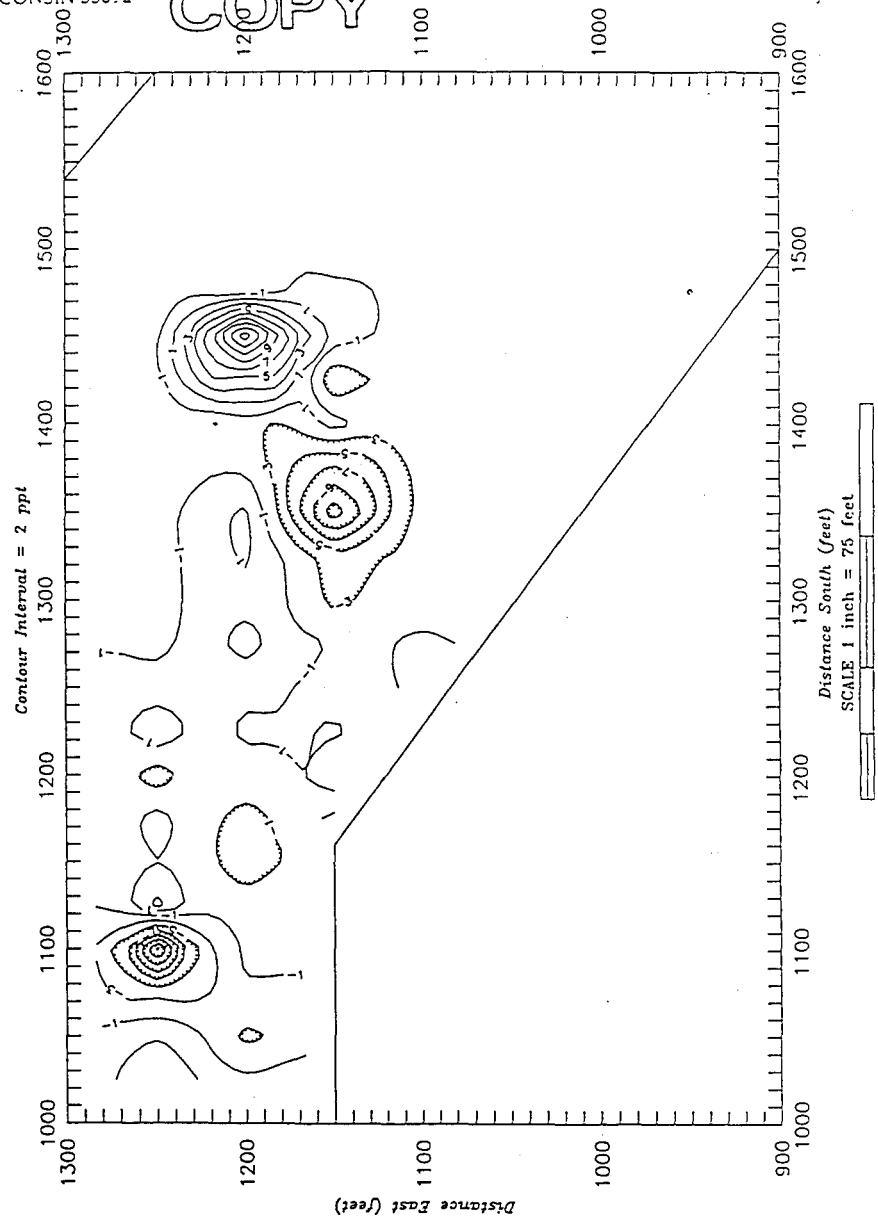

Figure 4: EM Inphase Map of Area A (−15 to 15 ppt)

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Figure 5: EM Station Locations for Area B

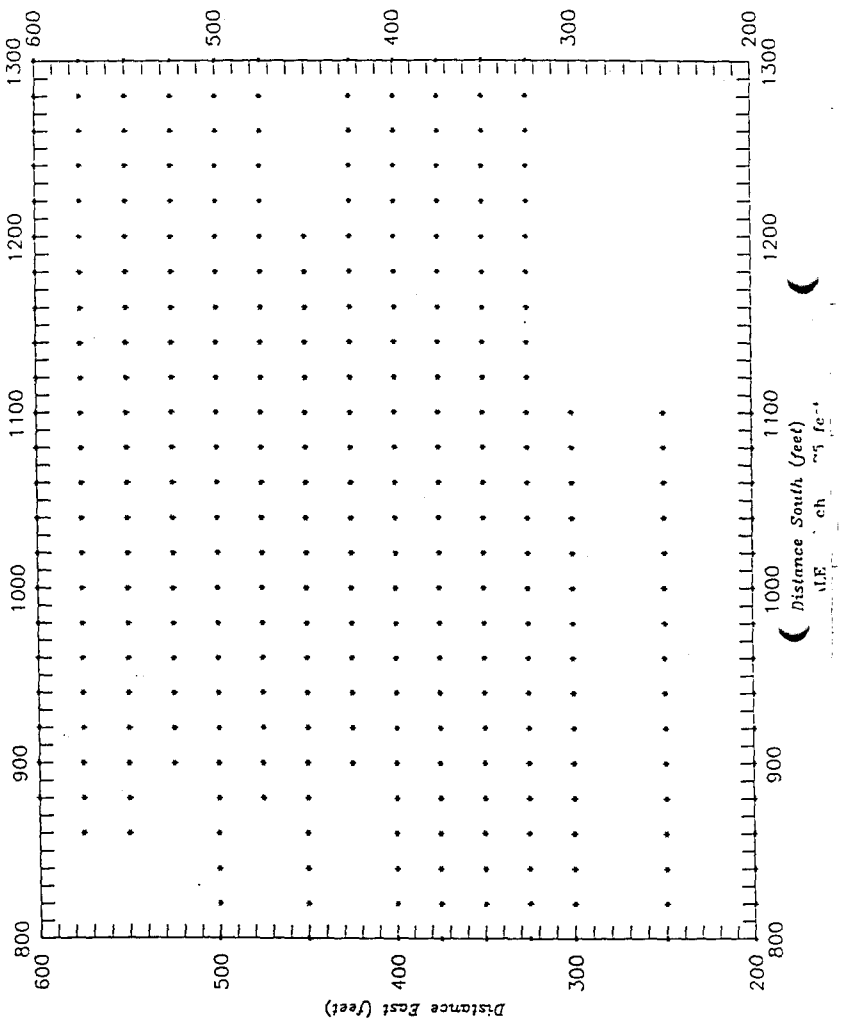

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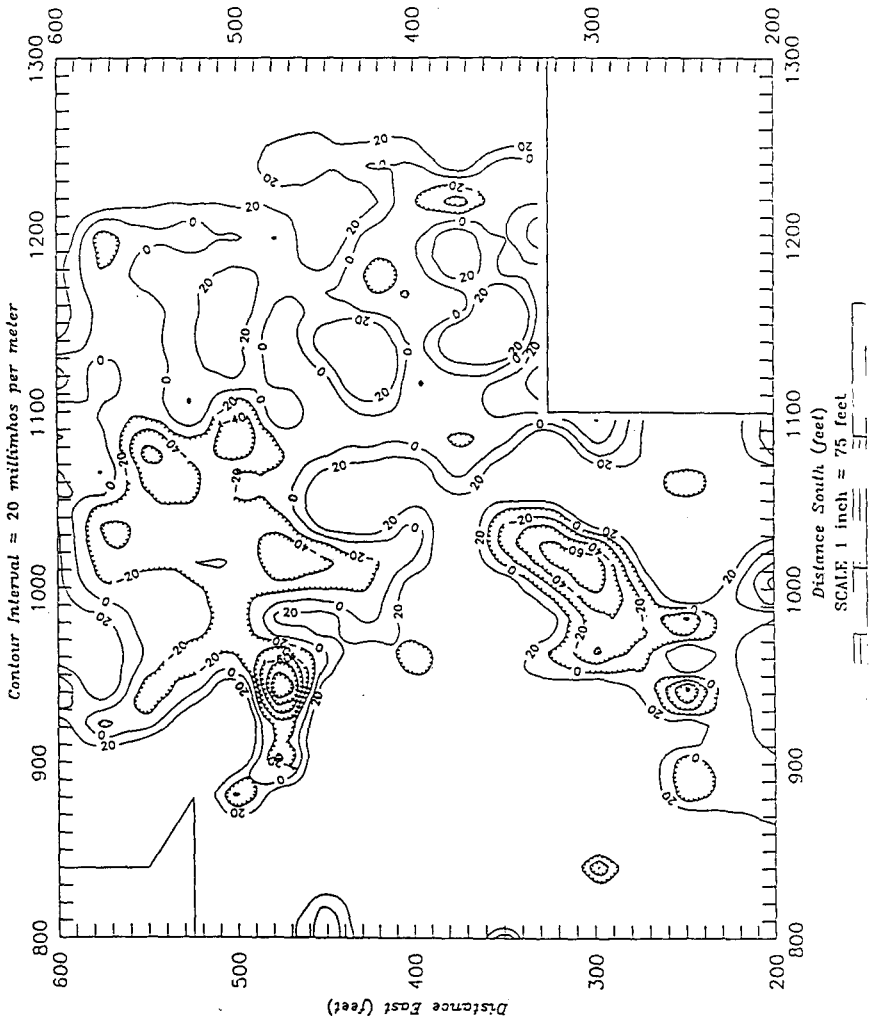
Figure 6b: EM Conductivity Map of Area B (-100 to 20 mmhos/m)



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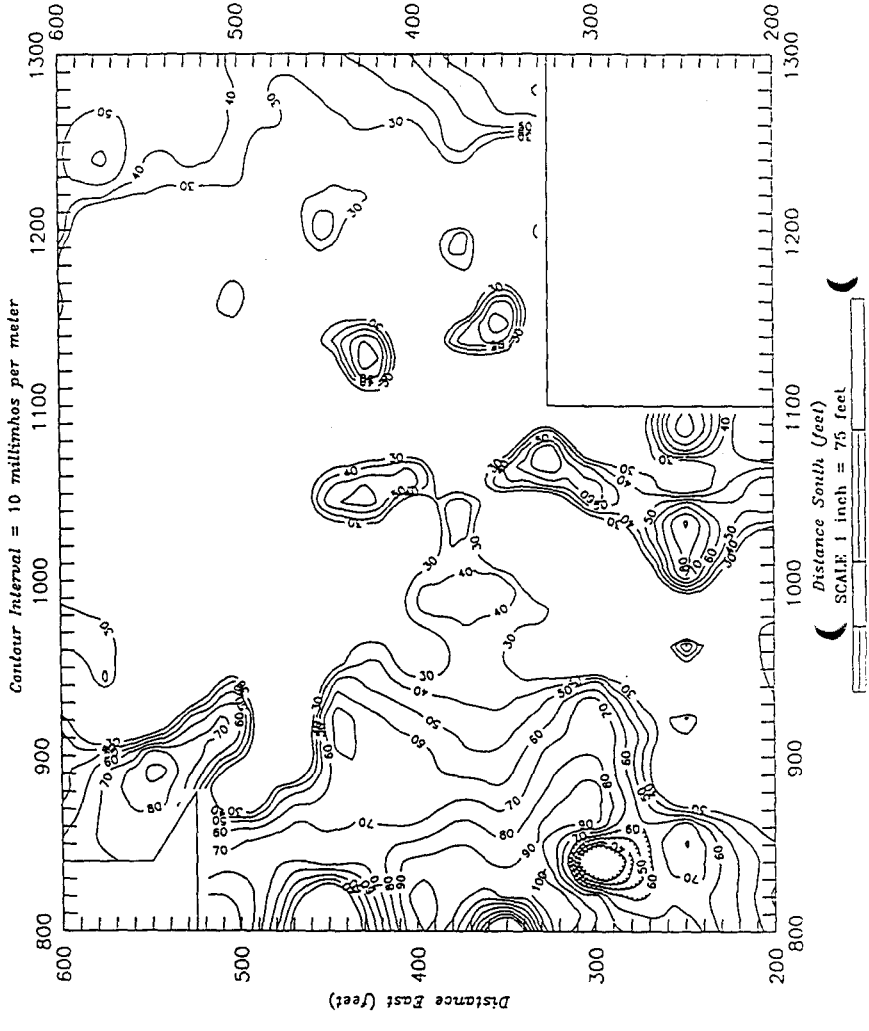

Figure 6a: EM Conductivity Map of Area B (30 to 100 mmhos/m)

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Figure 7a: EM Inphase Map of Area B (7 to 35 ppt)

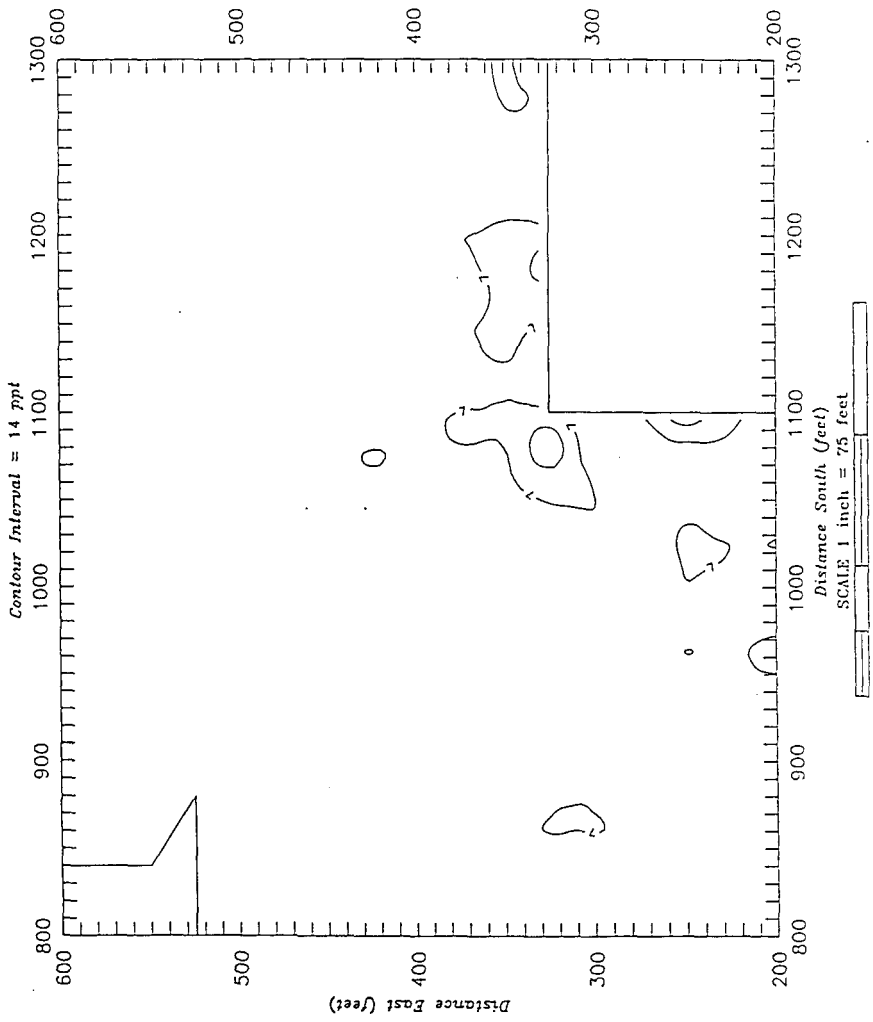

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Figure 7b: EM Inphase Map of Area B (-35 to -7 ppt)

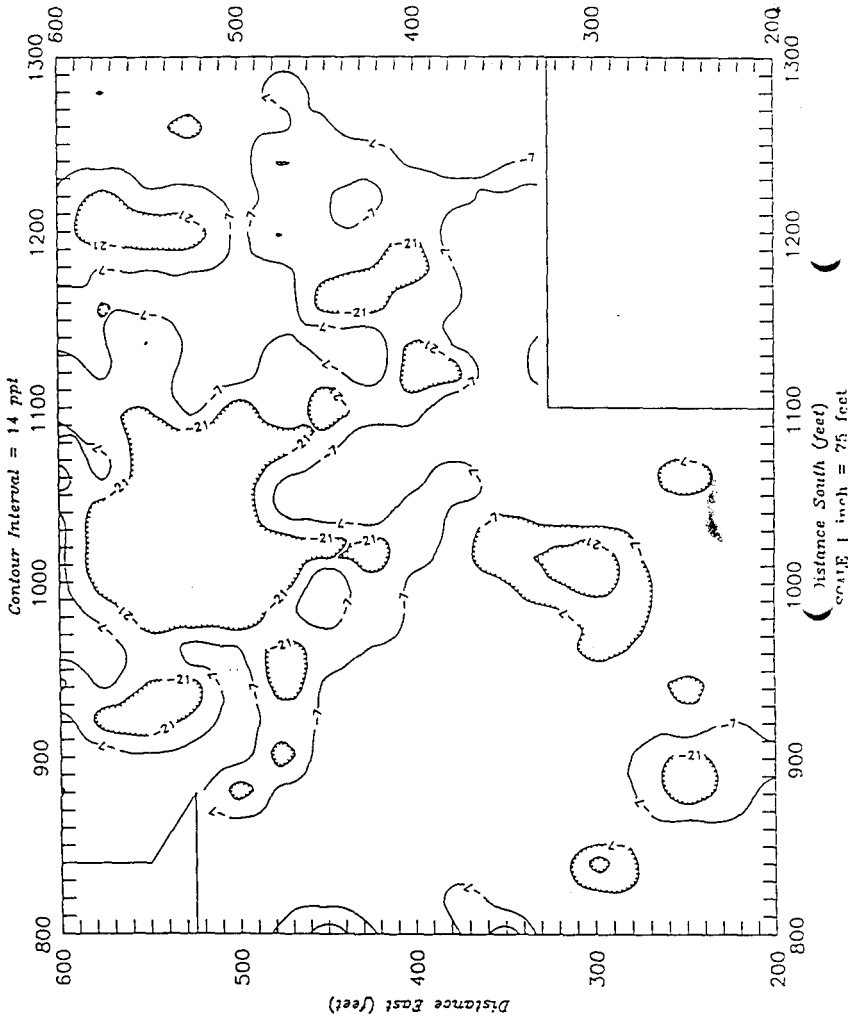

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Figure 8b: Total Field Mag. Map of Area B (-300 to 9900 gammas)

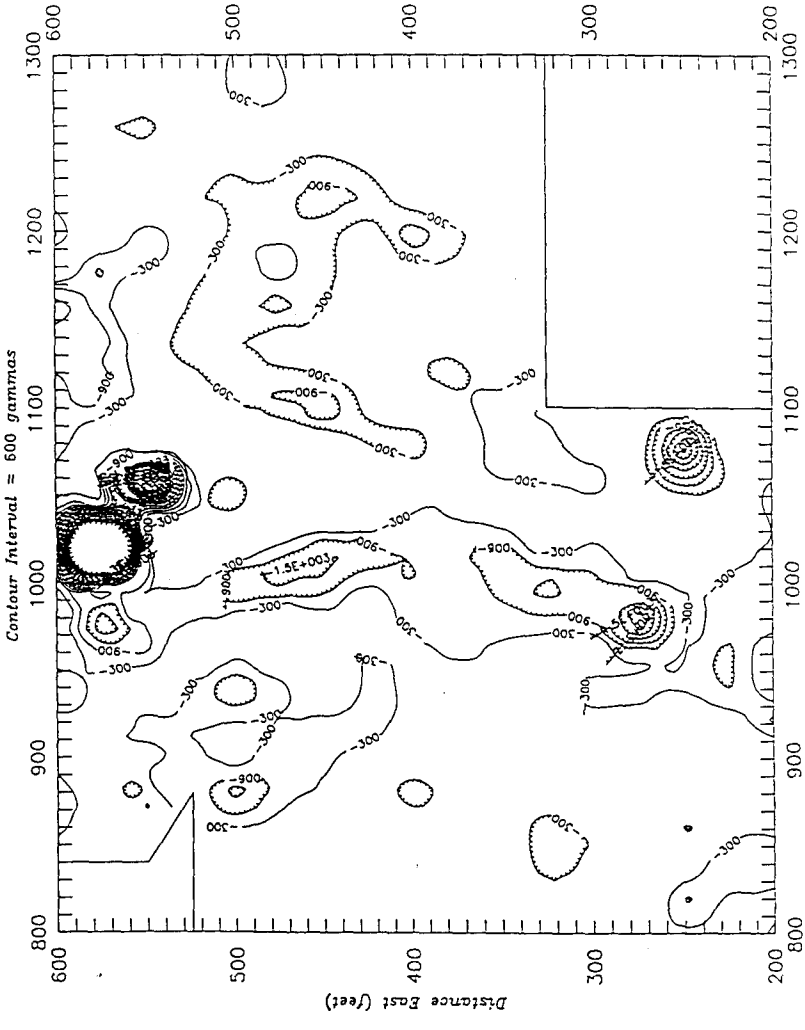

Figure 8a: Total Field Mag. Map of Area B (300 to 3900 gammas)

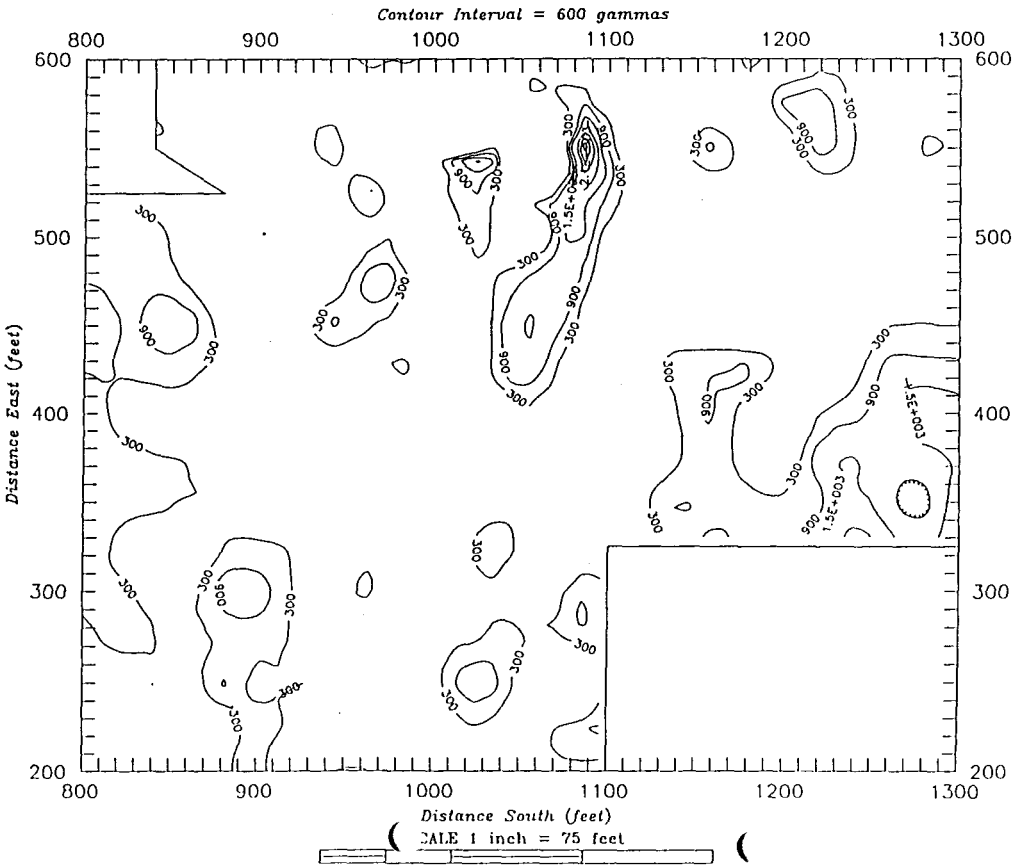

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Figure 9: EM Station Locations for Area C

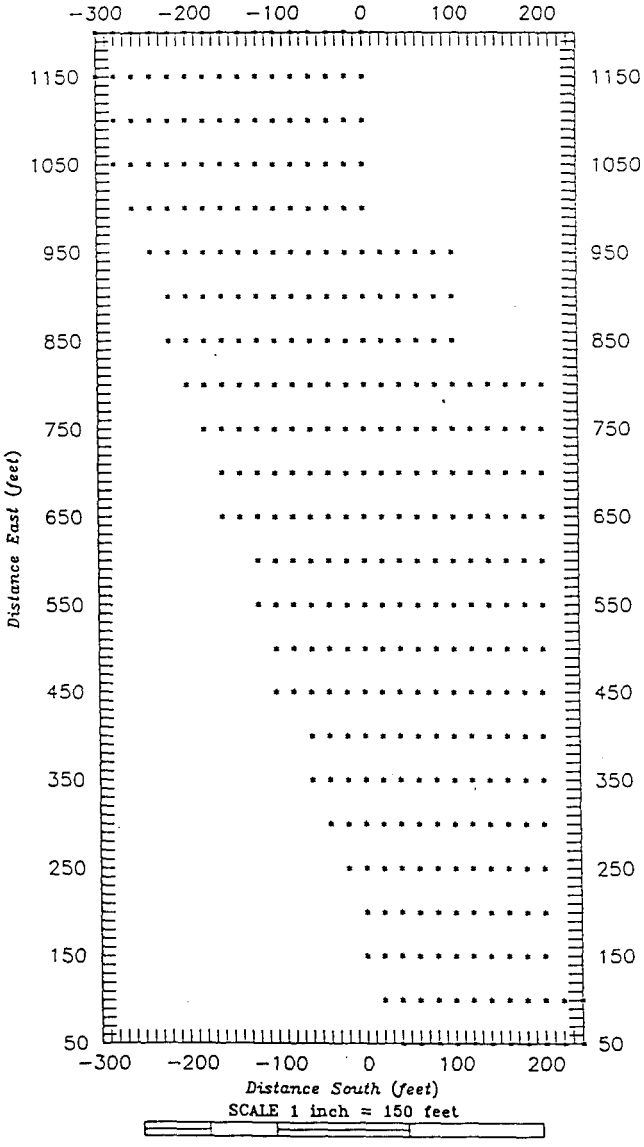

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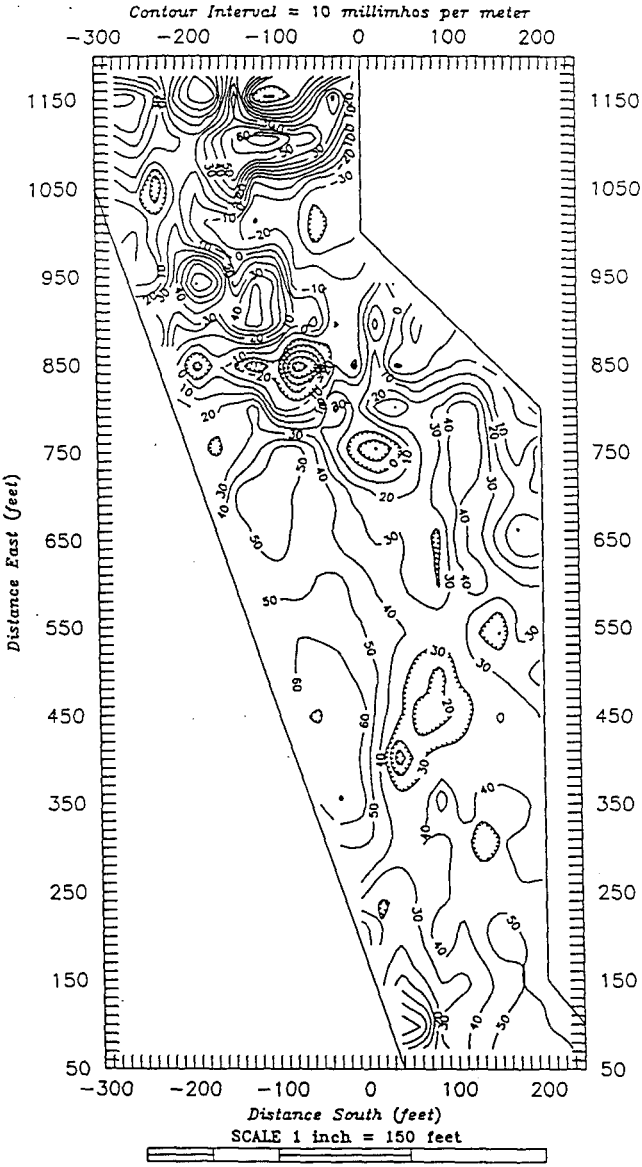
Figure 10: EM Cond. Map of Area C (-60 to 80 mmhos/m)



Appendix A: Electromagnetic Conductivity Data for Area A

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Appendix A: Electromagnetic Conductivity Data or Area A

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X	Y	Conductivity (mmhos/m)	Inphase (ppt)
1500	900	23.4	-2.00
1520	900	20.4	-1.75
1540	900	20.2	-1.88
1560	900	19.6	-1.89
1580	900	19.8	-1.78
1600	900	21.8	-1.70
1400	950	33.8	-1.94
1420	950	28.6	-2.11
1440	950	25.8	-2.11
1460	950	24.8	-2.19
1480	950	10.4	-0.54
1500	950	17	-1.47
1520	950	22	-1.94
1540	950	21.2	-2.06
1560	950	17.6	-1.88
1580	950	20.8	-1.88
1600	950	22.4	-1.73
1360	1000	29.8	-1.94
1380	1000	25	-1.93
1400	1000	19	-2.01
1420	1000	16.8	-2.17
1440	1000	17	-2.11
1460	1000	16	-2.06
1480	1000	16.4	-2.01
1500	1000	18.8	-1.96
1520	1000	21.6	-1.89
1540	1000	23.2	-1.94
1560	1000	20.6	-3.13
1580	1000	19.4	-1.96
1600	1000	20.6	-1.83
1300	1050	43	-1.58
1320	1050	33.8	-1.83
1340	1050	25.6	-1.91
1360	1050	18.4	-2.05
1380	1050	19.8	-1.99
1400	1050	20.6	-2.02
1420	1050	20.4	-2.00
1440	1050	19.2	-1.95
1460	1050	19.2	-2.01
1480	1050	19.4	-1.89
1500	1050	18.6	-1.88
1520	1050	19	-1.93
1540	1050	18.6	-1.89
1560	1050	18	-1.93
1580	1050	19.2	-1.87
1600	1050	19.6	-1.70
1200	1100	29.6	-1.77
1220	1100	31.8	-2.04

Appendix A: Electromagnetic Conductivity Data or Area A

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X	Y	Conductivity (mmhos/m)[1]	Inphase (ppt)
1240	1100	39.8	-0.76
1260	1100	41.4	-0.87
1280	1100	35.6	-0.48
1300	1100	26.2	-2.13
1320	1100	21.8	-2.08
1340	1100	20.6	-1.91
1360	1100	20	-1.93
1380	1100	21.6	-1.94
1400	1100	21.2	-1.85
1420	1100	21.8	-1.81
1440	1100	23.8	-1.76
1460	1100	24.8	-1.88
1480	1100	23.4	-1.97
1500	1100	22	-1.99
1520	1100	23.4	-1.91
1540	1100	23.8	-2.01
1560	1100	22	-1.90
1580	1100	21.2	-1.61
1600	1100	18.8	-1.59
1000	1150	49.4	7.96
1020	1150	44.8	3.34
1040	1150	30.6	-1.17
1060	1150	23.2	-3.34
1080	1150	46.4	-1.36
1100	1150	59.4	0.17
1120	1150	43.4	2.25
1140	1150	40	0.13
1160	1150	36.2	0.41
1180	1150	48	2.02
1200	1150	37	-2.42
1220	1150	35.8	-0.35
1240	1150	37	-2.02
1260	1150	36	-1.48
1280	1150	37.2	-1.19
1300	1150	30	-3.47
1320	1150	25.4	-4.80
1340	1150	44.2	-3.40
1360	1150	39.2	-21.11
1380	1150	33.8	-2.93
1400	1150	-11.6	-0.23
1420	1150	28.2	-5.50
1440	1150	34.2	-2.54
1460	1150	32.2	2.72
1480	1150	23.6	-1.76
1500	1150	21.8	-1.70
1520	1150	19.2	-1.73
1540	1150	20	-1.70
1560	1150	20.4	-1.77

Appendix A: Electromagnetic Conductivity Data or Area A

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X	Y	Conductivity (mmhos/m)	Inphase (ppt)
1580	1150	23.2	-1.83
1600	1150	24.8	-1.52
1000	1200	48.8	-1.71
1020	1200	36	0.31
1040	1200	32.4	-3.68
1060	1200	52.4	-3.20
1080	1200	57	-0.61
1100	1200	77.8	-0.57
1120	1200	59.6	0.43
1140	1200	52.8	-1.87
1160	1200	49.4	-2.43
1180	1200	54.2	-1.30
1200	1200	55.2	-0.05
1220	1200	37.6	-1.75
1240	1200	13.2	-0.24
1260	1200	17	-0.71
1280	1200	28.8	2.71
1300	1200	27.2	0.23
1320	1200	45.2	1.13
1340	1200	39.2	2.16
1360	1200	25.4	0.92
1380	1200	7.8	-2.07
1400	1200	32	-2.01
1420	1200	14.6	-5.31
1440	1200	23	33.89
1460	1200	31.8	-1.32
1480	1200	22.6	-1.81
1500	1200	18.06	-1.89
1520	1200	16.6	-1.84
1540	1200	17	-1.78
1560	1200	19.4	-1.82
1580	1200	20.4	-1.76
1600	1200	22.2	-1.58
1000	1250	36.4	3.54
1020	1250	35.4	3.18
1040	1250	36	1.94
1060	1250	47	-0.39
1080	1250	40.8	-4.62
1100	1250	26.2	-15.29
1120	1250	59.6	3.82
1140	1250	64.60001	2.30
1160	1250	53.8	-0.41
1180	1250	54.4	2.52
1200	1250	51.4	-2.02
1220	1250	61.6	3.47
1240	1250	44	0.11
1260	1250	42.2	-0.37
1280	1250	24.4	-1.95

Appendix A: Electromagnetic Conductivity Data or Area A

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X	Y	Conductivity (mmhos/m)	Inphase (ppt)
1300	1250	23.6	-1.76
1320	1250	20.4	-1.81
1340	1250	20	-1.81
1360	1250	20.8	-1.76
1380	1250	23.4	-1.83
1400	1250	22.6	-1.87
1420	1250	23	-1.84
1440	1250	22	-1.85
1460	1250	20.8	-1.90
1480	1250	20	-2.00
1500	1250	20.6	-1.96
1520	1250	20.4	-1.83
1540	1250	19.6	-1.81
1560	1250	19.2	-1.69
1580	1250	20.8	-1.70
1600	1250	21.6	-1.78
1000	1300	23.6	-1.35
1020	1300	23.4	-1.37
1040	1300	22.2	-1.40
1060	1300	22.2	-0.98
1080	1300	22.4	-1.12
1100	1300	21.2	-1.26
1120	1300	22	-1.11
1140	1300	22.6	-1.22
1160	1300	23.2	-1.08
1180	1300	23.8	-1.16
1200	1300	25.4	-1.10
1220	1300	23.4	-1.24
1240	1300	21.8	-1.19
1260	1300	23.6	-0.33
1280	1300	23.4	-1.37
1300	1300	22.4	-1.58
1320	1300	19.6	-1.76
1340	1300	19.8	-1.71
1360	1300	17	-1.75
1380	1300	18.8	-1.70
1400	1300	18.4	-1.85
1420	1300	18.6	-1.81
1440	1300	15.6	-1.72
1460	1300	16.8	-1.85
1480	1300	15.4	-1.77
1500	1300	16.6	-1.65
1520	1300	15.6	-1.71
1540	1300	14	-1.90

Appendix B: Electromagnetic Conductivity Data for Area B

COPY

Appendix B: Electromagnetic Conductivity Data for Area B

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
800	200	35.2	-2.11
820	200	27.2	-2.10
840	200	34.6	-1.46
860	200	25	-3.06
880	200	6.4	0.25
900	200	16.8	-13.93
920	200	27.8	0.59
940	200	31.4	-9.80
960	200	33	21.47
980	200	37.2	-2.46
1000	200	-58.6	-5.54
1020	200	-11.4	7.86
1040	200	56.2	5.36
1060	200	61.4	3.82
1080	200	-16.6	5.12
1100	200	-9.4	-5.54
800	250	78	5.36
820	250	63	3.66
840	250	78.6	4.20
860	250	83.4	2.08
880	250	-11	-32.08
900	250	-21.8	-32.04
920	250	61.8	8.38
940	250	-93.6	-19.06
960	250	89.4	11.72
980	250	-73.2	-9.08
1000	250	84	6.96
1020	250	86.4	9.89
1040	250	94.2	7.32
1060	250	-25	-19.69
1080	250	92	2.26
1100	250	82.6	32.65
800	300	86.6	-1.57
820	300	88.2	1.57
840	300	-33.6	-32.09
860	300	93	11.74
880	300	96.6	3.59
900	300	81	0.87
920	300	77.4	1.22
940	300	73.8	10.06
960	300	-52.8	-14.84
980	300	-22.2	-6.47
1000	300	-75	-31.97
1020	300	-73.2	-31.25
1040	300	55.2	6.94
1060	300	70.2	6.62
1080	300	-27.6	-7.41
1100	300	-49.2	-7.27

Appendix B: Electromagnetic Conductivity Data for Area B

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
800	325	103.2	3.81
820	325	112.2	5.35
840	325	91.8	3.34
860	325	94.2	8.53
880	325	82.2	4.67
900	325	75.8	5.86
920	325	59	5.38
940	325	42.6	4.11
960	325	-9	-0.95
980	325	42.2	-0.45
1000	325	-12.4	-20.04
1020	325	-74.8	-23.90
1040	325	-33.6	2.83
1060	325	76	14.05
1080	325	81.4	35.60
1100	325	-32.6	12.37
1120	325	-58.6	-22.36
1140	325	-45.6	-20.29
1160	325	-24	23.84
1180	325	-17.6	-5.94
1200	325	60.6	11.79
1220	325	-9.4	-4.13
1240	325	-15.8	-10.81
1260	325	59.2	5.09
1280	325	72.8	5.78
1300	325	59	-2.23
800	350	-30.6	-32.13
820	350	99.6	5.21
840	350	85.8	0.41
860	350	75	1.07
880	350	61.6	-0.65
900	350	52.6	0.30
920	350	43.6	1.61
940	350	33.2	-3.08
960	350	31	-5.52
980	350	34.8	-4.62
1000	350	55.6	-3.62
1020	350	-26.4	-22.51
1040	350	-25	-5.42
1060	350	70.2	4.11
1080	350	-5.8	4.97
1100	350	-22.2	11.32
1120	350	-27	4.61
1140	350	83.6	20.66
1160	350	77.4	13.78
1180	350	-12.2	15.05
1200	350	-3.4	18.76
1220	350	-10.2	-8.54

Appendix B: Electromagnetic Conductivity Data for Area B

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
1240	350	-16.4	-6.49
1260	350	58.2	5.06
1280	350	63.8	8.19
1300	350	63.8	9.01
800	375	78.6	-5.38
820	375	91.8	-16.86
840	375	97.2	2.43
860	375	84	1.48
880	375	67.2	-0.88
900	375	50.8	-1.22
920	375	46.6	2.70
940	375	34	-4.21
960	375	37	-6.41
980	375	42.8	-5.45
1000	375	42	-4.31
1020	375	45.2	-3.49
1040	375	64.2	-1.75
1060	375	-5.6	-20.64
1080	375	-26.8	8.16
1100	375	-7.8	15.08
1120	375	-12.2	-32.79
1140	375	70.4	3.95
1160	375	-33.8	-11.30
1180	375	44.8	-5.03
1200	375	48.6	6.38
1220	375	-67.2	-13.72
1240	375	49.6	1.43
1260	375	45.6	-1.04
1280	375	53	-1.65
1300	375	65.6	1.01
800	400	103.2	5.36
820	400	106.8	5.77
840	400	93	3.09
860	400	70.8	1.25
880	400	58.2	-1.45
900	400	66.8	-0.40
920	400	52	1.28
940	400	39.6	-3.29
960	400	0.062	-0.82
980	400	41	-2.82
1000	400	39.4	-1.69
1020	400	-8.4	-16.39
1040	400	-9.4	-16.58
1060	400	71.4	-1.20
1080	400	-4.8	-2.20
1100	400	-12.8	-14.04
1120	400	-22.2	-32.75
1140	400	-8.6	-23.22

Appendix B: Electromagnetic Conductivity Data for Area B

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
1160	400	-24.2	-7.59
1180	400	-10.4	-32.78
1200	400	-6.4	-20.78
1220	400	-21.8	-16.10
1240	400	-2.4	-4.91
1260	400	28.6	-3.05
1280	400	42	-4.26
1300	400	51.2	-1.81
900	425	64.4	-2.08
920	425	65.2	-3.75
940	425	46.8	-6.14
960	425	44.8	-3.52
980	425	-7.4	-23.79
1000	425	-20.4	-17.77
1020	425	-28.2	-32.74
1040	425	66.4	8.35
1060	425	56.2	3.02
1080	425	-4.8	13.33
1100	425	-3.2	-25.17
1120	425	91	8.03
1140	425	71	4.71
1160	425	-15.2	-32.74
1180	425	-25.2	-19.64
1200	425	-12.2	-10.19
1220	425	37.4	-1.47
1240	425	-7.6	-13.55
1260	425	39	-2.19
1280	425	35.2	-0.34
1300	425	43.2	-3.54
800	450	-13.4	-32.06
820	450	-6.2	2.42
840	450	85.8	0.77
860	450	64.2	1.10
880	450	61	1.34
900	450	66.6	6.15
920	450	72.4	-4.68
940	450	57.2	-1.35
960	450	-9.4	-15.45
980	450	41.8	-0.94
1000	450	-25.8	14.45
1020	450	-45.8	-32.04
1040	450	57.4	4.46
1060	450	38.8	2.93
1080	450	-10.8	-14.56
1100	450	-19.6	-32.10
1120	450	-11.4	-13.41
1140	450	43.2	4.15
1160	450	-4.8	-32.71

Appendix B: Electromagnetic Conductivity Data for Area B

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
1180	450	21.2	-12.82
1200	450	53.2	-7.01
880	475	55.4	1.95
900	475	-61	-32.65
920	475	-24	-12.03
940	475	-149.6	-32.66
960	475	-80.8	-32.66
980	475	46.4	-5.90
1000	475	-34.8	-32.66
1020	475	-65.2	-32.66
1040	475	-22.2	-0.39
1060	475	-11.2	-5.47
1080	475	-27.2	-32.66
1100	475	30.2	-1.90
1120	475	-14.2	-20.11
1140	475	-18.2	-7.78
1160	475	-6.4	3.78
1180	475	17.6	-4.24
1200	475	-3.8	-25.75
1220	475	33	-5.52
1240	475	-5.6	-25.59
1260	475	32.8	-2.95
1280	475	24.2	-11.98
1300	475	36.8	-3.37
800	500	91.6	1.45
820	500	87.8	0.69
840	500	73.8	5.59
860	500	63.6	2.53
880	500	-36.6	-32.08
900	500	44.4	1.14
920	500	71.2	0.81
940	500	54	2.11
960	500	-20.6	-2.61
980	500	-36.4	-32.08
1000	500	-26	-32.07
1020	500	-18.4	-28.80
1040	500	-38.6	-32.13
1060	500	-5.4	-32.12
1080	500	-59.2	-30.90
1100	500	-59.4	-32.13
1120	500	32.6	4.11
1140	500	22.4	-0.13
1160	500	39.4	-2.72
1180	500	24.6	-3.72
1200	500	-4	-3.89
1220	500	28.6	-3.91
1240	500	36	-0.67
1260	500	39.4	-3.73

Appendix B: Electromagnetic Conductivity Data for Area B

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
1280	500	40	-3.78
1300	500	39.2	-3.77
900	525	76.4	1.82
920	525	65	-15.81
940	525	-4.6	-29.79
960	525	-35.6	5.12
980	525	-3.6	-32.24
1000	525	-21.2	-27.77
1020	525	-19.2	-32.84
1040	525	-34.8	-32.83
1060	525	-48	-32.84
1080	525	-29	-31.04
1100	525	28.2	1.78
1120	525	12.6	-0.65
1140	525	21.6	-3.23
1160	525	15.8	-1.91
1180	525	15	-8.21
1200	525	-17.2	-32.81
1220	525	27.2	-8.72
1240	525	43.2	-4.53
1260	525	40.4	-8.77
1280	525	42.2	-4.08
1300	525	41.8	-3.75
860	550	75	2.02
880	550	87.8	4.80
900	550	94	-3.44
920	550	-9.4	-32.81
940	550	-40	-24.71
960	550	-2.6	-9.75
980	550	-17.4	-32.80
1000	550	-3.6	-32.79
1020	550	-37	-32.81
1040	550	-34.6	-32.81
1060	550	-45.2	-32.81
1080	550	-78	-32.81
1100	550	-11	-20.78
1120	550	-17.2	-16.87
1140	550	-8	-23.34
1160	550	-14.4	2.28
1180	550	21.2	-8.75
1200	550	-10.2	-32.79
1220	550	31	-6.56
1240	550	38.6	-3.89
1260	550	44.2	-6.62
1280	550	46.8	-4.72
1300	550	44.8	-2.17
860	575	74	5.76
880	575	73.6	-0.72

Appendix B: Electromagnetic Conductivity Data for Area B

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
900	575	59.6	4.91
920	575	-36	-32.80
940	575	46.4	-2.18
960	575	38.6	-0.94
980	575	31.8	-8.57
1000	575	-20	-30.74
1020	575	-37.8	-32.79
1040	575	-46.4	-32.79
1060	575	28.2	0.05
1080	575	11	-5.58
1100	575	-4	-22.58
1120	575	14.4	-2.36
1140	575	-9.8	-5.95
1160	575	-8.4	-8.21
1180	575	-22.8	-4.79
1200	575	-34.6	-32.79
1220	575	46.4	-27.61
1240	575	63.2	-1.58
1260	575	54.8	-2.78
1280	575	45	-7.37
1300	575	45.6	-3.02
880	600	44.6	-9.06
900	600	46.4	4.54
920	600	41.6	2.19
940	600	-33.6	-28.58
960	600	35.8	-0.51
980	600	31.8	-1.42
1000	600	27.4	-2.30
1020	600	27.2	-2.11
1040	600	22.8	-2.63
1060	600	-13.8	-32.77
1080	600	21.4	-5.09
1100	600	17	-7.74
1120	600	-42	-15.38
1140	600	25.2	-2.88
1160	600	36.8	1.46
1180	600	28	-17.67
1200	600	55.2	-15.51
1220	600	46.8	-7.80
1240	600	47.6	-2.71
1260	600	46.8	-1.82
1280	600	45	-6.78
1300	600	45.2	-4.78

Appendix C: Total Field Magnetic Data for Area B

COPY

Appendix C: Total Field Magnetic Data For Area B

COPY

X	Y	Gammas
800	200	-429
820	200	-86
840	200	-704
860	200	-155
880	200	-71
900	200	1021
920	200	-1200
940	200	256
960	200	582
980	200	-765
1000	200	-778
1020	200	-340
1040	200	-323
1060	200	-337
1080	200	-34
1100	200	-134
800	225	207
820	225	-164
840	225	-838
860	225	-17
880	225	-398
900	225	690
920	225	226
940	225	-1011
960	225	-1147
980	225	-607
1000	225	-600
1020	225	264
1040	225	-78
1060	225	-238
1080	225	1028
1100	225	1138
800	250	-148
820	250	-1068
840	250	393
860	250	-472
880	250	1111
900	250	-77
920	250	432
940	250	-407
960	250	-240
980	250	-48
1000	250	-251
1020	250	1454
1040	250	1052
1060	250	-1475
1080	250	-5116
1100	250	1250

Appendix C: Total Field Magnetic Data For Area B

COPY

X	Y	Gammas
800	275	-100
820	275	828
840	275	341
860	275	112
880	275	327
900	275	623
920	275	309
940	275	-679
960	275	-64
980	275	-5145
1000	275	60
1020	275	-34
1040	275	575
1060	275	265
1080	275	758
1100	275	729
800	300	529
820	300	530
840	300	-22
860	300	-261
880	300	1397
900	300	1288
920	300	385
940	300	-985
960	300	812
980	300	-797
1000	300	-1139
1020	300	-527
1040	300	336
1060	300	-897
1080	300	660
1100	300	522
1120	300	-5118
1140	300	-856
1160	300	-1087
1180	300	1278
1200	300	1179
800	325	932
820	325	98
840	325	-800
860	325	-786
880	325	297
900	325	418
920	325	278
940	325	-147
960	325	267
980	325	-763
1000	325	-1996

Appendix C: Total Field Magnetic Data For Area B

COPY

X	Y	Gammas
1020	325	567
1040	325	687
1060	325	-498
1080	325	-790
1100	325	-62
1120	325	-986
1140	325	1114
1160	325	-267
1180	325	821
1200	325	740
1220	325	1336
1240	325	2701
1260	325	1779
1280	325	1241
1300	325	2142
800	350	805
820	350	670
840	350	720
860	350	265
880	350	274
900	350	-246
920	350	-339
940	350	-61
960	350	-167
980	350	-537
1000	350	-1317
1020	350	-1401
1040	350	463
1060	350	-431
1080	350	-636
1100	350	-762
1120	350	220
1140	350	1053
1160	350	642
1180	350	564
1200	350	426
1220	350	628
1240	350	1825
1260	350	966
1280	350	551
1300	350	2040
920	375	37
940	375	-340
960	375	-290
980	375	-706
1000	375	-139
1020	375	-890
1040	375	-129

Appendix C: Total Field Magnetic Data For Area B

COPY

X	Y	Gammas
1060	375	-34
1080	375	261
1100	375	54
1120	375	-640
1140	375	226
1160	375	758
1180	375	-151
1200	375	-612
1220	375	1377
1240	375	1561
1260	375	1099
1280	375	1276
1300	375	1561
800	400	900
820	400	28
840	400	-205
860	400	247
880	400	-748
900	400	330
920	400	29
940	400	-73
960	400	-78
980	400	-723
1000	400	-1013
1020	400	-728
1040	400	-429
1060	400	263
1080	400	-868
1100	400	602
1120	400	-430
1140	400	300
1160	400	1144
1180	400	-311
1200	400	-1437
1220	400	408
1240	400	672
1260	400	1329
1280	400	2116
1300	400	1727
900	425	111
920	425	-786
940	425	-494
960	425	-509
980	425	624
1000	425	-241
1020	425	-1649
1040	425	1348
1060	425	1227

Appendix C: Total Field Magnetic Data For Area B

COPY

X	Y	Gammas
1080	425	-606
1100	425	-82
1120	425	185
1140	425	468
1160	425	879
1180	425	1189
1200	425	88
1220	425	-912
1240	425	18
1260	425	1248
1280	425	1106
1300	425	1074
800	450	-219
820	450	229
840	450	1358
860	450	1337
880	450	-162
900	450	-361
920	450	-649
940	450	1246
960	450	318
980	450	-71
1000	450	-1384
1020	450	-1622
1040	450	1344
1060	450	1536
1080	450	586
1100	450	-1730
1120	450	6
1140	450	92
1160	450	-523
1180	450	-975
1200	450	-565
1220	450	-1453
1240	450	-434
900	475	-988
920	475	-156
940	475	-744
960	475	1327
980	475	1135
1000	475	-2175
1020	475	-277
1040	475	440
1060	475	1377
1080	475	1308
1100	475	-964
1140	475	191
1160	475	-1436

Appendix C: Total Field Magnetic Data For Area B

COPY

X	Y	Gammas
1180	475	523
1200	475	-788
1220	475	-628
1240	475	141
1260	475	-7
1280	475	-457
1300	475	-317
800	500	807
820	500	357
840	500	630
860	500	-274
880	500	-1980
900	500	446
920	500	-247
940	500	-1563
960	500	-78
980	500	159
1000	500	-2156
1020	500	1029
1040	500	-360
1060	500	-804
1080	500	2170
1100	500	-473
1120	500	-928
1140	500	-249
1160	500	-844
1180	500	-854
1200	500	-343
1220	500	-351
1240	500	-268
1260	500	-266
1280	500	-357
1300	500	-296
900	525	-516
920	525	-249
940	525	-766
960	525	1336
980	525	-690
1000	525	-150
1020	525	1188
1040	525	-294
1060	525	53
1080	525	2042
1100	525	814
1120	525	-183
1140	525	-872
1160	525	-340
1180	525	10

Appendix C: Total Field Magnetic Data For Area B

COPY

X	Y	Gammas
1200	525	227
1220	525	-329
1240	525	-91
1260	525	260
1280	525	134
1300	525	-303
900	550	-34
920	550	-658
940	550	1098
960	550	-1220
980	550	-570
1000	550	-656
1020	550	847
1040	550	1180
1060	550	-18493
1080	550	5653
1100	550	-50
1120	550	245
1140	550	147
1160	550	1271
1180	550	-555
1200	550	-752
1220	550	1353
1240	550	251
1260	550	-596
1280	550	429
1300	550	185
900	575	-190
920	575	-171
940	575	104
960	575	-822
980	575	-3441
1000	575	-79
1020	575	-41847
1040	575	-633
1060	575	-461
1080	575	1005
1100	575	-1033
1140	575	-1344
1160	575	-429
1180	575	-1162
1200	575	1306
1220	575	1291
1240	575	51
1260	575	-305
1280	575	264
1300	575	10
900	600	-294

Appendix C: Total Field Magnetic Data For Area B

COPY

X	Y	Gammas
920	600	80
940	600	-1241
960	600	908
980	600	410
1000	600	-513
1020	600	-358
1040	600	-1003
1060	600	-277
1080	600	-717
1100	600	-819
1120	600	-853
1140	600	-1079
1160	600	-2141
1180	600	1161
1200	600	-1267
1220	600	184
1240	600	-285
1260	600	-142
1280	600	205
1300	600	174

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
40	50	22.00	-0.93
60	50	31.20	-0.05
80	50	31.00	-0.89
100	50	30.40	3.19
120	50	46.40	0.14
140	50	53.80	-0.01
160	50	67.00	-1.16
180	50	65.20	-2.28
200	50	56.80	-0.23
220	50	52.80	-0.52
240	50	49.40	-1.07
20	100	-24.80	-1.37
40	100	-31.60	-10.67
60	100	-23.20	-12.74
80	100	37.60	-2.31
100	100	33.60	1.00
120	100	44.60	2.26
140	100	45.20	1.35
160	100	56.60	1.72
180	100	54.60	-0.90
200	100	48.20	-1.38
220	100	48.80	-1.05
240	100	47.00	-0.89
0	150	20.00	-1.10
20	150	28.40	0.63
40	150	2.20	-4.47
60	150	20.60	0.34
80	150	34.40	-1.25
100	150	22.20	-5.68
120	150	33.20	-0.93
140	150	37.80	0.77
160	150	50.20	-1.60
180	150	49.00	-2.16
200	150	47.20	-1.49
0	200	-7.80	-9.33
20	200	37.40	3.85
40	200	16.00	-6.83
60	200	26.60	0.93
80	200	66.00	14.06
100	200	27.40	-3.00
120	200	41.00	-4.30
140	200	64.20	0.51
160	200	51.60	-0.84
180	200	49.80	-1.49
200	200	43.00	-1.40
-20	250	39.40	-1.99
0	250	34.60	-7.12
20	250	14.00	-8.37

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

X	Y	Conductivity (mmhos/m)*	Inphase (ppt)
180	400	31.20	-1.58
200	400	35.00	-3.42
-100	450	51.80	6.00
-80	450	64.00	0.26
-60	450	55.60	0.40
-40	450	61.80	-1.18
-20	450	76.20	4.27
0	450	64.40	-3.73
20	450	37.80	-0.18
40	450	31.60	-1.42
60	450	14.00	-6.94
80	450	14.00	-3.90
100	450	20.40	-2.58
120	450	30.80	-1.94
140	450	39.40	0.13
160	450	42.80	0.07
180	450	31.80	-2.84
200	450	29.40	-4.38
-100	500	50.80	1.90
-80	500	59.80	0.84
-60	500	66.80	4.48
-40	500	72.80	0.54
-20	500	56.60	-2.01
0	500	55.20	-1.35
20	500	48.20	-4.35
40	500	30.20	-3.71
60	500	28.80	-1.93
80	500	11.80	-13.75
100	500	32.60	-1.17
120	500	36.80	-0.67
140	500	26.00	-1.72
160	500	31.20	-2.90
180	500	18.00	-7.59
200	500	14.20	-2.71
-120	550	51.20	-1.40
-100	550	57.60	-1.65
-80	550	60.20	-3.05
-60	550	57.20	-1.38
-40	550	53.80	-2.58
-20	550	52.00	-3.85
0	550	51.00	-3.62
20	550	43.60	-1.79
40	550	42.20	-1.35
60	550	38.00	-3.61
80	550	37.80	0.13
100	550	35.60	-5.84
120	550	39.20	-3.24
140	550	-13.40	-12.33

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
40	250	21.40	-5.77
60	250	35.20	-3.97
80	250	34.00	-9.54
100	250	44.00	-0.08
120	250	50.60	-0.11
140	250	48.20	-5.70
160	250	39.20	-6.31
180	250	41.60	-3.26
200	250	41.20	-1.90
-40	300	46.40	-4.27
-20	300	50.00	0.28
0	300	49.80	-2.12
20	300	48.00	-0.04
40	300	28.60	-1.65
60	300	46.60	-1.61
80	300	29.40	0.10
100	300	50.60	-0.52
120	300	33.80	-3.72
140	300	34.80	-2.24
160	300	45.40	-2.34
180	300	34.00	-1.41
200	300	38.40	-1.78
-60	350	56.40	0.43
-40	350	66.60	0.72
-20	350	73.60	3.95
0	350	62.40	1.35
20	350	34.20	0.51
40	350	37.80	-0.51
60	350	26.00	3.60
80	350	65.80	-2.88
100	350	29.20	-1.52
120	350	42.40	-8.06
140	350	47.80	-1.01
160	350	42.40	-1.89
180	350	41.60	-2.31
200	350	36.60	-0.53
-60	400	67.40	2.07
-40	400	68.40	0.29
-20	400	63.00	1.40
0	400	57.00	0.25
20	400	35.20	0.76
40	400	-3.40	-5.53
60	400	29.80	-2.10
80	400	36.80	-1.18
100	400	33.00	-0.45
120	400	38.60	-1.48
140	400	32.80	-4.03
160	400	34.40	-4.14

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
160	550	27.20	-0.52
180	550	41.60	-3.58
200	550	25.40	-0.60
-120	600	48.40	-2.96
-100	600	49.00	-4.27
-80	600	42.00	0.00
-60	600	48.00	-2.75
-40	600	55.80	-1.26
-20	600	50.60	-1.31
0	600	42.80	-3.52
20	600	36.20	-3.15
40	600	29.20	-6.65
60	600	27.60	-7.94
80	600	9.40	-11.85
100	600	35.60	-12.88
120	600	49.80	-1.20
140	600	44.20	-3.55
160	600	31.40	-4.32
180	600	33.20	-5.91
200	600	30.40	-2.13
-160	650	49.40	0.40
-140	650	41.60	-2.38
-120	650	51.60	-2.46
-100	650	56.40	-1.73
-80	650	44.20	-5.25
-60	650	53.20	-0.81
-40	650	38.80	-2.08
-20	650	35.40	3.28
0	650	31.60	-5.23
20	650	27.40	-3.37
40	650	32.00	-2.41
60	650	35.40	2.83
80	650	-2.40	-18.27
100	650	58.00	-2.95
120	650	33.40	-8.00
140	650	25.60	-4.47
160	650	4.20	-4.86
180	650	-8.60	-17.18
200	650	7.60	-27.46
-160	700	24.20	-4.25
-140	700	60.80	-1.76
-120	700	57.20	-0.19
-100	700	59.00	-1.78
-80	700	48.80	-4.06
-60	700	43.80	-2.05
-40	700	48.20	-6.42
-20	700	33.80	-2.23
0	700	25.00	2.49

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
20	700	22.20	-3.73
40	700	20.40	-3.44
60	700	20.80	-3.85
80	700	31.60	-4.37
100	700	45.00	-1.99
120	700	38.60	-5.21
140	700	32.60	-1.02
160	700	27.20	-6.49
180	700	12.80	-1.90
200	700	23.40	-2.34
-180	750	23.40	-1.42
-160	750	16.20	-3.25
-140	750	28.80	5.25
-120	750	38.40	-0.17
-100	750	53.80	1.13
-80	750	61.40	1.88
-60	750	48.80	0.30
-40	750	27.60	-6.08
-20	750	-8.00	-23.37
0	750	-11.80	-12.70
20	750	-26.80	-24.99
40	750	-7.20	-7.13
60	750	19.60	-3.84
80	750	22.20	-12.90
100	750	49.20	4.15
120	750	52.60	1.18
140	750	35.20	-1.97
160	750	3.80	-10.84
180	750	2.20	-8.44
200	750	33.00	-0.71
-200	800	21.00	-1.97
-180	800	18.20	-3.47
-160	800	20.40	-3.61
-140	800	26.60	4.11
-120	800	36.00	3.31
-100	800	-9.80	-8.59
-80	800	-7.80	-11.04
-60	800	-17.80	-13.02
-40	800	31.60	-0.95
-20	800	37.60	-2.10
0	800	-10.40	-2.25
20	800	47.60	1.42
40	800	39.60	0.83
60	800	25.00	-3.96
80	800	28.60	-4.25
100	800	46.40	-3.49
120	800	47.80	-1.43
140	800	30.20	-5.43

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
160	800	-16.20	-19.34
180	800	8.60	-6.20
200	800	-23.60	-2.19
-220	850	50.40	22.47
-200	850	-52.80	-32.55
-180	850	-10.40	-31.16
-160	850	-5.60	-12.45
-140	850	-27.40	-15.56
-120	850	-42.40	-11.33
-100	850	-18.80	-11.33
-80	850	-61.00	-4.14
-60	850	-89.80	-32.57
-40	850	-3.20	-11.72
-20	850	-18.20	-10.84
0	850	-29.20	-32.56
20	850	34.20	-2.65
40	850	-33.00	-32.56
60	850	-17.80	-32.59
80	850	-6.80	-4.94
100	850	-2.60	-4.88
-220	900	55.00	-1.57
-200	900	-12.60	-26.49
-180	900	69.40	3.91
-160	900	-5.00	-11.87
-140	900	61.40	-0.93
-120	900	62.00	2.29
-100	900	55.80	-0.11
-80	900	-9.60	-7.90
-60	900	43.80	0.34
-40	900	-15.40	-10.26
-20	900	-23.80	-10.12
0	900	-14.00	-32.49
20	900	41.00	-2.34
40	900	-8.60	-20.88
60	900	-27.20	0.66
80	900	-10.20	-5.59
100	900	-13.00	-16.10
-240	950	-7.80	-4.94
-220	950	-3.40	-7.29
-200	950	83.60	2.70
-180	950	89.40	1.18
-160	950	71.00	4.03
-140	950	-11.20	-24.41
-120	950	58.00	3.13
-100	950	55.20	-1.97
-80	950	-33.80	-17.68
-60	950	-7.00	-14.05
-40	950	-7.60	-14.23

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
-20	950	-33.20	-32.46
0	950	-8.40	-29.33
20	950	-20.00	-14.19
40	950	39.20	-9.07
60	950	-13.60	-25.26
80	950	-13.00	-4.12
100	950	-9.80	-24.82
-260	1000	-8.20	-12.98
-240	1000	-21.20	-7.72
-220	1000	55.00	-1.19
-200	1000	-7.40	-13.39
-180	1000	-17.80	-9.00
-160	1000	-25.20	-17.16
-140	1000	-29.20	-9.08
-120	1000	-41.20	-31.51
-100	1000	-28.40	-13.03
-80	1000	-6.60	-8.32
-60	1000	-64.60	-32.18
-40	1000	-32.00	-22.41
-20	1000	-37.20	-26.07
0	1000	-29.00	-32.15
-280	1050	-8.00	-1.40
-260	1050	44.80	1.58
-240	1050	-39.00	-31.91
-220	1050	-17.40	-9.24
-200	1050	60.00	0.71
-180	1050	-48.60	-31.96
-160	1050	55.80	4.24
-140	1050	59.80	-2.69
-120	1050	-43.20	-32.01
-100	1050	-14.60	-14.87
-80	1050	-11.00	-32.04
-60	1050	-43.80	-32.07
-40	1050	-30.20	-32.08
-20	1050	-42.40	-28.18
0	1050	-31.00	-13.38
-280	1100	30.20	-3.94
-260	1100	47.20	4.62
-240	1100	44.40	3.55
-220	1100	-9.00	-27.71
-200	1100	63.80	5.27
-180	1100	-7.40	-28.65
-160	1100	73.80	-1.47
-140	1100	63.20	-4.02
-120	1100	85.40	3.25
-100	1100	88.40	7.18
-80	1100	68.60	2.28
-60	1100	59.40	-0.41

Appendix D: Electromagnetic Conductivity Data for Area C

COPY

X	Y	Conductivity (mmhos/m)	Inphase (ppt)
-40	1100	57.60	-5.55
-20	1100	-19.00	-2.05
0	1100	-19.40	1.63
-300	1150	56.20	6.18
-280	1150	66.20	2.37
-260	1150	61.00	1.11
-240	1150	73.80	2.82
-220	1150	-8.80	-21.70
-200	1150	-23.40	-21.41
-180	1150	-42.80	-21.82
-160	1150	-26.60	-19.54
-140	1150	64.60	0.35
-120	1150	-47.80	-31.55
-100	1150	-42.00	-20.05
-80	1150	-27.40	-17.62
-60	1150	-20.20	-31.59
-40	1150	66.20	-1.02
-20	1150	48.80	-2.83
0	1150	-11.80	6.49
-300	1200	-67.00	-31.12
-280	1200	37.40	-0.08
-260	1200	-16.40	9.18
-240	1200	-51.40	24.87
-220	1200	65.40	-0.16
-200	1200	-32.20	-31.02
-180	1200	-23.00	-18.21
-160	1200	-19.80	-7.38
-140	1200	42.80	-2.20
-120	1200	51.80	-4.43
-100	1200	-6.00	-19.89
-80	1200	-31.60	-30.96
-60	1200	-39.40	-19.36
-40	1200	-76.20	-30.89
-20	1200	-20.60	-23.75
0	1200	64.20	1.48

B

APPENDIX B

BORING LOGS

APPENDIX B-1

LEACHATE WELL BORING LOGS

KEY TO BORING LOGS

Sample Type

- Unsampled interval
- Auger cuttings sample
- Drilled by hollow stem augers; not sampled; logged by cuttings
- Hand sample from surface
- 4" outside diameter core barrel sampler
- Drilled by rotary wash bore; not sampled; logged by cuttings
- 5' continuous sampler
- 3" outside diameter split spoon sampler
- 3" shelby tube
- 2" outside diameter split spoon sampler

Lithologic Description

- Unknown lithology
- Lean clay
- Silty clay or clayey silt
- Sandy clay
- Concrete
- Construction debris-laden fill material
- Gravel
- Clayey gravel
- Silty gravel
- Sandy gravel
- Limestone or dolomitic limestone
- Silt
- Gravelly silt
- Silty sand
- Peat
- Sand
- Gravelly sand
- Sandy silt
- Topsoil

Borehole Material Graphics

- Concrete around flush-mounted protective casing
- Concrete surface seal around well casing
- Bentonite slurry or cement-bentonite grout around well casing
- Bentonite pellet seal around well casing
- Bentonite pellet seal around well screen
- Sand backfill around well casing
- Sand filter pack around well screen
- Sand backfill or natural soil collapse in borehole
- Concrete surface seal over borehole
- Bentonite slurry or bentonite-cement grout backfill in borehole
- Cuttings backfill in borehole
- Bentonite seal in borehole

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LOG OF TEST BORING

General Notes

Descriptive Soil Classification

GRAIN SIZE TERMINOLOGY

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

GENERAL TERMINOLOGY

Physical Characteristics
Color, moisture, grain shape, fineness, etc.

