RCRA Facility Assessment
Sampling Visit Report

For the Knolls Site
Land Disposal Area

Knolls Atomic Power Laboratory
Niskayuna, New York

Volume 1 of 2

September 2006
Revised December 2007

Prepared By

KAPL, Inc.
Knolls Atomic Power Laboratory
Niskayuna, New York
Operated for the United States Department of Energy
Contract DE-AC 12-00SN39357

Knolls Site – Land Disposal Area
RCRA Facility Assessment Sampling Visit Report
September 2006

CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

DS Sweesy, Manager, Operations and Environment & Health

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Replacement Pages for the Land Disposal Area Sampling Visit Report

Sampling Visit Report – Volume 1 of 2

Section 1 – Revised Page 1; affected Pages 1 and 2.

Section 4 – Revised Pages 30, 42, 54, and 62; affected Pages 30, 31, 42, 54, 62, and 63.

Section 5 – Revised Page 91; affected Pages 91 and 92.

Section 6 – Revised Pages 96, 99 and 102.

Table 11

Sampling Visit Report – Volume 2 of 2 - Appendix H

SDG 103512 – Revised Cyanide Sample Report Forms; pages 1510, 1512, 1514, 1516, 1518, 1520, 1522, and 1524; affected Pages 1388, 1510, 1512, 1514, 1516, 1518, 1520, 1522, 1524, and 1547 (located near the end of Appendix H).

Sampling Visit Report Covers and Spines

Revised Covers and Spines for revision date

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List of Acronyms

1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethylene
1,1,1-TCA	1,1,1-Trichloroethane
1,1,2,2-PCA	1,1,2,2-Tetrachloroethane
ASP	Analytical Services Protocol
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
cis-1,2-DCE	cis-1,2-Dichloroethylene
DOE	United States Department of Energy
EI	Environmental Indicator
ESI	Expanded Site Inspection
GE Global	General Electric Global Research Center
GEL	General Engineering Laboratories, Inc.
GPRA	Government Performance Results Act
gpm	Gallons Per Minute
ICM	Interim Corrective Measure
IDW	Investigation-Derived Waste
KAPL	Knolls Atomic Power Laboratory
LDPE	Low Density Polyethylene
MDA	Mercury Disposal Area
MEK	Methyl Ethyl Ketone
µg/Kg	Micrograms Per Kilogram
µg/L	Micrograms Per Liter
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NAPL	Non-Aqueous Phase Liquid
NTU	Nephelometric Turbidity Unit
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polynuclear Aromatic Hydrocarbon
PCE	Tetrachloroethylene
PID	Photoionization Detector
PPE	Personal Protective Equipment
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SDG	Sample Delivery Group
SNR	Schenectady Naval Reactors
SPDES	State Pollutant Discharge Elimination System
SPRU	Separations Process Research Unit
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCE	Trichloroethylene
TCL	Target Compound List
THF	Tetrahydrofuran
trans-1,2-DCE	trans-1,2-Dichloroethylene
TOGS	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

Executive Summary

The Knolls Atomic Power Laboratory (KAPL) is working closely with the United States Department of Energy (DOE), Office of Naval Reactors, and the New York State Department of Environmental Conservation (NYSDEC), to evaluate the Land Disposal Area for releases of hazardous constituents in soil and groundwater. A Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) Sampling Visit (SV) was implemented in the Land Disposal Area in accordance with the SV Work Plan approved by NYSDEC.

The LDA SV was comprised of a soil investigation and a groundwater investigation. The soil investigation was designed to determine the presence or absence of hazardous constituents in the environment associated with known or suspected historical shallow burial of solid waste. The areas investigated as part of the soil investigation included the Midline Stream, the Former Landfill Area (SWMU-002), C&D Area No.1 (SWMU-007), the North Field (SWMU-004), the Mercury Disposal Area (SWMU-003), the West Field (SWMU-006), the Pyrophoric Area (SWMU-005), and the Former Slurry Drum Storage Area (SWMU-035). The groundwater investigation was designed to define the limits of volatile organic compounds (VOCs) detected historically in groundwater in the LDA. Although the groundwater investigation did not focus on specific SWMUs, the data from the groundwater investigation supplemented and corroborated the findings of the soil investigation.

The LDA SV Report concludes that releases of hazardous constituents have occurred in the Land Disposal Area. However, the findings are overall unremarkable and indicate that the releases in the Land Disposal Area pose no imminent threat to human health and the environment. Where shallow buried material was found, the concentrations of hazardous constituents within the fill material are typically unexceptional, and the hazardous constituents appear to be incidental to the solid and stable fill material and are not readily migrating into the soil. The limits of the VOCs historically detected in the groundwater have been effectively defined. The VOCs are confined to a narrow plume associated with perched groundwater within sand and gravel deposits on impermeable gray till. A possible source area of the VOCs was found localized in the Pyrophoric Area.

Additional investigation is recommended in the LDA to further characterize the nature and extent of the releases and to enhance the understanding of hydrogeologic conditions preparatory to any corrective measure decisions. In accordance with Module III of the Knolls Site 6 NYCRR Part 373 Permit, the follow-on investigation will be designed and implemented as part of the RCRA Facility Investigation for the LDA.

1.0 Introduction

In accordance with Module III, Condition E.3 of the 6 New York Code of Rules and Regulations (NYCRR) Part 373 Hazardous Waste Management Permit (Part 373 Permit) for the Knolls Atomic Power Laboratory (KAPL) - Knolls Site, Niskayuna, New York [New York State Department of Environmental Conservation (NYSDEC) Permit Number 4-4224-00024/00001], effective July 20, 1998 [Reference (1)], a RCRA Facility Assessment (RFA) Sampling Visit (SV) was implemented in the Land Disposal Area (LDA). Reference (1) identified the following six solid waste management units (SWMUs) in the LDA that required investigation under an SV:

Former Landfill (SWMU-002),
Mercury Disposal Area (SWMU-003),
North Field (SWMU-004),
Pyrophoric Area (SWMU-005),
West Field (SWMU-006), and
Construction and Demolition Area No. 1 (C&D Area No.1; SWMU-007).

In parallel with the development of the LDA SV Work Plan, a separate SV investigation associated with the Former Slurry Drum Storage Area (SWMU-035) of the Separations Process Research Unit (SPRU) Project, a DOE operation separate from KAPL operations, was ongoing in portions of the LDA, including areas that overlapped portions of the Former Landfill and Pyrophoric Area. During implementation of the SPRU SV, low concentrations of volatile organic compounds (VOCs) were found in the shallow soil in the Former Landfill and Pyrophoric Area [Reference (2)]. Since a positive indication of a chemical release to the environment met the objective of an SV, NYSDEC and KAPL agreed that further characterization of the releases in the Former Landfill and Pyrophoric Area could be performed during the follow-on RCRA Facility Investigation (RFI). Therefore, the LDA SV focused on the Mercury Disposal Area (SWMU-003), North Field (SWMU-004), West Field (SWMU-006), and Construction and Demolition Area No. 1 (SWMU-007); still some investigation was performed in portions of the Former Landfill and Pyrophoric Area.

Based on historical site operational information; previous geophysical, soil gas, and hydrogeologic studies; and field observations; the LDA SV Work Plan was initially designed to investigate surface and near-surface soils for releases of hazardous constituents associated with known or suspected historical shallow burial of solid waste. Just prior to completion of the LDA SV Work Plan, NYSDEC requested that the groundwater RFI identified in Reference (1) for the Pyrophoric Area be moved up in schedule and investigated near term to allow a positive determination to be made by the end of

2005 for the environmental indicator (EI) *Migration of Contaminated Groundwater Under Control* (Groundwater EI). The Groundwater EI milestone was established by the United States Environmental Protection Agency (USEPA) pursuant to the Government Performance Results Act (GPRA). NYSDEC agreed that the groundwater investigation could be incorporated into the LDA SV. Consequently, a work plan for the soil investigation was transmitted as scheduled in June 2001 [Reference (3)], and an addendum to the work plan addressing the groundwater investigation was transmitted to NYSDEC in September 2001 [Reference (4)]. Following receipt of NYSDEC comments on the soil and groundwater investigation work plans, a final combined LDA SV Work Plan was transmitted to NYSDEC in April 2002 [Reference (5)]. NYSDEC provided approval of the LDA SV Work Plan in May 2002 [Reference (6)].

Fieldwork for the LDA SV was performed between July 2002 and July 2004. The investigation activities were implemented in several phases in accordance with the approved LDA SV Work Plan [Reference (6)] and supplemental scopes of work agreed to by NYSDEC. Included in the supplemental work was emergent shallow soil sampling to address NYSDEC comments on the SPRU SV Report [Reference (7)]. Via Reference (8), KAPL assumed responsibility to further evaluate, under the LDA Corrective Action work, sporadic indications of possible minor releases in shallow soil within an area associated with the Former Slurry Drum Storage Area (SWMU-035), a SPRU SWMU, for which a link to SPRU could not be definitively determined. Through a cooperative effort with DOE-SPRU, additional shallow soil samples were collected for KAPL by the DOE-SPRU contractor working in the area associated with the Former Slurry Drum Storage Area. These samples were collected, handled, and analyzed in accordance with procedures approved by NYSDEC.

In addition to the Groundwater EI, the LDA SV also was implemented in the context of achieving a second milestone established by the USEPA pursuant to GPRA – the *Current Human Exposures Under Control* EI (Human Health EI). The USEPA set a goal to have positive determinations made on the two environmental indicators by the end of 2005. Consequently, the LDA SV was designed and implemented to provide adequate release determination and groundwater migration data while expediting findings to support the environmental indicator determinations.

Based on historic site-wide voluntary groundwater data and recent LDA SV data, the extent and migration of the contaminated groundwater in the LDA is under control, and human health exposure related to contaminated soil and groundwater in the LDA is under control. In September 2004, NYSDEC issued a positive determination for the Knolls Site for the *Migration of Contaminated Groundwater Under Control* EI [Reference (9)]. NYSDEC issued a positive determination for the Knolls Site for the *Current Human Exposures Controlled* EI in August 2005 [Reference (10)].

2.0 Site Description

This section provides a description of the location, operational history, and environmental setting of the Knolls Site, with specific information on the LDA, including potential receptors to releases associated with the LDA. Additional, more-detailed discussion on aspects of the environmental setting (e.g., geology) in the LDA is provided in Section 4 – Soil Release Determination.

2.1 Location and Operational History

As shown on Figure 1, the Knolls Site is located in the Town of Niskayuna, Schenectady County, New York; on the south bank of the Mohawk River. The Knolls Site is comprised of 170 acres, most of which are located on a bluff approximately 115 to 120 feet above the Mohawk River surface (referred to as the upper level). Along the northern margin of the Knolls Site, the land surface slopes steeply to a natural bench (referred to as the lower level) approximately 15 to 20 feet above the river surface. The Knolls Site fronts approximately 4,200 feet of the Mohawk River. The Knolls Site is bounded to the north by the Mohawk River; to the east by a mixture of open land, parks, and the closed Town of Niskayuna municipal landfill; to the south by a low-density suburban residential area; and to the west by the General Electric Global Research Center (GE Global).

Construction of the Knolls Site began in 1948, and laboratory operations at the Knolls Site began in 1949. The principal function of the Knolls Site is research and development in the design and operation of Naval nuclear propulsion plants. Facilities at the Knolls Site include administrative offices, machine shops, a sewage pumping station, wastewater treatment facilities, a boiler house, oil storage facilities, cooling towers, waste storage facilities, and chemistry, physics, and metallurgical laboratories. The buildings and support facilities occupy approximately 60 acres of the property. The remainder of the Knolls Site (approximately 110 acres) consists of undeveloped woods and fields.

As shown on Figure 2, the six SWMUs comprising the LDA are located in the eastern portion of the Knolls Site, outside the fenced security area. The non-secure area in which these SWMUs are located is undeveloped, and consists mostly of open fields and woods. As indicated by the ground elevation contours on Figure 3, the ground surface in most of the LDA is relatively flat, with steeper slopes adjacent to drainage pathways and along fill faces. The ground surface in the West Field, Pyrophoric Area, and North Field slopes gently northeastward, northward, and westward, respectively, toward an ephemeral drainage pathway leading to the Midline Stream. The ground elevation decreases from approximately 324 feet National Geodetic Vertical Datum (based on mean sea level) in all three areas to approximately 290 feet where the ephemeral drainage pathway merges with the Midline Stream.

C&D Area No.1 is comprised mostly of a partial bowl-like feature, with an elevated rim and a lower mostly flat interior. The rim of the bowl is comprised of an in-situ ridge of soil to the north and east, a remnant of early site excavations, and a ridge of merged soil piles to the south, consisting of sand and gravel with large cobbles. The western portion of the area is not enclosed. The ground surface along the rim slopes inward from approximately 330 feet to 324 feet in the relatively flat interior of the area. The ground surface within C&D Area No.1 slopes gently westward out of the bowl and then slopes steeply toward the Midline Stream, dropping to less than 290 feet. An isolated small pile of concrete rubble is located approximately 75 feet southeast of the area.

The Mercury Disposal Area is situated in a gently sloping area near the edge of an east-sloping ridge. The ground surface elevation drops from approximately 324 feet at the edge of the ridge to roughly 300 feet along the western side of the closed landfill.

The Former Landfill is located south of a topographic divide roughly defined by the service roadway that passes north of well W-1 and Building Q12. This divide separates land sloping northward toward the Midline Stream from land sloping southward toward the East Boundary Stream. The ground surface in the Former Landfill also is relatively flat, sloping from approximately 324 feet to 320 feet at the top of the fill face. The elevation then drops abruptly 20 to 30 feet toward East Boundary Stream.

2.2 Environmental Setting

2.2.1 Geology

The Knolls Site is located in the Mohawk River Valley within the Hudson-Mohawk Lowlands Geomorphic Province. Bedrock underlying the Knolls Site consists of essentially horizontal shales and sandstones of the Upper-Middle Ordovician aged Schenectady Formation. The Schenectady Formation is comprised of a series of alternating beds of graywacke, sandstone, siltstone and shale about 2,000 feet thick, dipping gently to the west and southwest. These rocks are characteristically non-porous and impermeable, and form poor aquifers. The Schenectady Formation is underlain by the Canajoharie shale, which is a dark gray to black, thinly bedded fissile shale. Depth to bedrock at the Knolls Site generally ranges between 10 and 70 feet below grade, with shallower depths occurring along the lower level and deeper depths more central to the Knolls Site. Rock outcrops are visible on both banks of the Mohawk River in the vicinity of the Knolls Site.

The bedrock at the Knolls Site is overlain mainly by glacial deposits, most of which consist of thick (up to 70 feet) glacial till. Directly overlying the bedrock is the Mohawk Till, a grayish-blue, dense, compact till, commonly referred to as the gray till. The gray till extends from the bedrock typically to within 10 to 15 feet of the ground surface, where the gray till transitions into a yellowish-brown till

commonly referred to as the brown till. Evidence suggests that the brown till is the weathered surface of the gray till and not a separate depositional sequence. Occasional lenses of graded material, usually fine to medium sand, exist within the till. Based on drilling records, it is believed that these lenses are small in size and isolated from one another. The gray till is almost entirely impermeable except for the occasional lenses of fine sand which are capable of transmitting small quantities of water. However, the water is rapidly depleted from these small isolated sand lenses with little or no recharge. The brown till also is relatively impermeable; however, perched water at the brown till/gray till contact indicates that water does infiltrate into and percolate through the brown till.

Glacial lake (lacustrine) silts and clays and discontinuous ice-contact deposits (sand and gravel) are found mostly in the southern and southeast portions of the Knolls Site property. The silt and clay deposits also are relatively impermeable. The ice-contact deposits are capable of transmitting water, but their limited extent diminishes the potential for yielding useable water volumes.

The geology in the LDA is comprised of gray till, ice-contact sand and gravel deposits, lacustrine silt and clay deposits, and fill material. The gray till underlies the entire LDA and ranges in thickness from 25 to 55 feet. The gray till is found at the ground surface in the North Field and C&D Area No.1, where the overlying brown till was removed for use as structural fill material during construction of the Knolls Site. Elsewhere in the LDA, the gray till was covered with ice-contact deposits or lacustrine deposits, thereby precluding the weathering of the gray till and consequent formation of the brown till. However, brown till has been found along the flanks of the North Field, where the gray till was not covered by other geologic deposits. Also, some soil boring evidence suggests that thin (2 to 5 feet) isolated pockets of brown till may have formed prior to being overlain by other deposits.

Between the West Field and Pyrophoric Area, ice-contact deposits overlie the gray till as a ridge of sand and gravel that appears to extend from the Former Landfill to the Midline Stream. The sand and gravel deposit ranges in thickness from 2 to 4 feet near the edges of the deposit to 15 to 20 feet along the central axis of the deposit. Associated deposits of more uniform finer sand are present adjacent to the coarser sand and gravel.

Lacustrine silt and clay blanket the ice-contact deposits and till deposits. The silt and clay deposits are typically 10 to 20 feet thick, but appear thickest (20 to 25 feet) in the southwest portion of the LDA and thinnest (2 to 5 feet) along the apex of the sand and gravel deposit. Seams and partings of coarse to fine sand are present within the silt and clay. With the exception of the North Field and C&D Area No.1, where the silt and clay is absent, the silt and clay is found at the ground surface unless covered by fill material.

The fill material is a mix of construction and demolition debris (e.g., lumber, concrete, bricks, pipe, and wire), laboratory debris (e.g., glassware and metal and plastic tubing), metal turnings, office paper waste (newspaper, cardboard), trees and brush, and silty or sandy soil. Fill material was found from the West Field eastward to the Pyrophoric Area, and south to the Former Landfill. The laboratory debris and metal turnings were more evident in the West Field; whereas the construction and demolition debris predominated in the area east of the West Field to the Pyrophoric Area. The office paper waste was found mostly in the Former Landfill. The fill material in the West Field is typically 4 to 6 feet thick and is covered with 1 to 2 feet of silty and sandy soil. The fill material just east of the West Field is 1 to 3 feet thick and consists of mostly silty and sandy soil containing sporadic construction and demolition debris. The debris nearer the Pyrophoric Area is typically 6 to 8 feet thick and is thinly covered with sandy soil, though some debris is visible at the surface. The office paper waste found in the Former Landfill is 1 to 6 feet thick and is covered with roughly 2 to 5 feet of sandy fill. Up to 8 to 10 feet of sandy fill also appears to be present within and south of the Former Landfill in an area formerly used as a sand and gravel pit prior to development of the Knolls Site.

Construction and demolition debris also was found in the C&D Area No.1. However, this debris is present at the ground surface and is not buried. The construction and demolition debris is comprised mostly of large slabs of concrete with rebar and small piles of concrete rubble. Occasional pieces of metal and asphalt are also present. An isolated small pile of concrete rubble is located approximately 75 feet southeast of the area. Merged piles of sand and gravel with large cobbles form the southern side of the area.

2.2.2 Groundwater

The groundwater resources at the Knolls Site are limited due to the limited extent of sand and gravel deposits and the low permeability of the bedrock and silt and clay deposits. Consequently, there are no principal or primary bedrock or overburden aquifers underlying the Knolls Site for development as commercial or public water supplies.

The direction of groundwater flow at the Knolls Site is believed to be generally northeast toward the Mohawk River. Based on the relatively low permeability of the bedrock and till at the site, groundwater movement, overall, is expected to be relatively slow. Local variations in groundwater flow direction and velocities occur within less compact and more permeable material associated with natural geologic deposits and backfill along utility trenches and building foundations.

In the LDA, groundwater is found in the ice-contact sand and gravel and as perched groundwater at the contact between the porous fill material and the relatively impermeable silt and clay. Lesser quantities of groundwater occur within the sand partings and seams within the silt and clay. The underlying impermeable gray till inhibits vertical movement of groundwater, thereby creating an overall perched groundwater above the gray till. Groundwater flow in the LDA is influenced by the ground surface topography and the slope of the gray till surface. The topographic divide described in Section 2.1 approximates a divide between northward groundwater flow toward Midline Stream and southward flow toward the East Boundary Stream.

2.2.3 Surface Water

As shown on Figure 2, surface water from the undeveloped portions of the Knolls Site drain to the Mohawk River via three streams; the East Boundary Stream, the Midline Stream, and the West Boundary Stream. The East Boundary Stream is located on the eastern portion of the Knolls Site and receives drainage mostly from undeveloped areas along the south-southeast corridor of the Knolls Site, though some parking lot runoff and drainage upgradient of the Knolls Site is captured by the East Boundary Stream. The Midline Stream drains mostly the central undeveloped area of the Knolls Site, though it receives surface water runoff from the eastern portion of the upper level and from some parking lots and roadways at the site. The West Boundary Stream is located adjacent to the Knolls Site on the GE Global property, and receives some surface water runoff from the Knolls Site, though most of the drainage is derived from offsite surrounding land areas and the GE Global property. These streams are perennial, though the flow becomes extremely low during the dry summer weather. These streams are not accessible on-site to the public except at the point where they discharge to the Mohawk River. All streams are routinely monitored as part of the Knolls Site State Pollutant Discharge Elimination System (SPDES) program administered by New York State.

Surface water runoff from the LDA is controlled by the ground surface topography. Consequently, surface runoff from the North Field, C&D Area No.1, West Field, and Pyrophoric Area drains to the Midline Stream. Surface water runoff from the Former Landfill drains southward to the East Boundary Stream, and surface water runoff from the Mercury Disposal Area drains eastward to the perimeter drain of the closed landfill.

2.3 Potential Receptors from the LDA

This section addresses the potential human and ecological receptors in the LDA or in the surrounding environment that could potentially be exposed to chemical constituents associated with the LDA.

2.3.1 Local and Potential Future Uses of Groundwater

Groundwater resources in the LDA and surrounding area are limited due to the limited extent of sand and gravel deposits and the low permeability of the bedrock and silt and clay deposits. There are no principal or primary bedrock or overburden aquifers underlying or nearby the LDA. There are no production wells for service water on site. Water for site operations, including potable and limited cooling use, is obtained from the municipal water system. The majority of non-contact cooling water at the Knolls Site is obtained from the Mohawk River. No known wells are used for domestic consumption in the vicinity of the Knolls Site, and area residences are all served by a municipal water system.

2.3.2 Local and Potential Future Uses of Surface Water

Most of the surface water runoff from the LDA enters either the Midline Stream or East Boundary Stream, both of which are routinely monitored as part of the Knolls Site SPDES program. The minor amount of surface water runoff that could be associated with the Mercury Disposal Area drains to the drainage ditch along the west side of the closed landfill; the drainage ditch discharges any surface water runoff to the ground surface below the face of the landfill; there is no direct surface drainage pathway to the East Boundary Stream or Mohawk River.

The Mohawk River has been classified by NYSDEC as Class A from the Knolls Site downstream to the dam above Cohoes Falls. Class A freshwaters are best used as a source of drinking water, for culinary purposes, primary and secondary contact recreation and fishing, and are suitable for fish propagation and survival.

2.3.3 Human Access and Uses of Facility and Adjacent Lands

Human access to the LDA is restricted by 24-hour security measures. Normal vehicular and pedestrian access to the Knolls Site property is controlled through perimeter security gates. Trespassing in the LDA is controlled through the site access security measures and a combination of routine surveillance and patrol measures and topographic and natural barriers. The land in the LDA consists of mixed open field and woods with no current human use. Other than use of the service roads for routine security patrols and access to the closed landfill, site personnel rarely access the LDA.

2.3.4 Ecology Overlying and Adjacent to the LDA

As indicated previously, the LDA consists of undeveloped open fields and woods. Except for the North Field and C&D Area No.1, most fields are well vegetated. The North Field and C&D Area No.1 are sparsely vegetated owing to the infertile gray till surface exposed after removal of the overlying

brown till and top soil. Viable animal populations within the LDA boundary are evident. Small mammalian species such as moles, field mice, woodchuck, chipmunks, and squirrels have been observed. White tailed deer also inhabit the LDA. Various birds have been observed in the LDA, including many songbirds, turkeys, ducks, and red-tailed hawks.

2.3.5 Endangered or Threatened Species Near the LDA

No known endangered or threatened species are located at or in the immediate vicinity of the LDA [Reference (11)].

3.0 LDA SV Implementation

As indicated in Section 1.0, the LDA SV was implemented in the context of achieving the two environmental indicators established by the USEPA – *Current Human Exposures Under Control* and *Migration of Contaminated Groundwater Under Control*. Consequently, the LDA SV was streamlined to expedite the findings necessary to meet both the schedule demands and technical criteria for the environmental indicators.

3.1 LDA SV Scope

A summary of the LDA SV implementation is provided in Table 1. The LDA SV was comprised of two principal investigations – the Shallow Soil Investigation, which was designed to identify potential affects on soil from the SWMUs in the LDA; and the Groundwater Investigation, which was designed to characterize the nature and extent of VOCs in groundwater. The investigation activities were implemented over several progressive phases in accordance with the approved LDA SV Work Plan [Reference (6)] and supplemental scopes of work agreed to by NYSDEC, including the SPRU supplemental shallow soil sampling to address a potential affect on soil associated with the Former Slurry Drum Storage Area (SWMU-035). Two hundred and fifty-seven soil samples were collected for laboratory analysis during the LDA SV – 149 soil samples were collected from 61 drilled borings; 56 soil samples were collected from 25 hand auger boring locations; and 52 soil samples were collected from 41 test pits. Water samples were collected from 32 newly-installed monitoring wells, four seeps and two surface water locations. To evaluate the source of recharge to existing well W-3 and to assess potential contaminated groundwater migration, slug and bail tests were performed on existing well W-3.

For clarity, investigation locations are grouped and shown on several figures. Hand auger boring locations are shown on Figure 4; test pit locations are shown on Figure 5; drilled borings, monitoring wells, seeps and surface water sample locations are shown on Figure 6; and the supplemental SPRU borings are shown on Figure 7. In addition, Figure 8 provides a larger scale view of the C&D Area No.1 to more clearly show the closely spaced investigation locations.

3.2 Soil Investigation

3.2.1 Soil Borings

Soil samples from borings were collected via hand auger, direct-push, and hollow-stem auger drilling methods. The hand auger consisted of a 2-inch diameter carbon steel bucket auger. The hand auger was used to collect the shallow soil samples in the C&D Area No.1 and the Mercury Disposal Area,

and the sediment samples in Midline Stream. Soil or sediment was transferred from the bucket auger into a stainless steel bowl or pan, where the soil or sediment was screened and selected for sampling.

Direct push soil sampling was performed using an ATV-mounted, van-mounted, or track-mounted Geoprobe® direct push drilling rig. Direct push soil samples for the SPRU supplemental soil sampling were collected using a 2-foot long, 3-inch diameter carbon steel split-barrel (split spoon) sampler. A new thin-walled clear polyvinyl chloride (PVC) liner was used for each push interval. After retrieval of the split spoon, the split spoon was opened and the liner was cut to expose the soil core, and the soil was screened and selected for sampling. All other direct push soil samples were collected using a Macro-Core® soil sampler.

The Macro-Core® that was used was a 4-foot long, 2-inch outer diameter steel sampler capable of collecting a 1.5-inch diameter soil core. A new thin-walled clear PVC liner was inserted into the Macro-Core® for each push interval. The Macro-Core® sampler was used in both the open-tube and closed-piston configurations. Where the soil was cohesive and fall-in was not expected, soil samples were collected using the open-tube configuration. Where fall-in was anticipated or problematic, the closed-piston configuration was used to allow pushing to a specified depth without introducing soil into the sampler. At the planned sample depth, the drive tip was "unlocked" with a release rod inserted from the surface into the hollow drill rods. As the sampler was pushed into the soil, the drive tip was pushed up into the liner along with the soil sample. After retrieval of the Macro-Core® sampler to the surface, the PVC liner (and soil core) was removed from the sampler, the liner was cut lengthwise exposing the soil core, and the soil was screened and selected for sampling.

Hollow-stem auger drilling was used to drill and collect soil samples from three borings (SB-15A, 16A, and 24A). The borings were drilled with a truck-mounted drill rig using 4¼ -inch inner diameter hollow-stem augers. Soil samples were recovered using 2-foot long, 2-inch diameter carbon-steel split barrel samplers (split spoons) driven into the soil by a 140-pound weight dropping 30 inches. After retrieval of the split spoon, the split spoon was opened to expose the soil core, and the soil was screened and selected for sampling. Hollow-stem auger drilling also was used to overdrill and replace existing well W-3; soil samples were not collected.

For borings in which monitoring wells were installed, the borehole was backfilled with well construction materials described in the next section. For borings in which a monitoring well was not installed, the borehole typically was backfilled with native material sloughing into the borehole. Where sloughing did not occur, bentonite chips were added to the borehole and hydrated with potable water. In some cases, the borehole was filled with a combination of sloughing soil and bentonite. Logs for the drilled

LDA SV borings are provided in Appendix A and the logs for the supplemental SPRU borings are provided in Appendix B.

In advance of the test pit activity, direct push borings were drilled at each test pit location to assess soil conditions for the purposes of health and safety planning. Three shallow borings, typically 8 feet deep, were drilled at each test pit location. Only two borings were drilled at test pits TP-7 and TP-10 owing to access limitations. The logs for the pre-test pit borings are included in Appendix C.

3.2.2 Test Pits

Test pits were excavated using a Kubota Mini Track Hoe. Each test pit was approximately 8 feet long and 2 feet wide. For each test pit, soil was removed in nominal one-foot layers to an initial depth of 4 feet below grade. The excavated material from each layer was staged in separate piles adjacent to the test pit. The excavated soil and exposed soil face were inspected for evidence of buried material; for example, waste material or soil contacts indicative of previous excavation or placement of soil. For safety purposes, field personnel were not allowed into the test pits to inspect the soil face. A portable guard rail system that was installed adjacent to each test pit allowed for safe and close inspections of the test pits. A telescoping pole-mounted digital camera with lights also was used to facilitate inspection of the test pits. Logs of the test pits are provided in Appendix C.

If waste material was present and the bottom contact with the underlying soil was identified, a soil sample was collected at the contact for laboratory analysis. If waste material was not present, a soil sample was collected at the 4-foot depth and archived for possible laboratory analysis. Attempts were made to further excavate each test pit to a target depth of at least 6 feet or refusal, whichever occurred first. The material below 4 feet also was removed in nominal one-foot layers and staged in separate piles adjacent to the test pit. If waste material was not encountered in the test pit, the soil sample from the 4-foot depth was submitted for laboratory analysis. If waste material was encountered below 4 feet, attempts were made to excavate to the lower contact of the waste and soil or to the practical depth of excavation, whichever occurred first. A sample for laboratory analysis was collected at the lower contact of waste and soil or from the lowest practical excavation depth, whichever occurred first.

Soil for laboratory analysis was typically sampled from the backhoe bucket using a clean stainless steel trowel. At test pit TP-20, a sample of black material found at the ground surface was collected directly with a stainless steel trowel. As discussed in Section 4.6, the soil samples from test pits TP-29 and TP-31 were collected from the associated staged pile, and the 4-foot sample and a sample of deeper waste material at test pit TP-35 were collected from the staged piles.

Prior to backfilling, each test pit was photographed using a telescoping pole-mounted digital camera with lights. An annotated photographic summary of the test pits is provided in Appendix D. Each test pit was backfilled in the reverse order of excavation. Staged material from the deepest layer pile was returned first to the excavation, followed by the next-deepest layer pile and progressing to the shallowest pile. The surface of each backfilled test pit was covered with straw.

3.2.3 Soil Sample Collection

The soil recovered with the hand auger, Macro-Core®, split spoon, or backhoe bucket was screened and inspected by the field geologist. The surface of the collected soil was screened for total VOC vapors using either a MSA Passport 2 photoionization detector (PID) with a 10.6 electron volt (eV) lamp or, for the SPRU supplemental sampling, a RAESystems MiniRAE Plus PID with a 10.6 eV lamp. Based on PID results and inspection of the collected soil for indicators of releases (e.g., staining, odors, or suspect material), the field geologist selected the soil to be containerized for laboratory VOC analysis. Following VOC sample collection, a description of soil sample texture, composition, color, consistency, moisture content and recovery were recorded on the boring log.

If laboratory analysis for semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), or metals was required or warranted based on field observations, the collected soil was transferred to a stainless steel pan to be homogenized. Using a stainless steel trowel, the soil was rolled to the center of the pan and initially mixed. The soil was then quartered and each quarter was moved to a corner of the pan. Each quarter was then mixed individually, moved back to the center of the pan, and thoroughly mixed with the other quarters. Soil for the additional analysis was selected from this final mixture.

3.3 Groundwater Investigation

3.3.1 Well Installation

As indicated in Table 1, 34 new monitoring wells were installed. Thirty monitoring wells were installed in direct-push borings, and 4 monitoring wells were installed in hollow-stem auger borings. Most of the wells were completed with stickups and protective steel casing. Owing to proximity to equipment traffic areas, wells LMW-26, 28, 34, 35, 36, and 37 were completed as flush-mount wells. Well completion logs are shown on the boring logs provided in Appendix A.

Monitoring wells installed in the direct push borings consist of 1-inch diameter, flush-joint PVC riser pipe with 10 feet of 0.010-inch slot PVC well screen. The well screen and riser pipe were assembled

at the surface and lowered into the open borehole. In some cases, the well had to be pushed to depth by hand or with the Geoprobe® to penetrate sloughed soil at the bottom of the borehole.

Clean silica sand was poured into the borehole to fill the annular space between the screen and the borehole wall. The sand pack in each well extends at least one foot above the top of the screen. The top of the sand pack varies, depending on the depth of the well and the potential saturated zone to be monitored. For flush mount wells, bentonite was placed above the sand pack typically to the ground surface or within approximately 0.5 feet to 1 feet of the ground surface, and the bentonite was hydrated with potable water. A thin layer of clean silica sand was placed over the bentonite and the protective flush mount road box was cemented in place. For wells with stickups, bentonite was placed above the sand pack to the ground surface. Since only a small borehole was created, the protective steel casing had to be pushed or hammered into the ground.

Monitoring wells LMW-15A, LMW-16A, LMW-24A, and W-3 replacement were installed in the hollow-stem auger borings and consist of 2-inch diameter, flush-joint, PVC riser pipe with 0.010-inch slot well screen. The well screen is 10 feet long in LMW-15A, 16A, and 24A; and 5 feet long in W-3 replacement. The well screen and riser pipe were assembled at the surface and lowered inside the augers. As the augers were removed, clean silica sand was poured into the augers to fill the annular space between the screen and the borehole wall. The sand pack in each well extends approximately 2 feet above the top of the well screen. Approximately three feet of bentonite was placed above the sand pack, and the bentonite was hydrated with potable water. Cement/bentonite grout was placed above the bentonite to the surface, and a protective steel casing was cemented in place.

To assess the presence of sand and gravel lenses within the gray till, the boring for LMW-24A (SB-24A) was advanced to 54.5 feet below ground. Based on saturated conditions above the gray till surface near 28 feet, the boring was backfilled with bentonite to approximately 30 feet below ground. The bentonite was hydrated with potable water, and the well was then installed at this depth.

3.3.2 Well Development

Each newly-installed well was developed to remove fine-grained materials from the well and potentially improve the yield of the well. Development of a well began no sooner than 24 hours after installation of that well. A peristaltic pump and bailers were used to develop the monitoring wells. The peristaltic pump was a Masterflex Model 7571, with 5/16-inch inner diameter Masterflex silicon tubing for the pump head assembly and ¼-inch inner diameter low density polyethylene tubing for the intake and discharge tubing. The bailers were bottom-loading, ¾-inch outer diameter PVC. The bailers were 18-inches and 36-inches long, with the longer bailers used in wells with a longer water

column. Pump tubing and bailers were dedicated to a well. Most of the wells were developed, at least in part, with the peristaltic pump. Bailers were used where tubing became clogged with silt. Deionized water was added to some slowly recharging wells to enhance suspension and removal of the silt.

At the beginning of the well development process, prior to the removal of any water, the headspace in the well riser was monitored for total VOCs using the PID. The depth to water and well depth were then measured to determine the volume of water in the well. A Solinst interface probe was used to check for non-aqueous phase liquids (NAPLs) at the top and bottom of the water column in the well. Before use and between wells, the water level probe and interface probe and lower portion of cable were rinsed with deionized water and wiped with clean towels saturated with deionized water.

After each well volume was removed, the field parameters pH, temperature, specific conductivity, and turbidity were measured. Temperature, pH, and specific conductivity were measured with a YSI Model 63 water quality meter, and turbidity was measured with a LaMotte Model 2020 turbidity meter. Well development continued until turbidity stabilized at less than 50 nephelometric turbidity units (NTUs); and/or pH, temperature, and specific conductivity stabilized. Stabilization was considered achieved when three consecutive readings showed a ten percent or less variation of temperature, specific conductivity, and turbidity, and less than 0.1 unit variation of pH. If attainment of a stabilized turbidity less than 50 NTUs was impractical and the other parameters had stabilized, the well was considered developed. For wells that evacuated to dryness after removal of one well volume, well development was considered complete after removal of three well volumes, regardless of parameter stabilization. A summary of the well development field parameters is provided in Appendix E.

3.3.3 Groundwater Sample Collection

Groundwater monitoring wells were purged prior to sample collection using the dedicated bailers. When not in use, bailers were sealed in labeled plastic bags. To determine the volume of water to purge from each well, the depth to water and well depth were measured. The depth to groundwater and well depth were measured to the nearest 0.01 foot.

For monitoring wells with adequate recharge, purging was accomplished by removing at least three well volumes of water. For monitoring wells that quickly dewatered, purging was accomplished when the well was dewatered. The field parameters temperature, pH, specific conductivity, and turbidity were measured after removal of each well volume or when the well was dewatered. A summary of the groundwater purging field parameters is provided in Appendix E.

Groundwater samples typically were collected within three hours after purging. Most groundwater samples were collected immediately following well purging. For slowly recharging wells, groundwater samples were collected after a sufficient volume of water for sampling became available in the well. Sample containers were filled directly from the bailer.

3.3.4 Seep and Surface Water Sample Collection

Seep and surface water samples were collected by placing the sample container into the stream of water, open end facing upstream. Surface water samples were collected from downstream to upstream. The field parameters temperature, pH, specific conductivity, and turbidity were measured for each seep and surface water location.

3.4 W-3 Assessment and Replacement

The borehole in which the original W-3 was installed penetrated through nearly 15 feet of clayey silt, 5 feet of saturated sand, and 24 feet of gray till before encountering bedrock at a depth of approximately 44 feet. The well construction log for the original well W-3 indicates that W-3 was screened in the upper 10 feet of bedrock, with a sand pack that extended from the screened interval to within 7 feet of the ground surface. The remainder of the well annulus reportedly was filled with bentonite to several feet of the ground surface, where a cement collar seal was installed around the protective steel casing. Based on the construction of well W-3 and the detection of VOCs in historical groundwater samples collected from W-3, an assessment was performed to identify possible hydraulic communication along the well annulus between the deep screened interval of W-3 and the shallow, perched groundwater in which the VOC contamination was believed present. Subsequent to the assessment, well W-3 was overdrilled and replaced with a well constructed with an annulus sealed above the screen, thereby isolating the screen from the shallow groundwater.

The assessment consisted of slug and bail tests in W-3, during which groundwater levels were monitored for changes in W-3, nearby new well LMW-20, and a Well Point driven into the annulus of well W-3. To remove the concrete collar, the riser was cut at the base of the concrete (approximately 4 feet below ground), and the concrete and section of riser were removed. A PVC coupler was placed on the shortened riser, and the riser was extended above the ground surface by attaching a length of solid PVC pipe.

Using the hammer on a hollow-stem auger rig, a 1-inch diameter steel Well Point was driven down the side of the riser of W-3 into the annular sand pack. Based on the depth to groundwater of 12.5 feet measured in W-3 and LMW-20, the Well Point was driven to 14.5 feet below ground surface. In-Situ MiniTroll pressure transducers with integrated data loggers were placed in W-3, the Well Point, and

well LMW-20, which is approximately 5 feet north of W-3. Each transducer was connected to a notebook computer, which served as a controller of the transducers and allowed for real-time viewing of water levels.

The first test was a slug test in W-3, for which the water level in W-3 was raised rapidly by inserting a "slug" consisting of a 1-inch diameter, 4-feet long, PVC pipe capped on both ends and filled with sand. The slug was suspended in the well using nylon cord. The water levels in the Well Point and LMW-20 were monitored for corresponding increases in water levels caused by the displacement of water through the W-3 well screen and up through the sand pack to the shallow groundwater. Water levels were monitored for approximately 2.75 hours in W-3 and the Well Point. Owing to the lack of discernible change in water level, water level monitoring in LMW-20 was terminated after approximately 0.5 hours.

The second test was a bail test in W-3, for which the water level in W-3 was lowered by purging the well using a bailer. Consequently, the pressure transducer had to be removed from W-3. Owing to slow recharge, W-3 was dewatered, resulting in an approximately 40 foot change in water level within W-3. The water levels in the well point and LMW-20 were monitored for corresponding decreases in water levels caused by the drainage of water down along the sand pack of W-3 and through the well screen into the riser pipe. Water levels were monitored in the Well Point and LMW-20 for approximately 2.5 hours. Water levels in W-3 were monitored manually every 5 minutes with an electronic water level meter beginning about 1.25 hours into the test, when the water level recovered to a depth reachable with the 50-foot cable on the water level meter available at the time.

On the day following the slug and bail tests, W-3 was overdrilled with a hollow-stem auger drill rig using 4 ¼-inch inner diameter augers. The borehole was drilled to 54 feet, removing the well screen, riser, and sand pack. A replacement well with a 5-foot long screen was installed into the bedrock as described in Section 3.3.1. The well screen was isolated from the shallow groundwater by the bentonite and cement grout annular seal. Periodic inspections of the W-3 replacement did not reveal any measurable groundwater in the well. Therefore, W-3 was not sampled.

3.5 Equipment Cleaning

3.5.1 Soil Sampling Equipment

Soil sampling equipment that came into contact with the soil was cleaned prior to first use, between borings, and after last use. Hollow-stem auger flights and drill rods and split spoon samplers were cleaned in a temporary cleaning pad using a high pressure washer. The backhoe bucket was cleaned over each backfilled test pit location using a high pressure washer. The split spoon samplers were

additionally hand cleaned with an alconox solution followed by a potable water rinse and deionized water rinse after each use. The Macro-Core®, Geoprobe drill rods, and hand sampling equipment (e.g., hand auger, trowels, and pans) also were hand cleaned with an alconox solution followed by a potable water rinse and deionized water rinse after each use. Spray bottles were used to apply the alconox solution and water rinses to the sampling equipment. Clean wash rags were used to wipe down the equipment and absorb the cleaning liquids. For the SPRU supplemental soil sampling, the alconox solution and potable water were applied with scrub brushes in separate 5-gallon buckets.

3.5.2 Groundwater, Seep, and Surface Water Sampling Equipment

Dedicated equipment was used to develop, purge, and sample groundwater; therefore, equipment cleaning was not necessary. Similarly, new and clean one-time use containers were used to collect the seep and surface water; therefore, equipment cleaning was not necessary.

3.6 Investigation-Derived Waste Management

Investigation-derived waste (IDW) included disposable cotton, latex, and nitrile gloves; disposable sampling materials (e.g., aluminum foil, cleaning rags, and Macro-Core® PVC liners), cleaning pad liquids, soil cuttings, and purged groundwater. These wastes were managed in accordance with Knolls Site waste management practices.

All disposable gloves and disposable sampling materials were containerized and disposed of offsite. Cleaning pad liquid was allowed to infiltrate the ground within the area of contamination, and backhoe bucket cleaning liquid was allowed to infiltrate the ground directly over the backfilled test pit location. Residual soil core and drill cuttings were returned to ground at the borehole location. Material excavated from each test pit was backfilled into each test pit at the depth from which it was removed. Development and purge water was returned to ground nearby the well from which it was generated.

3.7 Sample Handling and Analytical Procedures

Sample containers were provided by the analytical laboratory. Soil samples for VOC analysis were collected in 4-ounce wide-mouth glass jars with Teflon-lined lids. Each soil sample container was filled to minimize headspace. Water samples for VOC analysis were collected in 40-milliliter glass vials, each with a Teflon-lined septum and hydrochloric acid preservative. Each water sample container was filled to zero headspace. Soil samples for SVOC, PCB, metals, or cyanide analysis were collected in 8-ounce wide-mouth glass jars with Teflon-lined lids. Water samples for SVOC or PCB analysis were collected in 1-liter glass jars with Teflon-lined caps. Water samples for metals and cyanide analysis were collected in separate 500-millilter plastic bottles with nitric acid and sodium hydroxide preservative, respectively.

After each sample container was filled, a label was affixed to the container indicating sample identification, sample date, sample time, and analysis requested. The sample containers were immediately placed in a cooler containing ice. During each day of sampling, samples were periodically transferred under chain of custody to a secure refrigerator pending shipment to the analytical laboratory. Sample delivery groups sent to the analytical laboratory consisted of no more than 20 field samples, and included a field duplicate, matrix spike, matrix spike duplicate, equipment blank, and trip blank (when appropriate).

All samples were analyzed by General Engineering Laboratories, Inc. (GEL) of Charleston, South Carolina. GEL was certified to conduct the analyses under the New York State Department of Health Environmental Laboratory Approval Program. The analytical program is outlined in Table 1. The analyses performed and the associated USEPA SW-846 methodology included the following:

- Target Compound List (TCL) VOCs (Method 8260),
- TCL SVOCs (Method 8270),
- TCL PAHs (Method 8270),
- TCL PCBs (Method 8082),
- TAL Metals (Method 6010; 7470/7471 mercury), and
- Total Cyanide (Method 9010).

The laboratory analytical results were reported and documented in a manner conforming with SW-846 protocols, the approved quality assurance project plan in the SV Work Plan, and NYSDEC Analytical Services Protocol (ASP) requirements, where applicable. The analytical data were reported in ASP Category B deliverable packages, and all data were validated in accordance with guidelines outlined in the SV Work Plan.

3.8 Land Surveying

Each soil boring (including sediment) and newly-installed monitoring well was surveyed for horizontal and vertical control. Monitoring wells were surveyed to the nearest 0.01 feet at the top of the wells riser pipe (measuring point) and top of protective steel casing or flush mount road box. Ground surface at each boring and well location also was surveyed to the nearest 0.01 feet. The locations of the test pits were initially established on a surveyed map of the LDA. The horizontal coordinates corresponding to the center of each test pit were then located in the field by land survey, at which time the ground elevation at each test pit was determined. Subsequent to being located by land survey, several test pit locations were adjusted in the field to correspond to surface features possibly

indicative of buried material (e.g., depressions, soil discoloration). The horizontal coordinates for these test pits were determined with a global positioning system. Tabulated survey coordinates and elevations for the Groundwater Investigation borings and wells, Test Pits, SPRU Supplemental Soil Sampling borings, and shallow hand borings are provided in Appendix F.

4.0 Soil Release Determination

The focus of the LDA SV was to address the presence or absence of hazardous constituents in the environment associated with known or suspected shallow land disposal of solid waste. The release determination, therefore, is based mostly on the results of the Shallow Soil Investigation, for which soil samples were collected directly within the known or suspected disposal areas. Visual evidence and physical characteristics of waste or soil noted during the investigation also were important factors in the overall release determination.

The Groundwater Investigation, presented in the next section, was implemented to characterize the extent of VOCs known to exist in groundwater down gradient of the Pyrophoric Area. Although the Groundwater Investigation did not necessarily focus on specific SWMUs, the soil and groundwater data from the Groundwater Investigation are used where appropriate to supplement and corroborate the findings of the Shallow Soil Investigation.

Release determinations are presented for the following areas:

1. Midline Stream,
2. Former Landfill,
3. C&D Area No.1,
4. North Field,
5. Mercury Disposal Area,
6. West Field,
7. Pyrophoric Area, and
8. SPRU Former Slurry Drum Storage Area.

As indicated in Section 1, the earlier SPRU SV identified VOCs in soil in the Pyrophoric Area and the Former Landfill. Consequently, these areas were identified for further characterization in an RFI. However, as part of the LDA SV, additional data were generated for these areas. For completeness, the SPRU SV data are included in the discussion of the LDA SV data. The summary table for the SPRU SV data and the locations and logs of the soil borings in which the VOCs were detected are provided in Appendix G.

Based on the SV implementation summary provided in Table 1, a brief overview is provided of the work performed for each area. A release determination is discussed for each area based on field

observations and analytical data, for which summary tables are provided. The associated ASP Category B Form 1's and data validation reports for the LDA SV samples are provided in Appendix H.

The detection of VOCs, SVOCs, and PCBs in environmental samples is generally indicative of a release. However, detection of these compounds can sometimes be attributable to site operations or off-site contributions that are unrelated to releases from waste management units. Analytical cross contamination can also result in detections unrelated to releases, particularly for certain VOCs and SVOCs. Certain VOCs are also naturally occurring. To assist in the release determination for metals, the background concentrations for metals developed during the SPRU SV [Reference (2)] are utilized as a screening tool. Metal concentrations that are greater than the SPRU SV background values are not necessarily indicative of a release. Different soil characteristics and analytical variability can affect comparability with the background concentrations.

Although remedy decisions are not part of the SV process, for perspective, the summary tables of VOC, SVOC, and PCB data also include the recommended soil cleanup objectives provided in NYSDEC's 1994 Technical and Administrative Guidance Memorandum (TAGM) 4046 [Reference (12)]; hereinafter referred to as the TAGM values. Since the 1994 TAGM 4046 does not include a value for cis-1,2-dichloroethylene (cis-1,2-DCE), the 1995 proposed TAGM 4046 value is used for cis-1,2-DCE. For metals, the TAGM values are principally based on site-specific background concentrations, if available, or average background concentrations determined for New York State. Since site-specific background concentrations are available, those concentrations are used for comparison. TAGM 4046 does not contain a cleanup objective for cyanide, instead deferring to consideration of site-specific forms of cyanide in cleanup determinations. For the LDA SV, the cyanide data are evaluated for relatively elevated concentrations that may warrant further characterization.

4.1 Midline Stream

As required by Reference (1), sediment was sampled in Midline Stream to supplement the database for the earlier Expanded Site Inspection (ESI) [Reference (13)]. The approximate location of each of the three locations sampled in the ESI was again sampled during the LDA SV. As shown on Figure 4, the sediment sample locations are designated SB-19, SB-20, and SB-21. The boring numbers are in sequence with the hand auger borings drilled during the LDA SV. One sediment sample was collected from the 1 to 2 feet depth interval at each location, and the samples were analyzed for TCL VOCs pursuant to Reference (1).

4.1.1 Midline Stream – VOCs in Sediment

As indicated in Table 2, VOCs were not detected in the Midline Stream sediment samples.

4.1.2 Midline Stream – Conclusions and Recommendations

VOCs were not detected in the Midline Stream sediment samples. Based on these data, the sampling and analysis requirement for the ESI is considered complete and further action is not recommended.

4.2 Former Landfill

During the SPRU SV, VOCs were detected in shallow soil in the Former Landfill. The summary table for the VOC data and the locations and logs of the soil borings in which the VOCs were detected are provided in Appendix G. As shown on Figure 6, borings SB-26 and SB-37 were drilled within and adjacent to the Former Landfill (also within an area containing possible buried metal objects) as part of the LDA SV Groundwater Investigation. Soil samples were collected from these borings at the water table and the gray till contact, and the soil samples were analyzed for TCL VOCs. Corresponding monitoring wells LMW-26 and LMW-37 were installed in the borings, and groundwater was collected from each well and analyzed for TCL VOCs plus tetrahydrofuran.