Major Constituents
Clay, silt, sand, gravel

Structure
Laminated, varved, fibrous, stratified, cemented, fissured, etc.

Geologic Origin
Glacial, alluvial, aeolian, residual, etc.

RELATIVE DENSITY

Term	"N" Value
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

RELATIVE PROPORTIONS OF COHESIONLESS SOILS

Proportional Term	Defining Range By Percentage of Weight
Trace	0%- 5%
Little	5%-12%
Some	12%-35%
And	35%-50%

CONSISTENCY

Term	q_u-tons/sq. ft.
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 4.0

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4-12%
Sedimentary Peat	12-50%
Fibrous and Woody Peat	More than 50%

PLASTICITY

Term	Plastic Index
None to Slight	0-4
Slight	5-7
Medium	8-22
High to Very High	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" pentrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

Symbols

DRILLING AND SAMPLING

CS—Continuous Sampling
RC—Rock Coring: Size AW, BW, NW, 2" [illegible]
RQD—Rock Quality Designator
RB—Rock Bit
FT—Fish Tail
DC—Drove Casing
C—Casing: Size 2½", NW, 4", HW
CW—Clear Water
DM—Drilling Mud
HSA—Hollow Stem Auger
FA—Flight Auger
HA—Hand Auger
COA—Clean-Out Auger
SS—2" Diameter Split-Barrel Sample
2ST—2" Diameter Thin-Walled Tube Samp
3ST—3" Diameter Thin-Walled Tube S[illegible]
PT—3" Diameter Piston Tube Sampl[illegible]
AS—Auger Sample
WS—Wash Sample
PTS—Peat Sample
PS—Pitcher Sample
NR—No Recovery
S—Sounding
PMT—Borehole Pressuremeter Test
VS—Vane Shear Test
WPT—Water Pressure Test

LABORATORY TESTS

q_p—Penetrometer Reading, tons/sq. ft.
q_u—Unconfined Strength, tons/sq. ft.
W—Moisture Content, %
LL—Liquid Limit, %
PL—Plastic Limit, %
SL—Shrinkage Limit, %
LI—Loss on Ignition, %
D—Dry Unit Weight, lbs./cu. ft.
pH—Measure of Soil Alkalinity or Acidity
FS—Free Swell, %

WATER LEVEL MEASUREMENT

▽—Water Level at time shown
NW—No Water Encountered
WD—While Drilling
BCR—Before Casing Removal
ACR—After Casing Removal
CW—Caved and Wet
CM—Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

Description of Boring Log Headings

No. = Sample number within the boring

Rec. = Amount of sample recovery

Moist = Visual estimate of the amount of moisture in the sample.

Type = Sampler type and sample interval

N Value = The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-spoon sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

Depth = Depth below ground surface

Visual Classification = Lithology symbol of stratigraphy; Description of stratigraphy; Borehole material graphics

qu(qa) = Unconfined compressive strength of the sample

PID = Photoionization detector reading

Description of Soil Samples

General Terminology

Relative Density (of noncohesive soils) or consistency (of cohesive soils)
Color
Grain Size (of noncohesive soils)
Major soil constituent
Minor proportions
Other characteristics or features
Unified Soil Classification System (USCS) Symbol

Descriptive Terms

NM = Not measured
ND = Not detected
M = Moist
F = Frozen
D = Dry
W = Wet
– = Measurement not possible

Relative Density

Term	"N" Value
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Consistency

Term	qa.-tons/sq.ft
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 40

Grain Size Terminology

Soil Fraction		Particle Size	U.S. Standard Sieve Size
Boulders		Larger than 12"	Larger than 12"
Cobbles		3" to 12"	3" to 12"
Gravel:	Coarse	3/4" to 3"	3/4" to 3"
	Fine	4.76 mm to 3/4"	#4 to 3/4"
Sand:	Coarse	2.00 mm to 4.76 mm	#10 to #4
	Medium	0.42 mm to 2.00 mm	#40 to #10
	Fine	0.074 mm to 0.42 mm	#200 to #40
Silt		0.005 mm to 0.074 mm	Smaller than #200
Clay		Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

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UNIFIED SOIL CLASSIFICATION SYSTEM

COARSE-GRAINED SOILS

(More than half of material is larger than No. 200 sieve size.)

GRAVELS More than half of coarse fraction larger than No. 4 sieve size

Clean Gravels (Little or no fines)

GW	Well-graded gravels, gravel-sand mixtures, little or no fines
GP	Poorly graded gravels, gravel-sand mixtures, little or no fines

Gravels with Fines (Appreciable amount of fines)

GM d u	Silty gravels, gravel-sand-silt mixtures
GC	Clayey gravels, gravel-sand-clay mixtures

SANDS More than half of coarse fraction smaller than No. 4 sieve size

Clean Sands (Little or no fines)

SW	Well-graded sands, gravelly sands, little or no fines
SP	Poorly graded sands, gravelly sands, little or no fines

Sands with Fines (Appreciable amount of fines)

SM d u	Silty sands, sand-silt mixtures
SC	Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(More than half of material is smaller than No. 200 sieve.)

SILTS AND CLAYS Liquid limit less than 50%

ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
OL	Organic silts and organic silty clays of low plasticity

SILTS AND CLAYS Liquid limit greater than 50%

MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
CH	Inorganic clays of high plasticity, fat clays
OH	Organic clays of medium to high plasticity, organic silts

HIGHLY ORGANIC SOILS

PT	Peat and other highly organic soils

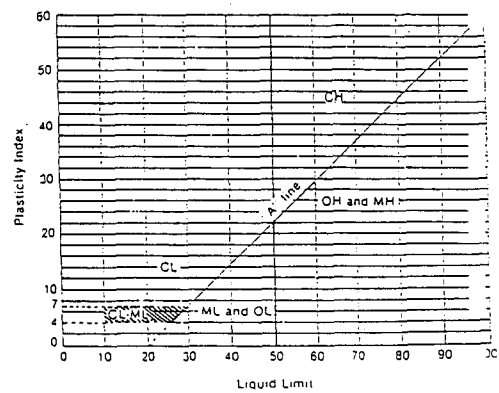
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for SW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 per cent ..... GW, GP, SW, SP
More than 12 per cent ..... GM, GC, SM, SC
5 to 12 per cent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



For classification of fine-grained soils and fine fraction of coarse-grained soils.

Atterberg Limits plotting in hatched area are borderline classifications requiring use of dual symbols.

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. LW1
Surface Elevation 933.5
Job No. 60776
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1		15	M			FILL: Reddish Brown Clay with Medium Sand and Organic Material.		
2		15	M					
						FILL: Plastic Trash with Soft Clay on Top.		
3		7	M	1	5			
4		23	W	16		Tan and Gray Medium to Coarse SAND, Trace Angular Gravel. (SP)		
5		4	W	9	10	Medium to Coarse SAND, Well Sorted. (SP)		
6		15	W	16		Grades to Coarse SAND and Fine to Coarse Gravel with Clay. (SP)		
7		18	W	20				
8		16	W	20	15			
						Grades to Medium Gravel Near Base		
9		3		82	20			
						End of Boring at 21' Installed Well to 13'		
					25			
					30			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 6.0 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 7/18/90 End 7/18/90
Driller ETI Chief MES Rig C
Logger JMW Editor JAW ME750
Drill Method 4 1/4" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
Remedial Investigation
Location: Woodstock, Illinios

Boring No. LW2
Surface Elevation 943.1
Job No. 60776
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1		5		12		FILL: Brown Medium Sandy Topsoil, Some Clay.		
2		6		5				
3		6		23	5	FILL: Brown Clay with Medium Sand and Occasional Gravel.		
4		6	M	11		FILL: Trash with Medium Sand.		
5		12	M	10				
6		7	W	13	10			
7		14	W	18		More Silt Near Base.		
8		18	W			Soft to Stiff CLAY with Coarse Silt. (CL-ML)		
					15			
9		14		14		Coarse SAND and GRAVEL, Trace Limestone Fragments. (GM)		
						Gray SILT, Plastic (ML)		
						Grades to Fine SAND and Occasional Gravel near Base. (SM)		
					20			
						End of Boring at 18' Installed Well to 16'		
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 14.0 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 7/17/90 End 7/17/90
Driller ETI Chief MES Rig C
Logger JMW Editor JAW ME750
Drill Method 4 1/4" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
Remedial Investigation
Location: Woodstock, Illinios

Boring No. LW3
Surface Elevation 939.2
Job No. 60776
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1		16				FILL: Sandy Clay.		
						FILL: Cement, Plastic, Wood, and Clothing with Medium Sandy Clay and Gravel.		
2		4		13	5			
3		6	M	11	10			
4		8	W	4	15	PEAT with Dark Gray Organic Clay, Trace Roots and Shells. (PT)		
						End of Boring at 17' Install Well to 17'		
					20			
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 12.0 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 7/20/90 End 7/20/90
Driller ETI Chief MES Rig C
Logger JMW Editor JAW ME750
Drill Method 4 1/4" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. LW4
Surface Elevation 938.8
Job No. 60776
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1		11				FILL: Sandy Topsoil with Clay, Some Trash.		
2		12				FILL: O-Rings and Hoses in Sandy Matrix		
					5			
3		12		7				
					10			
4		4	W	2				
5		14	W	11	15	Light Gray Medium SAND and Coarse Gravel with Clay. (SP)		
6		4	W	18				
					20	End of Boring at 18' Install Well to 16'		
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 13.5 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 7/24/90 End 7/24/90
Driller ETI Chief MES Rig C
Logger LMW Editor JAW ME750
Drill Method 4 1/4" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
Remedial Investigation
Location: Woodstock, Illinois

Boring No. SBLW4A
Surface Elevation
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (in.)	Moisture	N Value	Depth (ft.)	Profile	VISUAL CLASSIFICATION and Remarks	Borehole Backfill	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1		15	D				FILL: Sandy Topsoil with Clay			2
2		10	D	6			FILL: Plastic, Foam, Wood, Trash			
					5					
3		14	D	6						0
					10					
4		12	D	7						
					15					
5		13	M	4			Light Gray CLAY, Stiff (CL)			
6			M	10						
					20					
							End of Boring at 21'			
					25					

WATER LEVEL OBSERVATIONS

While Drilling ▽ None Upon Completion of Drilling ▼ None
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 7/23/90 End 7/23/90 Drill
Driller ETI Chief MES Rig CME 750
Logger JMW Editor JCQ
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. LW5
Surface Elevation 932.3
Job No. 60776
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE

No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)
1		6			
2		8	M	4	
					5
3		3	W	3	
					10
4		8	W	2	
					15
5		9	W	10	
6		12	W	10	
					20
7		1		11	
8		12		15	
9		14		11	
					25

VISUAL CLASSIFICATION and Remarks

FILL: Sandy with Clay.

FILL: Newspaper, Glass and Brick in Medium Sand Matrix with Clay.

Fine to Coarse SAND and GRAVEL, Some Clay.
Well Sorted near Top. (SP)

Fine to Coarse GRAVEL with Medium Sand, Trace Silt. (GP)

End of Boring at 26'
Install Well to 17'

SOIL PROPERTIES

qu (qa) (tsf)	PID (ppm)			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 4.2 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 7/19/90 End 7/19/90
Driller ETI Chief MES Rig C
Logger JMW Editor JAW ME75v
Drill Method 4 1/4" HSA

Boring Log BLW-1*
Woodstock Municipal Landfill Site
Woodstock, Illinois

	Depth (ft)
Refuse - cinders, glass, metal (poor samples)	0 - 19.5
Gray silt (poor samples)	19.5 - 24.5
Sand and gravel, very coarse grained	24.5 - 42.5
Brown-gray, silty clay till	42.5 - 50
Pink, sandy silt till; pebbly at 67 - 71'; wood fragments at 105 - 110' - possibly cave; silty sand, possible stringers at 110 - 115'	50 - 123
Gravel; some very coarse-grained sand	123 - 132
Pink, sandy silt till; pebbly at 145 - 150', 155 - 160'	132 - 160
Brown, pebbly, sandy silt, probably till; wood fragments	160 - 167
Black, silty clay, probably soil	167 - 170
Brown-gray, sandy silt till	170 - 180.5
Fine sand (no samples)	180.5 - 187.5
Brown-gray, sandy silt till	187.5 - 203
Sand, medium to coarse grained	203 - 207
Brown-gray, sandy silt till	207 - 213
Sand and gravel; some till - probably cave	213 - 225

*Data from Four Landfills in Northeastern Illinois. I.S.G.S. Environmental Geology Notes, Number 26.

JCQ/jmk/MJS
[400-92]
60776.28-PA

APPENDIX B-2

MONITORING WELL BORING LOGS

Description of Boring Log Headings

No. = Sample number within the boring

Rec. = Amount of sample recovery

Moist = Visual estimate of the amount of moisture in the sample.

Type = Sampler type and sample interval

N Value = The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-spoon sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

Depth = Depth below ground surface

Visual Classification = Lithology symbol of stratigraphy; Description of stratigraphy; Borehole material graphics

qu(qa) = Unconfined compressive strength of the sample

PID = Photoionization detector reading

Description of Soil Samples

General Terminology

Relative Density (of noncohesive soils) or consistency (of cohesive soils)
Color
Grain Size (of noncohesive soils)
Major soil constituent
Minor proportions
Other characteristics or features
Unified Soil Classification System (USCS) Symbol

Descriptive Terms

NM = Not measured
ND = Not detected
M = Moist
F = Frozen
D = Dry
W = Wet
-- = Measurement not possible

Relative Density

Term	"N" Value
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

Consistency

Term	qa.-tons/sq.ft.
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 40

Grain Size Terminology

Soil Fraction		Particle Size	U.S. Standard Sieve Size
Boulders		Larger than 12"	Larger than 12"
Cobbles		3" to 12"	3" to 12"
Gravel:	Coarse	3/4" to 3"	3/4" to 3"
	Fine	4.76 mm to 3/4"	#4 to 3/4"
Sand:	Coarse	2.00 mm to 4.76 mm	#10 to #4
	Medium	0.42 mm to 2.00 mm	#40 to #10
	Fine	0.074 mm to 0.42 mm	#200 to #40
Silt		0.005 mm to 0.074 mm	Smaller than #200
Clay		Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

WARZYN

UNIFIED SOIL CLASSIFICATION SYSTEM

COARSE-GRAINED SOILS

(More than half of material is larger than No. 200 seive size.)

GRAVELS More than half of coarse fraction larger than No. 4 sieve size	**Clean Gravels** (Little or no fines)	
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	Gravels with Fines (Appreciable amount of fines)	
	GM[d u]	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS More than half of coarse fraction smaller than No. 4 sieve size	**Clean Sands** (Little or no fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with Fines (Appreciable amount of fines)	
	SM[d u]	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(More than half of material is smaller than No. 200 sieve.)

SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit greater than 50%	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

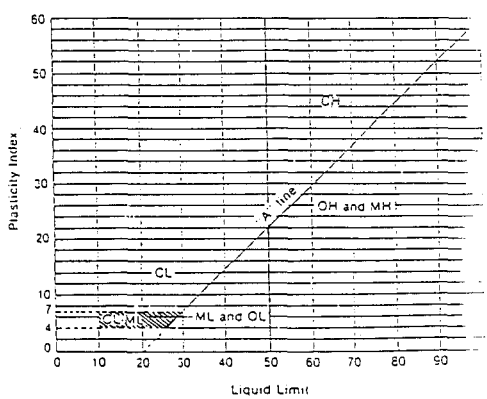
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for SW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 per cent ..... GW, GP, SW, SP
More than 12 per cent ..... GM, GC, SM, SC
5 to 12 per cent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



For classification of fine-grained soils and fine fraction of coarse-grained soils.

Atterberg Limits plotting in hatched area are borderline classifications requiring use of dual symbols.

KEY TO BORING LOGS

Sample Type

- Unsampled interval
- Auger cuttings sample
- Drilled by hollow stem augers; not sampled; logged by cuttings
- Hand sample from surface
- 4" outside diameter core barrel sampler
- Drilled by rotary wash bore; not sampled; logged by cuttings
- 5' continuous sampler
- 3" outside diameter split spoon sampler
- 3" shelby tube
- 2" outside diameter split spoon sampler

Lithologic Description

- Unknown lithology
- Lean clay
- Silty clay or clayey silt
- Sandy clay
- Concrete
- Construction debris-laden fill material
- Gravel
- Clayey gravel
- Silty gravel
- Sandy gravel
- Limestone or dolomitic limestone
- Silt
- Gravelly silt
- Silty sand
- Peat
- Sand
- Gravelly sand
- Sandy silt
- Topsoil

Borehole Material Graphics

- Concrete around flush-mounted protective casing
- Concrete surface seal around well casing
- Bentonite slurry or cement-bentonite grout around well casing
- Bentonite pellet seal around well casing
- Bentonite pellet seal around well screen
- Sand backfill around well casing
- Sand filter pack around well screen
- Sand backfill or natural soil collapse in borehole
- Concrete surface seal over borehole
- Bentonite slurry or bentonite-cement grout backfill in borehole
- Cuttings backfill in borehole
- Bentonite seal in borehole

WARZYN

LOG OF TEST BORING

General Notes

Descriptive Soil Classification

GRAIN SIZE TERMINOLOGY

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

GENERAL TERMINOLOGY

Physical Characteristics
Color, moisture, grain shape, fineness, etc.
Major Constituents
Clay, silt, sand, gravel
Structure
Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin
Glacial, alluvial, eolian, residual, etc.

RELATIVE DENSITY

Term	"N" Value
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

RELATIVE PROPORTIONS OF COHESIONLESS SOILS

Proportional Term	Defining Range By Percentage of Weight
Trace	0%- 5%
Little	5%-12%
Some	12%-35%
And	35%-50%

CONSISTENCY

Term	q_u-tons/sq. ft.
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 4.0

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4-12%
Sedimentary Peat	12-50%
Fibrous and Woody Peat	More than 50%

PLASTICITY

Term	Plastic Index
None to Slight	0-4
Slight	5-7
Medium	8-22
High to Very High	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" pentrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

Symbols

DRILLING AND SAMPLING

CS—Continuous Sampling
RC—Rock Coring: Size AW, BW, NW, 2"
RQD—Rock Quality Designator
RB—Rock Bit
FT—Fish Tail
DC—Drove Casing
C—Casing: Size 2½", NW, 4", HW
CW—Clear Water
DM—Drilling Mud
HSA—Hollow Stem Auger
FA—Flight Auger
HA—Hand Auger
COA—Clean-Out Auger
SS—2" Diameter Solit-Barrel Sample
2ST—2" Diameter Thin-Walled Tube Sam
3ST—3" Diameter Thin-Walled Tube Sa
PT—3" Diameter Piston Tube Sample
AS—Auger Sample
WS—Wash Sample
PTS—Peat Sample
PS—Pitcher Sample
NR—No Recovery
S—Sounding
PMT—Borehole Pressuremeter Test
VS—Vane Shear Test
WPT—Water Pressure Test

LABORATORY TESTS

q_p—Penetrometer Reading, tons/sq. ft.
q_u—Unconfined Strength, tons/sq. ft.
W—Moisture Content, %
LL—Liquid Limit, %
PL—Plastic Limit, %
SL—Shrinkage Limit, %
LI—Loss on Ignition, %
D—Dry Unit Weight, lbs./cu. ft.
pH—Measure of Soil Alkalinity or Acidity
FS—Free Swell, %

WATER LEVEL MEASUREMENT

▽—Water Level at time shown
NW—No Water Encountered
WD—While Drilling
BCR—Before Casing Removal
ACR—After Casing Removal
CW—Caved and Wet
CM—Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

WARZYN

LOG OF TEST BORING

Project dWoodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW1
Surface Elevation 940.6
Job No. 60776
Sheet 1 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	PID (ppm)
1		16	D/M	18		FILL: Black to Dark Brown Sandy Topsoil, Trace Clay, Silt, Gravel, and Concrete Rubble.	2.0	0.0
2		16	M	26	5	Brown Silty Fine SAND, Trace Fine to Coarse Gravel and Cobbles. (SM-GM) Trace Rust Staining at 5'		0.0
3		14	M	24				0.0
4		10	M	33	10	Increased Fine to Medium Sand and Coarse Limestone Cobbles. Possibly Boulders at 10'		0.0
5		2	M	37		Brown Silty SAND and GRAVEL, Trace to Little Pebbles and Cobbles. (GM)		0.0
6		4	W	22	15			0.0
7		8	W	36				0.0
8		4	W	57	20	Increasingly Siltier at 19-20'		0.0
9		8	W	45		Brown to Gray Silty Fine SAND, Trace to Little Medium to Coarse Sand and Fine to Coarse Gravel, Trace Pebbles and Cobbles. (SM-GM)		0.0
10		10	W	41	25	Increased Gravel and Less Silt at 25'		0.0
11		3	W	41		Siltier at 27'		0.0
12		3	W	53	30			0.0

WATER LEVEL OBSERVATIONS

While Drilling ▽ 12.5 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 7/27/90 End 8/14/90
Driller ETI Chief MES Rig C
Logger TJM Editor JAW ME750
Drill Method 3 7/8" RWB

WARZYN

LOG OF TEST BORING

Project dWoodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW1
Surface Elevation 940.6
Job No. 60776
Sheet 2 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
13		14	W/M	53				0.0
						Very Dense Dark Gray Sandy CLAY, Some Silt, Trace to Little Medium to Coarse Sand and Fine to Coarse Gravel. (SC)		
14		8	W	81				0.0
18		16	M	55	35			
						Gray Silty SAND and GRAVEL, Trace to Some Pebbles and Cobbles, Trace Gray Silty Clay. (GM)		
15		8	W/M	97				0.0
						Gray Silty Fine SAND and Sandy SILT, Trace to Some Fine to Coarse Gravel, Trace Clay. (SM)		
16		12	W	51	40			0.0
17;19		18	W	43				0.0
						Gray Fine to Medium SAND, Trace to Little Coarse Sand and Fine to Medium Gravel. (SP)		0.0
20		12	W/M	48			0.6	0.0
					45	Gray SILT, Trace Clay. (ML) Trace Thin (1/4") Fine to Medium Sand Seams at 44.5'		
21		15	W	42				0.0
						Gray Fine SAND, Trace Silt. (SP)		
22		16	W	37			1.25	0.0
					50	Gray SILT, Trace to Little Clay. (ML)		
23		13	W	51		Gray Fine SAND, Runny. (SP)		0.0
								0.0
						Dense Gray Clayey SILT. (ML)		0.0
24		14	W	44				
					55	Gray Fine SAND, Trace Thin (1/4") Silt Seams. (SP)		
25		14	W/M	52				0.0
						Gray Fine to Medium SAND. (SP) Trace Coarse Sand at 56-56.5'		0.0
26		14	M	52				0.0
					60	Very Dense Gray Silty CLAY, Trace Fine to Medium Gravel. (CL) YORKVILLE TILL MEMBER		
27		18	M	53				0.0

WARZYN

LOG OF TEST BORING

Project dWoodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW1
Surface Elevation 940.6
Job No. 60776
Sheet 3 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	PID (ppm)
					65			
28		7	M	60			4.5+	0.0
29		10	W/M	59				0.0
						Thin Gray SILT Seam, Trace Fine Gravel, Soupy. (ML)		
30		17	M	52				0.0
					70	Dense Gray Silty CLAY, Trace Fine Sand and Coarse Limestone Gravel. (CL)		
						End of Boring at 70.0' Tremmie Backfilled Borehole with Bentonite Slurry		
					75			
					80			
					85			
					90			
					95			

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
Remedial Investigation
Location: Woodstock, Illinios

Boring No. SBMW2
Surface Elevation 929.9
Job No. 60776
Sheet 1 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	PID (ppm)
1		12	M	6		Well Vegetated Surface. Black to Gray Silty CLAY, Trace Organics and Fine Sand. (OL-CL)	0.8	0.0
2		14	M/W	8	5	Black and Gray Silty Fine to Medium SAND, Trace Fine to Coarse Gravel. (SM)		0.0
								0.0
3		11	W	12		Brown and Gray Silty Fine SAND, Some Fine to Coarse Gravel, Trace Clay and Limestone Pebbles. (SM)		0.0
4		10	W	16	10	Grades to Gray Fine to Coarse SAND, Trace Silt and Fine to Medium Gravel, Trace of Interbedded Fine/Coarse Sands. (SP)		0.0
5		12	M/W/M	14		Trace Pebbles at 10'	0.5/1/7	0.0
6		9	M	12	15	Gray SILT, Trace Fine Sand. (ML)	1.7	0.0
7		12	M	30		Gray Fine to Medium SAND, Trace to Little Silt, Trace Clay. (SM)	3.0	0.0
8		12	M	32	20	Gray Silty CLAY, Trace Fine Gravel. (CL) YORKVILLE TILL MEMBER		0.0
8.5		10	M	41		Reddish Brown Fine Sandy CLAY, Some Silt, Trace to Little Fine to Coarse Gravel, Trace Pebbles. (CL-ML) TISKILWA TILL MEMBER		0.0
9		14	M	24	25			0.0
10		13	M	12			1.3	0.0
11		8	M	9	30		1.1	0.0

WATER LEVEL OBSERVATIONS

While Drilling ▽ 5.0 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 8/2/90 End 8/3/90
Driller ETI Chief MES Rig C
Logger TJM Editor JAW ME7
Drill Method 3 7/8" RWB

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW2
Surface Elevation 929.9
Job No. 60776
Sheet 2 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	PID (ppm)
12		8	M	35		Increased Fine Sand at 31-32'	0.5	0.0
13		6	M/W	32	35	Increased Fine to Medium Sand at 33-35'		0.0
14		12	M	23		More Dense at 37'	2.1	0.0
15		0		33	40			0.0
16		0		33		No Sample Recovery, Possible Pebbles and Cobbles in Clay		0.0
17		18	M	48			2.4	0.0
18		15	M	25	45	Same *TILL*	2.6	0.0
19		6	M	34			2.6	0.0
20		14	M	30	50			0.0
21		18	M	28				0.0
22		18	M	26	55			0.0
23		14	M	19		Increased Fine to Medium Sand, Less Dense at 56'		0.0
24		5	M	19	60			0.0
25		18	M/W	21		Gray Silty Fine to Medium SAND, Trace Clay and Fine to Coarse Gravel. (SM-SP)	0.75	0.0
26		16	W	13		Gray Clayey SILT and Silty Clay, Trace to Little Fine to Coarse Gravel, Trace		0.0

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW2
Surface Elevation 929.9
Job No. 60776
Sheet 3 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
					65	Pebbles. (ML-SC)		
27		14	W	51		Gray Silty Fine SAND, Trace to Some Clay, Trace Fine to Coarse Gravel and Pebbles. (SM)		0.0
28		13	W	51		Some Interbedded Fine/Coarse Silts and Sands.		0.0
					70	Grades to Gray Silty Fine to Medium SAND, Trace Clay and Coarse Sand and Fine Gravel. (SP-SM) Trace Interbedded (3") Fine/Coarse Sands.		
					75	Gray Silty Fine SAND. (SM) Increasingly Finer with Silt Layering at 67.3-67.5'		
						Gray Silty Fine to Medium SAND, Trace Fine to Coarse Gravel (SM-SP)		
					80	Gray Fine Sandy CLAY, Trace Medium Sand and Fine to Coarse Gravel. (SC)		
						Gray Fine to Coarse SAND, Trace to Little Fine to Coarse Gravel, Trace Pebbles. (SP)		
					85	End of Boring at 70.0' Tremmie Backfilled Borehole with Bentonite Slurry		
					90			
					95			

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW3
Surface Elevation 928.9
Job No. 60776
Sheet 1 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE

No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)
1		12	M	5	
2		12		22	5
3		12		25	
4		0		22	10
5		18		17	
6		14		17	15
7		9		20	
8		18		13	20
9		14		23	
10		12		12	
11		8		7	25
12		20		13	
13		24		10	30

VISUAL CLASSIFICATION and Remarks

Soft Black Organic SILT. (OL)

Medium Dense Light Brown Fine to Coarse SAND and Fine Gravel, Little to Some Silt. (SM-GM)

Very Stiff to Hard Lean Gray CLAY, Trace Medium to Coarse Sand and Fine Gravel. (CL)
YORKVILLE TILL MEMBER

Medium Dense Gray Fine to Coarse SAND and GRAVEL, Little to Some Silt and Clay. (SM-GM)

Stiff Gray-Brown Silty CLAY, Little to Some Fine to Coarse Sand, Trace Fine Gravel. (CL-ML)
TISKILWA TILL MEMBER

SOIL PROPERTIES

qu (qa) (tsf)	PID (ppm)
4.0+	
1.5	

WATER LEVEL OBSERVATIONS

While Drilling ▽ _____ Upon Completion of Drilling ▼ _____
Time After Drilling _____ _____ _____ _____
Depth to Water _____ _____ _____ _____
Depth to Cave in _____ _____ _____ _____

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 8/6/90 End 8/7/90
Driller ETI Chief MES Rig C
Logger TJM Editor JAW ME750
Drill Method 3 7/8" RWB

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW3
Surface Elevation 928.9
Job No. 60776
Sheet 2 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
14		10		17				
15		8		15	35			
16		16		15				
17		4		28	40			
18		0		19				
19		14		10	45			
20		14		5				
21		0		12	50			
22		18		6				
23		0		17	55	Interbedded Layers of Varying Silt and Clay Contents at 50-55'		
24		16		30		More Silt Than Clay at 57'		
25		18		12	60	Back Clayier at 60'		
26		18		5				
27		4		14				

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LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW3
Surface Elevation 928.9
Job No. 60776
Sheet 3 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES	
No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)		qu (qa) (tsf)	PID (ppm)
					65			
28		12		35				
						2" Silty Fine SAND Layer at 67.5' (SM)		
29		12		16				
					70	Brown-Gray Silty CLAY, Little to Some Fine to Coarse Sand, Trace Fine Gravel. (CL-ML)		
						End of Boring at 70.0' Tremmie Backfilled Borehole with Bentonite Slurry		
					75			
					80			
					85			
					90			
					95			

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
Remedial Investigation
Location: Woodstock, Illinios

Boring No. SBMW4
Surface Elevation 924.5
Job No. 60776
Sheet 1 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
						Well Vegetated Low Lying Grass		
1		14	M	5		Black Organic Silty Clay Topsoil, Trace to Some Roots and Peat. (OL)		
2		2	M	1		Dark Brown and Black PEAT. (PT)	0.6	
					5			
3		18	M	1		Grades to Greenish Gray Silty Fine SAND and PEAT, Highly Organic, Spongy Texture. (OL-PT) Trace Roots, Plant Debris and Shells at 6-7'		
4		16	M	1				
					10			
5		18	M	1		Very Soft Gray Silty CLAY, Trace Peat, Putty-Like Texture. (OH)	0.7	
6		9	M	8		Gray Sandy CLAY, Some Silt, Trace to Little Fine to Coarse Gravel. (SC)		
					15			
8		0		46		Layer of Brown and Black Silty PEAT, Trace Shells. (PT)		
9		8	W	29		Gray Fine Sandy SILT, Trace Fine Gravel. (SM)		
					20	Gray Silty SAND and GRAVEL, Trace Clay, Pebbles and Cobbles. (SM-GM)		
10		12	W/M	35		Dense Gray Silty CLAY, Trace Fine Sand and Fine to Medium Gravel, Trace Limestone Pebbles. (CL) YORKVILLE TILL MEMBER	3.0	
11		15	M	32			3.4	
					25	Less Sand at 25'		
12		7	M	30				
13		14	M	37			4.0+	
					30	Brown-Gray Mottled Appearance at 29.5'		

WATER LEVEL OBSERVATIONS

While Drilling ▽ 1.5 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 8/10/90 End 8/13/90
Driller ETI Chief MES Rig C
Logger TJM Editor JAW ME75
Drill Method 3 7/8" RBW

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW4
Surface Elevation 924.5
Job No. 60776
Sheet 2 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
						More Silt and Fine Sand at 30'		
14		16	M	36			3.2	
						Reddish Brown Fine Sandy CLAY, Trace Fine to Coarse Gravel. (CL-ML) TISKILWA TILL MEMBER		
15		14	M	42	35		4.0+	
16		4	M	53			2.5	
						1/2" Silty Fine Sand Seam at 37'		
17		10	M	27	40			
18		12	M	37				
19		10	M	35	45		3.0	
20		14	M	37				
21		6	M	50	50	Trace Limestone Pebbles at 49-50'		
22		14	M	32				
23		18	M/W	41	55			
						Brownish Gray Silty Fine SAND, Trace Clay, Medium to Coarse Sand and Fine Gravel. (SM)		
24		14	W	80				
						Brownish Gray Fine Sandy SILT, Trace Clay and Sand and Gravel. (ML)		
25		11	W/M/W	70	60			
						Brownish Gray Silty Fine to Medium SAND, Some Fine to Coarse Gravel, Red Granite Pebbles, and Limestone Cobbles. (SM)		
26		13	W	103				

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW4
Surface Elevation 924.5
Job No. 60776
Sheet 3 of 3

2100 CORPORATE DRIVE · ADDISON, ILLINOIS 60101 · TEL (708) 691-5000

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES			
No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)		qu (qa) (tsf)	PID (ppm)	
27		11	W	70	65	Brownish Gray Fine Sandy SILT, Trace Clay. (ML)			
						Brownish Gray Silty CLAY, Some Fine Sand, Trace Fine to Coarse Sand and Gravel. (CL-ML)			
					70	Brownish Gray Fine to Medium SAND, Trace to Little Fine to Coarse Sand and Gravel, Trace Silt. (SP)			
						Brownish Gray SILT, Trace Fine Sand and Clay. (ML)			
					75	Brownish Gray Silty Fine SAND, Trace Fine Gravel. (SM)			
						Brownish Gray SILT, Trace to Little Fine Sand. (ML)			
					80	Brownish Gray Fine SAND, Trace Silt. (SM)			
						End of Boring at 66.0' Tremmie Backfilled Borehole with Bentonite Slurry			
					85				
					90				
					95				

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
Remedial Investigation
Location: Woodstock, Illinios

Boring No. SBMW5
Surface Elevation 927.4
Job No. 60776
Sheet 1 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
						Well Vegetated Surface.		
1		8	M	4		Soft Peat-Like Topsoil. (OL)		
2		10	M/W	11	5	Black and Dark Brown Silty Fine to Medium SAND, Trace to Little Silt and Fine to Coarse Gravel. (SP) Thin Seam of White Well Rounded, Well Sorted, Coarse Quartz Sand at 2.3-2.4'		
3		10	W	10		Gray Fine to Coarse SAND, Trace to Little Silt and Fine to Coarse Gravel, Trace Pebbles. (SP)		
4		8	W	8	10	Some Layering of Fine/Coarse Sands. Increased Coarse Sand and Gravel, Trace Limestone Pebbles and Cobbles, Trace Chert at 10'		
5		4	W	10				
6		8	W	12	15	Less Coarse Gravel at 14'		
7		8	W/M	10		Trace to Some Fine to Coarse Gravel and Pebbles at Base, 16-17'	2.5	
8		2	M	3	20	Gray Silty CLAY, Trace Fine Sand and Fine to Coarse Gravel. (CL) YORKVILLE TILL MEMBER		
9		14	M			Increased Coarse Gravel and Limestone Pebbles at 20'		
10		17	M	9	25		1.1	
11		8	M	11		Soft and Plastic, Less Gravel and Trace Fine Sand at 25'	0.8	
12		18	M	11	30		1.2	

WATER LEVEL OBSERVATIONS

While Drilling ▽ 6.0 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 8/1/90 End 8/2/90
Driller ETI Chief MES Rig C
Logger TJM Editor JAW ME750
Drill Method 3 7/8" RWB

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW5
Surface Elevation 927.4
Job No. 60776
Sheet 2 of 3

2100 CORPORATE DRIVE · ADDISON, ILLINOIS 60101 · TEL (708) 691-5000

SAMPLE No.	Type	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
13		18	M	11			1.0	
14		18	M	12	35		1.3	
15		14	M	18		More Silty, Less Plastic, and No Gravel at 37.3'	2.2	
16		18	M	20	40		2.1	
17		0		20		Reddish Brown Fine Sandy CLAY, Some Silt, Trace to Little Medium to Coarse Sand and Fine to Coarse Gravel, Trace Pebbles. (CL-ML) TISKILWA TILL MEMBER		
18		11	M	16	45		1.2	
19		12	M	17				
20		14	M	11	50		1.2	
21		12	M/W	27		Gray Fine to Coarse SAND, Trace to Little Fine to Coarse Gravel, Trace Silt. (SP) Slightly Finer Sand at 54'		
22		11	W	31	55			
23		12	W	35		Grades to Gray Fine to Medium SAND, Trace Coarse Sand and Fine Gravel. (SP) Some Interbedded (6") Fine/Coarse Sands		
24		14	W/M	23	60	Gray Silty Fine SAND, Slightly Layered with Silt. (SM)	0.8	
						Gray SILT, Trace to Some Clay. (ML) Slightly Plastic at 59-60' with Increased Clay.		

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW5
Surface Elevation 927.4
Job No. 60776
Sheet 3 of 3

2100 CORPORATE DRIVE · ADDISON, ILLINOIS 60101 · TEL (708) 691-5000

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)		qu (qa) (tsf)	PID (ppm)			
					65	End of Boring at 60.0' Tremmie Backfilled Borehole with Bentonite Slurry.					
					70						
					75						
					80						
					85						
					90						
					95						

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW6
Surface Elevation 943.5
Job No. 60776
Sheet 1 of 3

2100 CORPORATE DRIVE · ADDISON, ILLINOIS 60101 · TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
						Well Vegetated Surface.		
1		14	M	4		Black to Brown Sandy Topsoil. (OL)		
						Brown Silty Fine to Medium SAND. (SM)		
2		10	M	13				
					5			
3		8	M	6		Decreased Silt.		
4		8	M	6				
					10			
5		8	M/W	18		Trace Organics at 11-11.5'		
						Trace Rust Color at 12' with Interbedding (1/2") of Medium to Coarse Sand at 12.2'		
6		8	W	18				
					15			
7		10	W	11		Light Gray Fine to Medium SAND, Trace Silt. (SP-SW) Trace Thin Interbedding of Fine/Coarse Sand.		
8		18	W	4		Mostly Gray Well Sorted Fine to Medium SAND, Decreased Silt. (SW)		
					20			
9		14	W/M	15		Interbedded Layer (1/4"-1/2") of Gray SILT and Fine to Medium SAND, Trace Black Organics. (SM)		
10		12	W	27		Gray Clayey SILT, Trace to Some Fine Sand, Trace Medium Sand.(ML)		
					25			
11		12	W	38		Black Fine SAND, Trace Silt and Medium Sand, No odor. (SP)		
12		14	W	33		Gray Fine Sandy SILT, Trace to Little Fine to Medium Sand, Some Thin (1/4") Interbedding, Trace Clay (SM)		
					30			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 12.0 Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the transition may be gradual.

GENERAL NOTES

Start 7/31/90 End 8/1/90
Driller ETI Chief MES Rig C
Logger TJM Editor JAW ME7
Drill Method 3 7/8" RWB

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
Remedial Investigation
Location: Woodstock, Illinois

Boring No. SBMW6
Surface Elevation 943.5
Job No. 60776
Sheet 2 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
13		10	W	36		Light Gray Fine to Medium SAND. (SP)		
						Gray Sandy SILT, Trace Black. (ML)		
14		6	W	32	35	Gray Fine SAND, Trace Silt and Medium Sand. (SP-SM)		
15		6	W/M	19		Black Fine Sand Seams (1/4") at 22.1' Interbedded in Gray Clayey Silt.		
16		8	M/W	27	40	Grades to Gray Sandy SILT, Trace Coarse Gravel. (SM)		
17		12	W/M	42		Gray Fine SAND, Trace Fine Gravel and Thin (<1/4") Silt Seams. (SP)		
18		14	M	46	45	Gray SILT and Fine SAND, Trace Fine to Coarse Gravel, Clay, and Limestone Pebbles. (ML-SP) Trace Limestone Cobbles at 30' Increased Clay, Less Fine Sand at 36'	4.5+	
19		16	M	39		Gray Clayey SILT, Trace Fine Sand (ML)	3.6-4.2	
20		6	M	78	50	Gray Silty Fine to Coarse SAND, Trace Fine to Medium Gravel. (SM-SP) Decreased Coarse Sand, Trace Clay. Some Layering of Areas with or without Gravel at 42'		
21		18	M	45			2.5-3.1	
22		14	M	38	55	Very Dense Gray Silty CLAY, Trace Fine to Coarse Gravel. (CL) YORKVILLE TILL MEMBER Less Silt and Gravel at 48' Trace to Some Fine to Medium Sand at 52'	3.5-4.5+	
		0						
23		14	M/W	36	60	Less Sand at 55' Very Silty at 58.5'		
24		12	M	32		Gray Fine to Medium SAND, Trace Silt and Fine Gravel. (SP)	2.0	
25		16	M	30		Gray Fine Sandy SILT. (ML)		

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
Remedial Investigation
Location Woodstock, Illinios

Boring No. SBMW6
Surface Elevation 943.5
Job No. 60776
Sheet 3 of 3

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL (708) 691-5000

SAMPLE No.	TYPE	Rec (in.)	Moist	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
					65	Gray Fine to Coarse SAND and GRAVEL, Trace Silt and Pebbles. (SP)		
							2.75	
26		18	M	30			1.6	
						Reddish Brown Sandy CLAY, Some Silt, Trace Fine to Coarse Gravel and Pebbles. (CL-ML)		
27		0	M	38		Dries Light Grayish Pink.		
					70	TISKILWA TILL MEMBER Less Gravel at 64-65' Less Dense at 67'		
					75	End of Boring at 70.0' Tremmie Backfilled Borehole with Bentonite Slurry		
					80			
					85			
					90			
					95			

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. MW7
Surface Elevation 931.7
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1			M	7		Brown Silty CLAY, Trace Fine to Coarse Sand and Gravel. (ML-CL) Trace Roots		
2			M	5		Brown and Black CLAY, Trace Silt and Fine Sand. (CL)		
					5			
3			M/W	21		Gray Silty CLAY, Trace Fine to Coarse Sand. (CL-ML)		
4			W	19		Gray Fine to Coarse SAND, Trace Fine to Coarse Gravel. (SP)		
					10	Black Fine to Coarse SAND and GRAVEL. Septic Odor. (SP-GP)		
5			W	33		Gray Fine to Coarse SAND, Trace Fine to Coarse Gravel. (SP)		
6						Brown Fine SAND and SILT, Trace Medium to Coarse Sand, Fine to Coarse Gravel and Clay. (SM)		
					15			
						End of Boring at 15 ft Install Well to 14 ft		
					20			
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 6.5' Upon Completion of Drilling ▼ 6.5
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/16/91 End 1/16/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. MW8
Surface Elevation
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE							VISUAL CLASSIFICATION and Remarks			SOIL PROPERTIES			
Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	Profile		Borehole	Backfill	qu (qa) (tsf)	PID (ppm)		
							Straight Drilled for Well Replacement. Utilized Well Materials from MW8X. Refer to boring log MW8X for stratigraphic details						
					5								
					10								
					15								
					20								
							End of boring at 20.5 ft Reinstall Well to 19.8 ft						
					25								

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil

GENERAL NOTES

Begin 2/5/91 End 2/5/91 Drill
Driller ETI Chief KT Rig C
Logger DSP Editor TJM MI
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. MW8X
Surface Elevation 924.5
Job No. 60776.23
Sheet 1 of 2

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE

Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)
1				1	
2			M	0	
3			M	0	
4			M	7	
5			M	0	
6			M/W	31	
7			W	24	

VISUAL CLASSIFICATION and Remarks

Profile / Backfill

Straight drill to 3.5 ft

Black PEAT

Greenish Gray SILT, Trace Roots, Shells, and Wood chips. (ML)

Gray CLAY, Some Silt, Trace Fine Gravel. (CL)

Increasing Silt and Fine Sand at 12-14 ft

Gray Silty SAND and GRAVEL. (SP-GP)

Gray Clayey SILT, Some Fine Sand. (ML)

Gray Fine to Coarse SAND. (SP)

Gray Clayey SILT, Trace Fine Sand. (ML)

Gray Fine to Coarse SAND, Trace Fine Gravel. (SP)

Gray Silty CLAY, Trace Fine to Coarse

SOIL PROPERTIES

qu (qa) (tsf)	PID (ppm)			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 0' Upon Completion of Drilling ▼ 0.2
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types: the actual transition may be gradual.

GENERAL NOTES

Begin 1/20/91 End 1/20/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. MW8X
Surface Elevation 924.5
Job No. 60776.23
Sheet 2 of 2

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	PROFILE	VISUAL CLASSIFICATION and Remarks	BACKFILL	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
							Sand and Fine Gravel. (CL-ML)			
8							Collect Shelby Tube 27.5-30.0 ft			
					30					
9							Collect Shelby Tube 30.0-32.5 ft			
							End of boring at 32.5 ft Install Well to 13.4 ft Well Later Pulled and Relaced as MW8			
					35					
					40					
					45					
					50					
					55					

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. SBMW8A
Surface Elevation 924.8
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	Profile	VISUAL CLASSIFICATION and Remarks	Backfill	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
							Brown Clayey Sand and Gravel, Some Silt. (Possible Fill)			
1			M	10						
2			M	1			Light Gray Clay. Resembles Bentonite, could be a thick Lime Slurry.			
					5					
3				0						
4			M	0			Soft Brown CLAY, Trace Roots and Gastropods.			
					10		End of Boring at 10 ft Abandon Location for Well.			
					15					
					20					
					25					

WATER LEVEL OBSERVATIONS

While Drilling ▽ 5.0' Upon Completion of Drilling ▼ 5.0
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil

GENERAL NOTES

Begin 1/18/91 End 1/18/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. SBMW8P
Surface Elevation 924.6
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	Profile	VISUAL CLASSIFICATION and Remarks	Borehole	Backfill	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)		
1			M	0			Black PEAT, Trace Fine to Coarse Sand Highly Organic with roots.						
2				0	5		Lime Slurry in Cuttings						
3			M	0			Green-Gray SILT, Trace Clay, Fine Sand, and Organics (roots) (ML)						
					10		End of boring at 10 ft Abandon Location for Well						
					15								
					20								
					25								

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/20/91 End 1/20/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ML
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. MW9
Surface Elevation
Job No. 60776.23
Sheet 1 of 2

2100 CORPORATE DRIVE · ADDISON, ILLINOIS 60101 · TEL. (708) 691-5000

SAMPLE						PROFILE	VISUAL CLASSIFICATION and Remarks	BOREHOLE	BACKFILL	SOIL PROPERTIES				
Number	TYPE	Rec. (ft.)	Mois-ture	N Value	Depth (ft.)					qu (qa) (tsf)	PID (ppm)			
							Straight drilled to 35 ft for well placement. Refer to log MW9P for stratigraphic details.							
					5									
					10									
					15									
					20									
					25									

WATER LEVEL OBSERVATIONS

While Drilling ▽ 0' Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 2/5/91 End 2/6/91 Drill
Driller ETI Chief KT Rig C
Logger DSP Editor TJM ME850
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI Phase II
Location: Woodstock, Illinois

Boring No. MW9
Surface Elevation
Job No. 60776.23
Sheet 2 of 2

2100 CORPORATE DRIVE · ADDISON, ILLINOIS 60101 · · TEL. (708) 691-5000

SAMPLE						PROFILE	VISUAL CLASSIFICATION and Remarks	BACKFILL	SOIL PROPERTIES		
Number	TYPE	Rec. (ft.)	Mois-ture	N Value	Depth (ft.)				qu (qa) (tsf)	PID (ppm)	
					30						
					35		Drillers Note: Gravel at 34.5 ft End of boring at 35 ft Install Well to 34.7 ft				
					40						
					45						
					50						
					55						

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. MW9P
Surface Elevation 924.7
Job No. 60776.23
Sheet 1 of 2

2100 CORPORATE DRIVE · ADDISON, ILLINOIS 60101 · TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
						Black PEAT, Highly Organic with Roots.		
1				2				
2				0	5			
3			M	0		Brown and Green Clayey PEAT, Trace Shells and Roots. (possible stratified floodplain deposits)		
4			M	0	10			
5			M	0		Black and Dark Green Clayey SILT, Trace Roots. (ML)		
6			M	0	15			
7			M	0		Soft Gray CLAY, Trace Silt and Fine Sand. (CL)		
8			M	0	20			
9			M	9		Gray Sandy/Silty CLAY, Trace Fine Gravel. (CL-ML)		
10			W	13	25	Gray SAND and GRAVEL, Trace Silt and Clay. (SP-GP)		

WATER LEVEL OBSERVATIONS

While Drilling ▽ 4.0' Upon Completion of Drilling ▼ 0.8
Time After Drilling
Depth to Water
Depth to Cave in

GENERAL NOTES

Begin 1/19/91 End 1/19/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

The stratification lines represent the approximate boundary between soil

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. MW9P
Surface Elevation 924.7
Job No. 60776.23
Sheet 2 of 2

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	Profile	VISUAL CLASSIFICATION and Remarks	Borehole Backfill	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
					30		Blind Drill 25-34.5 ft Drillers Note: Gray Sand and Gravel			
11			M	29	35		Gray Silty CLAY, Trace Fine to Coarse Sand and Gravel, Trace Brown Sand Pockets. (CL-ML)			
12							Reddish-Brown Silty CLAY, Some Fine to Coarse Sand. (CL-ML) Collect Shelby Tube 36.0-38.5 ft Collect Shelby Tube 38.5-41.0 ft			
13					40					
					45		End of boring at 41 ft Install Well to 13.3 ft Well later labeled as a nonsampling piezometer and replaced by MW9			
					50					
					55					

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. MW10
Surface Elevation 924.9
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
						Black PEAT, Highly Organic with Roots.		
1			M	2				
2				0				
					5			
3			M/W	0		Soft Brown Silty CLAY, Trace Roots. (CL-ML) Spongy		
4			M/W	2		Soft Gray Silty CLAY, Trace Roots. (CL-ML)		
					10			
5			M/W	2		Decreasing Silt at 11-12.5 ft		
6			M	12		Trace Fine to Coarse Sand and Gravel at 12.5 ft		
					15	Gray Silty CLAY, Trace Fine to Coarse Sand and Gravel. (CL-ML)		
7			M	16				
						Collect Shelby Tube 17.5-20 ft		
8								
					20	Shelby tube attempted at 20-22.5 ft but unsuccessful.		
9								
						End of boring at 22.5 ft Install Well to 13.4 ft		
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 4.0' Upon Completion of Drilling ▼ 0.9
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/19/91 End 1/19/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

APPENDIX B-3

PIEZOMETER WELL BORING LOGS

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. P1
Surface Elevation 933.2
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1			M	28		Brown Silty CLAY, Trace Fine to Coarse Sand and Gravel. (CL-ML)		
2			M	31	5			
3			M	30				
4			M	29	10			
5			M	16		Gray Silty CLAY, Trace Fine to Coarse Sand and Gravel. (CL-ML) Driller Note: Cobbles at 12'		
6			M	15	15	Increasing Fine to Medium Sand at 14'		
7			W	17		Brown Fine to Coarse SAND, Trace Silt, Clay, and Fine to Coarse Gravel. (SP)		
8			M/W	14	20	Brown Sandy SILT, Some Clay, Trace Fine Gravel. (ML)		
						Brown Sandy CLAY, Some Silt, Trace Fine to Coarse Gravel. (SC/CL-ML)		
						End of Boring at 20' Install Piezometer to 20'		
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 16.5' Upon Completion of Drilling ▼ 16.5
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/17/91 End 1/17/91 Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. P2
Surface Elevation 927.0
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1			M	8		Black and Brown CLAY, Trace Silt and Fine to Coarse Sand. (CL)		
2			M	11	5	Brown and Gray (Mottled) Silty CLAY, Trace Fine to Coarse Sand and Gravel. (CL-ML)		
3			M	20		Brown with Gray Streaks and Trace Fine Gravel at 7 ft		
4			M	27	10	Brown Silty CLAY, Trace Fine to Coarse Sand and Gravel. (CL-ML)		
5			M	25		Brown and Gray Silty CLAY, Trace Fine to Coarse Sand and Fine Gravel. (CL-ML)		
6			M	28	15	All Gray at 14 ft		
7			M	40		Brown Silty CLAY, Increasing Silt and Fine to Coarse Sand and Gravel. (CL-ML)		
8			M	28	20	Increasing Sand, 1 inch Sand Seam at 19.5 ft		
9			M	22		Sand Pocket at 21.5 ft		
10			M	35	25			
						End of Boring at 25 ft Install Piezometer to 23 ft		

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling ▼ 2.5
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/17/91 End 1/17/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. P2B
Surface Elevation 927.2
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE · ADDISON, ILLINOIS 60101 · TEL. (708) 691-5000

SAMPLE						PROFILE	VISUAL CLASSIFICATION and Remarks	BOREHOLE BACKFILL	SOIL PROPERTIES				
Number	TYPE	Rec. (ft.)	Moisture	N Value	Depth (ft.)				qu (qa) (tsf)	PID (ppm)			
							Straight drill to 13.5 ft for shallow piezometer placement. Refer to boring log P2 for stratigraphic details.						
					5								
					10								
							End of boring at 13.5 ft Install piezometer to 13.5 ft						
					15								
					20								
					25								

WATER LEVEL OBSERVATIONS

While Drilling ▽ _____ Upon Completion of Drilling ▼ 2.6
Time After Drilling _____ _____ _____ _____
Depth to Water _____ _____ _____ _____
Depth to Cave in _____ _____ _____ _____

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/19/91 End 1/19/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. P3
Surface Elevation 940.5
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE

Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)
1			M	5	
2			W	12	
3			M/W	14	
4			W	20	

VISUAL CLASSIFICATION and Remarks

Brown Fine to Medium SAND, Trace Silt and Clay. (SP)

Brown Silty CLAY, Trace Fine to Coarse Sand and Fine Gravel. (CL-ML)

Brown SAND and GRAVEL. (SP-GP) Decreasing Gravel with Depth.

Brown SAND and GRAVEL, Trace Silt and Clay. (SP-GP)

End of boring at 10 ft
Install piezometer to 10 ft

SOIL PROPERTIES

qu (qa) (tsf)	PID (ppm)

WATER LEVEL OBSERVATIONS

While Drilling ▽ 4.0' Upon Completion of Drilling ▼ 4.0
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/21/91 End 1/21/91 Drill
Driller Mathes Chief JB Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. P3A
Surface Elevation
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE						PROFILE	VISUAL CLASSIFICATION and Remarks	BOREHOLE	BACKFILL	SOIL PROPERTIES				
Number	TYPE	Rec. (ft.)	Mois-ture	N Value	Depth (ft.)					qu (qa) (tsf)	PID (ppm)			
							Straight drill to 18 ft for piezometer placement Refer to log P3 for stratigraphic details 0-10 ft							
					5									
					10		Gray Fine SAND, Little to Some Silt. (SM)							
					15									
							End of boring at 18 ft Install piezometer to 18 ft							
					20									
					25									

WATER LEVEL OBSERVATIONS

While Drilling ▽ Upon Completion of Drilling ▼
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 2/6/91 End 2/6/91 Drill
Driller ETI Chief KT Rig C
Logger DSP Editor TJM ME850
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project Woodstock Landfill
RI Phase II
Location Woodstock, Illinois

Boring No. P4
Surface Elevation 938.0
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
						TOPSOIL: Black Silty Clay. (OL)		
1			M	6				
2			M	5	5	Gray (Mottled) CLAY, Trace Silt and Fine Sand. (CL)		
3			M/W	2				
4			M/W	0	10			
5			M/W	0		Increased Silt at 11 ft		
6			W	17	15	Gray Fine to Coarse SAND, Trace Fine Gravel. (SP)		
						Gray Silty Fine SAND, Trace Clay. (SM)		
						End of boring at 15 ft Install piezometer to 14.8 ft		
					20			
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 8' Upon Completion of Drilling ▽ 8.0
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/23/91 End 1/23/91 Drill
Driller Mathes Chief DE Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. P5
Surface Elevation 945.9
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
						FILL: Silty Clay with Fine to Coarse Sand and Gravel.		
1	■		M	26				
						Brown Silty CLAY, Trace Fine to Coarse Sand and Fine Gravel. (CL-ML)		
2	■		M	9				
					5	Brown Fine to Medium SAND, Trace Coarse Sand.		
3	■		M/W	26		Brown Clayey SAND, Trace Silt and Layered Brown Fine to Medium Sand. (SC)		
4	■		M/W	24		Brown Fine to Coarse SAND, Some Fine to Coarse Gravel, Trace Silt and Clay. (SM)		
					10			
5	■		M/W	16				
6	■		W	6				
					15			
7	■		W	7				
					20	End of boring at 18.5 ft Install piezometer to 18.5 ft		
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ 13.5' Upon Completion of Drilling ▼ 13.8
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types: the actual transition may be gradual.

GENERAL NOTES

Begin 1/23/91 End 1/23/91 Drill
Driller Mathes Chief DE Rig C
Logger SJB Editor TJM ME550
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill
RI Phase II
Location: Woodstock, Illinois

Boring No. P6
Surface Elevation 938.8
Job No. 60776.23
Sheet 1 of 1

2100 CORPORATE DRIVE - ADDISON, ILLINOIS 60101 - TEL. (708) 691-5000

SAMPLE Number	Type	Rec. (ft.)	Moisture	N Value	Depth (ft.)	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID (ppm)
1				5		Soft Gray Silty CLAY, Trace Fine to Medium Sand. (CL-ML)		
2			M	3	5			
3			M	6		Becoming Dense at 6 ft		
4			M	3	10	Becoming Soft again with Trace Organics.		
5			M	2		Brown PEAT, Highly organic with root system present.		
6			M	2	15	Soft Gray Silty CLAY, Trace Fine to Medium Sand, (CL-ML)		
7				2				
					20	End of boring at 20 ft Install piezometer to 20 ft		
					25			

WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ Upon Completion of Drilling ▼ 2.5
Time After Drilling ____ ____ ____ ____
Depth to Water ____ ____ ____ ____
Depth to Cave in ____ ____ ____ ____

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin 1/23/91 End 1/23/91 Drill
Driller Mathes Chief DE Rig C
Logger SJB Editor TJM MEs5C
Drill Method 4.25" HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Boring No. P7
Surface Elevation 943.2
Job No. 60776.38
Sheet 1 of 1

One Science Court, P.O. Box 5385, Madisoin WI 53705 TEL (608) 231-4747

SAMPLE / VISUAL CLASSIFICATION and Remarks / SOIL PROPERTIES

No.	Type	Rec (in.)	Moist	N	Depth	Visual Classification and Remarks	qu (qa) (tsf)	PID	Explosive Gas	Field VOC Water	Monotox
1		20	M	16		Dark Brown Silty Topsoil (FILL)					
						Medium Dense, Brown to Dark Brown Fine to Medium Sandy SILT, Little Fine to Coarse Gravel (FILL)					
2		24	M	7		Loose, Brown to Grayish-Brown Silty Fine to Medium SAND (SM)					
3		20	M	13	5	Medium Dense, Brown Fine to Medium SAND (SP)					
4		24	W	7		Loose to Stiff, Grayish-Brown to Rust-Brown, Fine to Medium Sandy CLAY (SC). Alternating Thin (1/4" to 1") Rhythmites (Horizontal) of Fine to Medium Sandy Silt, Silt and Silty Clay	1.5				
5		24	W	4	10	Very Loose, Gray and Brown, Silty Fine to Medium SAND (SM), Trace Organics, Thin (1/8" to 1/2") Rhythmites of Silt and Fine to Medium Sand with Thin Organic Partings					
6		22	W	8		Loose to Medium Dense, Brown to Dark Gray, Fine to medium Sandy SILT (ML), Trace Organics, Trace Gravel, Thin (1/8" to 1/2") Horizontal Rhythmites of Fine to Medium Sand (SP), Silty Fine to Medium Sand and Silt With Thin Organic Partings					
7		22	W	14	15						
8		20	W	10		Medium Dense, Dark Gray Fine to Medium SAND, Little Silt (SP-SM)					
9		9	W	22	20						
						End of Boring at 21.5 ft					
						Set 5' PVC Screen to Approx. 20'					
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 7.5 Upon Completion of Drilling 9.6'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 10/1/91 End 10/1/91
Driller ETI Chief MB Rig D-50
Logger GFP Editor GFP Bomb
Drill Method 4 1/4" I.D. HSA 0-19.5'

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Boring No. P8
Surface Elevation 940.3
Job No. 60776.38
Sheet 1 of 2

One Science Court, P.O. Box 5385, Madisoin WI 53705 TEL (608) 231-4747

SAMPLE No.	Type	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID	Explosive Gas	Field VOC Water
		14		17		Black Silty Topsoil (FILL)				
						Medium Dense, Dark Brown Fine to Medium Sandy SILT, Some Fine to Coarse Gravel (FILL)				
		15		74		Very Dense, Light Brown Silty Fine to Medium SAND, Some Fine to Coarse Gravel (Till) (SM)				
		18		59	5	Thin (1") Moist, Brown Fine to Coarse Sand Seam (SP) at 5 1/2'				
						Scattered Cobbles and Boulders				
		18		72						
		18		68	10					
		18		75						
		18		71	15					
		18		89						
		12		50/4"	20	Very Dense, Brown and Grayish-Brown Silty Fine to Medium SAND, Some Fine to Coarse Gravel (SM)				
		18		93						
					25	Medium Dense, Gray, Fine to Medium SAND,				

WATER LEVEL OBSERVATIONS

While Drilling ▽ 12.5 Upon Completion of Drilling 21.56'
Time After Drilling
Depth to Water ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 9/30/91 End 9/30/91
Driller ETI Chief MB Rig
Logger GFP Editor GFP Bor
Drill Method 4 1/4" I.D. HSA 0-29.5'

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Boring No. P8
Surface Elevation 948.8
Job No. 60776.38
Sheet 2 of 2

One Science Court, P.O. Box 5385, Madison, WI 53705 TEL (608) 231-4747

SAMPLE No.	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	PID	Explosive Gas	Field VOC Water	Monitox
	12		20		Little Silt (SP-SM) Horizontally Stratified Fine Sand, Fine to Medium Sand with 1" Thick Silt Seams					
	20		35		Medium Dense to Dense, Gray, Fine to Coarse Sandy SILT, Little Clay, Trace Organics (ML); Horizontal Laminae of Fine to Coarse Sand (1"), Fine to Medium Sandy Silt (2") Silt, and Silty Clay (1/2")* (SP/SP-SM/ML/ML-CL)					
	20		25	30						
				35	End of Boring at 31.5 ft Set 5' PVC Screen to Approx. 30' * All Separated by Paper-Thin Black Organic Seams.					
				40						
				45						
				50						

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Boring No. P9
Surface Elevation 939
Job No. 60776.38
Sheet 1 of 1

One Science Court, P.O. Box 5385, Madisoin WI 53705 TEL (608) 231-4747

SAMPLE No.	Type	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTI qu (qa) (tsf)	PID	Explo-sive Gas	Field VOC Water
						Black TOPSOIL, Leaves, Grass, Organic Matter				
1		10	M	87		Very Dense, Light Brown, Fine to Medium SAND, Some Gravel, Trace Silt (SP)				
					5					
2		16	M	52						
					10					
3		18	S	28						
					15	End of Boring at 15.0 ft				
					20					
					25					

WATER LEVEL OBSERVATIONS

While Drilling ▽ 12.5 Upon Completion of Drilling _____
Time After Drilling _____
Depth to Water _____ ▼
Depth to Cave in _____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 10/14/91 End 10/14/91
Driller ETI Chief MB Rig I 0
Logger SGW Editor SGW
Drill Method 4 1/4" I.D. HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Boring No. P10
Surface Elevation
Job No. 60776.38
Sheet 1 of 2

One Science Court, P.O. Box 5385, Madisoin WI 53705 TEL (608) 231-4747

SAMPLE / VISUAL CLASSIFICATION and Remarks / SOIL PROPERTIES

No.	Type	Rec (in.)	Moist	N	Depth	Visual Classification and Remarks	qu (qa) (tsf)	PID	Explosive Gas	Field VOC Water	Monc tox
						Sand and Gravel FILL					
						Medium Sand, Possible Fill					
1		16	M	25		Outwash SAND and GRAVEL					
						Brown Silty CLAY (CL)					
					5						
2		20	M	29			4.5				
					10						
3		20	M/W	24		Gray Silty CLAY, Little Small Gravel	4.5				
					15						
4		23	M	32			4.0				
					20	Gray Silty CLAY, Little Small Gravel					
5		24	M	30							
					25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ _____ Upon Completion of Drilling _____
Time After Drilling _____
Depth to Water _____ ▼
Depth to Cave in _____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 10/2/91 End 10/2/91
Driller ETI Chief SL Rig D-50
Logger TJD Editor Bomb
Drill Method 4 1/4" I.D. HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Boring No. P10

Surface Elevation

Job No. 60776.38

Sheet 2 of 2

One Science Court, P.O. Box 5385, Madison, WI 53705 TEL (608) 231-4747

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERT			
No.	Type	Rec (in.)	Moist	N	Depth		qu (qa) (tsf)	PID	Explo-sive Gas	Field VOC Wa
6		23	W	35		Brown Medium SAND Seam				
						Brown Silty CLAY				
					30	SAND Seam				
						End of Boring at 30.0 ft				
					35					
					40					
					45					
					50					

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Boring No. P11
Surface Elevation
Job No. 60776.38
Sheet 1 of 1

One Science Court, P.O. Box 5385, Madisoin WI 53705 TEL.(608) 231-4747

SAMPLE No.	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	qu (qa) (tsf)	PID	Explosive Gas	Field VOC Water	Monc tox
1	18	M	14		Black Organic Peat, Grasses, Roots (ML)					
					Soft, Blue-Gray Lean CLAY (CL)					
							0.5			
2	12	S	7							
					Dense, Gray Clayey, Fine to Coarse SAND, Some Gravel (SC)					
				5						
3	18	S	31							
					2" Fine Sand Seam at 6.5 ft					
					Medium Dense, Gray Fine to Coarse SAND, Some Gravel (SP)					
4	18	S	23							
				10	End of Boring at 10.0 ft					
				15						
				20						
				25						

WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 Upon Completion of Drilling _____
Time After Drilling _____
Depth to Water _____ ▼
Depth to Cave in _____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 10/14/91 End 10/14/91
Driller ETI Chief MB Rig D50
Logger SGW Editor SGW
Drill Method 4 1/4" I.D. HSA

WARZYN

LOG OF TEST BORING

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Boring No. P12
Surface Elevation
Job No. 60776.38
Sheet 1 of 1

One Science Court, P.O. Box 5385, Madisoin WI 53705 TEL (608) 231-4747

SAMPLE No.	Type	Rec (in.)	Moist	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERT qu (qa) (tsf)	PID	Explo-sive Gas	Fiel VOC Wa
						Black Organic PEAT (PT)				
1		6	M	5						
2		6	W			Gray Silt (OL)-Hammer Pushed Spoon				
					5					
3		20	W			Gray SILT With Tiny Freshwater Mollusk Shells				
					10					
4		10	W	21						
						Fine SAND and GRAVEL				
					15					
						End of Boring at 15.0 ft				
					20					
					25					

WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.5 Upon Completion of Drilling

Time After Drilling

Depth to Water ▼

Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 10/3/91 End 10/3/91

Driller ETI Chief SL Rig 1 5

Logger TJD Editor Bo

Drill Method 4 1/4" I.D. HSA

APPENDIX B-4

TEST PIT BORING LOGS

WARZYN

LOG OF TEST PIT

Project Woodstock Landfill RI/FS
Northing: Easting:
Location Woodstock, Illinois

Test Pit No. TP01
Surface Elevation
Job No. 60776.36
Sheet 1 of 1

ONE SCIENCE COURT · P.O. BOX 5385, MADISON, WIS. 53705 · TEL.(608)273-0440

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	PID (ppm)	Depth		qu (qa) (tsf)	W	LL	PL	D
			D	0.0		Black TOPSOIL					
						FILL: Metal; washing machine, sheet metal, white goods, locker doors, hot water heater, mufflers					
						FILL: Some wood, glass, alot of metal, boulders, washer tub					
					5	FILL: Not much metal mostly white chalky ash substance at 5 ft and wood chunks					
					10						
					15	End of Test Pit at 15.0 ft Test pit dimensions (LxWxD) 19 ft x 15 ft x 15 ft					
					20						

WATER LEVEL OBSERVATIONS

While Working ▽ Upon Completion of Excavation
Time After completion
Depth to Water N/A ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil

GENERAL NOTES

Start 7/23/91 End 7/23/91
Contractor Warzyn Chief CB
Logger SGW Editor SGW
Equipment Hitachi EX270LC

WARZYN

LOG OF TEST PIT

Project Woodstock Landfill RI/FS
Northing: Easting:
Location Woodstock, Illinois

Test Pit No. TP02
Surface Elevation
Job No. 60776.36
Sheet 1 of 1

ONE SCIENCE COURT • P.O. BOX 5385, MADISON, WIS. 53705 • TEL.(608)273-0440

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	PID (ppm)	Depth		qu (qa) (tsf)	W	LL	PL	D
			D	0.0		FILL: Refuse, bottles, plastics					
						FILL: Metal; very large appliances, white goods, water heaters, some glass, wood, boulders An aerosol spray can was punctured at about 1 ft and released its contents; a white vapor which lasted 30 seconds.					
					5						
					10						
					15						
						End of Test Pit at 15.0 ft Test pit dimensions (LxWxD) 12 ft x 15 ft x 15 ft					
					20						

WATER LEVEL OBSERVATIONS

While Working ▽ Upon Completion of Excavation
Time After completion
Depth to Water N/A ▼
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

GENERAL NOTES

Start 7/23/91 End 7/23/91
Contractor Waryn Chief CB
Logger SGW Editor SGW
Equipment Hitachi EX270LC

WARZYN

LOG OF TEST PIT

Project: Woodstock Landfill RI/FS
Northing: Easting:
Location: Woodstock, Illinois

Test Pit No. TP03
Surface Elevation
Job No. 60776.36
Sheet 1 of 1

ONE SCIENCE COURT · P.O. BOX 5385, MADISON, WIS. 53705 · TEL.(608)273-0440

SAMPLE No.	Type	Rec (in.)	Moist	PID (ppm)	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	D
			D	0.0		Sand and Gravel FILL					
			M	0.0	5 10	FILL: Wood, refuse, metal strapping, the following drums were encountered: one black drum (OIS markings) and full of fibrous material (sawdust); one red and white drum leaking a white viscous substance (HNu 400-500, flamable sticker on it) from Econonmics Laboratory Inc., Chicago, IL 60620, 5-22-67, shipped to Brown Manufacturing, Div APECO, 610 E. Judd Street, Woodstock, Illinois; a sample was collected then the drum was over packed. Six crushed drums were encountered. (One blue drum with M+T label contained metal shavings). Several tires were also encountered in the test pit.					
					15 20	End of Test Pit at 12.0 ft Test pit dimensions (LxWxD) 15 ft x 10 ft x 12 ft					

WATER LEVEL OBSERVATIONS

While Working ▽	Upon Completion of Excavation			
Time After completion				
Depth to Water	N/A			▼
Depth to Cave in				

GENERAL NOTES

Start 7/24/91 End 7/24/91
Contractor Warzyn Chief CB
Logger SGW Editor SGW
Equipment Hitachi EX270LC

Stratification lines represent the approximate boundary between soil

WARZYN

LOG OF TEST PIT

Project: Woodstock Landfill RI/FS

Location: Woodstock, Illinois

Test Pit No. TP05
Surface Elevation
Job No. 60776.36
Sheet 1 of 1

ONE SCIENCE COURT · P.O. BOX 5385, MADISON, WIS. 53705 · TEL.(608)273-0440

SAMPLE No.	Type	Rec (in.)	Moist	PID (ppm)	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	D
			D	0.0	1	Sand and Gravel FILL					
			M	0.0	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	FILL: Cans, glass, ashes, charred material from burning, tires, wood, paper, magnetic tape Crushed drum, no lid (burning drum) 6-8 ft Water heater at 8 ft Washer at 11 ft					
					15, 16, 17, 18, 19, 20, 21	End of Test Pit at 15.0 ft Test pit dimensions (LxWxD) 10 ft x 12 ft x 15 ft					

WATER LEVEL OBSERVATIONS

While Working	▽	Upon Completion of Excavation	
Time After completion			
Depth to Water	N/A		▼
Depth to Cave in			

The stratification lines represent the approximate boundary between soil

GENERAL NOTES

Start 7/24/91 End 7/24/91
Contractor Warzyn Chief CB
Logger SGW Editor SGW
Equipment Hitachi EX270LC

WARZYN

LOG OF TEST PIT

Project: Woodstock Landfill RI/FS
Northing: Easting:
Location: Woodstock, Illinois

Test Pit No. TP04
Surface Elevation
Job No. 6077636
Sheet 1 of 1

ONE SCIENCE COURT · P.O. BOX 5385, MADISON, WIS. 53705 · TEL.(608)273-0440

SAMPLE No.	TYPE	Rec (in.)	Moist	PID (ppm)	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu (qa) (tsf)	W	LL	PL	D
			D	0.0		Sand and Gravel FILL					
			M	0.0	5	FILL: Charred wood and ashes, glass, paper, metal objects (scrap metal)					
					10	Drum lids at 6 ft (looks like lids from cardboard drums)					
					15	End of Test Pit at 15.0 ft Test pit dimensions (LxWxD) 12 ft x 12 ft x 15 ft					
					20						

WATER LEVEL OBSERVATIONS

While Working ▽ Upon Completion of Excavation
Time After completion
Depth to Water N/A ▼
Depth to Cave in

The classification lines represent the approximate boundary between soil

GENERAL NOTES

Start 7/24/91 End 7/24/91
Contractor Warzyn Chief CB
Logger SGW Editor SGW
Equipment Hitachi EX270LC

C

APPENDIX C

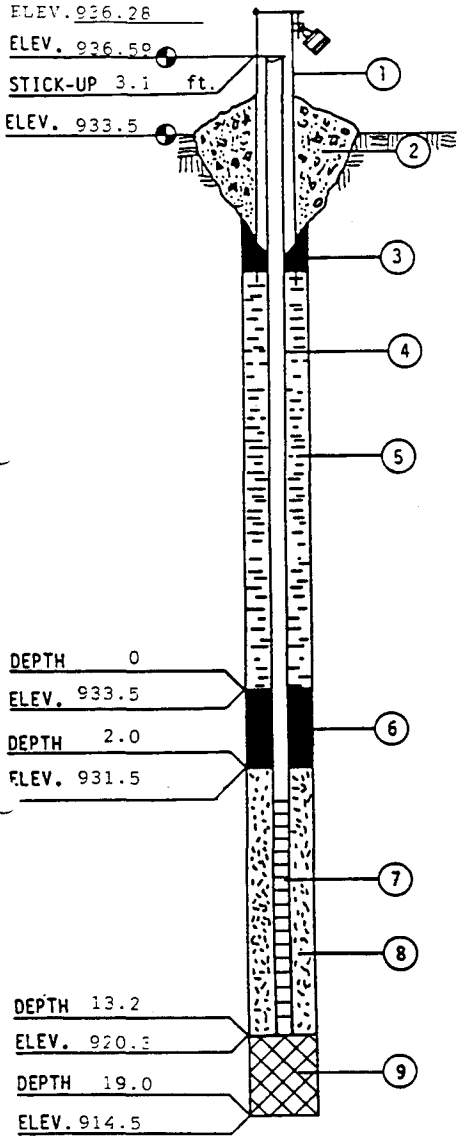
WELL CONSTRUCTION DETAILS

NOTE FOR APPENDIX C

The elevation recorded on the well construction diagrams are those from the initial elevation survey. Some elevations shifted slightly and were re-surveyed during the course of the investigation. Those re-surveyed elevations were used for determining groundwater elevation during the investigation. They are indicated in Appendix G and, are not presented here.

APPENDIX C-1

LEACHATE WELL CONSTRUCTION DETAILS



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description LW1

Boring/ Well No LW1 Date 7/18/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) Bentonite Pellets

4. Solid Pipe Type Sch 80 PVC

   Solid Pipe Length 10 ft

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed

6. Type of Lower Seal (if installed) None

7. Screen Type Sch 80 PVC

   Screen Length 10 ft.

   Slot Size 0.010

   Slotted Interval Length 10 ft

   Screen Diameter 2 in

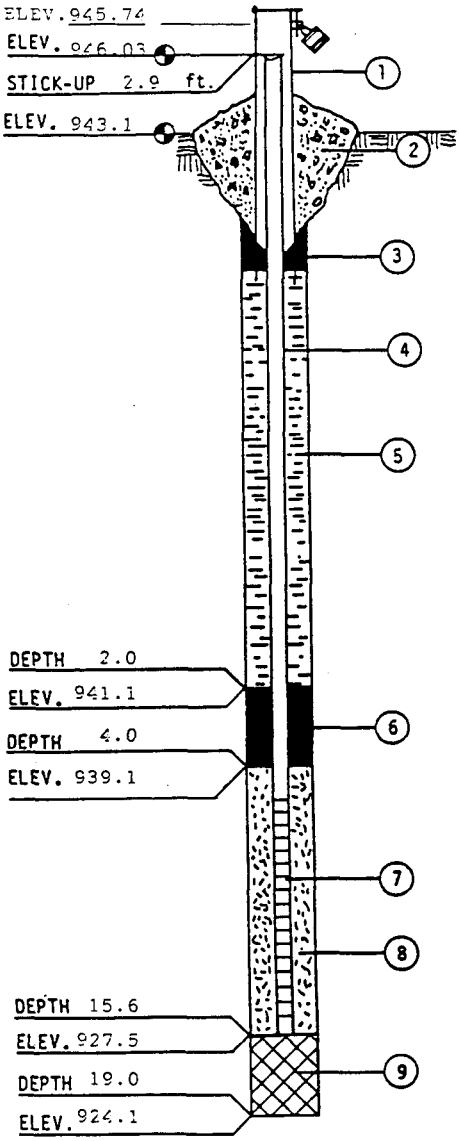
8. Type of Backfill around Screen Red Flint Filter Sand

9. Type of Backfill Top 4'-Flint Sand
   Bottom 1'-Hole Plug

10. Drilling Method 4-1/4" ID HSA with wood plug

11. Additives Used (if any)

    None



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description LW2

Boring/ Well No LW2 Date 7/17/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type Sch 80 PVC

   Solid Pipe Length 10 ft

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed

6. Type of Lower Seal (if installed) Bentonite Pellets

7. Screen Type Sch 80 PVC

   Screen Length 10 ft.

   Slot Size 0.010

   Slotted Interval Length 10 ft

   Screen Diameter 2 in

8. Type of Backfill around Screen Red Flint Filler Sand

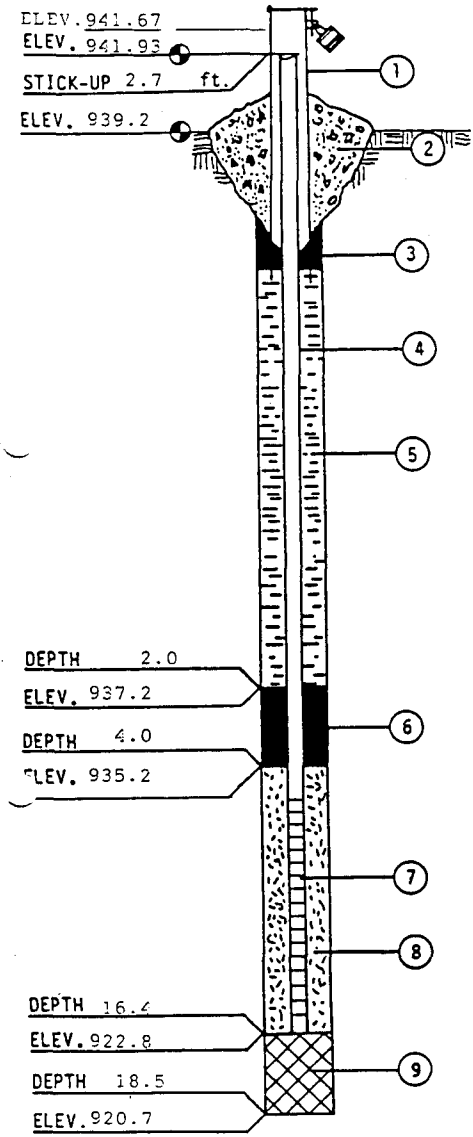
9. Type of Backfill Bottom 1'-Hole Plug
   Top 1'-Flint Sand

10. Drilling Method 4-1/4" ID HSA

11. Additives Used (if any)

    None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

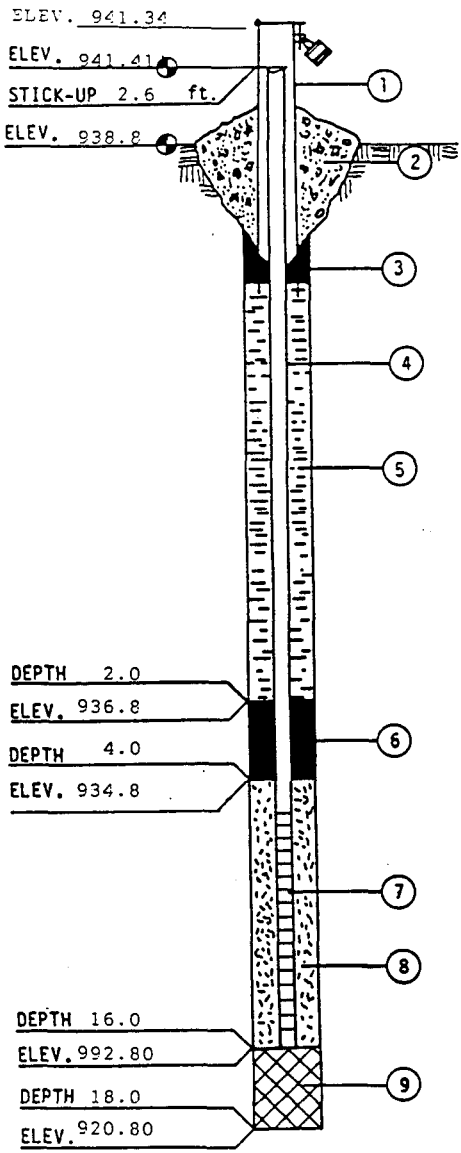
Project Number: 60776

Description: LW3

Boring/ Well No: LW3 Date: 7/20/90

1. Protective Casing: Yes
   Locking: Yes
2. Concrete Seal: No
3. Type of Surface Seal (if Installed): Granular Bentonite
4. Solid Pipe Type: Sch 80 PVC
   Solid Pipe Length: 10 ft
   Joint Type: Threaded
5. Type of Backfill: None
   Backfill Installed:
6. Type of Lower Seal (if installed): Bentonite Pellets
7. Screen Type: Sch 80 PVC
   Screen Length: 10 ft.
   Slot Size: 0.010
   Slotted Interval Length: 10 ft
   Screen Diameter: 2 in
8. Type of Backfill around Screen: Red Flint Filler Sand
9. Type of Backfill: Bentonite-Hole Plug
10. Drilling Method: 4-1/4" ID HSA
11. Additives Used (if any): None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description LW4

Boring/ Well No LW4 Date 7/24/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) Granular Bentonite

4. Solid Pipe Type Sch 80 PVC

   Solid Pipe Length 10 ft

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed

6. Type of Lower Seal (if installed) Bentonite Pellets

7. Screen Type Sch 80 PVC

   Screen Length 10 ft.

   Slot Size 0.010

   Slotted Interval Length 10 ft

   Screen Diameter 2 in

8. Type of Backfill around Screen Red Flint Filler Sand

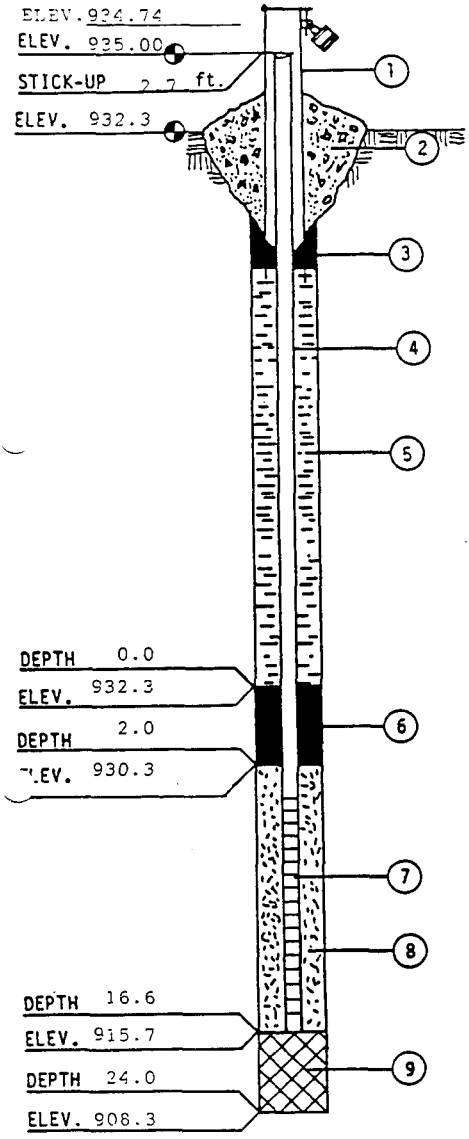
9. Type of Backfill Bentonite Hole Plug

10. Drilling Method 4-1/4" ID HSA

11. Additives Used (if any)

    None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

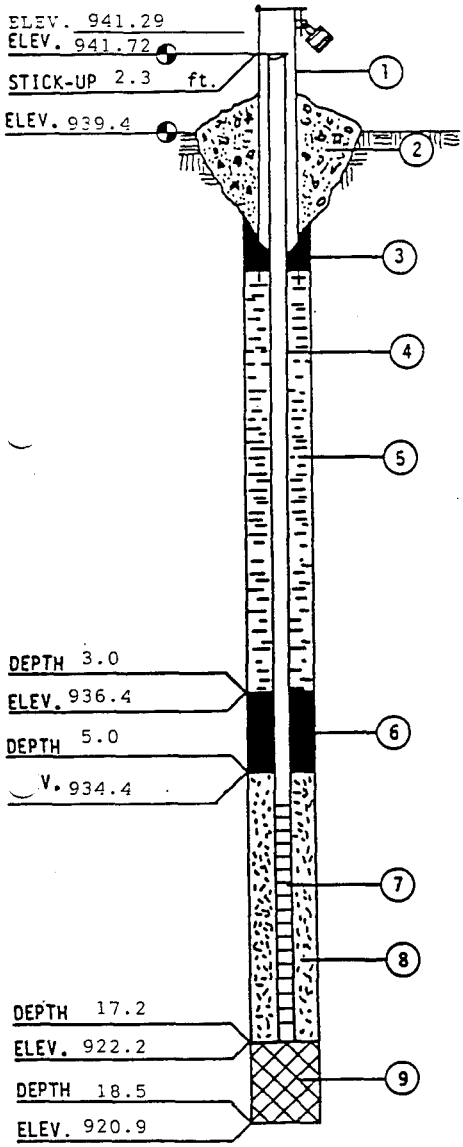
Project Number: 60776

Description: LW5

Boring/ Well No: LW5 Date: 7/19/90

1. Protective Casing: Yes
   Locking: Yes
2. Concrete Seal: No
3. Type of Surface Seal (if Installed): Bentonite Pellets
4. Solid Pipe Type: Sch 80 PVC
   Solid Pipe Length: 10 ft
   Joint Type: Threaded
5. Type of Backfill: None
   Backfill Installed: None
6. Type of Lower Seal (if Installed): None
7. Screen Type: Sch 80 PVC
   Screen Length: 15 ft.
   Slot Size: 0.010
   Slotted Interval Length: 15 ft
   Screen Diameter: 2 in
8. Type of Backfill around Screen: Red Flint Filler Sand
9. Type of Backfill: Bentonite Hole Plug
10. Drilling Method: 4-1/4" ID HSA
11. Additives Used (if any): None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW1S

Boring/ Well No MW1S Date 7-31-90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 10 ft

   Joint Type Threaded

5. Type of Backfill Granular Bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) Bentonite Pellets

7. Screen Type Sch 40 PVC

   Screen Length 10

   Slot Size 0.01

   Slotted Interval Length 10 ft

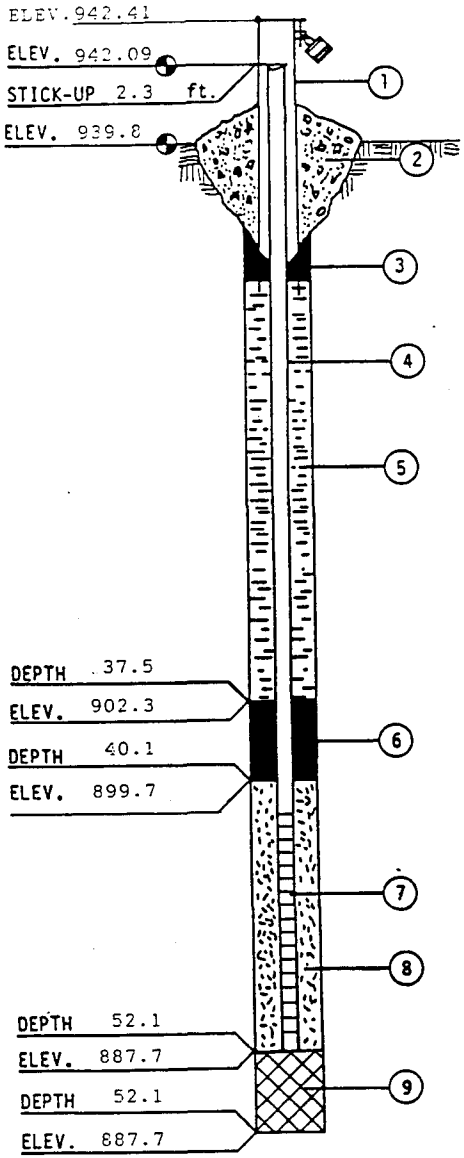
   Screen Diameter 2 in

8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill None

10. Drilling Method 4-1/4"HSA w/wood plug

11. Additives Used (if any) Clear Water



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW1D

Boring/ Well No MW1D Date 8/21/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 45 ft

   Joint Type Threaded

5. Type of Backfill Bentonite Slurry

   Backfill Installed Tremie

6. Type of Lower Seal (if installed) Bentonite Pellets

7. Screen Type Sch 40 PVC

   Screen Length 10

   Slot Size 0.010

   Slotted Interval Length 10 ft

   Screen Diameter 2 in

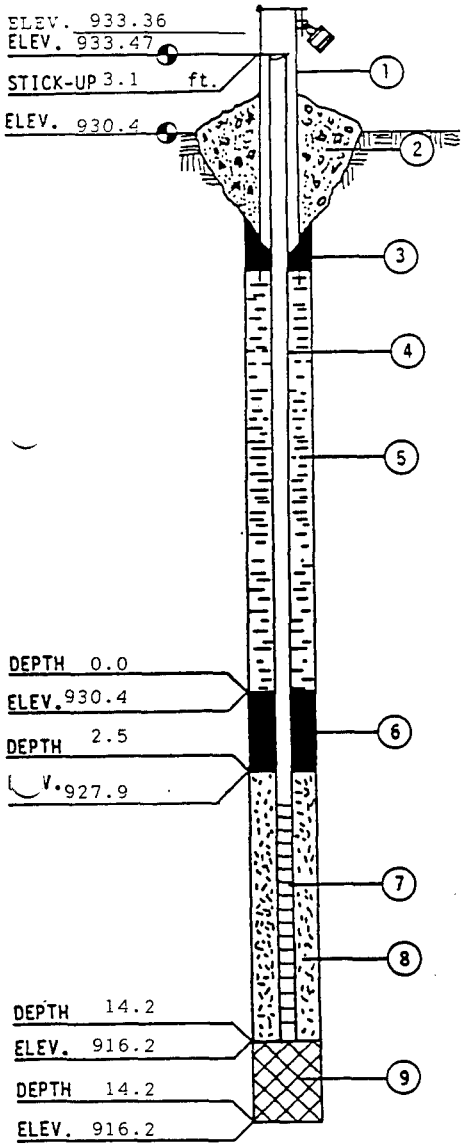
8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill None

10. Drilling Method 3-7/8" RWB

11. Additives Used (if any)

    Drilling Mud



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW2S

Boring/ Well No MW2S Date 8/15/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 10 ft

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed

6. Type of Lower Seal (if installed) Bentonite Pellets

7. Screen Type Sch 40 PVC

   Screen Length 10

   Slot Size 0.010

   Slotted Interval Length 10 ft

   Screen Diameter 2 in

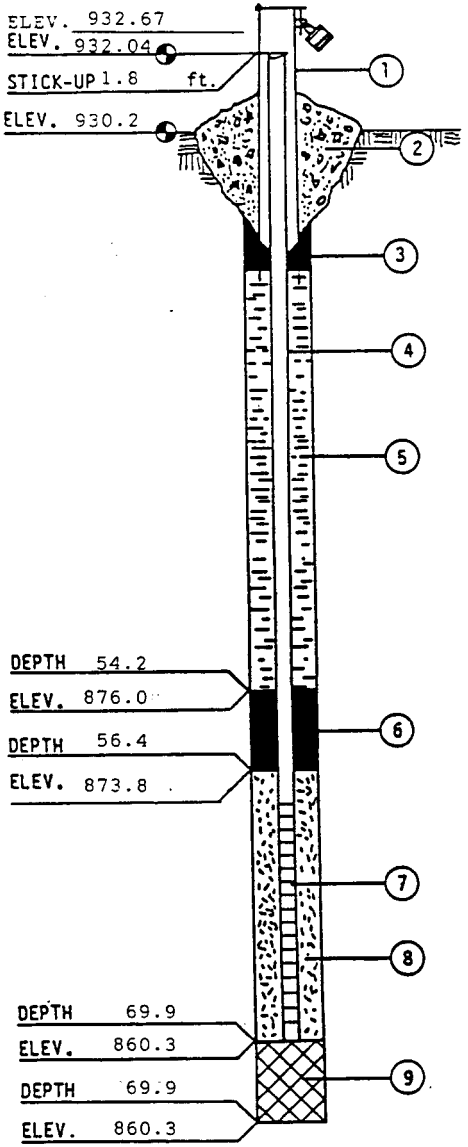
8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill None

10. Drilling Method 4-1/4"HSA w/wood plug

11. Additives Used (if any)

    Clear Water



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW2D

Boring/ Well No MW2D Date 8/17/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 65 ft

   Joint Type Threaded

5. Type of Backfill Bentonite Slurry

   Backfill Installed Tremie

6. Type of Lower Seal (if installed) Bentonite (hole plug and pellets)

7. Screen Type Sch 40 PVC

   Screen Length 10

   Slot Size 0.010

   Slotted Interval Length 10 ft

   Screen Diameter 2 in

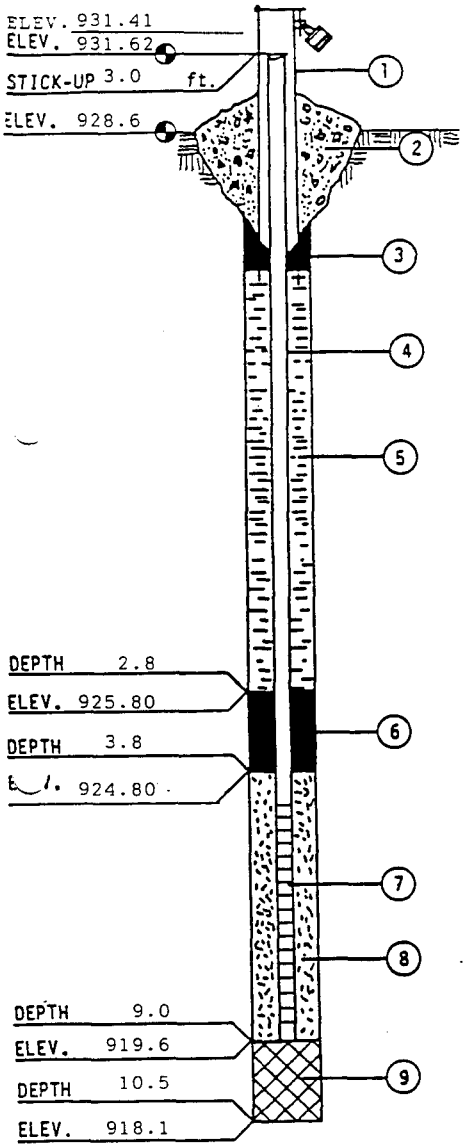
8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill None

10. Drilling Method 3-7/8" RWB

11. Additives Used (if any)

    Drilling Mud



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW3S

Boring/ Well No MW3S Date 8/27/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) Granular Bentonite

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 7.4 ft

   Joint Type Threaded

5. Type of Backfill Granular Bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) Bentonite Pellets

7. Screen Type Sch 40 PVC

   Screen Length 5

   Slot Size 0.010

   Slotted Interval Length 4.5

   Screen Diameter 2 in

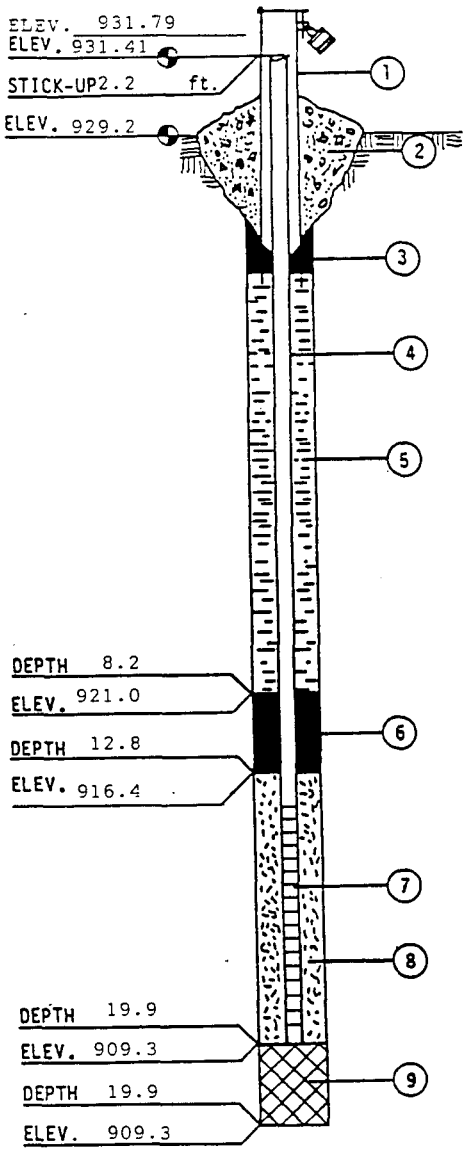
8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill Natural Cave

10. Drilling Method 4-1/4"HSA w/wood plug

11. Additives Used (if any)

    Clear Water



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW3D

Boring/ Well No MW3D Date 8/17/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 20 ft

   Joint Type Threaded

5. Type of Backfill Bentonite Slurry

   Backfill Installed Tremie

6. Type of Lower Seal (if installed) Bentonite Pellets

7. Screen Type Sch 40 PVC

   Screen Length 5

   Slot Size 0.010

   Slotted Interval Length 5 ft

   Screen Diameter 2 in

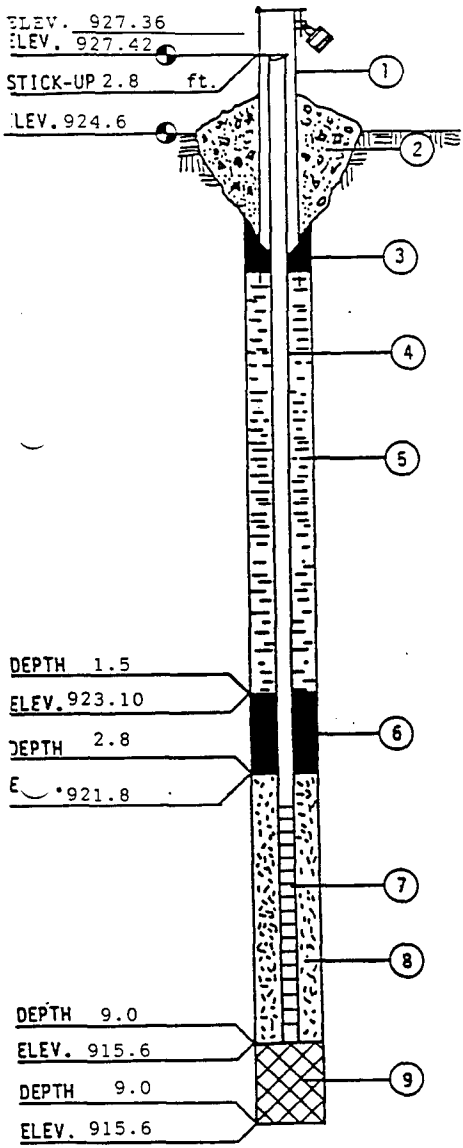
8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill None

10. Drilling Method 3-7/8" RWB

11. Additives Used (if any)

Clear Water



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW4S

Boring/ Well No MW4S Date 8/27/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) Bentonite Pellets

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 7.0 ft

   Joint Type Threaded

5. Type of Backfill Bentonite Pellets

   Backfill Installed From Surface

6. Type of Lower Seal (if Installed) Bentonite Pellets

7. Screen Type Sch 40 PVC

   Screen Length 5 ft

   Slot Size 0.010

   Slotted Interval Length 5 ft

   Screen Diameter 2 in

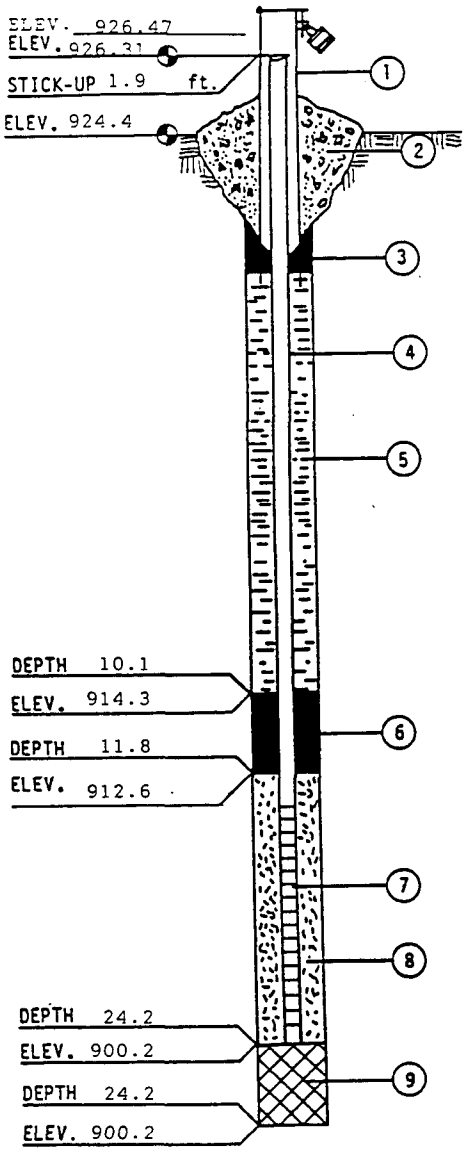
8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill None

10. Drilling Method 4-1/4"HSA w/wood plug

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

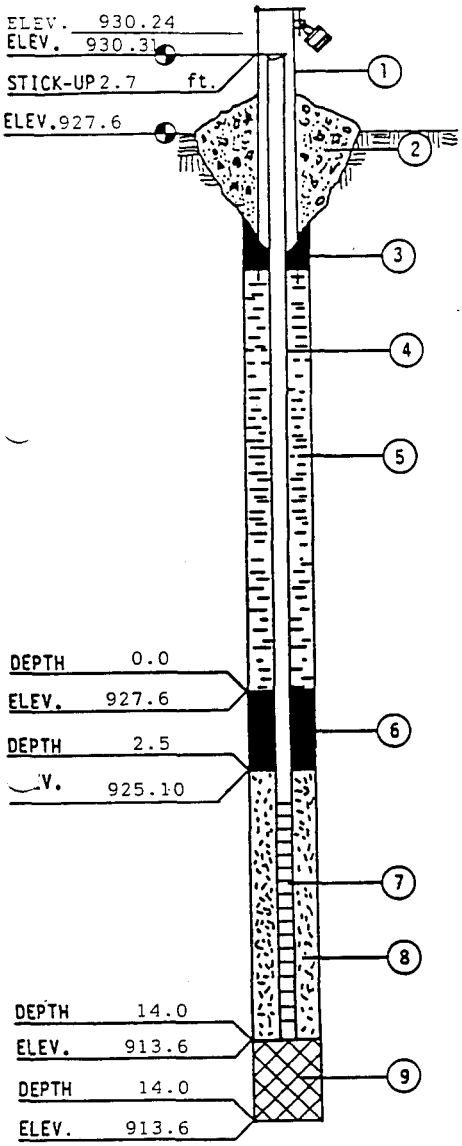
Monitoring Well Construction Information

Project Number: 60776

Description: MW4D

Boring/ Well No: MW4D Date: 8/28/90

1. Protective Casing: Yes
   Locking: Yes
2. Concrete Seal: No
3. Type of Surface Seal (if Installed): Bentonite Slurry
4. Solid Pipe Type: Sch 40 PVC
   Solid Pipe Length: 15.6 ft
   Joint Type: Threaded
5. Type of Backfill: Bentonite Slurry
   Backfill Installed: Tremie
6. Type of Lower Seal (if Installed): Bentonite Pellets
7. Screen Type: Sch 40 PVC
   Screen Length: 10.5 ft
   Slot Size: 0.010
   Slotted Interval Length: 10 ft
   Screen Diameter: 2 in
8. Type of Backfill around Screen: Red Flint Filler Sand
9. Type of Backfill: None
10. Drilling Method: 3-7/8" RWB
11. Additives Used (if any)



WARZYN

Monitoring Well Construction Information

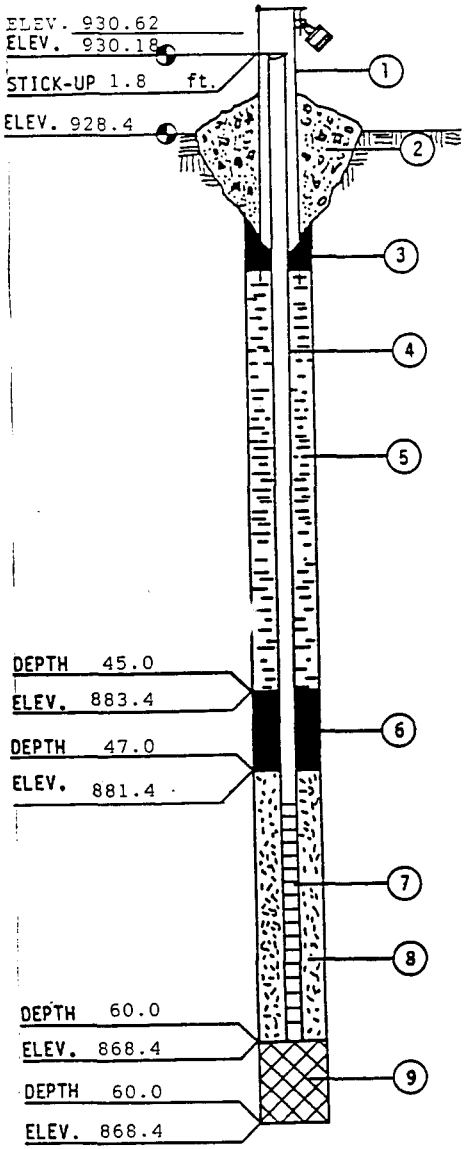
Project Number: 60776

Description: MW5S

Boring/ Well No: MW5S Date: 8/15/90

1. Protective Casing: Yes
   Locking: Yes
2. Concrete Seal: No
3. Type of Surface Seal (if Installed): None
4. Solid Pipe Type: Sch 40 PVC
   Solid Pipe Length: 10 ft
   Joint Type: Threaded
5. Type of Backfill: None
   Backfill Installed:
6. Type of Lower Seal (if Installed): Bentonite Pellets
7. Screen Type: Sch 40 PVC
   Screen Length: 10 ft.
   Slot Size: 0.010
   Slotted Interval Length: 10 ft
   Screen Diameter: 2 in
8. Type of Backfill around Screen: Red Flint Filler Sand
9. Type of Backfill: None
10. Drilling Method: 4-1/4"HSA w/wood plug
11. Additives Used (if any): Clear Water

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW5D

Boring/ Well No MW5D Date 8/25/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 52 ft

   Joint Type Threaded

5. Type of Backfill Bentonite Slurry

   Backfill Installed Tremie

6. Type of Lower Seal (if installed) Bentonite Pellets

7. Screen Type Sch 40 PVC

   Screen Length 10 ft

   Slot Size 0.010

   Slotted Interval Length 10 ft

   Screen Diameter 2 in

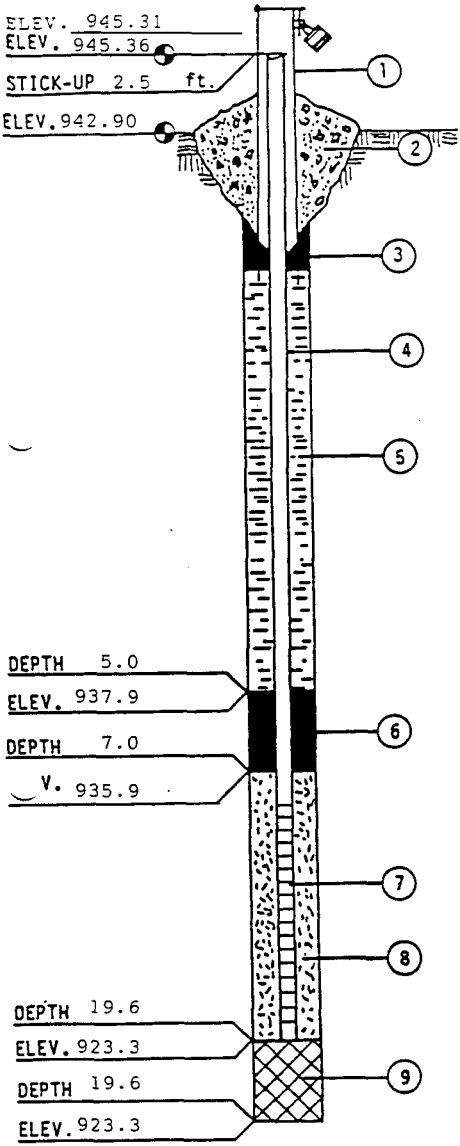
8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill None

10. Drilling Method 3-7/8" RWB

11. Additives Used (if any) Drilling Mud

All Depths Measured from Ground Surface



WARZYN

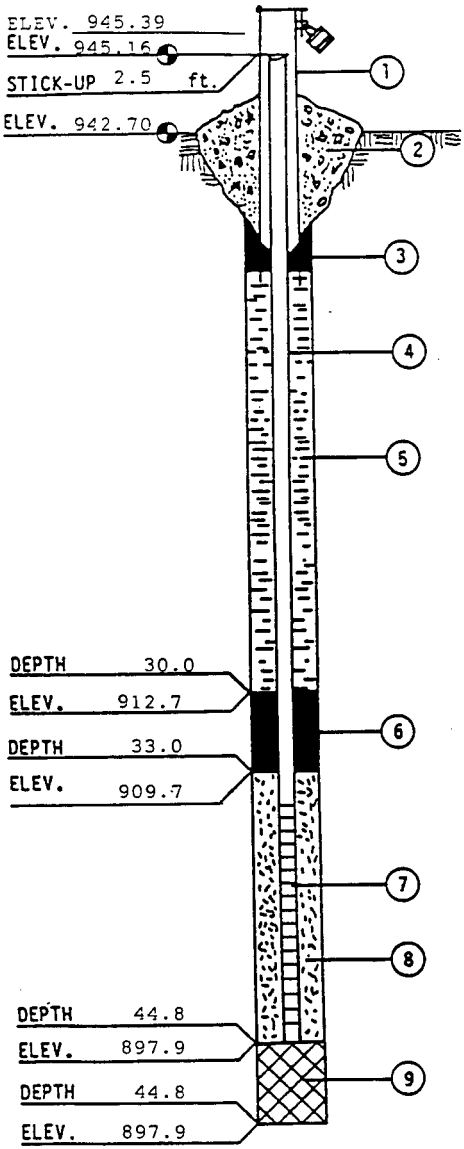
Monitoring Well Construction Information

Project Number: 60776

Description: MW6S

Boring/ Well No: MW6S Date: 8/23/90

1. Protective Casing: Yes
   Locking: Yes
2. Concrete Seal: No
3. Type of Surface Seal (if Installed): None
4. Solid Pipe Type: Sch 40 PVC
   Solid Pipe Length: 13 ft
   Joint Type: Threaded
5. Type of Backfill: Granular Bentonite
   Backfill Installed: From Surface
6. Type of Lower Seal (if installed): Bentonite Pellets
7. Screen Type: Sch 40 PVC
   Screen Length: 10 ft
   Slot Size: 0.010
   Slotted Interval Length: 10 ft
   Screen Diameter: 2 in
8. Type of Backfill around Screen: Red Flint Filler Sand
9. Type of Backfill: None
10. Drilling Method: 4-1/4" HSA
11. Additives Used (if any)



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description MW6D

Boring/ Well No MW6D Date 8/22/90

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 38 ft

   Joint Type Threaded

5. Type of Backfill Bentonite Slurry

   Backfill Installed Tremie

6. Type of Lower Seal (if Installed) Bentonite Pellets

7. Screen Type Sch 40 PVC

   Screen Length 10 ft.

   Slot Size 0.010

   Slotted Interval Length 10 ft

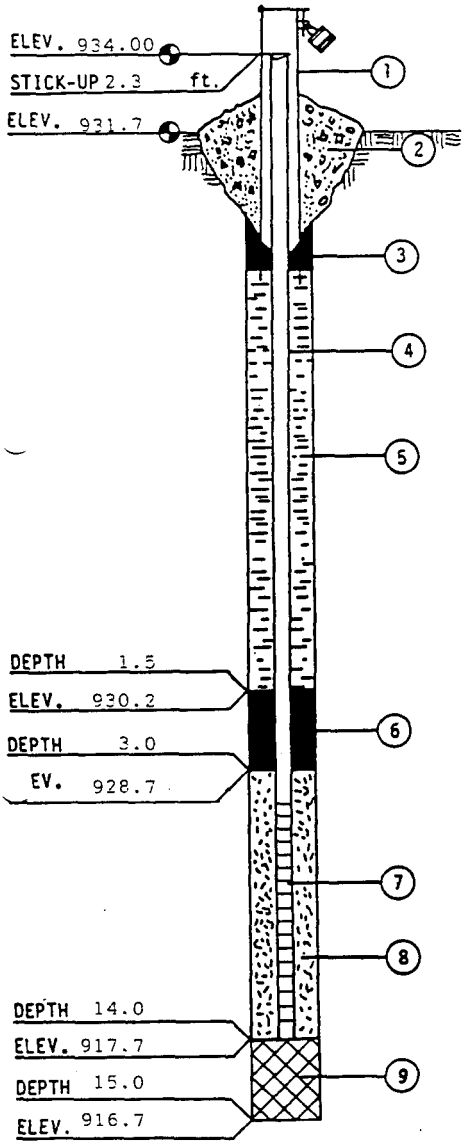
   Screen Diameter 2 in

8. Type of Backfill around Screen Red Flint Filler Sand

9. Type of Backfill None

10. Drilling Method 3-7/8" RWB

11. Additives Used (if any) Drilling Mud



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No MW7 Date 1/16/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Not Installed

4. Solid Pipe Type 304 Stainless Steel

   Solid Pipe Length 5.0 feet

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) Bentonite Pellet

7. Screen Type 304 Stainless Steel

   Screen Length 10.8 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 10.0 ft.

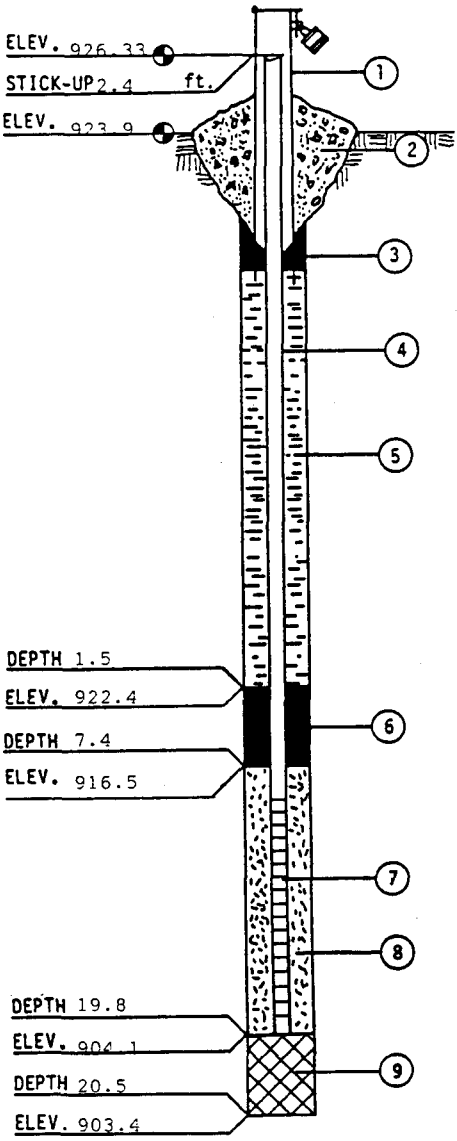
   Screen Diameter 2.0 in.

8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No MW8 Date 2/5/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type 304 Stainless Steel

   Solid Pipe Length 12.0 ft.

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) Bentonite Chips

7. Screen Type 304 Stainless Steel

   Screen Length 10.0 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 10.0 ft.

   Screen Diameter 2.0 in.

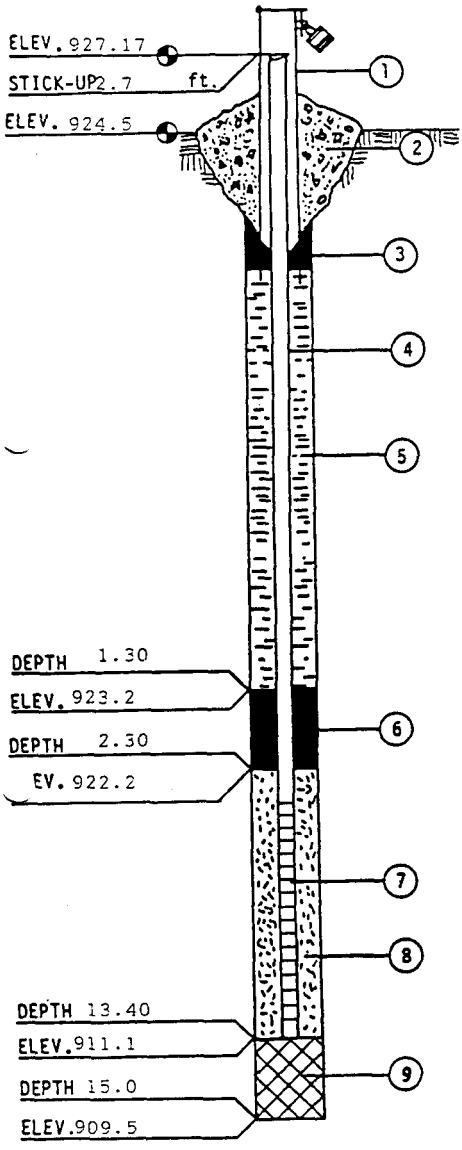
8. Type of Backfill around Screen #30 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" ID HSA

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No MW8X Date 1/21/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Not installed

4. Solid Pipe Type 304 Stainless Steel

   Solid Pipe Length 5.0 ft.

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed None

6. Type of Lower Seal (if installed) Bentonite Pellet

7. Screen Type Stainless Steel

   Screen Length 5.4 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 5.0 ft.

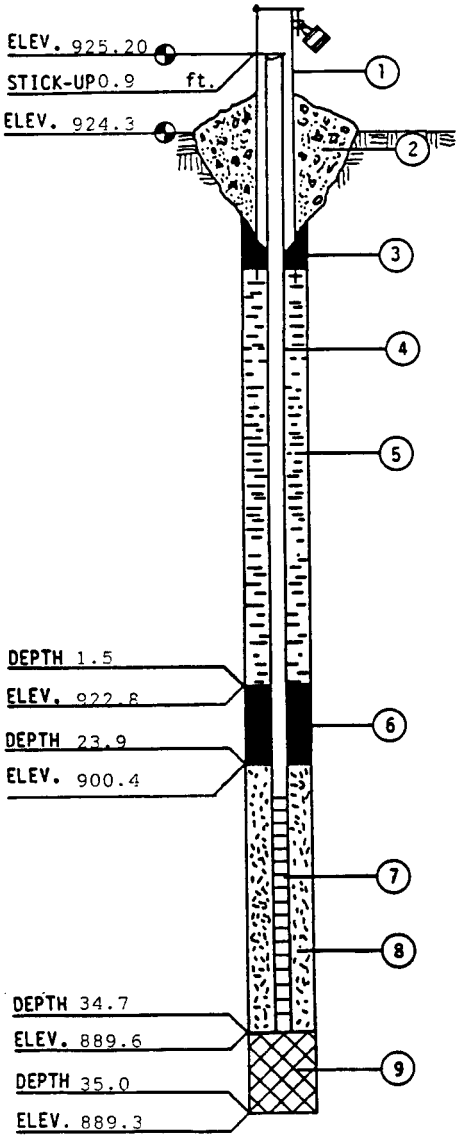
   Screen Diameter 2.0 in.

8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any)



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No MW9 Date 2/5/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type 304 Stainless Steel

   Solid Pipe Length 27.0 feet

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) Bentonite Chips

7. Screen Type 304 Stainless Steel

   Screen Length 10.1 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 9.9 ft.

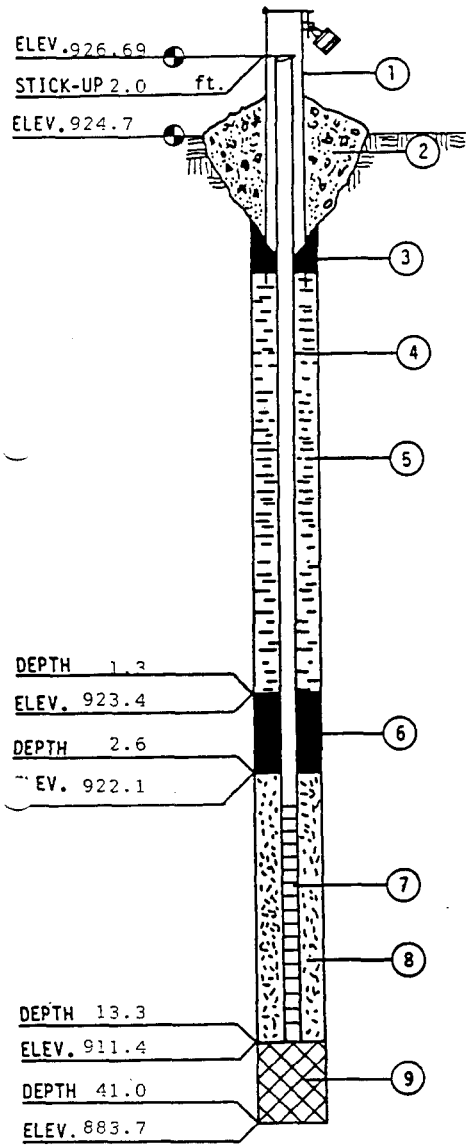
   Screen Diameter 2.0 in.

8. Type of Backfill around Screen #30 Quartz Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" ID HSA

11. Additives Used (if any)



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No MW9P Date 1/20/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Not installed

4. Solid Pipe Type 304 Stainless Steel

   Solid Pipe Length 5.0 ft.

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed None

6. Type of Lower Seal (if installed) Bentonite Pellet

7. Screen Type 304 Stainless Steel

   Screen Length 10.8 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 10.0 ft.

   Screen Diameter 2.0 in.

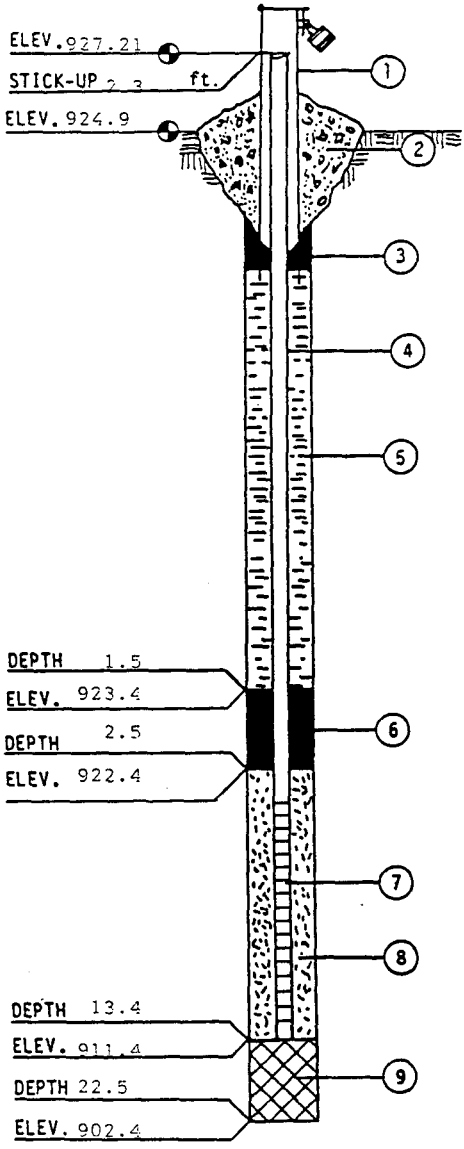
8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No MW10 Date 1/19/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type 304 Stainless Steel

   Solid Pipe Length 5.0 ft.

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed None

6. Type of Lower Seal (if installed) Bentonite Pellet

7. Screen Type 304 Stainless Steel

   Screen Length 10.8 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 10.0 ft.

   Screen Diameter 2.0 in.