4.2.1 Former Landfill VOCs in Soil

During the SPRU SV, VOCs were detected in six shallow borings drilled in the central and eastern portions of the Former Landfill. Office waste (paper, cardboard) was encountered in four of the borings. The depth to the top of the office waste ranges from 1.7 feet to 3.3 feet. The office waste is covered by and commingled with sandy fill or till-derived fill. Based on data from two borings, the thickness of the office waste ranged from 1.3 feet to 6 feet; the office waste was not fully penetrated in the other two borings. Samples were collected from the office waste/soil mixture and the overlying soil.

As indicated in the table provided in Appendix G, the VOCs detected included petroleum-related compounds toluene, ethylbenzene, and xylene; halogenated compounds tetrachloroethylene (PCE), trichloroethylene (TCE), 1,2-dichloroethylene (1,2-DCE), and chlorobenzene; and methyl ethyl ketone (MEK). The VOCs acetone, methylene chloride, 2-hexanone, and carbon disulfide were also detected, but these VOCs were not considered associated with a release since they were also detected in field or laboratory blanks.

Most of the SPRU SV VOC concentrations were less than 50 µg/Kg. The VOC with the highest concentration was toluene (700 µg/Kg). Other VOCs with relatively high concentrations were

MEK (180 µg/Kg), PCE (120 µg/Kg), and ethylbenzene (110 µg/Kg); all of these results, including the toluene, are associated with the same sample collected within the office waste and soil mixture. All VOC concentrations are below the associated TAGM values.

The results for the LDA SV soil borings SB-26 and SB-37 are consistent with the SPRU SV findings. Office waste covered with sandy fill was found in SB-37 from approximately 5 to 8 feet below ground. Office waste was not found in SB-26, though approximately 9 feet of apparent sandy fill is present at this location. As indicated in Table 28 from Section 5, the soil sample collected at the water table (13.5 feet) from SB-26 contained trace concentrations of TCE (0.55 µg/Kg) and cis-1,2-DCE (9.2 µg/Kg). Although consistent with the SPRU SV results, the presence of the TCE and cis-1,2-DCE at SB-26 may be associated with the migration into this area of groundwater affected by these VOCs, as discussed in Section 5. VOCs were not detected in the deeper gray till contact sample (27.7 feet).

The contact between the sandy fill and office waste in SB-37 was wet at approximately 5 feet; therefore, a soil sample was collected. The following VOCs were detected: 2-butanone (6.7 µg/Kg), acetone (31.4 µg/Kg), benzene (0.66 µg/Kg), carbon disulfide (4.4 µg/Kg), chlorobenzene (7.8 µg/Kg), ethylbenzene (50.6 µg/Kg), toluene (1.3 µg/Kg), and xylene (12.8 µg/Kg). The results are similar to the SPRU SV results; less the PCE, TCE, and 1,2-DCE. The detection of the acetone and carbon disulfide, the detection of which were suspect in the SPRU SV, indicates that these VOCs are present; however, the presence of these VOCs may be a by-product of decomposition of the waste and not a direct release associated with the disposal of the waste. Only acetone was detected in the gray till contact sample (21.5 feet). All VOC concentrations are less than associated TAGM values. As indicated in Table 29 and discussed further in Section 5, many of these VOCs were detected in the groundwater sample from well LMW-37, including PCE, TCE, and breakdown products. The source of these VOCs appears to be, in part, the Former Landfill, particularly for the benzene, toluene, ethylbenzene, and xylene. However, the presence of the chlorinated VOCs such as PCE and TCE may be associated with the migration into this area of groundwater affected by these VOCs from another source.

4.2.2 Former Landfill – Conclusions and Recommendations

The LDA SV data are consistent with the SPRU SV data. Generally low levels of VOCs are present in the Former Landfill, with an apparent association with the buried office waste. Various VOCs are present, including PCE and TCE, though the petroleum-related VOCs benzene, toluene, ethylbenzene, and xylene appear to be uniquely prevalent in the Former Landfill. The VOCs in the Former Landfill have affected groundwater, though migration of affected groundwater into the Former Landfill apparently is contributory to the groundwater VOC profile.

Further action has been previously determined for the Former Landfill. The nature and extent of the fill material and debris in the Former Landfill should be defined to the extent practicable. Soil within the Former Landfill should be further investigated to fully characterize the nature and extent of the VOCs. The soil at the surface and within and below the fill material should also be further characterized for SVOCs, PCBs, and metals. Further groundwater characterization should be performed as recommended in Section 5 and as appropriate based on the findings of future soil investigation in the Former Landfill.

4.3 C&D Area No.1

The soil investigation in the C&D Area No.1 consisted of hand borings, drilled borings, and test pits, the locations of which are shown on Figure 8. The locations of hand borings SB-1 and SB-2 correspond to previous soil gas locations where TCE was detected. The soil samples from each hand boring were analyzed for TCL VOCs. Based on the finding of TCE in the soil samples from SB-1, direct-push borings SB-30, SB-31, SB-32, and SB-33 were drilled adjacent to and nearby SB-1 to assess the extent of TCE in soil and the presence of TCE in groundwater. Groundwater was not encountered in the borings; therefore, wells were not installed. All soil samples from the borings were analyzed for TCL VOCs. Based on the presence of TCE at boring SB-33 and the proximity of SB-33 to the planned test pits TP-6 and TP-9, soil samples were collected for TCL VOC analysis from the planned pre-excavation direct-push borings located at the center of test pits TP-6 and TP-9.

Ten test pits (TP-1, 2, 3, 4, 5, 6, 7, 8, 9, and 10) were dug at the C&D Area No.1 to inspect the soil beneath the surface debris for evidence of any buried debris. Test pits TP-1, TP-2, TP-9, and TP-10 were excavated to a depth of 6 feet. Owing to the presence of dense gray till, the backhoe was unable to dig to 6 feet in test pit TP-3 (5 feet), TP-4 (5 feet), TP-5 (5 feet), TP-6 (4 feet), TP-7 (4.5 feet), and TP-8 (4.3 feet). One soil sample was collected from the 4-foot depth from each test pit and was analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL Inorganics.

4.3.1 C&D Area No.1 – Test Pit Observations

Detailed information on what was found in each test pit is presented on the test pit logs provided in Appendix C. For a quick review, a summary of the findings in the test pits is provided at the front of the logs. Photographs of the test pits are provided in Appendix D.

The test pits in C&D Area No.1 did not uncover evidence of material buried below the construction and demolition debris visible at the ground surface. All test pits, except test pit TP-9, encountered undisturbed till, and several test pits encountered shallow refusal in the gray till. The surface debris

pile at test pit TP-1 was approximately 3.5 feet deep, and sand and gravel fill was encountered in TP-9 to the bottom depth of six feet.

4.3.2 C&D Area No.1 - VOCs in Soil

As indicated in Table 3, TCE was detected in hand boring SB-1 at concentrations of 5.2 µg/Kg in the surface sample, 101 µg/Kg in the 0.5 to 1.5 foot sample, and 2,250 µg/Kg in the bottom 2.5 to 3.5 foot sample. Cis-1,2-DCE was also detected in the 0.5 to 1.5 foot and the 2.5 to 3.5 foot sample at concentrations of 9 µg/Kg and 12.1 µg/Kg, respectively. Carbon tetrachloride (0.67 µg/Kg) was detected in the 2.5 to 3.5 foot sample. The TCE concentration (2,250 µg/Kg) in the 2.5 to 3.5 foot sample from SB-1 is greater than the TAGM value for TCE (700 µg/Kg). VOCs were not detected in hand boring SB-2.

For the drilled borings, TCE and cis-1,2-DCE were detected in borings SB-31 and SB-33. At SB-31, TCE (2,090 µg/Kg) and cis-1,2-DCE (10.9 µg/Kg) were detected in the sample collected from 1.5 feet, but were not detected in the next sample collected from 9.9 feet at the bottom of the boring. However, 1,1,-DCE (1.3 µg/Kg) was detected in the sample from 9.9 feet. The detection of TCE and cis-1,2-DCE is consistent with the findings at hand boring SB-1. The TCE concentration at 1.5 feet (2,090 µg/Kg) in boring SB-31 is greater than the TAGM value for TCE (700 µg/Kg).

At SB-33, TCE and cis-1,2-DCE were detected in the sample from 4.2 feet at concentrations of 10,900 µg/Kg and 7.6 µg/Kg, respectively. The highest concentrations of TCE (40,700 µg/Kg) and cis-1,2-DCE (235 µg/Kg) were detected in the sample collected from 11.1 feet at the bottom of boring SB-33. In addition, the highest concentration of 1,1-DCE (19.4 µg/Kg) was detected at this depth, as was the only detection of trans-1,2-DCE (2.9 µg/Kg). TCE and cis-1,2-DCE were not detected in the samples from the borings drilled at nearby test pit locations TP-6 and TP-9, though a trace of 1,1 DCE (1.3 µg/Kg) was detected in the sample collected from 8 feet in the boring at test pit location TP-6. The TCE concentrations at 4.2 feet and 11.1 feet in boring SB-33 are greater than the TAGM value for TCE (700 µg/Kg).

Trace concentrations of acetone, toluene, methylene chloride, carbon disulfide, xylenes, and chloroform were detected in one or more samples. Acetone was detected in 6 samples at concentrations ranging from 4.2 µg/Kg to 8.1 µg/Kg, and in one sample at 32.0 µg/Kg. Toluene was detected in 7 samples at concentrations ranging from 0.44 µg/Kg to 2.7 µg/Kg. Methylene chloride was detected in 6 samples at concentrations ranging from 1.6 µg/Kg to 5.5 µg/Kg. Carbon disulfide was detected in 4 samples at concentrations ranging from 2.6 µg/Kg to 9.6 µg/Kg. Xylene was detected in 2 samples at concentrations of 1.3 µg/Kg and 1.4 µg/Kg, and chloroform was detected in

1 sample at a concentration of 1.1 µg/Kg. All of the concentrations are less than associated TAGM values.

The VOC data for the test pits are summarized in Table 4, which shows that TCE and related breakdown VOCs (e.g., cis-1,2-DCE; 1,1-DCE) were not detected in the soil samples from the test pits. Similar to the borings, however, trace concentrations of one or more of the VOCs methylene chloride, toluene, carbon disulfide, and chloroform were detected in all test pits except test pits TP-1 and TP-7. Methylene chloride was detected in nine samples at concentrations ranging from 1.9 µg/Kg to 8.1 µg/Kg. Toluene was detected in three samples at concentrations ranging from 0.56 µg/Kg to 1 µg/Kg. Carbon disulfide was detected in two samples at concentrations of 3.5 µg/Kg and 4.5 µg/Kg, and chloroform was detected in two samples at a concentration of 0.67 µg/Kg in each sample. All of the concentrations are less than associated TAGM values.

The trace concentrations of the incidental VOCs acetone, methylene chloride, toluene, carbon disulfide, and chloroform, and xylenes do not appear to be associated with the TCE in the C&D Area No.1, nor do they appear to represent a separate affect on soil. In borings SB-1 and SB-31, none of the incidental VOCs was detected with the TCE. Where one or more of the incidental VOCs are co-present with TCE, a corresponding increase in concentrations of the incidental VOCs does not occur when TCE concentrations increase (e.g., SB-33), thereby indicating the incidental VOCs are independent of the TCE.

The nature and the sporadic distribution of the incidental VOCs are consistent with cross contamination in the analytical laboratory (acetone, toluene, methylene chloride, chloroform), possibly natural occurrence in the soil (carbon disulfide), or other interference (e.g., soil matrix) affecting analytical reliability at low concentrations. For example, methylene chloride was not detected in the soil samples from the borings drilled at test pits TP-6 and TP-9, but was detected in the soil samples collected from the test pits at those locations. Conversely, toluene was detected in soil samples from the borings at test pits TP-6 and TP-9 but was detected only in the duplicate sample collected from test pit TP-6. Also, acetone was detected in soil samples from the borings at TP-6 and TP-9 (in addition to other borings), but was not detected in any test pit samples.

Methylene chloride and chloroform are degradation products of carbon tetrachloride, which was detected at hand boring SB-1 (0.67 µg/Kg). However, methylene chloride and chloroform were not detected in soil samples collected from hand boring SB-1 or the collocated drilled boring SB-31. Evidence does not exist elsewhere in the C&D Area No.1 linking the methylene chloride and chloroform with a release of carbon tetrachloride.

The detection of carbon disulfide is consistent with the sporadic detection of trace concentrations of carbon disulfide elsewhere at the Knolls Site and appears to be associated with a natural and variable occurrence of carbon disulfide in the soil [Reference (14)]. The detection of xylene in two samples from drilled borings SB-30 and SB-32 is not associated with the soil affected by TCE. The detection of xylene is isolated and appears insignificant based on the absence of xylene elsewhere in the C&D Area No.1 and the lack of any unusual odors, staining, PID readings, or detection of other petroleum-related VOCs (benzene, ethylbenzene, and toluene) commonly associated with xylene.

4.3.3 C&D Area No.1 - SVOCs in Soil

As presented in Table 5, SVOCs, principally PAHs, were detected in test pits TP-1, TP-4, TP-6, and TP-9. Twelve PAHs were detected in test pits TP-1, TP-4, and TP-9 at concentrations ranging from 16.3 µg/Kg to 335 µg/Kg. Fourteen PAHs were detected in test pit TP-6 at concentrations ranging from 19.7 µg/Kg to 694 µg/Kg. In addition, carbazole was detected in test pits TP-1 (33.3 µg/Kg), TP-4 (19.2 µg/Kg), and TP-6 (84.8 µg/Kg); and dibenzofuran was also detected in test pits TP-1 (19.9 µg/Kg) and TP-6 (47.4 µg/Kg). The concentrations of benzo(a)pyrene in TP-1 (140 µg/Kg), TP-6 (220 µg/Kg), and TP-9 (66.2 µg/Kg) and benzo(a)anthracene in TP-6 (322 µg/Kg) are greater than the TAGM values for benzo(a)pyrene (61 µg/Kg) and benzo(a)anthracene (224 µg/Kg).

The presence of the PAHs naphthalene in TP-1 (19.8 µg/Kg) and TP-6 (40 µg/Kg) and 2-methylnaphthalene in TP-6 (19.7 µg/Kg) coupled with the added detection of carbazole and dibenzofuran is consistent with an oil source of the PAHs. An oil and therefore liquid source of the PAHs would have been more mobile and had a greater potential to have migrated into the soil. Solid particles possibly containing PAHs would not be expected to have migrated into the dense till soil. The absence of any unusual odors, staining, or PID readings implies that, if present, the oil is inconspicuous.

Another possible explanation for the detection of PAHs in the test pits is fall-in of soil from the surface edge of the test pits. During excavation, the side walls of the test pits were commonly contacted by the backhoe bucket as the bucket was brought out of the excavation. Consequently, minor amounts of soil from shallower depths, including from the surface edge, fell into the test pit. Although the volume of this soil was minimal and attempts were made to remove this soil from the test pit, small quantities of the fall-in could have become commingled with the soil that was sampled from the backhoe bucket.

4.3.4 C&D Area No.1 - PCBs in Soil

As indicated in Table 6, PCBs were detected in test pits TP-1, TP-3, TP-4, TP-6, TP-9, and TP-10. Aroclor 1260 was detected in each of the six test pits at concentrations ranging from 2.6 µg/Kg to 32.6 µg/Kg. Aroclor 1254 was detected in TP-4, TP-6, TP-9, and TP-10 at concentrations ranging from 4.2 µg/Kg to 6.5 µg/Kg. All concentrations are less than the associated TAGM value for PCBs (1,000 µg/Kg).

As with PAHs, evidence was not found of material in the subsurface that could account for the detection of PCBs. PCBs are commonly found in construction and building materials; however, particles associated with the construction and demolition debris at the surface would not be expected to have migrated into the tight till soil. The co-presence of PCBs with PAHs in most of the samples may indicate a possible common source of the compounds. Fall-in, as previously discussed for PAHs, also is a possible source of PCBs, particularly at test pit TP-10, which was excavated through a pile of concrete rubble. However, the metals profile in the sample from TP-10 is not indicative of concrete in the sample.

4.3.5 C&D Area No.1 - Metals and Cyanide in Soil

Overall, the metals data are unremarkable, with only marginally elevated concentrations. As indicated in Table 7, a strong profile of elevated metals is not apparent in the data. Antimony concentrations are greater than background (0.29 mg/Kg) in ten of eleven samples at concentrations ranging from 0.43 mg/Kg to 1.4 mg/Kg. Barium concentrations are greater than background (97.4 mg/Kg) in two samples at 98.3 mg/Kg and 116 mg/Kg. Cadmium is greater than background (0.3 mg/Kg) in the sample from test pit TP-1 (0.34 mg/Kg). Chromium concentrations are greater than background (18.8 mg/Kg) in five samples at concentrations ranging from 19.1 mg/Kg to 20.5 mg/Kg. Lead is greater than background (15.7 mg/Kg) in the sample from test pit TP-1 (18 mg/Kg). Nickel is greater than background (33.8 mg/Kg) in the sample from test pit TP-10 (35.6 mg/Kg). Selenium concentrations are greater than background (0.21 mg/Kg) in seven samples at concentrations ranging from 0.34 mg/Kg to 0.72 mg/Kg. Vanadium concentrations are greater than background (25.4 mg/Kg) in four samples at concentrations ranging from 25.8 mg/Kg to 27.1 mg/Kg.

The lack of an overall profile of elevated metals is consistent with the absence of buried material in C&D Area No.1. The marginally elevated concentrations of antimony, selenium, and to a lesser extent vanadium appear related to an overall higher laboratory reporting concentration of naturally occurring antimony, selenium, and vanadium. Elevated concentrations of these metals are found elsewhere in the LDA in seemingly otherwise unaffected soil. Potentially more soluble metals such as

calcium, magnesium, and potassium are elevated in some samples, particularly in the parent sample from test pit TP-6, which could indicate possible leaching of these metals from the construction and demolition debris (e.g., concrete) into the soil.

Cyanide was detected only in the sample from test pit TP-1 (0.197 mg/Kg). This is consistent with sporadic and low concentrations seen elsewhere in the LDA. As indicated in Table 7, the samples associated with test pits TP-8 and TP-10 were prepared and analyzed beyond holding times for the cyanide analysis. In accordance with data validation protocol, the associated non-detected results were qualified as estimated, with possible low bias due to outlying holding times. This issue was discussed with the data validator at the time of its occurrence in 2004. The data validator indicated that the samples all were prepared and analyzed within two to four days of holding time, which would not affect the usability the data.

4.3.6 C&D Area No.1 – Conclusions and Recommendations

The test pits in C&D Area No.1 did not uncover evidence of material buried below the construction and demolition debris visible at the ground surface. Field indicators of a release, such as unusual odors, staining, or PID readings, were not observed. However, TCE and related VOCs have affected the soil along the southern rim of C&D Area No.1 in an area associated with the merged piles of sand and gravel fill and does not appear related to the construction and demolition debris. The lateral extent of the TCE has been roughly determined. However, the vertical extent was not defined at boring SB-33, where the highest TCE concentration was detected at a depth of approximately 11 feet, or approximately 7 feet into roughly 55 feet of gray till. In consideration of the weight of evidence for the LDA and the Knolls Site that demonstrates that the gray till is an effective barrier to groundwater flow and contaminant migration, the potential for the TCE at SB-33 to migrate is greatly reduced by the presence of the 55-foot thick deposit of gray till.

Trace levels of incidental VOCs such as methylene chloride, toluene, chloroform, acetone, carbon disulfide, and xylene were sporadically and inconsistently detected in C&D Area No.1. These VOCs are not linked with the TCE and do not appear to be of consequence. The detection of most of these VOCs is likely attributable to analytical cross contamination or natural occurrence.

Trace concentrations of PAHs and PCBs were found within the area of construction and demolition debris, including the isolated concrete rubble pile. The locations of the detected PAHs and PCBs are separate from the TCE-affected area. The PAH profile is consistent with a possible oil source. The co-presence of PCBs in many samples possibly indicates a common source. Based on the tight soil and the absence of buried material, migration of a liquid from the surface into the soil appears more

plausible than the migration of solid particles. Fall-in of surface soil containing PAHs and PCBs is possible, though a corresponding profile of elevated metals indicative of fall-in is not consistently evident.

The metals and cyanide data do not indicate an affect on soil, at least at the 4 foot sample depth. Potentially more soluble metals such as calcium, magnesium, and potassium are elevated in some samples, which is consistent with leaching from the construction and demolition debris into the soil. The marginally elevated concentrations of antimony, selenium, and to a lesser extent vanadium appear related to an overall higher laboratory reporting concentration of naturally occurring antimony, selenium, and vanadium and are not necessarily indicative of affected soil.

Additional investigation is necessary in C&D Area No.1 to determine the extent of the TCE and related VOCs found in the merged piles of sand and gravel fill along the southern edge of the area. The surface soil within the area containing construction and demolition debris also should be investigated for the presence of PAHs and PCBs. Although the metals concentrations are unremarkable in the test pit samples, characterization of metals in the surface soil is warranted in light of a possible release at the surface.

4.4 North Field

As shown on Figure 5, ten test pits (TP-11, 12, 13, 14, 15, 16, 17, 18, 19, and 39) were excavated in the North Field to assess the presence of buried material. In the SV Work Plan, the locations of test pits TP-20 and TP-21 were included in the scope of work for the North Field. Based on the finding of apparent pyrophoric burn residue at test pit TP-20 and the location of these test pits within the general location of the Pyrophoric Area, test pits TP-20 and TP-21 are more appropriately addressed as part of the Pyrophoric Area.

Test pits were oriented north-south, which is perpendicular to the east-west orientation of supposed trenches across the North Field. Undisturbed till was encountered in all test pits. Test pits TP-11, 13, 14, 16, 17, 18, and 19 were terminated in undisturbed gray till; and test pits TP-12, 15, and 39 were terminated in undisturbed brown till. Test pits TP-11, 12, 15, 17, 18, and 19 were excavated to a planned depth of 6 feet. The backhoe was unable to dig to 6 feet in the gray till in test pits TP-13 (4.5 feet), TP-14 (4.7 feet), and TP-16 (4.8 feet). A large cobble within the brown till at test pit TP-39 precluded excavation beyond 4.6 feet. One soil sample was collected at the 4-foot depth from each test pit and analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL Inorganics.

4.4.1 North Field – Test Pit Observations

Detailed information on what was found in each test pit is presented on the test pit logs provided in Appendix C. For a quick review, a summary of the findings in the test pits is provided at the front of the logs. Photographs of the test pits are provided in Appendix D.

Other than a piece of rebar at the ground surface at test pit TP-13, the test pits in the North Field did not reveal any evidence of surface debris or buried material. Undisturbed soil was encountered in all test pits. Seven test pits were terminated in the gray till, and three test pits (TP-12, TP-15, and TP-39) were terminated in the brown till found along the western side of the North Field. Field indicators of a release, such as unusual odors, staining, or PID readings, were not observed.

4.4.2 North Field - VOCs in Soil

Table 8 reveals that trace concentrations of toluene, methylene chloride, ethylbenzene, xylene, 1,1-DCE, PCE, and TCE were detected in the North Field. With the exception of toluene, the VOCs were detected in one or two isolated test pits. Toluene was detected in six test pits (TP-11, 12, 14, 16, 17, and 19) at concentrations ranging from 0.47 µg/Kg to 4.2 µg/Kg, and in test pit TP-13 (14.3 µg/Kg). Methylene chloride was detected in test pits TP-17 and TP-19 at 2.6 µg/Kg and 1.9 µg/Kg, respectively. Ethylbenzene and xylene were detected in test pit TP-14 at concentrations of 0.66 µg/Kg and 1.5 µg/Kg, respectively. 1,1-DCE was detected in test pit TP-13 at 0.58 µg/Kg. PCE and TCE were detected in test pit TP-39 at concentrations of 17.1 µg/Kg and 5.8 µg/Kg, respectively. All concentrations are less than associated TAGM values.

As indicated in Table 8, a number of soil sample results are qualified with an 'R' qualifier, meaning the data are rejected or unusable, including all VOC results for test pit TP-18. The data validator identified a strong matrix effect in the soil samples that inhibited the recovery of internal and surrogate volatile organic compounds (VOCs) during laboratory analysis. In accordance with analytical protocol, this implies a similar lack of recovery of the associated target VOCs. Therefore, many soil results that were reported as not detected by the laboratory have been qualified as estimated or rejected owing to the poor recoveries.

The recovery problem appears to be linked to the gray till. Sample of gray till from borings and test pits in C&D Area No.1 and test pits TP-20 and TP-21 in the Pyrophoric Area also exhibit a matrix effect. This natural phenomenon has been seen in gray till samples collected elsewhere at the Knolls Site (e.g., Hillside Area RFI). Although soil non-detect data may be rendered unusable per the analytical and data validation protocol, the results are usable in the context of fate and migration of

the VOCs. The inability to recover VOCs from the till using relatively aggressive analytical techniques demonstrates the adsorptive ability of the till and supports the argument that VOCs are not mobile in the till.

The distribution and the trace concentrations of toluene are overall consistent with cross contamination associated with the analytical laboratory. However, the highest concentration of toluene was detected in test pit TP-13, where the 1,1-DCE also was detected. The co-presence of these VOCs may be coincidence, but test pit TP-13 is located near an area (Red Pines Area) recently investigated by DOE-SPRU where trace concentrations of these VOCs were detected in some soil samples. These VOCs also were detected further to the north in the C&D Area No.1. Except for a piece of rebar at the ground surface, evidence of debris or affected soil was not found at test pit TP-13. Undisturbed gray till was encountered at 1.6 feet and backhoe refusal occurred at 4.5 feet, which indicates that trenching and burial did not occur at this location.

The concentrations of methylene chloride at test pits TP-17 and TP-19 also are consistent with cross contamination associated with the analytical laboratory. The detection of methylene chloride in the duplicate sample and not the parent sample from TP-17 introduces further uncertainty as to the legitimacy of the methylene chloride data. Although the presence of methylene chloride is suspect, test pits TP-17 and TP-19 are both located along the fringes of an area (Red Pines Area) recently investigated by DOE-SPRU where trace concentrations of methylene chloride were detected in some soil samples. Evidence was not found of any trenching or buried material at TP-17 and TP-19. Undisturbed gray till was encountered at 1.5 feet and 1 foot at test pits TP-17 and TP-19, respectively.

The detection of toluene, ethylbenzene, and xylene in test pit TP-14 is consistent with the presence of gasoline. Benzene, which is characteristically found in gasoline, was not detected. This is consistent with a degraded gasoline in the environment, in which benzene typically degrades more rapidly than the other VOCs. Trace concentrations notwithstanding, the detection of the toluene, ethylbenzene, and xylene indicate a relatively recent minor release of gasoline, possibly associated with the vegetation clearing activities prior to sampling. Exhaust from vehicles and equipment operating during sampling is a possible source of the VOCs; however, expected companion PAHs were not detected.

In consideration of the four foot depth of the sample, the presence of undisturbed gray till at the ground surface, and the typical attenuation of VOCs vertically in the gray till, a noticeable source of gasoline at or near the ground surface would be expected. However, odors, PID readings, and staining were not observed during the excavation of test pit TP-14. Cold weather at the time of

excavation, however, could have suppressed volatilization and the ability to detected odors and vapors.

The detection of PCE and TCE in test pit TP-39 is consistent with the presence of these VOCs in the nearby Pyrophoric Area. PCE and TCE had either become located on the ground surface at TP-39 and migrated vertically, or these VOCs migrated laterally through the soil to the TP-39 location. Buried material was not found at TP-39 and the metals data for the sample depth are consistent with background concentrations. The absence of VOCs in soil boring SB-13, adjacent to test pit TP-39, substantiates a VOC source in the Pyrophoric Area and not the North Field.

4.4.3 North Field - SVOCs in Soil

As indicated in Table 9, SVOCs were not detected in any soil samples collected from the test pits in the North Field.

4.4.4 North Field - PCBs in Soil

As indicated in Table 10, PCBs were detected only in test pit TP-39. Aroclor 1260 was detected in the parent and duplicate sample at concentrations of 14.8 µg/Kg and 18.4 µg/Kg, respectively. These concentrations are less than the TAGM value for PCBs (1,000 µg/Kg). The presence of PCBs at test pit TP-39 is consistent with the PCBs found in the nearby Pyrophoric Area. Being less mobile than VOCs, the presence of PCBs at TP-39 suggests that the PCBs became located on the surface at TP-39 and did not migrate laterally through the soil.

4.4.5 North Field - Metals and Cyanide in Soil

Overall, the metals data are unremarkable, with only marginally elevated concentrations. As indicated in Table 11, a strong profile of elevated metals is not apparent in the data. Antimony and selenium concentrations are greater than background in samples from all ten test pits, though none of the concentrations is remarkable. Antimony concentrations greater than background (0.29 mg/Kg) range from 0.366 mg/Kg to 1.170 mg/Kg. Selenium concentrations greater than background (0.21 mg/Kg) range from 0.857 mg/Kg to 2.660 mg/Kg. Arsenic is greater than background (8.8 mg/Kg) in TP-15 (9.310 mg/Kg). Chromium is greater than background (18.8 mg/Kg) in TP-15 (19.1 mg/Kg) and TP-18 (20.0 mg/Kg). Copper is greater than background (38.1 mg/Kg) in TP-15 (39.9 mg/Kg) and TP-16 (40.1 mg/Kg). Lead is greater than background (15.7 mg/Kg) in TP-18 (16.7 mg/Kg), and nickel is greater than background (33.8 mg/Kg) in TP-18 (34.7 mg/Kg). High concentrations of calcium (69,400 mg/Kg) and magnesium (38,400 mg/Kg) were detected in TP-19.

The elevated concentrations of antimony and selenium appear related either to a naturally higher concentration of antimony and selenium in the samples from the North Field or an artifact of analytical laboratory bias toward an overall higher reporting concentration of antimony and selenium. Elevated concentrations of other metals are not present to corroborate a legitimate affect from metals on the soil. Elevated concentrations of antimony and selenium are found elsewhere in the LDA in seemingly otherwise unaffected soil.

The concentrations of calcium and magnesium at test pit TP-19 are anomalously high, though, other than antimony and selenium, no other metals are elevated. Debris or other noticeable material was not found that could substantiate the presence of high concentrations of calcium and magnesium.

Other than the antimony and selenium, all metals in the sample from test pit TP-39 are within background concentrations. These data, combined with field observations, indicate that the soil at the sample depth is not fill material.

The cyanide concentration (3.34 mg/Kg) in the sample from test pit TP-14 is anomalously high relative to other cyanide concentrations in the North Field. The metals data for TP-14 are consistent with background, and debris was not found in the test pit. However, the elevated cyanide is coincident with the trace concentrations of toluene, ethylbenzene, and xylene; though a causal association is not apparent.

4.4.6 North Field – Conclusions and Recommendations

The test pits in the North Field did not reveal buried material or evidence of trenches. Field indicators of a release, such as unusual odors, staining, or PID readings, were not observed, though cold weather at times hampered the operation of the PID. Undisturbed soil was encountered in all test pits. Seven test pits were terminated in the gray till, and three test pits were terminated in the brown till found along the western side of the North Field. The rejection of some VOC data owing to an analytical matrix effect, evidently associated with the gray till, does not invalidate the weight of evidence which shows that material is not buried in the North Field and the North Field overall has not had an affect on soil.

A possible minor release of gasoline at test pit TP-14 is indicated by the detection of trace levels of toluene, ethylbenzene, and xylene. The presence of gasoline was not substantiated by odors or staining. A relatively high concentration of cyanide was detected in the same sample, though an association with the VOCs is not apparent. The cyanide appears to be an isolated anomalous detection.

The detections of trace concentrations of methylene chloride and toluene in test pits TP-13, 17, and 19 and 1,1-DCE in test pit TP-13; all located along the eastern side of the North Field; are not indicative of disposal activities in the North Field. Debris or evidence of trenches or disposal were not found in test pits TP-13, 17, and 19. The nature and magnitude of these VOCs is consistent with the findings of the DOE-SPRU investigation in the adjacent Red Pines Area. Extensive investigation in this area by DOE-SPRU has shown that methylene chloride, toluene, and 1,1-DCE are not widespread and are not VOCs of concern east of the North Field.

The presence of PCE and TCE together with PCBs in test pit TP-39, located in the southwest corner of the North Field, is consistent with the detection of these compounds in the nearby Pyrophoric Area. The VOCs and PCBs either became located on the ground surface at TP-39 and migrated vertically or were commingled with soil placed at this location. The metals data for test pit TP-39 are consistent with background and evidence of fill within the test pit was not noted; however, TP-39 is located at the edge of the fill material and the upper one foot of soil may have been placed at this location.

Based on available data, most of the North Field does not warrant further action. The apparent minor gasoline release at test pit TP-14 should be evaluated further for gasoline constituents and cyanide. The PCE, TCE, and PCBs found at test pit TP-39 are unrelated to activities in the North Field and should be appropriately addressed as part of further action associated with the Pyrophoric Area.

4.5 Mercury Disposal Area

Two phases of soil sampling were performed at the Mercury Disposal Area. In the first phase, one soil sample was collected from each of 16 hand auger soil borings (SB-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18) shown on Figure 4. Six borings (SB-4, 5, 8, 9, 17, 18) were advanced 2 feet into three small soil piles, two borings (SB-6 and SB-7) were advanced 0.5 feet into a shallow depression, four borings (SB-11, 12, 13, 14) were advanced 0.5 feet into a small excavated pit, and four borings (SB-3, 10, 15, 16) were advanced 0.5 feet into the apparently undisturbed ground surface nearby the piles, pit, and depression. All samples were submitted to the analytical laboratory to be analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL Inorganics.

Owing to sample handling error at the analytical laboratory, VOC analysis was not performed on the soil samples. Therefore, a second phase of sampling was necessary to resample all original locations and depths for TCL VOC analysis. Re-sample locations were collocated adjacent to the original borehole. Coupled with the re-sampling was expanded sampling and analysis based on the results of the analyses that were performed in the first phase. Locations SB-5, SB-9, SB-12, and SB-13 were sampled from the original depth and the next 1-foot depth interval to evaluate the presence of higher

barium and beryllium; these samples were analyzed for TAL Metals. The deeper sample interval (2 to 3 feet) at SB-5 and SB-9 targeted the undisturbed soil beneath the soil piles. Locations SB-6 and SB-7 were sampled from the original depth and the next 1-foot depth interval (0.5 to 1.5 feet) to evaluate vertical extent of PAHs, mercury, and cyanide; these samples were analyzed for TCL SVOCs and TAL Inorganics. To assess the lateral extent of PAHs, PCBs, mercury, and cyanide found in the first phase in the surface soil at borings SB-3, SB-6, SB-7, and SB-8; soil samples were collected from 0 to 0.5 feet at new locations SB-22, SB-23, SB-24, and SB-25; these samples were analyzed for TCL PAHs, TCL PCBs, and TAL Inorganics.

4.5.1 Mercury Disposal Area - VOCs in Soil

As indicated in Table 12, the only VOC detected at the Mercury Disposal Area was toluene, which was found at trace concentrations in four soil samples collected from borings SB-9 (4.5 µg/Kg), SB-10 (0.66 µg/Kg), SB-11 (2.7 µg/Kg), and SB-16 (0.90 µg/Kg). Boring SB-9 is located in a soil pile, SB-11 is located in the small pit, and SB-10 and SB-16 are located nearby the small pit and soil piles. All concentrations are less than the TAGM value for toluene (1,500 µg/Kg).

There is no known or obvious source of the toluene, and the data are not indicative of a significant and contiguous release of toluene. The trace concentration and sporadic distribution of the detected toluene are overall consistent with cross contamination associated with the analytical laboratory. Other organic compounds that typically are associated with petroleum-related releases are not present or are not associated with the toluene. The VOCs benzene, ethylbenzene, and xylene are typically detected with toluene in petroleum-related spills, particularly gasoline. None of these VOCs was detected in the soil samples. Degradation of the gasoline in the environment can reduce the concentration of these VOCs to not detectable levels; however, xylene is typically more persistent in the environment than toluene. Toluene can also be associated with other petroleum products (e.g., fuel oil, diesel, tar); however, as presented in the next section, SVOCs commonly associated with these petroleum products were not detected in the samples in which toluene was detected. Furthermore, field indicators of a release, such as unusual odors, staining, or PID readings, were not observed.

4.5.2 Mercury Disposal Area - SVOCs in Soil

As indicated in Table 13, SVOCs, comprised mostly of PAHs, were detected in the Mercury Disposal Area. PAHs were detected at eight locations at concentrations ranging from 10.6 µg/Kg to 255 µg/Kg. One location (SB-8) was in a soil pile, two locations (SB-6 and SB-7) were located in the shallow depression, and five locations (SB-3, 22, 23, 24, and 25) were located in the undisturbed soil adjacent to the soil piles and the shallow depression. All affected samples were collected from the 0 to 0.5 foot

sample interval, with the exception of the sample from SB-8 that was collected from the 0 to 2 foot sample interval in the soil pile. Typically two to five PAHs were detected, though only one PAH (pyrene; 37 µg/Kg) was detected at SB-8, and ten PAHs were detected at boring SB-6. Only the concentration of benzo(a)pyrene (167 µg/Kg) detected in SB-6 is greater than the associated TAGM value (61 µg/Kg).

Bis(2-ethylhexyl)phthalate was detected in the second round samples from borings SB-6 and SB-7 at concentrations ranging from 52.6 µg/Kg to 136 µg/Kg. Di-n-butylphthalate was detected at 68.4 µg/Kg in SB-17. All phthalate concentrations are less than associated TAGM values. Phthalates are common analytical laboratory contaminants associated with plastics used in the laboratory. The few and inconsistent detections of low concentrations of phthalates are consistent with cross contamination, and are not indicative of a significant release within the Mercury Disposal Area.

PAHs were not detected in the second round of samples collected from the 0 to 0.5 foot interval at boring SB-6 and SB-7, where trace levels of PAHs had been detected in the first round of samples. Owing to standing water in the depression, the location of the boreholes at SB-6 and SB-7 in the second round was moved toward the side of the depression. The inconsistent results indicate a sporadic distribution of the PAHs and possibly a concentration of PAHs nearer the lower portions of the depression.

4.5.3 Mercury Disposal Area - PCBs in Soil

As indicated in Table 14, Aroclor 1260 was detected in surface samples collected from eight locations at concentrations ranging from 1.4 µg/Kg (SB-11) to 9.3 µg/Kg (SB-3). One location (SB-11) is located within the small pit, one location (SB-6) is within the shallow depression, and six locations (SB-3, 10, 22, 23, 24, and 25) are located in the undisturbed area adjacent to the piles, pit, and depression. All concentrations are less than the associated TAGM value for PCBs (1000 µg/Kg).

4.5.4 Mercury Disposal Area - Metals and Cyanide in Soil

As presented in Table 15, the metals and cyanide data overall are unremarkable, though metals are present at concentrations elevated above background in many samples. The data for borings SB-17 and SB-18 do not show strong evidence of a profile of elevated metals in the associated soil pile. Chromium (19.6 mg/Kg) in SB-17 is marginally greater than background (18.8 mg/Kg). Concentrations of selenium (0.609 mg/Kg and 0.689 mg/Kg) and vanadium (32.7 mg/Kg and 31.9 mg/Kg) in SB-17 and SB-18, respectively, are marginally greater than background (0.21 mg/Kg and 25.4 mg/Kg, respectively). As seen in other samples, the concentrations of selenium and vanadium appear related to an overall higher laboratory reporting concentration of naturally occurring

selenium and vanadium and are not necessarily indicative of affected soil. Other marginally elevated concentrations are likely due to analytical variability and subtle differences in soil mineralogy.

The data for borings SB-4, SB-5, SB-8, and SB-9 show a similar profile of slightly elevated metals in the samples for one or both borings in each of the associated soil piles. Elevated metals include aluminum, antimony, barium, beryllium, cadmium, chromium, cobalt, lead, iron, selenium, and vanadium. In addition cyanide (0.333 mg/Kg) and mercury (0.091 mg/Kg) are marginally elevated in boring SB-8. Several metals remain elevated in the 2 to 3 foot sample at boring SB-5, including aluminum (21,900 mg/Kg), antimony (0.623 mg/Kg), barium (153 mg/Kg), beryllium (1.38 mg/Kg), chromium (24.6 mg/Kg), cobalt (15.3 mg/Kg), iron (43,300 mg/Kg), sodium (292 mg/Kg), and vanadium (44.1 mg/Kg).

The data for borings SB-6 and SB-7 also show elevated metals in the shallow depression, with the surface sample from boring SB-6 exhibiting a metals profile more similar to the profile of metals in the soil piles. In addition, the samples from borings SB-6 and SB-7 contained higher concentrations of cyanide and mercury, including elevated mercury in the 0.5 to 1.5 foot sample interval. Cyanide was detected in the 0 to 0.5 foot sample at borings SB-6 and SB-7 at concentrations up to 7.5 mg/Kg and 1.31 mg/Kg, respectively. Mercury was detected in the 0 to 0.5 foot interval at borings SB-6 and SB-7 at concentrations up to 0.144 mg/Kg and 0.831 mg/Kg, respectively. Mercury concentrations in the 0.5 to 1.5 foot interval are 0.15 mg/Kg and 0.284 mg/Kg in borings SB-6 and SB-7, respectively. Unlike the PAHs, which were not detected in the second round of sampling at SB-6 and SB-7, mercury was consistently elevated across the two rounds of sampling.

The results for borings SB-11, 12, 13, and 14 show elevated metals in the small pit. Except for mercury in the 0 to 0.5 foot sample interval at SB-11, mercury and cyanide are not elevated. Concentrations of barium, chromium, and vanadium are relatively high at borings SB-12 and SB-13, including elevated barium (136 mg/Kg) and other metals in the 0.5 to 1.5 foot sample interval. Relatively high concentrations of aluminum, iron, and potassium in SB-12 and SB-13 indicate a different soil type or an affect on soil concentrations from some source material that was formerly present at this location. Fewer metals are elevated at boring SB-11 and the concentrations are typically lower that those found in borings SB-12 and SB-13. At boring SB-14, only the heavy metals chromium (24.5 mg/Kg) and vanadium (39.6 mg/Kg) are elevated, as are aluminum (23,500 mg/Kg) and potassium (2,130 mg/Kg).

The results for borings SB-10, SB-15, and SB-16 do not reveal strong evidence of an elevated metal profile in the undisturbed soil at these locations. The results for SB-10 are essentially background,

with only aluminum (17,100 mg/Kg), selenium (0.675 mg/Kg), and vanadium (30.8 mg/Kg) apparently elevated. SB-10 is located near a soil pile and exhibits a metals profile consistent with that found at associated borings SB-17 and SB-18.

The results for the surface samples along the south side of the Mercury Disposal Area indicate a consistent profile of elevated metals. At boring SB-3, aluminum, cadmium, lead, selenium, and vanadium are only marginally elevated. However, cyanide is relatively high at 0.423 mg/Kg. The results for borings SB-22, 23, 24, and 25 exhibit almost identical profiles of elevated antimony, lead, mercury, selenium, silver, and vanadium. Cyanide is also relatively high at these locations, ranging in concentration from 0.258 mg/Kg (SB-22) to 10.8 mg/Kg (SB-24).

4.5.5 Mercury Disposal Area – Conclusions and Recommendations

Although the chemical profile in the Mercury Disposal Area is overall unremarkable, there are subtle indicators of a minor affect on soil concentrations of PAHs, PCBs, metals, and cyanide. The distribution of the PAHs, PCBs, elevated mercury (and other metals), and cyanide almost exclusively adjacent to the south side of the Mercury Disposal Area indicates an apparent association with the Mercury Disposal Area. Metals concentrations within the Mercury Disposal Area are unremarkable overall, though the occurrence and distribution of certain elevated metals indicates that the soil in the Mercury Disposal Area had been affected by a source of metals that has since been removed.

Although the overall results for the Mercury Disposal Area are unremarkable, further action is recommended to characterize the nature and extent of the PAHs, PCBs, metals, and cyanide along the south side of the Mercury Disposal Area. Also, mercury and cyanide in the shallow depression should be further characterized.

4.6 West Field (West Field and West Field Extended)

Seventeen test pits were excavated as part of the West Field investigation. As shown on Figure 5, the investigation centered on the geophysical anomaly located within the general area of what has been identified as the West Field. Eleven test pits (TP-24, 28, 29, 30, 31, 32, 33, 34, 35, 36, and 37) were dug within and outside the footprint of the anomaly to assess the nature and general extent of the apparent buried material.

To assess the presence and nature of the fill material between the West Field and Pyrophoric Area, the investigation was extended eastward where test pits TP-22, 23, 25 and 40 were excavated. Test pit TP-22 was dug adjacent to the flank of the surface fill material and within the geophysical anomaly indicating the presence of conductive soil or groundwater. Test pit TP-23 was dug within the apparent

buried material between the West Field and the Pyrophoric Area. Test pit TP-25 was excavated at the break in slope adjacent to the fill material, and test pit TP-40 was dug in an area where buried metallic debris apparently is not present. In addition, test pits TP-26 and TP-27 were excavated to assess the presence of any buried material to the north of the West Field. The investigation area in which test pits TP-22, 23, 25, 26, 27 and 40 were dug is referred to as the West Field Extended.

Most of the test pits were excavated to a depth of six feet. Test pit TP-35 was dug to a depth of 6.5 feet to clearly expose the debris/soil contact at approximately six feet. Test pit TP-23 was terminated at 5.5 feet owing to the presence of large timbers that prevented further digging. Substantial water draining from the fill material into the excavation resulted in the termination of test pits TP-29 and TP-32 at a depth of four feet, and the termination of test pit TP-30 at a depth of five feet.

One soil sample was collected from the 4-foot depth at each test pit. For safety purposes, field personnel were not permitted to enter the test pits. Therefore, most samples were collected from the backhoe bucket. However, owing to standing water in the excavation at the 4-foot sample depth and consequent saturated soil in the backhoe bucket, samples from test pits TP-29 and TP-31 were collected from the associated staged soil/debris pile to minimize water in the samples. At test pit TP-35, concentrated debris prevented recovery and collection of a sample from the backhoe bucket; therefore, the sample from the 4-foot depth was collected from the staged pile of fill material. Two additional samples were collected at test pit TP-35 – one sample from the staged pile of fill material approximating the 6-foot depth, and one sample from the backhoe bucket of the undisturbed soil underlying the fill material. All samples from the test pits were analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL Inorganics.

As shown on Figure 6, soil borings SB-12, SB-15, SB-15A, SB-17, SB-18, SB-24 and SB-24A were drilled in the West Field Extended as part of the Groundwater Investigation. Soil samples were collected from these borings at or near the water table and the gray till contact, and the soil samples were analyzed for TCL VOCs. Each boring was converted to the corresponding monitoring well LMW-12, LMW-15, LMW-15A, LMW-17, LMW-18, LMW-24, and LMW-24A. Groundwater samples were collected from each well and were analyzed for TCL VOCs plus tetrahydrofuran. Further detail and discussion on the Groundwater Investigation are provided in Section 5.

4.6.1 West Field – Test Pit Observations

Detailed information on what was found in each test pit is presented on the test pit logs provided in Appendix C. For a quick review, a summary of the findings in the test pits is provided at the front of the logs. Photographs of the test pits are provided in Appendix D.

In the area of the geophysical anomaly in the West Field, evidence of fill material or buried debris was not found in test pits TP-28 and TP-33. The soil at these locations is undisturbed fine sand and silt. Evidence of shallow fill material was found in the other nine test pits dug in this area (TP-24, 29, 30, 31, 32, 34, 35, 36, and 37). The fill material is typically 3 to 4 feet thick, though the fill was 6 feet thick at TP-35 and may be as much as 8 feet thick at TP-30. The fill in this area is underlain by fine sandy silt and clay. As a result of relatively less permeable fine soil underlying the fill, perched water was encountered in many test pits at or near the base of the fill material.

The nature of the fill material can be categorized as sand and gravel without debris, sand and gravel commingled with sporadic debris, and buried concentrated debris with or without some sand and gravel. The sand and gravel is found at varying gradations with varying percentages of silt. Pockets of till-derived fill commingled with debris also were found in some locations.

The sand and gravel without debris apparently was used as a general fill material and surface cover. The sand and gravel without debris is typically 1 to 2 feet thick and was found at the surface at test pits TP-24, 29, 30, 31, 34, and 35.

During filling and grading operations, sand and gravel evidently became commingled with debris. The debris typically consists of pieces of asphalt, concrete, wire, rebar, glass, brick, and burnt wood; which are found separately or in various combinations sporadically within the sand and gravel. Sand and gravel commingled with debris was found at test pits TP-24, TP-30, TP-34, TP-36, and TP-37. The debris at TP-34 also included a piece of transite and pieces of lagging material. The sand and gravel with debris is typically 2 to 4 feet thick and was found to a depth of 3 to 4 feet. At test pits TP-24, TP-30, and TP-34, the sand and gravel commingled with debris is covered with a surface layer of sand and gravel only. At TP-36, sporadic debris was found at the ground surface to the bottom of the fill at a depth of three feet. At TP-37, a piece of brick was found at the surface; otherwise, the two feet of fill consists of sand and gravel only. At test pit TP-30, a buried pile of brush was encountered at a depth of 4 feet in the west end of the test pit. As the test pit was excavated below the brush, water drained from the brush into the pit. Consequently, the depth of fill at TP-30 could not be reliably

determined as the test pit was terminated at 5 feet owing to water in the test pit. Information from the boring logs for the associated soil borings indicates that the fill may extend to approximately 8 feet.

A distinct buried layer of concentrated debris was found in test pits TP-29, TP-31, TP-32, and TP-35: The most debris was found in test pits TP-32 and TP-35. The debris in the test pits typically consisted of glass, wire, rebar, lumber, pieces of transite, and bricks. However, additional debris was specifically noted for some test pits. For example, pieces of cut stone and wood timber were found in TP-29. Lagging material and slag were noted for TP-31. Welding rods and empty lab glassware and tubing was found in TP-32; and empty lab glassware, a clump of pink asbestos-containing fibrous material, and a crushed 30-gallon metal drum were found at TP-35. The debris found at TP-29, TP-31, and TP-35 was covered with 1 to 2 feet of sand and gravel without debris. The debris at TP-32 was covered with 2 feet of sand mixed with debris. The thickness of the concentrated debris was 2 feet, 2.2 feet, and 5 feet in test pits TP-29, TP-31, and TP-35, respectively. The total depth of fill in TP-29, TP-31, and TP-35 was 4 feet, 4.2 feet, and 6 feet, respectively. Owing to water entering the test pit, TP-32 was terminated at a depth of 4 feet; therefore, the thickness of the concentrated debris and total depth of fill could not be determined. However, the logs for the borings associated with TP-32 indicate that the depth of fill is approximately 4 feet.