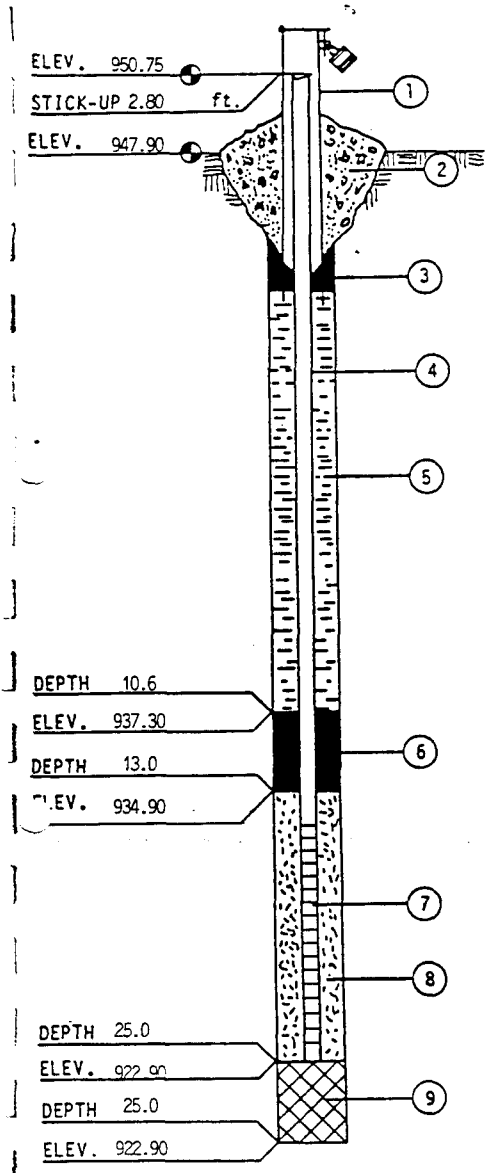
8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number: 60776.35

Description: Woodstock RI/FS

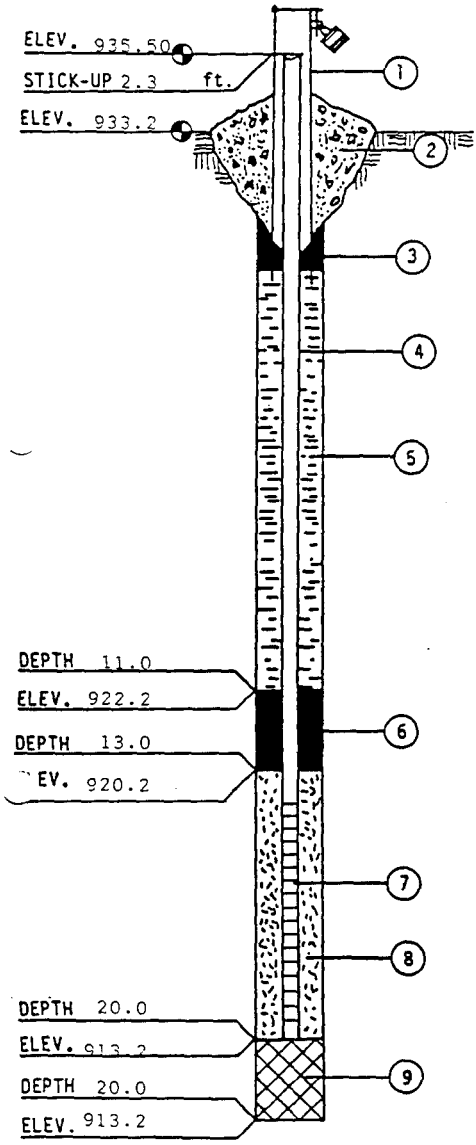
Boring/ Well No: MW-11 Date: 7/29/91

1. Protective Casing: Yes
   Locking: Yes
2. Concrete Seal: Yes
3. Type of Surface Seal (if Installed): Puregold Bentonite Chips
4. Solid Pipe Type: Schedule 40 PVC
   Solid Pipe Length: 17.5'
   Joint Type: Flush Thread
5. Type of Backfill: Bentonite Grout
   Backfill Installed: From Surface
6. Type of Lower Seal (if installed): Bentonite Pellets
7. Screen Type: Schedule 40 PVC
   Screen Length: 10.3 ft
   Slot Size: .010 inch
   Slotted Interval Length: 9.5 ft
   Screen Diameter: 2 inch
8. Type of Backfill around Screen: Silica Sand
9. Type of Backfill: N/A
10. Drilling Method: 4.25" ID HSA
11. Additives Used (if any): NA

All Depths Measured from Ground Surface

APPENDIX C-3

PIEZOMETER CONSTRUCTION DETAILS



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No P-1 Date 1/17/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Not installed

4. Solid Pipe Type 1" PVC (O.D.)

   Solid Pipe Length 17.0 ft.

   Joint Type Threaded

5. Type of Backfill Bentonite Slurry

   Backfill Installed Tremie

6. Type of Lower Seal (if installed) Bentonite Pellet

7. Screen Type PVC

   Screen Length 5 ft

   Slot Size 0.010

   Slotted Interval Length 4.75 ft.

   Screen Diameter 1.0 in.

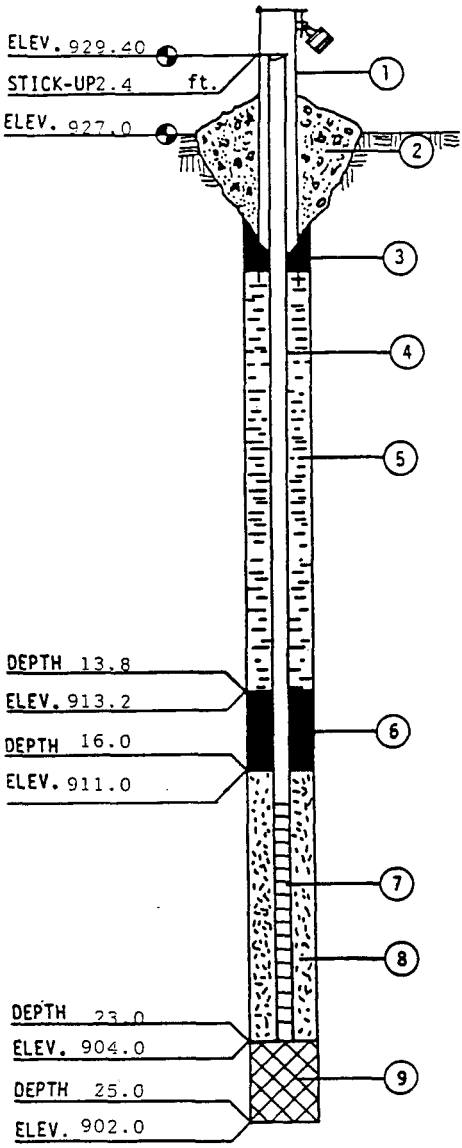
8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No P-2 Date 1/19/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Bentonite Pellets

4. Solid Pipe Type 1" PVC (O.D.)

   Solid Pipe Length 20.0

   Joint Type Threaded

5. Type of Backfill Bentonite Slurry

   Backfill Installed Tremie

6. Type of Lower Seal (if installed) Bentonite Pellet

7. Screen Type PVC

   Screen Length 5.0 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 4.75 ft.

   Screen Diameter 1.0 in.

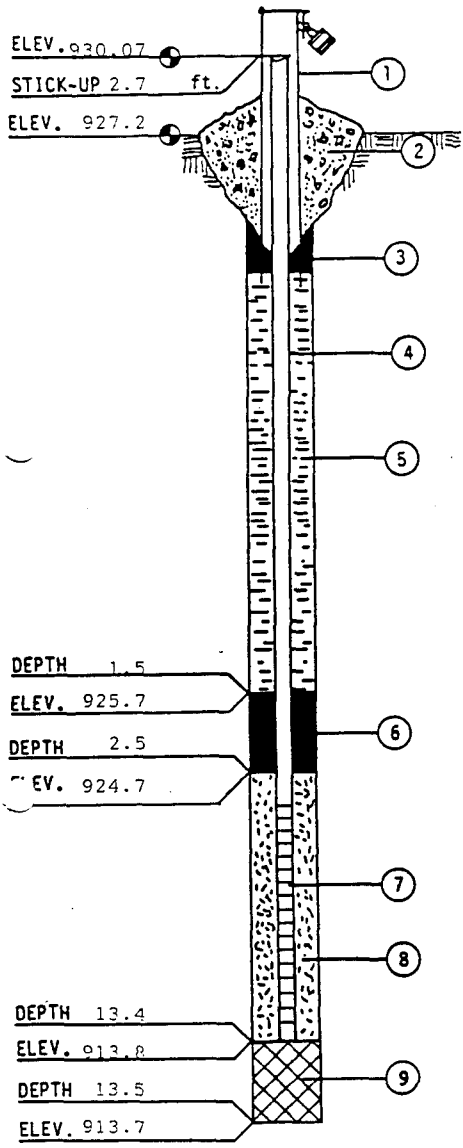
8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No P-2B Date 1/19/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Bentonite Pellets

4. Solid Pipe Type 1" PVC (O.D.)

   Solid Pipe Length 5.0 ft.

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed None

6. Type of Lower Seal (if Installed) Bentonite Pellet

7. Screen Type PVC

   Screen Length 10.0 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 9.6 ft.

   Screen Diameter 1.0 in.

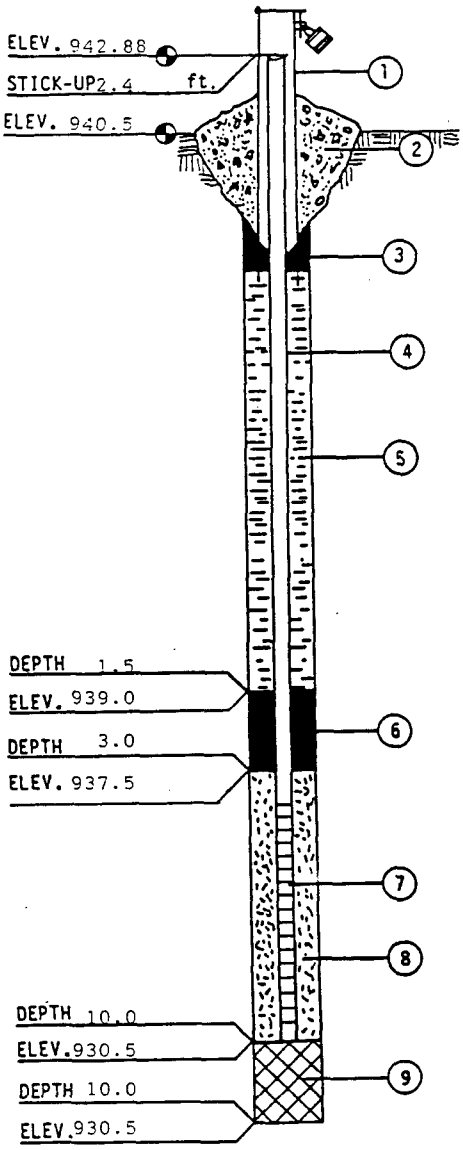
8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No P-3 Date 1/21/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Powdered Bentonite

4. Solid Pipe Type 1" PVC, (O.D.)

   Solid Pipe Length 7.0 ft.

   Joint Type Threaded

5. Type of Backfill Powdered Bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if Installed) Bentonite Pellet

7. Screen Type PVC

   Screen Length 5.25 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 4.75 ft.

   Screen Diameter 1.0 in.

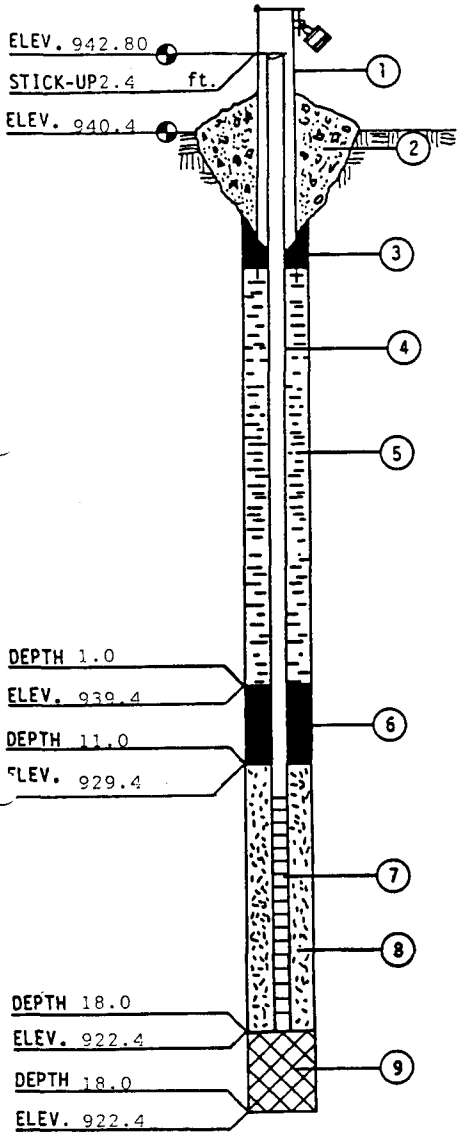
8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No P-3A Date 2/6/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) None

4. Solid Pipe Type 2 inch PVC (O.D.)

   Solid Pipe Length 10.0 ft.

   Joint Type Threaded

5. Type of Backfill None

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) Bentonite Chips & Granular Bentonite

7. Screen Type Schedule 40 PVC

   Screen Length 5.3 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 5.0 ft.

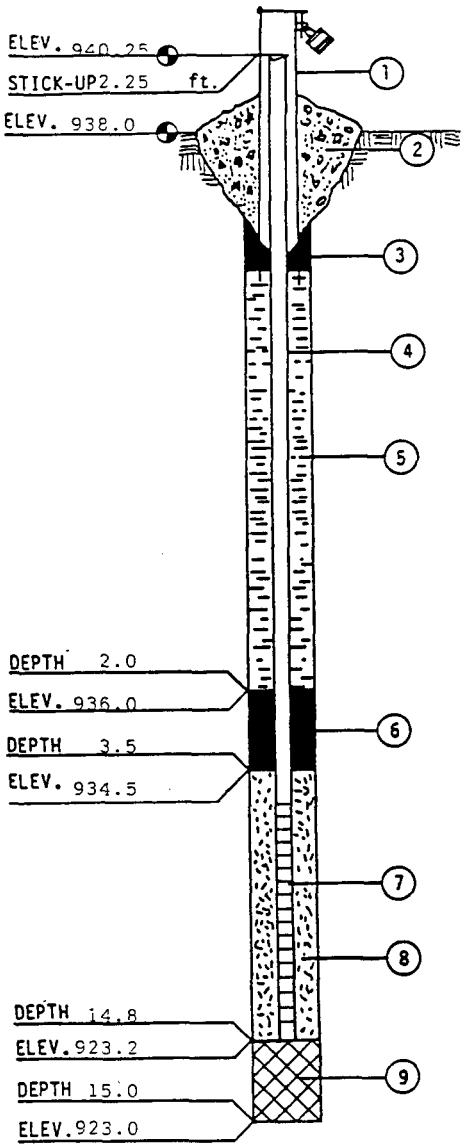
   Screen Diameter 2.0 in.

8. Type of Backfill around Screen #30 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" ID HSA

11. Additives Used (if any) None



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No P-4 Date 1/23/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Powdered Bentonite

4. Solid Pipe Type 1" PVC (O.D.)

   Solid Pipe Length 5.0 ft.

   Joint Type Threaded

5. Type of Backfill Powdered Bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) Bentonite Pellet

7. Screen Type PVC

   Screen Length 10.0 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 9.6 ft.

   Screen Diameter 1.0 in.

8. Type of Backfill around Screen #5 Silica Sand

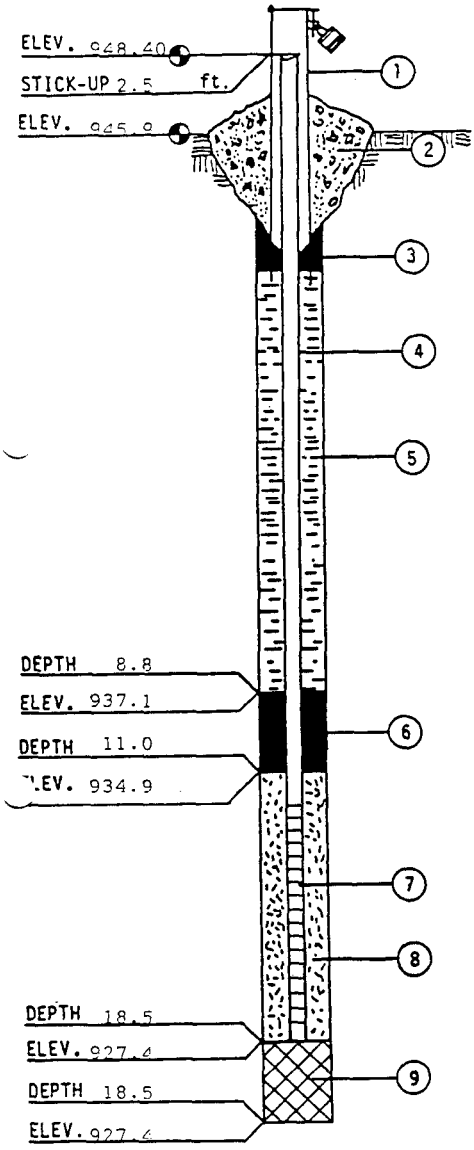
9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any)

    None

All Depths Measured from Ground Surface



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No P-5 Date 1/23/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Powdered Bentonite

4. Solid Pipe Type 1" PVC (O.D.)

   Solid Pipe Length 15.0 ft.

   Joint Type Threaded

5. Type of Backfill Powdered Bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if Installed) Bentonite Pellet

7. Screen Type PVC

   Screen Length 5.25 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 4.75 ft.

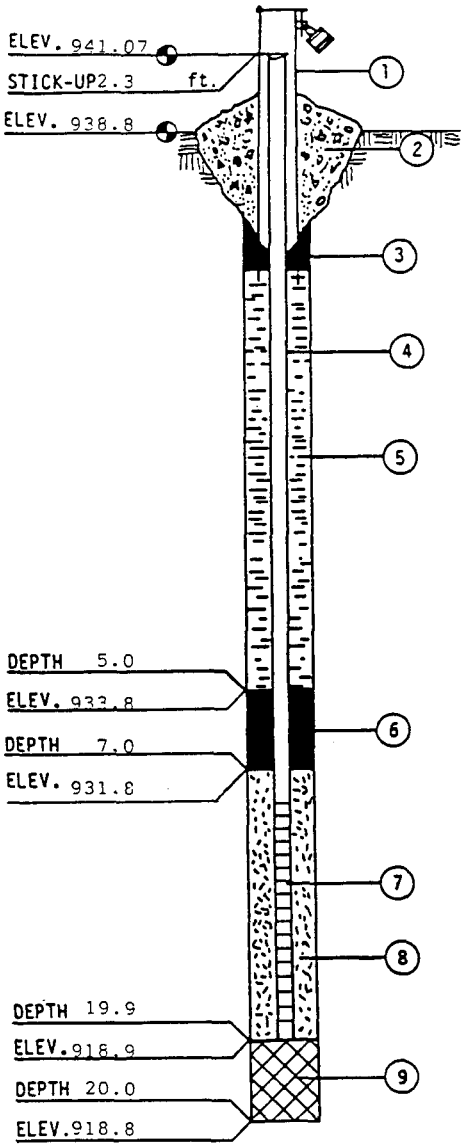
   Screen Diameter 1.0 in.

8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None



WARZYN

Monitoring Well Construction Information

Project Number 60776.23

Description Woodstock

Boring/ Well No P-6 Date 1/24/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal Yes

3. Type of Surface Seal (if Installed) Powdered Bentonite

4. Solid Pipe Type 1" PVC (O.D.)

   Solid Pipe Length 10.0 ft.

   Joint Type Threaded

5. Type of Backfill Silica Sand

   Backfill Installed From Surface

6. Type of Lower Seal (if Installed) Bentonite Pellet

7. Screen Type PVC

   Screen Length 10 ft.

   Slot Size 0.010 in.

   Slotted Interval Length 9.6 ft.

   Screen Diameter 1.0 in.

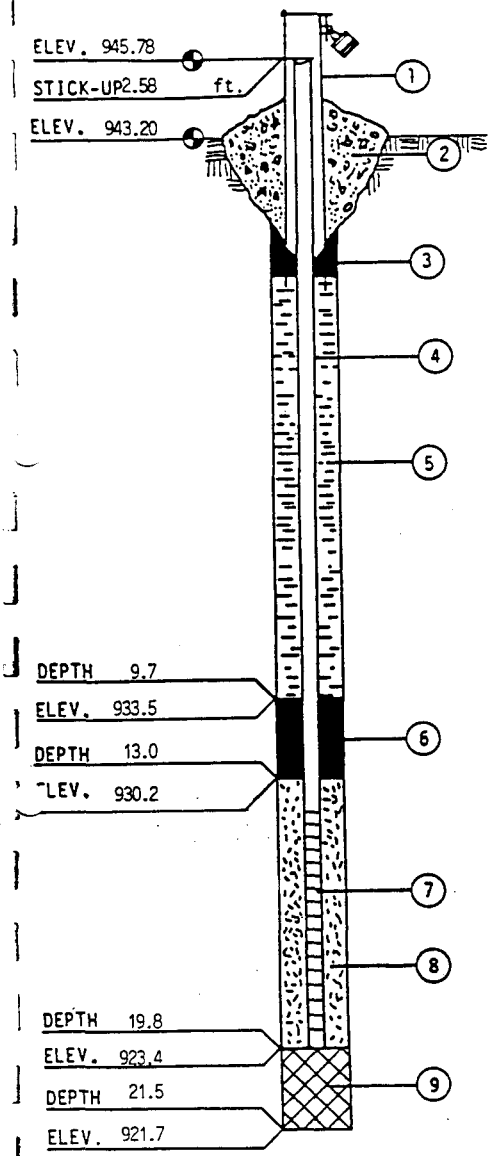
8. Type of Backfill around Screen #5 Silica Sand

9. Type of Backfill Natural Soils

10. Drilling Method 4-1/4" HSA

11. Additives Used (if any) None

All Depths Measured from Ground Surface



WARZYN

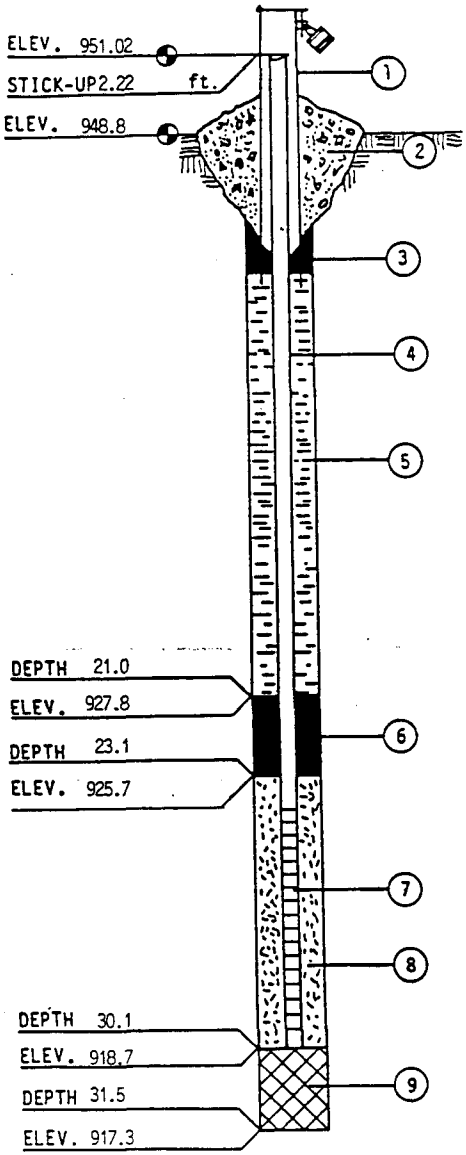
Monitoring Well Construction Information

Project Number: 60776

Description: M. Boese/ETI

Boring/ Well No: P-7 Date: 10/1/91

1. Protective Casing: Yes
   Locking: Yes
2. Concrete Seal: No
3. Type of Surface Seal (if Installed): N/A
4. Solid Pipe Type: Sch 40 PVC
   Solid Pipe Length: 17.28
   Joint Type: Threaded
5. Type of Backfill: granular bentonite
   Backfill Installed: From Surface
6. Type of Lower Seal (if installed): bentonite pellets
7. Screen Type: Sch 40 PVC
   Screen Length: 5.1 ft.
   Slot Size: 0.010"
   Slotted Interval Length: 4.9
   Screen Diameter: 2"
8. Type of Backfill around Screen: Red flint sand #30
9. Type of Backfill:
10. Drilling Method: 4.25" ID HSA
11. Additives Used (if any)



WARZYN

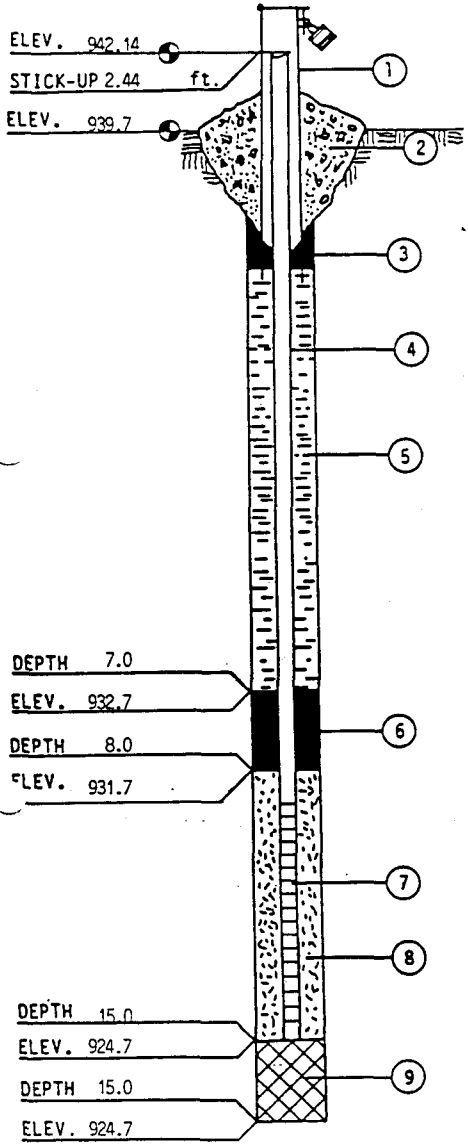
Monitoring Well Construction Information

Project Number: 60776

Description: M. Boese/ETI

Boring/ Well No: P-8 Date: 10/1/91

1. Protective Casing: Yes
   Locking: Yes
2. Concrete Seal: No
3. Type of Surface Seal (if Installed):
4. Solid Pipe Type: Sch 40 PVC
   Solid Pipe Length: 27.32
   Joint Type: Threaded
5. Type of Backfill: granular bentonite
   Backfill Installed: From Surface
6. Type of Lower Seal (if installed): bentonite pellets
7. Screen Type: Sch 40 PVC
   Screen Length: 5.0 ft.
   Slot Size: 0.010"
   Slotted Interval Length: 4.9
   Screen Diameter: 2"
8. Type of Backfill around Screen: Red flint sand #30
9. Type of Backfill: Filter Sand
10. Drilling Method: 4.25" ID HSA



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description Boese/ETI

Boring/ Well No P-9 Date 10/14/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) Bentonite

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 9.44

   Joint Type Threaded

5. Type of Backfill granular bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) Bentonite pellets

7. Screen Type Sch 40 PVC

   Screen Length 5 ft.

   Slot Size 0.010"

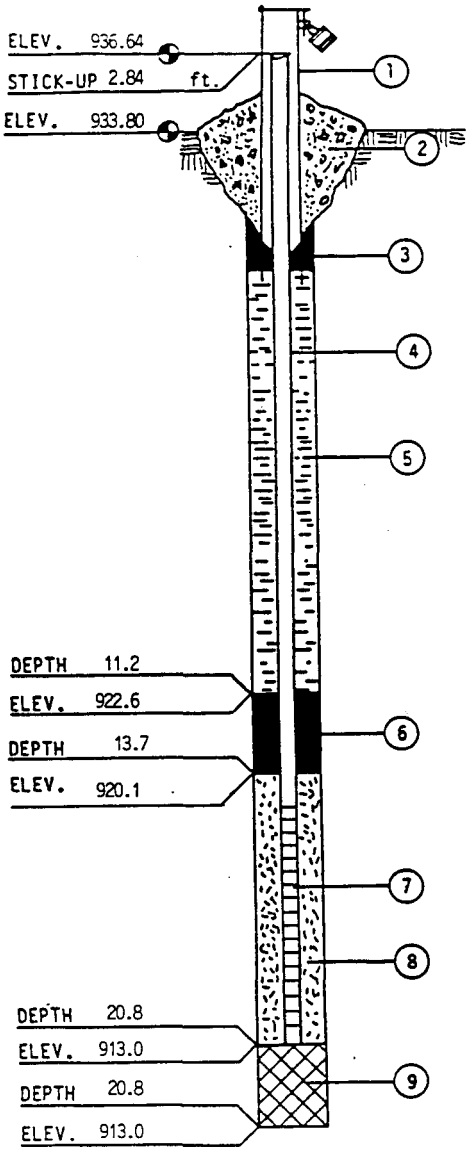
   Slotted Interval Length 4.7

   Screen Diameter 2"

8. Type of Backfill around Screen Red flint sand #30

9. Type of Backfill

10. Drilling Method 4.25" ID HSA



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description Lettman/ETI

Boring/ Well No P-10 Date 10/3/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) Bentonite

4. Solid Pipe Type Sch 40 PVC 2"

   Solid Pipe Length 18.84

   Joint Type Threaded

5. Type of Backfill granular bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if installed) bentonite pellets

7. Screen Type Sch 40 PVC

   Screen Length 4.8 ft.

   Slot Size 0.010"

   Slotted Interval Length 4.8

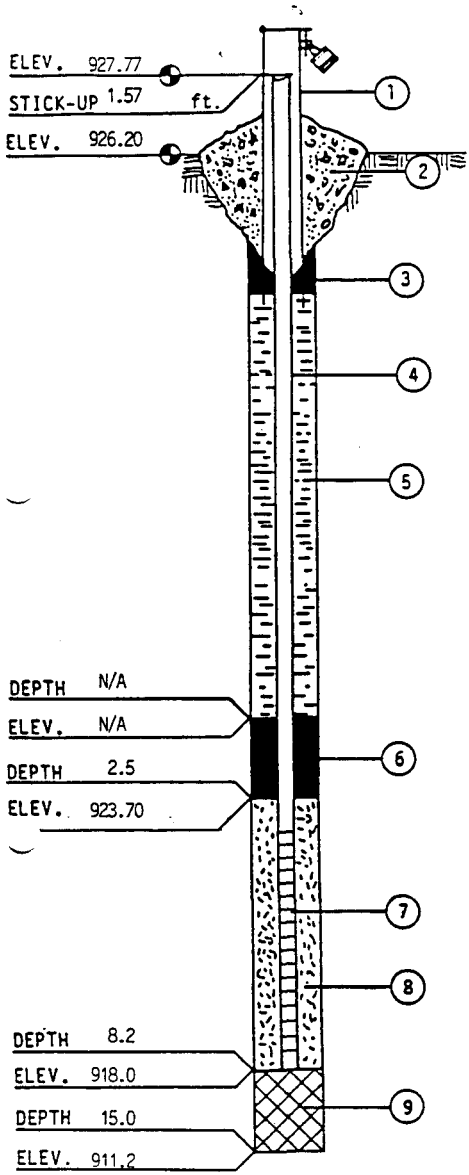
   Screen Diameter 2"

8. Type of Backfill around Screen Red flint sand #30

9. Type of Backfill N/A

10. Drilling Method 4.25" ID HSA

11. Additives Used (if any) None



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description Lettman/ETI

Boring/ Well No P-12 Date 10/3/91

1. Protective Casing No

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) Granular Bentonite

4. Solid Pipe Type Sch 40 PVC 2"

   Solid Pipe Length 4.87

   Joint Type Threaded

5. Type of Backfill granular bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if installed)

7. Screen Type Sch 40 PVC

   Screen Length 4.8 ft.

   Slot Size 0.010"

   Slotted Interval Length 4.8

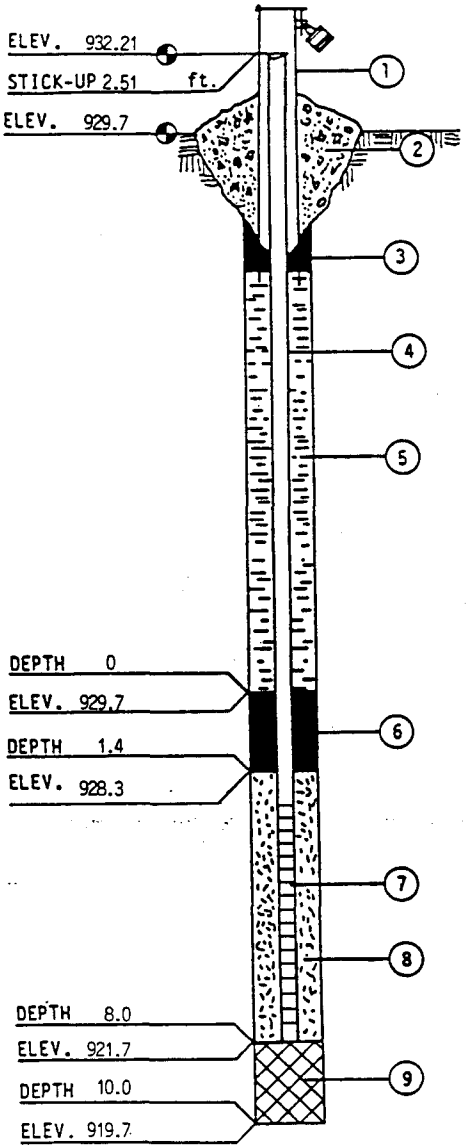
   Screen Diameter 2"

8. Type of Backfill around Screen Red flint sand #30

9. Type of Backfill N/A

10. Drilling Method 4.25" ID HSA

11. Additives Used (if any)



WARZYN

Monitoring Well Construction Information

Project Number 60776

Description Boese/ETI

Boring/ Well No P-11 Date 10/14/91

1. Protective Casing Yes

   Locking Yes

2. Concrete Seal No

3. Type of Surface Seal (if Installed) Bentonite

4. Solid Pipe Type Sch 40 PVC

   Solid Pipe Length 5.51

   Joint Type Threaded

5. Type of Backfill granular bentonite

   Backfill Installed From Surface

6. Type of Lower Seal (if installed)

7. Screen Type Sch 40 PVC

   Screen Length 5 ft.

   Slot Size 0.010"

   Slotted Interval Length 4.9

   Screen Diameter 2"

8. Type of Backfill around Screen Red flint sand #30

9. Type of Backfill Natural sand & gravel

10. Drilling Method 4.25" ID HSA

D

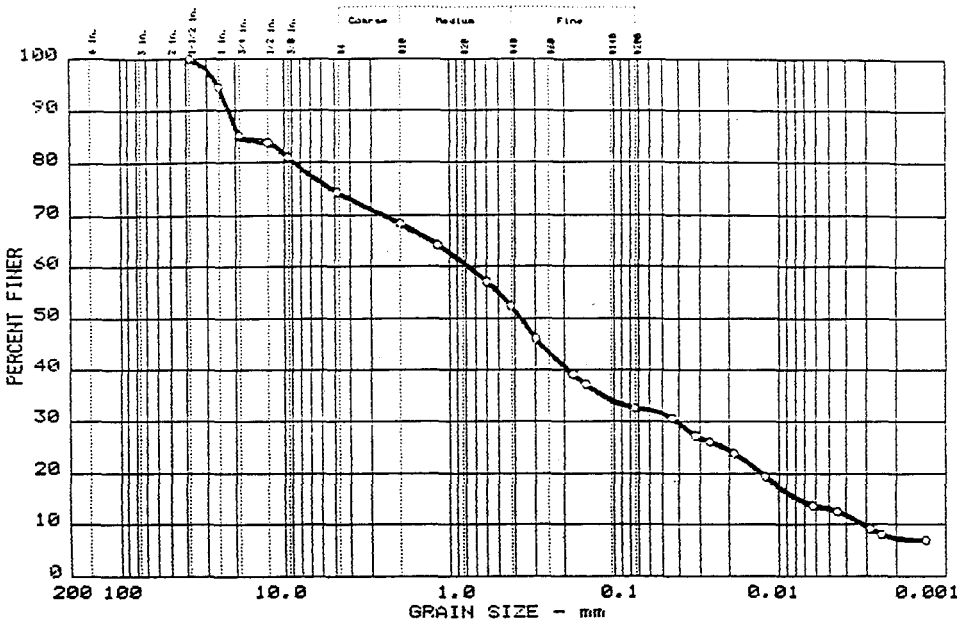
APPENDIX D

RESULTS OF GEOTECHNICAL TESTS

APPENDIX D-1

LANDFILL COVER

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	25.7	41.7	19.6	13.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	25	8	18.84	0.76	0.36	0.041	0.0076	0.0031	0.70	242.7

MATERIAL DESCRIPTION	USCS
O Brown Clayey Fine-Coarse SAND, Some Gravel & Silt	SC

Project No.: 15251.53
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.21
O Sample: WK-LW02-2

Date: 10/24/90

Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: [illegible]
APPROVED BY: DWN/WEI

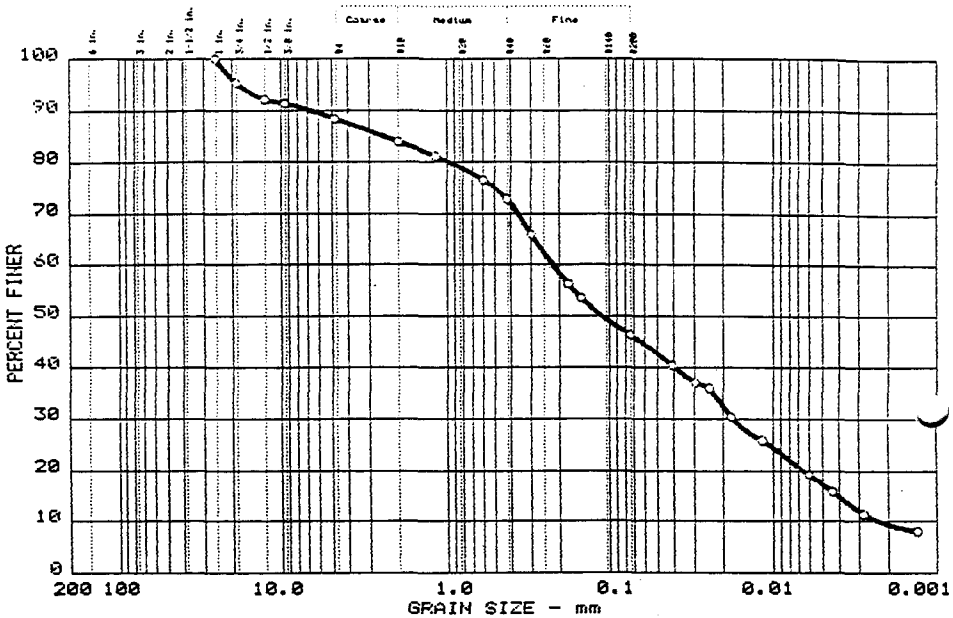
GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Sheet No.

EWI

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	11.6	42.0	29.1	17.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	21	5	2.37	0.22	0.11	0.017	0.0040	0.0023	0.60	94.4

MATERIAL DESCRIPTION	USCS
○ Brown Silty, Clayey Fine-Coarse SAND, Little Gravel	SC-SM

Project No.: 15251.53
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.21
○ Sample: WK-LW01-2

Date: 10/24/90

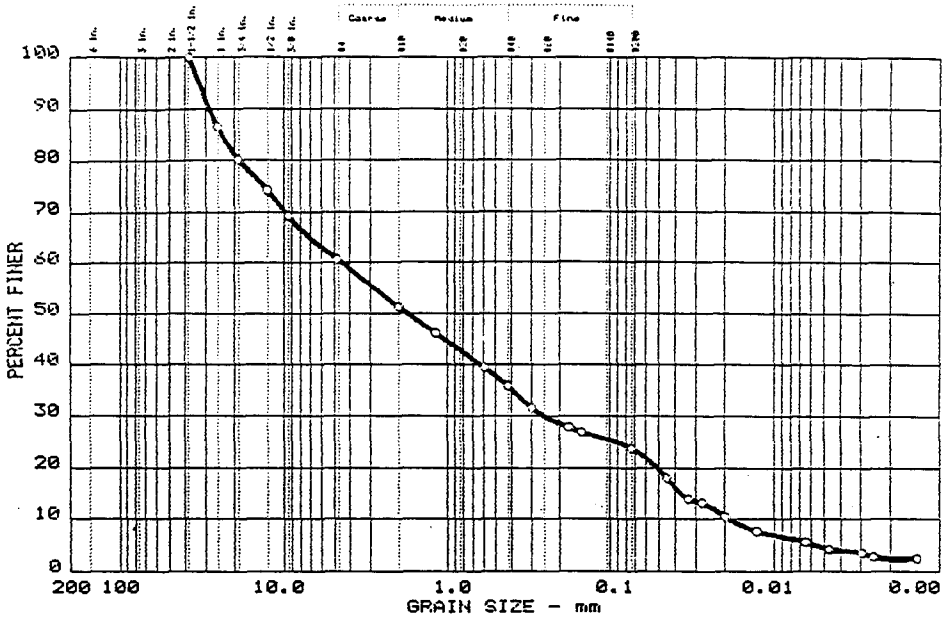
GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: [illegible]
APPROVED BY: [illegible]/WEI
Sheet No.

EWI

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	39.3	36.9	19.3	4.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	--	--	23.99	4.42	1.74	0.248	0.0367	0.0186	0.75	237.1

MATERIAL DESCRIPTION	USCS
○ Brown Fine-Coarse SAND & GRAVEL, Some Silt, Trace Clay	SM/GM

Project No.: 15251.53
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.21
○ Sample: WK-LW03-2

Date: 10/24/90

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Remarks:

TESTED BY: DWA/MML

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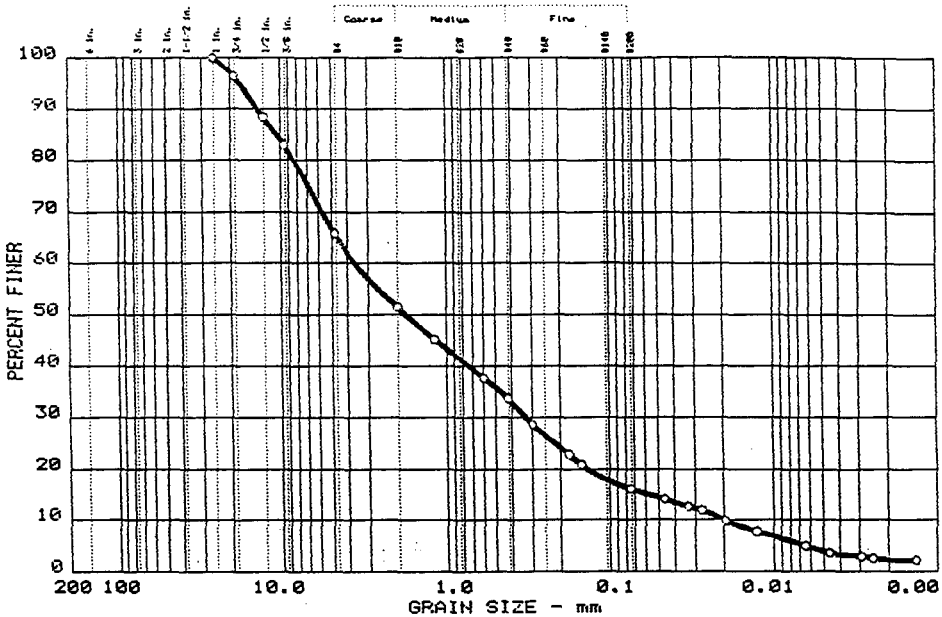
CHECKED BY: [illegible]

APPROVED BY: DLM/WEI

Sheet No.

EWI

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	34.2	49.7	12.2	3.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	--	--	10.58	3.58	1.77	0.327	0.0574	0.0199	1.50	179.9

MATERIAL DESCRIPTION	USCS
○ Brown Fine-Coarse SAND, Some Silt & Gravel, Trace Clay	SM

Project No.: 15251.53
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.21
○ Sample: WK-LW04-2

Date: 10/24/90

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Remarks:

TESTED BY: DWA/MML

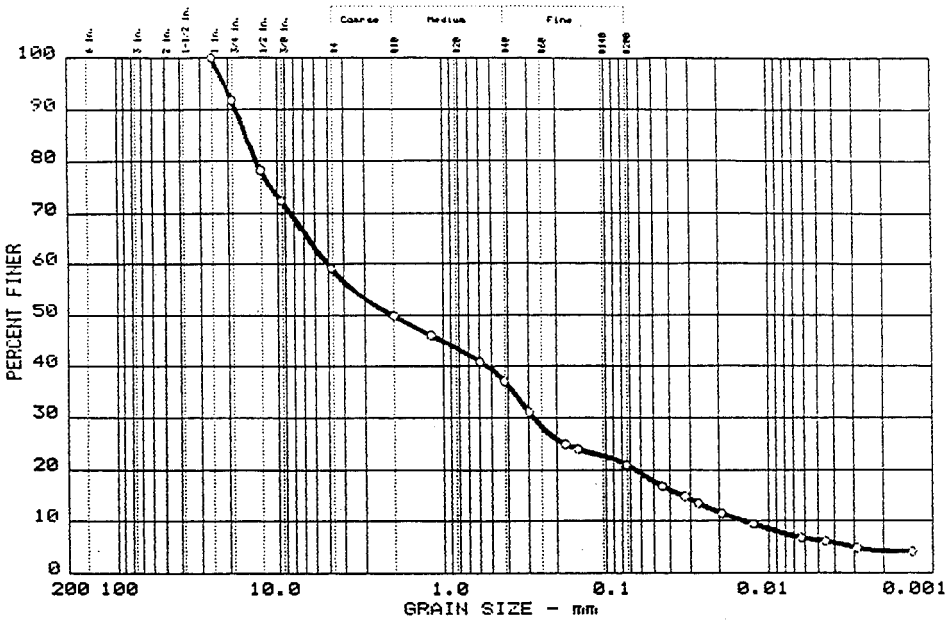
ENTERED BY: MML

CHECKED BY: [illegible]

APPROVED BY: DWA/WEI

Sheet No.

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	40.8	38.2	14.6	6.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	20	7	15.67	4.95	2.02	0.275	0.0327	0.0135	1.14	367.3

MATERIAL DESCRIPTION	USCS
○ Brown Silty, Clayey Fine-Coarse SAND & GRAVEL	SC-SM/GC-GM

Project No.: 15251.53
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.21
○ Sample: WK-LW05-2

Date: 10/24/90

Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY:
APPROVED BY: DWA/WEI

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Sheet No.

EWI

Job No. 15251.53
Date: 10/26/90

ALLING HEAD PERMEABILITY TEST

Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6860

OJECT CATION	WOODSTOCK LANDFILL RI/FS, WEI # 60776.21 WOODSTOCK, ILLINOIS
MPLE (a) PTH (ft)	WK-LW01-2
IL DESCRIPTION	Brown Silty, Clayey Fine-Coarse SAND, Little Gravel (SC-SM)
MPLE DIAMETER (cm)	7.4
MPLE AREA, A(cm²)	42.6

	INITIAL	FINAL
MPLE LENGTH, L(cm)	21.2	21.2
ISTURE CONTENT, %	12.9	14.8
Y DENSITY (lb/cu ft)	109.5	109.5
RCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	6.4E-06
2	4.8E-06
3	4.4E-06
4	4.3E-06
5	4.1E-06
6	3.7E-06
7	3.8E-06
8	9.0E-06
9	5.7E-06
10	4.4E-06

AVERAGE COEFFICIENT OF PERMEABILITY = 6.4E-06 cm/sec
(Based on run numbers 8 through 10)

MULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

OTNOTES: (a) This permeability test was performed on a relatively undisturbed 3-inch diameter Shelby tube sample.

HECKED BY: [signature] DATE: 11/12/90 APPROVED BY: [signature] (WEI) DATE: 11/15/90

EWI

Job No. 15251.53
Date: 10/26/90

FALLING HEAD PERMEABILITY TEST

EWI Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6860

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.21
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a) DEPTH (ft)	WK-LW02-2
SOIL DESCRIPTION	Brown Clayey Fine-Coarse SAND, Some Gravel & Silt (SC)
SAMPLE DIAMETER (cm)	7.4
SAMPLE AREA, A(cm^2)	42.6

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	20.8	20.8
MOISTURE CONTENT, %	11.8	13.1
DRY DENSITY (lb/cu ft)	115.5	115.5
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	2.6E-07
2	6.1E-07
3	6.7E-07
4	3.3E-07
5	7.0E-08
6	9.7E-08
7	9.1E-08
8	6.4E-08
9	5.9E-08
10	5.8E-08
11	6.6E-08

AVERAGE COEFFICIENT OF PERMEABILITY = 6.1E-08 cm/sec
(Based on run numbers 9 through 11)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was performed on a relatively undisturbed 3-inch diameter Shelby tube sample.

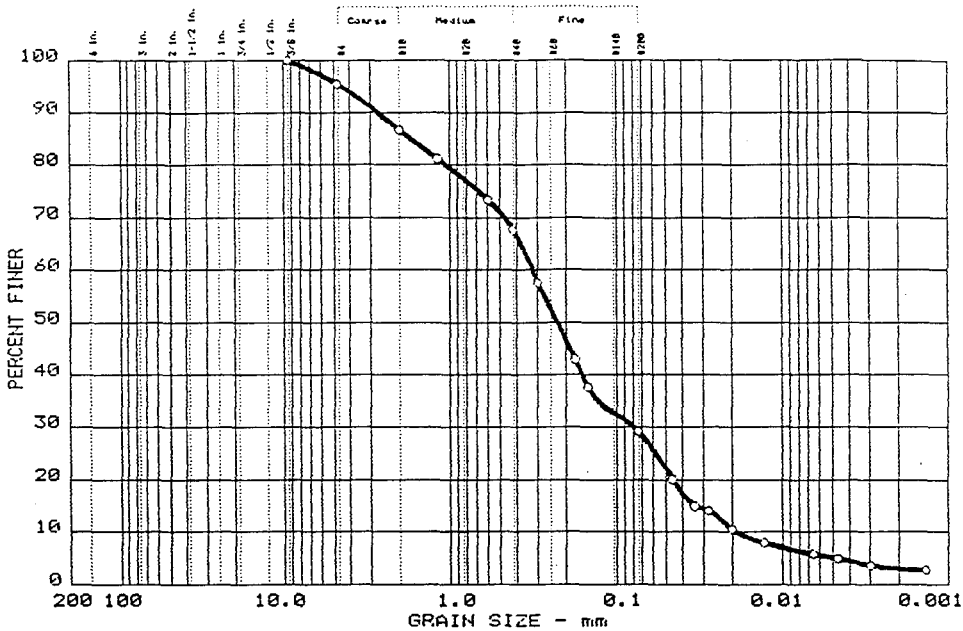
CHECKED BY: DWC DATE: 11/12/90 APPROVED BY: DJM/WEI DATE: 11/15/90

EWI

APPENDIX D-2

SOIL BORING/MONITORING WELL LOCATIONS

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	4.5	66.4	24.1	5.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	--	--	1.72	0.32	0.23	0.078	0.0338	0.0188	1.02	17.0

MATERIAL DESCRIPTION	USCS
○ Gray Fine-Coarse SAND, Some Silt, Little Clay, Trace Gravel	SM

Project No.: 15251.64
Project: WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
○ Sample: WK-SBMW2 @ 61.0-70.0 FT

Date: 11/07/90

Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: [illegible]
APPROVED BY: [illegible] WEI

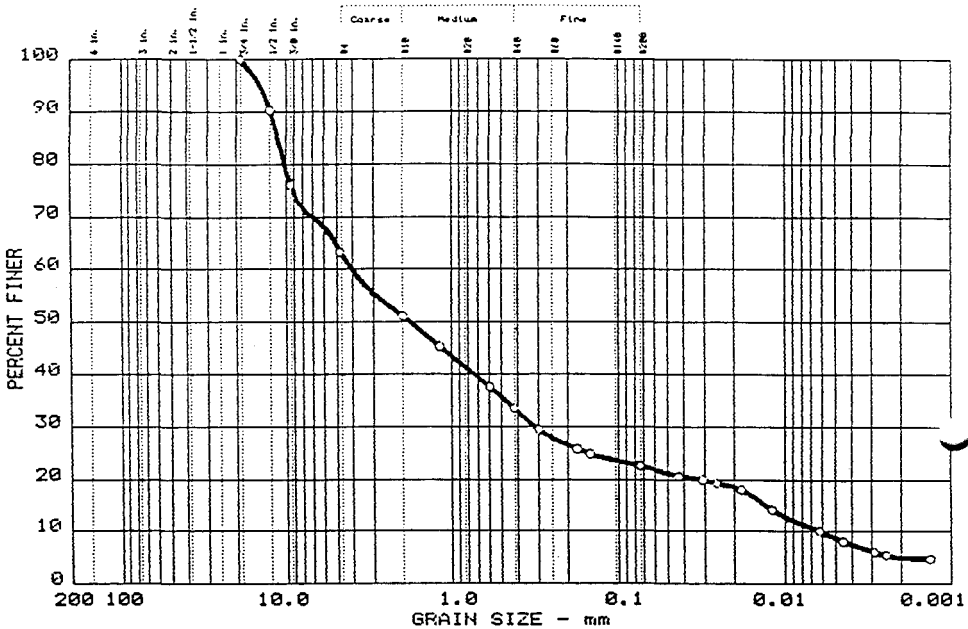
GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Sheet No.

EWI

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
o	0.0	36.7	40.7	13.9	8.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
o	--	--	11.42	4.05	1.77	0.311	0.0131	0.0061	3.89	660.7

MATERIAL DESCRIPTION	USCS
o Brown Fine-Coarse SAND & GRAVEL, Some Silt, Little Clay	SM/GM

Project No.: 15251.64
Project: WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
o Sample: WK-SBMW4 @ 13.5-20.0 FT

Date: 11/07/90

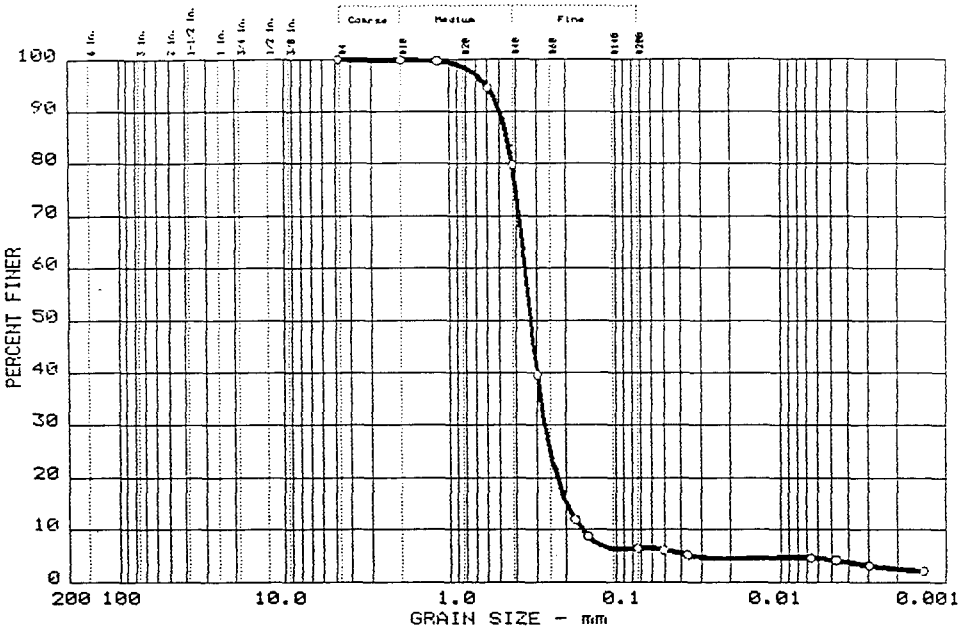
Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: [illegible]
APPROVED BY: DLN/WEI

GRAIN SIZE DISTRIBUTION TEST REPORT
EWI, Engineering Associates, Inc.

Sheet No.

EW.

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	0.0	93.5	2.2	4.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	--	--	0.45	0.35	0.32	0.267	0.1979	0.1590	1.27	2.2

MATERIAL DESCRIPTION	USCS
O Brown Fine-Medium SAND, Trace Clay & Silt	SP-SM

Project No.: 15251.64
Project: WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
O Sample: WK-SBMW6 @ 8.5-17.5 FT

Date: 11/07/90

Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: DWA
APPROVED BY: DLM/WEI

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Sheet No.

EWI

Job No. 15251.64
Date: 11/06/90

'ALLING HEAD PERMEABILITY TEST

I Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6360

ROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
OCATION	WOODSTOCK, ILLINOIS
MPLE (a)	WK-SBMW2
PTH (ft)	61.0-70.0
OIL DESCRIPTION	Gray Fine-Coarse SAND, Some Silt, Little Clay, Trace Gravel (SM)
MPLE DIAMETER (cm)	5.2
MPLE AREA, A(cm²)	21.3

	INITIAL	FINAL
AMPLE LENGTH, L(cm)	16.0	16.0
OISTURE CONTENT, %	10.2	10.2
Y DENSITY (lb/cu ft)	128.2	128.2
RCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	4.7E-05
2	4.3E-05
3	2.4E-05
4	2.2E-05
5	2.3E-05
6	2.2E-05
7	2.2E-05
8	2.2E-05
9	2.2E-05
10	2.2E-05

AVERAGE COEFFICIENT OF PERMEABILITY = 2.2E-05 cm/sec
(Based on run numbers 8 through 10)

$$\text{EMULA: } k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$$

, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

OOTNOTES: (a) This permeability test was run on remolded material in a 1/83.0 cu ft mold.

CHECKED BY: DLR DATE: 11/19/90 APPROVED BY: DLR/WEI DATE: 11/27/90

EW

Job No. 15251.64
Date: 11/06/90

FALLING HEAD PERMEABILITY TEST

Engineering Associates, Inc., 8333 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6860

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SBMW4
DEPTH (ft)	13.5-20.0
SOIL DESCRIPTION	Brown Fine-Coarse SAND & GRAVEL, Some Silt, Little Clay (SM/GM)
SAMPLE DIAMETER (cm)	5.2
SAMPLE AREA, A(cm^2)	21.3

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	11.2	11.2
MOISTURE CONTENT, %	16.5	17.3
DRY DENSITY (lb/cu ft) (b)	69.0	69.0
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	6.3E-06
2	5.5E-06
3	3.8E-06
4	4.2E-06
5	4.2E-06
6	3.9E-06
7	3.9E-06
8	3.9E-06
9	4.0E-06
10	3.8E-06

AVERAGE COEFFICIENT OF PERMEABILITY = 3.9E-06 cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES:
(a) This permeability test was run on remolded material in a 1/119.0 cu ft mold.
(b) Dry density of this specimen appears to be low due to high moisture content and possible test errors due to low sample volume.

CHECKED BY: [signature] DATE: 11/19/90 APPROVED BY: [signature] WEI DATE: 11/27/90

EWI

Job No. 15251.64
Date: 11/06/90

FALLING HEAD PERMEABILITY TEST

EWI Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6860

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SBMW6
DEPTH (ft)	8.5-17.5
SOIL DESCRIPTION	Brown Fine-Medium SAND, Trace Clay & Silt (SP-SM)
SAMPLE DIAMETER (cm)	5.2
SAMPLE AREA, A(cm^2)	21.3

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	16.0	16.0
MOISTURE CONTENT, %	16.1	16.5
DRY DENSITY (lb/cu ft)	103.5	103.5
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	2.9E-05
2	2.7E-05
3	2.8E-05
4	2.9E-05
5	2.7E-05
6	2.5E-05
7	2.6E-05
8	2.6E-05
9	2.6E-05
10	2.6E-05

AVERAGE COEFFICIENT OF PERMEABILITY = 2.6E-05 cm/sec
(Based on run numbers 8 through 10)

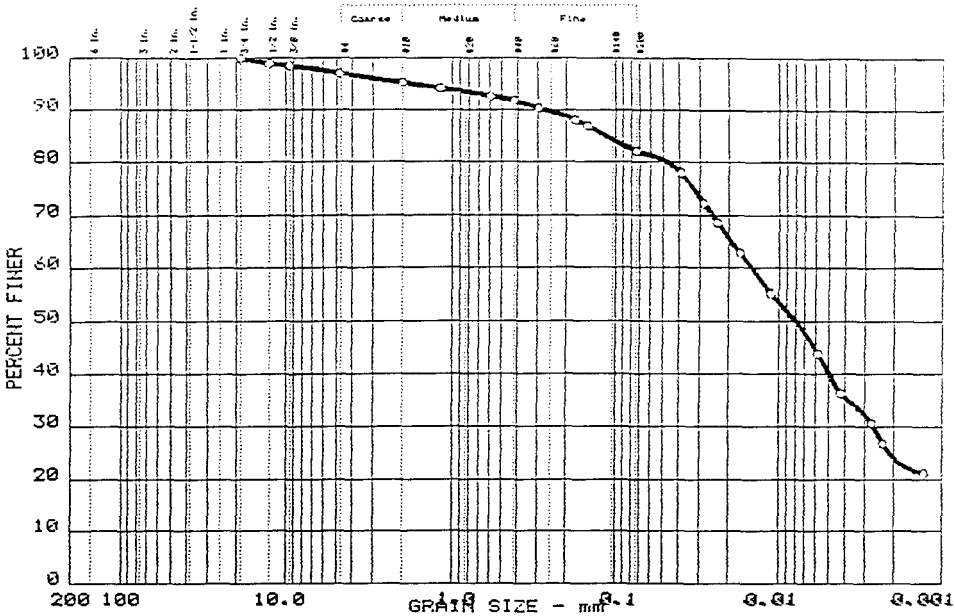
FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was run on remolded material in a 1/83.1 cu ft mold.

CHECKED BY: [signature] DATE: 11/19/90 APPROVED BY: [signature] DATE: 11/26/90

EWI

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	2.9	15.1	42.0	40.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	25	10	0.11		0.01	0.003				

MATERIAL DESCRIPTION	USCS
O Brown Lean CLAY, Some Sand, Trace Gravel	CL

Project No.: 15251.51
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.00
O Sample: WK-SBMW5 @ 22.0 FT

Date: 10/24/90

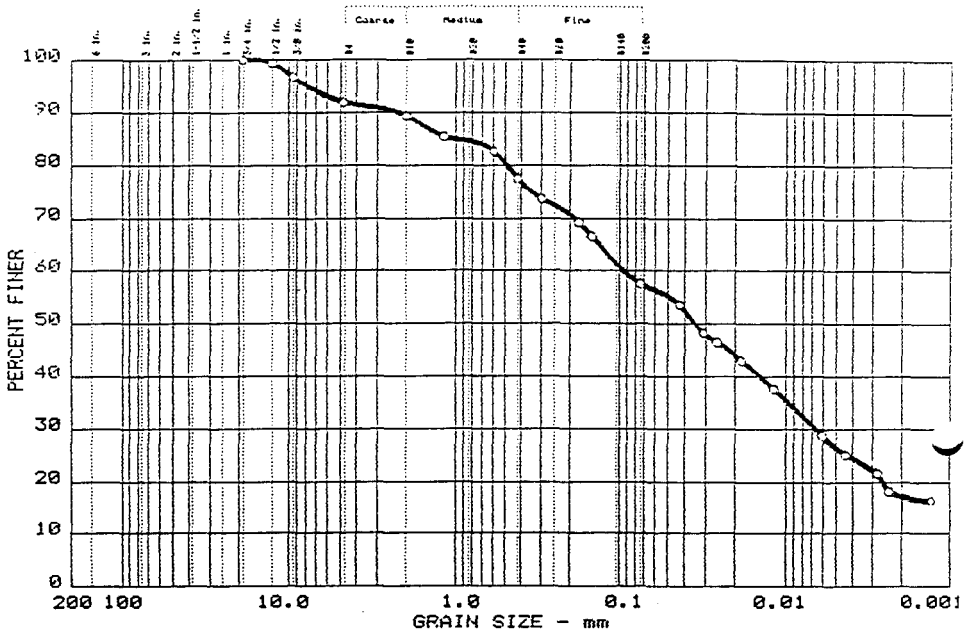
Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY:
APPROVED BY: /WEI

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Sheet No.

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75_	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	8.1	34.3	31.3	26.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	21	12	0.94	0.09	0.03	0.007				

MATERIAL DESCRIPTION	USCS
O Brown Lean CLAY, Some Sand, Little Gravel	CL

Project No.: 15251.51
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.00
O Sample: WK-SBMW2 @ 43.0 FT

Date: 10/24/90

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Remarks:

TESTED BY: DWA/MML

ENTERED BY: MML

CHECKED BY: [illegible]

APPROVED BY: [illegible] WEI

Sheet No.

Job No. 15251.51
Date: 10/24/90

FALLING HEAD PERMEABILITY TEST

WI Engineering Associates, Inc., 8333 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6360

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI# 60776.00
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SBMW5
DEPTH (ft)	22.0
SOIL DESCRIPTION	Brown Lean CLAY, Some Sand, Trace Gravel (CL)
SAMPLE DIAMETER (cm)	7.4
SAMPLE AREA, A(cm²)	42.6

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	19.9	19.9
MOISTURE CONTENT, %	14.1	14.2
DRY DENSITY (lb/cu ft)	114.8	114.8
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	3.5E-08
2	2.2E-08
3	3.4E-08
4	2.5E-08
5	2.0E-08
6	2.8E-08
7	3.8E-08
8	1.9E-08
9	2.2E-08
10	2.1E-08
11	2.1E-08

AVERAGE COEFFICIENT OF PERMEABILITY = 2.1E-08 cm/sec
(Based on run numbers 9 through 11)

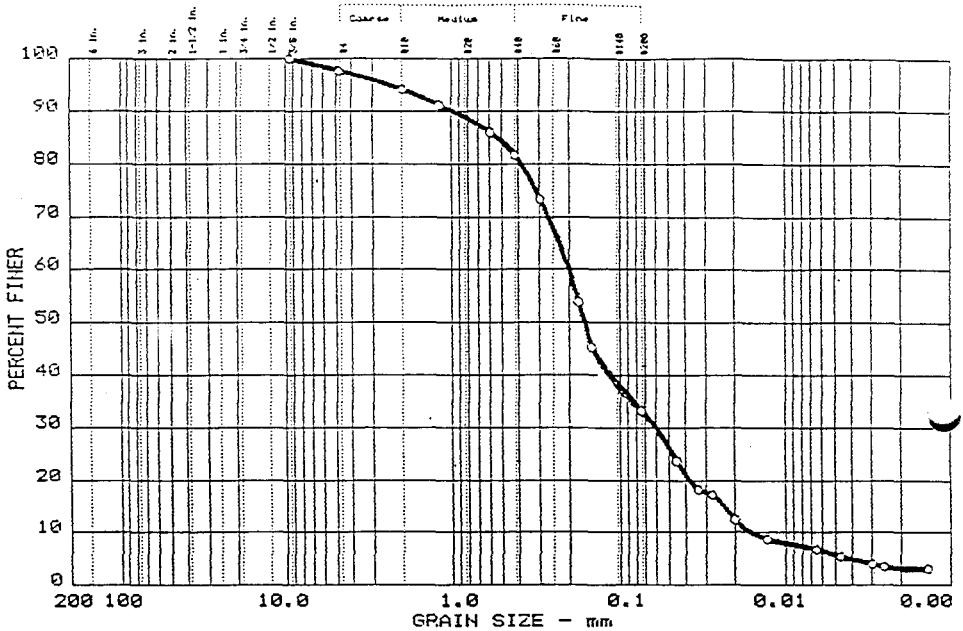
FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was performed on a relatively undisturbed 3-inch diameter Shelby tube sample.

CHECKED BY: [signature] DATE: 11/12/90 APPROVED BY: [signature] DATE: 11/15/90

EWI

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	2.3	64.5	27.6	5.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	--	--	0.52	0.20	0.16	0.060	0.0232	0.0158	1.14	12.7

MATERIAL DESCRIPTION	USCS
○ Brown Fine-Coarse SAND, Some Silt, Little Clay, Trace Gravel	SM

Project No.: 15251.66
Project: WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
○ Sample: WK-SSMW1D @ 41-42.5 & WK-SBMW1 @ 43.5-50 FT

Date: 11/07/90

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: DWR
APPROVED BY: DJR/WEI
Sheet No.

Job No. 15251.66
Date: 11/05/90

FALLING HEAD PERMEABILITY TEST

Wisconsin Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6869

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SSMW1D @ 41-42.5 & WK-SBMW1 @ 43.5-50
DEPTH (ft)	41.0-50.0
SOIL DESCRIPTION	Brown Fine-Coarse SAND, Some Silt, Little Clay, Trace Gravel (SM)
SAMPLE DIAMETER (cm)	5.2
SAMPLE AREA, A(cm²)	21.3

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	17.8	17.8
MOISTURE CONTENT, %	13.0	13.8
DRY DENSITY (lb/cu ft)	121.9	121.9
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	2.6E-05
2	2.5E-05
3	2.3E-05
4	2.2E-05
5	2.2E-05
6	2.2E-05
7	2.2E-05
8	2.2E-05
9	2.2E-05
10	2.2E-05

AVERAGE COEFFICIENT OF PERMEABILITY = 2.2E-05 cm/sec
(Based on run numbers 8 through 10)

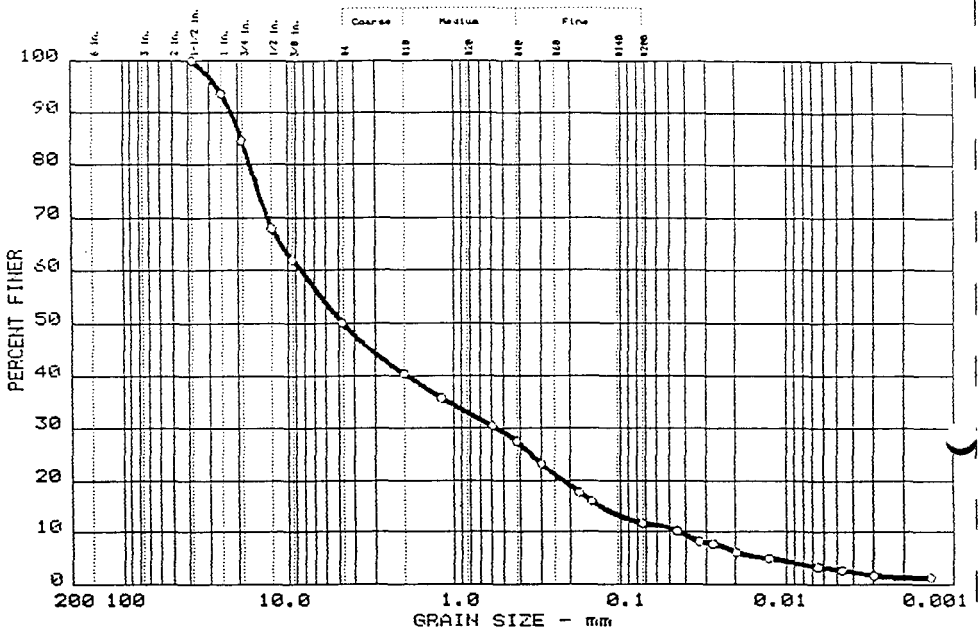
FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was run on remolded material in a 1/74.6 cu ft mold.

CHECKED BY: [illegible] DATE: 11/19/90 APPROVED BY: [illegible] DATE: 11/21/90

WEI

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75	% GRAVEL	% SAND	% SILT	% CLAY
O	0.0	49.8	38.5	8.8	2.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
O	--	--	19.28	8.41	4.68	0.556	0.1318	0.0437	0.84	192.8

MATERIAL DESCRIPTION	USCS
O Yellow-Brown Fine-Coarse SAND & GRAVEL, Little Silt, Trace Clay	SP-SM/GP-GM

Project No.: 15251.65
Project: WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
O Sample: WK-SSMW1D @ 8.5-20.0 FT

Date: 11/07/90

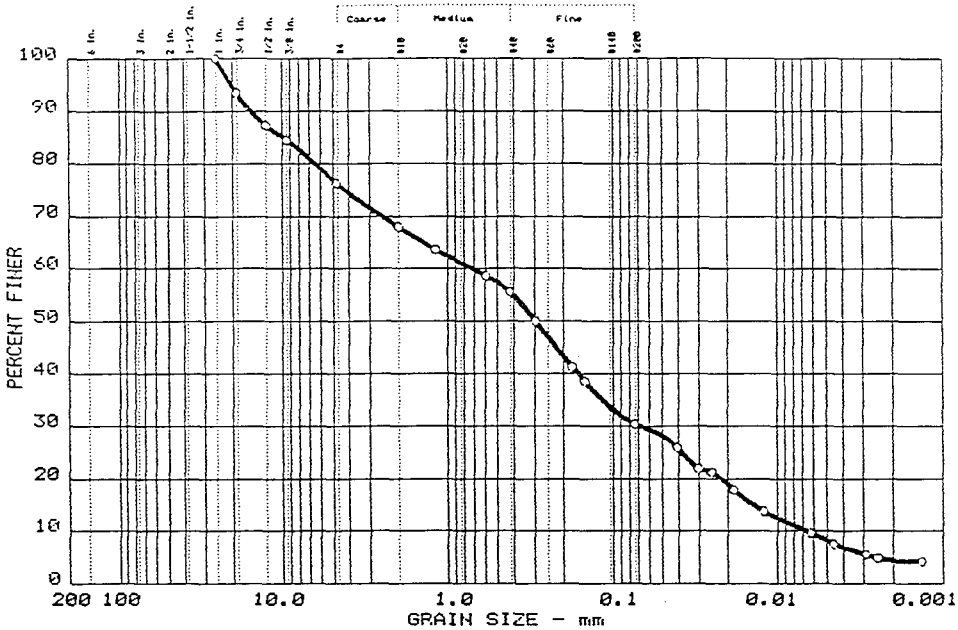
Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: DWA
APPROVED BY: DWA/WEI

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Sheet No.

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	23.7	45.9	22.2	8.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	--	--	10.00	0.71	0.30	0.069	0.0140	0.0066	1.02	107.2

MATERIAL DESCRIPTION	USCS
○ Gray-Brown Fine-Coarse SAND, Some Silt & Gravel, Little Clay	SM

Project No.: 15251.65
Project: WOODSTOCK LANDFILL RI/FS, WEI # 60776.00
○ Sample: WK-SBMW 6 @ 33.5-42.5 FT

Date: 11/07/90

Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: DWR
APPROVED BY: DWR/WEI

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Sheet No.

EWI

Job No. 15251.65
Date: 11/07/90

FALLING HEAD PERMEABILITY TEST

WI Engineering Associates, Inc., 8353 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6360

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI# 60776.00
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SSMW1D
DEPTH (ft)	8.5-20.0
SOIL DESCRIPTION	Yellow-Brown Fine-Coarse SAND & GRAVEL, Little Silt, Trace Clay (SP-SM/GP-GM)
SAMPLE DIAMETER (cm)	5.2
SAMPLE AREA, A(cm^2)	21.3

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	10.6	10.6
MOISTURE CONTENT, %	8.6	9.2
DRY DENSITY (lb/cu ft)	131.7	131.7
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	9.2E-06
2	8.6E-06
3	7.4E-06
4	2.1E-05
5	2.1E-05
6	2.1E-05
7	2.1E-05
8	2.1E-05
9	2.1E-05
10	2.1E-05

AVERAGE COEFFICIENT OF PERMEABILITY = 2.1E-05 cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was run on remolded material in a 1/125.2 cu ft mold.

CHECKED BY: [signature] DATE: 11/19/90 APPROVED BY: [signature] DATE: 11/27/90

Job No. 1525L65
Date: 11/07/90

FALLING HEAD PERMEABILITY TEST

WI Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6360

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI# 60776.00
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SBMW6
DEPTH (ft)	33.5-42.5
SOIL DESCRIPTION	Gray-Brown Fine-Coarse SAND, Some Silt & Gravel, Little Clay (SM)
SAMPLE DIAMETER (cm)	5.2
SAMPLE AREA, A(cm²)	21.3

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	13.6	13.6
MOISTURE CONTENT, %	8.9	9.4
DRY DENSITY (lb/cu ft)	133.0	133.2
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	4.1E-03
2	3.9E-03
3	3.8E-03
4	3.9E-03
5	3.9E-03
6	3.9E-03
7	3.9E-03
8	3.8E-03

AVERAGE COEFFICIENT OF PERMEABILITY = 3.9E-03 cm/sec
(Based on run numbers 6 through 8)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was run on remolded material in a 1/97.9 cu ft mold.

CHECKED BY: [illegible] DATE: 11/19/90 APPROVED BY: [illegible] DATE: 11/27/90

EWI

EWI
Engineering Associates, Inc.

FLEXIBLE WALL FALLING HEAD PERMEABILITY TEST RESULTS (b)

PROJECT: Woodstock RI

LOCATION: Woodstock, ILL

WEI # 60776.23
Test No.
Job No. 15251.96
Date 3/5/91
Sheet 1 of 1

8383 GREENWAY BLVD. • MIDDLETON, WI 53562

(a) SAMPLE 3-inch S.T.	MW-10		MW-9		MW-8	
DEPTH	17.5-20.0 FT		38.5-41.0 FT		30.0-32.5 FT	
SOIL DESCRIPTION (visual)	Gray Lean CLAY, Trace Sand & Gravel (CL)		Gray Lean CLAY, Trace Sand & Gravel (CL)		Gray Lean CLAY, Trace Sand & Gravel (CL)	
	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
SAMPLE DIAMETER (cm)	5.2	5.2	5.1	5.1	5.0	5.0
SAMPLE AREA, A (cm^2)	21.2	21.2	21.3	21.3	19.7	19.7
SAMPLE LENGTH, L (cm)	10.1	10.1	10.2	10.2	10.2	10.2
MOISTURE CONTENT, %	8.9	12.0	7.5	10.7	12.5	16.1
DRY DENSITY (PCF)(a)	127.7	127.7	132.4	132.5	118.6	118.6
MAXIMUM GRADIENT	19.0	19.0	18.7	18.7	18.8	18.8
NET CONFINING PRESSURE (PSI)	2.0	2.0	2.0	2.0	2.0	2.0

COEFFICIENT OF PERMEABILITY, k (cm/sec)

RUN NO. 1	2.2×10^{-8}	1.6×10^{-7}	2.8×10^{-8}
2	1.5×10^{-8}	1.4×10^{-7}	2.2×10^{-8}
3	1.6×10^{-8}	1.2×10^{-7}	2.4×10^{-8}
4	1.8×10^{-8}	1.3×10^{-7}	2.4×10^{-8}
5	1.6×10^{-8}	1.3×10^{-7}	2.5×10^{-8}
6	1.6×10^{-8}	1.1×10^{-7}	2.1×10^{-8}
7	1.6×10^{-8}	1.3×10^{-7}	2.4×10^{-8}
8	1.5×10^{-8}	1.3×10^{-7}	2.2×10^{-8}
9	1.3×10^{-8}	1.3×10^{-7}	2.2×10^{-8}
10	1.5×10^{-8}	1.3×10^{-7}	2.0×10^{-8}
AVERAGE k, (cm/sec)	1.6×10^{-8}	1.3×10^{-7}	2.3×10^{-8}

FORMULA: (b)

$$K = \frac{2.3\ a\ L}{A t} \log 10 \frac{h_o}{h_1}$$

Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

REMARKS:

(a) These permeability tests were performed on relatively undisturbed 3-inch Shelby Tube samples. B parameter at testing was 0.97 on all samples.

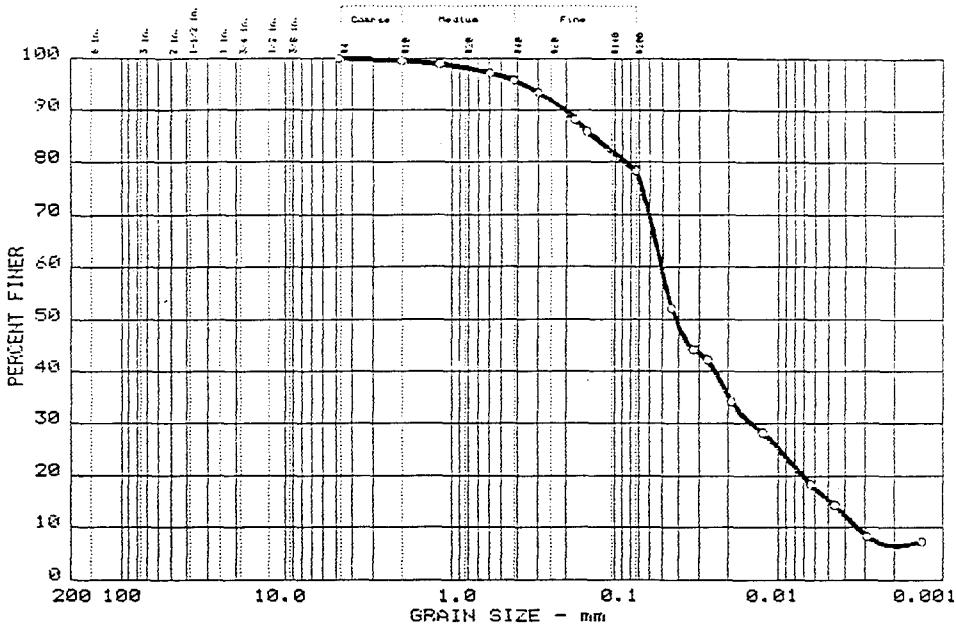
(b) "Rising Head / Falling Head" test formula.

TESTED BY [signature] CHECKED BY CAF APPROVED BY [signature]

APPENDIX D-3

SEDIMENT SAMPLING LOCATIONS

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	0.0	21.6	63.0	15.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	47	8	0.14		0.04	0.014	0.0048	0.0033	1.22	15.3

MATERIAL DESCRIPTION	USCS
○ Brown SILT, Some Sand & Clay	ML

Project No.: 15251.52
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.21
○ Sample: WK-SD5-01

Date: 10/24/90

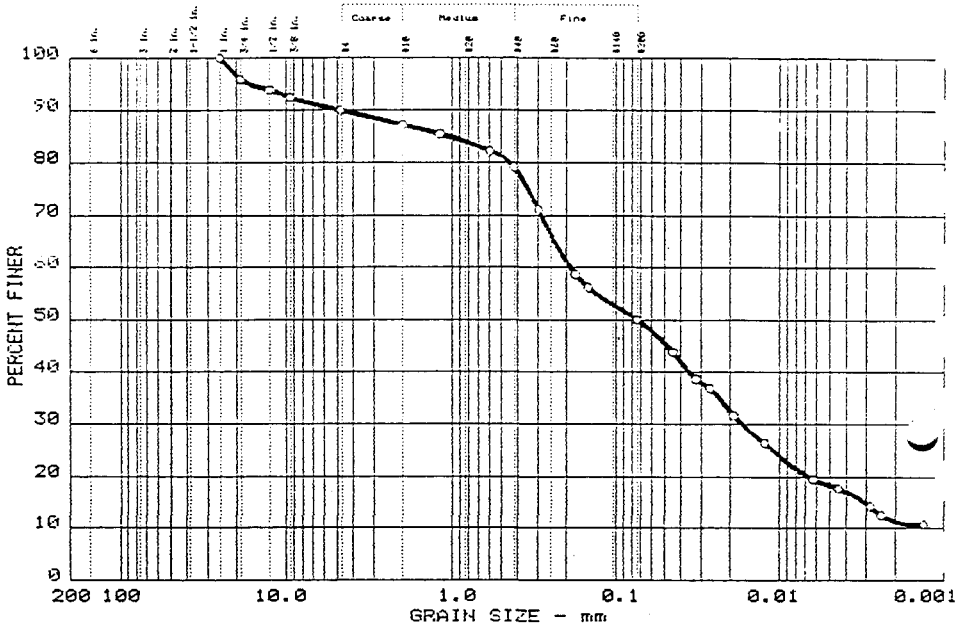
Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: DWA
APPROVED BY: DZN/WEI

GRAIN SIZE DISTRIBUTION TEST REPORT
EWI, Engineering Associates, Inc.

Sheet No.

EWI

GRAIN SIZE DISTRIBUTION TEST REPORT



Symbol	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	10.1	39.8	31.9	18.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c
○	28	12	1.05	0.19	0.07	0.017	0.0031		

MATERIAL DESCRIPTION	USCS
○ Brown Sandy Lean CLAY, Little Gravel	CL

Project No.: 15251.52
Project: WOODSTOCK LANDFILL RI/FS, WEI# 60776.21
○ Sample: WK-SD8-01

Date: 10/24/90

Remarks:
TESTED BY: DWA/MML
ENTERED BY: MML
CHECKED BY: DWA
APPROVED BY: DLR/WEI

GRAIN SIZE DISTRIBUTION TEST REPORT

EWI, Engineering Associates, Inc.

Sheet No.

Job No. 15251.52
Date: 10/25/90

'ALLING HEAD PERMEABILITY TEST

EWI Engineering Associates, Inc., 8333 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6860

ROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.21
LOCATION	WOODSTOCK, ILLINOIS
AMPLE (a)	WK-SD1-01
OIL DESCRIPTION (b)	Black Sedimentary PEAT, Little Sand (PT)
AMPLE DIAMETER (cm)	7.4
AMPLE AREA, A(cm²)	42.6

	INITIAL	FINAL
PLE LENGTH, L(cm)	21.0	21.0
MOISTURE CONTENT, %	167.0	170.3
RY DENSITY (lb/cu ft)	26.5	26.5
ERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	1.8E-03
2	1.8E-03
3	1.7E-03
4	1.7E-03
5	1.7E-03
6	1.7E-03
7	1.6E-03
8	1.6E-03
9	1.5E-03
10	1.5E-03

AVERAGE COEFFICIENT OF PERMEABILITY = 1.5E-03 cm/sec
(Based on run numbers 8 through 10)

ORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

OOTNOTES: (a) This permeability test was performed on a relatively undisturbed 3-inch diameter Shelby tube sample.
(b) Soil description is based on visual observation and organic content by Loss-on- Ignition = 37.2 %

HECKED BY: DWA DATE: 11/12/90 APPROVED BY: DHN/WEI DATE: 11/21/90

EWI

Job No. 15251.52
Date: 10/25/90

FALLING HEAD PERMEABILITY TEST

EWI Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6860

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.21
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SD1-91
SOIL DESCRIPTION (b)	Black Sedimentary PEAT, Little Sand (PT)
SAMPLE DIAMETER (cm)	7.4
SAMPLE AREA, A(cm^2)	42.6

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	21.1	21.1
MOISTURE CONTENT, %	124.3	124.0
DRY DENSITY (lb/cu ft)	34.3	34.3
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	4.2E-04
2	2.8E-04
3	2.7E-04
4	2.6E-04
5	2.7E-04
6	2.6E-04
7	2.7E-04
8	2.6E-04
9	2.6E-04
10	2.6E-04

AVERAGE COEFFICIENT OF PERMEABILITY = 2.6E-04 cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{\Delta t} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was performed on a relatively undisturbed 3-inch diameter Shelby tube sample.
(b) Soil description is based on visual observation and organic content by Loss-on-Ignition = 31.5 %

CHECKED BY: DWR DATE: 11/12/90 APPROVED BY: DLN/WEI DATE: 11/21/90

EWI

Job No. 15251.52
Date: 10/25/90

FALLING HEAD PERMEABILITY TEST

Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6860

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.21
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SD3-01
SOIL DESCRIPTION (b)	Brown-Black Fibrous PEAT, Little Sand (PT)
SAMPLE DIAMETER (cm)	7.4
SAMPLE AREA, A(cm²)	42.6

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	21.6	21.6
MOISTURE CONTENT, %	220.7	221.0
DRY DENSITY (lb/cu ft)	23.2	23.2
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	1.6E-03
2	9.7E-04
3	9.4E-04
4	9.0E-04
5	9.3E-04
6	8.8E-04
7	9.0E-04
8	8.7E-04
9	8.2E-04
10	8.1E-04

AVERAGE COEFFICIENT OF PERMEABILITY = 8.3E-04 cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was performed on a relatively undisturbed 3-inch diameter Shelby tube sample.
(b) Soil description is based on visual observation and organic content by Loss-on-Ignition = 58.0 %

CHECKED BY: [illegible] DATE: 11/12/90 APPROVED BY: [illegible] WEI DATE: 11/21/90

EWI

Job No. 15251.52
Date: 10/25/90

FALLING HEAD PERMEABILITY TEST

WI Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6560

PROJECT	WOODSTOCK LANDFILL RI/FS, WEI # 60776.21
LOCATION	WOODSTOCK, ILLINOIS
SAMPLE (a)	WK-SD5-01
DEPTH (ft)	
SOIL DESCRIPTION	Brown SILT, Some Sand & Clay (ML)
SAMPLE DIAMETER (cm)	7.4
SAMPLE AREA, A(cm²)	42.6

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	20.4	20.4
MOISTURE CONTENT, %	67.8	66.2
DRY DENSITY (lb/cu ft)	57.6	57.6
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	1.0E-05
2	9.5E-06
3	9.4E-06
4	9.5E-06
5	9.5E-06
6	9.4E-06
7	9.4E-06
8	9.4E-06
9	9.4E-06
10	9.4E-06

AVERAGE COEFFICIENT OF PERMEABILITY = 9.4E-06 cm/sec
(Based on run numbers 8 through 10)

FORMULA: $k = \frac{2.3aL}{\Delta t} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was performed on a relatively undisturbed 3-inch diameter Shelby tube sample.

CHECKED BY: DJR DATE: 11/12/90 APPROVED BY: DMN/WEI DATE: 11/15/90

EM

Job No. 15251.52
Date: 10/25/90

FALLING HEAD PERMEABILITY TEST

Engineering Associates, Inc., 8383 Greenway Blvd., Middleton, WI 53562 Phone: (608) 231-6360

PROJECT LOCATION	WOODSTOCK LANDFILL RI/FS, WEI # 60776.21 WOODSTOCK, ILLINOIS
SAMPLE (a) DEPTH (ft)	WK-SD8-01
SOIL DESCRIPTION	Brown Sandy Lean CLAY, Little Gravel (CL)
SAMPLE DIAMETER (cm)	7.4
SAMPLE AREA, A(cm²)	42.6

	INITIAL	FINAL
SAMPLE LENGTH, L(cm)	20.8	20.8
MOISTURE CONTENT, %	24.6	24.6
DRY DENSITY (lb/cu ft)	97.3	97.3
PERCENT COMPACTION	-	-

RUN	COEFFICIENT OF PERMEABILITY, k(cm/sec)
1	2.0E-07
2	2.4E-07
3	4.4E-07
4	3.0E-07
5	2.9E-07
6	3.0E-07
7	3.1E-07
8	3.2E-07
9	3.1E-07
10	3.1E-07
11	3.2E-07

AVERAGE COEFFICIENT OF PERMEABILITY = 3.1E-07 cm/sec
(Based on run numbers 9 through 11)

FORMULA: $k = \frac{2.3aL}{At} \log_{10} \frac{h_0}{h_1}$, Where a = cross-sectional area of standpipe,
t = time for water level to fall from initial height, h_0, to final height, h_1
(All other terms are defined above)

FOOTNOTES: (a) This permeability test was performed on a relatively undisturbed 3-inch diameter Shelby tube sample.

CHECKED BY: [signature] DATE: 11/12/90 APPROVED BY: DJN/WEI DATE: 11/21/90

EWI

E

APPENDIX E

HYDRAULIC CONDUCTIVITY TESTING DATA

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A Q T E S O L V   R E S U L T S

12/11/90 11:14:33

PROBLEM DEFINITION

Problem title: MW1s(2) Permeability Test

Knowns and Constants:
- No. of data points............... 48
- Radius of well casing............ 0.083
- Radius of well................... 0.083
- Aquifer saturated thickness...... 10
- Well screen length............... 8
- Static height of water in well... 6.95
- Log(Re/Rw)....................... 3.128

ESTIMATION RESULTS

Analytical method: Bouwer and Rice (unconfined aquifer slug test)

PARAMETER ESTIMATES

	Estimate		Std. Error
K =	1.8888E-003	+/-	4.0628E-005
y0 =	1.6991E+000	+/-	1.3415E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

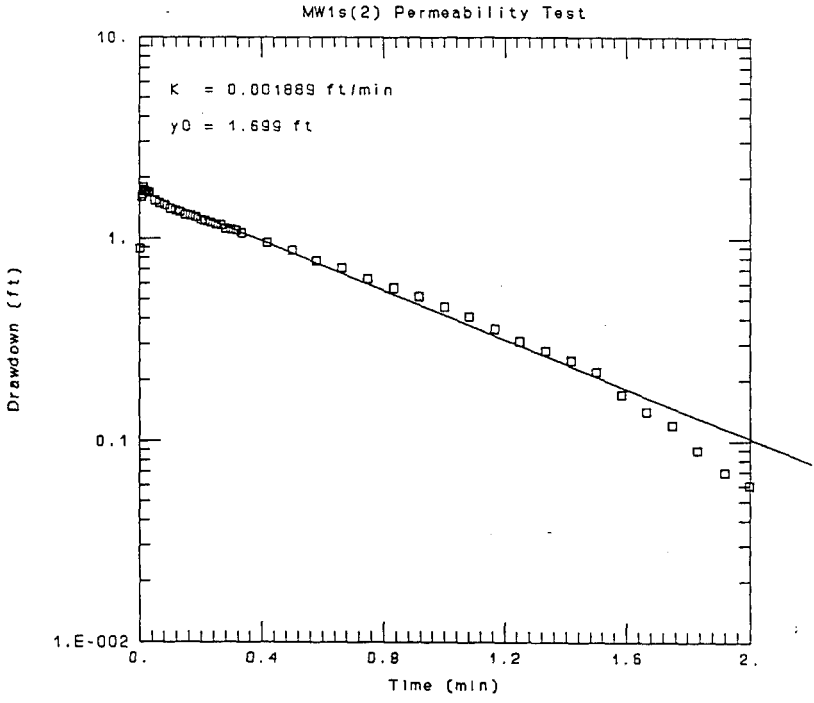
Weighted Residual Statistics:
- Number of residuals............... 45
- Number of estimated parameters.... 2
- Degrees of freedom................ 43
- Residual mean..................... -0.0001738
- Residual standard deviation....... 0.04579
- Residual variance................. 0.002096

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0133	1.79	1.6677	0.12229	1
0.0166	1.73	1.66	0.069992	1
0.02	1.7	1.6521	0.047889	1
0.0233	1.7	1.6445	0.055518	1
0.0266	1.7	1.6369	0.063112	1
0.03	1.68	1.6291	0.050899	1
0.0333	1.68	1.6216	0.058421	1
0.05	1.54	1.584	-0.04404	1

MW -152

0.0666	1.49	1.5476	-0.057587	1
0.0833	1.46	1.5118	-0.051761	1
0.1	1.41	1.4768	-0.066764	1
0.1166	1.38	1.4428	-0.062779	1
0.1333	1.35	1.4094	-0.05938	1
0.15	1.31	1.3768	-0.066753	1
0.1666	1.3	1.3451	-0.04507	1
0.1833	1.27	1.3139	-0.043932	1
0.2	1.23	1.2835	-0.053515	1
0.2166	1.22	1.254	-0.033978	1
0.2333	1.2	1.2249	-0.024949	1
0.25	1.17	1.1966	-0.026591	1
0.2666	1.16	1.1691	-0.0090546	1
0.2833	1.12	1.142	-0.021991	1
0.3	1.11	1.1156	-0.0055546	1
0.3166	1.09	1.0899	0.00011735	1
0.3333	1.06	1.0647	-0.0046522	1
0.4167	0.95	0.94713	0.0028719	1
0.5	0.87	0.8427	0.027305	1
0.5833	0.77	0.74978	0.020222	1
0.6667	0.71	0.66701	0.042988	1
0.75	0.63	0.59347	0.036535	1
0.8333	0.57	0.52803	0.041972	1
0.9167	0.52	0.46974	0.050259	1
1	0.46	0.41795	0.042054	1
1.083	0.41	0.37202	0.037981	1
1.167	0.36	0.33067	0.029326	1
1.25	0.31	0.29434	0.015663	1
1.333	0.28	0.26199	0.018007	1
1.417	0.25	0.23288	0.017124	1
1.5	0.22	0.20729	0.012714	1
1.583	0.17	0.18451	-0.014508	1
1.667	0.14	0.164	-0.024002	1
1.75	0.12	0.14598	-0.02598	1
1.833	0.09	0.12994	-0.039939	1
1.917	0.07	0.1155	-0.045498	1
2	0.06	0.10281	-0.042806	1


MW1s(2) Permeability Test
K = 0.001889 ft/min
y0 = 1.699 ft
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.4
0.8
1.2
1.6
2.
Time (min)

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S

12/11/90 11:17:34

PROBLEM DEFINITION

Problem title: MW1s(3) Permeability Test

Knowns and Constants:
- No. of data points............... 47
- Radius of well casing............ 0.083
- Radius of well................... 0.083
- Aquifer saturated thickness...... 10
- Well screen length............... 8
- Static height of water in well... 6.95
- Log(Re/Rw)....................... 3.128

ESTIMATION RESULTS

Analytical method: Bouwer and Rice (unconfined aquifer slug test)

PARAMETER ESTIMATES

	Estimate		Std. Error
K =	1.9741E-003	+/-	3.9910E-005
y0 =	1.6237E+000	+/-	1.2115E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

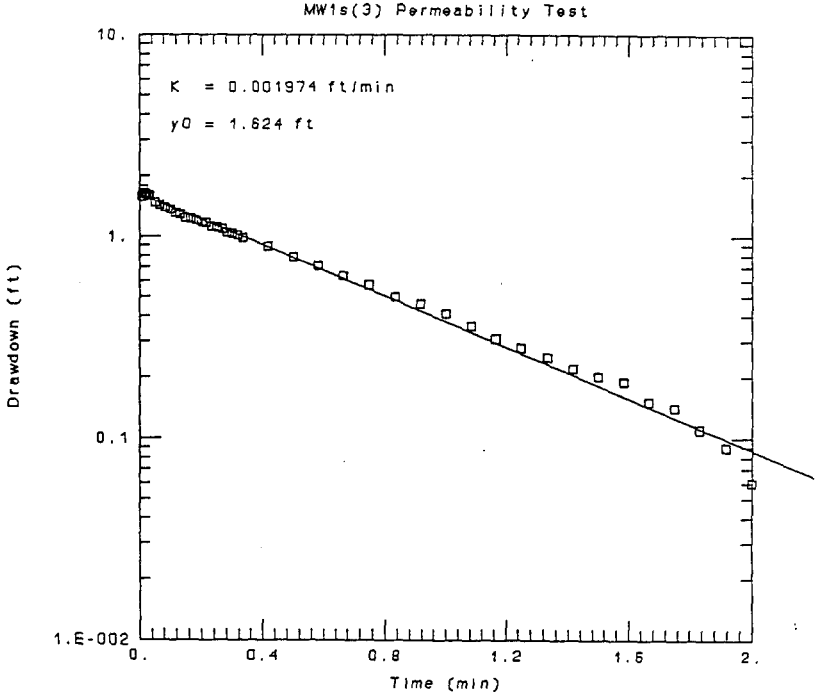
Weighted Residual Statistics:
- Number of residuals............... 45
- Number of estimated parameters.... 2
- Degrees of freedom................ 43
- Residual mean..................... 0.002609
- Residual standard deviation....... 0.04078
- Residual variance................. 0.001663

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0133	1.71	1.5924	0.11762	1
0.0166	1.65	1.5847	0.065306	1
0.02	1.63	1.5768	0.053184	1
0.0233	1.63	1.5692	0.060793	1
0.0266	1.62	1.5616	0.058365	1
0.03	1.6	1.5539	0.046129	1
0.0333	1.6	1.5464	0.053627	1
0.05	1.47	1.509	-0.038978	1

MW1S3

0.0666	1.43	1.4727	-0.042703	1
0.0833	1.39	1.4371	-0.04709	1
0.1	1.36	1.4023	-0.042337	1
0.1166	1.31	1.3686	-0.058626	1
0.1333	1.28	1.3355	-0.05553	1
0.15	1.23	1.3032	-0.073233	1
0.1666	1.22	1.2719	-0.051904	1
0.1833	1.2	1.2411	-0.041147	1
0.2	1.17	1.2111	-0.041133	1
0.2166	1.16	1.182	-0.022018	1
0.2333	1.12	1.1534	-0.033434	1
0.25	1.11	1.1255	-0.015541	1
0.2666	1.08	1.0985	-0.018484	1
0.2833	1.04	1.0719	-0.03192	1
0.3	1.03	1.046	-0.015999	1
0.3166	1.01	1.0209	-0.010854	1
0.3333	0.98	0.99617	-0.016167	1
0.4167	0.89	0.88153	0.0084658	1
0.5	0.79	0.78021	0.0097931	1
0.5833	0.71	0.69053	0.019473	1
0.6667	0.63	0.61107	0.018935	1
0.75	0.57	0.54083	0.029173	1
0.8333	0.5	0.47866	0.021338	1
0.9167	0.46	0.42358	0.03642	1
1	0.41	0.37489	0.035108	1
1.0833	0.36	0.3318	0.028199	1
1.1667	0.31	0.29362	0.016381	1
1.25	0.28	0.25987	0.020131	1
1.3333	0.25	0.23	0.020001	1
1.4166	0.22	0.20356	0.016438	1
1.5	0.2	0.18014	0.019863	1
1.5833	0.19	0.15943	0.030569	1
1.6667	0.15	0.14108	0.008915	1
1.75	0.14	0.12487	0.015132	1
1.8333	0.11	0.11052	-0.00051521	1
1.9167	0.09	0.097798	-0.0077978	1
2	0.06	0.086557	-0.026557	1


MW1s(3) Permeability Test
K = 0.001974 ft/min
y0 = 1.824 ft
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.4
0.8
1.2
1.6
2.
Time (min)

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

MW-1D

A Q T E S O L V

A Program for

Automatic Estimation of Aquifer Coefficients

From Aquifer Test Data

By:

Glenn M. Duffield
and
James O. Rumbaugh, III

Geraghty & Miller Modeling Group
1895 Preston White Drive, Suite 301
Reston, VA 22091

(703) 476 - 0335

A Q T E S O L V is a user-friendly program designed to analyze data from aquifer tests automatically. Aquifer coefficients for a variety of aquifer test conditions can be estimated by A Q T E S O L V , including the following:

- o confined aquifers, unconfined aquifers, and leaky aquifers
- o pumping tests, injection tests, recovery tests, and slug tests

Features:

- o Interactive, menu-driven program design
- o Nonlinear least-squares estimation of aquifer coefficients
- o Statistical analysis of results
- o Complete graphical display of results

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

YPE CURVE DATA

K = 7.41557E-003
y0 = 8.02277E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

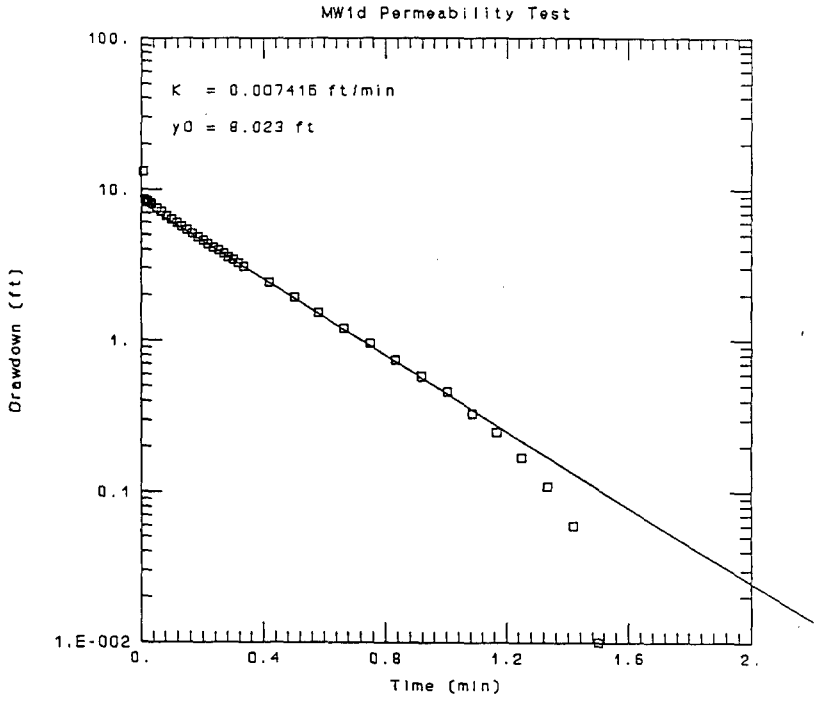
MW-1D

0.000E+000 8.023E+000 2.000E+000 2.457E-002

TYPE CURVE DATA

K = 7.41557E-003
y0 = 8.02277E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	8.023E+000	2.000E+000	2.457E-002		


MW1d Permeability Test
K = 0.007416 ft/min
y0 = 8.023 ft
100.
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.4
0.8
1.2
1.6
2.
Time (min)

Mw25(2)

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V

A Program for

Automatic Estimation of Aquifer Coefficients

From Aquifer Test Data

By:

Glenn M. Duffield
and
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<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 1.45656E-002
y0 = 2.51768E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

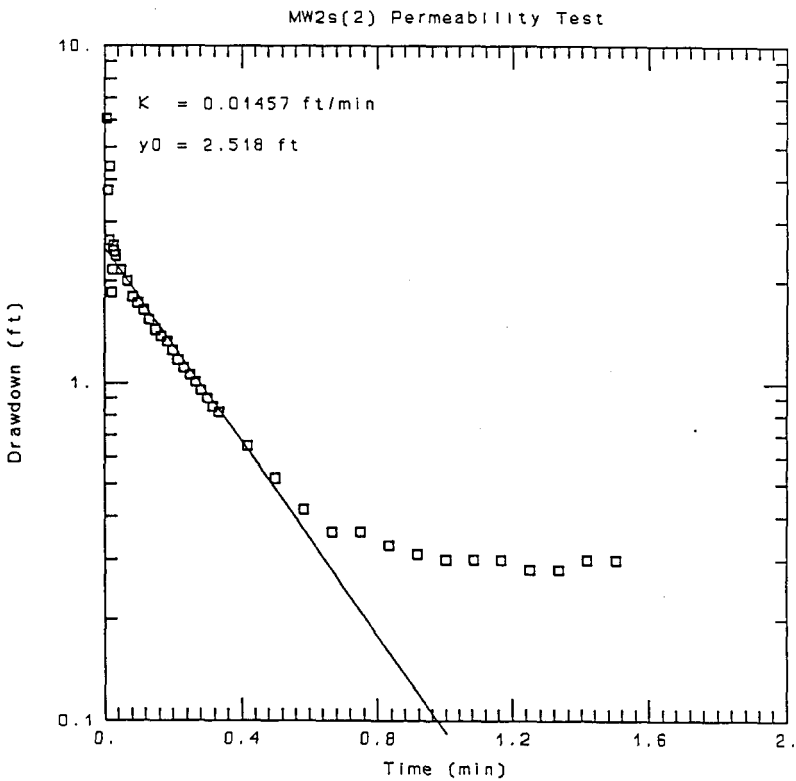
MW-252

0.00E+000	2.518E+000	2.000E+000	3.344E-003

TYPE CURVE DATA

K = 1.45656E-002
y0 = 2.51768E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.00E+000	2.518E+000	2.000E+000	3.344E-003		


MW2s(2) Permeability Test
K = 0.01457 ft/min
y0 = 2.518 ft
10.
1.
0.1
0.
0.4
0.8
1.2
1.6
2.
Drawdown (ft)
Time (min)

MW2S(3)

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

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<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

TYPE CURVE DATA

K = 2.96393E-002
y0 = 2.85350E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

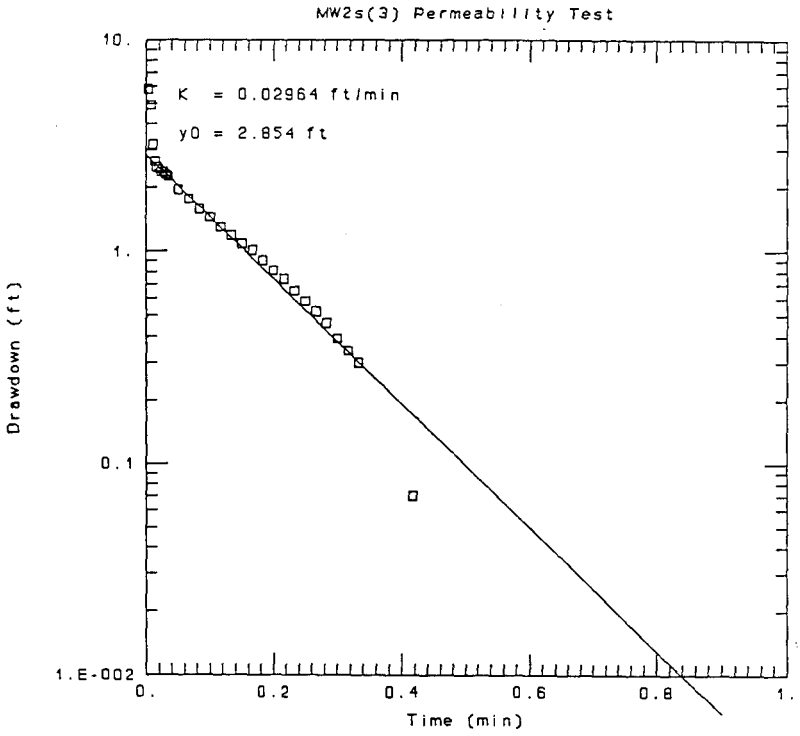
PW 2563

0.000E+000	2.854E+000	1.000E+000	3.376E-003

TYPE CURVE DATA

K = 2.96393E-002
y0 = 2.85350E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	2.854E+000	1.000E+000	3.376E-003		


MW2s(3) Permeability Test
K = 0.02964 ft/min
y0 = 2.854 ft
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.2
0.4
0.6
0.8
1.
Time (min)

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S

12/11/90 11:23:08

PROBLEM DEFINITION

Problem title: MW2d Permeability Test

Knowns and Constants:
- No. of data points............... 31
- Radius of well casing............ 0.083
- Radius of well................... 0.083
- Aquifer saturated thickness...... 20
- Well screen length............... 10
- Static height of water in well... 53.52
- Log(Re/Rw)....................... 4.737

ESTIMATION RESULTS

Analytical method: Bouwer and Rice (unconfined aquifer slug test)

PARAMETER ESTIMATES

	Estimate		Std. Error
K =	1.2778E-002	+/-	1.1554E-004
y0 =	1.0254E+001	+/-	4.5354E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

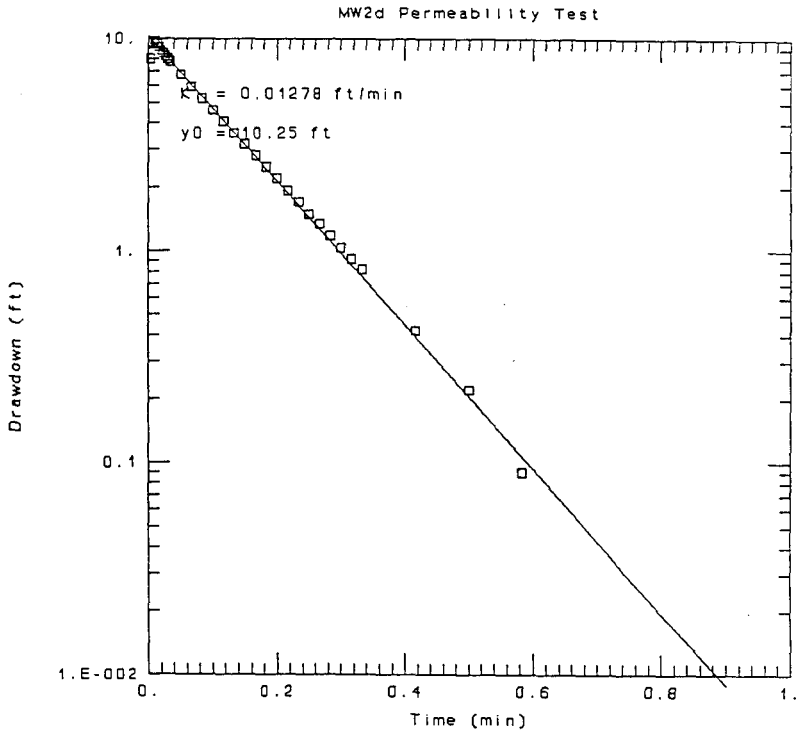
Weighted Residual Statistics:
- Number of residuals............... 29
- Number of estimated parameters.... 2
- Degrees of freedom................ 27
- Residual mean..................... 0.01176
- Residual standard deviation....... 0.09377
- Residual variance................. 0.008794

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0099	9.72	9.4886	0.23138	1
0.0133	9.44	9.2393	0.2007	1
0.0166	9.09	9.0036	0.08642	1
0.02	8.75	8.767	-0.017006	1
0.0233	8.5	8.5433	-0.043335	1
0.0266	8.24	8.3254	-0.085371	1
0.03	8.02	8.1066	-0.086617	1
0.0333	7.8	7.8998	-0.099795	1

MW-2D

0.05	6.78	6.9313	-0.15133	1
0.0666	5.94	6.0864	-0.14635	1
0.0833	5.22	5.3402	-0.1202	1
0.1	4.6	4.6855	-0.085527	1
0.1166	4.08	4.1143	-0.03433	1
0.1333	3.6	3.6099	-0.0099384	1
0.15	3.19	3.1674	0.022618	1
0.1666	2.82	2.7813	0.038743	1
0.1833	2.49	2.4403	0.049708	1
0.2	2.2	2.1411	0.058873	1
0.2166	1.93	1.8801	0.049891	1
0.2333	1.71	1.6496	0.060381	1
0.25	1.5	1.4474	0.052614	1
0.2666	1.35	1.2709	0.07906	1
0.2833	1.19	1.1151	0.074869	1
0.3	1.04	0.97842	0.061578	1
0.3166	0.92	0.85915	0.060854	1
0.3333	0.82	0.75382	0.06618	1
0.4167	0.42	0.39229	0.027707	1
0.5	0.22	0.20431	0.015688	1
0.5833	0.09	0.10641	-0.016409	1


MW2d Permeability Test
K = 0.01278 ft/min
y0 = 10.25 ft
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.2
0.4
0.6
0.8
1.
Time (min)

mw35

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

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<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

'PE CURVE DATA

K = 4.63841E-002
y0 = 1.60325E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

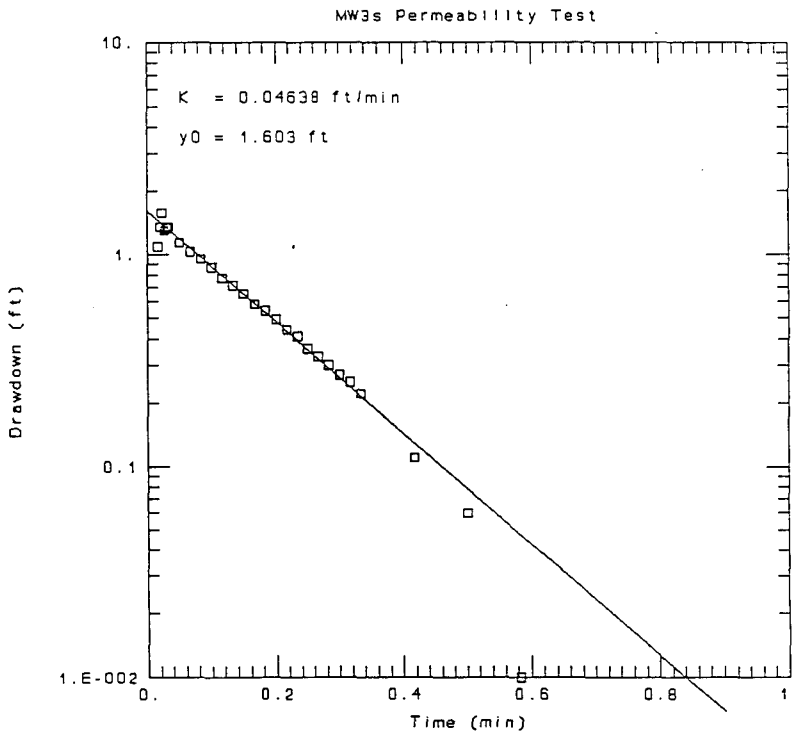
MW35

0.000E+000	1.603E+000	1.000E+000	3.762E-003

TYPE CURVE DATA

K = 4.63841E-002
y0 = 1.60325E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	1.603E+000	1.000E+000	3.762E-003		


MW3s Permeability Test
K = 0.04638 ft/min
y0 = 1.603 ft
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.2
0.4
0.6
0.8
1.
Time (min)

MW35(2)

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

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<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

TYPE CURVE DATA

K = 1.04492E-002
y0 = 1.56225E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

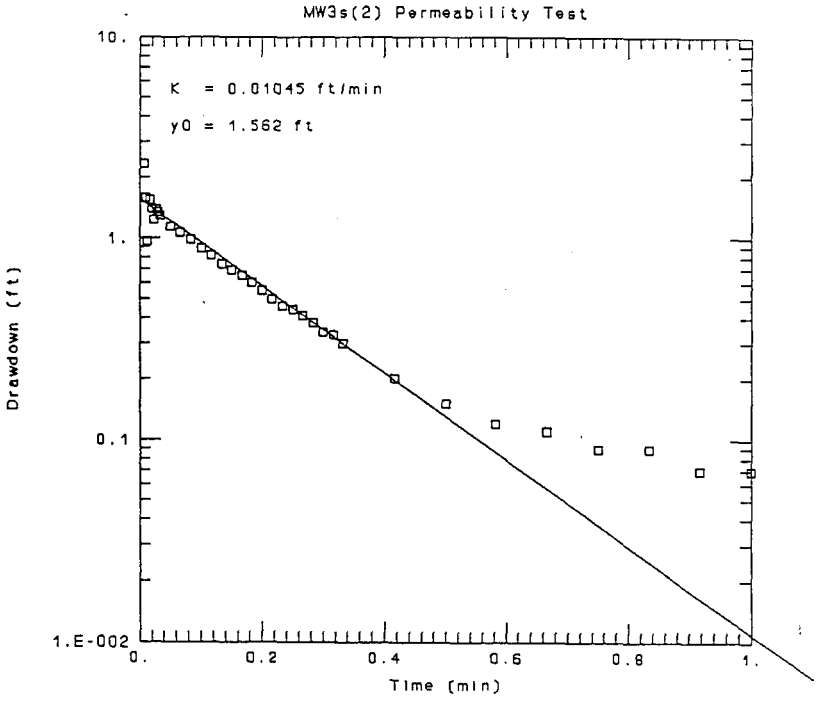
mw 35(2)

0..00E+000 1.562E+000 1.000E+000 1.087E-002

T' 'E CURVE DATA

K = 1.04492E-002
y0 = 1.56225E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.J00E+000	1.562E+000	1.000E+000	1.087E-002		


MW3s(2) Permeability Test
K = 0.01045 ft/min
y0 = 1.562 ft
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.2
0.4
0.6
0.8
1.
Time (min)

mw 4S

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

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..PE CURVE DATA

K = 1.54546E-003
y0 = 1.80926E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

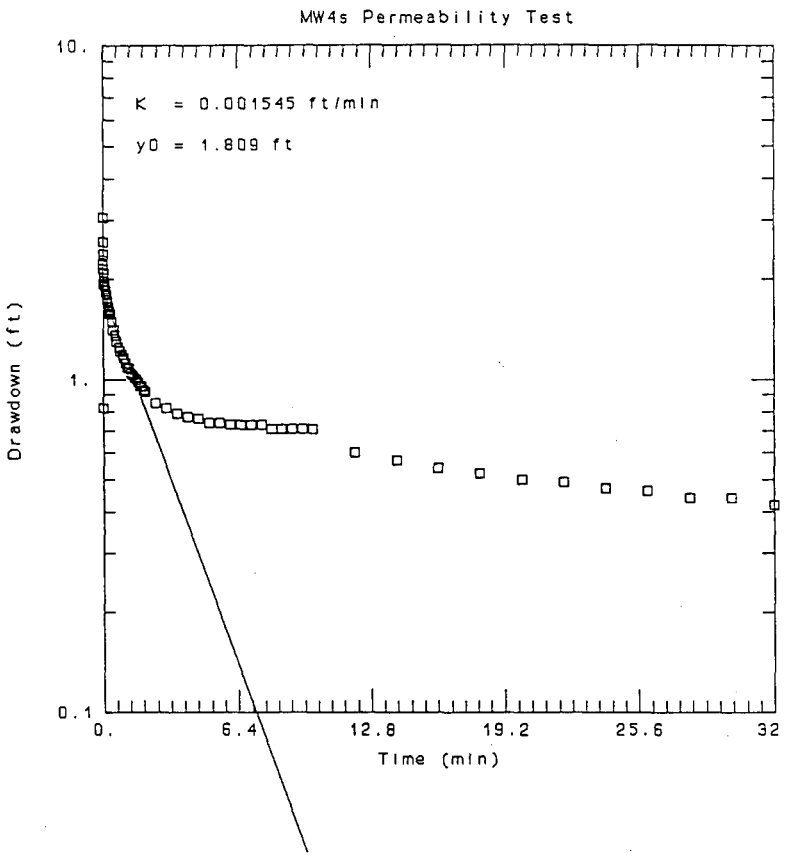
MW4S

0.000E+000 1.809E+000 3.200E+001 4.611E-006

TYPE CURVE DATA

K = 1.54546E-003
y0 = 1.80926E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	1.809E+000	3.200E+001	4.611E-006		


MW4s Permeability Test
K = 0.001545 ft/min
y0 = 1.809 ft
10.
1.
0.1
Drawdown (ft)
0.
6.4
12.8
19.2
25.6
32.
Time (min)

MW-4D

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<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 1.37019E-003
y0 = 3.33734E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

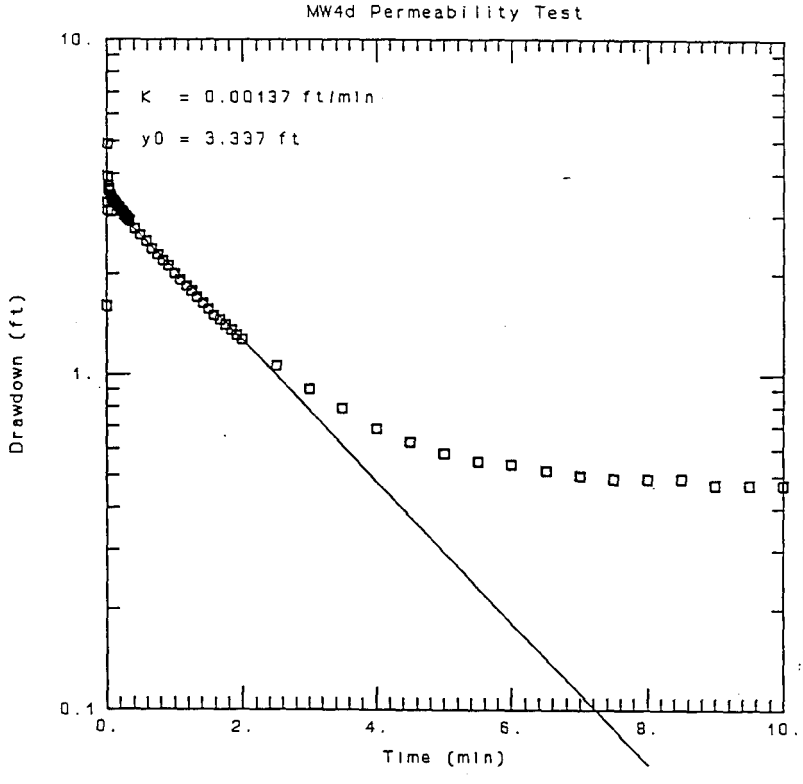
MW-4D

.000E+000 3.337E+000 1.000E+001 2.593E-002

'Y : CURVE DATA

K = 1.37019E-003
y0 = 3.33734E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
).000E+000	3.337E+000	1.000E+001	2.593E-002		


MW4d Permeability Test
K = 0.00137 ft/min
y0 = 3.337 ft
Drawdown (ft)
10.
1.
0.1
0.
2.
4.
6.
8.
10.
Time (min)

MW-55L

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<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

/PE CURVE DATA

K = 1.76093E-002
y0 = 1.24451E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

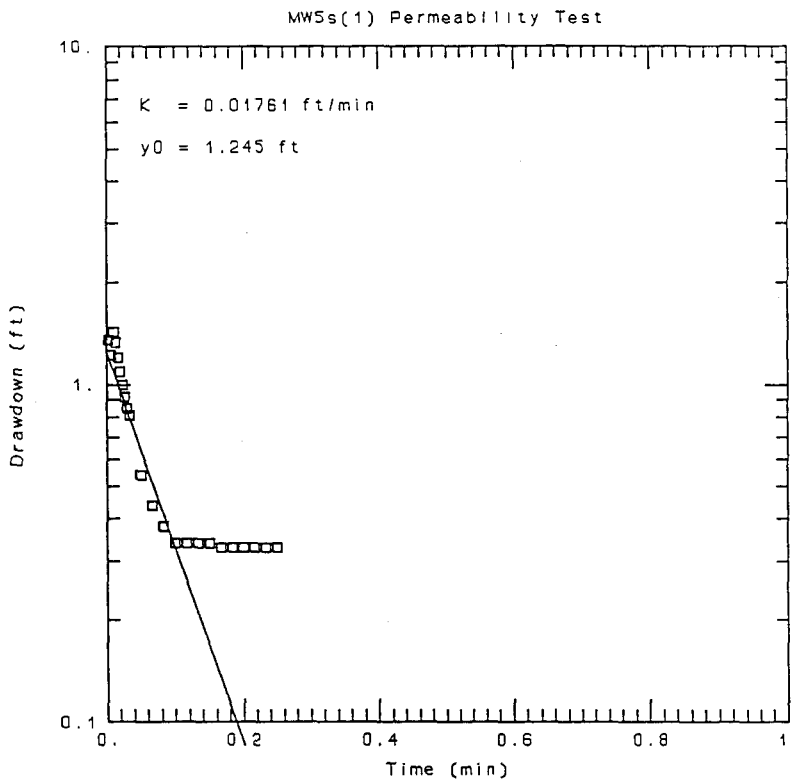
MW-551

0.000E+000 1.245E+000 1.000E+000 1.875E-006

TYPE CURVE DATA

K = 1.76093E-002
y0 = 1.24451E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	1.245E+000	1.000E+000	1.875E-006		


MW5s(1) Permeability Test
K = 0.01761 ft/min
y0 = 1.245 ft
10.
1.
0.1
Drawdown (ft)
0.
0.2
0.4
0.6
0.8
1.
Time (min)

MW-5D

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<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

TYPE CURVE DATA

K = 9.62564E-003
y0 = 4.16192E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

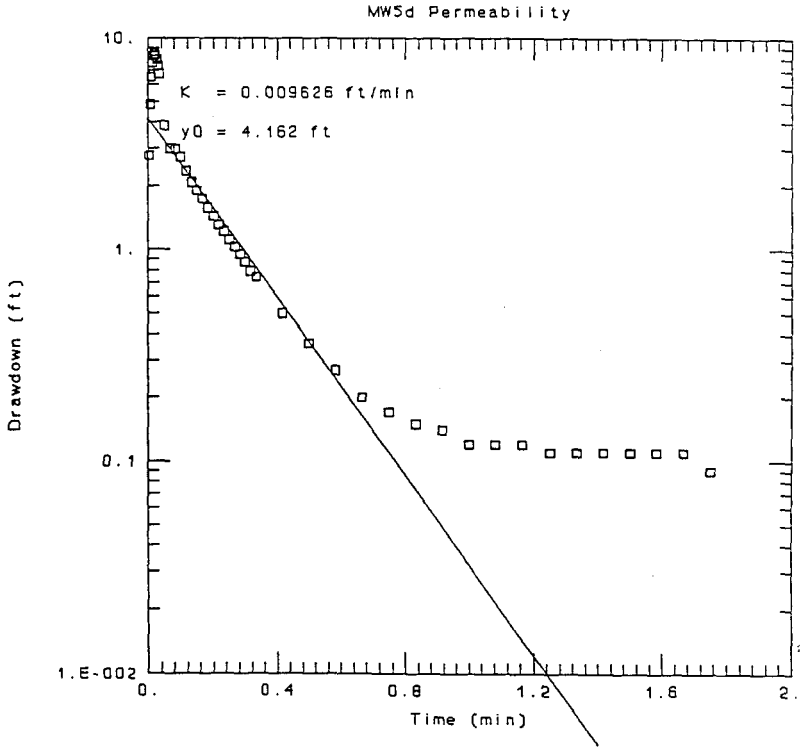
MW-5D

0 100E+000 4.162E+000 2.000E+000 2.500E-004

T E CURVE DATA

K = 9.62564E-003
y0 = 4.16192E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0 000E+000	4.162E+000	2.000E+000	2.500E-004		


MW5d Permeability
K = 0.009626 ft/min
y0 = 4.162 ft
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.4
0.8
1.2
1.6
2.
Time (min)

MW65

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

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<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

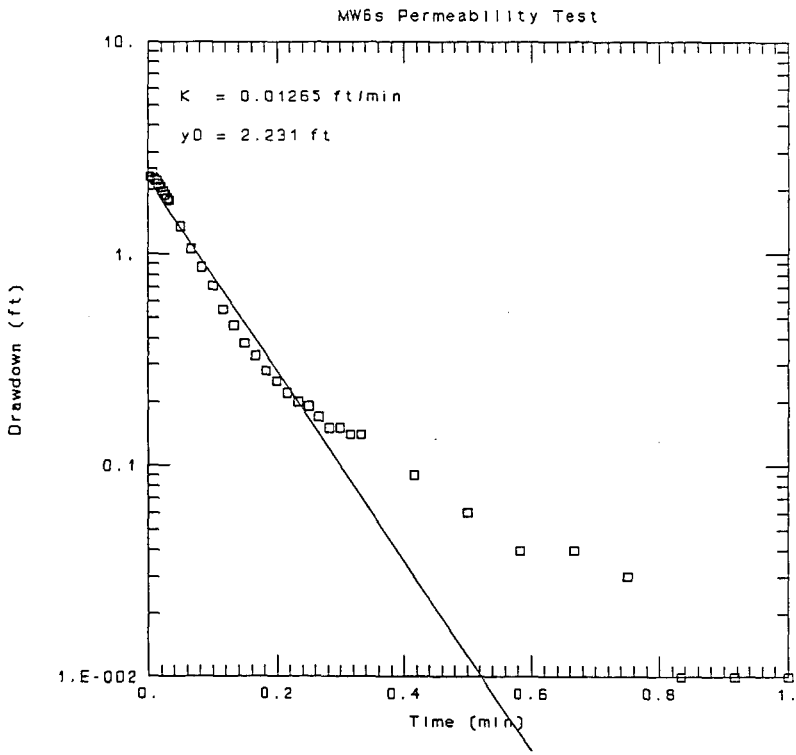
YPE CURVE DATA

K = 1.26486E-002
y0 = 2.23068E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown

MW65

0.000E+000 2.231E+000 1.000E+000 7.137E-005


MW6s Permeability Test
K = 0.01265 ft/min
y0 = 2.231 ft
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.2
0.4
0.6
0.8
1.
Time (min)

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<>>

A Q T E S O L V   R E S U L T S

12/11/90 10:36:45

PROBLEM DEFINITION

Problem title: MW6d Permeability Test

Knowns and Constants:
- No. of data points............... 47
- Radius of well casing............ 0.083
- Radius of well................... 0.083
- Aquifer saturated thickness...... 18
- Well screen length............... 10
- Static height of water in well... 33.32
- Log(Re/Rw)....................... 4.453

ESTIMATION RESULTS

Analytical method: Bouwer and Rice (unconfined aquifer slug test)

PARAMETER ESTIMATES

	Estimate		Std. Error
K =	7.2154E-003	+/-	2.9388E-004
y0 =	8.4214E+000	+/-	1.5647E-001