For the test pits in West Field Extended, evidence of fill or buried debris was not found in test pits TP-22, TP-25, TP-26, and TP-27. At test pit TP-22, the presence of surface fill on the undisturbed soil was evident at the end of the test pit adjacent to the flank of the fill. The soil in test pit TP-22 consisted of undisturbed fine sandy silt, the soil at TP-26 and TP-27 is undisturbed fine sand and silt, and the soil at TP-25 is undisturbed sand and gravel. At test pit TP-23, sand and gravel mixed with debris was found from the surface to a depth of 2 feet. The debris consisted of asphalt, concrete, and brick. Till-derived fill with sporadic glass and a ceramic dish was found from 2 feet to 3 feet. Concentrated debris was present from 3 to 5.5 feet, the depth at which heavy timber prevented further digging. In addition to asphalt, concrete, and bricks; the concentrated debris zone included copper wire, burnt wood, metal flashing, glass, pieces of transite, lagging material, and tar-like material. Based on information on the logs for the borings associated with TP-23, the depth of fill is approximately 6 feet. At test pit TP-40, sand and gravel commingled with debris was found in the upper three feet and transitioned into undisturbed clayey silt at approximately four feet.

PID readings were not observed in any test pits. Unusual odors were not observed, except in test pits TP-29, where a septic-like odor was noted; and TP-23, where an organic decay odor was noted.

4.6.2 West Field – VOCs in Soil

As indicated in Table 16, trace concentrations of chlorinated VOCs were detected in six samples from four test pits (TP-22, TP-23, TP-35, and TP-36). PCE was detected in only two test pits; TP-22 (0.92 µg/Kg) and TP-36 (61.9 µg/Kg). TCE was detected in the samples from test pits TP-22 (2.4 µg/Kg), TP-23 (4.6 µg/Kg) and each of the three samples from TP-35 (26.9 µg/Kg, 4.1 µg/Kg, and 0.62 µg/Kg). Cis-1,2-DCE was detected in the samples from test pits TP-22 (5.2 µg/Kg), TP-23 (9.5 µg/Kg), and in two samples from TP-35 (2.8 µg/Kg and 1.5 µg/Kg). In addition to the trace concentrations of TCE and cis-1,2-DCE, the sample from test pit TP-23 also contained a trace concentration of 1,2-DCA (20.9 µg/Kg). All concentrations of chlorinated VOCs are less than associated TAGM values.

Trace and similar concentrations of methylene chloride and chloroform were detected in the samples from test pits TP-28, TP-29, and TP-33. Methylene chloride concentrations range from 2.8 µg/Kg to 3.2 µg/Kg, and chloroform concentrations range from 0.75 µg/Kg to 0.80 µg/Kg. Trace concentrations of acetone were detected in the samples from test pits TP-30 (7.9 µg/Kg), TP-34 (6.8 µg/Kg), and in two samples from TP-35 (18.1 µg/Kg and 4.8 µg/Kg). A trace of toluene was detected in the sample from test pit TP-24 (0.44 µg/Kg). The concentrations of acetone, chloroform, methylene chloride, and toluene are less than the associated TAGM values.

Overall, the concentrations of VOCs in the West Field are unremarkable and are not indicative of a source area of VOCs. PCE was detected in only one test pit in the West Field; TP-36 (61.9 µg/Kg). Other chlorinated VOCs were detected only in test pit TP-35, where significant debris was found. Moreover, the VOC concentrations decrease with depth through the fill and are lowest in the underlying undisturbed soil.

The lack of significant concentrations of chlorinated VOCs in the West Field is consistent with the absence of these VOCs in nearby and down gradient borings and associated wells SB/LMW-17 and SB/LMW-18 shown on Figure 6. As indicated in Table 28 and Table 29 from Section 5, VOCs were not detected in the soil samples collected from the associated borings SB-17 and SB-18, and with the exception of a trace of toluene (0.68 µg/L) detected in the first sample from LMW-18, VOCs were not detected in groundwater immediately down gradient of the West Field.

The detection of methylene chloride and chloroform in the samples from test pits TP-28, TP-29, and TP-33 is questionable, particularly since no evidence of fill material was found at test pits TP-28 and TP-33, and these VOCs were not found in any other test pits containing debris. The samples from

TP-28, TP-29, and TP-33 are part of the sample delivery group (SDG) that also includes samples from TP-23 and TP-32, as well as samples from test pits TP-8 and TP-10 which are located in the C&D Area No.1. Methylene chloride and chloroform were not detected in the samples from test pits TP-23 and TP-32. However, based on review of the analytical injection log for this SDG, the results for TP-23 were based on a sample injected for analysis two days after the sequence of analysis of the other samples. As indicated in Table 4, methylene chloride and chloroform were detected in the samples from TP-8 and TP-10 at almost the same concentrations detected in the samples from the West Field. Hence, nearly identical concentrations of methylene chloride and chloroform were detected in most of the samples of the same SDG, with two samples originating from an area remote from the West Field. These data combined with the absence of methylene chloride and chloroform in any other samples from the West Field indicate that the detection of methylene chloride and chloroform is a result of cross contamination associated with the analytical laboratory.

The few and sporadic detections of acetone and the lone detection of toluene indicate that these compounds are not constituents of concern in the fill material in the West Field.

In the West Field Extended, the detection of PCE, TCE, and cis-1,2-DCE in test pit TP-22 is consistent with the profile of VOCs found in the fill material upgradient and upslope in the Pyrophoric Area (see Section 4.7.2). The VOCs within the adjacent fill material may have migrated with perched groundwater from the base of the fill material and into the soil column at TP-22. Migration of vapors from deeper sources also can result in VOCs in shallow soil. As indicated in Table 28 from Section 5 for nearby boring SB-12, significant concentrations of PCE (43,600 µg/Kg), TCE (2,360 µg/Kg), and cis-1,2-DCE (475 µg/Kg) were detected in the deeper soil sample collected from 17 to 17.5 feet at a relatively impermeable silt and clay contact just above the gray till.

Vapors of these VOCs may have originated from this deeper zone and migrated upward through the soil column thereby resulting in the detection of these VOCs in shallow soil. However, more than ten feet of tight silty clay soil that would inhibit migration of any vapor lies between the deeper affected zone and the 4-foot sample depth at TP-22. The absence of TCE and cis-1,2-DCE in the shallower sample collected from 14 to 14.5 feet at the water table at SB-12 signifies that upward migration of vapors is not the source of VOCs in the sample from TP-22. Conversely, these data show that the VOCs found at the gray till contact at SB-12 likely did not originate at the ground surface at SB-12 and migrate vertically through the soil column.

The data for SB-12 and other data presented in Section 5 indicate that the chlorinated VOCs likely have become located at depth at SB/LMW-12 via migration of VOCs along the impermeable surface

from a remote source area. As shown in Table 29, groundwater samples from two rounds of sampling at LMW-12 contained PCE, TCE, cis-1,2-DCE, and trans-1,2-DCE. Concentrations of PCE (48.2 µg/L) and TCE (38.4 µg/L) were higher in the first sample, whereas concentrations of cis-1,2-DCE (97.4 µg/L) and trans-1,2-DCE (0.99 µg/L) were higher in the second sample. Trace concentrations of toluene (0.84 µg/L) and xylenes (0.27 µg/L) were detected in the first sample collected from LMW-12, but were not detected in the second sample. As presented in Section 5, LMW-12 is located down gradient of the Pyrophoric Area and the West Field Extended, which are potential source areas of the VOCs.

The concentrations of the TCE, cis-1,2-DCE, and 1,2-dichloroethane (DCA) detected at test pit TP-23 are unremarkable and are not indicative of a source area at this location. However, the detection of 1,2-DCA is thus far unique to the LDA. Also, absent from the VOC profile is PCE, which is typically the principal VOC detected.

As presented in Table 28 and discussed in Section 5, PCE is also absent from the VOC profile in soil samples from nearby boring SB-24. The sample collected from 5 to 5.5 feet at the base of the fill at SB-24 contained TCE (4.6 µg/Kg), cis-1,2-DCE (1.2 µg/Kg), acetone (101 µg/Kg), and 2-butanone (16.4 µg/Kg). The sample collected from 18 to 18.5 feet at the water table contained TCE (134 µg/Kg) and vinyl chloride (9.6 µg/Kg). However, the sample collected from 27.7 feet at the gray till contact at the paired boring SB-24A contained PCE (83.2 µg/Kg), TCE (3.2 µg/Kg), and cis-1,2-DCE (1.0 µg/Kg).

The groundwater results from LMW-24 and LMW-24A corroborate the findings in the associated soil borings. As provided in Table 29, the groundwater samples from the shallower well LMW-24 did not contain PCE, but did contain TCE (582 µg/L to 641 µg/L), cis-1,2-DCE (4.2 µg/L to 5.6 µg/L), and vinyl chloride (1.2 µg/L to 1.5 µg/L). In contrast, PCE (647 µg/L) was the principal VOC detected in the groundwater sample from the deeper well LMW-24, with lower concentrations of TCE (10.6 µg/L) and cis-1,2-DCE (3.9 µg/L). These data indicate that possibly a separate shallow source of TCE is present in this area, whereas the PCE has become located deeper in this area from a separate and remote source.

Soil borings SB-15 and SB-15A are located near test pit TP-25, at the edge of the geophysical anomaly indicating buried metal. Approximately two feet of silty sand and gravel fill is present at this location. The fill is underlain by undisturbed silt that extends to a depth of six feet. Undisturbed sand and gravel underlies the silt and extends to a depth of 28 feet where the gray till was encountered. A thin layer of relatively impermeable silty clay was found at 24 to 25 feet within the sand and gravel.

As indicated in Table 28 from Section 5, PCE, TCE, and cis-1,2-DCE were detected in the soil samples collected from borings SB-15 and SB-15A, with PCE present as the dominant VOC. This VOC profile is similar to that seen in the nearby Pyrophoric Area (See Section 4.7.2) and in the soil sample collected from boring SB-24A. However, the samples from SB-15 also contained 1,2-DCA, which was detected in test pit TP-23. At boring SB-15, the concentrations of PCE (3,440 µg/Kg), TCE (150 µg/Kg), cis-1,2-DCE (47 µg/Kg), and 1,2-DCA (9 µg/Kg) in the sample collected from 24 to 24.5 feet at the relatively impermeable silty clay contact just above the gray till are notably higher than the concentrations of PCE (33.8 µg/Kg), TCE (2.4 µg/Kg), cis-1,2-DCE (0.97 µg/Kg), and 1,2-DCA (0.51 µg/Kg) detected in the sample collected from 15 to 15.5 feet at the water table. The deeper sample from SB-15 also contained chloroform (5 µg/Kg) and 1,1,1-trichloroethane (TCA; 3.7 µg/Kg). The higher concentrations of VOCs at the silty clay contact indicate that the VOCs may be migrating along the impermeable surface from a remote source area.

The concentrations of PCE (20.6 µg/Kg), TCE (1.6 µg/Kg), and cis-1,2-DCE (2.3 µg/Kg) decrease in the sample from boring SB-15A, which was collected from within the gray till at a depth of 31 to 31.5 feet. Methylene chloride (2.9 µg/Kg) and toluene (0.68 µg/Kg) also were detected in this sample. These data show that the VOCs have not migrated substantially into the gray till. As indicated in Table 28, many of the results for the sample from SB-15A are qualified with an 'R' qualifier, meaning the data are rejected or unusable. As discussed in Section 4.4.2, the gray till evidently affects the laboratory analysis whereby it inhibits the recovery of internal and surrogate VOCs.

As indicated in Table 29 and as discussed further in Section 5, a profile of chlorinated VOCs similar to that in the associated soil samples was detected in the groundwater samples from wells LMW-15 and LMW-15A, with the added detection of vinyl chloride. Hexane was inadvertently analyzed in the first phase of groundwater sampling and a trace of hexane (0.21 µg/L) was detected in the duplicate sample from LMW-15: hexane was not detected in the parent sample or in any other groundwater sample. A trace of 1,1-dichloroethylene (0.57 µg/L) was detected in the first round sample from LMW-15A, but was not detected in the second sample.

The concentrations of the VOCs are similar in LMW-15 and LMW-15A, though the highest concentrations of PCE (418 µg/L), TCE (50.3 µg/L), cis-1,2-DCE (35.9 µg/L), vinyl chloride (3.3 µg/L), 1,2-DCA (36.3 µg/L), 1,1,1-TCA (4.8 µg/L), and chloroform (4.6 µg/L) were detected in the samples from LMW-15A. The detection of chloroform in both wells over both phases of sampling appears to self validate the presence of chloroform in the groundwater.

The presence and nature of the "ethylene" and "ethane" VOCs indicates different parent sources of the VOCs. The sources of these VOCs are either collocated within the fill material or separate source areas exist and the VOCs have become commingled and are co-migrating in the groundwater. As presented in Section 5, the West Field Extended is a potential source of the VOCs found at LMW-15 and LMW-15A, as is the Pyrophoric Area. The similar profile and concentrations of VOCs in LMW-15 and LMW-15A indicates that the VOCs have diffused through the more permeable sand and gravel and are not necessarily confined to a deeper more permeable zone.

4.6.3 West Field – SVOCs in Soil

As indicated in Table 17, SVOCs were detected in samples from seven test pits (TP-23, 24, 29, 31, 34, 35, and 40). With the exception of carbazole (37.5 µg/Kg) in TP-31, the detected SVOCs were comprised entirely of PAHs. Only fluoranthene (20.5 µg/Kg) was detected in the sample from TP-40, and only benzo(a)pyrene (86.3 µg/Kg) and benzo(b)fluoranthene (28.7 µg/Kg) were detected in the sample from test pit TP-29. Similar concentrations of nine to twelve PAHs were detected in the samples from test pits TP-24, TP-31 (dup), TP-34, and TP-35, with minimum concentrations ranging from 5.2 µg/Kg to 11 µg/Kg and maximum concentrations ranging from 208 µg/Kg to 229 µg/Kg. Overall higher concentrations of twelve PAHs were detected in the parent sample from test pit TP-31 at concentrations ranging from 10 µg/Kg to 1,740 µg/Kg. The highest concentrations of PAHs were detected in the sample from test pit TP-23. Twelve PAHs were detected in this sample at concentrations ranging from 229 µg/Kg to 3,440 µg/Kg, with all but four concentrations greater than 1,000 µg/Kg.

PAHs found at concentrations greater than the TAGM values include benzo(a)anthracene in the samples from test pit TP-23 and TP-31; benzo(a)pyrene in the samples from test pits TP-23, TP-24, TP-29, TP-31, and TP-35; benzo(b)fluoranthene in the samples from TP-23 and TP-31; and chrysene in the samples from test pits TP-23 and TP-31.

For the West Field, the data do not show a strong correlation between the presence of concentrated debris and higher PAH concentrations. Of the five test pits in the West Field in which PAHs were detected, three contained concentrated debris (TP-29, TP-31, and TP-35) and two contained sand and gravel commingled with debris (TP-24 and TP-34). At test pit TP-29, only two PAHs were detected. At test pit TP-31, relatively high PAH concentrations were detected in the parent sample, but much lower concentrations were detected in the duplicate sample, indicating a sporadic and variable occurrence of PAHs in the fill material. At test pit TP-35, only trace concentrations of PAHs were detected in the sample of the debris from 4 feet, whereas none was detected in the deeper samples from the debris and undisturbed soil. These data indicate that the PAHs are not migrating

down through the fill and accumulating at the soil contact. PAHs were not detected in test pit TP-32, which is the fourth test pit in the West Field in which concentrated debris was found. The profile and magnitude of the PAHs detected in the sand and gravel commingled with debris at TP-24 and TP-34 is similar to that found in test pits TP-31 (dup) and TP-35.

For the West Field Extended, PAHs were detected in only two test pits; TP-23 and TP-40. Concentrated debris was found at test pit TP-23, including a tar-like material that may be the source of the high PAH concentrations. At test pit TP-40, only a trace of one PAH was detected in the sand and gravel commingled with debris.

The SVOC data for the West Field and West Field Extended are unremarkable. Other than for test pit TP-23, where a tar-like material is coincident with the highest PAH concentrations, an association between debris and higher concentrations of PAHs is not evident. Evidence of a liquid or otherwise mobile source of PAHs was not found in any test pits. The sporadic and overall low concentrations of PAHs may be attributed, at least in part, to burnt wood that was identified in several test pits. The absence of PAHs in most of the sand and gravel fill material indicates that this material was clean and became mixed with sporadic debris during filling and grading operations. Overall, the SVOC data for the West Field and West Field Extended indicate minimal actual or potential affect on the soil from SVOCs.

4.6.4 West Field – PCBs in Soil

As indicated in Table 18, PCBs were detected in ten test pits in the West Field (TP-24, 28, 29, 30, 31, 32, 34, 35, 36, and 37) and three test pits in the West Field Extended (TP-22, 23, and 40). PCBs were not detected in samples from test pits TP-25, TP-26, TP-27, and TP-33. Total PCBs were detected at concentrations ranging from 2.1 µg/Kg to 431 µg/Kg. PCB concentrations greater than 100 µg/Kg were detected in the samples from test pits TP-23 (431.6 µg/Kg), TP-29 (256.1 µg/Kg), TP-31 (121.2 µg/Kg), TP-34 (283.9 µg/Kg), and in two of the samples from TP-35 (375.4 µg/Kg and 115.1 µg/Kg). All other detectable PCB concentrations are less than or equal to 25 µg/Kg. All PCB concentrations are less than the TAGM value (1,000 µg/Kg).

Aroclor 1254 and Aroclor 1260 comprise the PCB concentrations in most samples. Only Aroclor 1260 was detected in the samples from TP-28 (2.1 µg/Kg) and TP-32 (14 µg/Kg). Neither aroclor is consistently dominant in all of the samples, though one of the two aroclors is the principal aroclor in the six samples containing PCBs greater than 100 µg/Kg. Aroclor 1254 is the principal aroclor in the sample from test pit TP-23 (339 µg/Kg) and in two of the samples from TP-35 (294 µg/Kg and

64.8 µg/Kg). Aroclor 1260 is the principal aroclor in the samples from TP-29 (182 µg/Kg), TP-31 (76.7 µg/Kg), and TP-34 (229 µg/Kg).

In general, the higher concentrations of PCBs correspond to the presence of concentrated debris. In the West Field, most of the higher PCB concentrations were detected in test pits TP-29, TP-31, and TP-35, in which concentrated debris was found. However, relatively high concentrations of PCBs also were found in TP-34, where debris was not as concentrated; and only a trace of PCB was detected at TP-32 where concentrated debris was found.

With the exception of TP-32, all PCB concentrations less than or equal to 25 µg/Kg were detected in test pits containing sand and gravel mixed with debris (TP-24, 30, 36, and 37) or undisturbed fill (TP-28). The widespread trace concentrations of PCBs in the sand and gravel mixed with debris suggests that the PCBs are likely incidental to the sporadic debris and not associated with a separate placement of PCBs in the West Field.

The detection of Aroclor 1260 (2.1 µg/Kg) in the sample of undisturbed soil from test pit TP-28 may be the result of analytical carryover. The injection log for the PCB analysis shows that the sample from test pit TP-29 was first to be analyzed, followed by the parent sample from TP-28 and then the duplicate sample from TP-28. A relatively higher concentration of PCB (256.1 µg/Kg) was detected in the sample from test pit TP-29. The detection of the trace concentration of PCB in the parent sample from TP-28 together with the absence of PCBs in the duplicate sample may be indicative of carryover of residual PCB into the otherwise clean parent sample from TP-28.

In the West Field Extension, the higher PCB concentrations found in TP-23 correspond to the presence of concentrated debris in the test pit. Undisturbed soil was found at test pit TP-22; therefore, the trace levels of PCB detected at TP-22 may have migrated from the base of the adjacent fill and into the soil at TP-22. The trace concentration of PCB detected in the sand and gravel mixed with debris at TP-40 is consistent with PCB concentrations detected in similar material in the West Field.

The PCB data for the West Field and West Field Extended are unremarkable. In general, higher PCB concentrations correspond to the presence of concentrated fill material. The presence of trace concentrations of PCBs in the sand and gravel fill material containing sporadic debris indicates that PCBs are incidental to the debris and were dispersed with the debris during filling and grading operations. Evidence of a liquid or otherwise mobile source of PCBs was not found in any test pits.

Overall, the PCB data for the West Field and West Field Extended indicate minimal actual or potential affect on the soil from PCBs.

4.6.5 West Field – Metals and Cyanide in Soil

As indicated in Table 19, all test pits in which fill was not encountered (TP-22, TP-25, TP-26, TP-27, TP-28, and TP-33) exhibit metals concentrations that are consistent with background concentrations. Antimony, selenium, and vanadium are above background concentrations in samples from these test pits, though none of the concentrations is remarkable. Given the undisturbed nature of the soil and the apparent background representation of most if not all of these test pits, the antimony, selenium, and vanadium concentrations appear to be related either to a naturally higher concentration of antimony, selenium, and vanadium in the samples or an artifact of analytical laboratory bias toward an overall higher reporting concentration of antimony, selenium, and vanadium.

Metal profiles consistent with background also are exhibited in many of the test pits containing sand and gravel commingled with sporadic debris (TP-30, TP-36, TP-37, and TP-40). Chromium (19.8 mg/Kg) and vanadium (37.7 mg/Kg) are marginally elevated in test pit TP-30, though the relatively higher vanadium concentration is consistent with the higher vanadium concentration found at nearby test pit TP-31 (52.3 mg/Kg) and may not be naturally occurring. The two other test pits containing sand and gravel mixed with debris (TP-24 and TP-34) exhibit marginally elevated concentrations of several metals, though the profiles of elevated metals differ slightly. At test pit TP-24, barium (122 mg/Kg), cadmium (0.39 mg/Kg), chromium (19.4 mg/Kg), mercury (0.11 mg/Kg), and selenium (1.5 mg/Kg) are marginally elevated. At test pit TP-34, cadmium (0.35 mg/Kg), cobalt (17.6 mg/Kg), lead (27 mg/Kg), and mercury (0.12 mg/Kg) are marginally elevated. The selenium at test pit TP-24 is identified as elevated based on its higher concentration relative to most other samples in the West Field. These data indicate that the sand and gravel was clean fill that became mixed with debris and associated metals during the covering and grading of the debris.

Obvious profiles of elevated metals and the highest metal concentrations are found in the test pits in which concentrated debris was found (TP-23, TP-29, TP-31, TP-32, and TP-35). The suite of elevated metals is similar for each of the test pits, though certain metal concentrations are notable in some test pits. The profile of elevated metals typically includes antimony, arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, silver, vanadium, and zinc.

In the West Field, test pit TP-31 contained the highest concentrations of antimony (9.2 mg/Kg), arsenic (17.5 mg/Kg), barium (1,300 mg/Kg), and lead (200 mg/Kg). The sample from the 4-foot depth at test pit TP-35 contained the highest mercury concentration (6.3 mg/Kg). In consideration of

the varied and concentrated nature of the debris at test pit TP-35, the magnitude of the elevated metals is unremarkable. Test pits TP-29 and TP-32 did not contain a single highest metal concentration.

The sample from test pit TP-23, located in the West Field Extended, contained the highest concentrations of cadmium (5.3 mg/Kg), chromium (151 mg/Kg), copper (1,920 mg/Kg), nickel (369 mg/Kg), selenium (5.2 mg/Kg), silver (1.5 mg/Kg), vanadium (124 mg/Kg), and zinc (1,700 mg/Kg).

As indicated in Table 19, cyanide concentrations in the West Field and West Field Extended are unremarkable, ranging from 0.0628 mg/Kg to 0.381 mg/Kg. The highest concentration was found in the sample from 4 feet at test pit TP-35. Cyanide was not detected in the samples from 6 feet.

Overall, the metals data for the West Field and West Field Extended are unremarkable, with elevated concentrations of metals principally found in the test pits containing concentrated debris. Metals concentrations consistent with or marginally elevated above background in the sand and gravel fill material containing sporadic debris indicates that the metals are incidental to the debris and were dispersed with the debris during filling and grading operations. Evidence of a source of metals other than the solid debris was not found in any test pits. Overall, the metals data for the West Field and West Field Extended indicate minimal actual or potential affect on the soil from the fill material.

4.6.6 West Field – Conclusions and Recommendations

Based on the test pit data, the extent of the buried material in the West Field is generally coincident with the geophysical anomaly in the West Field. Two to four feet of buried concentrated debris was found in four of the eleven test pits excavated within and adjacent to the anomaly. The debris typically consists of glass, wire, rebar, lumber, pieces of transite, and bricks. Additional debris specific to certain test pits included pieces of cut stone, wood timber, lagging material, slag, welding rods, lab glassware and tubing, and a crushed 30-gallon metal drum. The concentrated debris is typically covered with one to two feet of sand and gravel, with varying percentages of silt. Sand and gravel apparently was used as a general fill material and surface cover in the West Field and West Field Extended. During filling and grading operations, the sand and gravel fill evidently became commingled with debris, which is found sporadically within the sand and gravel. The fill material in most of the West Field is typically three to four feet thick, though fill depths of six feet and possibly as deep as eight feet were found in isolated locations. The fill material in the West Field is underlain by fine sandy silt and clay.

The two test pits dug to the north of the West Field did not reveal evidence of fill or buried debris, nor did the two test pits excavated to the northeast of the West Field at the break in slope and adjacent to the edge of the fill. Undisturbed soil was found in all four of these areas. Approximately three feet of buried concentrated debris was found in the test pit dug within the geophysical anomaly east of the West Field. The debris consisted of asphalt, concrete, bricks, copper wire, burnt wood, metal flashing, glass, pieces of transite, lagging material, and tar-like material. The concentrated debris was covered with approximately three feet of sand and gravel commingled with pieces of asphalt, concrete, brick, and glass. The depth of fill in this area is approximately six feet, and the fill is underlain by silt and clay. In the area between the geophysical anomalies, two to three feet of sand and gravel fill material was found mixed with sporadic debris.

Other than the obvious solid debris, evidence of a liquid or otherwise mobile or concentrated source of chemicals was not found in the test pits. PID readings were not observed in any test pits. Except for some natural odors of decay noted in two test pits, unusual odors indicative of organic compounds were not detected.

Overall, the concentrations of VOCs in the West Field are unremarkable and are not indicative of a source area of VOCs. Trace concentrations of chlorinated VOCs were detected in only two test pits in the West Field, with a high concentration of 61.9 µg/Kg of PCE. The lack of significant concentrations of chlorinated VOCs in the West Field is consistent with the absence of these VOCs in nearby and down gradient soil borings and groundwater monitoring wells. In the West Field Extended, trace concentrations of chlorinated VOCs were detected in samples from test pits within the geophysical anomaly east of the West Field and the geophysical anomaly adjacent to the fill material northeast of the West Field. The results are unremarkable and do not represent source areas of VOCs. However, deeper soil and groundwater samples collected within the West Field Extended contained significant concentrations of chlorinated VOCs indicative of a source area (or areas) of VOCs within the West Field Extended or Pyrophoric Area.

The SVOC, PCB, metals, and cyanide data for the West Field and West Field Extended are unremarkable. In general, higher PCB (431.6 µg/Kg; highest value), metal, and cyanide (0.381 mg/Kg; highest value) concentrations correspond to the presence of concentrated debris. Other than where a tar-like material was coincident with the highest SVOC (PAH) concentration (3,440 µg/Kg), a strong association between debris and higher concentrations of PAHs is not evident. The sporadic and overall low concentrations of PAHs may be attributed, at least in part, to burnt wood that was identified in several test pits. The detection of sporadic and trace concentrations of PCBs in the sand and gravel fill, in addition to metals concentrations consistent with

or marginally above background, appears to be associated with the sporadic debris within the sand and gravel fill material and not associated with a separate placement of PCBs in the West Field. Overall, the SVOC, PCB, metals, and cyanide data for the West Field and West Field Extended indicate minimal actual or potential affect on the soil.

Although the results for the West Field are unremarkable and the buried debris has been characterized, additional investigation is recommended to confirm the nature of the fill material in the West Field. Surface soil samples should be collected and analyzed for PAHs, PCBs, and metals to check if higher concentrations of these constituents are present in the surface soil. In addition, the lateral extent of the buried concentrated debris at test pit TP-35 should be defined, and the depth of fill at test pit TP-30 should be confirmed.

In the West Field Extended, surface soil samples should be collected within the geophysical anomaly east of the West Field and analyzed for PAHs, PCBs, and metals to check if higher concentrations of these constituents are present in the surface soil. Surface soil samples should also be collected adjacent to and down slope of the surface fill material adjacent to test pit TP-22 and analyzed for VOCs, PCBs, and metals to check if these constituents have migrated onto the surface soil from the adjacent fill material. In conjunction with further action recommendations in Section 5, the West Field Extended should be investigated for source areas of VOCs found in deeper soil samples and groundwater. Also in conjunction with recommendations in Section 5, well LMW-12 should be replaced with a well or well pair that will better monitor the deeper saturated zone just above the gray till and preclude surface water from entering the well and thereby affecting groundwater levels and analytical results.

4.7 Pyrophoric Area

During the LDA SV, test pits TP-20, TP-21, TP-38, and TP-41 were excavated within the Pyrophoric Area. As shown on Figure 5, test pits TP-20 and TP-21 were located in the eastern part of the Pyrophoric Area. The location of test pit TP-20 was selected to assess the nature of the geophysical anomaly shown on Figure 5, and test pit TP-21 was located to assess surface and subsurface soil conditions between the anomaly and the fill material in the western part of the Pyrophoric Area. Test pits TP-38 and TP-41 were located within a known fill area in the western part of the Pyrophoric Area. Test pits TP-38 and TP-41 were excavated to assess the nature and depth of the fill material.

Two samples were collected from TP-20 – one sample from the upper 0.5 feet where a black sandy material was found; and one sample of the soil at the 4-foot depth. One soil sample was collected at the 4-foot depth from test pit TP-21. Test pit TP-38 was terminated in debris at 6.5 feet, where one

sample (and duplicate) was collected of the soil commingled with debris. Two soil samples were collected from test pit TP-41, one at the 4-foot depth and one at the 5-foot depth. The sample from the 4-foot depth was collected within debris, and the sample from the 5-foot depth was collected from the soil at the base of the debris. All samples from the test pits were analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL Inorganics.

As shown on Figure 6, soil borings SB-14, SB-16, SB-16A, and SB-25 were drilled in the western part of the Pyrophoric Area as part of the Groundwater Investigation. Soil samples were collected from these borings at or near the water table and the gray till contact, and the soil samples were analyzed for TCL VOCs. Each boring was converted to the corresponding monitoring well LMW-14, LMW-16, LMW-16A, and LMW-25. Groundwater samples were collected from each well and were analyzed for TCL VOCs plus tetrahydrofuran. Based on a sheen on the development water from LMW-16A, the first groundwater sample from LMW-16 was also analyzed for TCL SVOCs. Further detail and discussion on the Groundwater Investigation are provided in Section 5.

4.7.1 Pyrophoric Area – Test Pit Observations

Detailed information on what was found in each test pit is presented on the test pit logs provided in Appendix C. For a quick review, a summary of the findings in the test pits is provided at the front of the logs. Photographs of the test pits are provided in Appendix D.

As indicated previously, a black sand-like material was found in the upper 0.5 feet at test pit TP-20. Based on field observation, the surface extent of the black material appears to coincide with the geophysical metallic anomaly identified in this area. Brown till was found below the black material to a depth of five feet, where undisturbed gray till was encountered. The contrast and vertical extent of the black material is apparent in the photograph provided in Appendix D. Evidence of buried material below the surface was not found in test pit TP-20. At test pit TP-21, undisturbed gray till was found from the surface to the bottom depth of six feet, and evidence was not found of buried material.

At test pit TP-38, debris was found from the ground surface to a depth of at least 6.5 feet, where the test pit was terminated due to water in the excavation. Based on information from nearby borings SB-16/16A, fill material extends to a depth of approximately eight feet in the area of TP-38 and is underlain by silt and clay. The fill consists mostly of concentrated construction and demolition debris with some empty laboratory glassware. Black sooty material was found at approximately six feet. Unusual odors or PID readings were not observed.

At test pit TP-41, sandy fill material was found from the ground surface to a depth of approximately five feet, where undisturbed sandy silt was encountered. The test pit was terminated at a depth of seven feet. The fill material at TP-41 consists of a gravelly sandy till-derived fill mixed with construction and demolition debris comprised mostly of concrete and bricks. North of TP-41, at nearby boring SB-14, fill was found to a depth of six feet and is underlain by silty clay. South of TP-41, at nearby boring SB-25, fill was found to a depth of five feet and is underlain by medium to fine sand. In the 2 to 3 foot depth interval from TP-41, a PID reading of 4.5 ppm was recorded. The PID reading increased to a maximum peak of 235 ppm in the 4 to 5 foot depth interval, with a sustained reading of almost 18 ppm. PID readings of 8.4 ppm and 3.2 ppm were recorded in the undisturbed 5 to 6 foot and 6 to 7 foot depth intervals, respectively. A solvent odor was noted for the 4 to 5 foot depth interval.

4.7.2 Pyrophoric Area - VOCs in Soil

During the SPRU SV, VOCs were detected in soil samples collected from shallow (4 feet) borings drilled within and adjacent to the Pyrophoric Area. The summary table for the VOC data and the locations and logs of the soil borings in which the VOCs were detected are provided in Appendix G. Chlorinated VOCs were detected in six borings located along or just beyond the apparent eastern extent of the fill associated with the Pyrophoric Area. PCE was detected in five borings at concentrations ranging from 1 µg/Kg to 180 µg/Kg. TCE was detected in two borings at concentrations of 25 µg/Kg and 130 µg/Kg, and 1,2-DCE was detected in one boring at 2 µg/Kg. Methyl ethyl ketone (MEK) was detected in one boring 16 µg/Kg. The higher TCE concentration and the 1,2-DCE and MEK all were detected in the same boring, where PCE was absent.

As indicated in Table 20, only trace concentrations of toluene were detected in the soil samples from test pits TP-20 (1.2 µg/Kg) and TP-21 (0.94 µg/Kg). VOCs were not detected in the black material. Principally chlorinated solvent VOCs were detected in the samples from test pits TP-38 and TP-41, with markedly higher concentrations of these VOCs found at TP-41. The chlorinated solvent compounds PCE (24.7 µg/Kg), TCE (2.4 µg/Kg), and cis-1,2-DCE (10.3 µg/Kg) were detected at TP-38, as was styrene (0.88 µg/Kg). PCE, TCE, and cis-1,2-DCE also were detected in the samples collected from 4 feet and 5 feet at TP-41, as was the related VOC trans-1,2-DCE. The concentrations of TCE (82.8 µg/Kg), cis-1,2-DCE (23.9 µg/Kg), and trans-1,2-DCE (2.0 µg/Kg) are slightly higher in the sample from 4 feet, but the concentration of PCE (18,900 µg/Kg) is distinctly higher in the sample from 5 feet than in the sample from 4 feet (6,190 µg/Kg). The 18,900 µg/Kg of PCE is the highest concentration of PCE found in the fill material in the LDA. The concentrations of PCE found at TP-41 are greater than the TAGM value for PCE (1,400 µg/Kg).

The trace concentrations of toluene detected in the samples from test pits TP-20 and TP-21 are similar to the trace concentrations of toluene found in samples from test pits in the North Field. Samples from the test pits in the Pyrophoric Area and the North Field were collected and analyzed together, and trace concentrations of toluene were detected in a combined nine of twelve test pits from these two areas. The distribution and the trace concentrations of toluene are overall consistent with cross contamination associated with the analytical laboratory. The absence of toluene in the samples from test pits TP-38 and TP-41, in which fill material was found, indicates that toluene is not a VOC of concern in the Pyrophoric Area.

The profile of chlorinated VOCs found at test pits TP-38 and TP-39 is consistent with the VOC profile seen elsewhere in the Pyrophoric Area. As summarized above for the SPRU SV, PCE, TCE, and DCE were detected in one or more soil samples collected within and adjacent to the eastern edge of the fill material in the Pyrophoric Area. As discussed in Section 4.4.2, PCE and TCE were detected in test pit TP-39, which is adjacent to the fill area and is nearly collocated with SPRU SV boring B3516, in which slightly higher concentrations of PCE and TCE were detected in the shallower soil sample. As shown in Table 28 and discussed below, PCE, TCE, and DCE also were detected in soil samples from borings SB-14, SB-16A, and SB-25. The absence of VOCs in the black material indicates that the pyrophoric burn residue is not a source of the chlorinated VOCs.

Considering the concentrated debris found at test pit TP-38, the VOC results for TP-38 are unremarkable and are not indicative of a source area of VOCs. Conversely, the relatively high concentrations of VOCs found at TP-41 are indicative of a source area of the VOCs at or near this location. PCE is the principal VOC, with TCE, cis-1,2-DCE, and trans-1,2-DCE evidently degradation by-products of the PCE. The higher concentration of PCE at the debris/soil contact may be indicative of the migration of the PCE through the debris and accumulation of the PCE at the relatively less-permeable sandy silt. However, PID readings of the deeper soil imply that the VOCs have moved deeper into the soil column. The data for the soil borings drilled in the Pyrophoric Area substantiate the presence of a source area (or areas) within the Pyrophoric Area and associated vertical migration of the VOCs.

As shown on Table 28, the soil sample collected from 6 to 6.5 feet at the base of the fill at boring SB-14 contained only trace levels of PCE (12.4 µg/Kg) and TCE (11.4 µg/Kg). The soil sample collected from 9.5 to 10 feet at the water table interface also contained trace levels of PCE (8.6 µg/Kg) and TCE (4.6 µg/Kg), as well as cis-1,2-DCE (5.1 µg/Kg). However, the concentrations of PCE (1,920 µg/Kg), TCE (102 µg/Kg), and cis-1,2-DCE (18.8 µg/Kg) are substantially higher in the soil

sample collected from 15 to 15.5 feet at the gray till contact The data for SB-25 exhibit a similar profile, though not of the same magnitude.

The results for boring SB-16 show that chlorinated VOCs are absent in the samples collected from the water table, just below the fill material, and from a deeper sandy layer found at 23 feet; a sample from the gray till contact was not collected at SB-16. These data indicate that chlorinated VOCs have not migrated from the fill in this area down through the soil column. These findings are consistent with the trace levels of VOCs detected in nearby test pit TP-38. However, in boring SB-16A, PCE (1,150 µg/Kg), TCE (49.3 µg/Kg), and cis-1,2-DCE (19.8 µg/Kg) were detected in the sample collected just above the gray till contact. The deeper sample, collected just below the surface of the gray till, contained only a trace of PCE (5.6 µg/Kg).

The soil boring data indicate that the chlorinated VOCs found at depth in borings SB-14, SB-16A, and SB-25 penetrated the soil at a location apart from the borings and have migrated laterally along the impermeable gray till boundary. The data for SB-16A also show that the chlorinated VOCs preferentially move along the impermeable boundary and not substantially into the gray till.

As indicated in Table 29 and as discussed further in Section 5, a similar profile of chlorinated VOCs was detected in the groundwater in the Pyrophoric Area. PCE was present at the highest concentration in each of LMW-14 (5,740 µg/L), LMW-16 (1.4 µg/L), LMW-16A (34 µg/L), and LMW-25 (1,280 µg/L). TCE and cis-1,2-DCE were detected at lower concentrations, apparently representative of by-products of PCE degradation. The highest concentrations of PCE (5,740 µg/L), TCE (77.6 µg/L), and cis-1,2-DCE (31.2 µg/L) were detected in LMW-14, which is located down gradient of test pit TP-41. PCE (1,280 µg/L), TCE (15.4 µg/L), and cis-1,2-DCE (2.6 µg/L) also were detected in LMW-25, along with trace concentrations of carbon tetrachloride (0.53 µg/L), chloroform (0.90 µg/L), and 1,1,2,2-tetrachloroethane (2.6 µg/L), possibly indicating a source of VOCs separate from that for LMW-14. Only PCE (1.4 µg/L) was detected in LMW-16. The higher concentration of PCE (34 µg/L) in the deeper well LMW-16A, screened across the gray till surface, and the detection of TCE (1.9 µg/L), cis-1,2-DCE (1.1 µg/L), and vinyl chloride (2 µg/L) is consistent with the soil data, which indicate lateral migration of VOCs along the deeper gray till surface.

4.7.3 Pyrophoric Area - SVOCs in Soil

As indicated in Table 21, nine PAHs were detected in the black surface material at test pit TP-20, at concentrations ranging from 5.5 µg/Kg to 87.8 µg/Kg. PAHs were not detected in the deeper soil sample from TP-20 or in the soil sample from TP-21. Ten PAHs were detected at test pit TP-38 at concentrations ranging from 24.8 µg/Kg to 1,560 µg/Kg. Eight PAHs were detected in the 4-foot

sample from TP-41 at concentrations ranging from 20.6 µg/Kg to 238 µg/Kg. Thirteen PAHs were detected in the 5-foot sample from TP-41 at concentrations ranging from 53.1 µg/Kg to 781 µg/Kg. The benzo(a)pyrene concentrations in the samples collected from TP-38 and TP-41 are greater than the TAGM value of 61 µg/Kg. The benzo(b)fluoranthene concentration in the sample from TP-38 is greater than the TAGM value of 1,100 µg/Kg. The benzo(a)anthracene concentration in the sample from TP-41 is greater than the TAGM value of 224 µg/Kg.

The presence of the PAHs in the black material is consistent with a burning process. The source of the PAHs may be the by-product of the burning process or a residue of an oil used to ignite the pyrophoric material. The presence of PAHs in TP-38 and TP-41 is consistent with the presence of fill material. The concentrations are unremarkable considering the amount of debris, particularly at test pit TP-38. The higher concentrations of PAHs in the deeper sample at TP-41 are possibly indicative of an accumulation of PAHs at the soil contact. Overall, these data indicate minimal actual or potential affect on the soil from SVOCs.

4.7.4 Pyrophoric Area – PCBs in Soil

As indicated in Table 22, a trace concentration of Aroclor 1260 (3 µg/Kg) was detected in the black surface material at test pit TP-20. Aroclor 1254 (22.5 µg/Kg) and Aroclor 1260 (24.1 µg/Kg) were detected in the sample from test pit TP-38. Aroclor 1242 (8.5 µg/Kg), Aroclor 1254 (44.2 µg/Kg), and Aroclor 1260 (67.1 µg/Kg) were detected in the sample collected from 4 feet at test pit TP-41. Aroclor 1254 (42.9 µg/Kg) and Aroclor 1260 (66.2 µg/Kg) were detected in the sample collected from 5 feet at test pit TP-41. All concentrations are less than the associated TAGM value for PCBs (1,000 µg/Kg).

The occurrence of Aroclor 1260 in the black material is similar to the trace concentrations of PCBs and PAHs co-present in the C&D Area No.1 and the Mercury Disposal Area. For test pits TP-38 and TP-41, the PCB results are unremarkable and do not indicate the presence of a concentrated source of PCBs in the fill material. Based on these data and the data for the West Field, the presence of the PCBs appears incidental to the construction and demolition debris. Overall, these data indicate minimal actual or potential affect on the soil from PCBs.

4.7.5 Pyrophoric Area – Metals and Cyanide in Soil

As indicated in Table 23, the black material found at the surface at TP-20 has a pronounced profile of elevated metals, including antimony (7.060 mg/Kg), chromium (106 mg/Kg), cobalt (30.5 mg/Kg), copper (81.8 mg/Kg), iron (154,000 mg/Kg), nickel (42.3 mg/Kg), selenium (5.410 mg/Kg), silver (0.412 mg/Kg), and vanadium (374 mg/Kg). Mercury is not elevated. Metals with

concentrations notably lower than background concentrations include arsenic (0.316 mg/kg), barium (20.9 mg/Kg), calcium (1,150 mg/Kg), lead (1.230 mg/Kg), and magnesium (1,580 mg/Kg).

The results for the underlying sample from 4 feet at TP-20 are essentially within background concentrations. Cobalt (15.8 mg/Kg) is marginally above background; and concentrations of antimony (0.449 mg/Kg), selenium (1.260 mg/Kg), and vanadium (31.0 mg/Kg) are similar to concentrations in other unaffected samples. The results for TP-21 also are consistent with background. Marginally elevated concentrations of a few metals were detected in TP-21, including antimony (0.775 mg/Kg), barium (103 mg/Kg), selenium (1.560 mg/Kg), and zinc (96.2 mg/Kg).

Based on its metal profile and color, the black material found at TP-20 is believed to be pyrophoric burn residue. The sandy metallic appearance of the material coupled with the notably reduced concentrations of certain metals typical of soil indicates that the black material is relatively homogenous and has not been substantially diluted with soil. The extent of the black material is coincident with the geophysical metallic anomaly in this area, which is consistent with the high iron content found in the black material. The black material is apparently limited to the surface soil, as the results for the deeper samples from TP-20 and nearby TP-21 are consistent with background concentrations. The elevated concentrations of antimony and selenium appear related either to a naturally higher concentration of antimony and selenium in the samples or an artifact of analytical laboratory bias toward an overall higher reporting concentration of antimony and selenium.

The results in Table 23 show the presence of elevated metals at test pits TP-38 and TP-41, though differences exist in the profiles of the elevated metals. The overall higher concentrations of metals were detected at test pit TP-38, which include antimony (12 mg/Kg), barium (206 mg/kg), cadmium (2 mg/Kg), chromium (132 mg/Kg), copper (216 mg/Kg), lead (162 mg/Kg), mercury (2.3 mg/Kg), nickel (513 mg/Kg), selenium (1.1 mg/Kg), silver (1.4 mg/Kg), vanadium (106 mg/Kg), and zinc (518 mg/Kg). Cyanide was detected at 0.338 mg/Kg.

At test pit TP-41, the metals concentrations are not substantially different in the samples from 4 feet and 5 feet. Therefore, the higher concentration of the two samples is presented. Elevated concentrations of metals at test pit TP-41 include antimony (3.1 mg/Kg), cadmium (0.8 mg/Kg), chromium (26.1 mg/Kg), copper (60.1 mg/Kg), lead (250 mg/Kg), mercury (5.2 mg/Kg), selenium (1.2 mg/Kg), silver (1.1 mg/Kg), vanadium (43.2 mg/Kg), and zinc (148 mg/Kg). Barium and nickel were not elevated and cyanide was not detected in the samples from test pit TP-41. Antimony and lead are notably higher in the sample from 4 feet. The higher calcium (32,600 mg/Kg) and

magnesium (16,400 mg/Kg) in the sample collected from 4 feet may be indicative of concrete debris in the sample.

Arsenic and cobalt are not elevated in the samples from test pits TP-38 or TP-41, and the selenium results are consistent with those for samples where fill is not present and no affect on soil is evident. The lack of elevated cobalt and selenium suggests that pyrophoric burn residue similar to that found at test pit TP-20 is not present in the fill material at these test pits locations. The absence of elevated arsenic raises some doubt as to the source of the arsenic found in the soil associated with SPRU supplemental sampling north of the Former Slurry Drum Storage Area.

The presence of elevated metals in TP-38 and TP-41 is not unexpected considering the presence of fill material. The concentrations are unremarkable, though, considering the amount of debris, particularly at test pit TP-38. Overall, these data indicate minimal actual or potential affect on the soil from metals and cyanide.

4.7.6 Pyrophoric Area – Conclusions and Recommendations

An apparent source area of chlorinated VOCs were found at test pit TP-41, located just north of the Pyrophoric Shed. Solvent odor, PID readings and relatively high concentrations of PCE, TCE, and DCE were detected at the bottom of the fill material at TP-41. PCE is the principal VOC, with TCE and DCE apparently present as degradation by-products of PCE. The presence of an apparent source area of these VOCs is consistent with the low diffuse concentrations of PCE, TCE, and DCE found in fill material in the Pyrophoric Area and adjacent soil, including the PCE and TCE found at the southwest portion of the North Field.

PID readings from the deeper and undisturbed soil at TP-41 indicate that the VOCs have moved deeper into the soil column at TP-41. This is substantiated by data from soil borings in the Pyrophoric Area which show that relatively high concentrations of PCE and degradation products have reached the impermeable gray till. In the absence of a VOC profile indicating a source area in the overlying soil at these boring locations, the VOCs apparently have migrated laterally along the gray till contact from a separate source, possibly TP-41 or other. This general area of the Pyrophoric Area appears to be a principal source of the VOCs found in groundwater in the LDA.

The black material found at the ground surface in the eastern part of the Pyrophoric Area appears to be pyrophoric burn residue. The black material exhibits a distinct profile of elevated metals, including antimony, chromium, cobalt, copper, iron, nickel, selenium, silver, and vanadium. The sandy metallic appearance of the material and the lack of certain metals typical of soil indicate that the burn residue

has not been mixed substantially with soil. The extent of the black material appears to be coincident with a geophysical metallic anomaly, which is consistent with the high iron content of the burn residue. Trace concentrations of PAHs and Aroclor 1260 also were detected in the black material. Similar trace concentrations of co-present PCBs and PAHs also were found in the C&D Area No.1 and the Mercury Disposal Area. Visual or analytical evidence of this pyrophoric burn residue were not found in test pits TP-38 or TP-41.

The presence of PAHs, PCBs, and elevated metals in TP-38 and TP-41 is consistent with the presence of fill material at these locations. The concentrations are unremarkable considering the amount of debris, particularly at test pit TP-38. Higher PAH concentrations in test pit TP-38 may be associated with the black sooty material found near the base of the test pit. This black sooty material is different from the apparent pyrophoric burn residue. The PCB results do not indicate the presence of a concentrated source of PCBs in the fill material and appear to be incidental to the construction and demolition debris. Elevated metals are higher in test pit TP-38, where more metallic debris was encountered. Overall, the data for test pits TP-38 and TP-41 indicate minimal actual or potential affect on the soil from SVOCs, PCBs, and metals, and cyanide.

Although the fill material found in the test pits does not exhibit remarkable concentrations of PAHs, PCBs, or metals; the vertical extent of the PAHs, PCBs, and elevated metals in the undisturbed soil beneath the fill material should be characterized. For completeness, the surface soil should be characterized for PAHs, PCBs, and metals in the event these constituents became located at the ground surface independent of the buried debris. The extent of the surface characterization should include the area north of and down slope of the Pyrophoric Area and should extend eastward to and include the apparent pyrophoric burn residue. In conjunction with the recommendations for the Groundwater Investigation, further action is recommended for the Pyrophoric Area to locate and define source areas of VOCs in the fill material. Further groundwater characterization should be performed as recommended in Section 5 and as appropriate based on the findings of future soil investigation in the Pyrophoric Area. An overall objective of future investigation in the LDA is to define the limits of waste burial, including the area south of test pit TP-38.

4.8 SPRU Former Slurry Drum Storage Area

Fifty-four soil samples were collected from 19 direct push soil borings drilled within the Former Slurry Drum Storage Area (SWMU-035) and the adjacent area to the north where soil associated with the Former Slurry Drum Storage Area may have been distributed. Through a cooperative effort with DOE-SPRU, the DOE-SPRU contractor working in these areas drilled the borings and collected the

samples. Noteworthy is that the investigation area north of the Former Slurry Drum Storage Area overlaps much of the Pyrophoric Area.