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

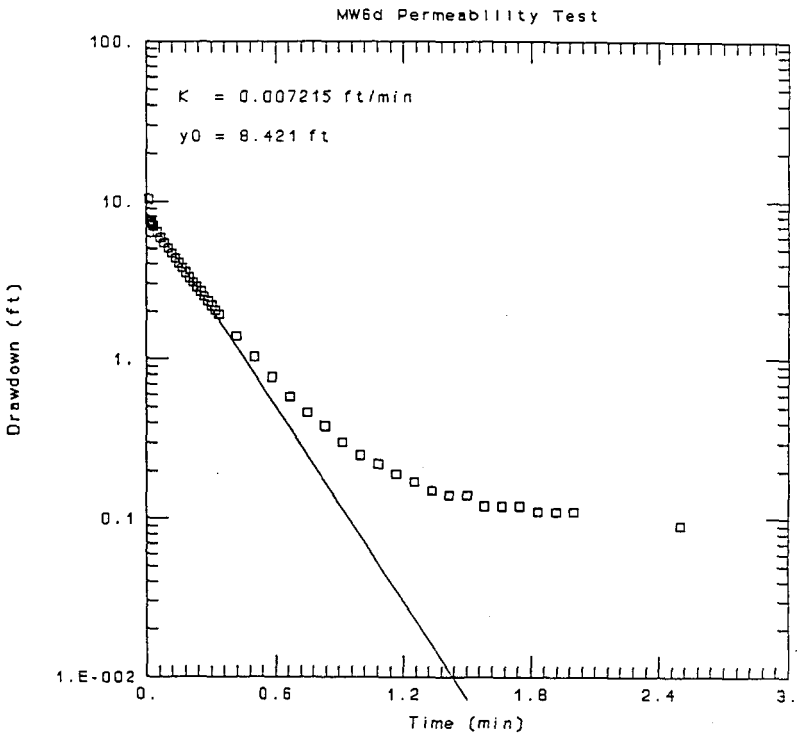
Weighted Residual Statistics:
- Number of residuals............... 47
- Number of estimated parameters.... 2
- Degrees of freedom................ 45
- Residual mean..................... 0.06571
- Residual standard deviation....... 0.385
- Residual variance................. 0.1482

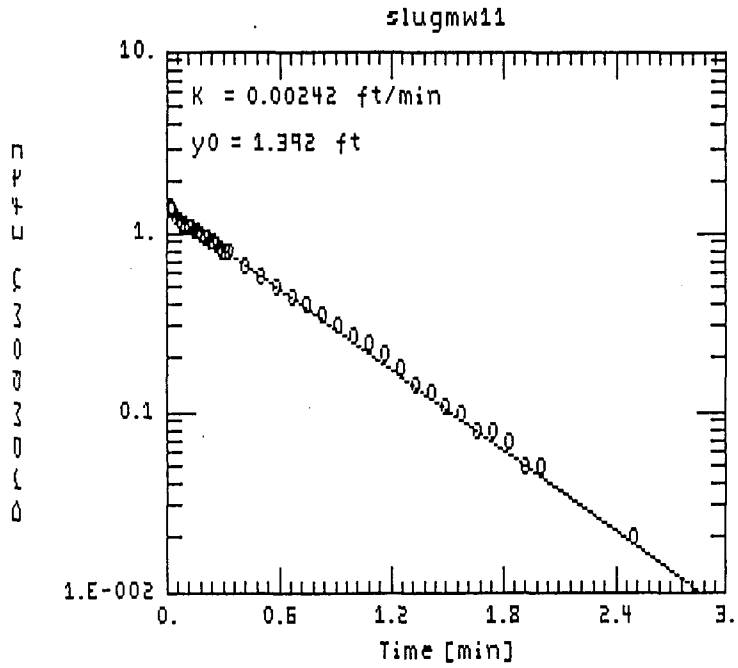
Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0099	10.34	8.0382	2.3018	1
0.0133	7.5	7.9106	-0.41065	1
0.0166	7.61	7.7888	-0.1788	1
0.02	7.51	7.6652	-0.15523	1
0.0233	7.34	7.5472	-0.20716	1
0.0266	7.21	7.4309	-0.22092	1
0.03	7.1	7.313	-0.21302	1
0.0333	6.97	7.2004	-0.23038	1

MW 62

0.05	6.38	6.6564	-0.27641	1
0.0666	5.89	6.1564	-0.26643	1
0.0833	5.46	5.6913	-0.23133	1
0.1	5.05	5.2614	-0.21136	1
0.1166	4.68	4.8662	-0.18617	1
0.1333	4.35	4.4985	-0.14854	1
0.15	4.05	4.1587	-0.10869	1
0.1666	3.76	3.8463	-0.086318	1
0.1833	3.51	3.5557	-0.045738	1
0.2	3.27	3.2871	-0.017111	1
0.2166	3.05	3.0402	0.0097917	1
0.2333	2.84	2.8105	0.029472	1
0.25	2.67	2.5982	0.0718	1
0.2666	2.49	2.403	0.086957	1
0.2833	2.32	2.2215	0.098501	1
0.3	2.17	2.0537	0.11633	1
0.3166	2.03	1.8994	0.13059	1
0.3333	1.9	1.7559	0.14408	1
0.4167	1.39	1.1861	0.20387	1
0.5	1.03	0.80161	0.22839	1
0.5833	0.77	0.54175	0.22825	1
0.6667	0.58	0.36595	0.21405	1
0.75	0.46	0.24732	0.21268	1
0.8333	0.38	0.16714	0.21286	1
0.9167	0.3	0.11291	0.18709	1
1	0.25	0.076304	0.1737	1
1.0833	0.22	0.051568	0.16843	1
1.1667	0.19	0.034834	0.15517	1
1.25	0.17	0.023542	0.14646	1
1.3333	0.15	0.01591	0.13409	1
1.4166	0.14	0.010752	0.12925	1
1.5	0.14	0.0072632	0.13274	1
1.5833	0.12	0.0049086	0.11509	1
1.6667	0.12	0.0033158	0.11668	1
1.75	0.12	0.0022409	0.11776	1
1.8333	0.11	0.0015144	0.10849	1
1.9167	0.11	0.001023	0.10898	1
2	0.11	0.00069137	0.10931	1
2.5	0.09	6.581E-005	0.089934	1


MW6d Permeability Test
K = 0.007215 ft/min
y0 = 8.421 ft
100.
10.
1.
0.1
1.E-002
Drawdown (ft)
0.
0.6
1.2
1.8
2.4
3.
Time (min)


slugmw11
K = 0.00242 ft/min
y0 = 1.392 ft
10.
1.
0.1
1.E-002
0.
0.6
1.2
1.8
2.4
3.
Time [min]

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A Q T E S O L V   R E S U L T S

10/29/91 18:1

PROBLEM DEFINITION

Problem title: slugmw11

Knowns and Constants:
   No. of data points............... 44
   Radius of well casing........... 0.08333
   Radius of well.................. 0.175
   Aquifer saturated thickness...... 25
   Well screen length.............. 5.37
   Static height of water in well... 5.37
   Log(Re/Rw)...................... 2.158

ESTIMATION RESULTS

Analytical method: Bouwer and Rice (unconfined aquifer slug test)

PARAMETER ESTIMATES

	Estimate		Std. Error
K =	2.4201E-003	+/-	4.0243E-005
y0 =	1.3921E+000	+/-	9.2658E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

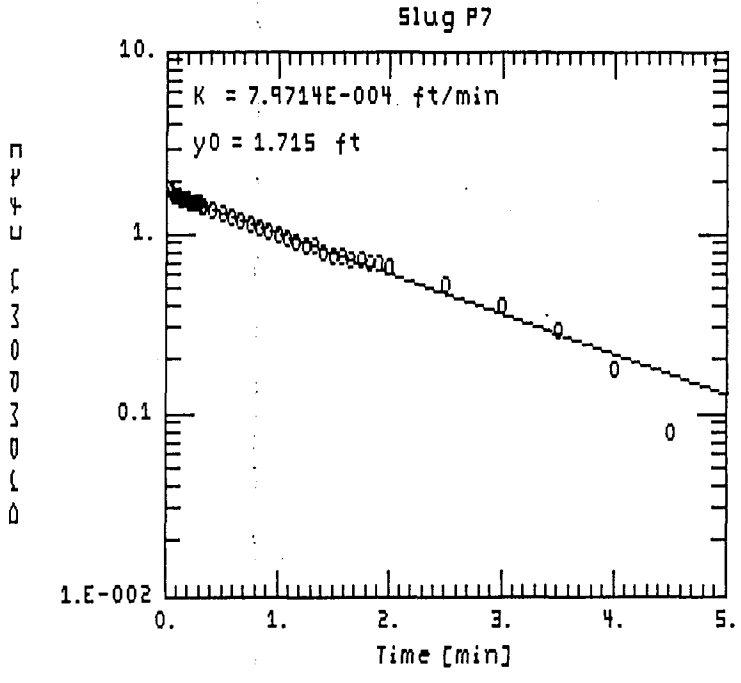
Weighted Residual Statistics:
   Number of residuals.............. 44
   Number of estimated parameters.... 2
   Degrees of freedom.............. 42
   Residual mean................... 0.002842
   Residual standard deviation....... 0.02685
   Residual variance............... 0.0007211

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.02	1.4	1.3447	0.055338	1
0.0233	1.4	1.337	0.063011	1
0.0266	1.38	1.3294	0.05064	1
0.03	1.37	1.3215	0.048455	1
0.0333	1.37	1.314	0.055996	1
0.05	1.26	1.2765	-0.016497	1
0.0666	1.21	1.2403	-0.030275	1
0.0833	1.16	1.2049	-0.044873	1

MW-11

0.1	1.13	1.1705	-0.040481	1
0.1166	1.1	1.1373	-0.037268	1
0.1333	1.07	1.1048	-0.034805	1
0.15	1.05	1.0733	-0.02327	1
0.1666	1.02	1.0428	-0.022815	1
0.1833	0.99	1.013	-0.023049	1
0.2	0.97	0.98413	-0.014132	1
0.2166	0.94	0.95621	-0.016207	1
0.2333	0.91	0.92891	-0.018913	1
0.25	0.89	0.9024	-0.012398	1
0.2666	0.86	0.87679	-0.016792	1
0.2833	0.84	0.85176	-0.011764	1
0.3	0.81	0.82745	-0.017452	1
0.3166	0.8	0.80397	-0.0039721	1
0.3333	0.78	0.78102	-0.0010234	1
0.4167	0.67	0.67586	-0.005857	1
0.5	0.59	0.58495	0.0050472	1
0.5833	0.51	0.50628	0.0037245	1
0.6667	0.45	0.4381	0.011896	1
0.75	0.4	0.37918	0.020822	1
0.8333	0.35	0.32818	0.021822	1
0.9167	0.3	0.28399	0.016012	1
1	0.27	0.24579	0.024209	1
1.0833	0.24	0.21273	0.027268	1
1.1667	0.21	0.18409	0.025913	1
1.25	0.18	0.15933	0.020673	1
1.3333	0.14	0.1379	0.0021028	1
1.4166	0.13	0.11935	0.01065	1
1.5	0.11	0.10328	0.006721	1
1.5833	0.1	0.089388	0.010612	1
1.6667	0.08	0.077352	0.0026485	1
1.75	0.08	0.066948	0.013052	1
1.8333	0.07	0.057943	0.012057	1
1.9167	0.05	0.050141	-0.00014087	1
2	0.05	0.043397	0.0066032	1
2.5	0.02	0.018235	0.0017651	1


Slug P7
K = 7.9714E-004 ft/min
y0 = 1.715 ft
10.
1.
0.1
1.E-002
0.
1.
2.
3.
4.
5.
Time [min]

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A Q T E S O L V   R E S U L T S

10/29/91 18:02:2

PROBLEM DEFINITION

Problem title:. Slug P7

Knowns and Constants:
- No. of data points............... 44
- Radius of well casing............ 0.08333
- Radius of well................... 0.175
- Aquifer saturated thickness...... 25
- Well screen length............... 4.9
- Static height of water in well... 5.95
- Log(Re/Rw)....................... 2.166

ESTIMATION RESULTS

Analytical method: Bouwer and Rice (unconfined aquifer slug test)

PARAMETER ESTIMATES

	Estimate		Std. Error
K =	7.9714E-004	+/-	1.1716E-005
y0 =	1.7146E+000	+/-	8.5833E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

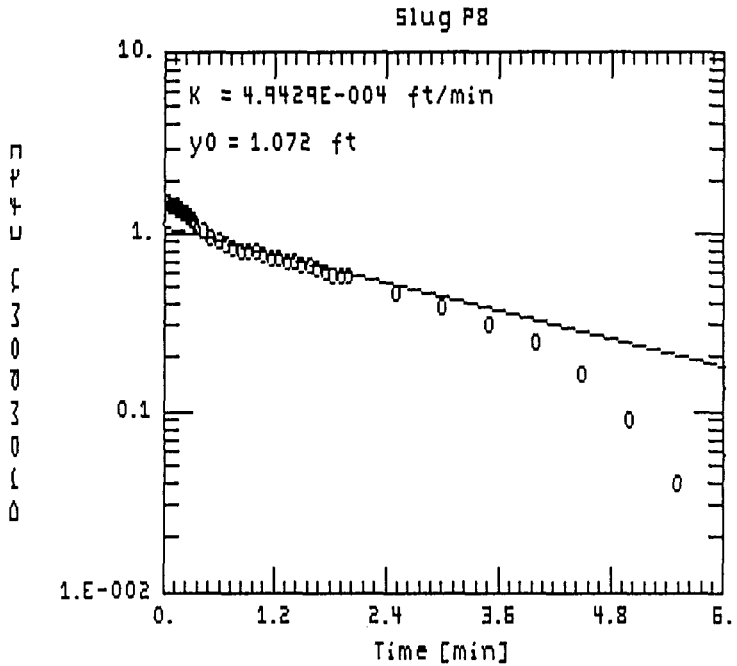
Weighted Residual Statistics:
- Number of residuals............... 44
- Number of estimated parameters.... 2
- Degrees of freedom................ 42
- Residual mean..................... -0.0002732
- Residual standard deviation....... 0.03083
- Residual variance................. 0.0009504

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0333	1.8	1.6852	0.11477	1
0.05	1.7	1.6707	0.029325	1
0.0666	1.66	1.6563	0.0036692	1
0.0833	1.62	1.642	-0.022024	1
0.1	1.62	1.6278	-0.0078414	1
0.1166	1.61	1.6139	-0.0038648	1
0.1333	1.59	1.5999	-0.0099252	1
0.15	1.59	1.5861	0.0038941	1

p.11

0.1666	1.56	1.5725	-0.012488	1
0.1833	1.56	1.5589	0.0010946	1
0.2	1.54	1.5454	-0.0054404	1
0.2166	1.53	1.5322	-0.0021713	1
0.2333	1.51	1.5189	-0.0089373	1
0.25	1.5	1.5058	-0.0058175	1
0.2666	1.48	1.4929	-0.012889	1
0.2833	1.48	1.48	6.1042E-006	1
0.3	1.47	1.4672	0.0027895	1
0.3166	1.45	1.4546	-0.0046131	1
0.3333	1.43	1.442	-0.012049	1
0.4167	1.37	1.3809	-0.010909	1
0.5	1.31	1.3224	-0.01243	1
0.5833	1.26	1.2664	-0.0064278	1
0.6667	1.19	1.2127	-0.022734	1
0.75	1.15	1.1614	-0.011377	1
0.8333	1.1	1.1122	-0.012195	1
0.9167	1.05	1.065	-0.01504	1
1	1	1.0199	-0.019938	1
1.0833	0.96	0.97675	-0.016745	1
1.1667	0.91	0.93533	-0.025333	1
1.25	0.88	0.89572	-0.015724	[illegible]
1.3333	0.85	0.85779	-0.0077914	[illegible]
1.4166	0.8	0.82147	-0.021466	1
1.5	0.77	0.78664	-0.016637	1
1.5833	0.75	0.75332	-0.0033246	1
1.6667	0.73	0.72139	0.0086148	1
1.75	0.72	0.69084	0.029164	1
1.8333	0.69	0.66158	0.02842	1
1.9167	0.69	0.63353	0.056469	1
2	0.65	0.6067	0.043298	1
2.5	0.53	0.46792	0.062075	1
3	0.4	0.36089	0.039108	1
3.5	0.29	0.27834	0.011659	1
4	0.18	0.21467	-0.034674	1
4.5	0.08	0.16557	-0.085569	1


Slug P8
K = 4.9429E-004 ft/min
y0 = 1.072 ft
10.
1.
0.1
1.E-002
0.
1.2
2.4
3.6
4.8
6.
Time [min]

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A Q T E S O L V   R E S U L T S

10/29/91 18:16

PROBLEM DEFINITION

Problem title: Slug P8

Knowns and Constants:
- No. of data points............... 45
- Radius of well casing............ 0.08333
- Radius of well................... 0.175
- Aquifer saturated thickness...... 25
- Well screen length............... 5
- Static height of water in well... 9.58
- Log(Re/Rw)....................... 2.382

ESTIMATION RESULTS

Analytical method: Bouwer and Rice (unconfined aquifer slug test)

PARAMETER ESTIMATES

	Estimate		Std. Error
K =	8.9007E-004	+/-	3.3639E-005
y0 =	1.4357E+000	+/-	1.9349E-002

ANALYSIS OF MODEL RESIDUALS

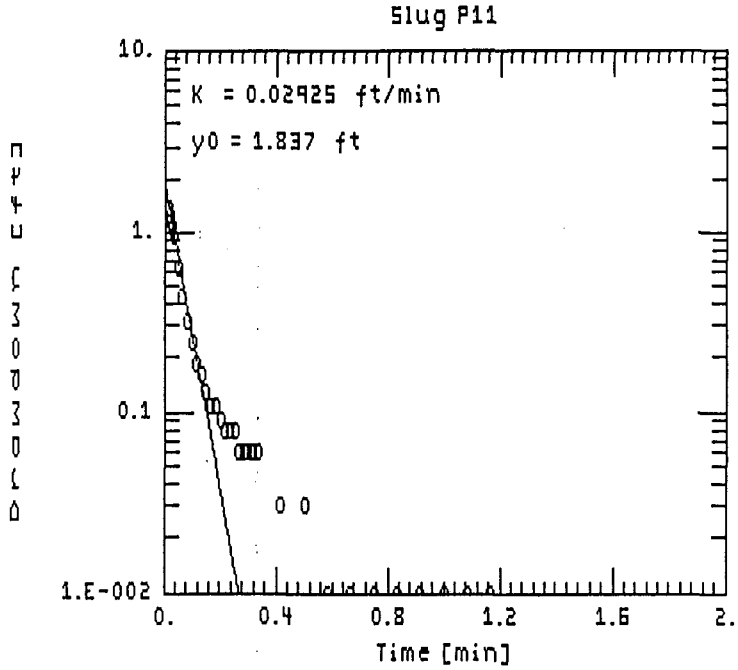
residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
- Number of residuals.............. 45
- Number of estimated parameters.... 2
- Degrees of freedom............... 43
- Residual mean.................... 0.004212
- Residual standard deviation....... 0.06679
- Residual variance................ 0.00446

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.05	1.48	1.3976	0.082416	1
0.0666	1.46	1.3852	0.074847	1
0.0833	1.43	1.3728	0.057241	1
0.1	1.41	1.3605	0.049524	1
0.1166	1.41	1.3484	0.061625	1
0.1333	1.4	1.3363	0.063689	1
0.15	1.38	1.3244	0.055646	1
0.1666	1.36	1.3126	0.047426	1

0.1833	1.35	1.3008	0.04917	1
0.2	1.32	1.2892	0.03081	1
0.2166	1.3	1.2777	0.022276	1
0.2333	1.28	1.2663	0.013709	1
0.25	1.25	1.255	-0.0049609	1
0.2666	1.24	1.2438	-0.0037988	1
0.2833	1.22	1.2327	-0.01267	1
0.3	1.19	1.2216	-0.03164	1
0.3166	1.17	1.2108	-0.040774	1
0.3333	1.16	1.1999	-0.039941	1
0.4167	1.06	1.1473	-0.087271	1
0.5	0.97	1.097	-0.12697	1
0.5833	0.9	1.0489	-0.14888	1
0.6667	0.87	1.0028	-0.13284	1
0.75	0.84	0.95887	-0.11887	1
0.8333	0.81	0.91683	-0.10683	1
0.9167	0.79	0.87659	-0.086591	1
1	0.78	0.83816	-0.058159	1
1.0833	0.76	0.80141	-0.041413	1
1.1667	0.74	0.76624	-0.026236	1
1.25	0.71	0.73264	-0.022642	1
1.3333	0.7	0.70052	-0.00052189	1
1.4166	0.68	0.66981	0.01019	1
1.5	0.66	0.64041	0.019591	1
1.5833	0.65	0.61233	0.037668	1
1.6667	0.63	0.58545	0.044545	1
1.75	0.6	0.55979	0.040213	1
1.8333	0.59	0.53525	0.054755	1
1.9167	0.57	0.51175	0.058249	1
2	0.57	0.48931	0.080685	1
2.5	0.46	0.37387	0.086131	1
3	0.38	0.28566	0.094339	1
3.5	0.3	0.21826	0.081736	1
4	0.24	0.16677	0.073232	1
4.5	0.16	0.12742	0.032578	1
5	0.09	0.097359	-0.0073586	1
5.5	0.04	0.074388	-0.034388	1


Slug P11
K = 0.02925 ft/min
y0 = 1.837 ft
10.
1.
0.1
1.E-002
0.
0.4
0.8
1.2
1.6
2.
Time [min]

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A Q T E S O L V   R E S U L T S

10/29/91 17:52:3

PROBLEM DEFINITION

Problem title: Slug P11

Knowns and Constants:

No. of data points............... 34
Radius of well casing............ 0.08333
Radius of well................... 0.175
Aquifer saturated thickness...... 25
Well screen length............... 5
Static height of water in well... 5.34
Log(Re/Rw)....................... 2.127

ESTIMATION RESULTS

Analytical method: Bouwer and Rice (unconfined aquifer slug test)

PARAMETER ESTIMATES

	Estimate		Std. Error
K =	2.9248E-002	+/-	1.1487E-003
y0 =	1.8373E+000	+/-	4.7240E-002

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals............... 34
Number of estimated parameters.... 2
Degrees of freedom................ 32
Residual mean..................... 0.02118
Residual standard deviation....... 0.03848
Residual variance................. 0.00148

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0166	1.35	1.3225	0.027487	1
0.02	1.24	1.2364	0.0036059	1
0.0233	1.16	1.1582	0.0018254	1
0.0266	1.1	1.0849	0.015096	1
0.03	1.02	1.0143	0.0057426	1
0.0333	0.94	0.95009	-0.010091	1
0.05	0.63	0.68254	-0.052544	1
0.0666	0.44	0.49131	-0.051311	1

0.0833	0.32	0.35296	-0.032957	1
0.1	0.24	0.25356	-0.013564	1
0.1166	0.19	0.18252	0.0074791	1
0.1333	0.16	0.13112	0.028877	1
0.15	0.13	0.094198	0.035802	1
0.1666	0.11	0.067806	0.042194	1
0.1833	0.11	0.048712	0.061288	1
0.2	0.09	0.034994	0.055006	1
0.2166	0.08	0.02519	0.05481	1
0.2333	0.08	0.018096	0.061904	1
0.25	0.08	0.013	0.067	1
0.2666	0.06	0.009358	0.050642	1
0.2833	0.06	0.0067227	0.053277	1
0.3	0.06	0.0048296	0.05517	1
0.3166	0.06	0.0034765	0.056524	1
0.3333	0.06	0.0024975	0.057503	1
0.4167	0.03	0.00047884	0.029521	1
0.5	0.03	9.1989E-005	0.029908	1
0.5833	0.01	1.7672E-005	0.0099823	1
0.6667	0.01	3.3882E-006	0.0099966	1
0.75	0.01	6.5091E-007	0.0099993	1
0.8333	0.01	1.2504E-007	0.0099999	1
0.9167	0.01	2.3975E-008	0.01	1
1	0.01	4.6058E-009	0.01	1
1.0833	0.01	8.8481E-010	0.01	1
1.1667	0.01	1.6964E-010	0.01	1

F

APPENDIX F-1

LEACHATE WELLS

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: IND MTL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-LLFB01-01 08/08/90		WK-LLFB07-02 02/07/91		WK-LLW01-01 08/08/90		WK-LLW01-02 02/08/91		WK-LLW01-91 08/08/90	
Aluminum (UG/L)	50.	U/	50.	U/	283000.	/	95400.	/	170000.	/
Antimony (UG/L)	50.	UN/R	5.	UN/R	50.	UN/R	5.	UN/R	50.	UN/R
Arsenic (UG/L)	2.	UN/R	2.	US/	68.8	NS/J	73.7	S/	24.	NS/J
Barium (UG/L)	10.	U/	10.	U/	2600.	/	855.	/	2450.	/
Beryllium (UG/L)	5.	U/	5.	U/	17.	/	5.	/	12.	/
Cadmium (UG/L)	5.	UN/	5.	U/	36.	N/J	6.7	/	35.	N/J
Calcium (UG/L)	1000.	U/	1000.	U/	3020000.	/	993000.	/	2110000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	1100.	/	306.	/	676.	/
Cobalt (UG/L)	10.	U/	10.	U/	415.	/	95.	/	251.	/
Copper (UG/L)	10.	U/	10.	U/	3070.	/	1080.	/	1990.	/
Iron (UG/L)	20.	U/	192.	/	854000.	/	263000.	/	572000.	/
Lead (UG/L)	3.	U/	3.	U/	2030.	/	496.	S/	1220.	/
Magnesium (UG/L)	1000.	U/	1000.	U/	1470000.	/	456000.	/	945000.	/
Manganese (UG/L)	10.	U/	15.	U/	18400.	/	5400.	/	15800.	/
Mercury (UG/L)	0.2	U/	0.2	U/	5.3	/	2.2	/	3.2	/
Nickel (UG/L)	20.	U/	20.	U/	3090.	/	1070.	/	2040.	/
Potassium (UG/L)	100.	U/	100.	U/	62800.	/	23200.	/	47300.	/
Selenium (UG/L)	2.	UN/UJ	2.	US/	20.6	NS/J	20.	US/	10.	NS/J
Silver (UG/L)	10.	UN/UJ	10.	U*/	23.	N/J	20.	*/	17.	N/J
Sodium (UG/L)	1000.	UN/	1000.	U/	18700.	N/J	13000.	/	14600.	N/J
Thallium (UG/L)	3.	UNS/UJ	3.	U/	15.3	NS/J	8.2	KS/	12.9	NS/J
Vanadium (UG/L)	50.	U/	50.	U/	1320.	/	349.	/	928.	/
Zinc (UG/L)	23.	/	10.	U/	31100.	/	13400.	/	20300.	/
Cyanide (UG/L)	10.	U/	10.	U/	60.	/	10.	U/	37.	/
Alkalinity, Total (MG/L)	5.	U/	5.	U/	630.	/J	585.	/	643.	/J
Chloride (MG/L)	1.	U/	1.	U/	8.	/	11.	/	9.	/
Chemical Oxygen Demand (MG/L)	20.	U/	20.	U/	2820.	/	38.	/	3440.	/
Nitrate+Nitrite Nitrogen (MG/L)	0.06	*/	0.07	/	0.26	*/U	0.02	U/	0.17	*/U
Nitrogen, Ammonia (MG/L)	0.1	U/	0.12	/	15.5	/	14.2	/	17.4	/
Nitrogen, Total Kjeldahl (MG/L)	0.1	U/UJ	0.21	/	54.1	/J	19.8	/	60.	/J
Phosphorus, Total (MG/L)	0.02	U/UJ	0.02	U/	10.	/J	0.58	/	10.4	/J
Sulfate (MG/L)	5.	U/	5.	UN/	29.	/	53.	N/J	31.	/
Total Dissolved Solids (MG/L)	20.	U/	20.	U/	612.	/	608.	/	604.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: IND MTL

Parameter	WK-LLW02-01 08/08/90		WK-LLW02-02 02/07/91		WK-LLW02-92 02/07/91		WK-LLW03-01 08/08/90		WK-LLW03-02 02/08/91	
Aluminum (UG/L)	22800.	/	54500.	/	54800.	/	190000.	/	94500.	/
Antimony (UG/L)	50.	UN/R	5.	UN/R	5.	UN/R	50.	UN/R	30.	KN/J
Arsenic (UG/L)	55.5	N/J	88.8	S/	89.5	S/	50.	UN/R	102.	S/
Barium (UG/L)	810.	/	1250.	/	1360.	/	10800.	/	5900.	/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/	9.	/	5.5	/
Cadmium (UG/L)	5.	UN/	6.3	/	8.2	/	333.	N/J	121.	/
Calcium (UG/L)	476000.	/	768000.	/	913000.	/	3080000.	/	1240000.	/
Chromium, total (UG/L)	86.	/	153.	/	151.	/	1400.	/	799.	/
Cobalt (UG/L)	60.	/	66.	/	62.	/	227.	/	79.	/
Copper (UG/L)	497.	/	1030.	/	972.	/	10800.	/	7120.	/
Iron (UG/L)	262000.	/	485000.	/	501000.	/	946000.	/	454000.	/
Lead (UG/L)	150.	/	330.	S/	429.	S/	18000.	/	12900.	S/
Magnesium (UG/L)	174000.	/	332000.	/	374000.	/	427000.	/	337000.	/
Manganese (UG/L)	7980.	/	15000.	/	16900.	/	26500.	/	13000.	/
Mercury (UG/L)	0.28	/	1.2	/	0.95	/	5.7	/	3.7	/
Nickel (UG/L)	1950.	/	4390.	/	4300.	/	15000.	/	8090.	/
Potassium (UG/L)	28000.	/	26500.	/	26100.	/	177000.	/	135000.	/
Selenium (UG/L)	10.	UNS/UJ	2.	US/	2.	US/	13.5	NS/J	20.	US/
Silver (UG/L)	10.	UN/UJ	10.	U*/	10.	U*/	58.	N/J	29.5	*/
Sodium (UG/L)	22700.	N/J	32100.	/	33300.	/	205000.	N/J	215000.	/
Thallium (UG/L)	5.	KNS/J	6.7	KS/	9.	KS/	8.8	KNS/J	4.4	KS/
Vanadium (UG/L)	108.	/	108.	/	94.	/	503.	/	275.	/
Zinc (UG/L)	8140.	/	17100.	/	16800.	/	185000.	/	93600.	/
Cyanide (UG/L)	20.	/	18.	/	33.	/	50.	/	42.	/
Alkalinity, Total (MG/L)	907.	/J	973.	/	934.	/	1510.	/J	1900.	/
Chloride (MG/L)	29.	/	38.	/	34.	/	156.	/	159.	/
Chemical Oxygen Demand (MG/L)	381.	/	125.	/	117.	/	6970.	/	197.	/
Nitrate+Nitrite Nitrogen (MG/L)	0.18	*/U	0.04	/U	0.02	U/	0.04	U*/	0.02	U/
Nitrogen, Ammonia (MG/L)	24.9	/	25.2	/	28.4	/	27.1	/	51.8	/
Nitrogen, Total Kjeldahl (MG/L)	21.7	/J	36.5	/	41.	/	161.	/J	169.	/
Phosphorus, Total (MG/L)	2.34	/J	5.96	/	6.54	/	23.2	/J	16.1	/
Sulfate (MG/L)	10.	/	43.	N/J	33.	N/J	37.	/	35.	N/J
Total Dissolved Solids (MG/L)	924.	/	918.	/	904.	/	1630.	/	1570.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: IND MTL

Parameter	WK-LLW04-01 08/08/90		WK-LLW04-02 02/08/91		WK-LLW05-01 08/08/90		WK-LLW05-02 02/08/91	
Aluminum (UG/L)	174000.	/	97000.	/	167000.	/	358000.	/
Antimony (UG/L)	50.	UN/R	5.	UN/R	50.	UN/R	5.	UNS/R
Arsenic (UG/L)	50.	UN/R	76.5	S/	2.	UN/R	2.9	KS/
Barium (UG/L)	2070.	/	1130.	/	4420.	/	2070.	/
Beryllium (UG/L)	9.	/	5.	/	10.	/	23.5	/
Cadmium (UG/L)	21.	N/J	5.	U/	19.	N/J	32.	/
Calcium (UG/L)	1700000.	/	919000.	/	3460000.	/	4390000.	/
Chromium, total (UG/L)	548.	/	250.	/	629.	/	1200.	/
Cobalt (UG/L)	255.	/	117.	/	261.	/	546.	/
Copper (UG/L)	2160.	/	1060.	/	1900.	/	4480.	/
Iron (UG/L)	742000.	/	350000.	/	773000.	/	1560000.	/
Lead (UG/L)	1900.	/	982.	S/	950.	/	3.	U/
Magnesium (UG/L)	881000.	/	405000.	/	654000.	/	1260000.	/
Manganese (UG/L)	15500.	/	6330.	/	19000.	/	31200.	/
Mercury (UG/L)	2.2	/	1.4	/	1.8	/	3.8	/
Nickel (UG/L)	1900.	/	846.	/	3760.	/	5770.	/
Potassium (UG/L)	53000.	/	27300.	/	64300.	/	83400.	/
Selenium (UG/L)	10.	UNS/UJ	3.7	KS/	15.4	NS/J	9.5	S/
Silver (UG/L)	10.	UN/UJ	10.	U*/	12.	N/J	10.	U*/
Sodium (UG/L)	108000.	N/J	115000.	/	66200.	N/J	93500.	/
Thallium (UG/L)	12.4	NS/J	4.2	KS/	12.5	NS/J	5.3	KS/
Vanadium (UG/L)	676.	/	283.	/	576.	/	1180.	/
Zinc (UG/L)	18700.	/	8700.	/	8340.	/	16800.	/
Cyanide (UG/L)	25.	/	10.	U/	58.	/	29.	/
Alkalinity, Total (MG/L)	876.	/J	951.	/	859.	/J	1100.	/
Chloride (MG/L)	121.	/	127.	/	40.	/	34.	/
Chemical Oxygen Demand (MG/L)	2260.	/	99.	/	7830.	/	150.	/
Nitrate+Nitrite Nitrogen (MG/L)	0.2	*/U	0.02	U/	0.15	*/U	0.02	U/
Nitrogen, Ammonia (MG/L)	7.55	/	3.46	/	31.9	/	32.3	/
Nitrogen, Total Kjeldahl (MG/L)	26.2	/J	19.6	/	124.	/J	120.	/
Phosphorus, Total (MG/L)	7.48	/J	5.65	/	12.2	/J	9.4	/
Sulfate (MG/L)	29.	/	31.	N/J	9.	/	34.	N/J
Total Dissolved Solids (MG/L)	1010.	/	1060.	/	904.	/	1052.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: PPCB
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-LLFB01-01 08/08/90		WK-LLW01-01 08/08/90		WK-LLW01-91 08/08/90		WK-LLW02-01 08/08/90		WK-LLW03-01 08/08/90	
alpha-BHC (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
beta-BHC (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
delta-BHC (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
gamma-BHC (Lindane) (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
Heptachlor (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
Aldrin (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
Heptachlor epoxide (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
Endosulfan I (UG/L)	0.05	U/	0.05	U/	0.05	U/	0.05	U/	0.05	U/
Dieldrin (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
4,4'-DDE (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Endrin (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Endosulfan II (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
4,4'-DDD (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Endosulfan sulfate (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
4,4'-DDT (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Methoxychlor (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Endrin ketone (UG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
alpha-Chlordane (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
gamma-Chlordane (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Toxaphene (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/
Aroclor-1016 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1221 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1232 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1242 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1248 (UG/L)	0.5	U/	0.5	U/	0.5	U/	0.5	U/	0.5	U/
Aroclor-1254 (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/
Aroclor-1260 (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: PPCB

Parameter	WK-LLW04-01 08/08/90		WK-LLW05-01 08/08/90	
alpha-BHC (UG/L)	0.05	U/	0.05	U/
beta-BHC (UG/L)	0.05	U/	0.05	U/
delta-BHC (UG/L)	0.05	U/	0.05	U/
gamma-BHC (Lindane) (UG/L)	0.05	U/	0.05	U/
Heptachlor (UG/L)	0.05	U/	0.05	U/
Aldrin (UG/L)	0.05	U/	0.05	U/
Heptachlor epoxide (UG/L)	0.05	U/	0.05	U/
Endosulfan I (UG/L)	0.05	U/	0.05	U/
Dieldrin (UG/L)	0.1	U/	0.1	U/
4,4'-DDE (UG/L)	0.1	U/	0.1	U/
Endrin (UG/L)	0.1	U/	0.1	U/
Endosulfan II (UG/L)	0.1	U/	0.1	U/
4,4'-DDD (UG/L)	0.1	U/	0.1	U/
Endosulfan sulfate (UG/L)	0.1	U/	0.1	U/
4,4'-DDT (UG/L)	0.1	U/	0.1	U/
Methoxychlor (UG/L)	0.5	U/	0.5	U/
Endrin ketone (UG/L)	0.1	U/	0.1	U/
alpha-Chlordane (UG/L)	0.5	U/	0.5	U/
gamma-Chlordane (UG/L)	0.5	U/	0.5	U/
Toxaphene (UG/L)	1.	U/	1.	U/
Aroclor-1016 (UG/L)	0.5	U/	0.5	U/
Aroclor-1221 (UG/L)	0.5	U/	0.5	U/
Aroclor-1232 (UG/L)	0.5	U/	0.5	U/
Aroclor-1242 (UG/L)	0.5	U/	0.5	U/
Aroclor-1248 (UG/L)	0.5	U/	0.5	U/
Aroclor-1254 (UG/L)	1.	U/	1.	U/
Aroclor-1260 (UG/L)	1.	U/	1.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-LLFB01-01 08/08/90		WK-LLFB07-02 02/07/91		WK-LLTB02-01 08/08/90		WK-LLTB03-01 08/08/90		WK-LLTB07-02 02/08/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	10.	U/	5.	U/	5.	U/	13.	B/U	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: VOC

Parameter	WK-LLW01-01 08/08/90		WK-LLW01-02 02/08/91		WK-LLW01-91 08/08/90		WK-LLW02-01 08/08/90		WK-LLW02-02 02/07/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	16.	/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	9.	/	11.	/	8.	/	8.	/	9.	/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	1.	J/	5.	U/	1.	J/	1.	J/	5.	U/
Chlorobenzene (UG/L)	3.	J/	8.	/	3.	J/	6.	/	8.	/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	2.	J/	8.	/	2.	J/	5.	/	7.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: VOC

Parameter	WK-LLW02-92 02/07/91		WK-LLW03-01 08/08/90		WK-LLW03-02 02/08/91		WK-LLW04-01 08/08/90		WK-LLW04-02 02/08/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	7.	B/U	5.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	9.	/	3.	J/	3.	J/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	8.	/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	6.	/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: VOC

Parameter	WK-LLW05-01 08/08/90		WK-LLW05-02 02/08/91	
Chloromethane (UG/L)	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/
Benzene (UG/L)	11.	/	14.	/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/
Toluene (UG/L)	2.	J/	5.	U/
Chlorobenzene (UG/L)	8.	/	7.	/
Ethylbenzene (UG/L)	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/
Xylenes (total) (UG/L)	2.	J/	2.	J/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: SVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-LLFB01-01 08/08/90		WK-LLFB07-02 02/07/91		WK-LLW01-01 08/08/90		WK-LLW01-91 08/08/90		WK-LLW02-01 08/08/90	
Phenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
bis(2-Chloroethyl) ether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Chlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
1,3-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
1,4-Dichlorobenzene (UG/L)	10.	U/	20.	U/	2.	J/	10.	U/	2.	J/J
Benzyl Alcohol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
1,2-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Hexachloroethane (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Nitrobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Isophorone (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Nitrophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4-Dimethylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzoic Acid (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4-Dichlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
1,2,4-Trichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Naphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	6.	J/J
4-Chloroaniline (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Hexachlorobutadiene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Chloro-3-methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Methylnaphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Hexachlorocyclopentadiene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4,6-Trichlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4,5-Trichlorophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
2-Chloronaphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
Dimethylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Acenaphthylene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,6-Dinitrotoluene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
3-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
Acenaphthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4-Dinitrophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
4-Nitrophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: SVOC

Parameter	WK-LLW02-02 02/07/91		WK-LLW02-92 02/07/91		WK-LLW03-01 08/08/90		WK-LLW04-01 08/08/90		WK-LLW05-01 08/08/90	
Phenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	6.	J/	8.	J/	10.	U/	10.	U/	2.	J/
Benzyl Alcohol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	2.	J/
N-Nitroso-di-n-dipropylamine (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	100.	U/	100.	U/	54.	B/J	10.	U/	28.	BJ/J
bis(2-Chloroethoxy)methane (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	26.	/	34.	/	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: SVOC

Parameter	WK-LLFB01-01 08/08/90		WK-LLFB07-02 02/07/91		WK-LLW01-01 08/08/90		WK-LLW01-91 08/08/90		WK-LLW02-01 08/08/90	
Dibenzofuran (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
2,4-Dinitrotoluene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Diethylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Chlorophenyl-phenylether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Fluorene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
N-nitrosodiphenylamine (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
4-Bromophenyl-phenylether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Hexachlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Pentachlorophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/R
Phenanthrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Di-n-butylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Butylbenzylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
3,3'-Dichlorobenzidine (UG/L)	20.	U/	40.	U/	20.	U/	20.	U/	20.	U/R
Benzo(a)anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Chrysene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Di-n-octyl Phthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzo(b)fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzo(k)fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzo(a)pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Dibenz(a,h)anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R
Benzo(g,h,i)perylene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/R

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC Type: SVOC

Parameter	WK-LLW02-02 02/07/91		WK-LLW02-92 02/07/91		WK-LLW03-01 08/08/90		WK-LLW04-01 08/08/90		WK-LLW05-01 08/08/90	
Dibenzofuran (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	100.	U/	100.	U/	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	100.	U/	100.	U/	3.	J/	50.	U/	50.	U/
Phenanthrene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	40.	U/	40.	U/	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Di-n-octyl Phthalate (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	20.	U/	20.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC
Generated by: CAW
Date Issued: 10-MAY-91

WK-LLW01-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
4-(Tetramethylbutyl)phenol (UG/L)	10.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, trimethyl- (UG/L)	9.	J/
Dichlorobenzene (UG/L)	3.	J/
Benzene, trimethyl- (UG/L)	3.	J/
1H-indene, dihydro- (UG/L)	7.	J/
Ethyldimethylbenzene (UG/L)	3.	J/
Ethyldimethylbenzene (UG/L)	6.	J/
Benzene, tetramethyl- (UG/L)	3.	J/
Ethyldimethylbenzene (UG/L)	6.	J/
Ethyldimethylbenzene+unknown (UG/L)	8.	J/

WK-LLW01-02 02/08/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, propyl- (UG/L)	4.	J/

WK-LLW01-91 08/08/90

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, trimethyl- (UG/L)	9.	J/
Benzene, propenyl- (UG/L)	7.	J/
Benzene, ethyldimethyl- (UG/L)	6.	J/
Benzene, tetramethyl- (UG/L)	6.	J/
Unknown subst. benzene (UG/L)	9.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC

WK-LLW02-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Trimethylbenzene (UG/L)	14.	J/
Trimethylbenzene (UG/L)	8.	J/
Unknown (UG/L)	14.	J/
Unknown (UG/L)	12.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, trimethyl- (UG/L)	37.	J/
Benzene, trimethyl- (UG/L)	17.	J/
Unknown (UG/L)	16.	J/
Benzene, methylpropyl- (UG/L)	9.	J/
Benzene, ethyldimethyl- (UG/L)	11.	J/
Benzene, ethyldimethyl- (UG/L)	11.	J/
Benzene, tetramethyl- (UG/L)	10.	J/
Unknown (UG/L)	14.	J/
Benzene, tetramethyl- (UG/L)	6.	J/
Naphthalene (UG/L)	17.	J/

WK-LLW02-02 02/07/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	24.	J/JN
Trimethylbenzene (UG/L)	32.	J/JN
2(3H)-benzothiazolone (UG/L)	24.	J/JN
Butoxyethanol phosphate (UG/L)	16.	J/JN

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC

WK-LLW02-92 02/07/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	24.	J/JN
Trimethylbenzene (UG/L)	44.	J/JN
Trimethylbenzene (UG/L)	16.	J/JN
Unknown alkenyl benzene (UG/L)	16.	J/JN
2(3H)-benzothiazolone (UG/L)	28.	J/JN
Ethanol, 2-butoxy-, phosphate (UG/L)	28.	J/JN

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Propyl benzene (UG/L)	8.	J/JN

WK-LLW03-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzamide, N,N-diethyl-3-methy (UG/L)	16.	J/
Hexadecanoic acid (UG/L)	14.	J/
Hexanedioic acid, mono(2-ethyl (UG/L)	8.	J/

WK-LLW03-02 02/08/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	3.	J/

WK-LLW04-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexanoic acid, 2-methyl- (UG/L)	16.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	8.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: LEC

WK-LLW04-02 02/08/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Ethane,1,1'-oxybis- (UG/L)	6.	J/
Unknown (UG/L)	6.	J/

WK-LLW05-01 08/08/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexanoic acid (DOT) (UG/L)	14.	J/
Unknown (UG/L)	14.	J/
Unknown (UG/L)	16.	J/
Trimethylbenzene (UG/L)	8.	J/
Benzamide, N,N-diethyl-3-methy (UG/L)	8.	J/
Phenol, bis(dimethylethyl)-met (UG/L)	48.	J/
Unknown (UG/L)	8.	J/

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Benzene, trimethyl- (UG/L)	14.	J/
Benzene, dichloro- (UG/L)	4.	J/
Unknown subst. benzene (UG/L)	10.	J/
Unknown (UG/L)	6.	J/

APPENDIX F-2

LANDFILL GAS

NOTE FOR APPENDICES F

The following sample identification codes were used during the Woodstock Landfill Remedial Investigation. They are presented in the general order in which they appear in these appendices.

WK	-	Woodstock
WK-L	-	Woodstock Landfill
LW	-	Leachate Well Sample
FB	-	Field Blank
GAS	-	Gas sample from landfill
GW	-	Groundwater Sample
BB	-	Bottle Blank
MW	-	Monitoring Well Sample
S	-	Shallow Well (of two)
D	-	Deep Well (of two)
RE	-	Resampling Event
-01	-	Sampling Round Indication (first round)
-91	-	Duplicate sample (indicated by "9")
BAD	-	Bad Sample, Disqualified due to sampling error
PW	-	Private Well Sample
SD	-	Sediment Sample
SW	-	Surface Water Sample
TP	-	Test Pit Sample
SS	-	Surface Soil Sample

Appendix F

Data Qualifiers, Summary of Unusable Data, Analytical Results

SUMMARY OF DATA QUALIFIER DEFINITIONS

The assessment of data quality is based on laboratory and field quality control (QC) criteria as described in the Quality Assurance Project Plan (QAPP). Data validation was performed on all laboratory analyses.

Laboratory qualified data are flagged by the performing laboratory. Data may be further qualified by Warzyn personnel during the data validation process. Data qualifiers are letter or symbol codes as outlined below. If data are qualified, the qualifiers are presented with results. The data validation qualifiers (DVQ) and laboratory qualifiers (LQ) are presented with the data as separate columns.

LABORATORY QUALIFIER DEFINITIONS

The following qualifiers were used by laboratories performing the various analyses. The qualifiers defined below are presented in the "LQ" column with the associated value.

Laboratory Qualifiers for Organic Analysis

U - Indicates the compound was analyzed for, but was not detected. The sample quantification limit is corrected for dilution and for percent moisture.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria, yet the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.

N - Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds (TICs) where the identification is based on a mass spectral library search. It is applied to all TIC results.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified TCL compound.

E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed. If the dilution of the extract cause any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

P - This flag is used for a pesticide/Aroclor target analyte when there is a greater than 25% difference for the detected concentrations between the two GC columns. The lower of the two values is reported.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

A - This flag indicates that a TIC is a suspected aldol condensation product.

X - X,Y, and Z flags may be designated by the laboratory to properly define the results. For example, X is often applied to semi-volatile data which were calculated manually (as opposed to computer generated) by the laboratory.

Laboratory Qualifiers for Inorganic Analyses

K - This flag is applied to a value greater than or equal to the instrument detection limit (IDL) but less than the Contract Required Detection Limit (CRDL). (Note: the EPA uses "B" for this qualifier. In order to prevent confusion with the qualifier for blank contamination, Warzyn has substituted the inorganic lab qualifier B with the flag K in all data tables.)

U - Indicates element was analyzed for, but was not detected. The value reported is the instrument detection limit value (e.g., 10U).

E - Indicates the value is estimated due to the presence of interference.

S - Indicates the value was determined by the method of standard addition.

M - Indicates duplicate injection precision for furnace analyses was not met.

N - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis is not within control limits.

+ - Indicates the correlation coefficient for for method of standard addition is less than 0.995.

W - Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.

DATA VALIDATION QUALIFIER DEFINITIONS

The following qualifiers were used by Warzyn personnel in the validation of laboratory results. Field QC samples (trip blanks, field blanks, field duplicates) are also evaluated during the data validation process. Validation of organics data was performed using Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses, February 1988. Inorganics data validation was performed based on guidelines in Laboratory Data Validation, Functional Guideline for Evaluating Inorganic Analyses, November 1985.

The data validation process is performed with specific project needs in mind. Data quality objectives and intended data usage as outlined in the Quality Assurance Project Plan were referenced. The data validation qualifiers defined below are presented with the data under the DVQ" column.

Data Validation Qualifiers for Organic Analyses

J - The associated numerical value is an estimated quantity, because quality control criteria were not met and/or because the value was less than the contract required quantitation limit (CRQL). Tentatively identified compounds (TIC) are flagged as estimated (J).

U - Indicates compound was analyzed for, but was not detected. The associated value is the sample quantitation limit. The sample quantitation limit may be elevated, due to contamination detected in laboratory blanks, field blanks, or trip blanks for VOCs.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated quantitation limit.

R - Quality control indicates the data are not usable (compound may or may not be present).

Data Qualifiers for Inorganic Analyses

J - The associated numerical value is an estimated quantity, because quality control criteria were not met, (i.e., out of control (low or high) spike recoveries, interferences in serial dilution and poor correlation coefficients).

R - Quality control indicates that the data are not usable (compound may or may not be present).

U - Indicates compound was analyzed for, but was not detected. The associated value is the sample quantitation limit. The sample quantitation limit may be elevated, due to contamination detected in laboratory blanks, field blanks, or trip blanks for VOCs.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated quantitation limit.

Summary of Data Validation Results for Woodstock Data

The data quality of the Woodstock analytical results is considered acceptable for use in the site investigation, based on the validation procedures referenced above.

Laboratory and data validation qualifiers used with this data can be summarized as follows. Two general types of laboratory qualifiers have been utilized with the Woodstock data:

1. Lab qualifiers alerting the data reviewer that alternative methods of sample analysis or data reduction were utilized (e.g. manual calculation, poor spike recoveries, etc.). These flags allow the data reviewer to closely backcheck the calculations performed by the lab.

1. Lab qualifiers indicating that CLP quality criteria were not met and the usability of the associated data may be limited (i.e., blank contamination, poor spike recoveries, etc.). These data were closely reviewed during the validation process. Based on the EPA guidelines and the final intended data use, the laboratory qualified data is then validation qualified as: acceptable without further qualification (U for nondetect data, or no qualifier for detect data), acceptable with qualification (J), below elevated quantitation limits (for blank contamination), or not usable (R).

The following Woodstock data is qualified (R) and is considered unusable:

Groundwater Samples

Silver - Silver results for the following samples were qualified as unusable due to unacceptable spike recoveries.

WK-GWBB01-01	WK-GWFB01-01	WK-GWFB02-01
WK-GWMW01D-01	WK-GWMW01S-01	WK-GWMW02D-01
WK-GWMW02S-01	WK-GWMW02S-91	WK-GWMW03D-01
WK-GWMW03S-01	WK-GWMW04D-01	WK-GWMW04S-01
WK-GWMW05D-01	WK-GWMW05D-91	WK-GWMW05S-01
WK-GWMW06D-01	WK-GWMW06S-01	

Leachate Samples

Semivolatiles - Results for all nondetected semivolatile compounds for sample WK-LLW02-01 were qualified as unusable due to unacceptable hold time exceedences. Positive detects were qualified as estimated.

Antimony - Results for the following leachate samples were qualified as unusable due to unacceptable spike recoveries.

WK-LLFB01-01	WK-LLFB07-02	WK-LLW01-01
WK-LLW01-91	WK-LLW01-02	WK-LLW02-01
WK-LLW02-02	WK-LLW02-92	WK-LLW03-01
WK-LLW04-01	WK-LLW04-02	WK-LLW05-01
WK-LLW05-02		

Arsenic - Results for the following leachate samples were qualified as unusable due to unacceptable spike recoveries.

WK-LLFB01-01	WK-LLW03-01	WK-LLW04-01
WK-LLW05-01		

Private Well Samples

Volatiles - Results for 2-Butanone and Acrolein were qualified as unusable due to unacceptable response factors in the initial calibration for the following samples.

WK-PW01-01	WK-PW02-01	WK-PW04-01
WK-PW04-91	WK-PWFB01-01	WK-PWTB01-01

Only data flagged R are considered unusable. The remaining data are of sufficient quality to be used for interpretation and will support the conclusions contained in this report.

JAH/jah/CAW
[WOODSTOCK]DATA QUALIFIERS

APPENDIX F-3

MONITORING WELLS

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GAS Type: GSVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-GASFB01-01 11/07/90		WK-GASLW03-01 11/07/90		WK-GASLW04-01 11/07/90		WK-GASLW04-91 11/07/90	
Freon 12 (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Chloromethane (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
Freon 114 (PPB(V/V))	2.	U/	4.	U/	78.	/	48.	/
Vinyl chloride (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
Bromomethane (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
Chloroethane (PPB(V/V))	5.	U/	10.	U/	470.	/	290.	/
Freon 11 (PPB(V/V))	1.	U/	2.	U/	10.	U/	10.	U/
cis-1,2-Dichloroethene (PPB(V/V))	2.	U/	4.	U/	20.	U/	20.	U/
Carbon disulfide (PPB(V/V))	10.	U/	20.	U/	50.	U/	50.	U/
Freon 113 (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Acetone (PPB(V/V))	10.	U/	20.	U/	50.	U/	50.	U/
Methylene chloride (PPB(V/V))	4.	U/	8.	U/	20.	U/	20.	U/
trans-1,2-Dichloroethene (PPB(V/V))	4.	U/	8.	U/	20.	U/	20.	U/
1,1-Dichloroethane (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
Vinyl acetate (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
1,1-Dichloroethene (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
2-Butanone (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
Chloroform (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Carbon tetrachloride (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Benzene (PPB(V/V))	3.	U/	6.	U/	220.	/	120.	/
1,2-Dichloroethane (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Trichloroethene (PPB(V/V))	2.5	U/	5.	U/	13.	U/	13.	U/
1,2-Dichloropropane (PPB(V/V))	8.	U/	16.	U/	40.	U/	40.	U/
Bromodichloromethane (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
cis-1,3-Dichloropropene (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
4-Methyl-2-pentanone (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
Toluene (PPB(V/V))	3.	U/	6.	U/	130.	/	65.	/
trans-1,3-Dichloropropene (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
1,1,2-Trichloroethane (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
Tetrachloroethane (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
2-Hexanone (PPB(V/V))	5.	U/	10.	U/	25.	U/	25.	U/
Dibromochloromethane (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
1,2-Dibromoethane (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
Chlorobenzene (PPB(V/V))	2.5	U/	5.	U/	120.	/	72.	/
Ethylbenzene (PPB(V/V))	2.5	U/	20.	/	310.	/	190.	/
Xylenes (total) (PPB(V/V))	5.	U/	20.	/	440.	/	290.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GAS Type: GSVOC

Parameter	WK-GASFB01-01 11/07/90		WK-GASLW03-01 11/07/90		WK-GASLW04-01 11/07/90		WK-GASLW04-91 11/07/90	
Styrene (PPB(V/V))	7.	U/	14.	U/	35.	U/	35.	U/
Bromoform (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
1,1,2,2-Tetrachloroethane (PPB(V/V))	4.	U/	8.	U/	20.	U/	20.	U/
Benzyl chloride (PPB(V/V))	2.	U/	4.	U/	10.	U/	10.	U/
4-Ethyl toluene (PPB(V/V))	4.	U/	8.	U/	160.	/	100.	/
1,3,5-Trimethylbenzene (PPB(V/V))	2.5	U/	5.	U/	70.	/	52.	/
1,2,4-Trimethylbenzene (PPB(V/V))	3.	U/	25.	/	320.	/	200.	/
1,3-Dichlorobenzene (PPB(V/V))	3.	U/	6.	U/	15.	U/	15.	U/
1,4-Dichlorobenzene (PPB(V/V))	4.	U/	8.	U/	20.	U/	20.	U/
1,2-Dichlorobenzene (PPB(V/V))	5.	U/	10.	U/	25.	U/	25.	U/
1,2,4-Trichlorobenzene (PPB(V/V))	7.	U/	14.	U/	35.	U/	35.	U/
Hexachlorobutadiene (PPB(V/V))	5.	U/	10.	U/	25.	U/	25.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

APPENDIX F-3A

DISQUALIFIED MONITORING WELL SAMPLES

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SB Type: SLIND
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SBMW01D-08.5 07/27/90		WK-SBMW01D-41 07/30/90		WK-SBMW02-43 08/03/90		WK-SBMW02-60 08/03/90		WK-SBMW03-06 08/06/90	
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	16000.	>/	16000.	>/	16000.	>/
Cation Exchange Capacity (MEQ/L)	0.	U/	0.	U/	3.95	/	0.	U/	0.	U/

Note: (1) Results are reported with qualifiers (Laborat[illegible] Qualifier/Data Validation Qualifier) to th[illegible]ght of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SB Type: SLIND

Parameter	WK-SBMW04-13.5 08/10/90		WK-SBMW05-22 08/01/90		WK-SBMW06-08.5 07/31/90		WK-SBMW06-33.5 07/31/90	
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	140.	/	16000.	>/
Cation Exchange Capacity (MEQ/L)	0.	U/	5.88	/	0.	U/	0.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW
Generated by: CAW
ate Issued: 01-OCT-91

K-GWMW11-91 08/08/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	19.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW
Generated by: CAW
Date Issued: 10-MAY-91

WK-GWMW01S-01 10/31/90

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
ETHANE, 1,1'-OXYBIS (UG/L)	7.	J/

WK-GWMW01S-02 02/06/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	8.	J/JN

WK-GWMW02S-01 10/31/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	32.	J/

WK-GWMW07-01 02/06/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	8.	J/JN

WK-GWMW07-02 04/02/91

(TVOA) Tentatively-Identified Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/L)	6.	J/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW04D-01 11/01/90		WK-GWMW04S-01 11/01/90		WK-GWMW05D-01 11/01/90		WK-GWMW05D-91 11/01/90		WK-GWMW05S-01 11/01/90	
Dibenzofuran (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	5.	J/
Di-n-octyl Phthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW06D-01 11/02/90		WK-GWMW06S-01 11/02/90	
Dibenzofuran (UG/L)	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	10.	U/
Di-n-octyl Phthalate (UG/L)	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWBB01-01 11/02/90		WK-GWFB01-01 10/31/90		WK-GWFB02-01 11/02/90		WK-GWMW01D-01 10/31/90		WK-GWMW01S-01 10/31/90	
Dibenzofuran (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Di-n-octyl Phthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW02D-01 10/31/90		WK-GWMW02S-01 10/31/90		WK-GWMW02S-91 10/31/90		WK-GWMW03D-01 11/01/90		WK-GWMW03S-01 11/01/90	
Dibenzofuran (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	40.	U/	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Di-n-octyl Phthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW04D-01 11/01/90		WK-GWMW04S-01 11/01/90		WK-GWMW05D-01 11/01/90		WK-GWMW05D-91 11/01/90		WK-GWMW05S-01 11/01/90	
Phenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW06D-01 11/02/90		WK-GWMW06S-01 11/02/90	
Phenol (UG/L)	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-GWBB01-01 11/02/90		WK-GWFB01-01 10/31/90		WK-GWFB02-01 11/02/90		WK-GWMW01D-01 10/31/90		WK-GWMW01S-01 10/31/90	
Phenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: SVOC

Parameter	WK-GWMW02D-01 10/31/90		WK-GWMW02S-01 10/31/90		WK-GWMW02S-91 10/31/90		WK-GWMW03D-01 11/01/90		WK-GWMW03S-01 11/01/90	
Phenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	20.	U/	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	100.	U/	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWTB05-02 02/06/91		WK-GWTB06-02 02/07/91		WK-GWTB08-02 02/11/91		WK-GWTB10-02 04/01/91		WK-GWTB11-02 04/02/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	6.	U/	5.	U/	22.	B/U
Acetone (UG/L)	10.	U/	10.	U/	9.	J/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW09-02 04/01/91		WK-GWMW09-91 02/11/91		WK-GWMW09-92 04/01/91		WK-GWMW10-01 02/07/91		WK-GWMW10-02 04/01/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	17.	B/U	5.	U/	17.	B/U	5.	U/	12.	B/U
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	/U	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWTB01-01 10/31/90		WK-GWTB01-01 12/12/90		WK-GWTB02-01 10/31/90		WK-GWTB03-01 11/02/90		WK-GWTB04-02 02/05/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	12.	B/UJ	10.	U/	10.	U/	12.	B/U
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	2.	J/	1.	J/	2.	J/	2.	J/	1.	J/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW05S-02 02/05/91		WK-GWMW06D-01 12/12/90		WK-GWMW06D-02 02/05/91		WK-GWMW06S-01 11/02/90		WK-GWMW06S-02 02/05/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/UJ	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	9.	J/U	10.	U/	11.	/U
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	3.	J/	5.	U/	2.	J/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	3.	J/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW07-01 02/06/91		WK-GWMW07-02 04/02/91		WK-GWMW08-01 02/11/91		WK-GWMW08-02 04/02/91		WK-GWMW09-01 02/11/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	21.	/	20.	/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	18.	B/U	6.	U/	35.	/U	5.	U/
Acetone (UG/L)	5.	J/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	2.	J/	3.	J/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	4.	J/	4.	J/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW03S-02 02/06/91		WK-GWMW04D-01 11/01/90		WK-GWMW04D-02 02/07/91		WK-GWMW04D-92 02/07/91		WK-GWMW04S-01 11/01/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	16.	/	21.	/	14.	/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	6.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW04S-02 02/07/91		WK-GWMW05D-01 12/12/90		WK-GWMW05D-02 02/06/91		WK-GWMW05D-91 12/12/90		WK-GWMW05S-01 11/01/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	11.	U/	5.	U/	5.	U/	6.	B/U	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	7.	J/U	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	4.	J/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW01S-01 10/31/90		WK-GWMW01S-02 02/06/91		WK-GWMW02D-01 12/12/90		WK-GWMW02D-02 02/06/91		WK-GWMW02S-01 10/31/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	9.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	B/U	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	2.	J/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	2.	J/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWMW02S-02 02/06/91		WK-GWMW02S-91 10/31/90		WK-GWMW03D-01 11/01/90		WK-GWMW03D-02 02/06/91		WK-GWMW03S-01 11/01/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC
Generated by: CAW
Date Issued: 04-JUN-91

Parameter	WK-GWBB01-01 11/02/90		WK-GWBB02-02 02/06/91		WK-GWFB01-01 10/31/90		WK-GWFB01-01 12/12/90		WK-GWFB02-01 11/02/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	7.	/	5.	U/	5.	U/	5.	U/	2.	J/
Acetone (UG/L)	11.	U/	10.	U/	10.	U/	14.	B/UJ	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	2.	J/	1.	J/	2.	J/	5.	U/	1.	J/
1,2-Dichloroethane (UG/L)	2.	J/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	1.	J/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	18.	/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	2.	J/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOC

Parameter	WK-GWFB06-02 02/07/91		WK-GWFB08-02 02/11/91		WK-GWFB10-02 04/02/91		WK-GWMW01D-01 12/12/90		WK-GWMW01D-02 02/06/91	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	7.	U/	6.	U/	28.	B/U	5.	U/	7.	U/
Acetone (UG/L)	10.	U/	9.	J/	10.	U/	10.	B/U	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW09-92 04/01/91		WK-GWMW10-01 02/07/91		WK-GWMW10-02 04/01/91	
Aluminum (UG/L)	50.	K/	81.	K/U	72.	K/
Antimony (UG/L)	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	U/	6.3	K/	6.1	K/
Barium (UG/L)	312.	/	192.	K/	166.	K/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	118000.	/	192000.	/	165000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	10.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/
Iron (UG/L)	4790.	/	19400.	/	13400.	/
Lead (UG/L)	3.	U/	3.	US/	3.	U/
Magnesium (UG/L)	49300.	/	53200.	/	46300.	/
Manganese (UG/L)	69.5	/	708.	/	658.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	2340.	K/	1260.	K/	1470.	K/
Selenium (UG/L)	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	81700.	/	19100.	N/	20000.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	10.	K/	140.	/	38.5	/
Cyanide (UG/L)			10.	U/		
Alkalinity, Total (MG/L)	556.	/	899.	/	606.	/
Chloride (MG/L)	113.	/	32.	*/J	24.	/
Chemical Oxygen Demand (MG/L)			157.	/		
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.04	U/
Nitrogen, Ammonia (MG/L)	3.95	N/J	3.28	/	3.67	N/J
Nitrogen, Total Kjeldahl (MG/L)	6.09	/	7.24	N/J	9.5	/
Phosphorus, Total (MG/L)	1.18	/	0.51	N/J	0.96	/
Sulfate (MG/L)	31.	/	51.	/	46.	/
Total Dissolved Solids (MG/L)	774.	/	916.	/	794.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW04D-02 02/07/91		WK-GWMW04D-92 02/07/91		WK-GWMW04S-01 11/01/90		WK-GWMW04S-02 02/07/91		WK-GWMW05D-01 11/01/90	
Aluminum (UG/L)	50.	U/	50.	U/	200.	U/	59.	K/U	200.	U/
Antimony (UG/L)	5.	UN/	5.	UN/	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	U/	2.	U/	6.2	K/	9.6	KS/	4.2	K/
Barium (UG/L)	210.	/	204.	/	171.	K/	150.	K/	219.	/
Beryllium (UG/L)	5.	U/	5.	U/	0.2	U/	5.	U/	0.2	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	161000.	/	161000.	/	132000.	/	123000.	/	111000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	50.	U/	10.	U/	50.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	13.	K/U
Iron (UG/L)	2770.	/	2570.	/	12600.	/	12300.	/	492.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	79000.	/	79100.	/	31100.	/	31700.	/	62700.	/
Manganese (UG/L)	422.	/	422.	/	598.	/	615.	/	85.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	2180.	K/	2140.	K/	3630.	K/	3570.	K/	2360.	K/
Selenium (UG/L)	2.	US/	2.	US/	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	UN/R	10.	U/	10.	UN/R
Sodium (UG/L)	62800.	N/J	62200.	N/J	77800.	/	88900.	N/J	26000.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	2.	U/	50.	U/	2.	U/
Zinc (UG/L)	14.	K/	10.	U/	10.	U/	326.	/	10.	U/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	712.	/	614.	/	619.	/	535.	/	485.	/
Chloride (MG/L)	140.	*/J	138.	*/J	49.	/	49.	*/J	31.	/
Chemical Oxygen Demand (MG/L)	45.	/U	42.	/U			117.	/U		
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	U/	0.08	/U	0.02	U/
Nitrogen, Ammonia (MG/L)	3.1	/	4.44	/	2.9	/	2.39	/	1.82	/
Nitrogen, Total Kjeldahl (MG/L)	7.02	N/J	7.	N/J	15.1	/	11.7	N/J	1.75	/
Phosphorus, Total (MG/L)	1.65	N/J	1.93	N/J	0.48	N/	0.39	N/J	0.05	N/
Sulfate (MG/L)	108.	/	106.	/	36.	/	64.	/	77.	/
Total Dissolved Solids (MG/L)	968.	/	972.	/	812.	/	772.	/	624.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW05D-02 02/06/91		WK-GWMW05D-91 11/01/90		WK-GWMW05S-01 11/01/90		WK-GWMW05S-02 02/05/91		WK-GWMW06D-01 11/02/90	
Aluminum (UG/L)	50.	U/	200.	U/	200.	U/	50.	U/	200.	U/
Antimony (UG/L)	5.	UN/	50.	U/	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.9	K/	4.4	K/	4.3	K/	6.1	KS/	2.	U/
Barium (UG/L)	235.	/	229.	/	344.	/	311.	/	333.	/
Beryllium (UG/L)	5.	U/	0.2	U/	0.2	U/	5.	U/	0.2	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	103000.	/	110000.	/	170000.	/	167000.	/	153000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	50.	U/	50.	U/	10.	U/	50.	U/
Copper (UG/L)	10.	U/	10.	K/U	10.	U/	10.	U/	10.	U/
Iron (UG/L)	373.	/	434.	/	11800.	/	12800.	/	8230.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	US/
Magnesium (UG/L)	60900.	/	62400.	/	86600.	/	81900.	/	57700.	/
Manganese (UG/L)	67.	/	84.	/	258.	/	202.	/	403.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	3130.	K/	2090.	K/	36800.	/	31800.	K/	1820.	K/
Selenium (UG/L)	2.	U/	2.	U/	2.	U/	2.	US/	2.	US/
Silver (UG/L)	10.	U/	10.	UN/R	10.	UN/R	10.	U/	10.	UN/R
Sodium (UG/L)	32300.	N/J	30100.	/	70300.	/	60200.	N/J	28100.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	2.	U/	3.7	K/	50.	U/	2.	U/
Zinc (UG/L)	564.	/	10.	U/	10.	K/	64.	/	10.	U/
Cyanide (UG/L)	13.	/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	496.	/	484.	/	973.	/	902.	/	293.	/
Chloride (MG/L)	28.	/	31.	/	67.	/	50.	/	220.	/
Chemical Oxygen Demand (MG/L)	20.	U/					45.	/U		
Nitrate+Nitrite Nitrogen (MG/L)	0.48	/	0.02	U/	0.02	U/	0.02	U/	0.02	U/
Nitrogen, Ammonia (MG/L)	1.69	/	1.78	/	17.6	/	13.8	/	1.98	/
Nitrogen, Total Kjeldahl (MG/L)	3.53	N/J	1.76	/	18.2	/	14.6	N/J	2.12	/
Phosphorus, Total (MG/L)	0.17	N/J	0.02	UN/	1.65	N/	0.62	N/J	0.07	N/
Sulfate (MG/L)	83.	/	78.	/	25.	/	43.	/	118.	/
Total Dissolved Solids (MG/L)	1820.	/	624.	/	1080.	/	988.	/	774.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW06D-02 02/05/91		WK-GWMW06S-01 11/02/90		WK-GWMW06S-02 02/05/91		WK-GWMW07-01 02/06/91		WK-GWMW07-02 04/02/91	
Aluminum (UG/L)	50.	U/	200.	U/	50.	U/	57.	K/U	51.5	K/
Antimony (UG/L)	5.	UN/	50.	U/	5.	UN/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	US/	2.	US/	2.	US/	11.	/	19.2	/
Barium (UG/L)	337.	/	174.	K/	213.	/	521.	/	509.	/
Beryllium (UG/L)	5.	U/	0.2	U/	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	160000.	/	75800.	/	95800.	/	214000.	/	223000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	50.	U/	10.	U/	10.	U/	10.	U/
Copper (UG/L)	10.	U/	14.	K/U	10.	U/	10.	U/	10.	U/
Iron (UG/L)	5330.	/	20.	U/	32.	K/U	11800.	/	17400.	/
Lead (UG/L)	3.	U/	3.	US/	3.	U/	3.	U/	3.	US/
Magnesium (UG/L)	65500.	/	24700.	/	32400.	/	111000.	/	116000.	/
Manganese (UG/L)	391.	/	92.	/	206.	/	507.	/	597.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	21.	K/	47.	/	30.5	K/
Potassium (UG/L)	3050.	K/	2560.	K/	3170.	K/	8640.	/	8920.	/
Selenium (UG/L)	2.	U/	2.	U/	2.	U/	2.	US/	2.	US/
Silver (UG/L)	10.	U/	10.	UN/R	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	35500.	N/J	183000.	/	175000.	N/	93700.	N/J	77500.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	US/
Vanadium (UG/L)	50.	U/	2.	US/	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	1750.	/	10.	U/	78.	/	37.	/	65.5	/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/		
Alkalinity, Total (MG/L)	303.	/	434.	/	414.	/	769.	/	985.	/
Chloride (MG/L)	228.	/	150.	/	149.	/	118.	/	109.	/
Chemical Oxygen Demand (MG/L)	20.	U/			20.	U/	60.	/U		
Nitrate+Nitrite Nitrogen (MG/L)	0.21	/U	2.87	/	5.09	/	0.02	U/	0.02	U/
Nitrogen, Ammonia (MG/L)	2.11	/	0.1	U/	0.15	/	6.47	/	8.96	N/J
Nitrogen, Total Kjeldahl (MG/L)	3.5	N/J	3.02	/	1.74	N/J	8.6	N/J	9.03	/
Phosphorus, Total (MG/L)	0.8	N/J	3.79	N/	0.82	N/J	0.77	N/J	1.38	/
Sulfate (MG/L)	111.	/	80.	/	80.	/	114.	/	102.	/
Total Dissolved Solids (MG/L)	764.	/	816.	/	828.	/	1300.	/	1340.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW08-01 02/11/91		WK-GWMW08-02 04/02/91		WK-GWMW09-01 02/11/91		WK-GWMW09-02 04/01/91		WK-GWMW09-91 02/11/91	
Aluminum (UG/L)	50.	U/	50.	U/	50.	U/	68.	K/	50.	U/
Antimony (UG/L)	5.1	KN/J	50.	U/	5.	UN/	50.	U/	6.8	KN/J
Arsenic (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Barium (UG/L)	220.	/	221.	/	348.	/	299.	/	347.	/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	185000.	/	188000.	/	114000.	/	121000.	/	114000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	10.	K/U	10.	U/	10.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	5550.	/	5040.	/	5140.	/	3130.	/	5090.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	102000.	/	104000.	/	47900.	/	48900.	/	47600.	/
Manganese (UG/L)	92.	/	92.	/	69.	/	77.5	/	68.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	33.	K/	25.	K/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	2720.	K/	2350.	K/	2370.	K/	2740.	K/	2390.	K/
Selenium (UG/L)	2.	U/	2.	US/	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	70300.	N/J	67800.	/	84700.	N/J	84600.	/	84200.	N/J
Thallium (UG/L)	3.	U/	3.	US/	3.	U/	3.	US/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	37.	/	16.	K/	25.	/	41.5	/	30.	/
Cyanide (UG/L)	10.	U/			10.	U/			10.	U/
Alkalinity, Total (MG/L)	862.	/	868.	/	588.	/	565.	/	570.	/
Chloride (MG/L)	166.	*/J	151.	/	117.	*/J	119.	/	118.	*/J
Chemical Oxygen Demand (MG/L)	45.	/U			20.	U/			20.	U/
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	/U	0.02	U/	0.03	/U
Nitrogen, Ammonia (MG/L)	1.04	/	1.1	N/J	5.21	/	3.86	N/J	4.23	/
Nitrogen, Total Kjeldahl (MG/L)	1.95	N/J	3.74	/	7.73	N/J	5.54	/	7.55	N/J
Phosphorus, Total (MG/L)	0.39	N/J	1.98	/	0.31	N/J	0.65	/	0.29	N/J
Sulfate (MG/L)	34.	/	35.	/	32.	/	38.	/	31.	/
Total Dissolved Solids (MG/L)	1120.	/	1080.	/	740.	/	776.	/	740.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOA
Generated by: CAW
Date Issued: 04-JUN-91

Parameter	WK-GWMW01D-BAD 10/31/90		WK-GWMW02D-BAD 10/31/90		WK-GWMW05D-9BAD 11/01/90		WK-GWMW05D-BAD 11/01/90		WK-GWMW06D-BAD 11/02/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/UJ
Acetone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	/U	4.	J/U	4.	J/U	4.	J/U	4.	J/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	2.	J/U	1.	J/U	2.	J/U	2.	J/U	2.	J/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

POSITIVE DETECT/USABLE ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: VOA
Generated by: CAW
Date Issued: 04-JUN-91

Parameter	WK-GWMW01D-BAD 10/31/90	WK-GWMW02D-BAD 10/31/90	WK-GWMW05D-9BAD 11/01/90	WK-GWMW05D-BAD 11/01/90	WK-GWMW06D-BAD 11/02/90
Chloromethane (UG/L)					
Bromomethane (UG/L)					
Vinyl chloride (UG/L)					
Chloroethane (UG/L)					
Methylene chloride (UG/L)					
Acetone (UG/L)					
Carbon disulfide (UG/L)					
1,1-Dichloroethene (UG/L)					
1,1-Dichloroethane (UG/L)					
1,2-Dichloroethene (total) (UG/L)					
Chloroform (UG/L)					
1,2-Dichloroethane (UG/L)					
2-Butanone (UG/L)					
1,1,1-Trichloroethane (UG/L)					
Carbon tetrachloride (UG/L)					
Vinyl acetate (UG/L)					
Bromodichloromethane (UG/L)					
1,2-Dichloropropane (UG/L)					
cis-1,3-Dichloropropene (UG/L)					
Trichloroethene (UG/L)					4. J/
Dibromochloromethane (UG/L)					
1,1,2-Trichloroethane (UG/L)					
Benzene (UG/L)					
trans-1,3-Dichloropropene (UG/L)					
Bromoform (UG/L)					
4-Methyl-2-pentanone (UG/L)					
2-Hexanone (UG/L)					
Tetrachloroethene (UG/L)					
1,1,2,2-Tetrachloroethane (UG/L)					
Toluene (UG/L)					
Chlorobenzene (UG/L)					
Ethylbenzene (UG/L)					
Styrene (UG/L)					
Xylenes (total) (UG/L)					2. J/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the left of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW02D-01 10/31/90		WK-GWMW02D-02 02/06/91		WK-GWMW02S-01 10/31/90		WK-GWMW02S-02 02/06/91		WK-GWMW02S-91 10/31/90	
Aluminum (UG/L)	200.	U/	50.	U/	200.	/U	50.	U/	200.	U/
Antimony (UG/L)	50.	U/	5.	UN/	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	U/	2.	U/	2.4	K/	3.8	KS/	2.7	K/
Barium (UG/L)	138.	K/	139.	K/	308.	/	247.	/	344.	/
Beryllium (UG/L)	0.2	U/	5.	U/	0.2	U/	5.	U/	0.2	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	97200.	/	89200.	/	154000.	/	129000.	/	171000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	50.	U/	10.	U/	50.	U/	10.	U/	50.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	1180.	/	1250.	/	1070.	/	1290.	/	669.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	54600.	/	54400.	/	77400.	/	69000.	/	85700.	/
Manganese (UG/L)	75.	/	87.	/	900.	/	1090.	/	909.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	1360.	K/	1300.	K/	8360.	/	6290.	/	9340.	/
Selenium (UG/L)	2.	U/	2.	U/	2.	US/	2.	U/	2.	US/
Silver (UG/L)	10.	UN/R	10.	U/	10.	UN/R	10.	U/	10.	UN/R
Sodium (UG/L)	7760.	/	9600.	N/J	138000.	/	125000.	N/J	165000.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	2.	U/	50.	U/	5.2	K/	50.	U/	5.6	K/
Zinc (UG/L)	10.	U/	12.	K/	10.	U/	222.	/	10.	U/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	413.	/	416.	/	606.	/	644.	/	657.	/
Chloride (MG/L)	4.	/	4.	/	295.	/	239.	/	328.	/
Chemical Oxygen Demand (MG/L)			20.	U/			42.	/U		
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	U/	0.02	U/	0.02	U/
Nitrogen, Ammonia (MG/L)	0.61	/	0.58	/	3.02	/	3.06	/	2.53	/
Nitrogen, Total Kjeldahl (MG/L)	0.68	/	0.62	N/J	3.51	/	6.12	N/J	5.	/
Phosphorus, Total (MG/L)	0.04	N/	0.15	N/J	0.9	N/J	1.75	N/J	1.79	N/J
Sulfate (MG/L)	83.	/	84.	/	17.	/	21.	/	15.	/
Total Dissolved Solids (MG/L)	512.	/	498.	/	1140.	/	1010.	/	1140.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWMW03D-01 11/01/90		WK-GWMW03D-02 02/06/91		WK-GWMW03S-01 11/01/90		WK-GWMW03S-02 02/06/91		WK-GWMW04D-01 11/01/90	
Aluminum (UG/L)	200.	U/	57.	K/U	200.	U/	50.	U/	200.	U/
Antimony (UG/L)	50.	U/	5.	UN/	50.	U/	5.	UN/	50.	U/
Arsenic (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Barium (UG/L)	137.	K/	138.	K/	110.	K/	83.	K/	254.	/
Beryllium (UG/L)	0.2	U/	5.	U/	0.2	U/	5.	U/	0.2	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	131000.	/	124000.	/	119000.	/	106000.	/	171000.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	50.	U/	10.	U/	50.	U/	10.	U/	50.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	1040.	/	1740.	/	20.	U/	20.	U/	1870.	/
Lead (UG/L)	3.	US/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	63300.	/	64800.	/	49200.	/	47400.	/	78300.	/
Manganese (UG/L)	48.	/	54.	/	451.	/	310.	/	529.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	K/	20.	U/	27.	K/	20.	U/	20.	U/
Potassium (UG/L)	1240.	K/	1150.	K/	860.	K/	510.	K/U	2500.	K/
Selenium (UG/L)	2.	U/	2.	US/	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	UN/R	10.	U/	10.	UN/R	10.	U/	10.	UN/R
Sodium (UG/L)	7790.	/	8400.	N/J	18200.	/	17600.	N/J	57700.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	2.	U/	50.	U/	2.	U/	50.	U/	2.	U/
Zinc (UG/L)	10.	U/	15.	K/	10.	U/	52.	/	10.	U/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	438.	/	494.	/	428.	/	417.	/	650.	/
Chloride (MG/L)	4.	/	8.	*/J	15.	/	25.	*/J	119.	/
Chemical Oxygen Demand (MG/L)			20.	U/			20.	U/		
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	U/	0.02	U/	0.04	U/
Nitrogen, Ammonia (MG/L)	0.55	/	0.43	/	0.24	/	0.31	/	3.6	/
Nitrogen, Total Kjeldahl (MG/L)	0.96	/U	0.57	N/J	10.4	/	5.97	N/J	7.08	/
Phosphorus, Total (MG/L)	0.74	N/	0.26	N/J	3.23	N/	2.55	N/J	2.5	N/
Sulfate (MG/L)	180.	/	170.	/	92.	/	90.	/	102.	/
Total Dissolved Solids (MG/L)	672.	/	652.	/	562.	/	518.	/	978.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

APPENDIX F-4

PRIVATE WELLS

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-GWBB01-01 11/02/90		WK-GWBB02-02 02/06/91		WK-GWFB01-01 10/31/90		WK-GWFB02-01 11/02/90		WK-GWFB06-02 02/07/91	
Aluminum (UG/L)	200.	U/	67.	K/	200.	U/	200.	U/	50.	U/
Antimony (UG/L)	50.	U/	5.	UN/	50.	U/	50.	U/	5.	UNS/
Arsenic (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Barium (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Beryllium (UG/L)	0.2	U/	5.	U/	0.2	U/	0.2	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	/	5.	U/	5.	U/
Calcium (UG/L)	1000.	U/	1000.	U/	1000.	U/	1000.	U/	1000.	U/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	50.	U/	10.	U/	50.	U/	50.	U/	10.	U/
Copper (UG/L)	14.	K/U	10.	U/	10.	U/	16.	K/U	10.	U/
Iron (UG/L)	38.	K/	74.	K/	20.	U/	20.	U/	20.	U/
Lead (UG/L)	3.	U/	3.	US/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	1000.	U/	1000.	U/	1000.	U/	1000.	U/	1000.	U/
Manganese (UG/L)	10.	U/	15.	U/	10.	U/	10.	U/	15.	U/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	100.	U/	100.	U/	100.	U/	100.	U/	110.	K/
Selenium (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	US/
Silver (UG/L)	10.	UN/R	10.	U/	10.	UN/R	10.	UN/R	10.	U/
Sodium (UG/L)	2000.	U/	1000.	UN/	2000.	U/	2000.	U/	1000.	UN/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	2.	U/	50.	U/	2.	U/	2.	U/	50.	U/
Zinc (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Chloride (MG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U*/UJ
Chemical Oxygen Demand (MG/L)			20.	U/					27.	/U
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.07	/	0.02	U/	0.02	U/	0.04	/
Nitrogen, Ammonia (MG/L)	0.1	U/	0.1	U/	0.1	U/	0.1	U/	0.1	U/
Nitrogen, Total Kjeldahl (MG/L)	0.1	/U	0.1	UN/UJ	0.1	U/	0.29	/	0.1	UN/UJ
Phosphorus, Total (MG/L)	0.02	UN/	0.02	UN/UJ	0.02	UN/	0.02	UN/	0.02	UN/UJ
Sulfate (MG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Total Dissolved Solids (MG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: GW Type: IND MTL

Parameter	WK-GWFB10-02 04/02/91		WK-GWMW01D-01 10/31/90		WK-GWMW01D-02 02/06/91		WK-GWMW01S-01 10/31/90		WK-GWMW01S-02 02/06/91	
Aluminum (UG/L)	50.	U/	200.	U/	52.	K/U	200.	U/	50.	U/
Antimony (UG/L)	50.	U/	50.	U/	5.	UN/	50.	U/	5.	UN/
Arsenic (UG/L)	2.	U/	2.	U/	2.	U/	5.9	KS/	6.	K/
Barium (UG/L)	10.	U/	171.	K/	200.	/	218.	/	250.	/
Beryllium (UG/L)	5.	U/	0.2	U/	5.	U/	0.2	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	1000.	U/	126000.	/	125000.	/	93500.	/	83700.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	50.	U/	10.	U/	50.	U/	12.	K/U
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	20.	U/	2370.	/	1180.	/	1340.	/	3160.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	1000.	U/	56000.	/	58400.	/	77300.	/	77200.	/
Manganese (UG/L)	10.	U/	163.	/	174.	/	553.	/	827.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	77.	/	93.	/
Potassium (UG/L)	100.	U/	1800.	K/	2440.	K/	13200.	/	15000.	K/
Selenium (UG/L)	2.	U/	2.	U/	2.	US/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	UN/R	10.	U/	10.	UN/R	10.	U/
Sodium (UG/L)	2000.	U/	44000.	/	67300.	N/J	65000.	/	58900.	N/J
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	2.	U/	50.	U/	2.	U/	50.	U/
Zinc (UG/L)	10.	U/	10.	U/	450.	/	10.	U/	49.	/
Cyanide (UG/L)			10.	U/	10.	U/	10.	U/	10.	U/
Alkalinity, Total (MG/L)	5.	U/	336.	/	359.	/	668.	/	622.	/
Chloride (MG/L)	1.	U/	142.	/	198.	/	36.	/	29.	/
Chemical Oxygen Demand (MG/L)					20.	U/			52.	/U
Nitrate+Nitrite Nitrogen (MG/L)	0.02	U/	0.02	U/	0.02	U/	0.02	U/	0.02	U/
Nitrogen, Ammonia (MG/L)	0.14	N/J	0.32	/	0.52	/	5.62	/	8.65	/
Nitrogen, Total Kjeldahl (MG/L)	0.1	U/	0.19	/U	1.45	N/J	5.61	/	8.34	N/J
Phosphorus, Total (MG/L)	0.02	U/	0.12	N/	1.38	N/J	1.09	N/J	1.08	N/J
Sulfate (MG/L)	5.	U/	97.	/	116.	/	21.	/	27.	/
Total Dissolved Solids (MG/L)	24.	/	696.	/	794.	/	756.	/	704.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

NOTE FOR APPENDIX F-3a

A sampling error was made at four deep monitoring wells in the Phase I, Round 1 sampling (October 31 to November 2, 1991). The analytical results which were disqualified as a result of the sampling error are presented in this Appendix.

The initial analytical results (from October 31 to November 2, 1991 sampling) indicated that trichloroethylene (TCE) and Xylenes had been detected at or below detection limit in monitoring wells MW-1D, MW-2D, MW-5D, and MW-6D; total xylenes were also estimated at 2 ug/l at each of these wells. During data validation, it was discovered that trace levels of TCE were also found in the field blanks collected through the bladder pump which had been used to purge and sample these wells. The blanks indicated TCE levels of 18 ug/l and a xylene level of 2 ug/l. It was discovered that the pump used to purge these wells had previously been used at a site contaminated with TCE. These monitoring wells were re-sampled on December 12, 1990. The results of the resampling indicated no detection of either trichloroethylene or xylenes.

APPENDIX F-5

SEDIMENT

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: PW Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-PW01-01 07/24/90		WK-PW02-01 07/24/90		WK-PW03-01 07/24/90		WK-PW04-01 07/24/90		WK-PW04-91 07/24/90	
Chloromethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Bromomethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Vinyl chloride (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Chloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Methylene chloride (UG/L)	6.	/U	1.	/U	1.	/U	1.	/U	1.	U/
Acetone (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Carbon disulfide (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
1,1-Dichloroethene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,1-Dichloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,2-Dichloroethene (total) (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Chloroform (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,2-Dichloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
2-Butanone (UG/L)	5.	U/R	5.	U/R	5.	U/	5.	U/R	5.	U/R
1,1,1-Trichloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Carbon tetrachloride (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Vinyl acetate (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Bromodichloromethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,2-Dichloropropane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
cis-1,3-Dichloropropene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Trichloroethene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Dibromochloromethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,1,2-Trichloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Benzene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
trans-1,3-Dichloropropene (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/
Bromoform (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
4-Methyl-2-pentanone (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
2-Hexanone (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Tetrachloroethene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
1,1,2,2-Tetrachloroethane (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Toluene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Chlorobenzene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Ethylbenzene (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Styrene (UG/L)	1.	U/	1.	U/	1.	U/	1.	U/	1.	U/
Xylenes (total) (UG/L)	2.	U/	2.	U/	2.	U/	2.	U/	2.	U/
Acrolein (UG/L)	25.	U/R	25.	U/R	25.	U/	25.	U/R	25.	U/R
Acrylonitrile (UG/L)	25.	U/	25.	U/	25.	U/	25.	U/	25.	U/

Note: (1) Results are reported with qualifiers (Labora Qualifier/Data Validation Qualifier) to (ight of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: PW Type: VOC

Parameter	WK-PWFB01-01 07/24/90		WK-PWTB01-01 07/24/90	
Chloromethane (UG/L)	2.	U/	2.	U/
Bromomethane (UG/L)	2.	U/	2.	U/
Vinyl chloride (UG/L)	2.	U/	2.	U/
Chloroethane (UG/L)	2.	U/	2.	U/
Methylene chloride (UG/L)	0.5	J/	1.	U/
Acetone (UG/L)	6.	B/U	5.	U/
Carbon disulfide (UG/L)	3.	U/	3.	U/
1,1-Dichloroethene (UG/L)	2.	U/	2.	U/
1,1-Dichloroethane (UG/L)	2.	U/	2.	U/
1,2-Dichloroethene (total) (UG/L)	2.	U/	2.	U/
Chloroform (UG/L)	4.	/	4.	/
1,2-Dichloroethane (UG/L)	2.	U/	2.	U/
2-Butanone (UG/L)	5.	U/R	5.	U/R
1,1,1-Trichloroethane (UG/L)	2.	U/	2.	U/
Carbon tetrachloride (UG/L)	2.	U/	2.	U/
Vinyl acetate (UG/L)	5.	U/	5.	U/
Bromodichloromethane (UG/L)	2.	U/	0.5	J/
1,2-Dichloropropane (UG/L)	2.	U/	2.	U/
cis-1,3-Dichloropropene (UG/L)	2.	U/	2.	U/
Trichloroethene (UG/L)	2.	U/	2.	U/
Dibromochloromethane (UG/L)	2.	U/	2.	U/
1,1,2-Trichloroethane (UG/L)	2.	U/	2.	U/
Benzene (UG/L)	2.	U/	2.	U/
trans-1,3-Dichloropropene (UG/L)	1.	U/	1.	U/
Bromoform (UG/L)	2.	U/	2.	U/
4-Methyl-2-pentanone (UG/L)	2.	U/	2.	U/
2-Hexanone (UG/L)	5.	U/	5.	U/
Tetrachloroethene (UG/L)	2.	U/	2.	U/
1,1,2,2-Tetrachloroethane (UG/L)	2.	U/	2.	U/
Toluene (UG/L)	2.	U/	2.	U/
Chlorobenzene (UG/L)	2.	U/	2.	U/
Ethylbenzene (UG/L)	2.	U/	2.	U/
Styrene (UG/L)	1.	U/	1.	U/
Xylenes (total) (UG/L)	2.	U/	2.	U/
Acrolein (UG/L)	25.	U/R	25.	U/R
Acrylonitrile (UG/L)	25.	U/	25.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: PW Type: MTL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-PW01-01 07/24/90		WK-PW02-01 07/24/90		WK-PW03-01 07/24/90		WK-PW04-01 07/24/90		WK-PW04-91 07/24/90	
Aluminum (UG/L)	50.	U/	50.	U/	52.	K/	51.	K/	50.	U/
Antimony (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Arsenic (UG/L)	2.3	K/	2.	US/	2.	U/	2.6	K/	2.	U/
Barium (UG/L)	63.	K/	10.	U/	98.	K/	134.	K/	137.	K/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Calcium (UG/L)	124000.	/	1300.	K/	82400.	/	109000.	/	109000.	/
Chromium, total (UG/L)	0.96	K/U	0.52	K/U	0.53	K/U	0.38	K/U	0.44	K/U
Cobalt (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	2430.	/	107.	/	996.	/	2500.	/	2680.	/
Lead (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	68400.	/	1000.	U/	37200.	/	60000.	/	61200.	/
Manganese (UG/L)	119.	/	10.	U/	57.	/	34.	/	32.	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.21	/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	U/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	1670.	KN/J	530.	KN/J	1190.	KN/J	1110.	KN/J	1020.	KN/J
Selenium (UG/L)	2.	U/	2.	U/	2.	US/	2.	U/	2.	U/
Silver (UG/L)	0.5	US/UJ	0.5	US/UJ	0.5	US/UJ	0.5	US/UJ	0.5	US/UJ
Sodium (UG/L)	15200.	/	306000.	/	34000.	/	9500.	/	9100.	/
Thallium (UG/L)	3.	U/	3.	US/	3.	U/	3.	U/	3.	KS/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	284.	/	50.	/	23.	/	132.	/	133.	/
Cyanide (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laborat(Qualifier/Data Validation Qualifier) to th(ght of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: PW Type: MTL

Parameter	WK-PWFB01-01 07/24/90	
Aluminum (UG/L)	50.	U/
Antimony (UG/L)	5.	U/
Arsenic (UG/L)	2.	U/
Barium (UG/L)	10.	U/
Beryllium (UG/L)	5.	U/
Cadmium (UG/L)	0.2	U/
Calcium (UG/L)	1000.	U/
Chromium, total (UG/L)	0.51	K/U
Cobalt (UG/L)	10.	U/
Copper (UG/L)	10.	U/
Iron (UG/L)	20.	U/
Lead (UG/L)	3.	U/
Magnesium (UG/L)	1000.	U/
Manganese (UG/L)	10.	U/
Mercury (UG/L)	0.2	U/
Nickel (UG/L)	20.	U/
Potassium (UG/L)	100.	UN/UJ
Selenium (UG/L)	2.	U/
Silver (UG/L)	0.5	U/UJ
Sodium (UG/L)	1000.	U/
Thallium (UG/L)	3.	U/
Vanadium (UG/L)	50.	U/
Zinc (UG/L)	10.	U/
Cyanide (UG/L)	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

APPENDIX G

WATER LEVEL MEASUREMENT DATA

WARZYN

LABORATORY RESULTS
VOLATILE ORGANIC REPORT

Project: Woodstock Landfill

Project #: 60776.34

Location: Woodstock, Illinois

Date Sampled: 7/19/91

Compound	Method Detection Limits (ug/L)	3006-001 SB4	3006-002 SB2	3006-003 SB1	3006-004 SB3	3006-005 SB5
Benzene	1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Ethylbenzene	1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene	1.00	<1.00	<1.00	<1.00	<1.00	<1.00
m- and p-Xylene	2.00	<2.00	<2.00	<2.00	<2.00	<2.00
o-Xylene	1.00	<1.00	<1.00	<1.00	<1.00	<1.00

Method Reference: EPA-600, "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewaters", July 1982, Method 602.

Ck'd: App'd: BCH
Date Issued: 7-23-91

WI Lab Certification ID#: 113138300
[var-Jul-040]
60776.34-lab

Area of Leachate Cell
(Grid Square area within landfill boundary)

	A	B	C	D	E	F	G	H
1	0	0	0	6250	12500	12500	9375	0
2	9375	50000	43750	50000	62500	50000	12500	0
3	0	50000	62500	62500	62500	62500	53125	15625
4	0	28125	62500	62500	62500	62500	62500	18750
5	0	6250	62500	62500	62500	62500	62500	15625
6	0	0	50000	56250	56250	56250	37500	3125

Leachate Volume in Cell
(Area multiplied by leachate thickness with 25% porosity)

	A	B	C	D	E	F	G	H
1	0	0	0	0	0	0	0	0
2	0	0	0	50000	62500	37500	3125	0
3	0	0	0	62500	187500	46875	13281	0
4	0	0	0	78125	62500	46875	15625	0
5	0	0	0	78125	46875	15625	31250	0
6	0	0	0	70313	28125	0	9375	0

Total Leachate Volume:

9.5E+05 cubic feet
7.1E+06 gallons

Appendix J-2
Leachate Volume Calculation
Woodstock Municipal Landfill Site
Woodstock, Illinois

The following matrices were used to calculate the volume of leachate in the landfill. The location of each of the grid squares is indicated in Figure 4-3.

Elevation of Bottom of Refuse (Shaded values are extrapolated)

	A	B	C	D	E	F	G	H
1								
2		930	930	925	924	924	924	924
3		930	930	925	916	924	924	924
4		930	930	925	924	924	924	924
5			930	925	925	926	924	924
6			930	925	925	925	924	924

Leachate Elevation (February 1991)

	A	B	C	D	E	F	G	H
1								
2		930	930	929	928	927	925	924
3		930	930	929	928	927	925	924
4		930	930	930	928	927	925	924
5			930	930	928	927	926	924
6			930	930	927	925	925	924

Leachate Thickness above base of refuse (February 1991) (Leachate elevation minus elevation of bottom of refuse)

	A	B	C	D	E	F	G	H
1								
2		0	0	4	4	3	1	0
3		0	0	4	12	3	1	0
4		0	0	5	4	3	1	0
5			0	5	3	1	2	0

STD. DEVIATIONS	0.262	0.171	0.435	0.762	1.050	1.337
	2.547	1.039	1.213	0.684	0.308	0.299

PERCOLATION FROM LAYER 2

TOTALS	0.6322	0.5586	0.6230	0.6275	0.6669	0.5742
	0.7860	0.7798	0.5836	0.5050	0.4674	0.5526
STD. DEVIATIONS	0.2318	0.2255	0.2434	0.3068	0.2527	0.1912
	0.4927	0.5847	0.3817	0.2823	0.1938	0.1767

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 5

	(INCHES)		(CU. FT.)	PERCENT
PRECIPITATION	36.03	(6.599)	4503500.	100.00
RUNOFF	0.897	(0.424)	112141.	2.49
EVAPOTRANSPIRATION	27.649	(4.121)	3456153.	76.74
PERCOLATION FROM LAYER 2	7.3568	(2.8819)	919603.	20.42
CHANGE IN WATER STORAGE	0.125	(1.001)	15603.	0.35

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 5

	(INCHES)	(CU. FT.)
PRECIPITATION	3.51	438750.0
RUNOFF	0.212	26512.8
PERCOLATION FROM LAYER 2	0.0802	10028.0
SNOW WATER	1.02	127746.4

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.1958

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.0223

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FINAL WATER STORAGE AT END OF YEAR 5

LAYER	(INCHES)	(VOL/VOL)
1	2.88	0.0961
2	28.80	0.3165
SNOW WATER	0.00	

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EVAPORATIVE ZONE DEPTH	=	20.00 INCHES
UPPER LIMIT VEG. STORAGE	=	8.7400 INCHES
INITIAL VEG. STORAGE	=	3.4832 INCHES
INITIAL SNOW WATER CONTENT	=	0.0000 INCHES
INITIAL TOTAL WATER STORAGE IN SOIL AND WASTE LAYERS	=	29.9312 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND SOLAR RADIATION FOR CHICAGO ILLINOIS

MAXIMUM LEAF AREA INDEX	=	2.00
START OF GROWING SEASON (JULIAN DATE)	=	128
END OF GROWING SEASON (JULIAN DATE)	=	282

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
21.40	26.00	36.00	48.80	59.10	68.60
73.00	71.90	64.70	53.50	39.80	27.70

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	1.48	0.94	2.71	4.37	2.49	4.60
	4.87	4.08	3.42	2.66	2.38	2.04
STD. DEVIATIONS	1.11	0.49	1.35	1.39	0.99	1.67
	4.14	1.48	1.49	1.29	0.25	0.65
RUNOFF						
TOTALS	0.000	0.000	0.000	0.000	0.000	0.000
	0.032	0.000	0.000	0.000	0.000	0.000
STD. DEVIATIONS	0.000	0.000	0.000	0.000	0.000	0.000
	0.071	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.676	1.173	1.978	2.946	2.833	4.366
	4.220	4.137	2.605	2.038	1.070	0.802

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WOODSTOCK MUNICIPAL LANDFILL SITE
SIMULATION.14
APRIL 24, 1991

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FAIR GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	30.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.1053 VOL/VOL
WILTING POINT	=	0.0466 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1053 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.005100000184 CM/SEC

LAYER 2

VERTICAL PERCOLATION LAYER

THICKNESS	=	91.00 INCHES
POROSITY	=	0.5200 VOL/VOL
FIELD CAPACITY	=	0.2942 VOL/VOL
WILTING POINT	=	0.1400 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2942 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000199999995 CM/SEC

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	58.20
TOTAL AREA OF COVER	=	1500000. SQ FT

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WOODSTOCK MUNICIPAL LANDFILL SITE
SIMULATION.13

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FAIR GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	30.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.0624 VOL/VOL
WILTING POINT	=	0.0245 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0624 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.017400000244 CM/SEC

LAYER 2

VERTICAL PERCOLATION LAYER

THICKNESS	=	91.00 INCHES
POROSITY	=	0.5200 VOL/VOL
FIELD CAPACITY	=	0.2942 VOL/VOL
WILTING POINT	=	0.1400 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2942 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000199999995 CM/SEC

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	55.25
TOTAL AREA OF COVER	=	1500000. SQ FT

EVAPORATIVE ZONE DEPTH	=	20.00 INCHES
UPPER LIMIT VEG. STORAGE	=	8.7400 INCHES
INITIAL VEG. STORAGE	=	2.0711 INCHES
INITIAL SNOW WATER CONTENT	=	0.0000 INCHES
INITIAL TOTAL WATER STORAGE IN SOIL AND WASTE LAYERS	=	28.6442 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND SOLAR RADIATION FOR CHICAGO ILLINOIS

MAXIMUM LEAF AREA INDEX	=	2.00
START OF GROWING SEASON (JULIAN DATE)	=	128
END OF GROWING SEASON (JULIAN DATE)	=	282

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
21.40	26.00	36.00	48.80	59.10	68.60
73.00	71.90	64.70	53.50	39.80	27.70

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	1.48	0.94	2.71	4.37	2.49	4.60
	4.87	4.08	3.42	2.66	2.38	2.04
STD. DEVIATIONS	1.11	0.49	1.35	1.39	0.99	1.67
	4.14	1.48	1.49	1.29	0.25	0.65
RUNOFF						
TOTALS	0.000	0.000	0.063	0.108	0.029	0.120
	0.114	0.080	0.179	0.070	0.082	0.051
STD. DEVIATIONS	0.000	0.000	0.112	0.089	0.052	0.122
	0.165	0.087	0.168	0.110	0.053	0.066
EVAPOTRANSPIRATION						
TOTALS	0.676	1.176	1.982	2.951	2.804	4.121
	3.721	3.808	2.580	1.976	1.042	0.811

STD. DEVIATIONS	0.251	0.197	0.289	0.287	1.597	1.218
	2.768	0.937	1.265	0.780	0.264	0.291

PERCOLATION FROM LAYER 2

TOTALS	0.3333	0.3449	0.4220	0.4750	0.4520	0.3920
	0.4435	0.4595	0.3674	0.3225	0.2770	0.2852
STD. DEVIATIONS	0.1658	0.1895	0.2218	0.3132	0.2635	0.1926
	0.2728	0.3402	0.2331	0.1805	0.1382	0.1121

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 5

	(INCHES)		(CU. FT.)	PERCENT
PRECIPITATION	36.03	(6.599)	4503500.	100.00
RUNOFF	0.121	(0.265)	15148.	0.34
EVAPOTRANSPIRATION	31.122	(5.004)	3890202.	86.38
PERCOLATION FROM LAYER 2	4.5744	(2.2831)	571797.	12.70
CHANGE IN WATER STORAGE	0.211	(1.197)	26354.	0.59

****

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 5

	(INCHES)	(CU. FT.)
PRECIPITATION	3.51	438750.0
RUNOFF	0.594	74285.5
PERCOLATION FROM LAYER 2	0.0392	4902.8
SNOW WATER	1.02	127746.4

MAXIMUM VEG. SOIL WATER (VOL/VOL) 0.3417

MINIMUM VEG. SOIL WATER (VOL/VOL) 0.0846

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FINAL WATER STORAGE AT END OF YEAR 5

LAYER	(INCHES)	(VOL/VOL)
1	6.25	0.2083
2	27.59	0.3032
SNOW WATER	0.00	

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 WOODSTOCK MUNICIPAL LANDFILL SITE
 SIMULATION.12
 APRIL 24, 1991

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FAIR GRASS

LAYER 1

VERTICAL PERCOLATION LAYER

THICKNESS	=	30.00 INCHES
POROSITY	=	0.4530 VOL/VOL
FIELD CAPACITY	=	0.1901 VOL/VOL
WILTING POINT	=	0.0848 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1901 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.002160000149 CM/SEC

LAYER 2

VERTICAL PERCOLATION LAYER

THICKNESS	=	91.00 INCHES
POROSITY	=	0.5200 VOL/VOL
FIELD CAPACITY	=	0.2942 VOL/VOL
WILTING POINT	=	0.1400 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.2942 VOL/VOL
SATURATED HYDRAULIC CONDUCTIVITY	=	0.000199999995 CM/SEC

GENERAL SIMULATION DATA

SCS RUNOFF CURVE NUMBER	=	68.71
TOTAL AREA OF COVER	=	1500000. SQ FT

EVAPORATIVE ZONE DEPTH	=	20.00 INCHES
UPPER LIMIT VEG. STORAGE	=	9.0600 INCHES
INITIAL VEG. STORAGE	=	4.3822 INCHES
INITIAL SNOW WATER CONTENT	=	0.0000 INCHES
INITIAL TOTAL WATER STORAGE IN SOIL AND WASTE LAYERS	=	32.4752 INCHES

SOIL WATER CONTENT INITIALIZED BY PROGRAM.

CLIMATOLOGICAL DATA

SYNTHETIC RAINFALL WITH SYNTHETIC DAILY TEMPERATURES AND SOLAR RADIATION FOR CHICAGO ILLINOIS

MAXIMUM LEAF AREA INDEX	=	2.00
START OF GROWING SEASON (JULIAN DATE)	=	128
END OF GROWING SEASON (JULIAN DATE)	=	282

NORMAL MEAN MONTHLY TEMPERATURES, DEGREES FAHRENHEIT

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
21.40	26.00	36.00	48.80	59.10	68.60
73.00	71.90	64.70	53.50	39.80	27.70

****

AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	1.48	0.94	2.71	4.37	2.49	4.60
	4.87	4.08	3.42	2.66	2.38	2.04
STD. DEVIATIONS	1.11	0.49	1.35	1.39	0.99	1.67
	4.14	1.48	1.49	1.29	0.25	0.65
RUNOFF						
TOTALS	0.002	0.000	0.000	0.000	0.000	0.000
	0.119	0.000	0.000	0.000	0.000	0.000
STD. DEVIATIONS	0.005	0.000	0.000	0.000	0.000	0.000
	0.266	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.669	1.209	2.329	3.606	3.185	4.730
	4.199	4.175	2.765	2.335	1.120	0.799

APPENDIX F-9

AQUIFER MATRIX

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS

WK-SS02-01 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown oxygenated alkane (UG/KG)	670.	J/NJ
Unknown oxygenated alkane (UG/KG)	470.	J/NJ
Hexadecanoic acid (UG/KG)	590.	J/NJ
Unknown hydrocarbon (UG/KG)	590.	J/NJ
Unknown hydrocarbon (UG/KG)	430.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	1700.	J/NJ
Unknown hydrocarbon (UG/KG)	390.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	3600.	J/NJ
Unknown (UG/KG)	1500.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	2500.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	23000.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	510.	J/NJ
Unknown hydrocarbon (UG/KG)	2100.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	2000.	J/NJ
Unknown (UG/KG)	780.	J/NJ
Unknown (UG/KG)	940.	J/NJ
Unknown (UG/KG)	1100.	J/NJ
Unknown hydrocarbon (UG/KG)	820.	J/NJ
Unknown (UG/KG)	670.	J/NJ
Unknown (UG/KG)	3100.	J/NJ

WK-SS02-91 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown oxygenated alkane (UG/KG)	720.	J/NJ
Hexadecanoic acid (UG/KG)	540.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	1200.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	2800.	J/NJ
Unknown (UG/KG)	860.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	810.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	7600.	J/NJ
Unknown (UG/KG)	630.	J/NJ
Unknown (UG/KG)	500.	J/NJ
Unknown hydrocarbon (UG/KG)	1400.	J/NJ
Unknown hydrocarbon (UG/KG)	1700.	J/NJ
Unknown (UG/KG)	720.	J/NJ
Unknown (UG/KG)	720.	J/NJ
Unknown (UG/KG)	1300.	J/NJ
Unknown hydrocarbon (UG/KG)	900.	J/NJ
Unknown (UG/KG)	990.	J/NJ
Unknown (UG/KG)	810.	J/NJ
Unknown (UG/KG)	3500.	J/NJ
Unknown (UG/KG)	500.	J/NJ
Unknown (UG/KG)	720.	J/NJ

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS

WK-SS03-01 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Hexadecanoic acid (UG/KG)	1300.	J/NJ
Unknown chlorinated hydrocarbo (UG/KG)	1100.	J/NJ
Unknown substituted alkane (UG/KG)	2300.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	2200.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	2700.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	1500.	J/NJ
Unknown (UG/KG)	1600.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	1600.	J/NJ
Unknown (UG/KG)	2100.	J/NJ
Unknown (UG/KG)	1500.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	5000.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown hydrocarbon (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	2600.	J/NJ
Unknown (UG/KG)	3100.	J/NJ
Unknown (UG/KG)	2600.	J/NJ
Unknown (UG/KG)	2800.	J/NJ

WK-SS04-01 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	800.	J/NJ
Unknown (UG/KG)	930.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	720.	J/NJ
Unknown (UG/KG)	720.	BJ/NJ
Unknown (UG/KG)	1700.	J/NJ
Unknown (UG/KG)	11000.	J/NJ
Unknown (UG/KG)	590.	J/NJ
Unknown hydrocarbon (UG/KG)	2100.	J/NJ
Unknown (UG/KG)	1100.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	670.	J/NJ
Unknown (UG/KG)	970.	J/NJ
Unknown (UG/KG)	1500.	J/NJ
Unknown hydrocarbon (UG/KG)	970.	J/NJ
Unknown (UG/KG)	2400.	J/NJ
Unknown (UG/KG)	890.	J/NJ
Unknown (UG/KG)	4600.	J/NJ
Unknown (UG/KG)	1600.	J/NJ
Unknown (UG/KG)	510.	J/NJ

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS Type: SVOC

Parameter	WK-SS01-01 08/08/91		WK-SS02-01 08/08/91		WK-SS02-91 08/08/91		WK-SS03-01 08/08/91		WK-SS04-01 08/08/91	
Dibenzofuran (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4-Dinitrotoluene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Diethylphthalate (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Chlorophenyl-phenylether (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Fluorene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Nitroaniline (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
4,6-Dinitro-2-methylphenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
N-nitrosodiphenylamine (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Bromophenyl-phenylether (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Hexachlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Pentachlorophenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
Phenanthrene (UG/KG)	58.	J/	390.	U/	450.	U/	79.	J/	420.	U/
Anthracene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Di-n-butylphthalate (UG/KG)	210.	J/	61.	J/	99.	J/	240.	J/	90.	J/
Fluoranthene (UG/KG)	130.	J/	43.	J/	59.	J/	220.	J/	61.	J/
Pyrene (UG/KG)	94.	J/	52.	J/	63.	J/	260.	J/	420.	U/
Butylbenzylphthalate (UG/KG)	65.	J/	390.	U/	450.	U/	290.	J/	420.	U/
3,3'-Dichlorobenzidine (UG/KG)	900.	U/	780.	U/	890.	U/	900.	U/	840.	U/
Benzo(a)anthracene (UG/KG)	73.	J/	390.	U/	450.	U/	160.	J/	420.	U/
Chrysene (UG/KG)	93.	J/	390.	U/	450.	U/	180.	J/	420.	U/
bis(2-ethylhexyl)phthalate (UG/KG)	450.	U/	390.	U/	450.	U/	1800.	B/U	420.	U/
Di-n-octyl Phthalate (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Benzo(b)fluoranthene (UG/KG)	300.	JX/	390.	U/	450.	U/	690.	X/	420.	U/
Benzo(k)fluoranthene (UG/KG)	300.	JX/	390.	U/	450.	U/	690.	X/	420.	U/
Benzo(a)pyrene (UG/KG)	99.	J/	40.	J/	450.	U/	170.	J/	420.	U/
Indeno(1,2,3-cd)pyrene (UG/KG)	450.	U/	390.	U/	450.	U/	100.	J/	420.	U/
Dibenz(a,h)anthracene (UG/KG)	450.	U/	390.	U/	450.	U/	48.	J/	420.	U/
Benzo(g,h,i)perylene (UG/KG)	52.	J/	390.	U/	450.	U/	110.	J/	420.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS
Generated by: CAW
Date Issued: 01-OCT-91

WK-SS01-01 08/08/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	640.	JN/NJ
Hexadecanoic acid (UG/KG)	730.	J/NJ
Unknown amine (UG/KG)	1800.	J/NJ
Unknown (UG/KG)	590.	J/NJ
Unknown (UG/KG)	550.	J/NJ
Unknown subst. hydrocarbon (UG/KG)	1300.	J/NJ
Unknown (UG/KG)	730.	J/NJ
Unknown (UG/KG)	820.	J/NJ
Unknown hydrocarbon (UG/KG)	2800.	J/NJ
Unknown (UG/KG)	820.	J/NJ
Unknown (UG/KG)	820.	J/NJ
Unknown hydrocarbon (UG/KG)	1300.	J/NJ
Unknown oxygenated hydrocarbon (UG/KG)	1800.	J/NJ
Unknown (UG/KG)	1000.	J/NJ
Unknown (UG/KG)	780.	J/NJ
Unknown (UG/KG)	1300.	J/NJ
Unknown (UG/KG)	2200.	J/NJ
Unknown (UG/KG)	1200.	J/NJ
Unknown (UG/KG)	2100.	J/NJ
Unknown (UG/KG)	550.	J/NJ

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS Type: SVOC
Generated by: CAW
Date Issued: 01-OCT-91

Parameter	WK-SS01-01 08/08/91		WK-SS02-01 08/08/91		WK-SS02-91 08/08/91		WK-SS03-01 08/08/91		WK-SS04-01 08/08/91	
Phenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
bis(2-Chloroethyl) ether (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Chlorophenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
1,3-Dichlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
1,4-Dichlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Benzyl alcohol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
1,2-Dichlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Methylphenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
bis(2-Chloroisopropyl)ether (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Methylphenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
N-Nitroso-di-n-dipropylamine (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Hexachloroethane (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Nitrobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Isophorone (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Nitrophenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4-Dimethylphenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Benzoic acid (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
bis(2-Chloroethoxy)methane (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4-Dichlorophenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
1,2,4-Trichlorobenzene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Naphthalene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Chloroaniline (UG/KG)	200.	J/	390.	U/	450.	U/	140.	J/	420.	U/
Hexachlorobutadiene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
4-Chloro-3-methylphenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Methylnaphthalene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
Hexachlorocyclopentadiene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4,6-Trichlorophenol (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4,5-Trichlorophenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
2-Chloronaphthalene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2-Nitroaniline (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
Dimethylphthalate (UG/KG)	450.	U/	390.	U/	450.	U/	100.	J/	420.	U/
Acenaphthylene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,6-Dinitrotoluene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
3-Nitroaniline (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
Acenaphthene (UG/KG)	450.	U/	390.	U/	450.	U/	450.	U/	420.	U/
2,4-Dinitrophenol (UG/KG)	2200.	U/	1900.	U/	2200.	U/	2200.	U/	2000.	U/
[illegible]-Ni[illegible]enol [illegible]KG)	2200	U/	1900	U/	2200.	U/	2200.	U/	2000.	U/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SS Type: SLIND HTL
Generated by: CAW
Date Issued: 01-OCT-91

Parameter	WK-SS01-01 08/08/91		WK-SS02-01 08/08/91		WK-SS02-91 08/08/91		WK-SS03-01 08/08/91		WK-SS04-01 08/08/91	
Aluminum (MG/KG)	10500.	/	4320.	/	4340.	/	17000.	/	6610.	/
Antimony (MG/KG)	12.	UN/UJ	11.4	UN/UJ	11.5	UN/UJ	10.8	UN/UJ	8.8	UN/UJ
Arsenic (MG/KG)	3.9	S/	4.8	S/	3.8	S/	5.1	S/	3.3	S/
Barium (MG/KG)	209.	/	45.6	K/	40.4	K/	412.	/	64.4	/
Beryllium (MG/KG)	1.2	U/	1.1	U/	1.1	U/	1.1	U/	0.88	U/
Cadmium (MG/KG)	1.3	/	1.1	U/	1.1	U/	2.3	/	0.88	U/
Calcium (MG/KG)	51900.	/	68700.	/	39000.	/	47600.	/	57000.	/
Chromium, total (MG/KG)	75.1	/	5.8	/	7.	/	63.1	/	9.8	/
Cobalt (MG/KG)	3.4	K/	2.9	K/	3.4	K/	6.4	K/	4.7	K/
Copper (MG/KG)	283.	/	17.1	/	16.7	/	589.	/	18.2	/
Iron (MG/KG)	18400.	/	12100.	/	11100.	/	24400.	/	12200.	/
Lead (MG/KG)	44.9	*/J	28.2	*/J	19.9	*/J	73.6	S*/J	17.4	*/J
Magnesium (MG/KG)	24900.	/	34000.	/	18800.	/	18900.	/	30300.	/
Manganese (MG/KG)	395.	/	445.	/	280.	/	793.	/	447.	/
Mercury (MG/KG)	2.2	*/J	0.12	*/J	0.09	*/J	1.9	*/J	0.07	*/J
Nickel (MG/KG)	27.7	/	13.	/	11.6	/	51.5	/	16.8	/
Potassium (MG/KG)	1020.	K/	654.	K/	723.	K/	1770.	/	881.	/
Selenium (MG/KG)	0.93	KS/	0.49	US/	0.92	KS/	1.9	S/	0.41	US/
Silver (MG/KG)	8.1	/	2.3	U/	2.3	U/	10.3	/	1.8	U/
Sodium (MG/KG)	481.	U/	457.	U/	459.	U/	1000.	K/	352.	U/
Thallium (MG/KG)	0.64	U/	0.73	U/	0.57	U/	0.61	U/	0.61	U/
Vanadium (MG/KG)	12.	U/	11.4	U/	11.5	U/	10.8	U/	15.5	/
Zinc (MG/KG)	441.	/	59.1	/	61.	/	688.	/	54.6	/
Total Solids (%)	73.7	/	71.8	/	75.2	/	76.4	/	82.7	/

Note: (1) Results are reported with qualifiers (Laborat[illegible] Qualifier/Data Validation Qualifier) to [illegible] right of the value.

APPENDIX J-2

SPREADSHEET TO CALCULATE LEACHATE VOLUME

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP
Generated by: CAW
Date Issued: 02-OCT-91

WK-TP03-06 07/24/91

(TBMA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LC/DVQ
3-Cyclohexene-1-methanol, .alp (UG/KG)	1600000.	J/JN
PCB (UG/KG)	5000000.	J/JN
PCB (UG/KG)	1800000.	J/JN
PCB (UG/KG)	2900000.	J/JN
PCB (UG/KG)	4100000.	J/JN
PCB (UG/KG)	7200000.	J/JN
PCB (UG/KG)	1400000.	J/JN
PCB (UG/KG)	3500000.	J/JN
PCB (UG/KG)	4400000.	J/JN
PCB (UG/KG)	1600000.	J/JN
PCB (UG/KG)	5100000.	J/JN
PCB (UG/KG)	1900000.	J/JN
PCB (UG/KG)	2400000.	J/JN
PCB (UG/KG)	3700000.	J/JN
Methylphenylester (UG/KG)	1700000.	J/JN
Unknown (UG/KG)	2400000.	J/JN
Unknown (UG/KG)	2900000.	J/JN
Unknown (UG/KG)	3400000.	J/JN
Unknown (UG/KG)	3100000.	J/JN
Unknown (UG/KG)	2300000.	J/JN

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP

WK-TP03-06DUP 07/24/91

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
PCB (UG/KG)	3000000.	J/JN
PCB (UG/KG)	960000.	J/JN
PCB (UG/KG)	1500000.	J/JN
PCB (UG/KG)	3000000.	J/JN
PCB (UG/KG)	8100000.	J/JN
PCB (UG/KG)	2000000.	J/JN
PCB (UG/KG)	1400000.	J/JN
PCB (UG/KG)	3600000.	J/JN
PCB (UG/KG)	5100000.	J/JN
PCB (UG/KG)	1200000.	J/JN
PCB (UG/KG)	5700000.	J/JN
PCB (UG/KG)	1800000.	J/JN
PCB (UG/KG)	2500000.	J/JN
PCB (UG/KG)	3600000.	J/JN
Tris(methylphenyl)esterphospho (UG/KG)	1300000.	J/JN
Unknown (UG/KG)	1900000.	J/JN
Unknown (UG/KG)	2300000.	J/JN
Unknown (UG/KG)	2900000.	J/JN
Unknown (UG/KG)	1700000.	J/JN
Unknown (UG/KG)	1000000.	J/JN

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: SLIND MTL
Generated by: CAW
Date Issued: 02-OCT-91

Parameter	WK-TP03-06 07/24/91		WK-TP03-06DUP 07/24/91	
Aluminum (MG/KG)	31.3	U/	31.2	U/
Antimony (MG/KG)	31.3	U/	31.2	U/
Arsenic (MG/KG)	1.3	U/	1.2	U/
Barium (MG/KG)	6.3	U/	6.2	U/
Beryllium (MG/KG)	3.1	U/	3.1	U/
Cadmium (MG/KG)	3.1	U/	3.1	U/
Calcium (MG/KG)	626.	U/	624.	U/
Chromium, total (MG/KG)	6.3	U/	6.2	U/
Cobalt (MG/KG)	6.3	U/	6.2	U/
Copper (MG/KG)	6.3	U/	6.2	U/
Iron (MG/KG)	20.	K/	29.3	K/
Lead (MG/KG)	1.9	U/	1.9	U/
Magnesium (MG/KG)	626.	U/	624.	U/
Manganese (MG/KG)	6.3	U/	6.2	U/
Mercury (MG/KG)	0.15	*/	0.12	U*/
Nickel (MG/KG)	12.5	U/	12.5	U/
Potassium (MG/KG)	62.6	U/	62.4	U/
Selenium (MG/KG)	1.3	U/	1.2	U/
Silver (MG/KG)	6.3	U/	6.2	U/
Sodium (MG/KG)	1250.	U/	1250.	U/
Thallium (MG/KG)	1.9	U/	1.9	U/
Vanadium (MG/KG)	31.3	U/	31.2	U/
Zinc (MG/KG)	6.3	U/	6.2	U/
Cyanide (MG/KG)	7.9	U/	7.8	U/
Total Solids (%)	31.7	/	32.	/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: PPCB
Generated by: CAW
Date Issued: 02-OCT-91

Parameter/	WK-TP03-06 07/24/91		WK-TP03-06DUP 07/24/91	
alpha-BHC (MG/KG)	12.	U/UJ	10.	U/UJ
beta-BHC (MG/KG)	12.	U/UJ	10.	U/UJ
delta-BHC (MG/KG)	12.	U/UJ	10.	U/UJ
gamma-BHC (Lindane) (MG/KG)	12.	U/UJ	10.	U/UJ
Heptachlor (MG/KG)	12.	U/UJ	10.	U/UJ
Aldrin (MG/KG)	12.	U/UJ	10.	U/UJ
Heptachlor epoxide (MG/KG)	12.	U/UJ	10.	U/UJ
Endosulfan I (MG/KG)	12.	U/UJ	10.	U/UJ
Dieldrin (MG/KG)	24.	U/UJ	20.	U/UJ
4,4'-DDE (MG/KG)	24.	U/UJ	20.	U/UJ
Endrin (MG/KG)	24.	U/UJ	20.	U/UJ
Endosulfan II (MG/KG)	24.	U/UJ	20.	U/UJ
4,4'-DDD (MG/KG)	24.	U/UJ	20.	U/UJ
Endosulfan sulfate (MG/KG)	24.	U/UJ	20.	U/UJ
4,4'-DDT (MG/KG)	24.	U/UJ	20.	U/UJ
Methoxychlor (MG/KG)	160.	U/UJ	130.	U/UJ
Endrin ketone (MG/KG)	24.	U/UJ	20.	U/UJ
alpha-Chlordane (MG/KG)	120.	U/UJ	100.	U/UJ
gamma-Chlordane (MG/KG)	120.	U/UJ	100.	U/UJ
Toxaphene (MG/KG)	240.	U/UJ	200.	U/UJ
Aroclor-1016 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1221 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1232 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1242 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1248 (MG/KG)	120.	U/UJ	100.	U/UJ
Aroclor-1254 (MG/KG)	140000.	C/J	120000.	C/J
Aroclor-1260 (MG/KG)	240.	U/UJ	200.	U/UJ

Note: (1) Results are reported with qualifiers (Laborat Qualifier/Data Validation Qualifier) to right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: SVOC

Parameter	WK-TP03-06 07/24/91		WK-TP03-06DUP 07/24/91	
Dibenzofuran (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4-Dinitrotoluene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Diethylphthalate (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Chlorophenyl-phenylether (UG/KG)	100000.	U/UJ	300000.	U/UJ
Fluorene (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Nitroaniline (UG/KG)	500000.	U/UJ	1500000.	U/UJ
4,6-Dinitro-2-methylphenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ
N-nitrosodiphenylamine (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Bromophenyl-phenylether (UG/KG)	100000.	U/UJ	300000.	U/UJ
Hexachlorobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Pentachlorophenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ
Phenanthrene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Anthracene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Di-n-butylphthalate (UG/KG)	100000.	U/UJ	120000.	J/J
Fluoranthene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Pyrene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Butylbenzylphthalate (UG/KG)	100000.	U/UJ	300000.	U/UJ
3,3'-Dichlorobenzidine (UG/KG)	200000.	U/UJ	600000.	U/UJ
Benzo(a)anthracene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Chrysene (UG/KG)	100000.	U/UJ	300000.	U/UJ
bis(2-ethylhexyl)phthalate (UG/KG)	250000.	J/J	76000.	J/J
Di-n-octyl Phthalate (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzo(b)fluoranthene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzo(k)fluoranthene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzo(a)pyrene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Indeno(1,2,3-cd)pyrene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Dibenz(a,h)anthracene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzo(g,h,i)perylene (UG/KG)	100000.	U/UJ	300000.	U/UJ

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: SVOC
Generated by: CAW
Date Issued: 02-OCT-91

Parameter	WK-TP03-06 07/24/91		WK-TP03-06DUP 07/24/91	
Phenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
bis(2-Chloroethyl) ether (UG/KG)	100000.	U/UJ	300000.	U/UJ
2-Chlorophenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
1,3-Dichlorobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
1,4-Dichlorobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzyl alcohol (UG/KG)	21000.	J/J	300000.	U/UJ
1,2-Dichlorobenzene (UG/KG)	12000.	J/J	300000.	U/UJ
2-Methylphenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
bis(2-Chloroisopropyl)ether (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Methylphenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
N-Nitroso-di-n-dipropylamine (UG/KG)	100000.	U/UJ	300000.	U/UJ
Hexachloroethane (UG/KG)	100000.	U/UJ	300000.	U/UJ
Nitrobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Isophorone (UG/KG)	6000000.	E/J	4600000.	/J
2-Nitrophenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4-Dimethylphenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
Benzoic acid (UG/KG)	500000.	U/UJ	1500000.	U/UJ
bis(2-Chloroethoxy)methane (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4-Dichlorophenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
1,2,4-Trichlorobenzene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Naphthalene (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Chloroaniline (UG/KG)	100000.	U/UJ	300000.	U/UJ
Hexachlorobutadiene (UG/KG)	100000.	U/UJ	300000.	U/UJ
4-Chloro-3-methylphenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
2-Methylnaphthalene (UG/KG)	100000.	U/UJ	300000.	U/UJ
Hexachlorocyclopentadiene (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4,6-Trichlorophenol (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4,5-Trichlorophenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ
2-Chloronaphthalene (UG/KG)	100000.	U/UJ	300000.	U/UJ
2-Nitroaniline (UG/KG)	500000.	U/UJ	1500000.	U/UJ
Dimethylphthalate (UG/KG)	100000.	U/UJ	300000.	U/UJ
Acenaphthylene (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,6-Dinitrotoluene (UG/KG)	100000.	U/UJ	300000.	U/UJ
3-Nitroaniline (UG/KG)	500000.	U/UJ	1500000.	U/UJ
Acenaphthene (UG/KG)	100000.	U/UJ	300000.	U/UJ
2,4-Dinitrophenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ
4-Nitrophenol (UG/KG)	500000.	U/UJ	1500000.	U/UJ

Note: (1) Results are reported with qualifiers (Laborato[illegible] Qualifier/Data Validation Qualifier) to [illegible]ight of the value.