The basis for the additional soil sampling within the Former Slurry Drum Storage Area was elevated concentrations of metals and PAHs that were detected during the SPRU SV at boring location B3543. Copper (109 mg/Kg), nickel (132 mg/Kg), and silver (0.54 mg/Kg) concentrations were greater than background in the 0 to 2 foot sample. Silver (0.59 mg/Kg) also was greater than background in the 2 to 4 foot sample. In addition to these suspected SPRU-related metals, antimony (0.36 mg/Kg), lead (18.2 mg/Kg), and vanadium (32 mg/Kg) also were elevated above background concentrations. Eight PAHs were detected in the 0 to 2 foot sample, at concentrations ranging from 330 μg/Kg (benzo(b)fluoranthene) to 1000 μg/Kg (fluoranthene). Eight PAHs also were detected in the 2 to 4 foot sample interval; however, concentrations decreased substantially to a high concentration of 60 μg/Kg of fluoranthene. With the exception of fluoranthene (19 μg/Kg), PAHs were not detected in the 4-6 foot sample.

To further assess the SPRU SV results for B3543, six borings were drilled at and around B3543. One boring was collocated adjacent to the original location of boring B3543 and one boring was drilled at each corner of a 14-foot square centered on location B3543. As shown on Figure 7, boring 02-3-B1 was drilled at the center of the square and borings 02-3-B2, 02-3-B3, 02-3-B4, and 02-3-B5 were drilled at the corners. Owing to shallow drilling refusal at 02-3-B2, a sixth boring (02-3-B2A) was drilled adjacent to 02-3-B2 to allow collection of samples below the 0 to 0.5 foot interval. Attempts were made to collect a soil sample from each of the soil intervals 0 to 0.5 feet, 0.5 to 2 feet, and 2 to 4 feet. In some cases, sample intervals were shortened or sample intervals could not be sampled owing to poor sample recovery or drilling refusal. All samples were analyzed for TCL PAHs and TAL Metals.

The basis for the additional sampling in the area north of the Former Slurry Drum Storage Area was a sporadic distribution of relatively low magnitude elevated concentrations of metals and PAHs identified in the SPRU SV data. The heavy metals and associated highest elevated concentrations found north of the Former Slurry Drum Storage Area during the SPRU SV are barium (176 mg/Kg), beryllium (1.2 mg/Kg), cadmium (0.67 mg/Kg), chromium (20.5 mg/Kg), cobalt (15.9 mg/Kg), copper (50.3 mg/Kg), lead (16.4 mg/Kg), mercury (0.1 mg/Kg), nickel (37 mg/Kg), and silver (0.6 mg/Kg). The highest concentrations typically were found in the surface soil sample, though concentrations greater than background also were found in the 2 to 4 foot sample interval. Up to 10 PAHs were detected in shallow soil at concentrations ranging from 29 μg/Kg (anthracene) to 400 μg/Kg (pyrene).

To further assess the SPRU SV results, soil samples were collected from the 13 soil borings shown on Figure 7. Logs for the borings are provided in Appendix B. Attempts were made to collect a soil sample from each of the soil intervals 0 to 0.5 feet, 0.5 to 2 feet, and 2 to 4 feet. In some cases, sample intervals were shortened or sample intervals could not be sampled owing to poor sample recovery or drilling refusal. All samples were analyzed for TCL PAHs and TAL Metals.

4.8.1 SPRU Former Slurry Drum Storage Area - PAHs in Soil

4.8.1.1 SPRU SV Boring B3543

As indicated in Table 24, PAHs were detected at each boring location. PAHs were not detected in the surface (0 to 0.5 feet) samples at borings 02-3-B1 and 02-3-B2, and only one PAH was detected in the surface soil in borings 02-3-B3 (pyrene: 4.8 µg/Kg) and 02-3-B4 (benzo(a)pyrene: 72.8 µg/Kg). The absence of detected PAHs in the surface samples at borings 02-3-B1 and 02-3-B2 may be the result of dilution of these samples during laboratory analysis. According to the data validation report, dilution of several samples was necessary to extract viscosity and color. Nine PAHs were detected in the surface sample at 02-3-B5 at concentrations ranging from 22.9 µg/Kg (phenanthrene) to 180 µg/Kg (indeno(1,2,3-cd)pyrene).

The greater number of PAHs and the highest PAH concentrations were detected in the 0.5 to 2 foot sample interval. Ten to thirteen PAHs were detected in the 0.5 to 2 foot sample interval in borings 02-3-B1, 02-3-B2a, 02-3-B4, and 02-3-B5 The highest PAH concentration in each boring, respectively, is 206 µg/Kg (indeno(1,2,3-cd)pyrene), 172 µg/Kg (indeno(1,2,3-cd)pyrene), 310 µg/Kg (fluoranthene), and 1,210 µg/Kg (fluoranthene). Fewer (4) PAHs and lower concentrations (20.6 µg/Kg to 79.4 µg/Kg) were detected in the 0.5 to 2 foot sample interval in boring 02-3-B3.

Except for benzo(a)pyrene (66 µg/Kg) in boring 03-B-2a, PAHs were not detected in the 2 to 4 foot sample interval. Owing to split-spoon refusal, a sample from the 2 to 4 foot interval was not collected at 02-3-B5.

PAH concentrations greater than TAGM values include benzo(a)pyrene (66 µg/Kg to 878 µg/Kg) in nine samples from the five borings, and benzo(a)anthracene (614 µg/Kg) and chrysene (643 µg/Kg) detected in the 0.5 to 2 foot sample at boring 02-3-B5.

The distribution and concentrations of the PAHs are consistent with the results presented in the SPRU SV Report. The presence of PAHs is attributable, at least in part, to asphalt commingled with the soil. The boring logs indicate the presence of slag and asphalt in many of the sample intervals. Asphalt is

identified in the 0.5 to 2 foot sample interval at boring 02-3-B5 where the highest single and overall higher concentrations of PAHs were detected. Other possible sources of the diffuse concentrations of PAHs include emissions and possible incidental leaks of petroleum product from heavy equipment, vehicles, and gas-powered hand tools used in this area historically and during recent clearing operations. The occurrence of the overall higher PAH concentrations in the 0.5 to 2 foot sample interval possibly indicates the presence of a former land surface that has since been covered with a veneer of soil that is less affected with PAHs.

4.8.1.2 North of Former Slurry Drum Storage Area

PAHs were detected in 12 of the 13 borings sampled in the area north of the Former Slurry Drum Storage Area: PAHs were not detected in boring 07-6-S. PAHs were detected in the surface sample interval (0 to 0.5 feet) in all 12 borings at concentrations ranging from 5.6 µg/Kg to 4,110 µg/Kg. PAHs were detected only in the surface sample at borings 04-3-S, 07-4-B1, 07-7-S, 07-8-S, and 07-9-S. Owing to the presence of construction and demolition debris, a surface sample only was collected at boring 16-8-S, in which eight PAHs were detected at concentrations up to 1,660 µg/Kg. Three PAHs were detected in the 0 to 0.5 foot sample at boring 07-8-S at concentrations up to 30.1 µg/Kg (fluoranthene), and four PAHs were detected in the 0 to 0.5 foot sample at boring 07-9-S at concentrations up to 32.6 µg/Kg (fluoranthene). A higher number of PAHs was detected in the surface sample at borings 04-3-S (11 PAHs), 07-4-B1 (10 PAHs), and 07-7-S (13 PAHs) at concentrations up to 221 µg/Kg (pyrene), 110 µg/Kg (fluoranthene), and 288 µg/Kg (fluoranthene), respectively.

PAHs were detected in the surface sample and the 0.5 to 2 foot sample, but not in the 2 to 4 foot interval at borings 04-6-S, 04-9-S, 07-1-S, and 07-2-B. More PAHs and higher concentrations of PAHs were typically detected in the surface sample, except at 04-6-S in which five PAHs were detected in the surface sample and eight PAHs were detected in the 0.5 to 2 foot sample at concentrations up to 76.3 µg/Kg (pyrene) and 182 µg/Kg (indeno(1,2,3-cd)pyrene), respectively. At boring 04-9-S, thirteen PAHs at concentrations up to 404 µg/Kg (pyrene) were detected in the surface sample, whereas four PAHs were detected in the 0.5 to 2 foot sample at concentrations up to 40.3 µg/Kg (pyrene). Eleven PAHs were detected in the surface sample at boring 07-1-S at concentrations up to 1,820 µg/Kg (indeno(1,2,3-cd)pyrene), and eight PAHs were detected in the 0.5 to 2 foot interval at concentrations up to 169 µg/Kg (indeno(1,2,3-cd)pyrene). At boring 07-2-B, seven PAHs were detected in the surface sample at concentrations up to 2,020 µg/Kg (indeno(1,2,3-cd)pyrene), and ten PAHs were detected in the 0.5 to 2 foot sample at concentrations up to 205 µg/Kg (indeno(1,2,3-cd)pyrene). The fewer detected PAHs in the surface sample at boring

07-2-B is likely the result of sample dilution during analysis, which may have rendered some of the lower concentrations of PAHs non detectable.

A unique vertical profile of PAHs was found at boring 07-4-B2 where PAHs were detected in the surface interval and 2 to 4 feet interval, but were not detected in the middle 0.5 to 2 foot interval. Seven PAHs were detected in the surface sample at concentrations up to 105 µg/Kg (fluoranthene), and twelve PAHs were detected in the 2 to 4 foot sample at concentrations up to 250 µg/Kg (fluoranthene).

The single highest concentration and overall higher concentrations of PAHs were detected at boring 07-3-B. The surface sample contained thirteen PAHs at concentrations up to 4,110 µg/Kg (fluoranthene). The number of PAHs and concentrations decrease slightly to twelve PAHs in the 0.5 to 2 foot sample and ten PAHs in the 2 to 4 foot sample, at concentrations up to 2,630 µg/Kg (pyrene) and 1,750 µg/Kg (indeno(1,2,3-cd)pyrene), respectively.

PAHs that were detected at concentrations greater than the TAGM values are benzo(a)pyrene (84.4 µg/Kg to 2,250 µg/Kg) in 13 samples from nine borings, chrysene (452 µg/Kg to 2,170 µg/Kg) in 4 samples from two borings, benzo(a)anthracene (225 µg/Kg and 1,650 µg/Kg) in 2 samples from two borings, and benzo(b)fluoranthene (1,470 µg/Kg and 2,600µg/Kg) in 2 samples from one boring.

Overall, the PAH data are consistent with the results presented in the SPRU SV Report. The presence of PAHs is attributable, at least in part, to asphalt and construction and demolition debris commingled with the soil. The highest concentrations of PAHs were found at boring 07-3-B, which is located within fill material in which asphalt was identified. Relatively high concentrations of PAHs also were detected at boring 16-8-S, where construction and demolition debris was found at the surface. Other relatively high concentrations of PAHs were found adjacent to the fill material in the Pyrophoric Area. This suggests that some of the fill material has been redistributed through either natural or mechanical processes.

Other possible sources of the diffuse concentrations of PAHs include emissions and possible incidental leaks of petroleum product from heavy equipment, vehicles, and gas-powered hand tools used in this area historically and during recent clearing operations. Though possibly coincidental, wood, presumably the result of chipping during the land clearing, was found on the surface at many of the borings where PAHs also were detected, except for at borings 07-6-S, 07-8-S, and 07-9-S where few or no PAHs were detected. The deposition of PAHs on the ground surface from these sources is consistent with the typical profile of higher concentrations of PAHs in the surface soil and lower or

non-detectable concentrations at depth. However, the presence of higher concentrations of PAHs at depth in borings 04-6-S and 07-4-B2 indicates that soil has been moved into this area.

As discussed in Section 4.7.3, trace levels of PAHs also were detected in the apparent pyrophoric burn residue found at nearby test pit TP-20. Nine PAHs were detected at concentrations up to 87.8 µg/Kg. The presence of PAHs in the burn residue is not unexpected, but the relatively low concentrations of PAHs do not implicate this particular burn area residue as a likely source of the PAHs detected elsewhere in this investigation area.

4.8.2 SPRU Former Slurry Drum Storage Area - Metals in Soil

4.8.2.1 SPRU SV Boring 3543

As presented in Table 25, the overall metals data are unremarkable, though metals are present in many samples at concentrations greater than background concentrations. The relatively higher concentrations of metals typically correspond to the 0.5 to 2 foot sample interval, which is consistent with the distribution seen in the PAH data. The samples collected at and near the original SPRU SV boring B3543 did not reveal strong evidence of elevated copper, nickel, or silver. At boring 02-3-B1, located adjacent to boring B3543, copper and nickel concentrations are within background concentrations and silver (0.11 mg/Kg) is greater than background (0.09 mg/Kg) only in the 0.5 to 2 foot sample. Vanadium (26.8 mg/Kg) and selenium (1 mg/Kg) are slightly greater than their respective background concentrations (25.4 mg/Kg and 0.21 mg/Kg) in the 0 to 0.5 foot sample. The concentration of vanadium is higher in the 0.5 to 2 foot sample (36.9 mg/Kg) and the 2 to 4 foot sample (36.9 mg/Kg), whereas the selenium concentrations decrease in these sample intervals to 0.71 mg/Kg and not detected at 0.174 mg/Kg, respectively. The duplicate of the 0.5 to 2 foot sample contained antimony (0.51 mg/Kg) and chromium (19.3 mg/Kg) slightly greater than the respective background concentrations (0.29 mg/Kg and 18.8 mg/Kg).

In the borings surrounding 02-3-B1, slightly elevated metals concentrations are present in most of the samples, with antimony, selenium, and vanadium the most prevalent. More elevated metals and higher concentrations are found mostly in the 0.5 to 2 foot sample interval in borings 02-3-B2A, 02-3-B3, and 02-3-B4. Only in the 0.5 to 2 foot sample at boring 02-3-B3 was nickel (56.8 mg/Kg) elevated above the associated background concentration (33.8 mg/Kg). Other metals present in this sample at concentrations greater than background include antimony (0.91 mg/Kg), barium (100 mg/Kg), chromium (22.5 mg/Kg), selenium (1.1 mg/Kg), silver (0.11 mg/Kg), and vanadium (34.5 mg/Kg). The highest vanadium (73.8 mg/Kg) and selenium (2.9 mg/Kg) concentrations were detected in the 0.5 to 2 foot sample interval at boring 02-3-B2A.

Chromium (19.8 mg/Kg), lead (19.2 mg/Kg), and silver (0.14 mg/Kg) were slightly greater than background concentrations in this sample. The 0 to 0.5 foot sample interval at boring 02-3-B4 contained the highest chromium (25 mg/Kg) concentration, and the 0.5 to 2 foot sample at this location contained a relatively high concentration of vanadium (48.6 mg/Kg). At boring 02-3-B5, where the highest PAH concentration was detected, the heavy metals data are unremarkable; antimony (0.72 mg/Kg), chromium (20.2 mg/Kg), lead (16.8 mg/Kg), selenium (0.32 mg/Kg), and vanadium (28 mg/Kg) are marginally greater than background concentrations in the 0 to 0.5 foot sample interval; and only antimony and selenium are greater than background concentrations in the 0.5 to 2 foot sample interval.

The metals data are consistent with the results provided in the SPRU SV Report. Sporadic and overall marginally elevated concentrations of metals are present, but evidence of a more concentrated source area or a profile of metals indicative of a source material was not found. The elevated metal concentrations appear to be associated with incidental debris commingled with the soil. As previously indicated for the PAH data, the boring logs indicate the presence of slag and asphalt in many of the sample intervals. Based on the unremarkable metal results at boring 02-3-B5, the asphalt does not appear to impart a significant metal profile on the soil. However, some material, possibly the slag, appears to have had some affect on the metal profile in the soil. The detection of relatively high concentrations of calcium and manganese in the presence of other elevated metals indicates the influence from a material bearing those metals, possibly concrete. The occurrence of the overall higher metal concentrations in the 0.5 to 2 foot sample interval possibly indicates the presence of a former land surface that has since been covered with a veneer of soil that is less affected with metals.

Antimony, selenium, and vanadium are elevated relative to background concentrations in the most samples. The antimony, selenium, and, at times, vanadium detections appear to be related to an overall higher laboratory reporting concentration of naturally occurring antimony, selenium, and vanadium. Elevated concentrations of these metals are found elsewhere in the LDA in seemingly otherwise unaffected soil. Some of the vanadium concentrations, however, appear to be elevated.

4.8.2.2 North of Former Slurry Drum Storage Area

A profile of elevated metals is present in many of the borings located north of the Former Slurry Drum Storage Area. The metal profile is typified by elevated mercury in most of the surface samples, along with elevated cadmium, chromium, silver, lead, selenium, and zinc. Other metals elevated in fewer samples include arsenic, barium, copper, and vanadium.

The distribution of the elevated metals is not entirely consistent with the presence of elevated PAHs. The highest PAHs were detected at boring 07-3-B; however, only a few marginally elevated metals were detected at this boring. Cadmium (0.44 mg/Kg), lead (34.5 mg/Kg), zinc (84.3 mg/Kg), and antimony (0.62 mg/Kg) are elevated in the surface sample. Lead (22.8 mg/Kg) and antimony (0.78 mg/Kg) are elevated in the 0.5 to 2 foot sample. At boring 07-6-S, PAHs were not detected, but many metals are elevated in the surface sample, including arsenic (10 mg/Kg), barium (106 mg/Kg), cadmium (0.6 mg/Kg), chromium (33.4 mg/Kg), copper (39.1 mg/Kg), lead (24.5 mg/Kg), mercury (0.26 mg/Kg), selenium (1.4 mg/Kg), silver (0.25 mg/Kg), vanadium (34.9 mg/Kg), and zinc (89.2 mg/Kg). The number of elevated metals decreases in the deeper sample intervals, though chromium (28.4 mg/Kg), lead (18.8 mg/Kg), selenium (0.42 mg/Kg), silver (0.16 mg/Kg), and vanadium (29.9 mg/Kg) remain elevated in the 2 to 4 foot interval. Boring 07-7-S contained low concentrations of PAHs in the surface sample, but no strong evidence of an elevated metal profile. Antimony (0.47 mg/Kg), lead (16.9 mg/Kg), and selenium (0.68 mg/Kg) are only marginally greater than background concentrations in the surface sample.

At borings 07-8-S and 07-9-S, only trace concentrations of a few PAHs were detected. However, elevated metals are present at these locations, with more elevated metals and higher concentrations found at boring 07-8-S. Mercury is not elevated in either boring, yet many metals elevated in other borings are also elevated in these borings, including barium, chromium, copper, lead, selenium, silver, vanadium, and zinc. The highest copper concentration (152 mg/Kg) was found in 07-8-S, but copper was not elevated in 07-9-S. Relatively high concentrations of selenium are present at both borings. Barium, chromium, selenium, silver, thallium, and vanadium remain elevated in the 2 to 4 foot sampling in both borings.

The metals profile in borings 07-8-S and 07-9-S exhibits characteristics unique to these two borings. Nickel (45.5 mg/Kg) is elevated in the surface sample at boring 07-8-S, and is the only elevated nickel found in the 13 borings sampled north of the Former Slurry Drum Storage Area. Also, thallium is elevated in both 07-8-S and 07-9-S, which are the only locations where thallium is elevated. Absent in borings 07-8-S and 07-9-S are elevated concentrations of arsenic and cadmium, which are typically elevated in other samples exhibiting a similar suite of elevated metals.

Borings 07-8-S and 07-9-S are nearby and topographically down slope from the apparent pyrophoric burn residue found at test pit TP-20. As indicated in Table 23 and discussed previously in Section 4.7.5, the black material exhibits a unique metal profile, some of which is consistent with that seen at borings 07-8-S and 07-9-S. Relatively high concentrations of chromium, copper, nickel, selenium, silver, and vanadium were detected in the black material; whereas arsenic and cadmium

were not detected. However, the presence of cobalt in the black material and the absence of thallium in the black material are not consistent with the results for borings 07-8-S and 07-9-S.

The results for borings 04-3-S, 04-6-S, 04-9-S and northward through borings 07-4-B2, 07-1-S, 07-4-B1, and 07-2-B exhibit a profile of metals consisting typically of elevated mercury, cadmium, chromium, lead, and silver. At boring 04-6-S, mercury was not elevated, but elevated metals are present in the 0.5 to 2 foot sample, which is consistent with the PAH data. The overall highest concentrations of metals were detected in the surface sample at boring 07-2-B, including the highest concentration of mercury (4.4 mg/Kg). Other elevated metals include arsenic (8.9 mg/Kg), barium (99.2 mg/Kg), cadmium (1.9 mg/Kg), chromium (74.3 mg/Kg), copper (125 mg/Kg), lead (65.5 mg/Kg), silver (14.4 mg/Kg), vanadium (34.8 mg/Kg), and zinc (256 mg/Kg). Metals concentrations are also elevated in the 0.5 to 2 foot sample, but decline to essentially background concentrations in the 2 to 4 foot sample. These results are similar to those for boring 07-6-S. A similar suite of elevated metals also is evident at boring 16-8-S.

4.8.3 SPRU Former Slurry Drum Storage Area – Conclusions and Recommendations

Overall, the PAH and metals data are consistent with the results provided in the SPRU SV Report. In the area of SPRU SV boring B3543, diffuse concentrations of PAHs were detected, which appear to be associated with incidental pieces of asphalt commingled with the soil. Other possible sources of the PAHs include emissions and possible incidental leaks of petroleum product from vehicles and equipment used in this area. Evidence of a significant and mobile source of the PAHs was not found. Sporadic and overall marginally elevated concentrations of metals were detected, but evidence of a more concentrated source area or a profile of metals indicative of a source material associated with the Former Slurry Drum Storage Area was not found. The elevated metal concentrations appear to be associated with incidental debris (e.g., slag) commingled with the soil. The concentrations of PAHs and metals are higher overall in the 0.5 to 2 foot sample interval, which possibly indicates the presence of a former land surface that has since been covered with a veneer of soil.

For the investigation area north of the Former Slurry Drum Storage Area, the PAH and metals are generally consistent with the results presented in the SPRU SV Report. However, the tighter density of borings and soil samples in this area has revealed profiles of detected PAHs and elevated metals. The highest PAH concentrations are located in and near the fill material in the Pyrophoric Area, where asphalt and construction and demolition debris were found. The concentrations of PAHs are typically higher in the surface soil samples over most of the area, indicating that PAHs became located at the ground surface, or soil containing PAHs was redistributed in the investigation area. Emissions and incidental leaks from vehicles and equipment also are possible sources of PAHs.

Although overall unremarkable, the metals data for the samples collected north of the Former Slurry Drum Storage Area indicate that the soil has been affected by metals. In the northeast portion of this study area, apparent pyrophoric burn residue is visually evident and a unique profile of elevated metals is associated with that material. Soil samples from borings nearby and down slope of the pyrophoric burn residue exhibit a profile of elevated metals that could, in part, be attributed to the burn residue, indicating that the burn residue may have migrated westward via surface water. However, significant differences exist between the metals profiles, indicating either a separate source of the metals or commingling with another source of the metals.

The profile of elevated metals found across much of study area north of the Former Slurry Drum Storage Area is consistent with the metals profile in the SPRU tank waste identified in Reference (15). Commingling of the soil with other sources of elevated metals is possible, particularly considering the proximity to the buried material in the Pyrophoric Area, where elevated concentrations of many metals were found. However, the fill material in the Pyrophoric Area where the highest PAH concentrations were detected did not exhibit a profile of elevated metals. Further, PAHs were not detected in a nearby boring, yet a profile of elevated metals is evident. These data together with the PAH data indicate that various placements of soil, possibly associated with different sources of PAHs and metals, may have occurred in this area.

For the area of SPRU SV boring B3543, further investigation is not considered necessary. The source of the PAHs and elevated metals appears to be incidental debris commingled with the soil. The debris is typically visible, thereby providing a reasonable indicator of PAHs and metals. Therefore, further characterization is not needed to identify affected soil. Further investigation is recommended for the nearby Former Landfill, where similar debris has been found.

For the area north of the Former Slurry Drum Storage Area, further action is recommended to characterize the extent of PAHs and metals in the soil to the north and down slope of the study area. It is anticipated that this characterization will be performed as part of further characterization efforts associated with the Pyrophoric Area.

5.0 Groundwater Investigation

The Groundwater Investigation was implemented to characterize the nature and extent of VOCs detected historically in groundwater at monitoring well W-3, which is located down gradient of the Pyrophoric Area. At least one of the VOCs PCE, TCE, and total 1,2-DCE had been detected in W-3 during routine groundwater monitoring since 1987.

The scope and general sequence of work performed for the Groundwater Investigation is summarized in Table 1. Figure 6 shows the locations of the drilled borings, wells, seeps, and surface water locations sampled during the Groundwater Investigation. Soil borings SB-30, 31, 32, and 33, located in the C&D Area No.1, were drilled in sequence with the borings associated with the Groundwater Investigation; therefore, these borings are identified in Table 1 and on Figure 6. However, groundwater was not encountered in these borings; therefore, these borings and associated results are more appropriately discussed in Section 4.3.

The Groundwater Investigation was implemented in two principal phases over two field seasons. A key part of the Groundwater Investigation was to evaluate the source of recharge to existing well W-3 and to assess a potential migration path of affected groundwater. As described in Section 3.4, an assessment of W-3 was performed to identify possible hydraulic communication along the well annulus between the deep screened interval of W-3 and the shallow, perched groundwater in which the VOC contamination was believed present. Subsequent to the assessment, well W-3 was overdrilled and replaced with a well constructed with an annulus sealed above the screen, thereby isolating the screen from the shallow groundwater.

The bulk of the fieldwork for the Groundwater Investigation involved the drilling of soil borings and the installation of monitoring wells. Based on the findings in associated soil and groundwater samples, the Groundwater Investigation was expanded as necessary to address the nature and extent of the affected groundwater in the LDA. Initially, twenty direct-push borings were drilled and seventeen groundwater monitoring wells were installed. Groundwater was not found in borings SB-7, SB-11, and SB-13, which were drilled on the western flank of the North Field; therefore, wells were not installed in those borings. As shown on Figure 6, the majority of the borings and wells were located in several arrays situated perpendicular to the apparent groundwater flow from well W-3 northward. Several borings/wells also were located upgradient of W-3, including SB/LMW-12 located in the swale just upgradient of W-3 within the geophysical anomaly indicating possible conductive soil or groundwater; SB/LMW-15, SB/LMW-17 and SB/LMW-18 located between the West Field and W-3;

and SB-13, SB/LMW-14, and SB/LMW-16 located in the western portion of the Pyrophoric Area. Groundwater samples were collected from fifteen of the newly-installed monitoring wells: LMW-8 and LMW-10 were essentially dry and therefore could not be sampled.

Based on the presence of VOCs in down gradient borings/wells SB/LMW-4 and SB/LMW-19, direct-push borings and wells SB/LMW-21, 22, and 23 were drilled and installed to assess the western and northern extent of VOCs. Based on the presence of VOCs in upgradient borings/wells SB/LMW-14, 15, and 16; soil borings/wells SB/LMW-24 and SB/LMW-25 were drilled and installed further upgradient in the Pyrophoric Area and West Field Extended. Deeper borings and wells SB/LMW-15A and SB/LMW-16A were drilled and installed using hollow-stem auger drilling to sample soil at the gray till contact and to better monitor the deeper groundwater at the gray till contact. Groundwater samples were collected from the seven newly-installed wells.

Based on VOCs detected in SB/LMW-24 and SB/LMW-25, direct-push borings and wells were drilled and installed at SB/LMW-26, 27, 28, and 29 to evaluate the southern extent of VOCs in groundwater. A deeper boring was drilled and a well was installed at SB/LMW-24A using hollow-stem auger drilling to sample soil at the gray till contact and to monitor groundwater at the gray till contact. Groundwater samples were collected from the five newly-installed wells plus twenty-three of the existing LDA SV wells. LMW-8 was essentially dry and therefore could not be sampled.

The presence of VOCs in the southern wells LMW-26, 27, 28, and 29 prompted the drilling and installation of borings/wells SB/LMW-34, 35, 36, and 37 further south near the southern boundary of the LDA. Groundwater samples were collected from these four new wells in addition to samples from four seeps and two surface water locations. A pronounced emergence of groundwater from the ground with iron staining was evident at Seep 1, Seep 2, and Seep 3, apparently the result of groundwater convergence into this area. Iron staining was not evident at Seep 4, which exhibited only a trickle of water seeping from the surface of the gray till. The two surface water samples were collected from East Boundary Stream – one downstream and one upstream of the seeps.

Attempts were made to collected soil samples from each boring at the water table interface and the contact with the gray till or other impermeable contacts where VOCs may have accumulated. All soil samples were analyzed for TCL VOCs. All water samples were analyzed for TCL VOCs plus tetrahydrofuran (THF). Hexane was inadvertently analyzed by the analytical laboratory in the first phase of the Groundwater Investigation. Based on a slight sheen on the development water, LMW-16 was also analyzed for TCL SVOCs in the first sampling event. As shown in Table 26, diethyl phthalate (4.4 µg/L), a common analytical laboratory contaminant, was the only SVOC detected.

Although not part of the LDA SV work, LMW-36 was decommissioned on June 16, 2005 owing to its location within an area needed for placement of clean soil from on-site construction activities. The riser pipe and well screen were pulled from the ground and the hole was filled with bentonite-cement grout to a depth of five feet. The interval from five feet to the ground surface was filled with clean silica sand.

5.1 W-3 Assessment and Replacement

As discussed in Section 3.4, the assessment of W-3 consisted of slug and bail tests, during which groundwater levels were monitored for changes in W-3, a Well Point driven into the annulus of well W-3, and well LMW-20 located approximately five feet north of W-3. The slug test was performed first. As described in Section 3.4, the water level in W-3 was raised rapidly by inserting a 4-foot long PVC "slug" into the water column. The water levels in the Well Point and LMW-20 were monitored for corresponding increases in water levels caused by the displacement of water through the W-3 well screen and up through the sand pack to the shallow groundwater.

Figure 9 clearly shows an abrupt approximately 4-foot rise of the water level in W-3 upon insertion of the slug. Water levels subsequently decline slowly toward the pre-test water level. As shown on Figure 10, the water level in the Well Point appears to have responded to the increased water level in W-3. The gradual and subtle 0.1-foot increase of the water level in the Well Point over a relatively long period of time is consistent with a dampened translation of the increased water level in W-3 upward through the well annulus to the well point. The cause of the roughly 0.1-foot drop in the water level in the Well Point after approximately 95 minutes is not apparent, though the decline of the water level below the pre-test level may be a result of a higher initial water level caused by displacement when the transducer was submerged in the Well Point. The 4-foot change in water level in W-3 did not produce a discernible change in water level in LMW-20.

Following a slug test, the slug typically is removed from the well causing a drop in the water level and water levels area measured as the water level recovers. In consideration of the limited water level response in the Well Point during the slug test, a greater change in the water level in W-3 was necessary to better evaluate consequent water level changes in the Well Point and LMW-20 and determine hydraulic communication along the annulus of W-3. Therefore, the second test was a bail test in W-3, for which the water level in W-3 was lowered by purging the well using a bailer. Consequently, the pressure transducer had to be removed from W-3. Owing to slow recharge, W-3 was dewatered, resulting in an approximately 40-foot change in water level within W-3. The water

levels in the Well Point and LMW-20 were monitored for corresponding decreases in water levels caused by the drainage of water down along the sand pack of W-3 and through the well screen.

Figure 11 clearly shows a steady decline of the water level in the Well Point in response to the dewatering of W-3. The drop of the water level in LMW-20 corroborates these findings. Figure 12 shows a slight though clear decline of the water level in LMW-20 for the first 15 to 20 minutes of the test. These data signify that the shallow groundwater was recharging W-3 via the annulus of the well. The flatter slope on Figure 12 after approximately twenty minutes indicates a steady state condition whereby the zone of influence in the shallow groundwater necessary to support the drainage down the annulus of W-3 had been reached. Manual water level measurements in W-3 showed that the water level recovered approximately 10.5 feet in 1.25 hours, or approximately 8.5 feet per hour.

On the day following the slug and bail tests, W-3 was overdrilled with a hollow-stem auger drill rig. The borehole was drilled to 54 feet, removing the well screen, riser, and sand pack. A replacement well with a 5-foot long screen was installed into the bedrock and was isolated from the shallow groundwater by a bentonite and cement grout annular seal. Periodic inspections of the W-3 replacement well did not reveal any measurable groundwater in the well. Therefore, W-3 was not sampled. As part of subsequent Knolls Site routine groundwater monitoring, W-3 replacement has been found to contain water. Upon purging of the well, W-3 replacement has not produced measurable groundwater and has taken months to recover, recovering at an estimated two feet per month.

The results of the slug and bail tests coupled with the protracted recovery of replacement well W-3 clearly show that when the original W-3 was purged for sampling the recharge to the original W-3 occurred almost exclusively from the shallow groundwater via the well annulus. Consequently, VOCs detected historically in the original W-3 were not indicative of affected bedrock groundwater, but were originating from the shallow groundwater, which later is shown to contain VOCs consistent with those found in the original W-3.

5.2 Hydrogeologic Conditions

In support of the later discussion on the nature and extent of VOCs in groundwater, interpretations of the geology and groundwater flow are presented for the area associated with the Groundwater Investigation. This area encompasses the central portion of the LDA roughly defined by the area from the West Field east to the Pyrophoric Area and from the East Boundary Stream north to the Midline Stream.

5.2.1 Geology

The natural geologic deposits in the LDA coupled with the fill material placed in the LDA control the occurrence and movement of groundwater and the extent and migration potential of VOCs found in the LDA. Overall, the geology in this area is comprised of gray till, ice-contact sand and gravel deposits, lacustrine silt and clay deposits, and fill material. To illustrate important features of the geology that evidently are influencing the groundwater flow and associated VOC migration, four geologic cross sections have been constructed along the transects shown on Figure 13.

Figure 14 depicts geologic conditions near the southern end of the investigation area, from the area south of the West Field and east into the Former Landfill. Gray till underlies the entire area. Based on boring logs for wells W-8 and W-1, the thickness of the gray till ranges from approximately 32 feet in the eastern part of the cross section to approximately 40 feet in the western part of the cross section. The surface of the gray till slopes west to east, with an apparent depression in the surface in the area of SB/LMW-35. Up to 24 feet of clayey silt, which transitions into a deeper silty clay, overlies the gray till in the western part of the area. The clayey silt deposit transitions into a fine sand deposit just east of SB/LMW-34. The fine sand is approximately 26 feet thick at SB/LMW-35, with the upper 4 to 5 feet containing some silt. Just east of SB/LMW-35, Figure 14 shows the abrupt change into the western part of the Former Landfill, where 8 to 10 feet of fill material overlies sand and gravel. An approximate 3-foot thick layer of office waste was found at SB/LMW-37 at a depth of five to eight feet below ground surface. The office waste is covered with sandy fill. The area in the vicinity of SB/LMW-37 was used as a sand and gravel pit prior to development of the Knolls Site. The abrupt contacts shown on Figure 14 between the fill material and the deeper sand and gravel and the fill material and the adjacent fine sand are consistent with this area having been excavated and backfilled.

Figure 15 depicts the geologic conditions from the area just north of the West Field eastward through the West Field Extended into the area just south of the Pyrophoric Area. Gray till underlies the entire area. Based on the boring log for nearby well W-2, the thickness of the gray till is approximately 28 feet in the central portion of the cross section, with greater thicknesses expected to the east and west. A depression is depicted in the surface of the gray till in the central portion of the cross section. The surface of the gray till slopes into the depression gently from west and more steeply from the east. Sand and gravel overlies the gray till in most of the area, with up to 15 to 20 feet of sand and gravel located just east of SB/LMW-17 beneath the West Field Extended. The sand and gravel thins to less than ten feet to the west and pinches out to the east between SB/LMW-24 and SB/LMW-29,

where 10 to 12 feet of medium to fine sand overlies the gray till. Borings are not available west of MW-3 to identify the extent of the sand and gravel.

As shown on Figure 15, silt and clay overlies the sand and gravel. The thickness of the silt and clay ranges from 5 feet, where the sand and gravel is thickest, to 16 feet at SB/LMW-24, where the sand and gravel is thinnest. The silt and clay also is relatively thick (14 feet) in the area of MW-3 in the western part of the cross section. In the eastern part of the cross section, the silt and clay transitions into or is draped on the deposit of medium to fine sand. The medium to fine sand may be a transitional deposit associated with the silt and clay, or a finer-grained deposit associated with the larger sand and gravel deposit. Sandy fill with debris is found across the area associated with the West Field Extended. As discussed in Section 4.6.1, the approximately 4 feet of fill near SB/LMW-17 is comprised mostly of sand and gravel with sporadic debris, whereas concentrated debris was found in the 7 to 8 feet of fill near SB/LMW-24. The roughly 10 feet of sandy fill depicted at SB/LMW-29 is based on the presence of unusual black sand in the boring, which was also found at SB/LMW-27.

Figure 16 depicts the geologic conditions from the area just north of the West Field eastward through the West Field Extended and into the western part of the Pyrophoric Area. The gray till underlies the entire area. Borings along or near the cross section did not fully penetrate the gray till; therefore, the thickness of the gray till is not known. However, based on the thickness of gray till to the south at W-2 (28 feet) and to the north at W-3 (22 feet), the thickness of the gray till in this area is estimated at 25 feet. Greater thickness is expected to the east and west. As with Figure 15, a depression is depicted in the surface of the gray till in the central portion of the cross section beneath the West Field Extended and part of the Pyrophoric Area. The surface of the gray till slopes into the depression gently from the west and more steeply from the east. The elevation of the gray till is approximately ten feet higher to the east with indications of trending higher. Sand and gravel overlies the gray till in the western half of the cross section, with up to 22 feet of sand and gravel at SB/LMW-15. The sand and gravel thins to less than ten feet to the west and pinches out to the east between SB/LMW-15 and SB/LMW-16, where approximately 20 feet of silt and clay overlies the gray till. Although not shown on Figure 16, a 1-foot thick layer of silty clay was found from 24 to 25 feet at SB-15 within the lower portion of the sand and gravel. This layer may be correlative with the silt and clay at SB/LMW-16.

The thickness of the silt and clay ranges from 4 feet at SB/LMW-15, where the sand and gravel is thickest, to 20 feet at SB/LMW-16, where the sand and gravel is absent. The silt and clay also is relatively thick (14 feet) in the area of MW-3 in the western part of the cross section. In the eastern part of the cross section, the silt and clay transitions into or is draped on 10 to 12 feet of medium to fine sand. The medium to fine sand may be a transitional deposit associated with the silt and clay,

though the presence of the coarse sand in the bottom two feet suggests that this sand deposit could be associated with the larger sand and gravel deposit. Sandy fill with debris is found across the area associated with the West Field Extended and Pyrophoric Area. As discussed in Section 4.6.1, the approximately 4 feet of fill near SB/LMW-17 and 2 feet of fill at SB/LMW-15 is comprised mostly of sand and gravel with sporadic debris, whereas concentrated debris was found in the approximately 8 feet of fill near SB/LMW-16. As discussed in Section 4.7.1, approximately 5 feet of sandy fill mixed with construction and demolition debris was found in the area of SB/LMW-25.

Figure 17 depicts the geologic conditions just north of the fill area at well W-3, where VOCs had been historically detected. The gray till underlies the entire area. Based on the boring log for W-3, which is located five feet south of SB/LMW-20, the gray till is 22 feet thick in the center of the cross section, with greater thickness expected to the east and west. A narrow depression is depicted in the surface of the gray till, and the surface of the gray till slopes equally into the depression from the east and the west. The lower portion of this depression is filled with approximately 3.5 feet of sand and gravel at SB/LMW-9, and approximately 5.5 feet of medium to fine sand at SB/LMW-20. An additional two feet of medium to fine sand overlie the sand and gravel at SB/LMW-9. Based on the assessment of W-3 presented in Section 5.1 and the geologic conditions depicted on Figure 17, groundwater from the sand found at SB/LMW-20 and possibly the sand and gravel found at SB/LMW-9 provided the recharge to the original well W-3.

Brown till is shown on Figure 17 overlying the gray till on the flanks of the depression. The brown till may have formed from the gray till before becoming covered with silt and clay. The abrupt vertical contact between the brown till and the sand and gravel in the eastern portion of the cross section depicts a possible erosion face caused by surface water flowing through this area. Up to 14 feet of silt and silty clay overlies the brown till and sand deposit. The silt and clay is thickest at SB/LMW-20 and thins to approximately 5 feet at SB/LMW-11. Pockets of fine sand are present in the silt as shown at SB/LMW-10.

As a result of the depressions in the surface of the gray till depicted on each cross section, the surface elevation of the gray till was mapped across the entire area of the Groundwater Investigation. As shown on Figure 18, the depressions shown on the cross sections appear to be part of a continuous trough in the surface of the gray till which slopes south to north from the Former Landfill to the Midline Stream. The surface of the gray till slopes into the trough gently from the west and more steeply from the east. The trough apparently narrows in the area of well W-3, where a small northeast trending ridge in the gray till apparently forms the constriction. North of the constriction the trough widens and slopes more steeply toward Midline Stream.

Based on the presence of sand and gravel in many borings, a contour map of the thickness of the sand and gravel was constructed to illustrate the extent and magnitude of the sand and gravel deposit through the area of the Groundwater Investigation. The map is based on the presence of sand and gravel, though adjacent and nearby deposits of sand only may or may not be associated with the coarser sand and gravel deposit.

As shown on Figure 19, the sand and gravel occurs as an elongated deposit aligned in a general north-south direction from the Former Landfill north to the Midline Stream. The location of the sand and gravel roughly coincides with the trough in the gray till surface. The sand and gravel is thickest (22 feet) at SB/LMW-15 and is relatively thick (10 to 15 feet) beneath the West Field Extended to the Former Landfill. The eastern extent of the sand and gravel is defined by borings, though the extent of the sand and gravel into the eastern portion of the Former Landfill is an extrapolation of the trend of the deposit. The sand and gravel evidently is absent to the east and is inferred to terminate to the west beneath the West Field. The inferred western extent of the sand and gravel is based on the absence of sand and gravel directly south of the West Field (see Figure 14) and an apparent overall symmetry of the deposit along the north-south axis of the deposit. As depicted on Figure 19, the sand and gravel deposit is 250 to 300 feet wide.

The depiction of a relatively flat surface in the Former Landfill is consistent with the former use of the area as a sand and gravel pit, which likely would have resulted in a flat surface within the deposit. The thickness contours deflect toward SB/LMW-29 which may indicate that the sand deposit found at SB/LMW-29 is related and possibly connected to the larger sand and gravel deposit.

North of the fill area, the sand and gravel is shown on Figure 19 to bifurcate around SB/LMW-8 in the area of the small ridge of gray till depicted on Figure 18. A relatively thin (1 to 4 feet) deposit of sand and gravel is present within the narrow trough in the gray till east of SB/LMW-8. As discussed previously and shown on Figure 17, sand deposits also are present within the narrow trough. However, the bulk of the sand and gravel deposit apparently extends through the area west and north of SB/LMW-8. Figure 19 depicts fifteen or more feet of sand and gravel in this area.

5.2.2 Groundwater Flow

In support of the later discussion on the nature and extent of VOCs in the groundwater in the LDA, groundwater contour and flow direction maps were constructed for the area associated with the Groundwater Investigation. The groundwater contour maps are based on groundwater levels measured on September 18, 2003 and March 1, 2004, the data for which are provided in Table 27.

The resultant groundwater elevation contours and flow directions are shown on Figure 20 and Figure 21. The presence of various geologic material of contrasting permeability coupled with the changeable geologic conditions across the investigation area introduces uncertainty in the construction of the groundwater contour maps. However, the groundwater elevations and flow depicted on the Figure 20 and Figure 21 area a best-fit interpretation based on available data and information. As indicated in the notes on Figure 20 and Figure 21, standing water at and around wells MW-3, LMW-12, and LMW-20 evidently affected the groundwater level in each well. Therefore, groundwater elevations for LMW-12 were excluded from the groundwater flow interpretation on Figure 20, and groundwater elevations for MW-3, LMW-12, and LMW-20 were excluded from the groundwater flow interpretation on Figure 21.

Figure 20 and Figure 21 each show a similar pattern of groundwater contours and flow directions. An area of higher groundwater elevation is present within the apparent center of the fill material in the West Field Extended and the Pyrophoric Area. This is consistent with a greater amount of surface recharge entering the relatively porous fill and forming a mound in the groundwater surface. Another important feature depicted in the groundwater flow maps is an apparent groundwater divide in the general area between SB/LMW-18 and SB/LMW-24/24A. Groundwater flows into this area from the east and west flows and then diverges to the north and south. The location of the divide and the north and south components of groundwater flow coincide with the presence and orientation of the sand and gravel deposit shown Figure 19.

As shown on Figure 20 and Figure 21, groundwater flows subradially from the central mound of groundwater. Groundwater in the Pyrophoric Area assumes a northward flow direction and trends toward and along the trough in the gray till shown on Figure 18. Groundwater beneath much of the West Field Extended and the West Field flows from the east and west, respectively, into the sand and gravel and then flows northward apparently within the sand and gravel deposit. Groundwater beneath part of the southern portion of the West Field Extended flows west into the sand and gravel and then flows southward apparently within the sand and gravel. Groundwater beneath the south-central and southeastern portions of the West Field Extended and the area just south of the Pyrophoric Area flows south toward the Former Landfill and apparently converges with all the southward flowing groundwater in the western part of the Former Landfill. Seeps emerging near the base of the slope on the western part of the Former Landfill are consistent with groundwater convergence and may represent drainage from the sand and gravel deposit.

The area of high groundwater elevation depicted on Figure 20 and Figure 21 is based on the groundwater elevations associated with wells LMW-16 and LMW-24, which are located within the fill

area where an apparent mounding of the water table has occurred as a result of the porous fill material. Wells LMW-16 and LMW-24 were installed in direct-push borings and each have sand packs that extend to within approximately five feet of the ground surface to allow monitoring of potential partings and seams of sand within the silt and clay deposit that may contain VOCs. These wells do not extend to the gray till contact. To monitor the deeper groundwater at and near the gray till contact, wells LMW-16A and LMW-24A were installed via hollow-stem auger drilling and the annulus of each well is sealed above the well screen with bentonite and bentonite-cement grout, thereby isolating the well screens to the deeper groundwater only. Well LMW-15A was similarly installed. Figure 22 shows the locations of the well screen for the three paired wells LMW-15/15A, LMW-16/16A, and LMW-24/24A.

As indicated in Table 27, the groundwater elevation in LMW-16 was more than 1-foot higher than the groundwater elevation in the paired well LMW-16A for both rounds of groundwater measurements. Similarly, the groundwater elevation in LMW-24 was higher than in LMW-24A for both rounds of groundwater measurements, with the greater difference of over 3 feet occurring in March 2004, during the spring thaw. The groundwater elevations were the same in LMW-15 and LMW-15A in both rounds of groundwater measurements, which is consistent with the uniform and thick deposit of sand and gravel with only a thin cover of silt and clay.

To assess the groundwater flow pattern and potential VOC migration path associated with the deeper groundwater, the groundwater elevation contours were reconfigured to account for the groundwater elevations at LMW-15A, LMW-16A, and LMW-24A. Figure 23 and Figure 24 depict the reconfigured groundwater elevation contours and flow directions for the central portion of the investigation area affected by the changed groundwater elevations. The groundwater elevation for the rest of the area would remain as on Figure 20 and Figure 21. Also, smaller contour intervals in tenths of feet were used to illustrate the contour pattern.

As shown on Figure 23 and Figure 24, the groundwater contour and flow pattern changed from a mound in the fill area to a ridge of groundwater originating from the southwest corner of the Pyrophoric Area and pushing out into and under the Pyrophoric Area and West Field Extended toward the sand and gravel deposit. This pattern is indicative of a groundwater recharge area on the fringes of the Pyrophoric Area, which is consistent with the sand deposits found in this area at SB/LMW-25 and SB/LMW-29. Boring data and interpretations on the cross sections indicate that the sand deposits near the Pyrophoric Area likely are connected to the larger sand and gravel deposit central to the fill area. The location of the groundwater divide is not affected.

5.3 Groundwater Investigation – VOCs in Soil

As indicated in Table 28, the chlorinated VOCs PCE, TCE, and cis-1,2-DCE are the principal group of VOCs that were detected in the soil borings drilled for the Groundwater Investigation. Overall, PCE was detected at higher concentrations and appears to be the parent VOC, with TCE and cis-1,2-DCE occurring as breakdown products of the PCE. However, as discussed later, TCE may be present independent of PCE in the southern portion of the investigation area. One or more of the VOCs PCE, TCE, and cis-1,2-DCE were detected in 18 borings. Trace concentrations of related breakdown VOCs vinyl chloride and 1,1-DCE were detected in three borings and one boring, respectively. Trace concentrations of one or more of the group of secondary VOCs were detected in 12 borings. The secondary VOCs include acetone, toluene, methylene chloride, 2-butanone, carbon disulfide, chloroform, benzene, ethylbenzene, total xylenes, chlorobenzene, and bromomethane.

The highest overall concentrations of VOCs were detected north of the Pyrophoric Area. The highest concentrations of PCE (43,600 µg/Kg), TCE (2,360 µg/Kg), and cis-1,2-DCE (475 µg/Kg) were detected at SB-12, in the sample collected from 17 to 17.5 feet near the gray till contact. The shallower sample collected from 14 to 14.5 feet at SB-12 contained only a trace of PCE (4.7 µg/Kg) and vinyl chloride (8 µg/Kg). Relatively high concentrations of PCE also were detected at SB-20 (12,000 µg/Kg), SB-9 (6,760 µg/Kg), and SB-14 (1,920 µg/Kg); all in soil samples collected at or near the gray till contact. Corresponding shallower samples from SB-9 and SB-20 did not contain detectable VOCs, and the shallower sample from SB-14 contained only a trace of PCE (11.4 µg/Kg). The concentrations of TCE and cis-1,2-DCE, though much less in magnitude, exhibit a similar distribution; higher concentrations in the deeper samples and lower concentrations in the shallower samples. Trace levels of the breakdown product VOCs vinyl chloride (1.1 µg/Kg) and 1,1-DCE (0.60 µg/Kg) were also detected in the deeper sample at SB-9.

The same distribution of PCE was found further north at SB-4 and SB-5, through at much lower concentrations; the PCE concentration detected in the deeper sample at SB-4 and SB-5 is 202 µg/Kg and 116 µg/Kg, respectively. A trace of PCE (4.9 µg/Kg) was detected further north at SB-19, though not in the deeper sample. However, the shallower sample was collected at a contact with a relatively impermeable clay deposit just above the gray till. The northernmost boring at which a VOC was detected was SB-21, where a trace of PCE (1.4 µg/Kg) was detected in the sample collected at the water table; PCE was not detected in the deeper sample at the gray till contact.

The distribution of chlorinated VOCs is similar in the southern portion of the Pyrophoric Area. At SB-16 and SB-16A, chlorinated VOCs were not detected in the shallower sample but

PCE (1,150 µg/Kg), TCE (49.3 µg/Kg), and cis-1,2-DCE (19.8 µg/Kg) were detected in the sample from the impermeable clayey surface just above the gray till. The data for SB-25 exhibit a similar profile, though not of the same magnitude. Just west of the Pyrophoric Area, at SB-15 and SB-15A, a similar distribution of the chlorinated VOCs was found. Only trace concentrations of PCE (33.8 µg/Kg), TCE (2.4 µg/Kg), and cis-1,2-DCE (0.97 µg/Kg) were detected in the shallower water table sample. However, higher concentrations of PCE (3,440 µg/Kg), TCE (150 µg/Kg), and cis-1,2-DCE (47 µg/Kg) were detected in the deeper sample collected from 24 to 24.5 feet at an impermeable clayey contact above the gray till. Notable in the data for SB-15 and SB-15A is the presence of 1,1,1-TCA (3.7 µg/Kg) and 1,2-DCA (9.0 µg/Kg) in the sample from 24 to 24.5 feet. The presence of these VOCs from the "ethane" family indicates a source of these VOCs separate from the "ethylene" family of chlorinated VOCs such as PCE, TCE, and cis-1,2-DCE.