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): J ANDERSON J KELLY Date: AUGUST 10, 1990
Project/Site: WOODSTOCK L/F State: ILLINOIS County: MCHENRY
Applicant/Owner: _____ Plant Community #/Name: 4
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ____ No X (If no, explain on back) THE AREA IS PARTIALLY FILLED BY THE LANDFILL.
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes X No ____ (If yes, explain on back) PORTIONS OF THE WETLAND HAVE BEEN FILLED BY LANDFILLING A EROSION

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. TYPHA LATIFOLIA	OBL	HERB	11.		
2. SALIX SP.	FACW	SHRUB	12.		
3. CAREX SP.	OBL	HERB	13.		
4. PHALARIS ARUNDINACEA	FACW+	HERB	14.		
5. SOLIDAGO SPP.	—	HERB	15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 90
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: MOST OF THE AREA IS DOMINATED BY OBL OR FACW WETLAND VEGETATION.

SOILS

Series/phase: HOUGHTON MUCK Subgroup:[2] _____
Is the soil on the hydric soils list? Yes X No ____ Undetermined _____
Is the soil a Histosol? Yes X No ____ Histic epipedon present? Yes ____ No X
Is the soil: Mottled? Yes ____ No X Gleyed? Yes ____ No X
Matrix Color: BLACK Mottle Colors: _____
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes X No ____
Rationale: MUCK SOILS ARE WITHIN 18 IN. OF THE SURFACE.

HYDROLOGY

Is the ground surface inundated? Yes X No ____ Surface water depth: APPROX. 6 IN.
Is the soil saturated? Yes X No ____
Depth to free-standing water in pit/soil probe hole: LESS THAN 2 IN.
List other field evidence of surface inundation or soil saturation.

Is the wetland hydrology criterion met? Yes X No ____
Rationale: WATER OR SATURATED SOILS ARE PRESENT IN MOST OF THE WETLAND.

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: VEGETATION, SOILS, AND HYDROLOGY CRITERIA ARE MET.

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): J ANDERSON, J KELLY Date: AUGUST 10, 1990
Project/Site: WOODSTOCK L/F State: ILLINOIS County: MCHENRY
Applicant/Owner: _____ Plant Community #/Name: 3
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ____ No X (If no, explain on back) THE AREA WAS DRAINED AND SPOIL PILES WERE FORMED 50-55 YRS AG
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes X No ____ (If yes, explain on back) PORTIONS OF THE AREA HAD BEEN FARMED WITHIN 15 YRS.

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. PHALARIS ARUNDINACEA	FACW+	HERB	11.		
2. SOLIDAGO SPP.	–	HERB	12.		
3. TYPHA LATIFOLIA	OBL	HERB	13.		
4. URTICA DIOICA	FAC+	HERB	14.		
5. AMBROSIA TRIFIDA	FAC+	HERB	15.		
6. CORNUS FOEMINA	FACW-	SHRUB	16.		
7. RHAMNUS CATHARTICA	FACU	SHRUB	17.		
8. ACER NEGUNDO	FACW-	SAPLING	18.		
9. CRATAEGUS SP.	–	SAPLING	19.		
10. SILPHIUM TERREBINTHINACEUM	FACU	HERB	20.		

Percent of dominant species that are OBL, FACW, and/or FAC 95
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: MOST AREAS ARE DOMINATED BY FACW OR FAC SPECIES.

SOILS

Series/phase: HOUGHTON MUCK, ELLIOT SILT LOAM Subgroup:[2] _____
Is the soil on the hydric soils list? Yes X No ____ Undetermined _____
Is the soil a Histosol? Yes X No ____ Histic epipedon present? Yes ____ No X
Is the soil: Mottled? Yes X No ____ Gleyed? Yes ____ No ____
Matrix Color: BLACK Mottle Colors: ORANGE, GRAY
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes X No ____
Rationale: MUCK SOILS ARE WITHIN 18 IN. OF SURFACE

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth: _____
Is the soil saturated? Yes X No ____
Depth to free-standing water in pit/soil probe hole: LESS THAN 1 IN. IN PLACES
List other field evidence of surface inundation or soil saturation.

Is the wetland hydrology criterion met? Yes X No ____
Rationale: SATURATED CONDITIONS OCCUR WITHIN 18 IN. OF THE SURFACE.

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: THE AREA HAS WETLAND SOILS, INDICATORS OF HYDROLOGY, AND A DOMINANCE OF WETLAND VEGETATION.

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): J ANDERSON, J KELLY Date: AUGUST 9, 1990
Project/Site: WOODSTOCK L/F State: ILLINOIS County: MCHENRY
Applicant/Owner: _____ Plant Community #/Name: 2
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. PHALARIS ARUNDINACEA	FACW+	HERB	11.		
2. CORNUS FOEMINA	FACW-	SHRUB	12.		
3. SOLIDAGO SPP.	-	HERB	13.		
4. SALIX SP.	FACW	SHRUB	14.		
5. ACER NEGUNDO	FACW-	SAPLING	15.		
6. QUERCUS MACROCARPA	FAC-	TREE	16.		
7. POPULUS DELTOIDES	FAC+	TREE	17.		
8. RHAMNUS CATHARTICA	FACU	SAPLING	18.		
9. AMBROSIA TRIFIDA	FAC+	HERB	19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 95
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: THE AREA WAS DOMINATED BY FACW SPECIES, ESPECIALLY BY PHALARIS ARUNDINACEA.

SOILS

Series/phase: DRUMMER SILT CLAY LOAM Subgroup:[2] _____
Is the soil on the hydric soils list? Yes X No ____ Undetermined _____
Is the soil a Histosol? Yes ____ No X Histic epipedon present? Yes X No ____
Is the soil: Mottled? Yes X No ____ Gleyed? Yes X No ____
Matrix Color: BLACK Mottle Colors: ORANGE, GRAY
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes X No ____
Rationale: MOTTLING AND GLEYING OCCURRED WITHIN 18 IN. OF SURFACE.

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth: _____
Is the soil saturated? Yes ____ No X
Depth to free-standing water in pit/soil probe hole: GREATER THAN 18 IN.
List other field evidence of surface inundation or soil saturation.

Is the wetland hydrology criterion met? Yes X No ____
Rationale: THIS CRITERION IS MET BECAUSE THE VEGETATION AND SOILS CRITERIA ARE MET.

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: THE AREA HAS WETLAND SOILS AND A DOMINANCE OF WETLAND VEGETATION.

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): J ANDERSON, J KELLY Date: AUGUST 9, 1990
Project/Site: WOODSTOCK L/F State: ILLINOIS County: MC HENRY
Applicant/Owner: _____ Plant Community #/Name: 1
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes ____ No X (If no, explain on back) SITE WAS DRAINED 50-55 YRS AGO, USED AS A LANDFILL 25-35 YRS
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back) PERIMETER AREAS HAVE BEEN FILLED

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. PHALARIS ARUNDINACEA	FACW+	HERB	11. URTICA DIOICA	FAC+	HERB
2. ACER NEGUNDO	FACW-	SAPLING	12.		
3. SOLIDAGO SPP.	—	HERB	13.		
4. SALIX SPP.	FACW	TREE,	14.		
5.		SAPLING	15.		
6. RHAMNUS CATHARTICA	FACU	SAPLING	16.		
7. POPULUS DELTOIDES	FAC+	TREE	17.		
8. TYPHA LATIFOLIA	OBL	HERB	18.		
9. CORNUS STOLONIFERA	FACW	SHRUB	19.		
10. AMBROSIA TRIFIDA	FAC+	HERB	20.		

Percent of dominant species that are OBL, FACW, and/or FAC 95
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: MOST AREAS ARE DOMINATED BY FACW SPECIES, ESPECIALLY BY PHALARIS ARUNDINACEA.

SOILS

Series/phase: LENA MUCK, HOUGHTON MUCK, LOAMY BURNED MUCK Subgroup:[2]
Is the soil on the hydric soils list? Yes X No ____ Undetermined ____
Is the soil a Histosol? Yes X No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes X No ____ Gleyed? Yes ____ No X
Matrix Color: BLACK Mottle Colors: ORANGE
Other hydric soil indicators: ____
Is the hydric soil criterion met? Yes X No ____
Rationale: MUCK SOILS ARE WITHIN 18 IN. OF SURFACE.

HYDROLOGY

Is the ground surface inundated? Yes X IN PLACES No ____ Surface water depth: LESS THAN 1 FT
Is the soil saturated? Yes ____ No X EXCEPT IN INUNDATED AREAS
Depth to free-standing water in pit/soil probe hole: GREATER THAN 18 IN.
List other field evidence of surface inundation or soil saturation.
HUMMOCKS IN ONE AREA
Is the wetland hydrology criterion met? Yes X No ____
Rationale: THIS CRITERION IS MET BECAUSE THE VEGETATION AND SOILS CRITERIA ARE MET.

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: THE AREA HAS WETLAND SOILS AND A DOMINANCE OF WETLAND VEGETATION.

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

APPENDIX F-7

TEST PITS

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SWFB01-01 11/20/90		WK-SWTB01-01 11/20/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	9.	U/	9.	U/
Acetone (UG/L)	10.	U/UJ	10.	U/UJ	11.	B/UJ	10.	U/UJ
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	2.	J/	1.	J/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Labora Qualifier/Data Validation Qualifier) to t ight of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: SVOC

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SWFB01-01 11/20/90	
Dibenzofuran (UG/L)	10.	U/	10.	U/	10.	U/
2,4-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/
Diethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/
4-Chlorophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/
Fluorene (UG/L)	10.	U/	10.	U/	10.	U/
4-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/
4,6-Dinitro-2-methylphenol (UG/L)	50.	U/	50.	U/	50.	U/
N-nitrosodiphenylamine (UG/L)	10.	U/	10.	U/	10.	U/
4-Bromophenyl-phenylether (UG/L)	10.	U/	10.	U/	10.	U/
Hexachlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
Pentachlorophenol (UG/L)	50.	U/	50.	U/	50.	U/
Phenanthrene (UG/L)	10.	U/	10.	U/	10.	U/
Anthracene (UG/L)	10.	U/	10.	U/	10.	U/
Di-n-butylphthalate (UG/L)	10.	U/	10.	U/	10.	U/
Fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/
Pyrene (UG/L)	10.	U/	10.	U/	10.	U/
Butylbenzylphthalate (UG/L)	10.	U/	10.	U/	10.	U/
3,3'-Dichlorobenzidine (UG/L)	20.	U/	20.	U/	20.	U/
Benzo(a)anthracene (UG/L)	10.	U/	10.	U/	10.	U/
Chrysene (UG/L)	10.	U/	10.	U/	10.	U/
bis(2-ethylhexyl)phthalate (UG/L)	24.	B/UJ	39.	B/UJ	5.	BJ/
Di-n-octyl Phthalate (UG/L)	10.	U/	10.	U/	10.	U/
Benzo(b)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/
Benzo(k)fluoranthene (UG/L)	10.	U/	10.	U/	10.	U/
Benzo(a)pyrene (UG/L)	10.	U/	10.	U/	10.	U/
Indeno(1,2,3-cd)pyrene (UG/L)	10.	U/	10.	U/	10.	U/
Dibenz(a,h)anthracene (UG/L)	10.	U/	10.	U/	10.	U/
Benzo(g,h,i)perylene (UG/L)	10.	U/	10.	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: SVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SWFB01-01 11/20/90	
Phenol (UG/L)	10.	U/	10.	U/	10.	U/
bis(2-Chloroethyl) ether (UG/L)	10.	U/	10.	U/	10.	U/
2-Chlorophenol (UG/L)	10.	U/	10.	U/	10.	U/
1,3-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
1,4-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
Benzyl Alcohol (UG/L)	10.	U/	10.	U/	10.	U/
1,2-Dichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
2-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/
bis(2-Chloroisopropyl)ether (UG/L)	10.	U/	10.	U/	10.	U/
4-Methylphenol (UG/L)	10.	U/	10.	U/	10.	U/
N-Nitroso-di-n-dipropylamine (UG/L)	10.	U/	10.	U/	10.	U/
Hexachloroethane (UG/L)	10.	U/	10.	U/	10.	U/
Nitrobenzene (UG/L)	10.	U/	10.	U/	10.	U/
Isophorone (UG/L)	10.	U/	10.	U/	10.	U/
2-Nitrophenol (UG/L)	10.	U/	10.	U/	10.	U/
2,4-Dimethylphenol (UG/L)	10.	U/	10.	U/	10.	U/
Benzoic Acid (UG/L)	50.	U/	50.	U/	50.	U/
bis(2-Chloroethoxy)methane (UG/L)	10.	U/	10.	U/	10.	U/
2,4-Dichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/
1,2,4-Trichlorobenzene (UG/L)	10.	U/	10.	U/	10.	U/
Naphthalene (UG/L)	10.	U/	10.	U/	10.	U/
4-Chloroaniline (UG/L)	10.	U/	10.	U/	10.	U/
Hexachlorobutadiene (UG/L)	10.	U/	10.	U/	10.	U/
4-Chloro-3-methylphenol (UG/L)	10.	U/	10.	U/	10.	U/
2-Methylnaphthalene (UG/L)	10.	U/	10.	U/	10.	U/
Hexachlorocyclopentadiene (UG/L)	10.	U/	10.	U/	10.	U/
2,4,6-Trichlorophenol (UG/L)	10.	U/	10.	U/	10.	U/
2,4,5-Trichlorophenol (UG/L)	50.	U/	50.	U/	50.	U/
2-Chloronaphthalene (UG/L)	10.	U/	10.	U/	10.	U/
2-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/
Dimethylphthalate (UG/L)	10.	U/	10.	U/	10.	U/
Acenaphthylene (UG/L)	10.	U/	10.	U/	10.	U/
2,6-Dinitrotoluene (UG/L)	10.	U/	10.	U/	10.	U/
3-Nitroaniline (UG/L)	50.	U/	50.	U/	50.	U/
Acenaphthene (UG/L)	10.	U/	10.	U/	10.	U/
2,4-Dinitrophenol (UG/L)	50.	U/	50.	U/	50.	U/
4-Nitrophenol (UG/L)	50.	U/	50.	U/	50.	U/

Note: (1) Results are reported with qualifiers (Laboratory [illegible] lifier/Data Validation Qualifier) to the r[illegible] of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: IND MTL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SW10-01 04/02/91		WK-SW10-91 04/02/91		WK-SW11-01 04/03/91	
Aluminum (UG/L)	50.	U/	50.	U/	76.	K/	83.5	K/	87.	K/
Antimony (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Arsenic (UG/L)	2.4	KNS/J	2.	UN/UJ	2.	U/	2.	U/	2.	U/
Barium (UG/L)	222.	/	195.	K/	48.5	K/	48.	K/	67.5	K/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	199000.	/	189000.	/	79000.	/	79600.	/	86700.	/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Copper (UG/L)	14.	K/	12.	K/	10.	U/	10.	U/	10.	U/
Iron (UG/L)	32200.	/	28000.	/	432.	/	396.	/	1190.	/
Lead (UG/L)	4.6	S*/J	5.3	S*/J	3.	U/	3.	U/	3.	U/
Magnesium (UG/L)	126000.	/	126000.	/	31600.	/	31000.	/	46300.	/
Manganese (UG/L)	615.	/	641.	/	54.5	/	52.	/	86.5	/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	121.	/	141.	/	20.	U/	20.	U/	20.	U/
Potassium (UG/L)	16000.	/	15700.	/	1220.	K/	1220.	K/	10100.	/
Selenium (UG/L)	2.	U/	2.	US/	2.	U/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	63400.	/	60400.	/	28900.	/	30200.	/	35100.	/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	264.	/	225.	/	10.	U/	10.	U/	181.	/
Cyanide (UG/L)	10.	U/	10.	U/						
Alkalinity, Total (MG/L)					234.	/	234.	/	368.	/
Chloride (MG/L)					70.	/	69.	/	67.	/
Nitrate+Nitrite Nitrogen (MG/L)					4.33	/	4.23	/	3.2	/
Nitrogen, Ammonia (MG/L)					0.21	/	0.24	/	1.51	/
Nitrogen, Total Kjeldahl (MG/L)					1.82	N/J	1.93	N/J	3.48	N/J
Phosphorus, Total (MG/L)					0.03	/	0.03	/	0.04	/
Sulfate (MG/L)					74.	/	67.	/	70.	/
Total Dissolved Solids (MG/L)					506.	/	478.	/	600.	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: IND MTL

Parameter	WK-SW12-01 04/03/91		WK-SWFB01-01 11/20/90		WK-SWFB10-01 04/03/91	
Aluminum (UG/L)	89.	K/	50.	U/	50.	U/
Antimony (UG/L)	50.	U/	50.	U/	50.	U/
Arsenic (UG/L)	2.	U/	2.	UN/UJ	2.	U/
Barium (UG/L)	73.5	K/	10.	U/	10.	U/
Beryllium (UG/L)	5.	U/	5.	U/	5.	U/
Cadmium (UG/L)	5.	U/	5.	U/	5.	U/
Calcium (UG/L)	99200.	/	1000.	U/	1000.	U/
Chromium, total (UG/L)	10.	U/	10.	U/	10.	U/
Cobalt (UG/L)	10.	U/	10.	U/	10.	U/
Copper (UG/L)	10.	U/	10.	U/	10.	U/
Iron (UG/L)	986.	/	20.	U/	20.	U/
Lead (UG/L)	3.	U/	3.	U*/UJ	3.	U/
Magnesium (UG/L)	58100.	/	1000.	U/	1000.	U/
Manganese (UG/L)	64.	/	10.	U/	10.	U/
Mercury (UG/L)	0.2	U/	0.2	U/	0.2	U/
Nickel (UG/L)	20.	U/	20.	K/U	20.	U/
Potassium (UG/L)	9920.	/	100.	U/	100.	U/
Selenium (UG/L)	2.	US/	2.	U/	2.	U/
Silver (UG/L)	10.	U/	10.	U/	10.	U/
Sodium (UG/L)	38500.	/	2000.	U/	2000.	U/
Thallium (UG/L)	3.	U/	3.	U/	3.	U/
Vanadium (UG/L)	50.	U/	50.	U/	50.	U/
Zinc (UG/L)	90.	/	10.	U/	10.	U/
Cyanide (UG/L)			10.	U/		
Alkalinity, Total (MG/L)	432.	/			5.	U/
Chloride (MG/L)	64.	/			1.	U/
Nitrate+Nitrite Nitrogen (MG/L)	2.51	/			0.02	U/
Nitrogen, Ammonia (MG/L)	1.6	/			0.1	U/
Nitrogen, Total Kjeldahl (MG/L)	3.44	N/J			0.13	N/J
Phosphorus, Total (MG/L)	0.04	/			0.02	U/
Sulfate (MG/L)	69.	/			5.	U/
Total Dissolved Solids (MG/L)	652.	/			20.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

APPENDIX F-8

SURFACE SOIL

Groundwater Elevation Data
October 28, 1991

Woodstock Municipal Landfill Site
Woodstock, Illinois

Well #	TD (ft)	Elevation (TOIC)	WL 10/28/91	GW Elev 10/28/91
MW1S		941.72	13.44	928.28
MW1D		942.09	13.82	928.27
MW2S		933.45 (*)	6.54	926.91
MW2D		932.02 (*)	23.25	908.77
MW3S		931.67 (*)	5.45	926.22
MW3D		931.41 (*)	12.89	918.52
MW4S		927.57	3.26	924.31
MW4D		926.31	1.84	924.47
MW5S		930.36	4.82	925.54
MW5D		930.18	20.37	909.81
MW6S		destroyed		
MW6D		945.16	16.30	928.86
MW7		934.01	6.07	927.94
MW8		926.33	1.70	924.63
MW8X		Moved to MW-8		
MW9		925.20	0.71	924.49
MW9P		926.69	2.43	924.26
MW10		927.21	2.95	924.26
MW11		950.75 (*)	22.48	928.27
LW1		936.59	9.44	927.15
LW2		946.03	18.21	927.82
LW3		941.93	14.57	927.36
LW4		941.41	15.63	925.78
LW5		935.00	7.50	927.50

Well #	TD (ft)	Elevation (TOIC)	WL 10/28/91	GW Elev 10/28/91
SG1		938.21	2.36	935.85
SG2		932.10 (*)	Dry	
SG3		924.51 (*)	0.11	924.40
SG4		934.58 (*)	2.70	931.88
SG5		925.88 (*)	1.55	924.33
SG6		926.80 (*)	2.39	924.41
SG7		925.62 (*)	1.20	924.42
SG8		927.23 (*)	2.82	924.41
SG9		932.67 (*)	3.4	929.27
P1		935.52 (*)	15.55	919.97
P2		929.42 (*)	10.26	919.16
P2B		930.11	6.13	923.98
P3		942.88	Dry	
P3A		942.80	14.41	928.39
P4		destroyed		
P5		948.39 (*)	18.96	929.43
P6		941.09	NM	
P7		945.78 (*)	16.33	929.45
P8		951.02 (*)	22.74	928.28
P9		942.14 (*)	14.87	927.27
P10		936.64 (*)	14.11	922.53
P11		932.21 (*)	5.17	927.04
P12		927.77 (*)	2.72	925.05

Notes:

TOIC = Top of Inner Casing
TD = Total Well Depth Below TOIC
WL = Water Level Below TOIC
GW = Groundwater Elevation in ft MSL, USGS Datum
MW6S and P4 were destroyed, apparently by auto accidents
(*) = Elevation (re)surveyed in October 1991

776RI GW102891 JCQ/MJS

Appendix H
Summary of Rainfall Data
Woodstock Municipal Landfill Site
Woodstock, Illinois

DAY OF THE MONTH	Aug-90	Sep-90	Oct-90	Nov-90	Dec-90	Jan-91	Feb-91	Mar-91	Apr-91	May-91
1								0.62		
2			0.50			snow		0.01		
3	0.29		0.45	0.31	0.13					0.01
4				0.98		snow			0.10	0.23
5				0.07						1.18
6		0.50	0.23	0.04						
7			0.32							
8			0.28	0.09		snow		0.04	0.74	
9			0.48	0.02					0.04	
10			0.35			snow				
11	1.15					snow		0.06	0.01	
12	0.34					snow		0.20	0.05	
13		0.15					snow		0.46	0.32
14		0.07	0.37		0.14		snow		0.50	
15		0.10			0.05	snow			0.01	
16		0.01								0.22
17	2.53		0.37		0.15			0.31		0.45
18	0.64	0.06					0.17			0.41
19	0.55									
20	0.14	0.90	0.02	0.14	0.01	snow				
21		0.05		0.22	0.01			0.01		
22						snow		0.31		0.87
23								0.07	0.38	0.01
24										0.09
25	0.01							1.06		0.87
26				0.18			snow	1.16		0.03
27				1.08				0.46	0.11	
28		0.39			0.36		0.01	0.02	0.01	
29		0.04			0.02	snow			0.17	
30						snow		snow		0.41
31								0.04		0.16
MONTHLY TOTALS	5.65	2.27	3.37	3.13	0.87	******	0.18(*)	4.37(*)	2.58	5.26

TOTAL RAINFALL (Aug 90 to May 91) = 27.68 inches (*)

Notes: Rainfall in inches
(*) This does not include snowfall.

776RI RAINFALL JCQ/JMW

Groundwater Elevation Data
May 8, 1991

Woodstock Municipal Landfill Site
Woodstock, Illinois

Well #	TD (ft)	Elevation (TOIC)	WL 5/8/91	GW Elev 5/8/91
MW1S	20.05	941.72	10.16	931.56
MW1D	52.12	942.09	10.53	931.56
MW2S	17.24	933.47	3.92	929.55
MW2D	71.20	932.04	14.20	917.84
MW3S	11.86	931.62	3.43	928.19
MW3D	21.92	931.36	8.15	923.21
MW4S	11.54	927.57	3.33	924.24
MW4D	26.15	926.31	1.69	924.62
MW5S	17.03	930.36	3.87	926.49
MW5D	61.36	930.18	10.83	919.35
MW6S	destroyed			
MW6D	47.18	945.16	12.49	932.67
MW7	16.50	934.01	3.64	930.37
MW8	19.80	926.33	1.03	925.30
MW8X		Moved to MW-8		
MW9	34.70	925.20	0.51	924.69
MW9P	15.90	926.69 (*)	2.44	924.25
MW10	16.00	927.21 (*)	2.77	924.44
LW1	16.12	936.59	5.06	931.53
LW2	18.45	946.03	14.29	931.74
LW3	18.40	941.93	13.25	928.68
LW4	18.58	941.41	14.68	926.73
LW5	18.92	935.00	5.70	929.30

Well #	TD (ft)	Elevation (TOIC)	WL 5/8/91	GW Elev 5/8/91
SG1		938.21 (*)	1.83	936.38
SG2		932.10 (*)	1.59	930.51
SG3		924.51 (*)	0.32	924.19
SG4		934.59 (*)	2.60	931.99
SG5		925.87 (*)	1.70	924.17
SG6		926.80 (*)	2.57	924.23
SG7		925.62 (*)	1.35	924.27
P1	22.30	935.51 (*)	14.08	921.43
P2	26.30	929.42 (*)	2.27	927.15
P2B	16.20	930.11 (*)	3.79	926.32
P3	12.38	942.88	11.15	931.73
P3A	18.00	942.80 (*)	10.82	931.98
P4	17.25	940.30 (*)	2.68	937.62
P5	20.90	948.40	14.24	934.16
P6	22.30	941.09 (*)	4.45	936.64

Notes:

TOIC = Top of Inner Casing
TD = Total Well Depth Below TOIC
WL = Water Level Below TOIC
GW = Groundwater Elevation in ft MSL, USGS Datum
MW-6S was destroyed, apparently by an auto accident
(*) New elevations have been determined during surveying in May 1991

776RI GWAPR TJM/JCQ

Groundwater Elevation Data
October 21, 1991

Woodstock Municipal Landfill Site
Woodstock, Illinois

Well #	TD (ft)	Elevation (TOIC)	WL 10/21/91	GW Elev 10/21/91
MW1S		941.72	13.47	928.25
MW1D		942.09	13.89	928.20
MW2S		933.45 (*)	6.60	926.85
MW2D		932.02 (*)	23.11	908.91
MW3S		931.67 (*)	6.01	925.66
MW3D		931.41 (*)	12.86	918.55
MW4S		927.57	3.32	924.25
MW4D		926.31	1.96	924.35
MW5S		930.36	4.95	925.41
MW5D		930.18	20.23	909.95
MW6S		destroyed		
MW6D		945.16	16.29	928.87
MW7		934.01	6.15	927.86
MW8		926.33	1.73	924.60
MW8X		Moved to MW-8		
MW9		925.20	0.85	924.35
MW9P		926.69	2.55	924.14
MW10		927.21	3.13	924.08
MW11		950.75 (*)	22.48	928.27
LW1		936.59	10.33	926.26
LW2		946.03	18.22	927.81
LW3		941.93	14.54	927.39
LW4		941.41	15.62	925.79
LW5		935.00	7.47	927.53

Well #	TD (ft)	Elevation (TOIC)	WL 10/21/91	GW Elev 10/21/91
SG1		938.21	2.47	935.74
SG2		932.10 (*)	NM	
SG3		924.51 (*)	0.12	924.39
SG4		934.58 (*)	2.52	932.06
SG5		925.88 (*)	1.49	924.39
SG6		926.80 (*)	2.40	924.40
SG7		925.62 (*)	1.18	924.44
SG8		927.23 (*)	2.82	924.41
SG9		932.67 (*)	3.47	929.20
P1		935.52 (*)	15.53	919.99
P2		929.42 (*)	10.06	919.36
P2B		930.11	6.48	923.63
P3		942.88	DRY	
P3A		942.80	14.48	928.32
P4		destroyed		
P5		948.39 (*)	18.92	929.47
P6		941.09	NM	
P7		945.78 (*)	16.31	929.47
P8		951.02 (*)	22.77	928.25
P9		942.14 (*)	14.94	927.20
P10		936.64 (*)	13.97	922.67
P11		932.21 (*)	5.31	926.90
P12		927.77 (*)	3.18	924.59

Notes:

TOIC = Top of Inner Casing
TD = Total Well Depth Below TOIC
WL = Water Level Below TOIC
GW = Groundwater Elevation in ft MSL, USGS Datum
MW6S and P4 were destroyed, apparently by an auto accidents
(*) = Elevation (re)surveyed in October 1991

776RI GWOCT91 JCQ/MJS

APPENDIX F

ANALYTICAL RESULTS

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD

WK-SD06-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	1200.	AJ/
Aldol (UG/KG)	1400.	AJ/
Aldol (UG/KG)	370.	AJ/
Fluorophenol (UG/KG)	600.	J/
Unknown (UG/KG)	370.	J/
Unknown hydrocarbon (UG/KG)	300.	J/
Unknown (UG/KG)	1200.	J/
Unknown aldehyde (UG/KG)	370.	J/
Unknown hydrocarbon (UG/KG)	670.	J/
Unknown (UG/KG)	1800.	J/
Unknown (UG/KG)	890.	J/
Unknown aldehyde (UG/KG)	3200.	J/
Unknown hydrocarbon (UG/KG)	1900.	J/
Unknown (UG/KG)	7400.	J/
Unknown (UG/KG)	520.	J/
Unknown aldehyde (UG/KG)	1700.	J/
Unknown hydrocarbon (UG/KG)	1500.	J/
Unknown (UG/KG)	1900.	J/
Vitamin E acetate + unknown (UG/KG)	890.	J/
Unknown aldehyde (UG/KG)	820.	J/
Unknown (UG/KG)	1800.	J/
Unknown (UG/KG)	890.	J/
Unknown (UG/KG)	1900.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD

WK-SD04-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	1300.	AJ/
Aldol (UG/KG)	2300.	AJ/
Aldol (UG/KG)	460.	AJ/
Heptadecane (UG/KG)	650.	J/
Sulfur + unknown (UG/KG)	10000.	J/
Unknown hydrocarbon (UG/KG)	330.	J/
Hexanedioic acid, mono(2-ethyl (UG/KG)	390.	J/
Dimethylheptadecane (UG/KG)	520.	J/
Unknown (UG/KG)	330.	J/
Unknown hydrocarbon (UG/KG)	2000.	J/
Unknown (UG/KG)	650.	J/
Unknown (UG/KG)	650.	J/
Unknown (UG/KG)	5500.	J/
Unknown hydrocarbon (UG/KG)	3700.	J/
Unknown (UG/KG)	2300.	J/
Unknown (UG/KG)	910.	J/
Unknown (UG/KG)	3100.	J/
Unknown (UG/KG)	1200.	J/
Dimethylheptadecane (UG/KG)	850.	J/
Unknown (UG/KG)	1300.	J/
Unknown (UG/KG)	1200.	J/
Unknown (UG/KG)	2300.	J/
Unknown (UG/KG)	1000.	J/

WK-SD05-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	2200.	J/
Aldol (UG/KG)	1500.	AJ/
Aldol (UG/KG)	1400.	AJ/
Unknown (UG/KG)	2000.	J/
Unknown (UG/KG)	690.	J/
Unknown (UG/KG)	390.	J/
Unknown (UG/KG)	310.	J/
Unknown (UG/KG)	460.	J/
Dimethylheptadecane (UG/KG)	770.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD

WK-SD02-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	1200.	J/
Aldol (UG/KG)	6100.	AJ/
Aldol (UG/KG)	4100.	AJ/
Aldol (UG/KG)	700.	AJ/
Unknown subst. hydrocarbon (UG/KG)	1600.	J/
Unknown hydrocarbon (UG/KG)	1500.	J/
Unknown hydrocarbon (UG/KG)	5100.	J/
Unknown hydrocarbon (UG/KG)	1000.	J/
Unknown hydrocarbon (UG/KG)	3600.	J/
Unknown (UG/KG)	930.	J/
Unknown hydrocarbon (UG/KG)	1200.	J/
Unknown hydrocarbon (UG/KG)	2300.	J/
Unknown hydrocarbon (UG/KG)	1400.	J/
Pentacosane (UG/KG)	1600.	J/
Unknown hydrocarbon (UG/KG)	2600.	J/
Unknown (UG/KG)	3000.	J/
Unknown hydrocarbon (UG/KG)	3500.	J/
Pentacosane (UG/KG)	6900.	J/
Unknown hydrocarbon (UG/KG)	12000.	J/
Pentacosane (UG/KG)	12000.	J/
Unknown (UG/KG)	5400.	J/
Unknown (UG/KG)	7700.	J/
Unknown (UG/KG)	13000.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD

WK-SD03-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	1300.	J/
Aldol (UG/KG)	6500.	AJ/
Aldol (UG/KG)	2500.	AJ/
Aldol (UG/KG)	3100.	AJ/
Unknown (UG/KG)	1500.	J/
Dimethylheptadecane (UG/KG)	890.	J/
Hexanedioic acid, mono(2-ethyl (UG/KG)	740.	J/
Dimethylheptadecane (UG/KG)	1200.	J/
Dimethylheptadecane (UG/KG)	1600.	J/
Unknown (UG/KG)	890.	J/
Unknown (UG/KG)	2700.	J/
Unknown (UG/KG)	1300.	J/
Unknown (UG/KG)	4500.	J/
Dimethylheptadecane (UG/KG)	4600.	J/
Unknown (UG/KG)	1800.	J/
Unknown (UG/KG)	6400.	J/
Unknown (UG/KG)	890.	J/
Unknown (UG/KG)	2800.	J/
Octacosane (UG/KG)	1800.	J/
Unknown (UG/KG)	1500.	J/
Unknown (UG/KG)	2400.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD
Generated by: CAW
Date Issued: 10-MAY-91

WK-SD01-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Unknown (UG/KG)	3800.	J/
Aldol (UG/KG)	2800.	AJ/
Aldol (UG/KG)	700.	AJ/
Aldol (UG/KG)	700.	AJ/
Unknown hydrocarbon (UG/KG)	2000.	J/
Unknown hydrocarbon (UG/KG)	930.	J/
9-Octadecene, (E)- (UG/KG)	2600.	J/
Unknown hydrocarbon (UG/KG)	460.	J/
Unknown hydrocarbon (UG/KG)	350.	J/
Unknown (UG/KG)	1400.	J/
Unknown hydrocarbon (UG/KG)	2000.	J/
Heptadecane, 2,6-dimethyl- (UG/KG)	2600.	J/
9-Octadecene, (E)- (UG/KG)	7100.	J/
Unknown hydrocarbon (UG/KG)	1500.	J/
Tetracontane, 3,5,24-trimethyl (UG/KG)	3000.	J/
Unknown hydrocarbon (UG/KG)	1600.	J/
Unknown (UG/KG)	1400.	J/
Unknown (UG/KG)	810.	J/
Unknown (UG/KG)	1000.	J/
Unknown (UG/KG)	1500.	J/
Unknown (UG/KG)	930.	J/
Unknown (UG/KG)	930.	J/

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD

WK-SD01-91 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	2900.	AJ/
Aldol (UG/KG)	2700.	AJ/
Unknown (UG/KG)	2800.	J/
Tribromophenol (UG/KG)	1300.	J/
1-Heptadecanol (UG/KG)	1400.	J/
Unknown hydrocarbon (UG/KG)	1400.	J/
Unknown hydrocarbon (UG/KG)	1600.	J/
Unknown hydrocarbon (UG/KG)	4400.	J/
Unknown hydrocarbon (UG/KG)	2100.	J/
Unknown hydrocarbon (UG/KG)	1200.	J/
Unknown hydrocarbon (UG/KG)	5900.	J/
Unknown hydrocarbon (UG/KG)	1300.	J/
Unknown hydrocarbon (UG/KG)	1600.	J/
Unknown hydrocarbon (UG/KG)	2300.	J/
Iron, tricarbonyl[N-(phenyl- (UG/KG)	4100.	J/
Unknown hydrocarbon (UG/KG)	6500.	J/
Unknown hydrocarbon (UG/KG)	2300.	J/
Unknown hydrocarbon (UG/KG)	2400.	J/
Pentacosane (UG/KG)	3800.	J/
Unknown hydrocarbon (UG/KG)	3600.	J/
Unknown hydrocarbon (UG/KG)	2200.	J/
Unknown hydrocarbon (UG/KG)	5700.	J/

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: PPCB
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SD01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
alpha-BHC (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
beta-BHC (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
delta-BHC (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
gamma-BHC (Lindane) (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Heptachlor (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Aldrin (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Heptachlor epoxide (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Endosulfan I (UG/KG)	28.	U/	28.	U/	28.	U/	360.	U/	1600.	U/
Dieldrin (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
4,4'-DDE (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
Endrin (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
Endosulfan II (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
4,4'-DDD (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
Endosulfan sulfate (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
4,4'-DDT (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
Methoxychlor (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Endrin ketone (UG/KG)	56.	U/	56.	U/	56.	U/	710.	U/	3100.	U/
alpha-Chlordane (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
gamma-Chlordane (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Toxaphene (UG/KG)	560.	U/	560.	U/	560.	U/	7100.	U/	31000.	U/
Aroclor-1016 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1221 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1232 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1242 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1248 (UG/KG)	280.	U/	280.	U/	280.	U/	3600.	U/	16000.	U/
Aroclor-1254 (UG/KG)	560.	U/	560.	U/	560.	U/	7100.	U/	31000.	U/
Aroclor-1260 (UG/KG)	560.	U/	560.	U/	560.	U/	7100.	U/	31000.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: PPCB

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90	
alpha-BHC (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
beta-BHC (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
delta-BHC (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
gamma-BHC (Lindane) (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Heptachlor (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Aldrin (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Heptachlor epoxide (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Endosulfan I (UG/KG)	19.	U/	18.	U/	10.	U/	60.	U/
Dieldrin (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
4,4'-DDE (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
Endrin (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
Endosulfan II (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
4,4'-DDD (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
Endosulfan sulfate (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
4,4'-DDT (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
Methoxychlor (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Endrin ketone (UG/KG)	38.	U/	36.	U/	20.	U/	120.	U/
alpha-Chlordane (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
gamma-Chlordane (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Toxaphene (UG/KG)	380.	U/	360.	U/	200.	U/	1200.	U/
Aroclor-1016 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1221 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1232 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1242 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1248 (UG/KG)	190.	U/	180.	U/	100.	U/	600.	U/
Aroclor-1254 (UG/KG)	380.	U/	360.	U/	200.	U/	1200.	U/
Aroclor-1260 (UG/KG)	380.	U/	360.	U/	200.	U/	1200.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SVOC

Parameter	WK-SD01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
Dibenzofuran (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4-Dinitrotoluene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Diethylphthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Chlorophenyl-phenylether (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Fluorene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Nitroaniline (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
4,6-Dinitro-2-methylphenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
N-nitrosodiphenylamine (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Bromophenyl-phenylether (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Hexachlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Pentachlorophenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
Phenanthrene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Anthracene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Di-n-butylphthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Fluoranthene (UG/KG)	1089.	U/	1188.	U/	120.	J/	1485.	U/	627.	U/
Pyrene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Butylbenzylphthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
3,3'-Dichlorobenzidine (UG/KG)	2574.	U/	2808.	U/	2597.4	U/	3510.	U/	1482.	U/
Benzo(a)anthracene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Chrysene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
bis(2-ethylhexyl)phthalate (UG/KG)	350.	J/	250.	J/	1200.	/	270.	J/	290.	J/
Di-n-octyl Phthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzo(b)fluoranthene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzo(k)fluoranthene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzo(a)pyrene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Indeno(1,2,3-cd)pyrene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Dibenz(a,h)anthracene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzo(g,h,i)perylene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SVOC

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90	
Dibenzofuran (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4-Dinitrotoluene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Diethylphthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Chlorophenyl-phenylether (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Fluorene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Nitroaniline (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
4,6-Dinitro-2-methylphenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
N-nitrosodiphenylamine (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Bromophenyl-phenylether (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Hexachlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Pentachlorophenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
Phenanthrene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Anthracene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Di-n-butylphthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Fluoranthene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Pyrene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Butylbenzylphthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
3,3'-Dichlorobenzidine (UG/KG)	1794.	U/	1716.	U/	1014.	U/	17472.	U/
Benzo(a)anthracene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Chrysene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
bis(2-ethylhexyl)phthalate (UG/KG)	220.	J/	200.	J/	60.	J/	7392.	U/
Di-n-octyl Phthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzo(b)fluoranthene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzo(k)fluoranthene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzo(a)pyrene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Indeno(1,2,3-cd)pyrene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Dibenz(a,h)anthracene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzo(g,h,i)perylene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/

Note: (1) Results are reported with qualifiers (Laboratory [illegible]lifier/Data Validation Qualifier) to the r[illegible] of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SVOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SD01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
Phenol (UG/KG)	1089.	U/	1188.	U/	1100.	J/	1485.	U/	627.	U/
bis(2-Chloroethyl) ether (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2-Chlorophenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
1,3-Dichlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
1,4-Dichlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzyl Alcohol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
1,2-Dichlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	100.	J/
2-Methylphenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
bis(2-Chloroisopropyl)ether (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Methylphenol (UG/KG)	1089.	U/	1188.	U/	180.	J/	1485.	U/	627.	U/
N-Nitroso-di-n-dipropylamine (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Hexachloroethane (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Nitrobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Isophorone (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2-Nitrophenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4-Dimethylphenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Benzoic Acid (UG/KG)	5280.	U/	5760.	U/	190.	J/	7200.	U/	3040.	U/
bis(2-Chloroethoxy)methane (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4-Dichlorophenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
1,2,4-Trichlorobenzene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Naphthalene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Chloroaniline (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Hexachlorobutadiene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
4-Chloro-3-methylphenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2-Methylnaphthalene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Hexachlorocyclopentadiene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4,6-Trichlorophenol (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4,5-Trichlorophenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
2-Chloronaphthalene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2-Nitroaniline (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
Dimethylphthalate (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
Acenaphthylene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,6-Dinitrotoluene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
3-Nitroaniline (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
Acenaphthene (UG/KG)	1089.	U/	1188.	U/	1098.9	U/	1485.	U/	627.	U/
2,4-Dinitrophenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/
4-Nitrophenol (UG/KG)	5280.	U/	5760.	U/	5328.	U/	7200.	U/	3040.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SVOC

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90	
Phenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
bis(2-Chloroethyl) ether (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Chlorophenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
1,3-Dichlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
1,4-Dichlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzyl Alcohol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
1,2-Dichlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Methylphenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
bis(2-Chloroisopropyl)ether (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Methylphenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
N-Nitroso-di-n-dipropylamine (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Hexachloroethane (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Nitrobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Isophorone (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Nitrophenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4-Dimethylphenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Benzoic Acid (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
bis(2-Chloroethoxy)methane (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4-Dichlorophenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
1,2,4-Trichlorobenzene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Naphthalene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Chloroaniline (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Hexachlorobutadiene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
4-Chloro-3-methylphenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Methylnaphthalene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Hexachlorocyclopentadiene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4,6-Trichlorophenol (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4,5-Trichlorophenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
2-Chloronaphthalene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2-Nitroaniline (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
Dimethylphthalate (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
Acenaphthylene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,6-Dinitrotoluene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
3-Nitroaniline (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
Acenaphthene (UG/KG)	759.	U/	726.	U/	429.	U/	7392.	U/
2,4-Dinitrophenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/
4-Nitrophenol (UG/KG)	3680.	U/	3520.	U/	2080.	U/	35840.	U/

Note: (1) Results are reported with qualifiers (Laboratory [illegible]lifier/Data Validation Qualifier) to the [illegible]t of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: TP Type: VOC
Generated by: CAW
Date Issued: 02-OCT-91

Parameter	WK-TP03-06 07/24/91		WK-TP03-06DUP 07/24/91	
Chloromethane (UG/KG)	1600000.	U/	1600000.	U/
Bromomethane (UG/KG)	1600000.	U/	1600000.	U/
Vinyl chloride (UG/KG)	1600000.	U/	1600000.	U/
Chloroethane (UG/KG)	1600000.	U/	1600000.	U/
Methylene chloride (UG/KG)	780000.	U/	780000.	U/
Acetone (UG/KG)	17000000.	D/J	73000000.	E/J
Carbon disulfide (UG/KG)	780000.	U/	780000.	U/
1,1-Dichloroethene (UG/KG)	780000.	U/	780000.	U/
1,1-Dichloroethane (UG/KG)	780000.	U/	780000.	U/
1,2-Dichloroethene (total) (UG/KG)	780000.	U/	780000.	U/
Chloroform (UG/KG)	780000.	U/	780000.	U/
1,2-Dichloroethane (UG/KG)	780000.	U/	780000.	U/
2-Butanone (UG/KG)	1600000.	U/	1600000.	U/
1,1,1-Trichloroethane (UG/KG)	780000.	U/	780000.	U/
Carbon tetrachloride (UG/KG)	780000.	U/	780000.	U/
Vinyl acetate (UG/KG)	1600000.	U/	1600000.	U/
Bromodichloromethane (UG/KG)	780000.	U/	780000.	U/
1,2-Dichloropropane (UG/KG)	780000.	U/	780000.	U/
cis-1,3-Dichloropropene (UG/KG)	780000.	U/	780000.	U/
Trichloroethene (UG/KG)	780000.	U/	780000.	U/
Dibromochloromethane (UG/KG)	780000.	U/	780000.	U/
1,1,2-Trichloroethane (UG/KG)	780000.	U/	780000.	U/
Benzene (UG/KG)	780000.	U/	780000.	U/
trans-1,3-Dichloropropene (UG/KG)	780000.	U/	780000.	U/
Bromoform (UG/KG)	780000.	U/	780000.	U/
4-Methyl-2-pentanone (UG/KG)	3800000.	D/J	15000000.	/J
2-Hexanone (UG/KG)	1600000.	U/	1600000.	U/
Tetrachloroethene (UG/KG)	780000.	U/	780000.	U/
1,1,2,2-Tetrachloroethane (UG/KG)	1600000.	U/	1600000.	U/
Toluene (UG/KG)	22000000.	D/J	87000000.	E/J
Chlorobenzene (UG/KG)	780000.	U/	780000.	U/
Ethylbenzene (UG/KG)	780000.	U/	340000.	J/J
Styrene (UG/KG)	780000.	U/	780000.	U/
Xylenes (total) (UG/KG)	310000.	DJ/J	1400000.	/J

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SW Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SW01-01 11/20/90		WK-SW01-91 11/20/90		WK-SWFB01-01 11/20/90		WK-SWTB01-01 11/20/90	
Chloromethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Bromomethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Vinyl chloride (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Chloroethane (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Methylene chloride (UG/L)	5.	U/	5.	U/	9.	U/	9.	U/
Acetone (UG/L)	10.	U/UJ	10.	U/UJ	11.	B/UJ	10.	U/UJ
Carbon disulfide (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloroethene (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Chloroform (UG/L)	5.	U/	5.	U/	2.	J/	1.	J/
1,2-Dichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
2-Butanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
1,1,1-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Carbon tetrachloride (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Vinyl acetate (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Bromodichloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,2-Dichloropropane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
cis-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Trichloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Dibromochloromethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2-Trichloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Benzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
trans-1,3-Dichloropropene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Bromoform (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
4-Methyl-2-pentanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
2-Hexanone (UG/L)	10.	U/	10.	U/	10.	U/	10.	U/
Tetrachloroethene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
1,1,2,2-Tetrachloroethane (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Toluene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Chlorobenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Ethylbenzene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Styrene (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/
Xylenes (total) (UG/L)	5.	U/	5.	U/	5.	U/	5.	U/

Note: (1) Results are reported with qualifiers (Laboratory [illegible]lifier/Data Validation Qualifier) to the [illegible]t of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: VOC
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SD01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
Chloromethane (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Bromomethane (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Vinyl chloride (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Chloroethane (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Methylene chloride (UG/KG)	47.	B/U	57.	B/U	64.	B/U	43.	B/U	57.	B/U
Acetone (UG/KG)	33.	U/	74.	B/U	140.	B/U	130.	B/U	87.	B/U
Carbon disulfide (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,1-Dichloroethene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,1-Dichloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,2-Dichloroethene (total) (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Chloroform (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,2-Dichloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
2-Butanone (UG/KG)	33.	U/	30.	U/	32.	U/	15.	J/	20.	U/
1,1,1-Trichloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Carbon tetrachloride (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Vinyl acetate (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Bromodichloromethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,2-Dichloropropane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
cis-1,3-Dichloropropene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Trichloroethene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Dibromochloromethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,1,2-Trichloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Benzene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
trans-1,3-Dichloropropene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Bromoform (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
4-Methyl-2-pentanone (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
2-Hexanone (UG/KG)	33.	U/	30.	U/	32.	U/	37.	U/	20.	U/
Tetrachloroethene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
1,1,2,2-Tetrachloroethane (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Toluene (UG/KG)	16.5	U/	15.	U/	12.	J/	17.	J/	14.	/
Chlorobenzene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Ethylbenzene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Styrene (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/
Xylenes (total) (UG/KG)	16.5	U/	15.	U/	16.	U/	18.5	U/	10.	U/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: VOC

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90	
Chloromethane (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Bromomethane (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Vinyl chloride (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Chloroethane (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Methylene chloride (UG/KG)	28.	B/U	21.	B/U	17.	B/U	220.	B/U
Acetone (UG/KG)	62.	B/U	55.	B/U	32.	B/U	280.	B/U
Carbon disulfide (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,1-Dichloroethene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,1-Dichloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,2-Dichloroethene (total) (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Chloroform (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,2-Dichloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
2-Butanone (UG/KG)	28.	U/	23.	U/	13.	U/	39.	BJ/U
1,1,1-Trichloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Carbon tetrachloride (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Vinyl acetate (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Bromodichloromethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,2-Dichloropropane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
cis-1,3-Dichloropropene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Trichloroethene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Dibromochloromethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,1,2-Trichloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Benzene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
trans-1,3-Dichloropropene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Bromoform (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
4-Methyl-2-pentanone (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
2-Hexanone (UG/KG)	28.	U/	23.	U/	13.	U/	77.	U/
Tetrachloroethene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
1,1,2,2-Tetrachloroethane (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Toluene (UG/KG)	3.	J/	3.	J/	7.	/	92.	/
Chlorobenzene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Ethylbenzene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Styrene (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/
Xylenes (total) (UG/KG)	14.	U/	11.5	U/	6.5	U/	38.5	U/

Note: (1) Results are reported with qualifiers (Laboratory [illegible]ifier/Data Validation Qualifier) to the ri[illegible] of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SLIND MTL

Parameter	WK-SD10-91 04/02/91		WK-SD11-01 04/03/91		WK-SD12-01 04/03/91		WK-SD13-01 04/03/91		WK-SD14-01 04/03/91	
Aluminum (MG/KG)	8390.	/	8850.	/	12300.	/	8400.	/	11600.	/
Antimony (MG/KG)	41.	U/	57.	U/	22.9	U/	50.7	U/	19.5	U/
Arsenic (MG/KG)	12.9	/	12.8	/	7.3	/	6.9	K/	5.5	/
Barium (MG/KG)	152.	K/	165.	K/	172.	/	97.3	K/	161.	/
Beryllium (MG/KG)	4.1	U/	5.7	U/	2.3	U/	5.1	U/	1.9	U/
Cadmium (MG/KG)	4.1	U/	5.7	U/	2.3	U/	5.1	U/	1.9	U/
Calcium (MG/KG)	38400.	N/J	54400.	N/J	29300.	N/J	22000.	N/J	11000.	N/J
Chromium, total (MG/KG)	8.6	/	13.2	/	18.2	/	10.1	U/	15.6	/
Cobalt (MG/KG)	8.2	U/	11.4	U/	6.9	K/	10.1	U/	7.	K/
Copper (MG/KG)	14.8	K/	31.9	/	17.8	/	12.2	K/	17.5	/
Iron (MG/KG)	25000.	/	34500.	/	29900.	/	16100.	/	15400.	/
Lead (MG/KG)	73.	*/	58.3	*/	18.7	*/	450.	*/	42.1	S*/
Magnesium (MG/KG)	8950.	/	10600.	/	6830.	/	3270.	K/	3630.	/
Manganese (MG/KG)	152.	/	270.	/	293.	/	238.	/	1260.	/
Mercury (MG/KG)	0.19	U/	0.29	U/	0.11	U/	0.27	U/	0.11	U/
Nickel (MG/KG)	16.4	U/	28.5	K/	16.9	K/	20.3	U/	16.8	/
Potassium (MG/KG)	1020.	K/	1630.	K/	1460.	K/	1050.	K/	1590.	K/
Selenium (MG/KG)	1.4	K/	2.3	KS/	1.6	K/	2.4	US/	0.96	K/
Silver (MG/KG)	8.2	U/	11.4	U/	4.6	U/	10.1	U/	3.9	U/
Sodium (MG/KG)	2000.	K/	2300.	K/	914.	U/	2030.	U/	779.	U/
Thallium (MG/KG)	2.1	U/	3.4	U/	1.2	US/	3.6	U/	1.1	U/
Vanadium (MG/KG)	41.	U/	57.	U/	22.9	U/	50.7	U/	26.1	/
Zinc (MG/KG)	140.	/	513.	/	87.8	/	53.7	/	93.9	/
Cyanide (MG/KG)										
Total Organic Carbon (MG/KG)										
Cation Exchange Capacity (MEQ/L)										
Total Solids (%)	21.4	/	13.9	/	34.9	/	14.6	/	35.4	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SLIND MTL

Parameter	WK-SD15-01 04/03/91		WK-SD16-01 04/03/91	
Aluminum (MG/KG)	12800.	/	3430.	/
Antimony (MG/KG)	42.	U/	41.7	U/
Arsenic (MG/KG)	9.3	/	12.5	/
Barium (MG/KG)	129.	K/	79.2	K/
Beryllium (MG/KG)	4.2	U/	4.2	U/
Cadmium (MG/KG)	4.2	U/	4.2	U/
Calcium (MG/KG)	65000.	N/J	23600.	N/J
Chromium, total (MG/KG)	17.6	/	8.3	U/
Cobalt (MG/KG)	11.7	K/	8.3	U/
Copper (MG/KG)	26.9	/	15.	K/
Iron (MG/KG)	22700.	/	16500.	/
Lead (MG/KG)	56.6	*/	73.	*/
Magnesium (MG/KG)	18500.	/	3160.	K/
Manganese (MG/KG)	571.	/	181.	/
Mercury (MG/KG)	0.2	U/	0.23	U/
Nickel (MG/KG)	16.8	K/	16.7	U/
Potassium (MG/KG)	2020.	K/	1510.	K/
Selenium (MG/KG)	1.7	US/	1.8	US/
Silver (MG/KG)	8.4	U/	8.3	U/
Sodium (MG/KG)	4440.	/	1670.	U/
Thallium (MG/KG)	2.6	U/	2.7	U/
Vanadium (MG/KG)	42.	U/	41.7	U/
Zinc (MG/KG)	153.	/	131.	/
Cyanide (MG/KG)				
Total Organic Carbon (MG/KG)				
Cation Exchange Capacity (MEQ/L)				
Total Solids (%)	19.7	/	17.3	/

Note: (1) Results are reported with qualifiers (Laboratory [illegible]alifier/Data Validation Qualifier) to the [illegible]t of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SLIND MTL
Generated by: CAW
Date Issued: 10-MAY-91

Parameter	WK-SD01-01 09/06/90		WK-SD01-91 09/06/90		WK-SD02-01 09/06/90		WK-SD03-01 09/06/90		WK-SD04-01 09/06/90	
Aluminum (MG/KG)	8870.	/	7470.	/	9630.	/	15600.	/	13800.	/
Antimony (MG/KG)	33.7	UN/UJ	34.	UN/UJ	33.3	UN/UJ	49.	UN/UJ	21.4	UN/UJ
Arsenic (MG/KG)	6.3	K/	7.5	/	12.7	/	24.	S/	9.7	/
Barium (MG/KG)	209.	/	223.	/	243.	/	316.	/	238.	/
Beryllium (MG/KG)	3.4	U/	3.4	U/	3.3	U/	4.9	U/	2.1	U/
Cadmium (MG/KG)	3.4	U/	3.4	U/	3.3	U/	4.9	U/	2.1	U/
Calcium (MG/KG)	33200.	/	36500.	/	43300.	/	112000.	/	66800.	/
Chromium, total (MG/KG)	15.5	/	14.3	/	28.	/	30.4	/	41.4	/
Cobalt (MG/KG)	6.7	U/	6.8	U/	7.3	K/U	10.8	K/U	9.4	K/U
Copper (MG/KG)	28.3	/	29.3	/	99.3	/	28.4	/	144.	/
Iron (MG/KG)	20800.	/	21300.	/	28000.	/	67000.	/	56300.	/
Lead (MG/KG)	44.9	/	50.2	/	109.	/	43.7	S/	30.5	S/
Magnesium (MG/KG)	4310.	/	4370.	/	6500.	/	14700.	/	13800.	/
Manganese (MG/KG)	357.	/	445.	/	531.	/	676.	/	747.	/
Mercury (MG/KG)	0.15	/	0.14	U/	0.15	/	0.2	U/	0.3	/
Nickel (MG/KG)	31.6	/	17.7	K/	107.	/	24.5	K/	274.	/
Potassium (MG/KG)	821.	K/	694.	K/	1110.	K/	4210.	K/	1600.	K/
Selenium (MG/KG)	2.4	K/	1.6	KS/	1.9	K/	2.9	K/	1.7	K/
Silver (MG/KG)	6.7	U/	6.8	U/	6.7	U/	49.	U/	4.3	U/
Sodium (MG/KG)	1350.	U/	1360.	U/	1330.	U/	1960.	U/	855.	U/
Thallium (MG/KG)	2.5	K/	2.	U/	2.	U/	3.7	KS/	2.1	K/
Vanadium (MG/KG)	34.3	/	34.	U/	33.3	U/	49.	U/	37.6	/
Zinc (MG/KG)	196.	/	212.	/	806.	/	175.	/	715.	/
Cyanide (MG/KG)	8.4	U/	8.5	U/	8.3	U/	12.2	U/	5.3	U/
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	16000.	>/	16000.	>/	16000.	>/
Cation Exchange Capacity (MEQ/L)	16.1	/	16.3	/	19.4	/	7.86	/	5.4	/
Total Solids (%)	29.7	/	29.4	/	30.	/	20.4	/	46.8	/

Note: (1) Results are reported with qualifiers (Laboratory Qualifier/Data Validation Qualifier) to the right of the value.

ANALYTICAL DATA REPORT
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD Type: SLIND MTL

Parameter	WK-SD05-01 09/06/90		WK-SD06-01 09/06/90		WK-SD07-01 09/06/90		WK-SD08-01 09/06/90		WK-SD10-01 04/02/91	
Aluminum (MG/KG)	6270.	/	8850.	/	6210.	/	12500.	/	5560.	/
Antimony (MG/KG)	25.4	UN/UJ	24.4	UN/UJ	15.8	UN/UJ	56.5	UN/UJ	49.6	U/
Arsenic (MG/KG)	18.1	/	7.	/	2.3	K/	5.3	K/	11.1	K/
Barium (MG/KG)	203.	/	146.	/	46.8	K/	100.	K/	112.	K/
Beryllium (MG/KG)	2.5	U/	2.4	U/	1.6	U/	5.6	U/	5.	U/
Cadmium (MG/KG)	2.5	U/	2.4	U/	1.6	U/	5.6	U/	5.	U/
Calcium (MG/KG)	136000.	/	99800.	/	61400.	/	18500.	/	35100.	N/J
Chromium, total (MG/KG)	11.7	/	13.2	/	8.9	/	18.1	/	9.9	U/
Cobalt (MG/KG)	6.6	K/U	5.8	K/U	5.1	K/U	11.3	U/	9.9	U/
Copper (MG/KG)	61.	/	26.8	/	10.7	/	29.4	/	12.9	K/
Iron (MG/KG)	46300.	/	16700.	/	10600.	/	14600.	/	18200.	/
Lead (MG/KG)	46.8	S/	22.7	S/	11.3	S/	44.9	S/	72.8	S*/
Magnesium (MG/KG)	16700.	/	4270.	/	29000.	/	8570.	/	6880.	/
Manganese (MG/KG)	605.	/	558.	/	208.	/	147.	/	148.	/
Mercury (MG/KG)	0.1	U/	0.1	U/	0.06	U/	0.23	U/	0.28	U/
Nickel (MG/KG)	42.2	/	9.7	U/	6.3	U/	45.2	K/	19.8	U/
Potassium (MG/KG)	1380.	K/	1250.	K/	692.	K/	1610.	K/	784.	K/
Selenium (MG/KG)	1.	U/	0.98	US/	0.63	U/	2.3	U/	2.3	US/
Silver (MG/KG)	5.1	U/	4.9	U/	3.2	U/	11.3	U/	9.9	U/
Sodium (MG/KG)	1020.	U/	975.	U/	939.	K/	5490.	K/	2040.	K/
Thallium (MG/KG)	1.6	K/	1.5	U/	0.95	U/	3.4	U/	3.4	U/
Vanadium (MG/KG)	25.4	U/	26.8	/	23.4	/	56.5	U/	49.6	U/
Zinc (MG/KG)	432.	/	168.	/	42.7	/	150.	/	108.	/
Cyanide (MG/KG)	6.4	U/	6.1	U/	3.9	U/	14.1	U/		
Total Organic Carbon (MG/KG)	16000.	>/	16000.	>/	16000.	>/	16000.	>/		
Cation Exchange Capacity (MEQ/L)	5.08	/	11.5	/	5.11	/	12.7	/		
Total Solids (%)	39.3	/	41.	/	63.3	/	17.7	/	14.3	/

Note: (1) Results are reported with qualifiers (Laboratory lifier/Data Validation Qualifier) to the r of the value.

APPENDIX F-6

SURFACE WATER

SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS
Woodstock Landfill RI/FS
Woodstock, Illinois

Matrix: SD

WK-SD07-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	1300.	AJ/
Aldol (UG/KG)	730.	AJ/
Aldol (UG/KG)	340.	AJ/
Aldol (UG/KG)	210.	AJ/
Aldol (UG/KG)	510.	AJ/
1-Decanol, 2-ethyl- (UG/KG)	430.	J/
17-Pentatriacontene (UG/KG)	730.	J/
Unknown hydrocarbon (UG/KG)	170.	J/
Unknown (UG/KG)	170.	J/
Unknown hydrocarbon (UG/KG)	390.	J/
Dodecane, 1-iodo- (UG/KG)	560.	J/
Unknown hydrocarbon (UG/KG)	1200.	J/
Unknown hydrocarbon (UG/KG)	300.	J/
Unknown (UG/KG)	510.	J/
Unknown hydrocarbon (UG/KG)	210.	J/
Unknown hydrocarbon (UG/KG)	4300.	J/
Unknown hydrocarbon (UG/KG)	300.	J/
Unknown (UG/KG)	300.	J/
Unknown (UG/KG)	1800.	J/

WK-SD08-01 09/06/90

(TBNA) Tentatively-Identified Semi-Volatiles

Compound (Units)	Concentration	LQ/DVQ
Aldol (UG/KG)	14000.	AJ/
Heptadecane, 2,6-dimethyl- (UG/KG)	4500.	J/
Unknown hydrocarbon (UG/KG)	4500.	J/
Unknown (UG/KG)	5200.	J/
Unknown hydrocarbon (UG/KG)	6000.	J/
Heptadecane, 2,6-dimethyl- (UG/KG)	37000.	J/
Unknown hydrocarbon (UG/KG)	20000.	J/
Unknown hydrocarbon (UG/KG)	3000.	J/
Octacosane (UG/KG)	16000.	J/
Vitamin E acetate (VAN) (UG/KG)	19000.	J/
Unknown hydrocarbon (UG/KG)	13000.	J/
Unknown hydrocarbon (UG/KG)	9000.	J/
Unknown (UG/KG)	8200.	J/
Unknown (UG/KG)	58000.	J/

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): J KELLY Date: AUGUST 15, 1990
Project/Site: WOODSTOCK L/F State: ILLINOIS County: McHENRY
Applicant/Owner: _____ Plant Community #/Name: 5
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes X No ____ (If yes, explain on back) SPOIL PILES ARE ALONG THE CREEK.

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. SOLIDAGO SPP.	–	HERB	11.		
2. AMBROSIA TRIFIDA	FAC+	HERB	12.		
3. TYPHA LATIFOLIA	OBL	HERB	13.		
4. PHALARIS ARUNDINACEA	FACW+	HERB	14.		
5. URTICA DIOICA	FAC+	HERB	15.		
6. AMBROSIA ARTEMISIIFOLIA	FACU	HERB	16.		
7. CAREX SP.	OBL	HERB	17.		
8. ACER NEGUNDO	FACW-	SAPLING	18.		
9. IMPATIENS CAPENSIS	FACW	HERB	19.		
10. EUPATORIADELPHUS MACULATUS	OBL	HERB	20.		

Percent of dominant species that are OBL, FACW, and/or FAC 90
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: THE AREA IS DOMINATED BY OBL AND FACW SPECIES.

SOILS

Series/phase: HOUGHTON MUCK Subgroup:[2] _____
Is the soil on the hydric soils list? Yes X No ____ Undetermined _____
Is the soil a Histosol? Yes X No ____ Histic epipedon present? Yes ____ No X
Is the soil: Mottled? Yes X No ____ Gleyed? Yes ____ No X
Matrix Color: BLACK Mottle Colors: GRAY
Other hydric soil indicators: _____
Is the hydric soil criterion met? Yes X No ____
Rationale: MUCK SOILS ARE WITHIN 18 IN. OF THE SURFACE.

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth: _____
Is the soil saturated? Yes ____ No X
Depth to free-standing water in pit/soil probe hole: GREATER THAN 1 FT.
List other field evidence of surface inundation or soil saturation.

Is the wetland hydrology criterion met? Yes X No ____
Rationale: THIS CRITERION IS MET BECAUSE THE VEGETATION AND SOILS CRITERIA ARE MET.

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: THE AREA HAS WETLAND SOILS AND A DOMINANCE OF WETLAND VEGETATION.

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."