PCE was detected in only two borings south of the Pyrophoric Area – SB-24A (83.2 µg/Kg) and SB-29 (1.6 µg/Kg). At SB-24A, the PCE was detected in the deeper sample collected at the gray till contact. However, PCE was absent from the two shallower samples collected at the bottom of the fill and at the water table. Cis-1,2-DCE (1.2 µg/Kg) and vinyl chloride (4.6 µg/Kg) were detected in the sample collected from just below the fill, and TCE (134 µg/Kg) and vinyl chloride (9.6 µg/Kg) were detected in the sample collected at the water table. At SB-29, a trace of PCE (1.6 µg/Kg) was detected in the sample collected from the water table, but PCE was not detected in the sample collected from the gray till contact.

South of SB-24 and SB-24A, TCE was detected mostly in the samples collected at the water table at borings SB-26 (0.55 µg/Kg), SB-28 (36.9 µg/Kg), and SB-35 (124 µg/Kg). Cis-1,2-DCE (9.2 µg/Kg) also was detected at SB-26. Except for a trace of TCE (0.65 µg/Kg) at SB-35, none of the principal chlorinated VOCs and breakdown products was detected in the samples collected at the gray till contact south of SB-24 and SB-24A.

The soil concentrations of PCE at SB-9 (6,760 µg/Kg), SB-12 (43,600 µg/Kg), SB-14 (1,920 µg/Kg), SB-15 (3,440 µg/Kg), and SB-20 (12,000 µg/Kg) are greater than the TAGM value for PCE (1,400 µg/Kg). All of these concentrations correspond to samples collected below the water table at or near the gray till contact at depths ranging from 15 to 25 feet. The concentrations of TCE (2,360 µg/Kg) and cis-1,2-DCE (475 µg/Kg) at SB-12 also are greater than the TAGM values for TCE (700 µg/Kg) and cis-1,2-DCE (250 µg/Kg).

Trace concentrations of secondary VOCs were detected in twelve borings, with most of the detections and slightly higher concentrations occurring in the borings within and south of the fill material. None of the concentrations for the secondary VOCs is greater than the associated TAGM values.

Acetone was detected in two samples from two borings SB-2 (7.3 µg/Kg) and SB-6 (6.1 µg/Kg) north of the Pyrophoric Area. From the Pyrophoric Area south to the Former Landfill, acetone was detected in eight borings (SB-16, 16A, 24, 29, 34, 35, 36, and 37), at concentrations ranging from 4.9 µg/Kg to 101 µg/Kg. The highest concentration of acetone was detected at SB-24, in the sample collected from just below the fill material at 5 to 5.5 feet. Relatively high concentrations of acetone also were detected in samples collected just below or within fill material at SB-16 (56.3 µg/Kg) and SB-37 (31.4 µg/Kg).

Toluene was detected in one sample from boring SB-11 (0.40 µg/Kg), which is located north of the Pyrophoric Area. From the Pyrophoric Area south to the Former Landfill, toluene was detected in seven borings (SB-15A, 16, 16A, 29, 35, 36, and 37) at concentrations ranging from 0.68 µg/Kg to 6.1 µg/Kg. Owing to the relatively uniform concentrations, an association between the magnitude of the toluene concentrations and the location of the samples in the soil column is not evident in the data.

Methylene chloride was detected in five borings (SB-15A, 16A, 29, 34, and 36) from the Pyrophoric Area south at concentrations ranging from 2.5 µg/Kg to 7.0 µg/Kg. All of the samples in which methylene chloride was detected were collected at or below the gray till contact.

The VOC 2-butanone (synonym methyl ethyl ketone; MEK) was detected in three borings (SB-16, 24, and 37) from the Pyrophoric Area south to the Former Landfill at concentrations ranging from 6.7 µg/Kg to 16.4 µg/Kg. The highest concentration corresponds to the sample in which the highest concentration of acetone was detected. All three samples in which 2-butanone was detected were collected just below or within the fill material.

Carbon disulfide was detected in three borings (SB-29, 35, and 37) south of the Pyrophoric Area to the Former Landfill at concentrations ranging from 2.6 µg/Kg to 4.4 µg/Kg. The samples from SB-29 and SB-35 were collected at the gray till contact, whereas the sample from SB-37 was collected at the contact of the surface soil fill and the underlying office waste.

Total xylenes were detected at SB-29 (1.1 µg/Kg) and SB-37 (12.8 µg/Kg), with the higher concentration at SB-37 corresponding with the sample collected from the soil/office waste contact.

Benzene (0.66 µg/Kg), ethylbenzene (50.6 µg/Kg), and chlorobenzene (7.8 µg/Kg) were detected only in the sample collected from the soil/office waste contact.

Chloroform (5.0 µg/Kg) was detected only at SB-15A, in the sample collected from 24 to 24.5 feet, which is the sample in which relatively high concentrations of the principal chlorinated VOCs were detected. Bromomethane (481 µg/Kg) was detected only at SB-12 in the deeper sample collected from 17 to 17.5 feet at the impermeable clay contact, where the highest concentrations of chlorinated VOCs were detected

The presence of relatively high concentrations of the chlorinated VOCs PCE, TCE, and cis-1,2-DCE at or near the gray till contact within and north of the Pyrophoric Area indicates that VOCs have migrated vertically through the fill and soil column to the relatively impermeable gray till and are moving preferentially along the overall northward sloping surface of the gray till. The absence of significant VOCs in the shallower soil samples from borings drilled within the fill material indicates that the bulk fill material is not the source of the VOCs, rather discrete source areas of concentrated VOCs are likely present within the fill. Results for test pit TP-41, discussed in Section 4.7.2, indicate a probable source area of chlorinated VOCs at or near this test pit location in the Pyrophoric Area.

The detection of the VOCs from the "ethane" family of VOCs at SB-15/15A is consistent with the detection of 1,2-DCA in the soil sample from test pit TP-23, located south of SB-15/15A. Although the trace concentration of 1,2-DCA detected in test pit TP-23 is not indicative of a source area at this location, the presence of the "ethane" VOCs west of the Pyrophoric Area and west of SB-16/16A and SB-24/24A indicates the presence of a source of these VOCs in the fill material of the West Field Extended. The "ethane" VOCs apparently have become commingled with the "ethylene" VOCs also found at SB-15/15A.

The presence of principally TCE in the soil sample collected from the water table at SB-24 and the presence of principally PCE in the soil sample collected from SB-24A at the gray till contact may be indicative of separate sources of these VOCs in this area. As shown in cross section on Figure 15 and the well pairs on Figure 22, the deeper sand and gravel at SB-24/24A is isolated from the surface by approximately 16 feet of silt and clay. The sand and gravel also appears to be connected to the sand deposits found to the east at SB-25 and SB-29. Based on the slope in the gray till surface, the PCE found in the sand and gravel at SB-24A may have originated in the sand deposits to the east and is not associated with the TCE.

PCE was not detected in soil samples south of SB-24/24A, whereas TCE was detected in soil samples from three borings and was detected principally in samples collected at the water table. The absence of higher concentrations in samples from the gray till contact and the detection in mostly water table samples suggests that a less substantial source of TCE is present in the shallow soil column and is migrating south with the groundwater. The absence of more concentrated VOCs in the samples collected from the gray till contact south of SB-24/24A is consistent with the overall northward sloping surface of the gray till, which would preclude VOCs from moving southward along its surface.

The acetone, toluene, methylene chloride, and 2-butanone may be associated with analytical cross contamination. However, the 2-butanone and the higher concentrations of the acetone are associated with samples collected within or adjacent to fill material, which may be a source of these VOCs either through direct placement of the VOCs in the fill or as by-products of decomposition of organic material in the fill. Carbon disulfide also may be associated with the decay of organic material.

5.4 Groundwater Investigation – VOCs in Groundwater

The results for the groundwater samples area provided in Table 29. For comparison and perspective, Table 29 also includes the groundwater standards or guidance values provided in NYSDEC's Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Technical and Operational Guidance Series (TOGs) № 1.1.1 [Reference (16)]; hereinafter referred to as the groundwater standards. As indicated in Table 29 and shown on Figure 25, one or more VOCs were detected above groundwater standards in groundwater samples from eighteen wells (LMW-4, 5, 9, 12, 14, 15, 15A, 16A, 19, 20, 21, 24, 24A, 25, 26, 28, 35, and 37). Groundwater samples from six wells (LMW-1, 10, 16, 18, 27, and 29) contained detectable VOCs, but at concentrations less than groundwater standards; and groundwater samples from eight wells (LMW-2, 3, 6, 17, 22, 23, 34, and 36) did not contain detectable VOCs.

As indicated on Figure 25, the VOCs are present in a north-south trending plume coincident with the fill material and the sand and gravel deposits above the gray till. The eastern extent of the plume is controlled by the less permeable gray till which is present at or near the ground surface just east of the study area. As shown on Figure 20, Figure 21, Figure 23, and Figure 24 groundwater in the sand deposits within and just south of the Pyrophoric Area assumes a northward or southward flow in response to the gray till and apparent hydraulic communication with the larger sand and gravel deposit depicted on Figure 19. The surface of the gray till and the sand and gravel deposit also control the western extent of the plume, whereby the northward sloping trough in the surface of the gray till shown on Figure 18 captures and controls westward VOC migration along the gray till surface,

and the north-south trending sand and gravel deposit acts as a hydraulic sink for eastward and westward flowing groundwater, thereby providing a hydraulic barrier to westward flow.

Based on available hydrogeologic and analytical data, the plume narrows at its northern terminus near LMW-21, apparently moving coincident with the sand and gravel deposits within the narrow trough in the gray till. At the southern end of the plume, groundwater and the associated plume converge into the western part of the Former Landfill, apparently controlled by the presence of the sand and gravel deposit. Seeps located near the base of the slope in this area are consistent with groundwater discharge from the sand and gravel deposit.

PCE is the principal VOC in the groundwater plume from the Pyrophoric Area northward. The highest concentrations of PCE were detected within and adjacent to the Pyrophoric Area at LMW-14 (5,740 µg/L), LMW-9 (3,610 µg/L), and LMW-25 (1,280 µg/L). Other wells north of the Pyrophoric Area in which PCE was detected above groundwater standards include, in order from south to north, LMW-12 (48.2 µg/L), LMW-20 (346 µg/L), LMW-4 (886 µg/L), LMW-5 (407 µg/L), LMW-19 (6.7 µg/L), and LMW-21 (25 µg/L). Near the northern terminus of the plume, concentrations of PCE less than 1 µg/L were detected in nearby well LMW-1 (0.59 µg/L) and recently in W-4 (0.85 µg/L) during routine Knolls Site groundwater monitoring.

TCE and cis-1,2-DCE were detected with the PCE in the same wells identified above, except LMW-19. Overall, the TCE and cis-1,2-DCE were detected at much lower concentrations. TCE concentrations range from 3.6 µg/L in LMW-21 to 77.6 µg/L in LMW-14, and cis-1,2-DCE concentrations range from 1.6 µg/L in LMW-21 to 97.4 µg/L in LMW-12. Cis-1,2-DCE also was recently detected in W-4 (1.0 µg/L) during routine Knolls Site groundwater monitoring.

In the western part of the Pyrophoric Area, the concentration of PCE in LMW-16A (34 µg/L) is greater than the groundwater standard and is higher than the PCE concentration in LMW-16 (1.4 µg/L), which indicates that more concentrated VOCs are deeper in the water column, possibly coincident with the gray till contact, which is consistent with the soil data. However, the concentration of PCE is relatively low compared to the other wells within and near the Pyrophoric Area. The concentrations of PCE are higher west of LMW-16A in LMW-15 (337 µg/L) and LMW-15A (418 µg/L). Further, LMW-15 and LMW-15A also contain 1,1,1-TCA and 1,2-DCA, which are part of the "ethane" family of chlorinated VOCs, which is different from the "ethylene" family of chlorinated VOCs that includes PCE, TCE, and cis-1,2-DCE. Chloroform also was detected in both sampling events for LMW-15 and LMW-15A, which self-validates the presence of chloroform and is consistent with the chloroform detected in the soil sample from SB-15.

The presence of the higher PCE concentrations and the detection of the "ethane" VOCs and chloroform suggest that a separate source of the VOCs exists between the Pyrophoric Area and the location of LMW-15/15A. The surface of the gray till slopes west and north toward the area in which LMW-15/15A are located. Therefore, VOCs present at the surface of the gray till under much of the West Field Extended could become located at LMW-15/15A. Based on the westward and northward groundwater flow toward LMW-15/15A, the source of the "ethane" VOCs and chloroform could be within the area west of LMW-16/16A and LMW-24/24A and north of the groundwater divide. The presence of PCE at LMW-15/15A may be associated with a source area common to the "ethane" VOCs, or the PCE may have migrated from a separate source and has become commingled with the "ethane" VOCs.

The presence of chloroform and 1,1,1-TCA in LMW-21, along with the PCE, TCE, and cis-1,2-DCE, is consistent with the co-migration of these VOCs northward from the area of LMW-15/15A. However, the "ethane" VOCs and chloroform are absent from all wells between LMW-15/15A and LMW-21. This indicates that the groundwater and associated VOCs found at LMW-15/15A may be moving along a narrow flow path separate from the sand and gravel in the narrow trough to the east.

In addition to the PCE, TCE, and cis-1,2-DCE, groundwater samples from LMW-25 also contained carbon tetrachloride (0.53 µg/L), chloroform (0.90 µg/L), and 1,1,2,2-tetrachloroethane (2.6 µg/L). These VOCs were detected in both sampling events from this well, thereby validating the presence of these VOCs. Although present at trace concentrations, the presence of these VOCs may be indicative of separate source area of VOCs. The chloroform may be a breakdown product of the carbon tetrachloride. Based on the location of LMW-25 near the upslope edge of the fill material and the groundwater plume, the source of VOCs in LMW-25 is likely in the immediate vicinity of LMW-25.

The magnitude of concentration and frequency of detection of PCE drops markedly south of the Pyrophoric Area. The highest concentration of PCE in groundwater south of the Pyrophoric Area was detected in LMW-24A (647 µg/L). South of LMW-24A, PCE was detected in only three wells; LMW-28, LMW-29, and LMW-37 at concentrations of 19.2 µg/L, 4.4 µg/L, and 0.98 µg/L, respectively.

Conversely, the highest concentrations of TCE were detected south of the Pyrophoric Area, from LMW-24 south to the Former Landfill. The highest concentration of TCE for the entire investigation was detected in LMW-24 (641 µg/L). The next two highest concentrations of TCE were detected in LMW-37 (418 µg/L) and LMW-35 (135 µg/L). For comparison, the highest concentration of TCE in groundwater from the Pyrophoric Area northward was detected in LMW-14 (77.6 µg/L). Based on the groundwater flow directions depicted on Figure 20 and Figure 21, the TCE in the shallow groundwater

in the area of LMW-24 migrates in an overall southward direction with the groundwater toward the Former Landfill.

The groundwater results from LMW-24 and LMW-24A corroborate the findings in the associated soil samples. Figure 22 shows that LMW-24 is screened within the silt and clay deposit, whereas LMW-24A is screened principally within the deeper sand and gravel. As indicated in Table 29, the groundwater samples from the shallower well LMW-24 did not contain PCE, but did contain TCE (582 µg/L to 641 µg/L), cis-1,2-DCE (4.2 µg/L to 5.6 µg/L), and vinyl chloride (1.2 µg/L to 1.5 µg/L). In contrast, PCE (647 µg/L) was the principal VOC detected in the groundwater sample from the deeper well LMW-24A, with lower concentrations of TCE (10.6 µg/L) and cis-1,2-DCE (3.9 µg/L). These data indicate that possibly a separate shallow source of TCE is present in this area, whereas the PCE has become located deeper in this area from a separate and remote source. Based on the groundwater elevation contours and flow directions shown on Figure 23 and Figure 24, the sand deposits to the east within and just south of the Pyrophoric Area may be contributing to the groundwater and VOCs in LMW-24A. The trace PCE (4.4 µg/L) in LMW-29 may be on the fringe of the source area.

In the area south of the groundwater divide into the Former Landfill, VOCs from the "ethane" family were detected in LMW-26, LMW-28, LMW-35, and LMW-37; and chloroform was detected in LMW-28 and LMW-35. This profile of "ethane" VOCs with chloroform is consistent with that seen in LMW-15 and LMW-15A located north of the groundwater divide. The distribution of the "ethane" VOCs apparently is limited to the western side of the overall VOC plume. The "ethane" VOCs apparently originate in an area west of LMW-16/16A and LMW-24/24A in an area inclusive of the groundwater divide, thereby resulting in the presence of the "ethane" VOCs north and south of the groundwater divide. Absent in the groundwater south of the divide is the principal concentration of PCE seen at LMW-15 and LMW-15A. This may indicate that significant concentrations of PCE are not co-present with the source of the "ethane" VOCs, at least not for the southern portion of the plume.

Based on the southward groundwater flow and convergence of groundwater into the Former Landfill, the detection of PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, vinyl chloride and the "ethane" VOCs in the groundwater from LMW-37 can be attributable to upgradient sources. These VOCs were not detected in the soil samples from SB-37. However, the trace concentrations of benzene (1.1 µg/L), toluene (7.6 µg/L), ethylbenzene (2.8 µg/L), xylene (5.6 µg/L), and chlorobenzene (1.6 µg/L) in the groundwater sample is consistent with the results for the soil sample from SB-37 collected at the soil fill and office waste contact.

The convergence of groundwater into the western part of the Former Landfill apparently has resulted in seeps emerging near the base of the slope of the Former Landfill. Seep 1, Seep 2, and Seep 3, which are located down gradient of the area of groundwater convergence, exhibited pronounced emergence of groundwater from the ground with iron staining; whereas Seep 4, located outside the area of groundwater convergence, exhibited only a trickle of water and was representative of water seeping from the surface of the gray till. As shown on Table 30, the VOCs detected in Seep 1, Seep 2, and Seep 3 are consistent with the upgradient groundwater results. Seep 1 contained TCE (7.4 µg/L), cis-1,2-DCE (22.1 µg/L), and vinyl chloride (5.8 µg/L). Seep 2 contained TCE (21 µg/L), cis-1,2-DCE (20 µg/L), vinyl chloride (7.0 µg/L), 1,1-DCE (0.54 µg/L), and 1,1-DCA (1.0 µg/L). Seep 3 contained cis-1,2-DCE (10.9 µg/L), trans-1,2-DCE (0.53 µg/L), and vinyl chloride (11.9 µg/L). VOCs were not detected in Seep 4. The surface water samples from East Boundary Stream, collected concurrently with the seep samples, did not contain any VOCs.

As discussed in Section 5.3, trace concentrations of acetone, 2-butanone, methylene chloride, carbon disulfide, and toluene were detected in soil samples from borings associated with the Groundwater Investigation. As indicated on Table 29, acetone, 2-butanone, methylene chloride, and carbon disulfide were not detected in any groundwater samples, which indicates these VOCs have not affected groundwater. Trace concentrations of toluene were detected in the first sampling event in wells LMW-9 (1.1 µg/L), LMW-12 (0.84 µg/L), and LMW-18 (0.68 µg/L); however, toluene was not detected in the second sampling event. The concentration of toluene (7.6 µg/L) detected in the sample from LMW-37 is consistent with the presence of the related petroleum VOCs benzene, ethylbenzene, and xylene.

5.5 Groundwater Investigation – Conclusions and Recommendations

Overall, the Groundwater Investigation has effectively defined the limits of the VOC plume in the land disposal area. Initially prompted by the historical detection of VOCs in monitoring well W-3, the results of Groundwater Investigation show that the VOCs found in W-3 were associated with shallow perched groundwater in sand and gravel deposits on the gray till and were not indicative of affected bedrock groundwater. The assessment of recharge to the original well W-3 clearly shows that recharge to the original W-3 occurred almost exclusively from the shallow groundwater via the annulus of W-3. Consequently, VOCs detected historically in the original W-3 were originating from the shallow groundwater which has been shown to contain VOCs consistent with those found in the original W-3. Overdrilling and replacement of W-3 resulted in a well isolated in the bedrock with no apparent hydraulic communication with the perched groundwater.

The geology in the LDA is comprised of gray till, ice-contact sand and gravel deposits, lacustrine silt and clay deposits, and fill material. The gray till underlies the entire LDA and ranges in thickness from 25 to 55 feet. The gray till within the area of the Groundwater Investigation ranges in thickness from 25 to 40 feet beneath fill areas and thins to approximately 20 feet north of the fill area. The gray till is covered with ice-contact deposits or lacustrine deposits, thereby precluding the weathering of the gray till and consequent formation of the brown till. However, some soil boring evidence suggests that thin (2 to 5 feet) isolated pockets of brown till may have formed prior to being overlain by other deposits.

Between the West Field and Pyrophoric Area, an elongated ice-contact deposit of sand and gravel overlies the gray till from the Former Landfill to the Midline Stream. The sand and gravel deposit ranges in thickness from 2 to 4 feet near the edges of the deposit to 15 to 20 feet along the central axis of the deposit. Associated deposits of more uniform finer sand are present adjacent to the coarser sand and gravel.

Lacustrine silt and clay blanket the ice-contact deposits and till deposits. The silt and clay deposits are typically 10 to 20 feet thick, but appear thickest (20 to 25 feet) in the southwest portion of the LDA and thinnest (2 to 5 feet) along the apex of the sand and gravel deposit. Seams and partings of coarse to fine sand are present within the silt and clay. The silt and clay is found at the ground surface unless covered by fill material.

The fill material just east of the West Field is 1 to 3 feet thick and consists of mostly silty and sandy soil containing sporadic construction and demolition debris. The debris nearer the Pyrophoric Area is typically 6 to 8 feet thick and is thinly covered with sandy soil, though some debris is visible at the surface. Three to 6 feet of office paper waste was found in the Former Landfill and is covered with roughly 2 to 5 feet of sandy fill. Up to 8 to 10 feet of sandy fill also appears to be present within and south of the Former Landfill in an area formerly used as a sand and gravel pit prior to development of the Knolls Site.

Groundwater flow and migration of VOCs is controlled by the geologic deposits and the fill material. Available data indicate that the gray till inhibits vertical groundwater flow and migration of VOCs. The surface of the gray till is characterized by a trough that slopes south to north from the Former Landfill to the Midline Stream. The surface of the gray till slopes into the trough gently from the west and more steeply from the east. The trough apparently narrows in the area of well W-3, where a small northeast trending ridge in the gray till apparently forms the constriction. North of the constriction the trough widens and slopes more steeply toward Midline Stream. The north-south trending sand and gravel deposit roughly coincides with the trough in the gray till surface and separates eastward flowing

groundwater from westward flowing groundwater. Once in the sand and gravel deposit, groundwater assumes either a northward or southward flow direction, depending on its position relative to the groundwater divide in the area of LMW-18 and LMW-24/24A. Mounding of the groundwater surface occurs in the central portion of the fill material in the West Field Extended and the Pyrophoric Area, apparently the result of increased recharge through the relatively permeable fill material. Groundwater therefore flows subradially outward from the central portion of the fill area.

VOCs are present in a north-south trending plume coincident with the fill material and the sand and gravel deposits above the gray till. The eastern extent of the plume is controlled by the less permeable gray till which is present at or near the ground surface just east of the study area. Groundwater in the sand deposits within and just south of the Pyrophoric Area assumes a northward or southward flow in response to the gray till and apparent hydraulic communication with the larger sand and gravel deposit. The surface of the gray till and the sand and gravel deposit also control the western extent of the plume, whereby the northward sloping trough in the surface of the gray till captures and controls westward VOC migration along the gray till surface, and the north-south trending sand and gravel deposit acts as a hydraulic sink for eastward and westward flowing groundwater, thereby providing a hydraulic barrier to westward flow.

Based on available hydrogeologic and analytical data, the plume narrows at its northern terminus near LMW-21, apparently moving coincident with the sand and gravel deposits within the narrow trough in the gray till. At the southern end of the plume, groundwater and the associated plume converge into the western part of the Former Landfill, apparently controlled by the presence of the sand and gravel deposit. Seeps located near the base of the slope in this area are consistent with groundwater discharge from the sand and gravel deposit.

PCE is the principal VOC in the groundwater plume from the Pyrophoric Area northward. The highest concentrations of PCE were detected within and adjacent to the Pyrophoric Area. TCE and cis-1,2-DCE are typically co-present with the PCE, but at overall much lower concentrations. West of the Pyrophoric Area at LMW-15/15A, VOCs from the "ethane" family of VOCs, such as 1,1,1-TCA and 1,2-DCA, and chloroform were detected with the PCE in soil and groundwater. A similar profile of VOCs is present in LMW-21 located near the northern terminus of the plume, which is consistent with the co-migration of these VOCs northward from the area of LMW-15/15A. However, this profile of VOCs is not evident in the in-between wells, which indicates the presence of a separate narrow groundwater flow path.

The magnitude of concentration and frequency of detection of PCE drops markedly south of the Pyrophoric Area. TCE is the principal VOC south of the groundwater divide to the Former Landfill, where the highest concentrations of TCE were detected. VOCs from the "ethane" family of VOCs and chloroform also were detected in the area south of the groundwater divide into the Former Landfill. The profile of "ethane" VOCs with chloroform is consistent with that seen in LMW-15 and LMW-15A located north of the groundwater divide, possibly indicating a common source material.

The convergence of groundwater into the western part of the Former Landfill apparently has resulted in seeps emerging near the base of the slope of the Former Landfill. The profile of VOCs in the seep water is consistent with that found in the upgradient groundwater. Surface water in the nearby East Boundary Stream did not contain VOCs.

Relatively high concentrations of chlorinated VOCs were detected at or near the gray till contact within and north of the Pyrophoric Area, indicating that VOCs have migrated vertically through the fill and soil column to the relatively impermeable gray till and are moving preferentially along the overall northward sloping surface of the gray till. The absence of significant VOCs in the shallower soil samples from borings drilled within the fill material indicates that the bulk fill material is not the source of the VOCs, rather discrete source areas of concentrated VOCs are likely present within the fill.

Although the limits of the VOC plume have been effectively defined, additional investigation is recommended to refine the boundaries of the plume and to enhance the understanding of hydrogeologic conditions preparatory to any remedy decisions. Suggested further action recommendations are provided below.

In the Former Landfill, additional borings are recommended to define the eastern extent of the sand and gravel deposit and to characterize the surface of the gray till. Groundwater monitoring wells should be installed as appropriate to confirm the eastern extent of the VOC plume. West of the Former Landfill, borings and wells should be drilled and installed as appropriate to refine the western extent of the VOC plume between LMW-34 and LMW-35. A boring and well also is recommended between LMW-28 and the West Field to confirm groundwater flow direction and the western extent of the VOC plume.

In the area just south of the Pyrophoric Area, borings should be drilled to further characterize the nature and extent of the black sand found in borings SB-27 and SB-29. Borings and wells should be drilled and installed as appropriate around the pyrophoric shed just south of LMW-25 to characterize potential source areas of VOCs and groundwater recharge to the deeper sand and gravel to the west.

Overall, further investigation should be performed to refine the extent of the north-south trending sand and gravel deposit. Borings and wells should be drilled and installed as appropriate along the apparent north-south axis of the sand and gravel from the Former Landfill north to the area of LMW-15/15A, with emphases on identifying the gray till surface and the thickness of sand and gravel, and refining the location of the groundwater divide. Borings should be drilled as appropriate to define the western extent of the sand and gravel.

To address the potential separate groundwater flow and VOC migration path north of LMW-15/15A, borings should be drilled and wells installed as appropriate to characterize the surface of the gray till and to define potential VOC migration flow paths within the sand and gravel deposit west of LMW-8. Emphasis should be placed on confirming the gray till surface in the area of LMW-8.

To refine the monitoring of the VOCs in the sand and gravel deposit north of the Pyrophoric Area, the direct-push wells LMW-9, LMW-12, and LMW-20 should be replaced with wells screened solely within the sand and gravel deposits on the gray till and sealed from the influence from shallower water. Shallower paired wells may be installed if conditions warrant.

6.0 Conclusions and Recommendations

The LDA SV has met the objective of determining the presence or absence of hazardous constituents in the environment associated with known or suspected historical shallow land disposal of solid waste. The release determinations were based mostly on the results of soil samples collected from the following eight areas: 1) Midline Stream, 2) Former Landfill Area (SWMU-002), 3) C&D Area No.1 (SWMU-007), 4) North Field (SWMU-004), 5) Mercury Disposal Area (SWMU-003), 6) West Field (SWMU-006), 7) Pyrophoric Area (SWMU-005), and 8) SPRU Former Slurry Drum Storage Area (SWMU-035). The release determinations were supplemented by soil and groundwater data generated for the Groundwater Investigation, which effectively defined the limits of the VOC plume in the LDA.

As indicated below, additional investigation is recommended in the LDA to further characterize the nature and extent of releases and to enhance the understanding of the hydrogeologic conditions preparatory to any corrective measure decisions. Further investigation will be implemented in accordance with the conditions for a RCRA Facility Investigation prescribed in Reference (1).

6.1 Midline Stream

VOCs were not detected in the Midline Stream sediment samples. Based on these data, the sampling and analysis requirement for the Expanded Site Inspection (ESI) is considered complete and further action is not recommended.

6.2 Former Landfill

Generally low levels of VOCs such as PCE; TCE; and benzene, toluene, ethyl benzene, and xylene (BTEX) are present in the Former Landfill, with an apparent association with the buried office waste. The petroleum-related BTEX compounds appear to be uniquely prevalent in the former landfill. The VOCs in the Former Landfill have affected groundwater, though migration of affected groundwater into the Former Landfill apparently is contributory to the groundwater VOC profile.

Further action is recommended to determine the nature and extent of the fill material in the Former Landfill. The full nature and extent of the VOCs should be determined, and the soil within the Former Landfill should be further characterized for SVOCs, PCBs, and metals.

6.3 C&D Area No.1

The test pits in C&D Area No.1 did not uncover evidence of material buried below the construction and demolition debris visible at the ground surface. TCE and related VOCs have affected the soil along the southern rim of C&D Area No.1 in an area associated with the merged piles of sand and gravel fill and does not appear related to the construction and demolition debris. The lateral extent of the TCE has been roughly determined. However, the vertical extent was not defined at boring SB-33, where the highest TCE concentration was detected at a depth of approximately 11 feet, or 7 feet into roughly 55 feet of gray till. The potential for the TCE at SB-33 to migrate is greatly reduced by the presence of the thick deposit of gray till, which has been shown to inhibit contaminant migration.

Trace concentrations of PAHs and PCBs were found within the area of construction and demolition debris, including the isolated concrete rubble pile. The PAH profile along with the co-presence of PCBs indicates a possible common oil source. Based on the tight soil and the absence of buried material, migration of a liquid from the surface into the soil appears more plausible than the migration of solid particles.

Soluble metals such as calcium, magnesium, and potassium are elevated in some samples, which is consistent with leaching from the construction and demolition debris (e.g., concrete) into the soil. The marginally elevated concentrations of antimony, selenium, and to a lesser extent vanadium appear related to an overall higher laboratory reporting concentration of naturally occurring antimony, selenium, and vanadium and are not necessarily indicative of affected soil.

Additional investigation is necessary in C&D Area No.1 to determine the extent of the TCE and related VOCs. The surface soil within the area containing construction and demolition debris also should be investigated for the presence of metals, PAHs, and PCBs.

6.4 North Field

Ten test pits excavated in the North Field did not reveal buried material or evidence of trenches. Seven test pits were terminated in undisturbed gray till, and three test pits were terminated in undisturbed brown till found along the western side of the North Field.

A possible minor release of gasoline in the North Field at test pit TP-14 is indicated by the detection of trace levels of toluene, ethyl benzene, and xylene. The presence of gasoline was not substantiated by odors or staining. An anomalous detection of cyanide at a relatively high concentration was detected in the same sample, though an association with the VOCs is not apparent.

The detections of trace concentrations of methylene chloride and toluene in test pits TP-13, TP-17, and TP-19; and 1,1-DCE in test pit TP-13 are not indicative of disposal activities in the North Field. These test pits all are located along the eastern side of the North Field and extensive investigation in this area by DOE-SPRU has shown that methylene chloride, toluene, and 1,1-DCE are not widespread and are not VOCs of concern east of the North Field.

The presence of trace concentrations of PCE and TCE together with PCBs in test pit TP-39, located in the southwest corner of the North Field, is consistent with the detection of these compounds in the adjacent Pyrophoric Area. The metals data for test pit TP-39 are consistent with background and evidence of fill within the test pit was not noted; however, the upper one foot of soil may represent the fringe of the surface fill in the Pyrophoric Area.

Based on available data, most of the North Field does not warrant further action. However, apparent minor gasoline release at test pit TP-14 and an anomalous concentration of cyanide should be evaluated further. Further action for the Pyrophoric area will address the chlorinated VOCs and PCBs found at TP-39.

6.5 Mercury Disposal Area

Although the chemical profile in the Mercury Disposal Area is overall unremarkable, there are subtle indicators of a minor affect on soil concentrations of PAHs, PCBs, metals, and cyanide. The distribution of the PAHs, PCBs, elevated mercury (and other metals), and cyanide almost exclusively adjacent to the south side of the Mercury Disposal Area indicates an apparent association with the Mercury Disposal Area. Metals concentrations within the Mercury Disposal Area are unremarkable overall, though the occurrence and distribution of certain elevated metals indicates that the soil in the Mercury Disposal Area had been affected by a source of metals that has since been removed.

Although the overall results for the Mercury Disposal Area are unremarkable, further action is recommended to characterize the nature and extent of the PAHs, PCBs, metals, and cyanide along the south side of the Mercury Disposal Area. Also, mercury and cyanide in the shallow depression should be further characterized.

6.6 West Field

Based on the test pit data, the extent of the buried material in the West Field is generally coincident with the geophysical anomaly in the West Field. Two to four feet of buried concentrated debris was found in four of the eleven test pits excavated within and adjacent to the anomaly. The debris

typically consists of glass, wire, rebar, lumber, pieces of transite, and bricks. Additional debris specific to certain test pits included pieces of cut stone, wood timber, lagging material, slag, welding rods, empty lab glassware and tubing, and a crushed 30-gallon metal drum. The concentrated debris is typically covered with one to two feet of sand and gravel, with varying percentages of silt. During filling and grading operations, the sand and gravel fill evidently became commingled with debris, which is found sporadically within the sand and gravel. The fill material in most of the West Field is typically three to four feet thick, though fill depths of six feet and possibly as deep as eight feet were found in isolated locations. The fill material in the West Field is underlain by fine sandy silt and clay.

Approximately three feet of buried concentrated debris was found in the test pit dug within the geophysical anomaly east of the West Field, within the West Field Extended. The debris consisted of asphalt, concrete, bricks, copper wire, burnt wood, metal flashing, glass, pieces of transite, lagging material, and tar-like material. The concentrated debris was covered with approximately three feet of sand and gravel commingled with pieces of asphalt, concrete, brick, and glass. The depth of fill in this area is approximately six feet, and the fill is underlain by silt and clay. In the area between the geophysical anomalies, two to three feet of sand and gravel fill material was found mixed with sporadic debris.

Other than the obvious solid debris, evidence of a liquid or otherwise mobile or concentrated source of chemicals was not found in the test pits. Except for some natural odors of decay noted in two test pits, unusual odors or PID readings indicative of organic compounds were not detected.

Undisturbed soil was found in the two test pits dug to the north of the West Field and in the two test pits excavated to the northeast of the West Field at the break in slope and adjacent to the edge of the fill.

Overall, the concentrations of VOCs in the West Field are unremarkable and are not indicative of a source area of VOCs. Chlorinated VOCs were detected in only two test pits in the West Field, with a high concentration of 61.9 µg/Kg of PCE. The lack of significant concentrations of chlorinated VOCs in the West Field is consistent with the absence of these VOCs in nearby and down gradient soil borings and groundwater monitoring wells. In the West Field Extended, trace concentrations of chlorinated VOCs were detected in samples from test pits within the geophysical anomaly east of the West Field and the geophysical anomaly adjacent to the fill material northeast of the West Field. The results are unremarkable and do not represent source areas of VOCs. However, deeper soil and groundwater samples collected within the West Field Extended contained significant concentrations of

chlorinated VOCs indicative of a source area (or areas) of VOCs within the West Field Extended or Pyrophoric Area.

Overall, the SVOC, PCB, metals, and cyanide data for the West Field and West Field Extended indicate minimal actual or potential affect on the soil. In general, higher PCB (431.6 μg/Kg; highest value), metal, and cyanide (0.381 mg/Kg; highest value) concentrations correspond to the presence of concentrated debris. Other than where a tar-like material was coincident with the highest SVOC (PAH) concentration (3,440 μg/Kg), a strong association between debris and higher concentrations of PAHs is not evident. The sporadic and overall low concentrations of PAHs may be attributed, at least in part, to burnt wood that was identified in several test pits. The detection of sporadic and trace concentrations of PCBs in the sand and gravel fill, in addition to metals concentrations consistent with or marginally above background, appears to be associated with the sporadic debris within the sand and gravel fill material and not associated with a separate placement of PCBs in the West Field.

Although the results for the West Field and West Field Extended are unremarkable and the buried debris has been characterized, additional investigation is recommended to confirm the nature of the fill material. Surface soil samples should be collected and analyzed for PAHs, PCBs, and metals. Further action in the West Field should involve defining the lateral extent of the buried concentrated debris at test pit TP-35, and the depth of fill at test pit TP-30 should be confirmed. Surface soil samples should also be collected in the West Field Extended area adjacent to and down slope of the surface fill material adjacent to test pit TP-22 and analyzed for VOCs, PCBs, and metals to check if these constituents have migrated onto the surface soil from the adjacent fill material.

6.7 Pyrophoric Area

An apparent source area of chlorinated VOCs was found at test pit TP-41, located just north of the pyrophoric shed. Solvent odor, PID readings and relatively high concentrations of PCE, TCE, and DCE were detected at the bottom of the fill material at TP-41. PCE is the principal VOC, with TCE and DCE apparently present as degradation by-products of PCE. The presence of an apparent source area of these VOCs is consistent with the low and diffuse concentrations of PCE, TCE, and DCE found in fill material in the Pyrophoric Area and adjacent soil, including the PCE and TCE found in the southwest portion of the North Field.

PID readings from the deeper and undisturbed soil at TP-41 indicate that the VOCs have moved deeper into the soil column at TP-41. This is substantiated by data from soil borings in the Pyrophoric Area which show that relatively high concentrations of PCE and related VOCs have reached the impermeable gray till. In the absence of a VOC profile indicating a source area in the overlying soil at

these boring locations, the VOCs apparently have migrated laterally along the gray till contact from a separate source, possibly TP-41 or other. This general area of the Pyrophoric Area appears to be a principal source of the VOCs found in groundwater in the LDA.

Overall, the data for test pits TP-38 and TP-41 indicate minimal actual or potential affect on the soil from SVOCs, PCBs, and metals, and cyanide. The concentrations are unremarkable considering the amount of debris, particularly at test pit TP-38. Higher PAH concentrations in test pit TP-38 may be associated with the black sooty material found near the base of the test pit. This black sooty material is different from the apparent pyrophoric burn residue. The PCB results do not indicate the presence of a concentrated source of PCBs in the fill material and appear to be incidental to the construction and demolition debris. Elevated metals are higher in test pit TP-38, where more metallic debris was encountered.

Black material found at the ground surface in the eastern part of the Pyrophoric Area appears to be pyrophoric burn residue. The black material exhibits a distinct profile of elevated metals, including antimony, chromium, cobalt, copper, iron, nickel, selenium, silver, and vanadium. The sandy metallic appearance of the material and the lack of certain metals typical of soil indicate that the burn residue has not been mixed substantially with soil. The extent of the black material appears to be coincident with a geophysical metallic anomaly, which is consistent with the high iron content of the burn residue. Trace concentrations of PAHs and Aroclor 1260 also were detected in the black material. Similar trace concentrations of co-present PCBs and PAHs also were found in the C&D Area No.1 and the Mercury Disposal Area. Visual or analytical evidence of this pyrophoric burn residue were not found in test pits TP-38 or TP-41.

The fill material found in the Pyrophoric Area does not exhibit remarkable concentrations of PAHs, PCBs, or metals; however, the vertical extent of these compounds in the undisturbed soil beneath the fill material should be characterized along with the surface soil for completeness. The extent of the surface characterization should include the area north of and down slope of the Pyrophoric Area and should extend eastward to and include the apparent pyrophoric burn residue. In conjunction with the recommendations for the Groundwater Investigation, further action is recommended for the Pyrophoric Area to locate and define source areas of VOCs in the fill material.

6.8 SPRU Former Slurry Drum Storage Area

Overall, the PAH and metals data are consistent with the results provided in the SPRU SV Report. In the area of SPRU SV boring B3543, diffuse concentrations of PAHs were detected, which appear to be associated with incidental pieces of asphalt commingled with the soil. Other possible sources of

the PAHs include emissions and possible incidental leaks of petroleum product from vehicles and equipment used in this area. Evidence of a significant and mobile source of the PAHs was not found. Sporadic and overall marginally elevated concentrations of metals were detected, but evidence of a more concentrated source area or a profile of metals indicative of a source material associated with the Former Slurry Drum Storage Area was not found. The elevated metal concentrations appear to be associated with incidental debris (e.g., slag) commingled with the soil. The concentrations of PAHs and metals are higher overall in the 0.5 to 2 foot sample interval, which possibly indicates the presence of a former land surface that has since been covered with a veneer of soil.

For the investigation area north of the Former Slurry Drum Storage Area, the PAH and metals are generally consistent with the results presented in the SPRU SV Report. However, the tighter density of borings and soil samples in this area has revealed profiles of detected PAHs and elevated metals. The highest PAH concentrations are located in and near the fill material in the Pyrophoric Area, where asphalt and construction and demolition debris were found. The concentrations of PAHs are typically higher in the surface soil samples over most of the area, indicating that PAHs became located at the ground surface, or soil containing PAHs was redistributed in the investigation area. Emissions and incidental leaks from vehicles and equipment also are possible sources of PAHs.

Although overall unremarkable, the metals data for the samples collected north of the Former Slurry Drum Storage Area indicate that the soil has been affected by metals. In the northeast portion of this study area, apparent pyrophoric burn residue is visually evident and a unique profile of elevated metals is associated with that material. Soil samples from borings nearby and down slope of the pyrophoric burn residue exhibit a profile of elevated metals that could, in part, be attributed to the burn residue, indicating that the burn residue may have migrated westward via surface water. However, significant differences exist between the metals profiles, indicating either a separate source of the metals or commingling with another source of the metals.

The profile of elevated metals found across much of the study area north of the Former Slurry Drum Storage Area is consistent with the metals profile in the SPRU tank waste. Commingling of the soil with other sources of elevated metals is possible, particularly considering the proximity to the buried material in the Pyrophoric Area, where elevated concentrations of many metals were found. However, the fill material in the Pyrophoric Area where the highest PAH concentrations were detected did not exhibit a profile of elevated metals. Further, PAHs were not detected in a nearby boring, yet a profile of elevated metals is evident. These data together with the PAH data indicate that various placements of soil, possibly associated with different sources of PAHs and metals, may have occurred in this area.

For the area of SPRU SV boring B3543, further investigation is not considered necessary. The source of the PAHs and elevated metals appears to be incidental debris commingled with the soil. The debris is typically visible, thereby providing a reasonable indicator of PAHs and metals. Therefore, further characterization is not needed to identify affected soil. For the area north of the Former Slurry Drum Storage Area, further action is recommended to characterize the extent of PAHs and metals in the soil to the north and down slope of the study area. It is anticipated that this characterization will be performed as part of further characterization efforts associated with the Pyrophoric Area.

6.9 Groundwater Investigation

Overall, the Groundwater Investigation has effectively defined the limits of the VOC plume in the land disposal area. Initially prompted by the historical detection of VOCs in monitoring well W-3, the results of Groundwater Investigation show that the VOCs found in W-3 were associated with shallow perched groundwater in sand and gravel deposits on the gray till and were not indicative of affected bedrock groundwater.

Groundwater flow and migration of VOCs is controlled by the geologic deposits and the fill material. The gray till inhibits vertical groundwater flow and migration of VOCs. The surface of the gray till is characterized by a trough that slopes south to north from the Former Landfill to the Midline Stream. The surface of the gray till slopes into the trough gently from the west and more steeply from the east. The trough apparently narrows in the area of well W-3, where a small northeast trending ridge in the gray till apparently forms the constriction. North of the constriction the trough widens and slopes more steeply toward Midline Stream. A north-south trending sand and gravel deposit roughly coincides with the trough in the gray till surface and separates eastward flowing groundwater from westward flowing groundwater. Once in the sand and gravel deposit, groundwater assumes either a northward or southward flow direction, depending on its position relative to the groundwater divide in the area of LMW-18 and LMW-24/24A. Mounding of the groundwater surface occurs in the central portion of the fill material in the West Field Extended and the Pyrophoric Area, apparently the result of increased recharge through the relatively permeable fill material. Groundwater therefore flows subradially outward from the central portion of the fill area.

VOCs are present in a north-south trending plume coincident with the fill material and the sand and gravel deposits above the gray till. The eastern extent of the plume is controlled by the less permeable gray till which is present at or near the ground surface just east of the study area. Groundwater in the sand deposits within and just south of the Pyrophoric Area assumes a northward

or southward flow in response to the gray till and apparent hydraulic communication with the larger sand and gravel deposit. The surface of the gray till and the sand and gravel deposit also control the western extent of the plume, whereby the northward sloping trough in the surface of the gray till captures and controls westward VOC migration along the gray till surface, and the north-south trending sand and gravel deposit acts as a hydraulic sink for eastward and westward flowing groundwater, thereby providing a hydraulic barrier to westward flow.

Based on available hydrogeologic and analytical data, the plume narrows at its northern terminus near LMW-21, apparently moving coincident with the sand and gravel deposits within the narrow trough in the gray till. At the southern end of the plume, groundwater and the associated plume converge into the western part of the Former Landfill, apparently controlled by the presence of the sand and gravel deposit. Seeps located near the base of the slope in this area are consistent with groundwater discharge from the sand and gravel deposit.

PCE is the principal VOC in the groundwater plume from the Pyrophoric Area northward. The highest concentrations of PCE were detected within and adjacent to the Pyrophoric Area. West of the Pyrophoric Area at LMW-15/15A, VOCs from the "ethane" family of VOCs, such as 1,1,1-TCA and 1,2-DCA, and chloroform were detected with the PCE in soil and groundwater. A similar profile of VOCs is present in LMW-21 located near the northern terminus of the plume. However, this profile of VOCs is not evident in the in-between wells, which indicates the presence of a separate narrow groundwater flow path.

TCE is the principal VOC south of the groundwater divide to the Former Landfill, where the highest concentrations of TCE were detected. VOCs from the "ethane" family of VOCs and chloroform also were detected in the area south of the groundwater divide into the Former Landfill. The profile of VOCs in the seep water from the base of the western part of the Former Landfill is consistent with that found in the upgradient groundwater. Surface water in the nearby East Boundary Stream did not contain VOCs.

Relatively high concentrations of chlorinated VOCs were detected at or near the gray till contact within and north of the Pyrophoric Area, indicating that VOCs have migrated vertically through the fill and soil column to the relatively impermeable gray till and are moving preferentially along the overall northward sloping surface of the gray till. The absence of significant VOCs in the shallower soil samples from borings drilled within the fill material indicates that the bulk fill material is not the source of the VOCs, rather discrete source areas of concentrated VOCs are likely present within the fill.

Although the limits of the VOC plume have been effectively defined, additional investigation is recommended to refine the boundaries of the plume and to enhance the understanding of hydrogeologic conditions preparatory to any remedy decisions. The surface of the gray till and the extent of the sand and gravel deposit in the eastern portion of the Former Landfill should be characterized. In addition groundwater monitoring wells should be installed as appropriate to confirm the eastern extent of the VOC plume in the Former Landfill. West and northwest of the Former Landfill, borings and wells should be drilled and installed as appropriate to refine the western extent of the VOC plume.

In the area just south of the Pyrophoric Area, borings should be drilled to further characterize the nature and extent of the black sand found in borings SB-27 and SB-29. Borings and wells should be drilled and installed as appropriate around the pyrophoric shed just south of LMW-25 to characterize potential source areas of VOCs and groundwater recharge to the deeper sand and gravel to the west.

Borings and wells should be drilled and installed as appropriate to further characterize the extent of the sand and gravel deposit and to refine the location of the groundwater divide. North of LMW-15/15A, borings should be drilled and wells installed as appropriate to define potential separate VOC migration flow paths within the sand and gravel deposit and to characterize the surface of the gray till, with emphasis on the area near LMW-8.

To refine the monitoring of the VOCs in the sand and gravel deposit north of the Pyrophoric Area, the direct-push wells LMW-9, LMW-12, and LMW-20 should be replaced with wells screened solely within the sand and gravel deposits on the gray till and sealed from the influence from shallower water. Shallower paired wells may be installed if conditions warrant.

7.0 References

1. New York State Department of Environmental Conservation, 1998. NYSDEC 6 NYCRR Part 373 Hazardous Waste Management Facility Permit for the U.S. Department of Energy Knolls Atomic Power Laboratory, Knolls Site, Niskayuna, New York, EPA I.D. Number: NY 6890008992, DEC Permit Number: 4-4224-00024/00001.

2. KAPL. 2002. RCRA Facility Assessment Sampling Visit for Separations Process Research Unit SWMUs/AOC, Knolls Atomic Power Laboratory, Niskayuna, New York – Report, February 2002. Transmitted to NYSDEC via SNR Letter REC&SD:SPT02-12, dated February 22, 2002.

3. SNR letter REC&SD:SPT01-53 to NYSDEC, dated June 15, 2001; Subject: KAPL-Knolls Site - RCRA Facility Assessment Sampling Visit Work Plan for the Land Disposal Areas (SWMUs 003, 004, 006, and 007); Forwarding for Approval.

4. SNR letter REC&SD:SPT01-76 to NYSDEC, dated September 13, 2001; Subject: KAPL-Knolls Site - RCRA Facility Assessment Sampling Visit Work Plan for the Land Disposal Areas (SWMUs 003, 004, 006, and 007) – Groundwater Addendum; Forwarding for Approval.

5. SNR letter REC&SD:SPT02-21 to NYSDEC, dated April 3, 2002; Subject: KAPL-Knolls Site - RCRA Facility Assessment Sampling Visit Work Plan for the Land Disposal Area; Forwarding of Resolution to NYSDEC Comments and Revised Work Plan.

6. NYSDEC (Rogers) letter to SNR (Seepo), dated May 21, 2002; Subject: RCRA Facility Assessment Sampling Visit Work Plan for the Land Disposal Area; Forwarding of Resolution to NYSDEC Comments and Revised Work Plan April 3, 2002.

7. NYSDEC (Rogers) letter to SNR (Seepo), dated April 30, 2003; Subject: RCRA Facility Assessment Sampling Visit Work Report, Separations Process Research Unit ("SPRU") SWMUs/AOC, February 2002.

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9. NYSDEC (Van Guilder) letter to SNR (Robillard), dated November 2, 2004; Subject: EPA Environmental Indicator Evaluation.

10. NYSDEC (Van Guilder) letter to SNR (Robillard), dated August 3, 2005; Subject: EPA Environmental Indicator Evaluation.

11. Ebasco Services Incorporated. 1994. Final Federal Facility ESI Review, Knolls Niskayuna Site, City of Schenectady, Schenectady County, New York.

12. NYSDEC. 1994. Technical and Administrative Guidance Memorandum 4046: Determination of Soil Cleanup Objectives and Cleanup Levels.

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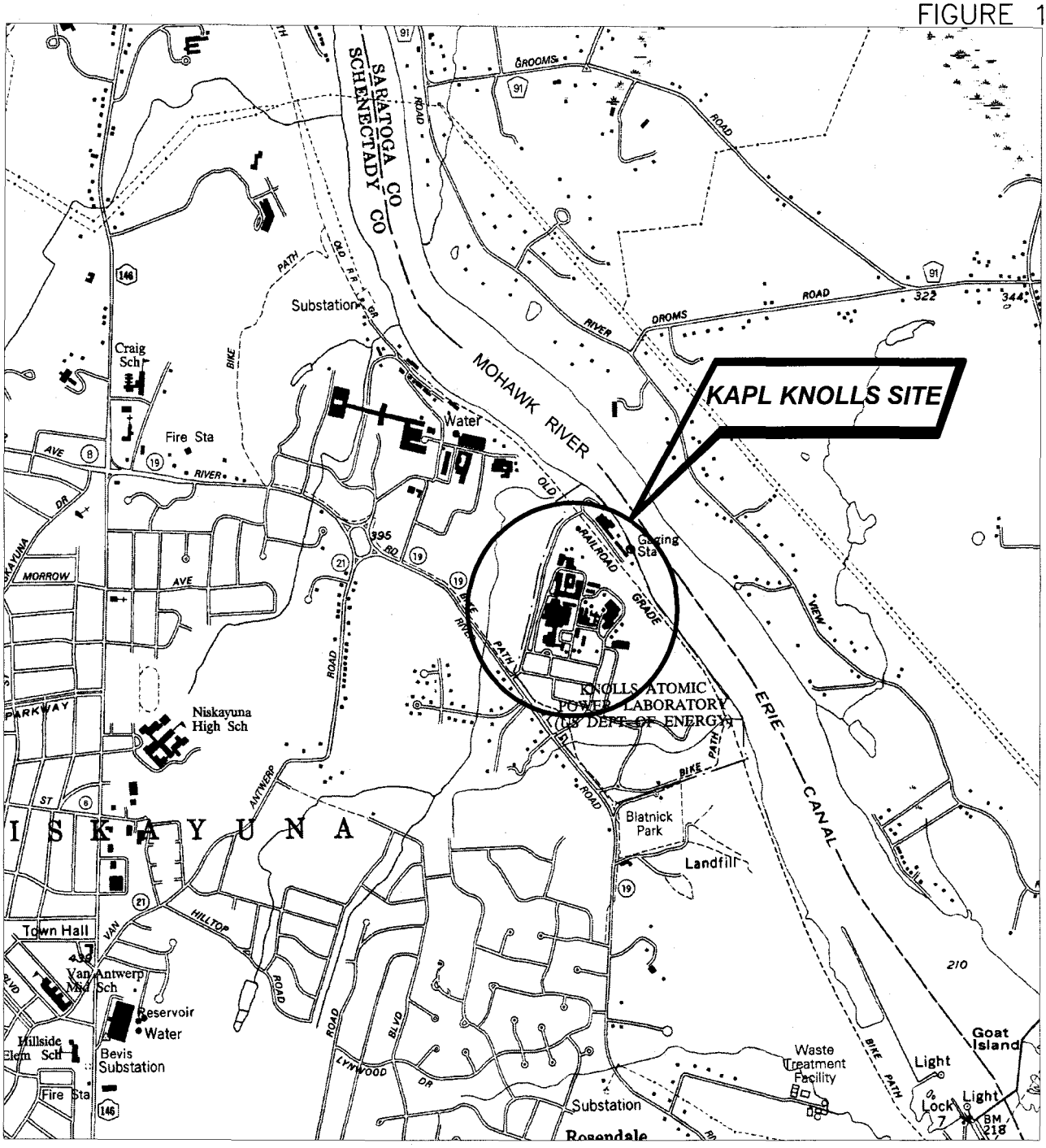
14. Howard, P.H. 1990. Handbook of Environmental Fate and Exposure Data for Organic Chemicals, Volume II Solvents: Lewis Publishers.

15. DOE-NNSA (Feinberg) letter to NYSDEC (Rogers), dated March 9, 2005.

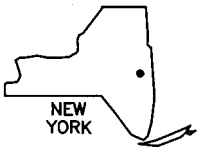
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FIGURE 1



ADAPTED FROM: NISKAYUNA & SCHENECTADY QUAD., N.Y. STATE U.S.G.S. 7.5 MIN. QUAD



QUADRANGLE LOCATION

KNOLLS ATOMIC POWER LABORATORY
NISKAYUNA, NEW YORK

SITE LOCATION MAP

1 1/2 0 1 MILE

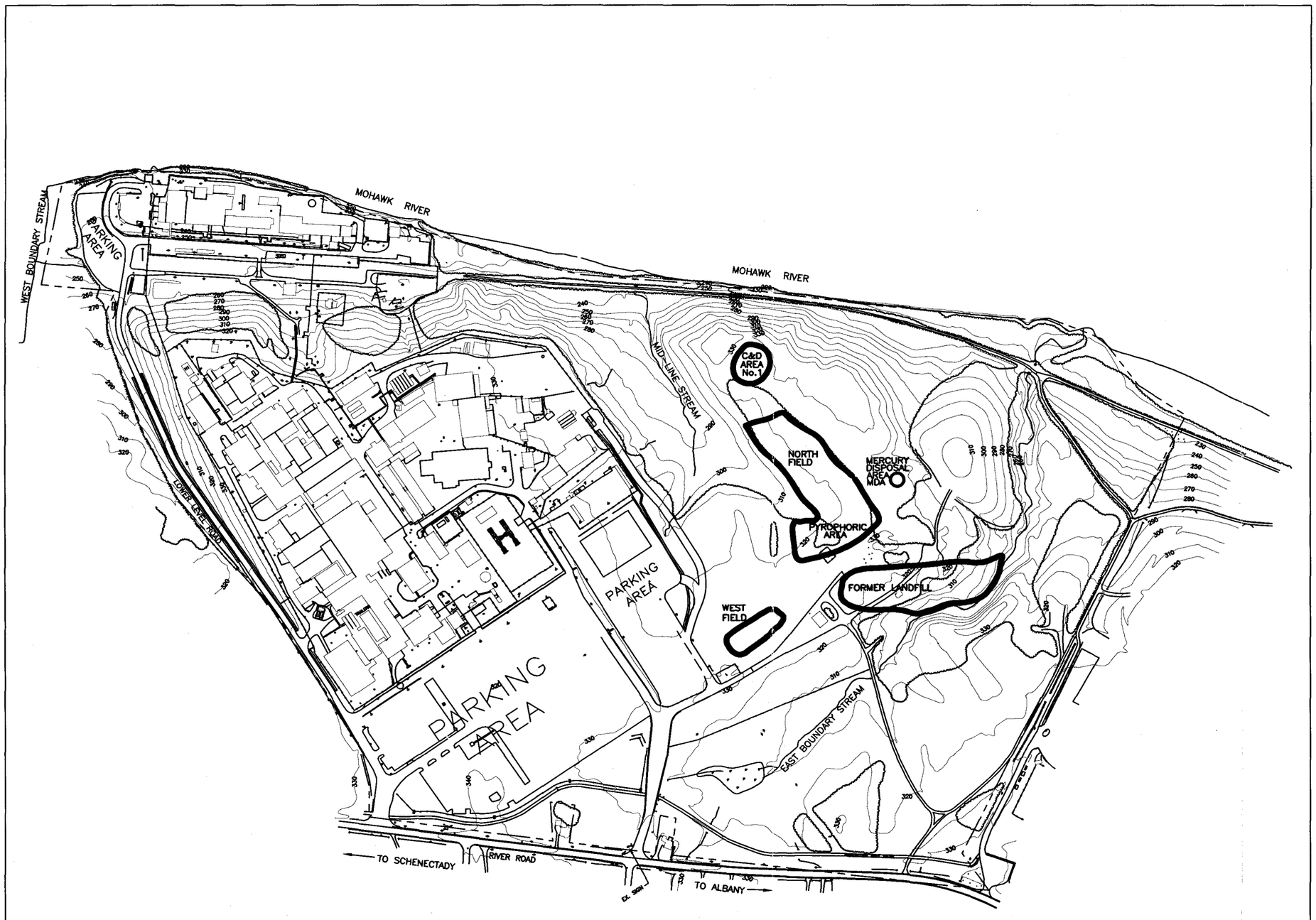
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1 5 0 1 KILOMETER

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FIGURE 2



ADAPTED FROM: LOCKWOOD MAP. 1999.

KNOLLS ATOMIC POWER LABORATORY
NISKAYUNA, NEW YORK

KAPL – KNOLLS SITE MAP

400 0 400

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FIGURE 3



LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION

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NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

LAND DISPOSAL AREA SWMU LOCATION MAP

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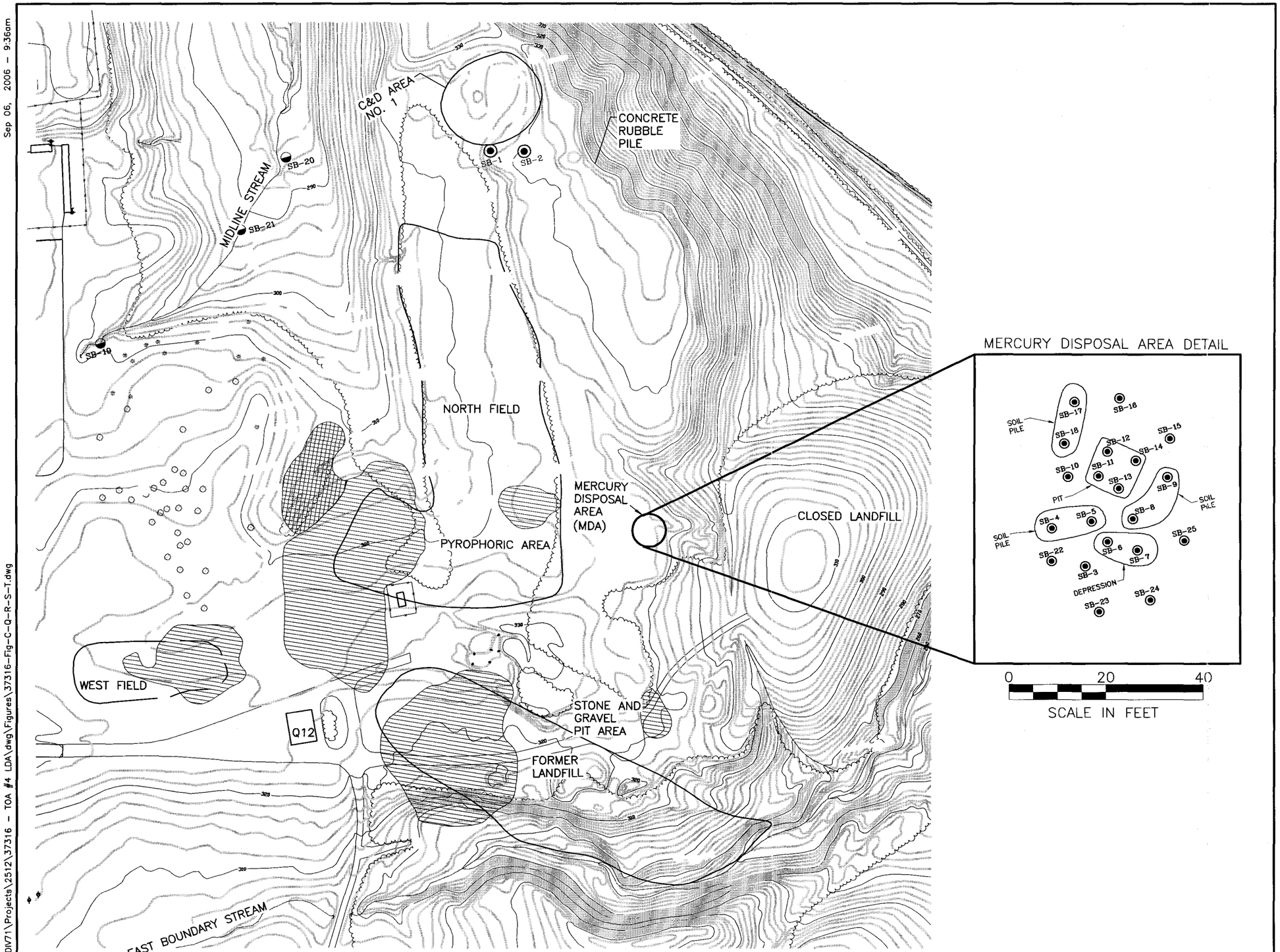
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FIGURE 4



LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- SB-1 — SOIL BORING LOCATION
- SB-21 — SEDIMENT SAMPLE LOCATION

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

HAND AUGER BORING LOCATIONS

0 150 300

SCALE IN FEET

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FIGURE 5



LEGEND

AREA CONTAINING POSSIBLE BURIED METAL OBJECTS

AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER

TP-38 TEST PIT LOCATION

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

TEST PIT LOCATIONS

0 150 300

SCALE IN FEET

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FIGURE 6

LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- SB/LMW-1 — SOIL BORING & NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-1 — SOIL BORING AT TEST PIT LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION

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NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

DRILLED BORINGS, MONITORING WELLS, SEEPS, AND SURFACE WATER SAMPLE LOCATIONS

0 150 300

SCALE IN FEET

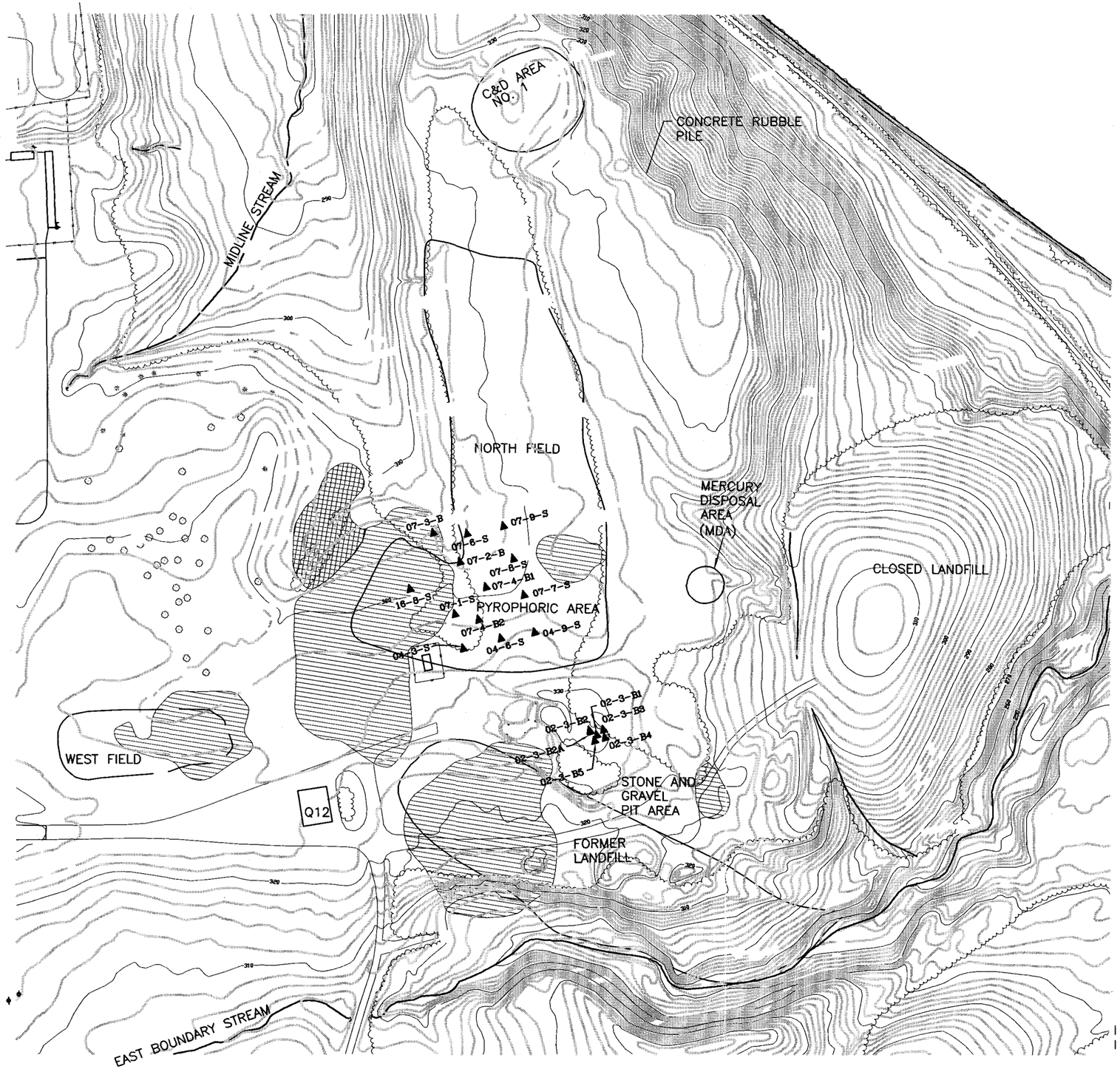
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FIGURE 7



LEGEND

AREA CONTAINING POSSIBLE BURIED METAL OBJECTS

AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER

02-3-B4▲ SPRU SUPPLEMENTAL BORING LOCATION (BORING IDs ARE ABBREVIATED FOR CLARITY. PREFIX "LA10" WAS OMITTED FROM THE BEGINNING OF EACH ID. EXAMPLE: LA1002-3-B4.)

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

SPRU SUPPLEMENTAL BORING LOCATIONS

0 150 300

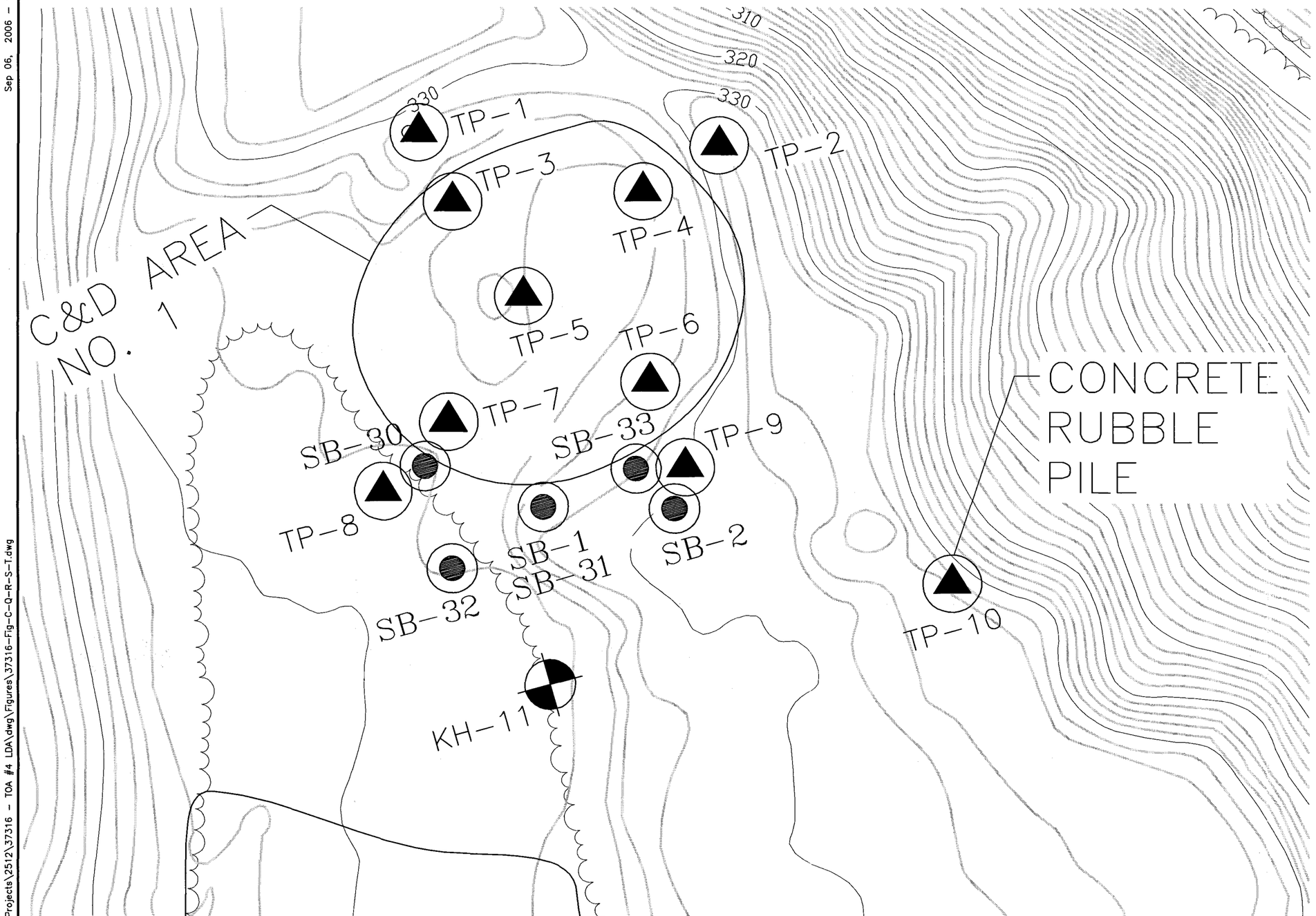
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FIGURE 8



LEGEND

TP-38 ▲ TEST PIT LOCATION

SB-1 ⊙ SOIL BORING LOCATION

KH-11 ⊕ OLD MONITORING WELL LOCATION

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

C&D AREA NO. 1 INVESTIGATION LOCATIONS

0 40 80

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Figure 9
W-3 Slug Test: W-3 Water Level Response
Land Disposal Area SV

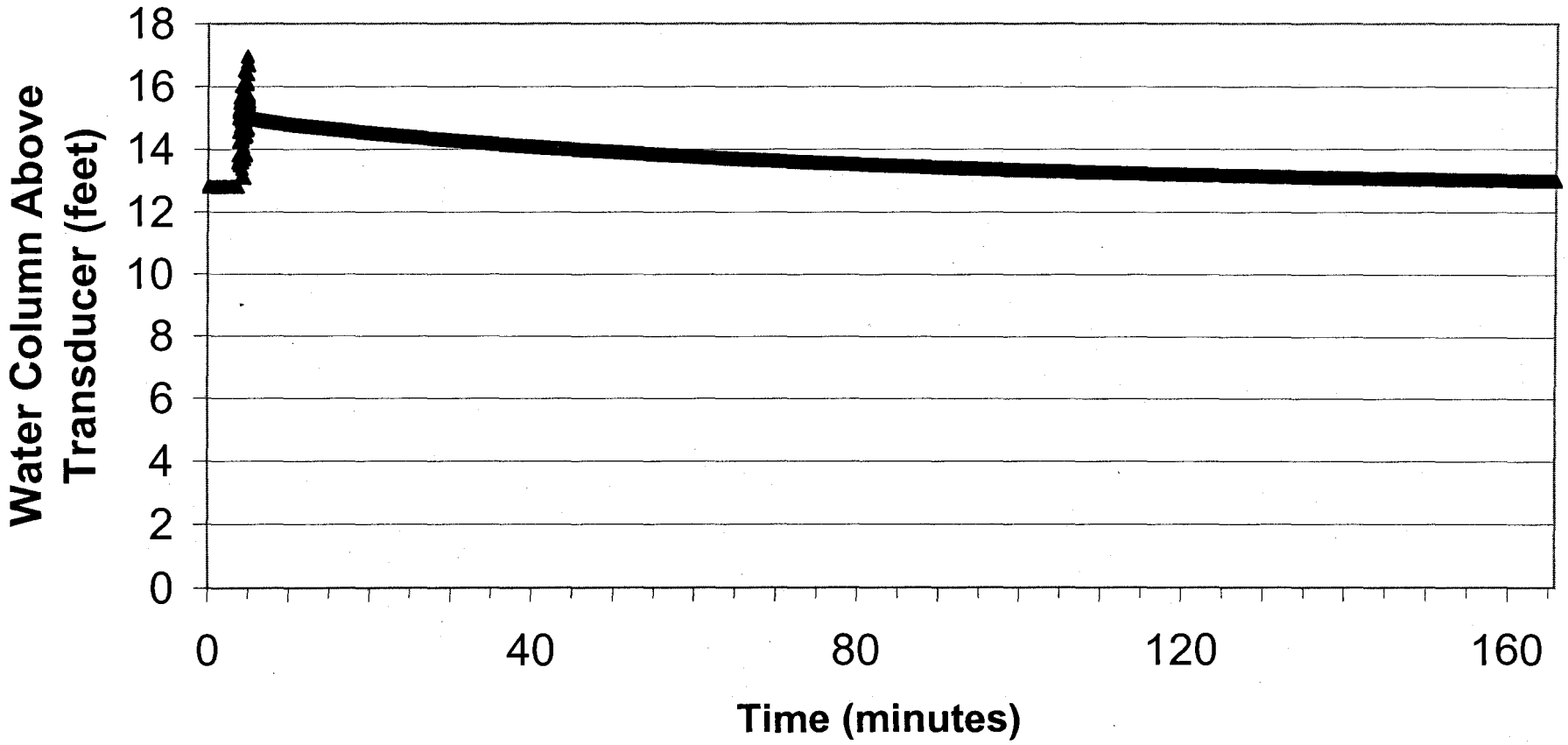


Figure 10
W-3 Slug Test: Well Point Water Level Response
Land Disposal Area SV

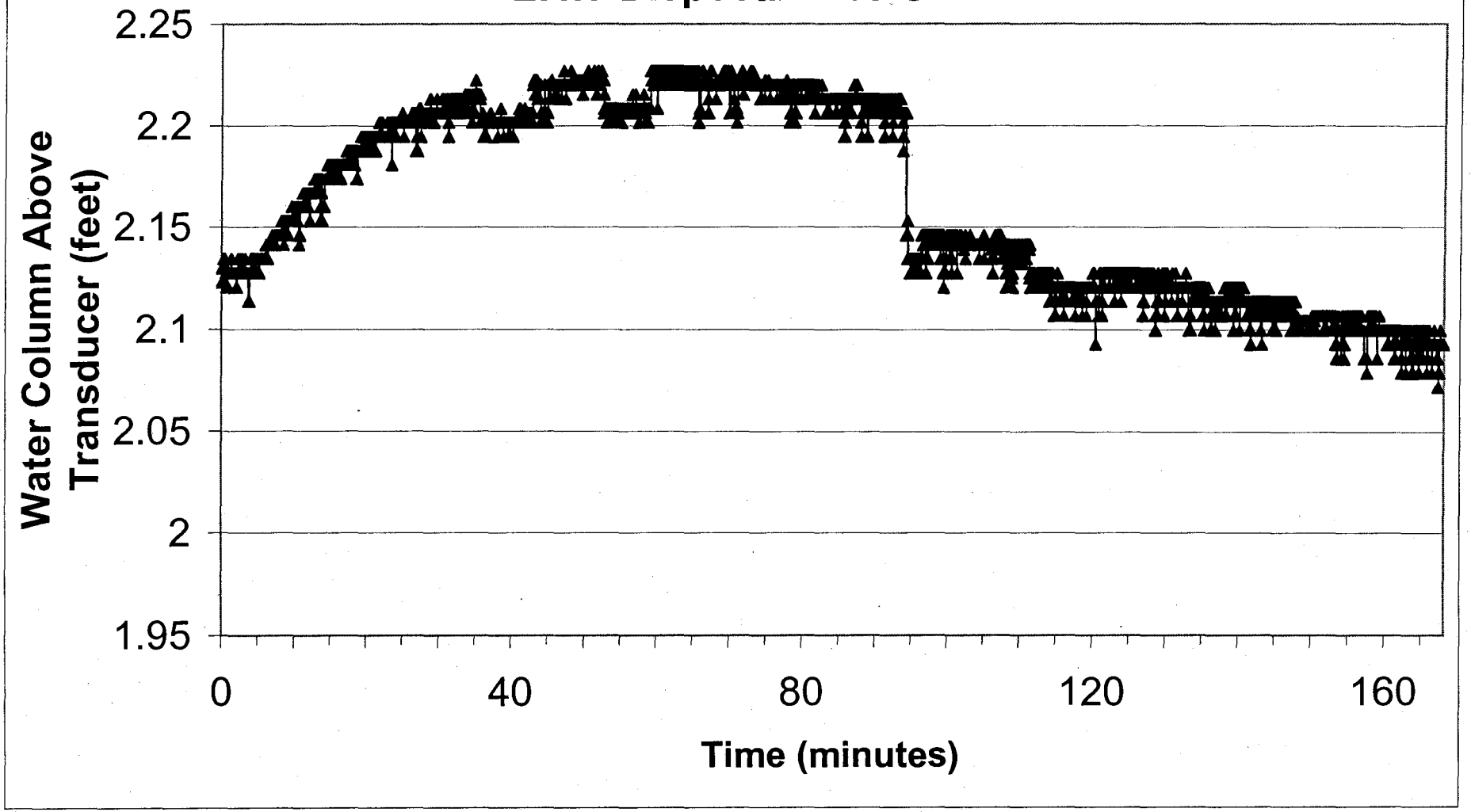


Figure 11
W-3 Bail Test: Well Point Water Level Response
Land Disposal Area SV

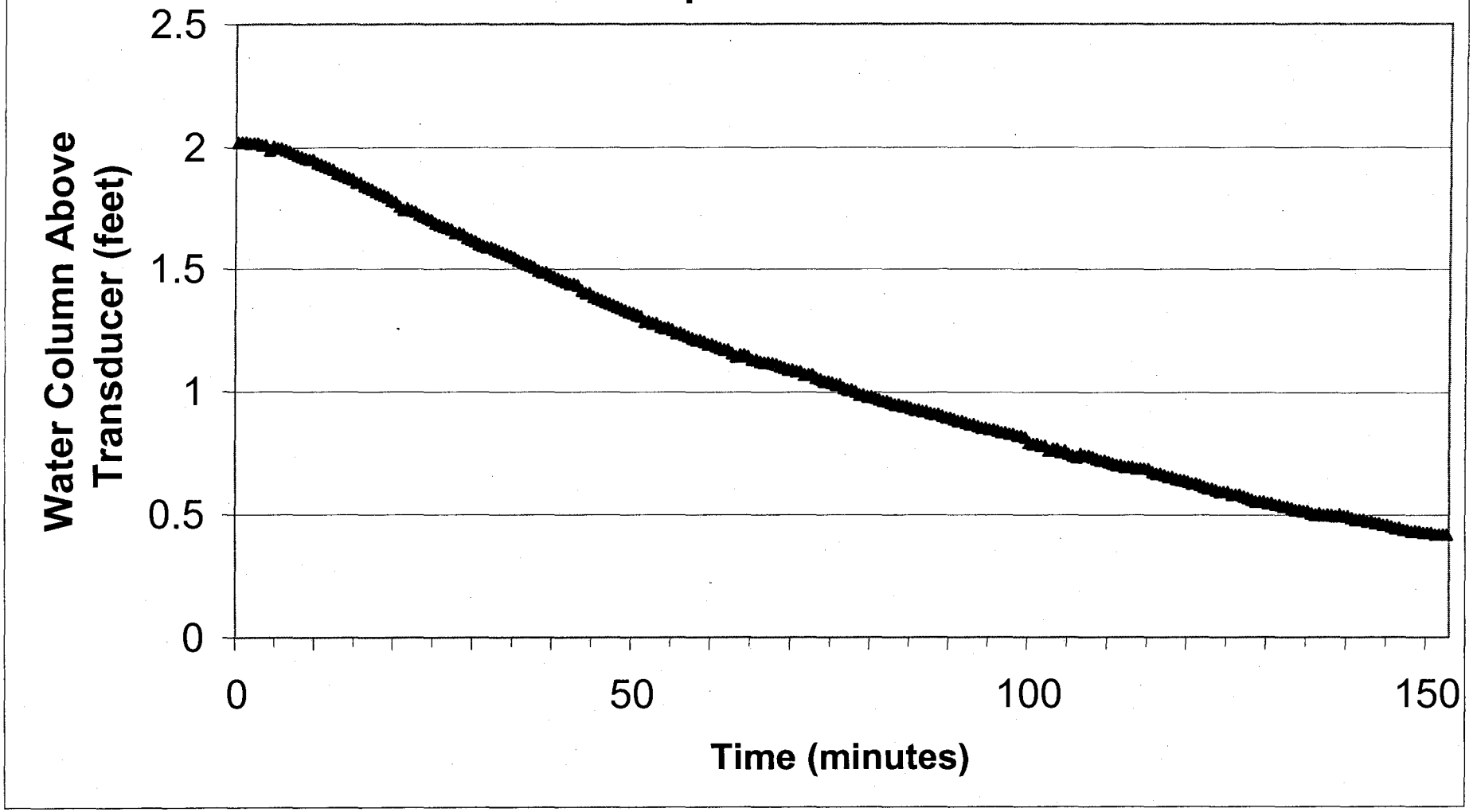
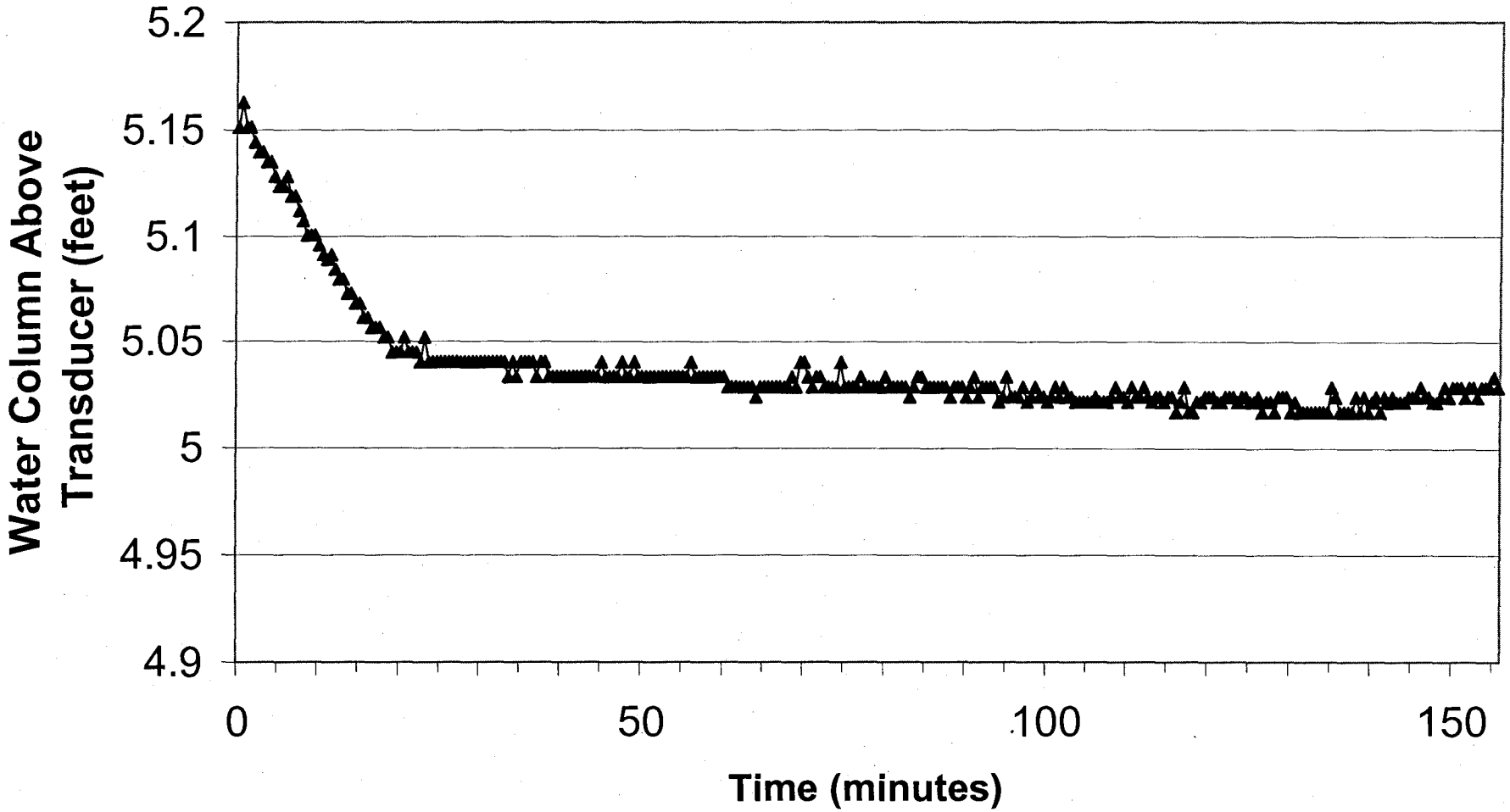


Figure 12
W-3 Bail Test: LMW-20 Water Level Response
Land Disposal Area SV



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FIGURE 13

LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- SB/LMW-1 — SOIL BORING & NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-38 — TEST PIT LOCATION
- SB-20 — SEDIMENT SAMPLE LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION
- C C' — CROSS SECTION LOCATION

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NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

CROSS SECTION LOCATIONS

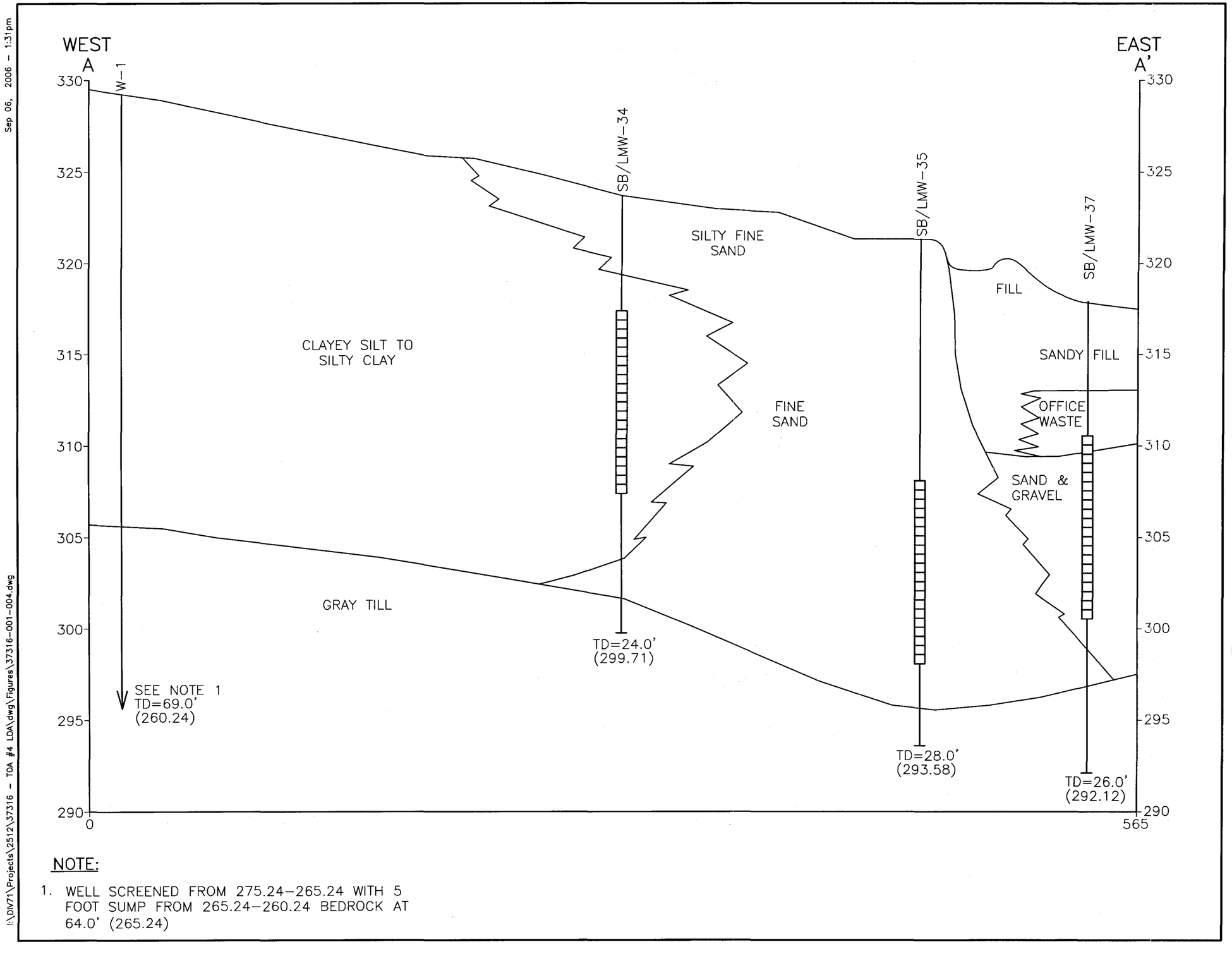
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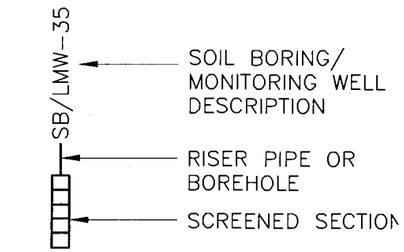
FIGURE 14



NOTE:

1. WELL SCREENED FROM 275.24–265.24 WITH 5 FOOT SUMP FROM 265.24–260.24 BEDROCK AT 64.0' (265.24)

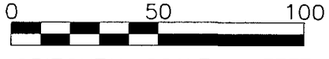
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NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

CROSS SECTION A–A'

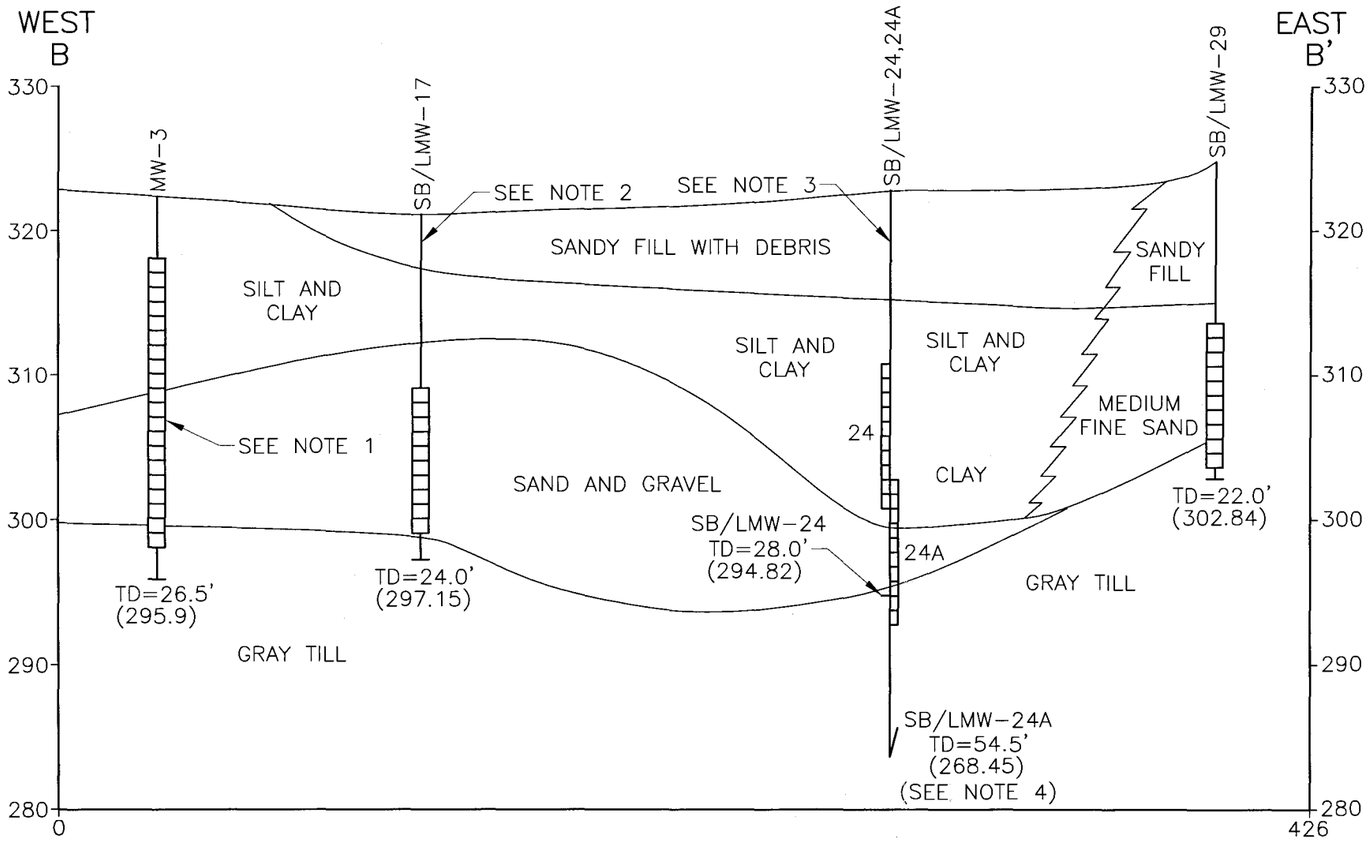


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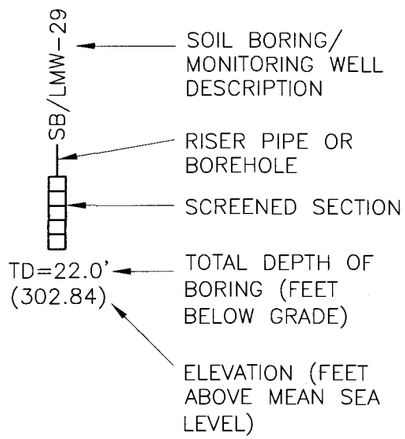
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FIGURE 15



LEGEND



NOTES:

1. SAND AND GRAVEL CONTACT INTERPRETED FROM AUGER CHANGE (FIELD OBSERVATION).
2. FILL DEPTH BASED ON TEST PIT TP-24 AND ASSOCIATED BORINGS.
3. FILL DEPTH BASED ON TEST PIT TP-23 AND ASSOCIATED BORINGS.
4. COMPLETE BORING DEPTH NOT SHOWN FOR CLARITY.

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POWER LABORATORY
NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

CROSS SECTION B-B'

0 50 100
HORIZONTAL SCALE IN FEET

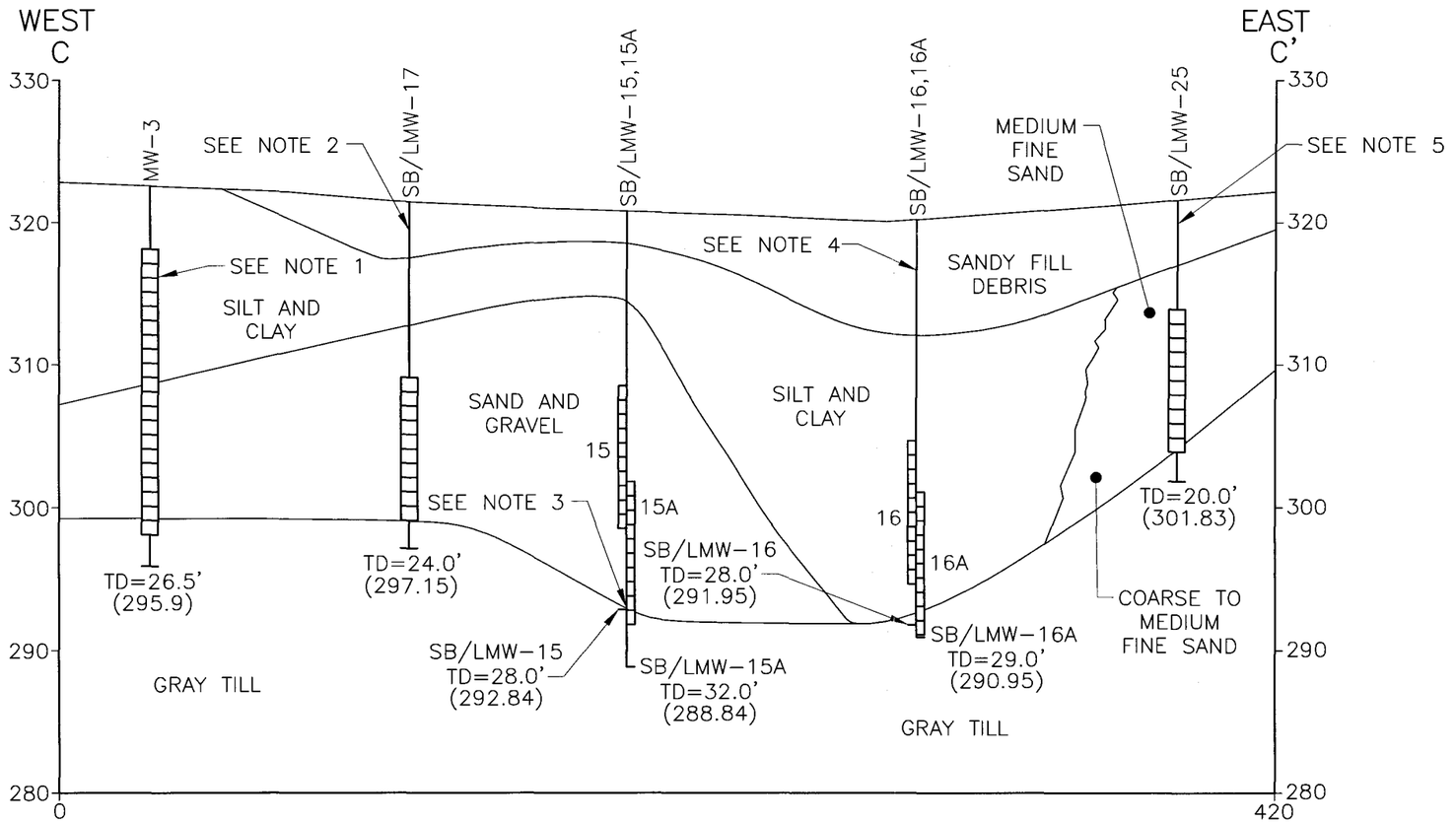
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VERTICAL SCALE IN FEET

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FIGURE 16



NOTES:

1. SAND AND GRAVEL CONTACT INTERPRETED FROM AUGER CHANGE (FIELD OBSERVATION).
2. FILL DEPTH BASED ON TEST PIT TP-24 AND ASSOCIATED BORINGS.
3. GRAY TILL DEPTH INTERPOLATED FROM SB-15 AND SB-15A.
4. FILL DEPTH BASED ON TEST PIT TP-38.
5. FILL DEPTH BASED ON TEST PIT TP-41.

LEGEND



SOIL BORING/ MONITORING WELL DESCRIPTION

RISER PIPE OR BOREHOLE

SCREENED SECTION

TOTAL DEPTH OF BORING (FEET BELOW GRADE)

ELEVATION (FEET ABOVE MEAN SEA LEVEL)

KNOLLS ATOMIC POWER LABORATORY
NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

CROSS SECTION C-C'

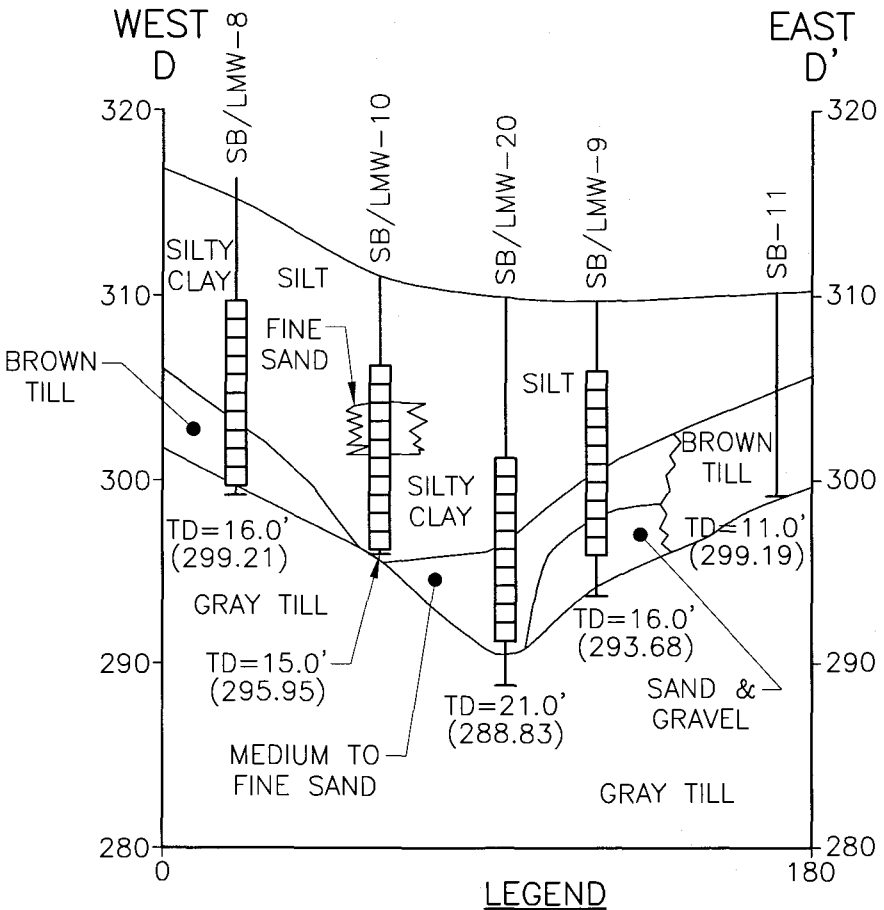
0 50 100
HORIZONTAL SCALE IN FEET

0 10 20
VERTICAL SCALE IN FEET

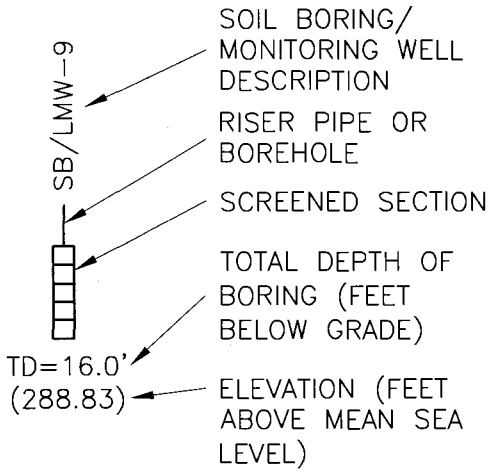
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FIGURE 17



LEGEND



KNOLLS ATOMIC POWER LABORATORY
NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

CROSS SECTION D–D'

0 50 100

HORIZONTAL SCALE IN FEET

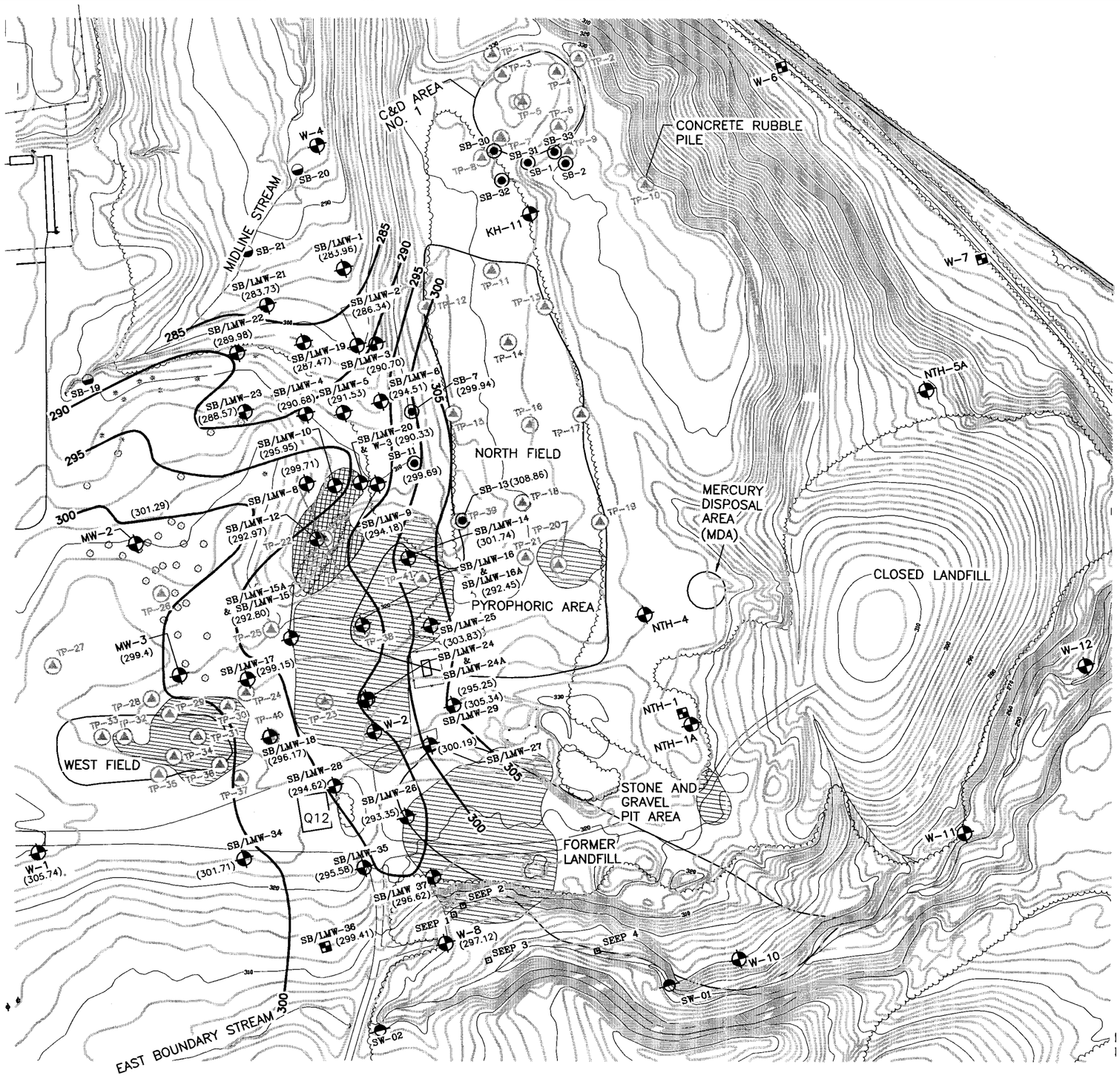
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SEPTEMBER 2006

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FIGURE 18



LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- SB/LMW-1 — SOIL BORING & NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-38 — TEST PIT LOCATION
- SB-20 — SEDIMENT SAMPLE LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION
- (305.34) — GRAY TILL SURFACE ELEVATIONS
- 285 — GRAY TILL SURFACE ELEVATION CONTOURS

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

GRAY TILL SURFACE ELEVATION CONTOUR MAP

0 150 300

SCALE IN FEET

SEPTEMBER 2006

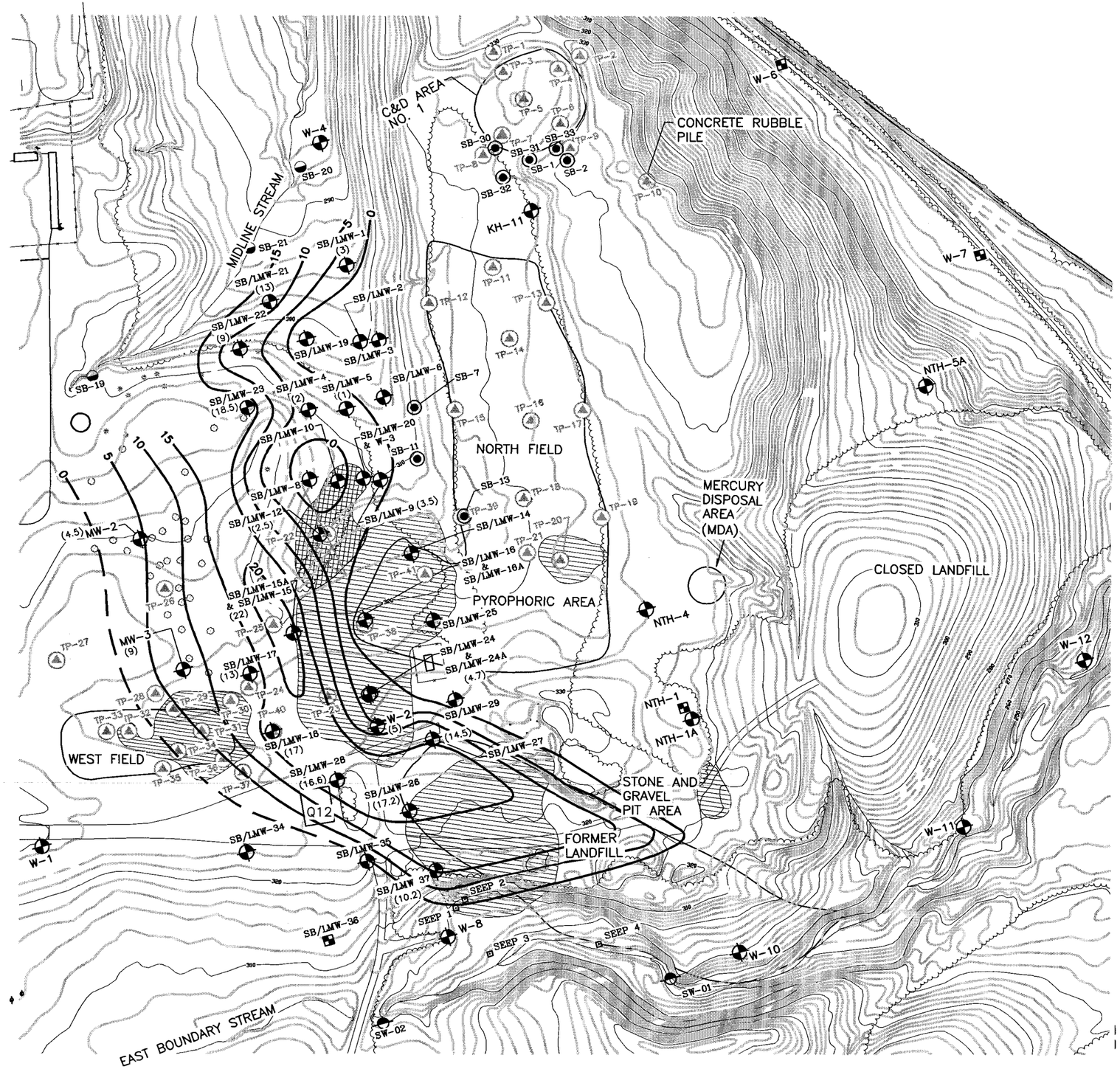
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Sep 06, 2006 - 9:38am

FIGURE 19



LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- SB/LMW-1 — SOIL BORING & NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-38 — TEST PIT LOCATION
- SB-20 — SEDIMENT SAMPLE LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION
- (3.5) — SAND AND GRAVEL THICKNESS
- 15 — SAND AND GRAVEL ISOTHICKNESS CONTOURS (DASHED WHERE INFERRED)

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

SAND AND GRAVEL ISOTHICKNESS

0 150 300

SCALE IN FEET

SEPTEMBER 2006

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NOTE:

1. ON SEPTEMBER 18, 2003 MONITORING WELL SB/LMW-8 WAS DRY.
2. MONITORING WELLS SB/LMW-34, SB/LMW-35, SB/LMW-36, AND SB/LMW-37 DO NOT HAVE GROUNDWATER ELEVATIONS AS THEY WERE NOT YET INSTALLED ON THE MONITORING DATE.
3. SB/LMW-12 IS NOT INCLUDED IN THE CONTOUR INTERPRETATION. THE WATER LEVEL IN SB/LMW-12 IS SUSPECT OWING TO STANDING WATER AROUND THE WELL.

FIGURE 20

LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- SB/LMW-1 — SOIL BORING & NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-38 — TEST PIT LOCATION
- SB-20 — SEDIMENT SAMPLE LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION
- (306.34) — GROUNDWATER ELEVATION
- 308 — GROUNDWATER ELEVATION CONTOURS
- GROUNDWATER FLOW ARROW

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

GROUNDWATER ELEVATION CONTOUR MAP (9/18/2003)

0 150 300

SCALE IN FEET

SEPTEMBER 2006

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FIGURE 21

NOTE:

1. ON MARCH 1, 2004 MONITORING WELLS SB/LMW-1, SB/LMW-2, SB/LMW-6, W-8 WERE FROZEN. MONITORING WELL LMW-8 WAS DRY.
2. SB/LMW-12, SB/LMW-20, AND MW-3 ARE NOT INCLUDED IN THE CONTOUR INTERPRETATION. THE WATER LEVELS IN SB/LMW-12, SB/LMW-20, AND MW-3 ARE SUSPECT OWING TO STANDING WATER AT AND AROUND THE WELLS.

LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- SB/LMW-1 — SOIL BORING & NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-38 — TEST PIT LOCATION
- SB-20 — SEDIMENT SAMPLE LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION
- (306.34) — GROUNDWATER ELEVATION
- 308 — GROUNDWATER ELEVATION CONTOURS
- GROUNDWATER FLOW ARROW

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

GROUNDWATER ELEVATION CONTOUR MAP (3/1/2004)

0 150 300

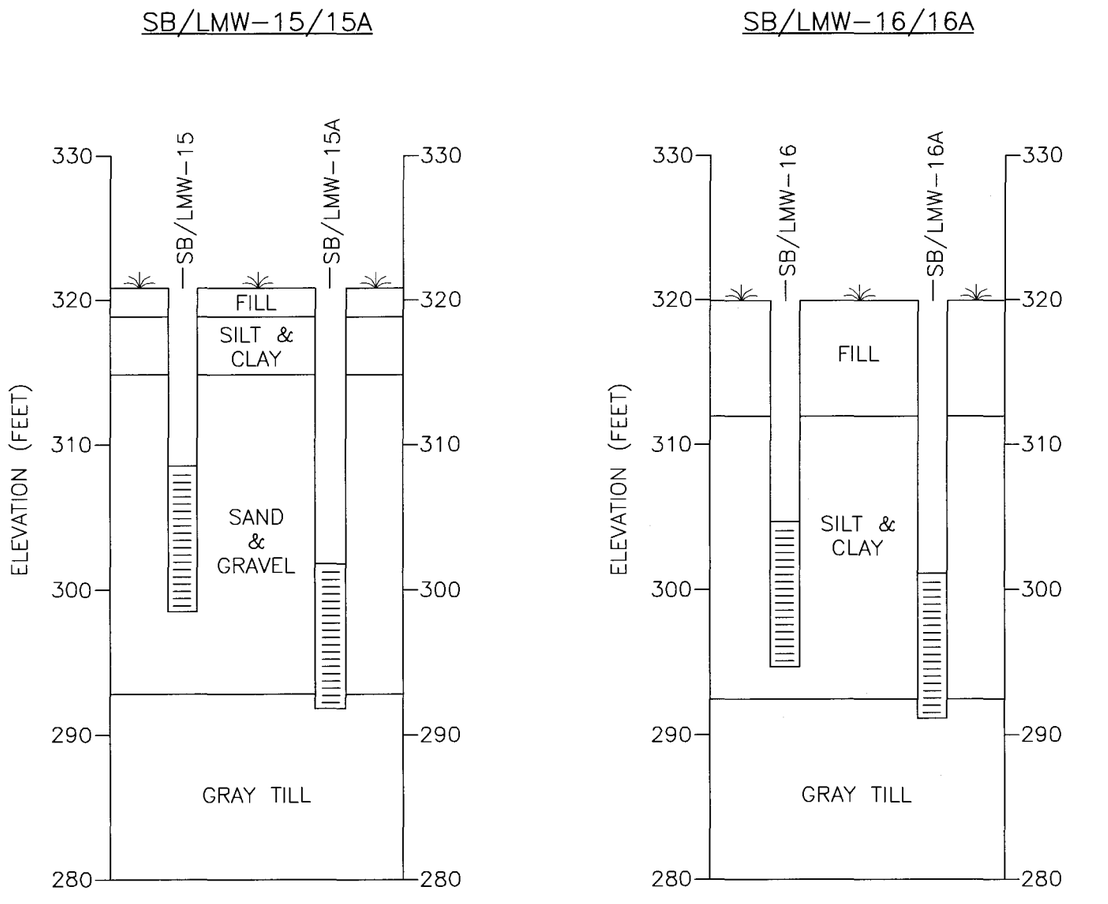
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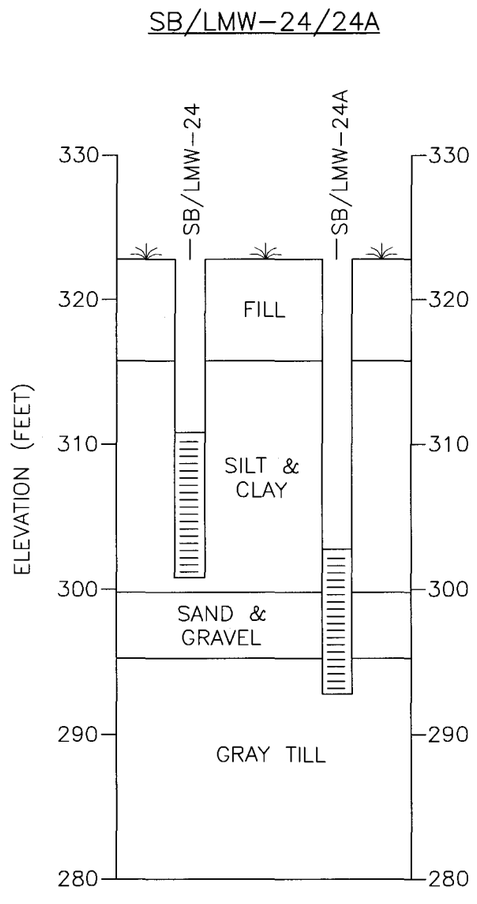
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FIGURE 22





LEGEND

SB/LMW-24 MONITORING WELL LOCATION

WELL SCREEN

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

MONITORING WELL PAIR DETAILS

0 10 20

VERTICAL SCALE IN FEET

SEPTEMBER 2006

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Sep 06, 2006 - 9:38am

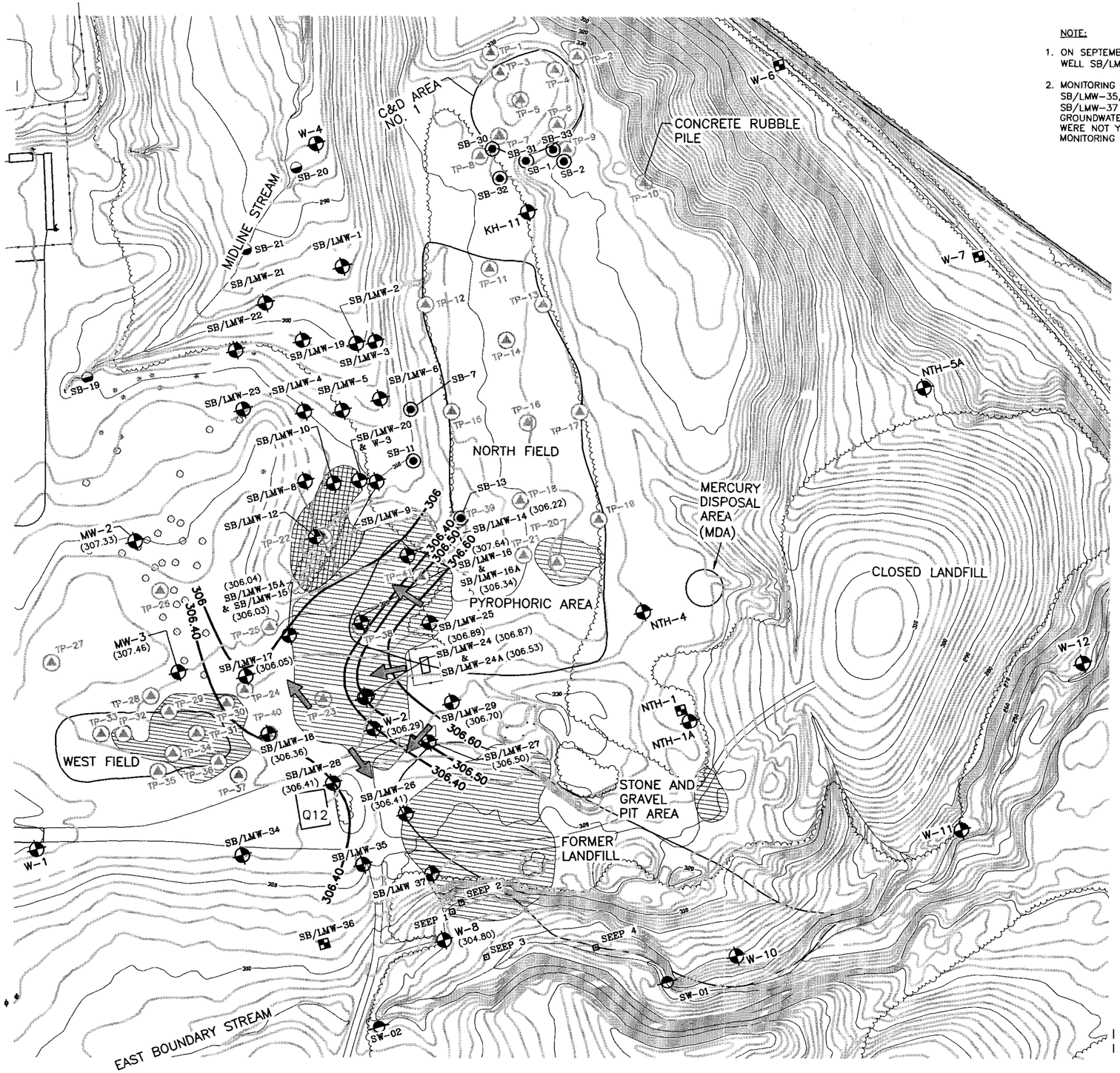
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FIGURE 23

NOTE:

1. ON SEPTEMBER 18, 2003 MONITORING WELL SB/LMW-8 WAS DRY.
2. MONITORING WELLS SB/LMW-34, SB/LMW-35, SB/LMW-36, AND SB/LMW-37 DO NOT HAVE GROUNDWATER ELEVATIONS AS THEY WERE NOT YET INSTALLED ON THE MONITORING DATE.



LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- SB/LMW-1 — SOIL BORING & NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-38 — TEST PIT LOCATION
- SB-20 — SEDIMENT SAMPLE LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION
- (306.34) — GROUNDWATER ELEVATION
- 308 — GROUNDWATER ELEVATION CONTOURS
- GROUNDWATER FLOW ARROW

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

RECONFIGURED GROUNDWATER ELEVATION CONTOURS (9/18/2003) USING DEEPER WELLS 15A, 16A, AND 24A

0 150 300

SCALE IN FEET

SEPTEMBER 2006

FILE NO. 2512.37316.010

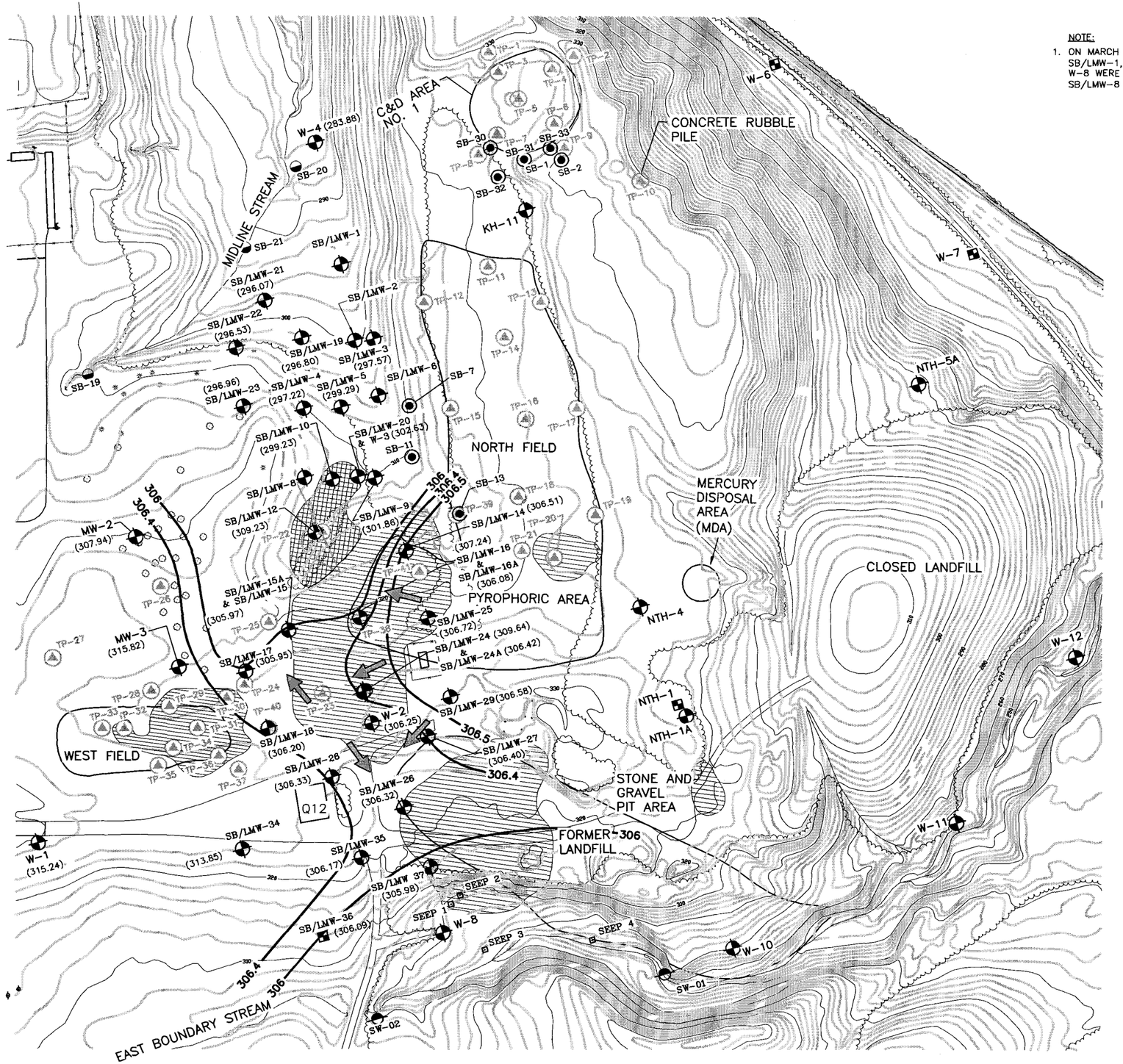
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FIGURE 24

NOTE:

1. ON MARCH 1, 2004 MONITORING WELLS SB/LMW-1, SB/LMW-2, SB/LMW-6, AND W-8 WERE FROZEN. MONITORING WELL SB/LMW-8 WAS DRY.



LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- SB/LMW-1 — SOIL BORING & NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-38 — TEST PIT LOCATION
- SB-20 — SEDIMENT SAMPLE LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION
- (306.34) — GROUNDWATER ELEVATION
- 308 — GROUNDWATER ELEVATION CONTOURS
- GROUNDWATER FLOW ARROW

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

RECONFIGURED GROUNDWATER ELEVATION CONTOURS (3/1/2004) USING DEEPER WELLS 15A, 16A, AND 24A

0 150 300

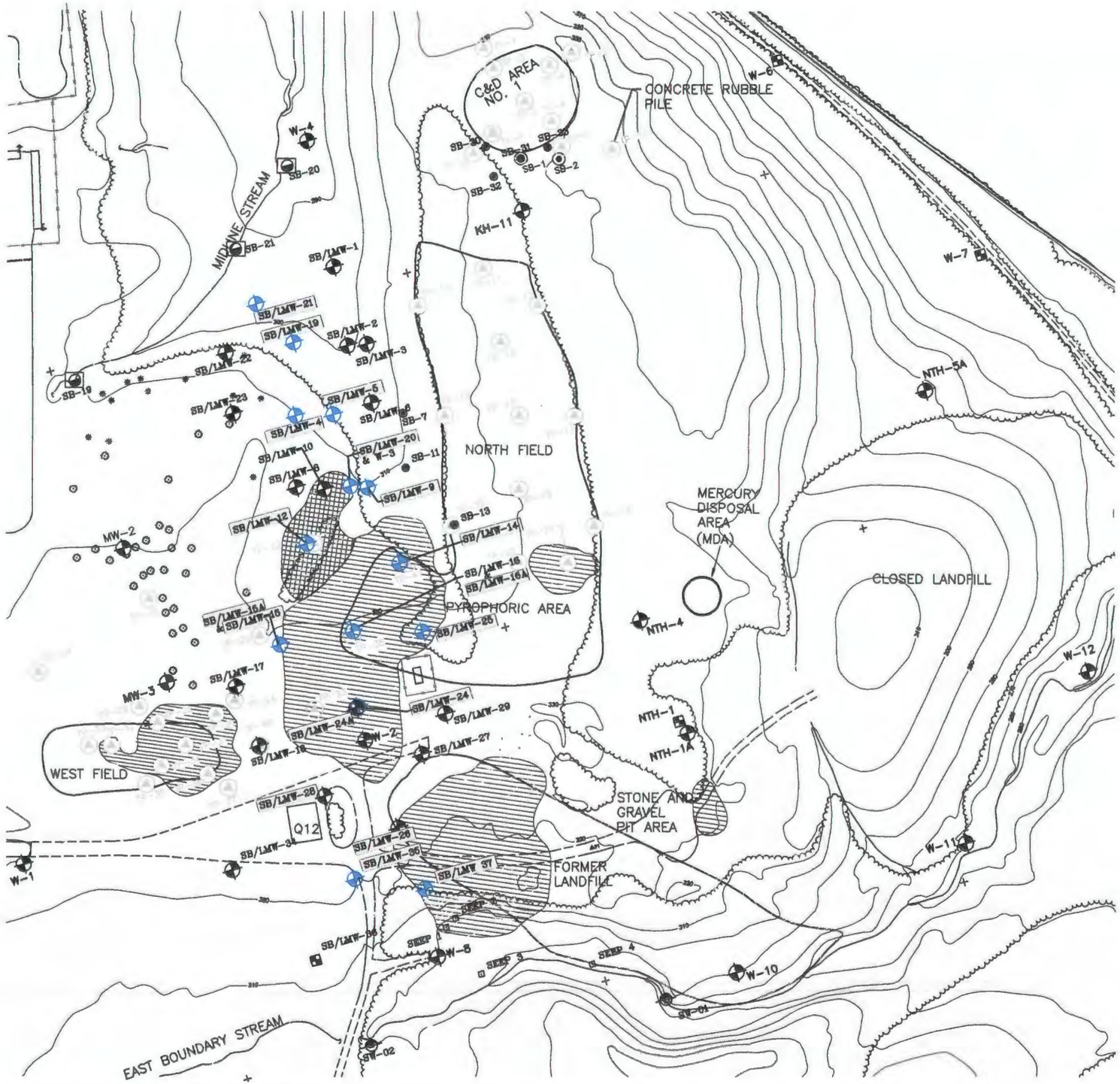
SCALE IN FEET

SEPTEMBER 2006

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FIGURE 25



LEGEND

- AREA CONTAINING POSSIBLE BURIED METAL OBJECTS
- AREA CONTAINING POSSIBLE CONDUCTIVE SOIL OR GROUNDWATER
- W-7 — FORMER WELL LOCATION
- MW-3 — OLD MONITORING WELL LOCATION
- LMW-1 — NEW MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION
- TP-38 — TEST PIT LOCATION
- SB-20 — SEDIMENT SAMPLE LOCATION
- SEEP 1 — SEEP SAMPLE LOCATION
- SW-02 — SURFACE WATER SAMPLE LOCATION
- SB/LMW-24 — VOC CONCENTRATION GREATER THAN GROUNDWATER STANDARD

KNOLLS ATOMIC POWER LABORATORY

NISKAYUNA, NEW YORK

LAND DISPOSAL AREA SAMPLING VISIT

WELLS CONTAINING VOCs GREATER THAN GROUNDWATER STANDARDS

150 0 150

SCALE IN FEET

SEPTEMBER 2006

10350.29274

Table 1
Land Disposal Area
SV Implementation Summary

Groundwater Investigation	

July 17, 2002 – November 7, 2002	Soil Boring/Sampling and Monitoring Well Installation
	• 20 direct push borings
	  ○ SB-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20
	• 17 monitoring wells installed
	  ○ LMW-1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 14, 15, 16, 17, 18, 19, and 20
	
	Groundwater Sampling
	• 15 monitoring wells sampled
	  ○ LMW-1, 2, 3, 4, 5, 6, 9, 12, 14, 15, 16, 17, 18, 19, and 20
	  ○ Insufficient water in LMW-8 and 10
	
	Well W-3 Assessment and Replacement
	• Slug and bail tests to evaluate hydraulic communication between the well screen and the shallow contaminated groundwater via the well annulus
	• Overdrilled and replaced W-3 with conventional well and annular seal
	  ○ 1 hollow-stem auger boring
	  ○ 1 monitoring well installed

November 12, 2002 – January 15, 2003	Soil Boring/Sampling and Monitoring Well Installation
	• 5 direct push borings
	  ○ SB-21, 22, 23, 24, and 25
	• 2 hollow-stem auger borings
	  ○ SB-15A and SB-16A
	• 7 monitoring wells installed
	  ○ LMW-15A, 16A, 21, 22, 23, 24, and 25
	
	Groundwater Sampling
	• 7 monitoring wells sampled
	  ○ LMW-15A, 16A, 21, 22, 23, 24, and 25

July 8, 2003 – August 7, 2003	Soil Boring/Sampling and Monitoring Well Installation
	• 8 direct push borings
	  ○ SB-26, 27, 28, 29, 30, 31, 32, and 33
	• 1 hollow-stem auger boring
	  ○ SB-24A
	• 5 monitoring wells installed
	  ○ LMW-24A, 26, 27, 28, and 29
	
	Groundwater Sampling
	• 28 monitoring wells sampled
	  ○ LMW-1, 2, 3, 4, 5, 6, 9, 10, 12, 14, 15, 15A, 16, 16A, 17, 18, 19, 20, 21, 22, 23, 24, 24A, 25, 26, 27, 28, 29

October 13, 2003 – November 14, 2003	Soil Boring/Sampling and Monitoring Well Installation
	• 4 direct push borings
	  ○ SB-34, 35, 36, and 37
	• 4 monitoring wells installed
	  ○ LMW-34, 35, 36, and 37
	
	Groundwater Sampling
	• 4 Monitoring wells sampled
	  ○ LMW-34, 35, 36, and 37
	
	Seep and Surface Water Sampling
	• 4 seeps sampled
	  ○ Seep 1, 2, 3, and 4
	• 2 surface water samples
	  ○ SW-1 and SW-2

Table 1
Land Disposal Area
SV Implementation Summary

Shallow Soil Investigation	
October 29, 2002 – November 7, 2002	C&D Area No. 1 • 2 shallow hand auger borings o SB-1 and SB-2 Midline Stream Sediment • 3 shallow hand auger borings o SB-19, 20, and 21 Mercury Disposal Area • 16 shallow hand auger borings o SB-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18
July 1, 2003 – July 3, 2003	Mercury Disposal Area Expanded Sampling • Resample for VOCs at 16 original locations • Expanded sampling at 6 original locations and 4 new locations o SB-5, 6, 7, 9, 12, and 13; and SB 22, 23, 24, and 25
September 8, 2003 – October 9, 2003	Pre-Test Pit Excavation Soil Characterization • 121 direct push borings from 41 test pit locations o 3 borings each at 39 test pit locations o Shallow borings typically 8 feet deep o 2 borings each at TP-7 and TP-10 (access limitations for 3rd boring) o Physical characterization of soil for health and safety planning • VOC analysis of soil from one boring each at TP-6 and TP-9 o TP-6 and TP-9 close to borings in C&D Area No.1 that contained TCE
November 25, 2003 – December 9, 2003	Test Pit Excavation and Sampling • 12 test pits excavated and sampled o TP-11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and 39
June 16, 2004 – July 15, 2004	Test Pit Excavation and Sampling • 29 test pits excavated and sampled o TP-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, and 41
SPRU Supplemental Soil Sampling – Former Slurry Drum Storage Area	
July 15, 2004 – July 28, 2004	Soil Boring/Sampling in and Near the Former Slurry Drum Storage Area • 19 direct push borings o LA1002-3-B1, LA1002-3-B2, LA1002-3-B2a, LA1002-3-B3, LA1002-3-B4, LA1002-3-B5, LA1004-3-S, LA1004-6-S, LA1004-9-S, LA1007-1-S, LA1007-2-B, LA1007-3-B, LA1007-4-B1, LA1007-4-B2, LA1007-6-S, LA1007-7-S, LA1007-8-S, LA1007-9-S, LA1016-8-S

Notes:

- 222 borings – 177 direct push, 4 hollow stem auger, 41 hand auger (25 locations plus 16 resamples)
- 34 wells installed – 30, 1-inch diameter; 4, 2-inch diameter
- 41 test pits excavated
- All groundwater, surface water and seep samples were analyzed for TCL VOCs plus tetrahydrofuran (THF) by EPA Method 8260
  - Owing to slight sheen on development water, one groundwater sample from LMW-16 also was analyzed for TCL SVOCs by EPA Method 8270
- Soil samples associated with Groundwater Investigation borings, C&D Area No. 1, Midline Stream, and pre-Test Pit borings TP-6B and TP-9B analyzed for TCL VOCs
- Soil samples associated with initial Mercury Disposal Area sampling analyzed for TCL VOCs, SVOCs, PCBs, and TAL Inorganics (Metals plus cyanide)
- Soil samples associated with second Mercury Disposal Area sampling analyzed for TCL VOCs at the 16 original locations: Additionally, TAL Metals at SB-5, 9, 12, and 13; TAL Inorganics and TCL SVOCs at SB-6 and SB-7; and TCL PAHs, PCBs, and TAL Inorganics at new locations SB-22, 23, 24, and 25
- All test pit soil samples analyzed for TCL VOCs, SVOCs, PCBs, and TAL Inorganics
- Soil samples associated with SPRU Supplemental sampling analyzed for TCL PAHs and TAL Metals

Table 2
Knolls Atomic Power Laboratory
Land Disposal Area: Midline Stream
Hand Boring Results (Sediment)
Volatile Organic Compounds

		Location ID	SB-19	SB-19	SB-20	SB-21
		Sample ID	NMLS-SD-SB19-1001	NMLS-SD-X1-1002 (Dup)	NMLS-SD-SB20-1005	NMLS-SD-SB21-1006
		Sample Date	10/31/2002	10/31/2002	10/31/2002	11/4/2002
	NYSDEC	Depth Interval (ft)	1 - 2	1 - 2	1 - 2	1 - 2
Chemical Name	TAGM 4046	Unit				
1,1,1-Trichloroethane	800	ug/kg	12.1 UJ	11.7 UJ	15.9 U	13.0 UJ
1,1,2,2-Tetrachloroethane	600	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
1,1,2-Trichloroethane	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
1,1-Dichloroethane	200	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
1,1-Dichloroethylene	400	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
1,2-Dichloroethane	100	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
1,2-Dichloropropane	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
2-Butanone	300	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
2-Hexanone	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
4-Methyl-2-pentanone	1000	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Acetone	200	ug/kg	12.1 U	11.7 U	15.9 U	21.2 U
Benzene	60	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Bromodichloromethane	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Bromoform	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Bromomethane	NC	ug/kg	12.1 U	11.7 U	15.9 UJ	13.0 U
Carbon disulfide	2700	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Carbon tetrachloride	600	ug/kg	12.1 UJ	11.7 UJ	15.9 U	13.0 UJ
Chlorobenzene	1700	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Chloroethane	1900	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Chloroform	300	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Chloromethane	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
cis-1,2-Dichloroethylene	250	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
cis-1,3-Dichloropropylene	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Dibromochloromethane	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Ethylbenzene	5500	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Methylene chloride	100	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Styrene	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Tetrachloroethylene	1400	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Toluene	1500	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
trans-1,2-Dichloroethylene	300	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Trichloroethylene	700	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Vinyl chloride	200	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U
Xylenes, Total	1200	ug/kg	12.1 U	11.7 U	15.9 U	13.0 U

Notes: U - Not detected, J - Estimated value, NC - No criteria.

Table 3
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Hand and Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB-1	SB-1	SB-1	SB-1	SB-2	SB-2
		Sample ID	NCD1-SS-SB01-1003	NCD1-SS-SB01-1004	NCD1-SS-X1-1005 (Dup)	NCD1-SS-SB01-1006	NCD1-SS-SB02-1007	NCD1-SS-SB02-1008
		Depth Interval (ft)	0 - 0.5	0.5 - 1.5	0.5 - 1.5	2.5 - 3.5	0 - 0.5	0.5 - 1.5
	NYSDEC	Sample Date	10/29/2002	10/29/2002	10/29/2002	10/29/2002	10/30/2002	10/30/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
1,1,2,2-Tetrachloroethane	600	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
1,1,2-Trichloroethane	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
1,1-Dichloroethane	200	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
1,1-Dichloroethylene	400	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
1,2-Dichloroethane	100	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
1,2-Dichloropropane	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
2-Butanone	300	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
2-Hexanone	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
4-Methyl-2-pentanone	1000	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Acetone	200	ug/kg	29.3 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Benzene	60	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Bromodichloromethane	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Bromoform	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Bromomethane	NC	ug/kg	13.1 UJ	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Carbon disulfide	2700	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Carbon tetrachloride	600	ug/kg	13.1 U	11.4 U	11.3 U	**0.67 J**	11.9 U	11.2 U
Chlorobenzene	1700	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Chloroethane	1900	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Chloroform	300	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Chloromethane	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
cis-1,2-Dichloroethylene	250	ug/kg	13.1 U	**3.8 J**	**9.0 J**	**12.1**	11.9 U	11.2 U
cis-1,3-Dichloropropylene	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Dibromochloromethane	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Ethylbenzene	5500	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Methylene chloride	100	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Styrene	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Tetrachloroethylene	1400	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Toluene	1500	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
trans-1,2-Dichloroethylene	300	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
trans-1,3-Dichloropropylene	NC	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Trichloroethylene	700	ug/kg	**5.2 J**	**43**	**101**	**2250 D ***	11.9 U	11.2 U
Vinyl chloride	200	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U
Xylenes, Total	1200	ug/kg	13.1 U	11.4 U	11.3 U	11.3 U	11.9 U	11.2 U

Notes: J - Estimated value, U - Not detected, R - Unusable data, D - Dilution
* - TAGM exceedance, Detects in **BOLD**, NC - No criteria.

Table 3
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Hand and Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB-2	TP-6B	TP-6B	TP-6B	TP-6B	TP-9B
		Sample ID	NCD1-SS-SB02-1009	NLDA-SS-TP6B-1113	NLDA-SS-TP6B-1114	NLDA-SS-TPB6-1116	NLDA-SS-TP6B-1115	NLDA-SS-TP9B-1108
		Depth Interval (ft)	2.5 - 3.5	2 - 2	4 - 4	6 - 6	8 - 8	2 - 2
	NYSDEC	Sample Date	10/30/2002	10/7/2003	10/7/2003	10/7/2003	10/7/2003	10/7/2003
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.0 U	55.0 UJ	53.4 R	53.8 R	53.9 R	10.9 U
1,1,2-Trichloroethane	NC	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
1,1-Dichloroethane	200	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
1,1-Dichloroethylene	400	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	**1.3 J**	10.9 U
1,2-Dichloroethane	100	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
1,2-Dichloropropane	NC	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
2-Butanone	300	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
2-Hexanone	NC	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
4-Methyl-2-pentanone	1000	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
Acetone	200	ug/kg	11.0 U	11.0 U	**4.4 J**	**8.1 J**	**7.7 J**	10.9 U
Benzene	60	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Bromodichloromethane	NC	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Bromoform	NC	ug/kg	11.0 U	55.0 UJ	53.4 R	53.8 R	53.9 R	10.9 U
Bromomethane	NC	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Carbon disulfide	2700	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Carbon tetrachloride	600	ug/kg	11.0 U	11.0 UJ	10.7 UJ	53.8 UJ	10.8 UJ	10.9 UJ
Chlorobenzene	1700	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
Chloroethane	1900	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Chloroform	300	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Chloromethane	NC	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
cis-1,2-Dichloroethylene	250	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Dibromochloromethane	NC	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
Ethylbenzene	5500	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
Methylene chloride	100	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Styrene	NC	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
Tetrachloroethylene	1400	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
Toluene	1500	ug/kg	11.0 U	**1.5 J**	53.4 UJ	53.8 UJ	**1.8 J**	10.9 U
trans-1,2-Dichloroethylene	300	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U
Trichloroethylene	700	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Vinyl chloride	200	ug/kg	11.0 U	11.0 U	10.7 UJ	53.8 U	10.8 UJ	10.9 U
Xylenes, Total	1200	ug/kg	11.0 U	11.0 UJ	53.4 UJ	53.8 UJ	53.9 UJ	10.9 U

Notes: J - Estimated value, U - Not detected, R - Unusable data, D - Dilution
* - TAGM exceedance, Detects in **BOLD**, NC - No criteria.

Table 3
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Hand and Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	TP-9B	TP-9B	TP-9B	TP-9B	SB-30	SB-30
		Sample ID	NLDA-SS-X13-1109 (Dup)	NLDA-SS-TP9B-1110	NLDA-SS-TP9B-1111	NLDA-SS-TP9B-1112	NLDA-SS-SB30-1098	NLDA-SS-SB30-1099
		Depth Interval (ft)	2 - 2	4 - 4	6 - 6	8 - 8	4 - 4	14.5 - 14.5
	NYSDEC	Sample Date	10/7/2003	10/7/2003	10/7/2003	10/7/2003	7/17/2003	7/17/2003
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.0 U	10.8 U	54.0 UJ	10.6 R	53.7 R	55.8 R
1,1,2-Trichloroethane	NC	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
1,1-Dichloroethane	200	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
1,1-Dichloroethylene	400	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
1,2-Dichloroethane	100	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
1,2-Dichloropropane	NC	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
2-Butanone	300	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
2-Hexanone	NC	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
4-Methyl-2-pentanone	1000	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
Acetone	200	ug/kg	11.0 U	10.8 U	10.8 U	**7.8 J**	53.7 U	**32.0 J**
Benzene	60	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
Bromodichloromethane	NC	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
Bromoform	NC	ug/kg	11.0 U	10.8 U	54.0 UJ	10.6 R	53.7 R	55.8 R
Bromomethane	NC	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
Carbon disulfide	2700	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	**4.8 J**	**9.6 J**
Carbon tetrachloride	600	ug/kg	11.0 UJ	10.8 UJ	10.8 UJ	10.6 UJ	53.7 U	55.8 UJ
Chlorobenzene	1700	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
Chloroethane	1900	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
Chloroform	300	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
Chloromethane	NC	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
cis-1,2-Dichloroethylene	250	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
Dibromochloromethane	NC	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
Ethylbenzene	5500	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
Methylene chloride	100	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	**5.5 J**	**2.7 J**
Styrene	NC	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
Tetrachloroethylene	1400	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
Toluene	1500	ug/kg	11.0 U	**0.44 J**	**1.4 J**	**1.4 J**	53.7 UJ	55.8 UJ
trans-1,2-Dichloroethylene	300	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	53.7 UJ	55.8 UJ
Trichloroethylene	700	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
Vinyl chloride	200	ug/kg	11.0 U	10.8 U	10.8 U	10.6 UJ	53.7 U	55.8 U
Xylenes, Total	1200	ug/kg	11.0 U	10.8 U	10.8 UJ	10.6 UJ	**1.3 J**	55.8 UJ

Notes: J - Estimated value, U - Not detected, R - Unusable data, D - Dilution
* - TAGM exceedance, Detects in **BOLD**, NC - No criteria.

Table 3
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Hand and Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB-31	SB-31	SB-31	SB-32	SB-32	SB-33
		Sample ID	NLDA-SS-SB31-1100	NLDA-SS-X12-1101 (Dup)	NLDA-SS-SB31-1102	NLDA-SS-SB32-1096	NLDA-SS-SB32-1097	NLDA-SS-SB33-1103
		Depth Interval (ft)	1.5 - 1.5	1.5 - 1.5	9.9 - 9.9	5.7 - 5.7	14.5 - 14.5	4.2 - 4.2
	NYSDEC	Sample Date	7/21/2003	7/21/2003	7/21/2003	7/16/2003	7/16/2003	7/21/2003
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
1,1,2,2-Tetrachloroethane	600	ug/kg	10.7 UJ	53.0 UJ	53.5 R	10.6 R	10.8 R	1090 U
1,1,2-Trichloroethane	NC	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
1,1-Dichloroethane	200	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
1,1-Dichloroethylene	400	ug/kg	10.7 U	10.6 U	**1.3 J**	10.6 UJ	10.8 UJ	10.9 UJ
1,2-Dichloroethane	100	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
1,2-Dichloropropane	NC	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
2-Butanone	300	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
2-Hexanone	NC	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
4-Methyl-2-pentanone	1000	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
Acetone	200	ug/kg	10.7 U	10.6 U	**4.2 J**	**5.8 J**	25.4 UJ	10.9 UJ
Benzene	60	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
Bromodichloromethane	NC	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
Bromoform	NC	ug/kg	10.7 UJ	53.0 UJ	53.5 R	10.6 R	10.8 R	1090 U
Bromomethane	NC	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
Carbon disulfide	2700	ug/kg	10.7 U	**2.6 J**	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
Carbon tetrachloride	600	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
Chlorobenzene	1700	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
Chloroethane	1900	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
Chloroform	300	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	**1.1 J**
Chloromethane	NC	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
cis-1,2-Dichloroethylene	250	ug/kg	**10.9 J**	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	**7.6 J**
cis-1,3-Dichloropropylene	NC	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
Dibromochloromethane	NC	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
Ethylbenzene	5500	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
Methylene chloride	100	ug/kg	10.7 U	10.6 U	**1.6 J**	**3.0 J**	10.8 UJ	**1.6 J**
Styrene	NC	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
Tetrachloroethylene	1400	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
Toluene	1500	ug/kg	10.7 UJ	**1.2 J**	**2.7 J**	52.8 UJ	10.8 R	1090 U
trans-1,2-Dichloroethylene	300	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
trans-1,3-Dichloropropylene	NC	ug/kg	10.7 UJ	53.0 U	53.5 UJ	52.8 UJ	10.8 R	1090 U
Trichloroethylene	700	ug/kg	**2090 DJ ***	10.6 UJ	10.7 UJ	10.6 UJ	10.8 UJ	**10900 DJ ***
Vinyl chloride	200	ug/kg	10.7 U	10.6 U	10.7 UJ	10.6 UJ	10.8 UJ	10.9 UJ
Xylenes, Total	1200	ug/kg	10.7 UJ	53.0 U	53.5 UJ	**1.4 J**	10.8 R	1090 U

Notes: J - Estimated value, U - Not detected, R - Unusable data, D - Dilution
* - TAGM exceedance, Detects in **BOLD**, NC - No criteria.

Table 3
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Hand and Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB-33
		Sample ID	NLDA-SS-SB33-1106
		Depth Interval (ft)	11.1 - 11.1
	NYSDEC	Sample Date	7/22/2003
Chemical Name	TAGM 4046	Unit	
1,1,1-Trichloroethane	800	ug/kg	10.5 UJ
1,1,2,2-Tetrachloroethane	600	ug/kg	10.5 U
1,1,2-Trichloroethane	NC	ug/kg	10.5 U
1,1-Dichloroethane	200	ug/kg	10.5 UJ
1,1-Dichloroethylene	400	ug/kg	**19.4 J**
1,2-Dichloroethane	100	ug/kg	10.5 UJ
1,2-Dichloropropane	NC	ug/kg	10.5 UJ
2-Butanone	300	ug/kg	10.5 UJ
2-Hexanone	NC	ug/kg	10.5 U
4-Methyl-2-pentanone	1000	ug/kg	10.5 U
Acetone	200	ug/kg	10.5 UJ
Benzene	60	ug/kg	10.5 UJ
Bromodichloromethane	NC	ug/kg	10.5 UJ
Bromoform	NC	ug/kg	10.5 U
Bromomethane	NC	ug/kg	10.5 UJ
Carbon disulfide	2700	ug/kg	**3.7 J**
Carbon tetrachloride	600	ug/kg	10.5 UJ
Chlorobenzene	1700	ug/kg	10.5 U
Chloroethane	1900	ug/kg	10.5 UJ
Chloroform	300	ug/kg	10.5 UJ
Chloromethane	NC	ug/kg	10.5 UJ
cis-1,2-Dichloroethylene	250	ug/kg	**235 J**
cis-1,3-Dichloropropylene	NC	ug/kg	10.5 UJ
Dibromochloromethane	NC	ug/kg	10.5 U
Ethylbenzene	5500	ug/kg	10.5 U
Methylene chloride	100	ug/kg	**1.6 J**
Styrene	NC	ug/kg	10.5 U
Tetrachloroethylene	1400	ug/kg	10.5 U
Toluene	1500	ug/kg	10.5 U
trans-1,2-Dichloroethylene	300	ug/kg	**2.9 J**
trans-1,3-Dichloropropylene	NC	ug/kg	10.5 U
Trichloroethylene	700	ug/kg	**40700 D ***
Vinyl chloride	200	ug/kg	10.5 UJ
Xylenes, Total	1200	ug/kg	10.5 U

Notes: J - Estimated value, U - Not detected, R - Unusable data, D - Dilution
* - TAGM exceedance, Detects in **BOLD**, NC - No criteria.

Table 4
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Volatile Organic Compounds

		Location ID	TP-1	TP-2	TP-3	TP-4	TP-5
		Sample ID	NCD1-SS-TP1-1188	NCD1-SS-TP2-1181	NCD1-SS-TP3-1185	NCD1-SS-TP4-1180	NCD1-SS-TP5-1179
		Sample Date	7/12/2004	7/7/2004	7/8/2004	7/6/2004	7/6/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit					
1,1,1-Trichloroethane	800	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.1 U	10.6 U	10.9 R	10.8 R	53.4 UJ
1,1,2-Trichloroethane	NC	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ
1,1-Dichloroethane	200	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
1,1-Dichloroethylene	400	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
1,2-Dichloroethane	100	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
1,2-Dichloropropane	NC	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
2-Butanone	300	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
2-Hexanone	NC	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ
4-Methyl-2-pentanone	1000	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ
Acetone	200	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Benzene	60	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Bromodichloromethane	NC	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Bromoform	NC	ug/kg	11.1 U	10.6 U	10.9 R	10.8 R	53.4 UJ
Bromomethane	NC	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Carbon disulfide	2700	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Carbon tetrachloride	600	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Chlorobenzene	1700	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ
Chloroethane	1900	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Chloroform	300	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Chloromethane	NC	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
cis-1,2-Dichloroethylene	250	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Dibromochloromethane	NC	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ
Ethylbenzene	5500	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 U
Methylene chloride	100	ug/kg	11.1 U	**2.6 J**	**2.5 J**	**6.0 J**	**4.9 J**
Styrene	NC	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ
Tetrachloroethylene	1400	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ
Toluene	1500	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	**0.56 J**
trans-1,2-Dichloroethylene	300	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ
Trichloroethylene	700	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Vinyl chloride	200	ug/kg	11.1 U	10.6 U	10.9 U	10.8 UJ	10.7 U
Xylenes, Total	1200	ug/kg	11.1 U	10.6 U	10.9 UJ	53.9 UJ	10.7 UJ

Notes: U - Not detected, J - Estimated value, R - Unusable data,
NC - No criteria, Detects in **BOLD**.

Table 4
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Volatile Organic Compounds

		Location ID	TP-6	TP-6	TP-7	TP-8	TP-9
		Sample ID	NCD1-SS-TP6-1183	NCD1-SS-X20-1184 (Dup)	NCD1-SS-TP7-1189	NCD1-SS-TP8-1176	NCD1-SS-TP9-1182
		Sample Date	7/8/2004	7/8/2004	7/12/2004	7/1/2004	7/7/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit					
1,1,1-Trichloroethane	800	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
1,1,2,2-Tetrachloroethane	600	ug/kg	10.9 R	54.7 UJ	10.7 R	10.7 R	10.8 U
1,1,2-Trichloroethane	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
1,1-Dichloroethane	200	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
1,1-Dichloroethylene	400	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
1,2-Dichloroethane	100	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
1,2-Dichloropropane	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
2-Butanone	300	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
2-Hexanone	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U
4-Methyl-2-pentanone	1000	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U
Acetone	200	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Benzene	60	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Bromodichloromethane	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Bromoform	NC	ug/kg	10.9 R	54.7 UJ	10.7 R	10.7 R	10.8 U
Bromomethane	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Carbon disulfide	2700	ug/kg	**3.5 J**	**4.5 J**	10.7 UJ	10.7 U	10.8 U
Carbon tetrachloride	600	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Chlorobenzene	1700	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U
Chloroethane	1900	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Chloroform	300	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	**0.67 J**	10.8 U
Chloromethane	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
cis-1,2-Dichloroethylene	250	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
cis-1,3-Dichloropropylene	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Dibromochloromethane	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U
Ethylbenzene	5500	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U
Methylene chloride	100	ug/kg	**7.2 J**	**8.1 J**	10.7 UJ	**3.8 J**	**2.3 J**
Styrene	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U
Tetrachloroethylene	1400	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U
Toluene	1500	ug/kg	10.9 UJ	**0.56 J**	10.7 UJ	**1.0 J**	10.8 U
trans-1,2-Dichloroethylene	300	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
trans-1,3-Dichloropropylene	NC	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U
Trichloroethylene	700	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Vinyl chloride	200	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 U	10.8 U
Xylenes, Total	1200	ug/kg	10.9 UJ	10.9 UJ	10.7 UJ	10.7 R	10.8 U

Notes: U - Not detected, J - Estimated value, R - Unusable data,
NC - No criteria, Detects in **BOLD**.

Table 4
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Volatile Organic Compounds

		Location ID	TP-10
		Sample ID	NCD1-SS-TP10-1175
		Sample Date	7/1/2004
	NYSDEC	Depth Interval (ft)	4 - 4
Chemical Name	TAGM 4046	Unit	
1,1,1-Trichloroethane	800	ug/kg	11.0 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.0 U
1,1,2-Trichloroethane	NC	ug/kg	11.0 U
1,1-Dichloroethane	200	ug/kg	11.0 U
1,1-Dichloroethylene	400	ug/kg	11.0 U
1,2-Dichloroethane	100	ug/kg	11.0 U
1,2-Dichloropropane	NC	ug/kg	11.0 U
2-Butanone	300	ug/kg	11.0 U
2-Hexanone	NC	ug/kg	11.0 U
4-Methyl-2-pentanone	1000	ug/kg	11.0 U
Acetone	200	ug/kg	11.0 U
Benzene	60	ug/kg	11.0 U
Bromodichloromethane	NC	ug/kg	11.0 U
Bromoform	NC	ug/kg	11.0 U
Bromomethane	NC	ug/kg	11.0 U
Carbon disulfide	2700	ug/kg	11.0 U
Carbon tetrachloride	600	ug/kg	11.0 U
Chlorobenzene	1700	ug/kg	11.0 U
Chloroethane	1900	ug/kg	11.0 U
Chloroform	300	ug/kg	**0.67 J**
Chloromethane	NC	ug/kg	11.0 U
cis-1,2-Dichloroethylene	250	ug/kg	11.0 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.0 U
Dibromochloromethane	NC	ug/kg	11.0 U
Ethylbenzene	5500	ug/kg	11.0 U
Methylene chloride	100	ug/kg	**1.9 J**
Styrene	NC	ug/kg	11.0 U
Tetrachloroethylene	1400	ug/kg	11.0 U
Toluene	1500	ug/kg	11.0 U
trans-1,2-Dichloroethylene	300	ug/kg	11.0 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.0 U
Trichloroethylene	700	ug/kg	11.0 U
Vinyl chloride	200	ug/kg	11.0 U
Xylenes, Total	1200	ug/kg	11.0 U

Notes: U - Not detected, J - Estimated value, R - Unusable data,
NC - No criteria, Detects in **BOLD**.

Table 5
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-1	TP-2	TP-3	TP-4	TP-5
		Sample ID	NCD1-SS-TP1-1188	NCD1-SS-TP2-1181	NCD1-SS-TP3-1185	NCD1-SS-TP4-1180	NCD1-SS-TP5-1179
		Sample Date	7/12/2004	7/7/2004	7/8/2004	7/6/2004	7/6/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit					
2,4,5-Trichlorophenol	100	ug/kg	366 U	352 U	361 U	356 U	353 U
2,4,6-Trichlorophenol	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
2,4-Dichlorophenol	400	ug/kg	366 U	352 U	361 U	356 U	353 U
2,4-Dimethylphenol	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
2,4-Dinitrophenol	200 or MDL	ug/kg	886 U	852 U	874 U	863 U	854 U
2,4-Dinitrotoluene	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
2,6-Dinitrotoluene	1000	ug/kg	366 U	352 U	361 U	356 U	353 U
2-Chloronaphthalene	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
2-Chlorophenol	800	ug/kg	366 U	352 U	361 U	356 U	353 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	886 U	852 U	874 U	863 U	854 U
2-Methylnaphthalene	36400	ug/kg	366 U	352 U	361 U	356 U	353 U
2-Nitrophenol	330 or MDL	ug/kg	366 U	352 U	361 U	356 U	353 U
3,3'-Dichlorobenzidine	NC	ug/kg	731 U	703 U	721 U	712 U	705 U
4-Bromophenylphenylether	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	366 U	352 U	361 U	356 U	353 U
4-Chloroaniline	220 or MDL	ug/kg	366 U	352 U	361 U	356 U	353 U
4-Chlorophenyl phenyl ether	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
4-Nitrophenol	100 or MDL	ug/kg	886 U	852 U	874 U	863 U	854 U
Acenaphthene	50000	ug/kg	**35.9 J**	352 U	361 U	**22.3 J**	353 U
Acenaphthylene	41000	ug/kg	366 U	352 U	361 U	356 U	353 U
Anthracene	50000	ug/kg	**95.0 J**	352 U	361 U	**43.5 J**	353 U
Benzo(a)anthracene	224 or MDL	ug/kg	**202 J**	352 U	361 U	**74.9 J**	353 U
Benzo(a)pyrene	61	ug/kg	**140 J ***	352 U	361 U	**50.4 J**	353 U
Benzo(b)fluoranthene	1100 or MDL	ug/kg	**174 J**	352 U	361 U	**65.8 J**	353 U
Benzo(g,h,i)perylene	50000	ug/kg	366 UJ	352 U	361 U	**28.2 J**	353 U
Benzo(k)fluoranthene	1100	ug/kg	366 U	352 U	361 U	356 U	353 U
Bis(2-chloroethoxy)methane	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
Bis(2-chloroethyl)ether	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	366 U	352 U	361 U	356 U	353 U
Butyl benzyl phthalate	50000	ug/kg	366 U	352 U	361 U	356 U	353 U
Carbazole	NC	ug/kg	**33.3 J**	352 U	361 U	**19.2 J**	353 U
Chrysene	400	ug/kg	**163 J**	352 U	361 U	**72.8 J**	353 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NC - No criteria, Detects in **BOLD**.

Table 5
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-1	TP-2	TP-3	TP-4	TP-5
		Sample ID	NCD1-SS-TP1-1188	NCD1-SS-TP2-1181	NCD1-SS-TP3-1185	NCD1-SS-TP4-1180	NCD1-SS-TP5-1179
		Sample Date	7/12/2004	7/7/2004	7/8/2004	7/6/2004	7/6/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit					
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	366 U	352 U	361 U	356 U	353 U
Dibenzofuran	6200	ug/kg	**19.9 J**	352 U	361 U	356 U	353 U
Dichlorobenzenes (1,2-)	7900	ug/kg	366 U	352 U	361 U	356 U	353 U
Dichlorobenzenes (1,3-)	1600	ug/kg	366 U	352 U	361 U	356 U	353 U
Dichlorobenzenes (1,4-)	8500	ug/kg	366 U	352 U	361 U	356 U	353 U
Diethyl phthalate	7100	ug/kg	366 U	409 U	361 U	356 U	353 U
Dimethyl phthalate	2000	ug/kg	366 U	352 U	361 U	356 U	353 U
Di-n-butylphthalate	8100	ug/kg	366 U	352 U	361 U	356 U	353 U
Di-n-octyl phthalate	50000	ug/kg	366 U	352 U	361 U	356 U	353 U
Diphenylamine	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
Fluoranthene	50000	ug/kg	**292 J**	352 U	361 U	**163 J**	353 U
Fluorene	50000	ug/kg	**33.5 J**	352 U	361 U	**16.3 J**	353 U
Hexachlorobenzene	410	ug/kg	366 U	352 U	361 U	356 U	353 U
Hexachlorobutadiene	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
Hexachlorocyclopentadiene	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
Hexachloroethane	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	**81.8 J**	352 U	361 U	**26.9 J**	353 U
Isophorone	4400	ug/kg	366 U	352 U	361 U	356 U	353 U
m,p-Cresols	900	ug/kg	369 U	355 U	364 U	360 U	356 U
m-Nitroaniline	500	ug/kg	886 U	852 U	874 U	863 U	854 U
Naphthalene	13000	ug/kg	**19.8 J**	352 U	361 U	356 U	353 U
Nitrobenzene	200 or MDL	ug/kg	366 U	352 U	361 U	356 U	353 U
N-Nitrosodipropylamine	NC	ug/kg	366 U	352 U	361 U	356 U	353 U
o-Cresol	100	ug/kg	369 U	355 U	364 U	360 U	356 U
o-Nitroaniline	430	ug/kg	886 U	852 U	874 U	863 U	854 U
Pentachlorophenol	1000 or MDL	ug/kg	886 U	852 U	874 U	863 U	854 U
Phenanthrene	50000	ug/kg	**302 J**	352 U	361 U	**144 J**	353 U
Phenol	30 or MDL	ug/kg	366 U	352 U	361 U	356 U	353 U
p-Nitroaniline	NC	ug/kg	886 U	852 U	874 U	863 U	854 U
Pyrene	50000	ug/kg	**335 J**	352 U	361 U	**135 J**	353 U
Trichlorobenzenes (1,2,4-)	3400	ug/kg	366 U	352 U	361 U	356 U	353 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NC - No criteria, Detects in **BOLD**.

Table 5
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-6	TP-6	TP-7	TP-8	TP-9
		Sample ID	NCD1-SS-TP6-1183	NCD1-SS-X20-1184 (Dup)	NCD1-SS-TP7-1189	NCD1-SS-TP8-1176	NCD1-SS-TP9-1182
		Sample Date	7/8/2004	7/8/2004	7/12/2004	7/1/2004	7/7/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit					
2,4,5-Trichlorophenol	100	ug/kg	359 U	362 U	354 U	355 U	358 U
2,4,6-Trichlorophenol	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
2,4-Dichlorophenol	400	ug/kg	359 U	362 U	354 U	355 U	358 U
2,4-Dimethylphenol	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
2,4-Dinitrophenol	200 or MDL	ug/kg	869 U	876 U	856 U	859 U	866 U
2,4-Dinitrotoluene	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
2,6-Dinitrotoluene	1000	ug/kg	359 U	362 U	354 U	355 U	358 U
2-Chloronaphthalene	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
2-Chlorophenol	800	ug/kg	359 U	362 U	354 U	355 U	358 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	869 U	876 U	856 U	859 U	866 U
2-Methylnaphthalene	36400	ug/kg	359 U	**19.7 J**	354 U	355 U	358 U
2-Nitrophenol	330 or MDL	ug/kg	359 U	362 U	354 U	355 U	358 U
3,3'-Dichlorobenzidine	NC	ug/kg	717 U	722 U	706 U	709 U	715 U
4-Bromophenylphenylether	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	359 U	362 U	354 U	355 U	358 U
4-Chloroaniline	220 or MDL	ug/kg	359 U	362 U	354 U	355 U	358 U
4-Chlorophenyl phenyl ether	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
4-Nitrophenol	100 or MDL	ug/kg	869 U	876 U	856 U	859 U	866 U
Acenaphthene	50000	ug/kg	**10.9 J**	**74.6 J**	354 U	355 U	**16.3 J**
Acenaphthylene	41000	ug/kg	359 U	362 U	354 U	355 U	358 U
Anthracene	50000	ug/kg	**19.7 J**	**182 J**	354 U	355 U	**45.7 J**
Benzo(a)anthracene	224 or MDL	ug/kg	359 U	**322 J ***	354 U	355 U	**89.6 J**
Benzo(a)pyrene	61	ug/kg	**37.6 J**	**220 J ***	354 U	355 U	**66.2 J ***
Benzo(b)fluoranthene	1100 or MDL	ug/kg	**73.3 J**	**392**	354 U	355 U	**117 J**
Benzo(g,h,i)perylene	50000	ug/kg	**23.4 J**	**134 J**	354 UJ	355 U	**46.2 J**
Benzo(k)fluoranthene	1100	ug/kg	359 U	362 U	354 U	355 U	358 U
Bis(2-chloroethoxy)methane	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
Bis(2-chloroethyl)ether	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	359 U	362 U	354 U	355 U	358 U
Butyl benzyl phthalate	50000	ug/kg	359 U	362 U	354 U	355 U	358 U
Carbazole	NC	ug/kg	359 U	**84.8 J**	354 U	355 U	358 U
Chrysene	400	ug/kg	**49.4 J**	**294 J**	354 U	355 U	**76.0 J**

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NC - No criteria, Detects in **BOLD**.

Table 5
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-6	TP-6	TP-7	TP-8	TP-9
		Sample ID	NCD1-SS-TP6-1183	NCD1-SS-X20-1184 (Dup)	NCD1-SS-TP7-1189	NCD1-SS-TP8-1176	NCD1-SS-TP9-1182
		Sample Date	7/8/2004	7/8/2004	7/12/2004	7/1/2004	7/7/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit					
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	359 U	362 U	354 U	355 U	358 U
Dibenzofuran	6200	ug/kg	359 U	**47.4 J**	354 U	355 U	358 U
Dichlorobenzenes (1,2-)	7900 *	ug/kg	359 U	362 U	354 U	355 U	358 U
Dichlorobenzenes (1,3-)	1600	ug/kg	359 U	362 U	354 U	355 U	358 U
Dichlorobenzenes (1,4-)	8500	ug/kg	359 U	362 U	354 U	355 U	358 U
Diethyl phthalate	7100	ug/kg	359 U	362 U	354 U	355 U	358 U
Dimethyl phthalate	2000	ug/kg	359 U	362 U	354 U	355 U	358 U
Di-n-butylphthalate	8100	ug/kg	359 U	362 U	354 U	355 U	358 U
Di-n-octyl phthalate	50000	ug/kg	359 U	362 U	354 U	355 U	358 U
Diphenylamine	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
Fluoranthene	50000	ug/kg	**110 J**	**694**	354 U	355 U	**173 J**
Fluorene	50000	ug/kg	**8.0 J**	**78.6 J**	354 U	355 U	**18.7 J**
Hexachlorobenzene	410	ug/kg	359 U	362 U	354 U	355 U	358 U
Hexachlorobutadiene	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
Hexachlorocyclopentadiene	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
Hexachloroethane	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	**20.1 J**	**121 J**	354 UJ	355 U	**40.0 J**
Isophorone	4400	ug/kg	359 U	362 U	354 U	355 U	358 U
m,p-Cresols	900	ug/kg	362 U	365 U	357 U	358 U	361 U
m-Nitroaniline	500	ug/kg	869 U	876 U	856 U	859 U	866 U
Naphthalene	13000	ug/kg	359 U	**40 J**	354 U	355 U	358 U
Nitrobenzene	200 or MDL	ug/kg	359 U	362 U	354 U	355 U	358 U
N-Nitrosodipropylamine	NC	ug/kg	359 U	362 U	354 U	355 U	358 U
o-Cresol	100	ug/kg	362 U	365 U	357 U	358 U	361 U
o-Nitroaniline	430	ug/kg	869 U	876 U	856 U	859 U	866 U
Pentachlorophenol	1000 or MDL	ug/kg	869 U	876 U	856 U	859 U	866 U
Phenanthrene	50000	ug/kg	**74.3 J**	**607**	354 U	355 U	**165 J**
Phenol	30 or MDL	ug/kg	359 U	362 U	354 U	355 U	358 U
p-Nitroaniline	NC	ug/kg	869 U	876 U	856 U	859 U	866 U
Pyrene	50000	ug/kg	**92.0 J**	**495**	354 U	355 U	**178 J**
Trichlorobenzenes (1,2,4-)	3400	ug/kg	359 U	362 U	354 U	355 U	358 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NC - No criteria, Detects in **BOLD**.

Table 5
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-10
		Sample ID	NCD1-SS-TP10-1175
		Sample Date	7/1/2004
	NYSDEC	Depth Interval (ft)	4 - 4
Chemical Name	TAGM 4046	Unit	
2,4,5-Trichlorophenol	100	ug/kg	365 U
2,4,6-Trichlorophenol	NC	ug/kg	365 U
2,4-Dichlorophenol	400	ug/kg	365 U
2,4-Dimethylphenol	NC	ug/kg	365 U
2,4-Dinitrophenol	200 or MDL	ug/kg	883 U
2,4-Dinitrotoluene	NC	ug/kg	365 U
2,6-Dinitrotoluene	1000	ug/kg	365 U
2-Chloronaphthalene	NC	ug/kg	365 U
2-Chlorophenol	800	ug/kg	365 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	883 U
2-Methylnaphthalene	36400	ug/kg	365 U
2-Nitrophenol	330 or MDL	ug/kg	365 U
3,3'-Dichlorobenzidine	NC	ug/kg	729 U
4-Bromophenylphenylether	NC	ug/kg	365 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	365 U
4-Chloroaniline	220 or MDL	ug/kg	365 U
4-Chlorophenyl phenyl ether	NC	ug/kg	365 U
4-Nitrophenol	100 or MDL	ug/kg	883 U
Acenaphthene	50000	ug/kg	365 U
Acenaphthylene	41000	ug/kg	365 U
Anthracene	50000	ug/kg	365 U
Benzo(a)anthracene	224 or MDL	ug/kg	365 U
Benzo(a)pyrene	61	ug/kg	365 U
Benzo(b)fluoranthene	1100 or MDL	ug/kg	365 U
Benzo(g,h,i)perylene	50000	ug/kg	365 U
Benzo(k)fluoranthene	1100	ug/kg	365 U
Bis(2-chloroethoxy)methane	NC	ug/kg	365 U
Bis(2-chloroethyl)ether	NC	ug/kg	365 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	365 U
Butyl benzyl phthalate	50000	ug/kg	365 U
Carbazole	NC	ug/kg	365 U
Chrysene	400	ug/kg	365 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NC - No criteria, Detects in **BOLD**.

Table 5
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-10
		Sample ID	NCD1-SS-TP10-1175
		Sample Date	7/1/2004
	NYSDEC	Depth Interval (ft)	4 - 4
Chemical Name	TAGM 4046	Unit	
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	365 U
Dibenzofuran	6200	ug/kg	365 U
Dichlorobenzenes (1,2-)	7900	ug/kg	365 U
Dichlorobenzenes (1,3-)	1600	ug/kg	365 U
Dichlorobenzenes (1,4-)	8500	ug/kg	365 U
Diethyl phthalate	7100	ug/kg	365 U
Dimethyl phthalate	2000	ug/kg	365 U
Di-n-butylphthalate	8100	ug/kg	365 U
Di-n-octyl phthalate	50000	ug/kg	365 U
Diphenylamine	NC	ug/kg	365 U
Fluoranthene	50000	ug/kg	365 U
Fluorene	50000	ug/kg	365 U
Hexachlorobenzene	410	ug/kg	365 U
Hexachlorobutadiene	NC	ug/kg	365 U
Hexachlorocyclopentadiene	NC	ug/kg	365 U
Hexachloroethane	NC	ug/kg	365 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	365 U
Isophorone	4400	ug/kg	365 U
m,p-Cresols	900	ug/kg	368 U
m-Nitroaniline	500	ug/kg	883 U
Naphthalene	13000	ug/kg	365 U
Nitrobenzene	200 or MDL	ug/kg	365 U
N-Nitrosodipropylamine	NC	ug/kg	365 U
o-Cresol	100	ug/kg	368 U
o-Nitroaniline	430	ug/kg	883 U
Pentachlorophenol	1000 or MDL	ug/kg	883 U
Phenanthrene	50000	ug/kg	365 U
Phenol	30 or MDL	ug/kg	365 U
p-Nitroaniline	NC	ug/kg	883 U
Pyrene	50000	ug/kg	365 U
Trichlorobenzenes (1,2,4-)	3400	ug/kg	365 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NC - No criteria, Detects in **BOLD**.

Table 6
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location ID	TP-1	TP-2	TP-3	TP-4	TP-5	TP-6
		Sample ID	NCD1-SS-TP1-1188	NCD1-SS-TP2-1181	NCD1-SS-TP3-1185	NCD1-SS-TP4-1180	NCD1-SS-TP5-1179	NCD1-SS-TP6-1183
		Sample Date	7/12/2004	7/7/2004	7/8/2004	7/6/2004	7/6/2004	7/8/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit						
Aroclor-1016	1000	ug/kg	3.7 U	3.5 U	3.6 U	3.6 U	3.6 U	3.6 U
Aroclor-1221	1000	ug/kg	3.7 U	3.5 U	3.6 U	3.6 U	3.6 U	3.6 U
Aroclor-1232	1000	ug/kg	3.7 U	3.5 U	3.6 U	3.6 U	3.6 U	3.6 U
Aroclor-1242	1000	ug/kg	3.7 U	3.5 U	3.6 U	3.6 U	3.6 U	3.6 U
Aroclor-1248	1000	ug/kg	3.7 U	3.5 U	3.6 U	3.6 U	3.6 U	3.6 U
Aroclor-1254	1000	ug/kg	3.7 U	3.5 U	3.6 U	**4.2**	3.6 U	**6.5**
Aroclor-1260	1000	ug/kg	**14.4**	3.5 U	**4.2**	**2.6 J**	3.6 U	**23.9**

Notes: U - Not dectected, J - Estimated value, Detects in **BOLD**.

Table 6
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location ID	TP-6	TP-7	TP-8	TP-9	TP-10
		Sample ID	NCD1-SS-X20-1184 (Dup)	NCD1-SS-TP7-1189	NCD1-SS-TP8-1176	NCD1-SS-TP9-1182	NCD1-SS-TP10-1175
		Sample Date	7/8/2004	7/12/2004	7/1/2004	7/7/2004	7/1/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit					
Aroclor-1016	1000	ug/kg	3.6 U	3.6 U	3.6 U	3.6 U	3.7 U
Aroclor-1221	1000	ug/kg	3.6 U	3.6 U	3.6 U	3.6 U	3.7 U
Aroclor-1232	1000	ug/kg	3.6 U	3.6 U	3.6 U	3.6 U	3.7 U
Aroclor-1242	1000	ug/kg	3.6 U	3.6 U	3.6 U	3.6 U	3.7 U
Aroclor-1248	1000	ug/kg	3.6 U	3.6 U	3.6 U	3.6 U	3.7 U
Aroclor-1254	1000	ug/kg	3.6 U	3.6 U	3.6 U	**6.1**	**5.0**
Aroclor-1260	1000	ug/kg	**32.6**	3.6 U	3.6 U	**16.5**	**7.6**

Notes: U - Not dectected, J - Estimated value, Detects in **BOLD**.

Table 7
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Inorganics

		Location ID	TP-1	TP-2	TP-3	TP-4	TP-5
		Sample ID	NCD1-SS-TP1-1188	NCD1-SS-TP2-1181	NCD1-SS-TP3-1185	NCD1-SS-TP4-1180	NCD1-SS-TP5-1179
		Sample Date	7/12/2004	7/7/2004	7/8/2004	7/6/2004	7/6/2004
	Soil	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	13400	10300	10800	14100	11400
Antimony	0.29	mg/kg	**0.43 BNJ**	**0.53 BNJ**	**0.65 BNJ**	**0.74 BNJ**	**1.4 BNJ**
Arsenic	8.8	mg/kg	6.8	6.3	6.1	6.9	7.5
Barium	97.4	mg/kg	79	59.8 NJ	76.2 NJ	**116 NJ**	87 NJ
Beryllium	1.1	mg/kg	0.69	0.57	0.56	0.72	0.59
Cadmium	0.3	mg/kg	**0.34 B**	0.28 B	0.21 B	0.21 B	0.18 B
Calcium	31600	mg/kg	17800	5480	20400	21400	23300
Chromium	18.8	mg/kg	**20.4**	14.3	15.7	**20.2**	16.7
Cobalt	14.4	mg/kg	9.6 E	9.1	9.3	11.2	10.3
Copper	38.1	mg/kg	32.8	25.4	25	28.4	25.7
Cyanide	NSB	mg/kg	0.197 J	1.00 U	1.00 U	1.00 U	1.00 U
Iron	35700	mg/kg	25800	24400	22300	27000	24300
Lead	15.7	mg/kg	**18**	10.6	10.6	10.2	10.2
Magnesium	9362	mg/kg	7910	4440	9180	**10600**	**9570**
Manganese	745	mg/kg	505	422	456	532	494
Mercury	0.09	mg/kg	0.052	0.024	0.026	0.021	0.022
Nickel	33.8	mg/kg	25.8	20.7	22.9	28.5	24.6
Potassium	1870	mg/kg	**1970 ENJ**	1610 ENJ	**2090 ENJ**	**3090 ENJ**	**2480 ENJ**
Selenium	0.21	mg/kg	**0.51 B**	0.171 U	**0.69 B**	**0.34 B**	**0.72 B**
Silver	0.09	mg/kg	0.0984 U	0.0949 U	0.0984 U	0.0965 U	0.0939 U
Sodium	130	mg/kg	84.7 B	79.4 B	87.2 B	94.8 B	86.1 B
Thallium	0.26	mg/kg	1.09 U	1.05 U	1.09 U	1.07 U	1.04 U
Vanadium	25.4	mg/kg	**26.5**	23.5	21.7	**27.1**	24.3
Zinc	82.9	mg/kg	80.8	58.7	54.8	61.1	57.2

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
h - Sample preparation or preservation holding time exceeded,
H - Analytical holding time exceeded, NC - No criteria, SB - Soil background,
NSB - No soil background concentration available.
IDL - Instrument Detection Limit
MDL - Method Detection Limit
CRDL - Contract Required Detection Limit

Table 7
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Inorganics

		Location ID	TP-6	TP-6	TP-7	TP-8	TP-9
		Sample ID	NCD1-SS-TP6-1183	NCD1-SS-X20-1184 (Dup)	NCD1-SS-TP7-1189	NCD1-SS-TP8-1176	NCD1-SS-TP9-1182
		Sample Date	7/8/2004	7/8/2004	7/12/2004	7/1/2004	7/7/2004
	Soil	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	12400	14000	8990	12700	10600
Antimony	0.29	mg/kg	**0.77 BNJ**	**1.3 BNJ**	0.367 UNJ	**0.45 BNJ**	**1.3 BNJ**
Arsenic	8.8	mg/kg	7.1	7	6.5	6.7	5.4
Barium	97.4	mg/kg	96.6 NJ	**98.3 NJ**	73.3	92.9	69.3 NJ
Beryllium	1.1	mg/kg	0.66	0.71	0.45 B	0.67	0.52
Cadmium	0.3	mg/kg	0.18 B	0.21 B	0.23 B	0.16 B	0.2 B
Calcium	31600	mg/kg	**40600**	19600	24100	22600 *	30200
Chromium	18.8	mg/kg	17.9	**20.5**	13.2	**19.1**	14.8
Cobalt	14.4	mg/kg	10	11.4	9.7 E	11.3 EJ	8.6
Copper	38.1	mg/kg	25.8	29.9	26.3	29.9 ENJ	23.5
Cyanide	NSB	mg/kg	1.00 U	1.00 U	1.00 U	1.00 HUhJ	1.00 U
Iron	35700	mg/kg	25200	27700	20800	26400	20700
Lead	15.7	mg/kg	11.6	14.4	10	11.3 *NJ	9.9
Magnesium	9362	mg/kg	**20200**	**10400**	9030	**10700**	6730
Manganese	745	mg/kg	503	554	477	589	460
Mercury	0.09	mg/kg	0.028	0.031	0.02 B	0.026 *NJ	0.02
Nickel	33.8	mg/kg	24.9	29.2	22.1	26.6 EJ	21.8
Potassium	1870	mg/kg	**2550 ENJ**	**2860 ENJ**	1800 ENJ	**2380 ENJ**	**1990 ENJ**
Selenium	0.21	mg/kg	**0.5 B**	0.18 B	0.173 U	**0.6 BJ**	0.172 U
Silver	0.09	mg/kg	0.0978 U	0.0985 U	0.0964 U	0.0963 U	0.0956 U
Sodium	130	mg/kg	86.6 B	87.4 B	108 B	94.3 B	60.4 B
Thallium	0.26	mg/kg	1.08 U	1.09 U	1.07 U	1.07 U	1.06 U
Vanadium	25.4	mg/kg	25.3	**27**	19	24.8	21.1
Zinc	82.9	mg/kg	64.4	69.2	51.4	57.7 NJ	55.9

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
h - Sample preparation or preservation holding time exceeded,
H - Analytical holding time exceeded, NC - No criteria, SB - Soil background,
NSB - No soil background concentration available.
IDL - Instrument Detection Limit
MDL - Method Detection Limit
CRDL - Contract Required Detection Limit

Table 7
Knolls Atomic Power Laboratory
Land Disposal Area: C&D Area No. 1
Test Pit Results (Soil)
Inorganics

		Location ID	TP-10
		Sample ID	NCD1-SS-TP10-1175
		Sample Date	7/1/2004
	Soil	Depth Interval (ft)	4 - 4
Chemical Name	Background	Unit	
Aluminum	15200	mg/kg	14400
Antimony	0.29	mg/kg	**0.67 BNJ**
Arsenic	8.8	mg/kg	7.5
Barium	97.4	mg/kg	89.8
Beryllium	1.1	mg/kg	0.71
Cadmium	0.3	mg/kg	0.23 B
Calcium	31600	mg/kg	2840 *
Chromium	18.8	mg/kg	**20.5**
Cobalt	14.4	mg/kg	12.8 EJ
Copper	38.1	mg/kg	34.9 ENJ
Cyanide	NSB	mg/kg	1.00 HUhJ
Iron	35700	mg/kg	30200
Lead	15.7	mg/kg	14.9 *NJ
Magnesium	9362	mg/kg	5650
Manganese	745	mg/kg	**762**
Mercury	0.09	mg/kg	0.049 NJ
Nickel	33.8	mg/kg	**35.6 EJ**
Potassium	1870	mg/kg	**2080 ENJ**
Selenium	0.21	mg/kg	**0.47 BJ**
Silver	0.09	mg/kg	0.0992 U
Sodium	130	mg/kg	57.9 B
Thallium	0.26	mg/kg	1.1 U
Vanadium	25.4	mg/kg	**25.8**
Zinc	82.9	mg/kg	77.7 NJ

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
h - Sample preparation or preservation holding time exceeded,
H - Analytical holding time exceeded, NC - No criteria, SB - Soil background,
NSB - No soil background concentration available.
IDL - Instrument Detection Limit
MDL - Method Detection Limit
CRDL - Contract Required Detection Limit

Table 8
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Volatile Organic Compounds

Chemical Name	NYSDEC TAGM 4046	Location ID / Sample ID / Sample Date / Depth Interval (ft) / Unit	TP-11 NNF-SS-TP11-1145 12/3/2003 4 - 4	TP-12 NNF-SS-TP12-1144 12/3/2003 4 - 4	TP-13 NNF-SS-TP13-1147 12/4/2003 4 - 4	TP-14 NNF-SS-TP14-1146 12/4/2003 4 - 4	TP-15 NNF-SS-TP15-1143 12/2/2003 4 - 4
1,1,1-Trichloroethane	800	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
1,1,2,2-Tetrachloroethane	600	ug/kg	10.6 R	11.2 U	10.6 R	10.7 R	11.6 U
1,1,2-Trichloroethane	NC	ug/kg	10.6 UJ	11.2 U	10.6 R	10.7 R	11.6 U
1,1-Dichloroethane	200	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
1,1-Dichloroethylene	400	ug/kg	10.6 U	11.2 U	**0.58 J**	10.7 U	11.6 U
1,2-Dichloroethane	100	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
1,2-Dichloropropane	NC	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
2-Butanone	300	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
2-Hexanone	NC	ug/kg	10.6 UJ	11.2 U	10.6 R	10.7 R	11.6 U
4-Methyl-2-pentanone	1000	ug/kg	10.6 UJ	11.2 U	10.6 R	10.7 R	11.6 U
Acetone	200	ug/kg	10.6 UJ	11.2 UJ	10.6 UJ	10.7 UJ	11.6 UJ
Benzene	60	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Bromodichloromethane	NC	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Bromoform	NC	ug/kg	10.6 R	11.2 U	10.6 R	10.7 R	11.6 U
Bromomethane	NC	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Carbon disulfide	2700	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Carbon tetrachloride	600	ug/kg	10.6 UJ	11.2 UJ	10.6 UJ	10.7 UJ	11.6 UJ
Chlorobenzene	1700	ug/kg	10.6 UJ	11.2 U	10.6 R	10.7 R	11.6 U
Chloroethane	1900	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Chloroform	300	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Chloromethane	NC	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
cis-1,2-Dichloroethylene	250	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
cis-1,3-Dichloropropylene	NC	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Dibromochloromethane	NC	ug/kg	10.6 UJ	11.2 U	10.6 R	10.7 R	11.6 U
Ethylbenzene	5500	ug/kg	10.6 UJ	11.2 U	10.6 R	**0.66 J**	11.6 U
Methylene chloride	100	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Styrene	NC	ug/kg	10.6 UJ	11.2 U	10.6 R	10.7 R	11.6 U
Tetrachloroethylene	1400	ug/kg	10.6 UJ	11.2 U	10.6 R	10.7 R	11.6 U
Toluene	1500	ug/kg	**0.88 J**	**0.47 J**	**14.3 J**	**2.5 J**	11.6 U
trans-1,2-Dichloroethylene	300	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
trans-1,3-Dichloropropylene	NC	ug/kg	10.6 UJ	11.2 U	10.6 R	10.7 R	11.6 U
Trichloroethylene	700	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Vinyl chloride	200	ug/kg	10.6 U	11.2 U	10.6 U	10.7 U	11.6 U
Xylenes, Total	1200	ug/kg	10.6 UJ	11.2 U	10.6 R	**1.5 J**	11.6 U

Notes: U - Not detected, J - Estimated value, R - Unusable data,
NC - No criteria, Detects in **BOLD**.

Table 8
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Volatile Organic Compounds

		Location ID	TP-16	TP-17	TP-17	TP-18	TP-19
		Sample ID	NNF-SS-TP16-1142	NNF-SS-TP17-1138	NNF-SS-X15-1139 (Dup)	NNF-SS-TP18-1137	NNF-SS-TP19-1136
		Sample Date	12/2/2003	12/1/2003	12/1/2003	12/1/2003	11/26/2003
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	**TAGM 4046**	**Unit**					
1,1,1-Trichloroethane	800	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
1,1,2,2-Tetrachloroethane	600	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 R
1,1,2-Trichloroethane	NC	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
1,1-Dichloroethane	200	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
1,1-Dichloroethylene	400	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
1,2-Dichloroethane	100	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
1,2-Dichloropropane	NC	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
2-Butanone	300	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
2-Hexanone	NC	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
4-Methyl-2-pentanone	1000	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
Acetone	200	ug/kg	10.6 UJ	10.7 UJ	10.7 UJ	10.8 R	10.7 UJ
Benzene	60	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Bromodichloromethane	NC	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Bromoform	NC	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 R
Bromomethane	NC	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Carbon disulfide	2700	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Carbon tetrachloride	600	ug/kg	10.6 UJ	10.7 UJ	10.7 UJ	10.8 R	10.7 UJ
Chlorobenzene	1700	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
Chloroethane	1900	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Chloroform	300	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Chloromethane	NC	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
cis-1,2-Dichloroethylene	250	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
cis-1,3-Dichloropropylene	NC	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Dibromochloromethane	NC	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
Ethylbenzene	5500	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
Methylene chloride	100	ug/kg	10.6 U	10.7 UJ	**2.6 J**	10.8 R	**1.9 J**
Styrene	NC	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
Tetrachloroethylene	1400	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
Toluene	1500	ug/kg	**3.2 J**	10.7 R	**2.6 J**	10.8 R	**4.2 J**
trans-1,2-Dichloroethylene	300	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
trans-1,3-Dichloropropylene	NC	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U
Trichloroethylene	700	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Vinyl chloride	200	ug/kg	10.6 U	10.7 UJ	10.7 UJ	10.8 R	10.7 U
Xylenes, Total	1200	ug/kg	10.6 R	10.7 R	10.7 R	10.8 R	10.7 U

Notes: U - Not detected, J - Estimated value, R - Unusable data,
NC - No criteria, Detects in **BOLD**.

Table 8
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Volatile Organic Compounds

Chemical Name	NYSDEC TAGM 4046	Unit	Location ID: TP-39	TP-39
			Sample ID: NNF-SS-TP39-1148	NNF-SS-X16-1149 (Dup)
			Sample Date: 12/4/2003	12/4/2003
			Depth Interval (ft): 4 - 4	4 - 4
1,1,1-Trichloroethane	800	ug/kg	11.1 U	11.1 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.1 U	11.1 U
1,1,2-Trichloroethane	NC	ug/kg	11.1 U	11.1 U
1,1-Dichloroethane	200	ug/kg	11.1 U	11.1 U
1,1-Dichloroethylene	400	ug/kg	11.1 U	11.1 U
1,2-Dichloroethane	100	ug/kg	11.1 U	11.1 U
1,2-Dichloropropane	NC	ug/kg	11.1 U	11.1 U
2-Butanone	300	ug/kg	11.1 U	11.1 U
2-Hexanone	NC	ug/kg	11.1 U	11.1 U
4-Methyl-2-pentanone	1000	ug/kg	11.1 U	11.1 U
Acetone	200	ug/kg	11.1 UJ	11.1 UJ
Benzene	60	ug/kg	11.1 U	11.1 U
Bromodichloromethane	NC	ug/kg	11.1 U	11.1 U
Bromoform	NC	ug/kg	11.1 U	11.1 U
Bromomethane	NC	ug/kg	11.1 U	11.1 U
Carbon disulfide	2700	ug/kg	11.1 U	11.1 U
Carbon tetrachloride	600	ug/kg	11.1 UJ	11.1 UJ
Chlorobenzene	1700	ug/kg	11.1 U	11.1 U
Chloroethane	1900	ug/kg	11.1 U	11.1 U
Chloroform	300	ug/kg	11.1 U	11.1 U
Chloromethane	NC	ug/kg	11.1 U	11.1 U
cis-1,2-Dichloroethylene	250	ug/kg	11.1 U	11.1 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.1 U	11.1 U
Dibromochloromethane	NC	ug/kg	11.1 U	11.1 U
Ethylbenzene	5500	ug/kg	11.1 U	11.1 U
Methylene chloride	100	ug/kg	11.1 U	11.1 U
Styrene	NC	ug/kg	11.1 U	11.1 U
Tetrachloroethylene	1400	ug/kg	**13.2**	**17.1**
Toluene	1500	ug/kg	11.1 U	11.1 U
trans-1,2-Dichloroethylene	300	ug/kg	11.1 U	11.1 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.1 U	11.1 U
Trichloroethylene	700	ug/kg	**4.7 J**	**5.8 J**
Vinyl chloride	200	ug/kg	11.1 U	11.1 U
Xylenes, Total	1200	ug/kg	11.1 U	11.1 U

Notes: U - Not detected, J - Estimated value, R - Unusable data,
NC - No criteria, Detects in **BOLD**.

Table 9
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location Name	TP-11	TP-12	TP-13	TP-14	TP-15	TP-16
		Sample Name	NNF-SS-TP11-1145	NNF-SS-TP12-1144	NNF-SS-TP13-1147	NNF-SS-TP14-1146	NNF-SS-TP15-1143	NNF-SS-TP16-1142
		Sample Date	12/3/2003	12/3/2003	12/4/2003	12/4/2003	12/2/2003	12/2/2003
	NYDEC TAGM	Depth Interval	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	**4046**	**Unit**						
2,4,5-Trichlorophenol	100	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
2,4,6-Trichlorophenol	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
2,4-Dichlorophenol	400	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
2,4-Dimethylphenol	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
2,4-Dinitrophenol	200 or MDL	ug/kg	849 U	900 U	850 U	857 U	925 U	850 U
2,4-Dinitrotoluene	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
2,6-Dinitrotoluene	1000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
2-Chloronaphthalene	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
2-Chlorophenol	800	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	849 U	900 U	850 U	857 U	925 U	850 U
2-Methylnaphthalene	36400	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
o-Nitroaniline	430 or MDL	ug/kg	849 U	900 U	850 U	857 U	925 U	850 U
2-Nitrophenol	330 or MDL	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
3,3'-Dichlorobenzidine	NC	ug/kg	701 U	742 U	701 U	707 U	763 U	701 U
m-Nitroaniline	500 or MDL	ug/kg	849 U	900 U	850 U	857 U	925 U	850 U
4-Bromophenylphenylether	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
4-Chloroaniline	220 or MDL	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
4-Chlorophenyl phenyl ether	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
p-Nitroaniline	NC	ug/kg	849 U	900 U	850 U	857 U	925 U	850 U
4-Nitrophenol	100 or MDL	ug/kg	849 U	900 U	850 U	857 U	925 U	850 U
Acenaphthene	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Acenaphthylene	41000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Anthracene	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Benzo(a)anthracene	224 or MDL	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Benzo(a)pyrene	61 or MDL	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Benzo(b)fluoranthene	1100	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Benzo(g,h,i)perylene	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Benzo(k)fluoranthene	1100	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Bis(2-chloroethoxy)methane	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Bis(2-chloroethyl)ether	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 9
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location Name	TP-11	TP-12	TP-13	TP-14	TP-15	TP-16
		Sample Name	NNF-SS-TP11-1145	NNF-SS-TP12-1144	NNF-SS-TP13-1147	NNF-SS-TP14-1146	NNF-SS-TP15-1143	NNF-SS-TP16-1142
		Sample Date	12/3/2003	12/3/2003	12/4/2003	12/4/2003	12/2/2003	12/2/2003
	NYDEC TAGM	Depth Interval	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	4046	Unit						
Butyl benzyl phthalate	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Carbazole	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Chrysene	400	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Dibenzofuran	6200	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Dichlorobenzenes (1,2-)	7900	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Dichlorobenzenes (1,3-)	1600	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Dichlorobenzenes (1,4-)	8500	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Diethyl phthalate	7100	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Dimethyl phthalate	2000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Di-n-butylphthalate	8100	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Di-n-octyl phthalate	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Diphenylamine	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Fluoranthene	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Fluorene	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Hexachlorobenzene	410	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Hexachlorobutadiene	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Hexachlorocyclopentadiene	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Hexachloroethane	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Isophorone	4400	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
m,p-Cresols	900	ug/kg	354 U	375 U	354 U	357 U	386 U	354 U
Naphthalene	13000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Nitrobenzene	200 or MDL	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
N-Nitrosodipropylamine	NC	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
o-Cresol	100 or MDL	ug/kg	354 U	375 U	354 U	357 U	386 U	354 U
Pentachlorophenol	1000 or MDL	ug/kg	849 U	900 U	850 U	857 U	925 U	850 U
Phenanthrene	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Phenol	30 or MDL	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Pyrene	50000	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U
Trichlorobenzenes (1,2,4-)	3400	ug/kg	351 U	372 U	351 U	354 U	382 U	351 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 9
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location Name	TP-17	TP-17	TP-18	TP-19	TP-39	TP-39
		Sample Name	NNF-SS-TP17-1138	NNF-SS-X15-1139 (Dup)	NNF-SS-TP18-1137	NNF-SS-TP19-1136	NNF-SS-TP39-1148	NNF-SS-X16-1149 (Dup)
		Sample Date	12/1/2003	12/1/2003	12/1/2003	11/26/2003	12/4/2003	12/4/2003
	NYDEC TAGM	Depth Interval	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	4046	Unit						
2,4,5-Trichlorophenol	100	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
2,4,6-Trichlorophenol	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
2,4-Dichlorophenol	400	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
2,4-Dimethylphenol	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
2,4-Dinitrophenol	200 or MDL	ug/kg	857 U	856 U	861 U	856 U	887 U	888 U
2,4-Dinitrotoluene	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
2,6-Dinitrotoluene	1000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
2-Chloronaphthalene	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
2-Chlorophenol	800	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	857 U	856 U	861 U	856 U	887 U	888 U
2-Methylnaphthalene	36400	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
o-Nitroaniline	430 or MDL	ug/kg	857 U	856 U	861 U	856 U	887 U	888 U
2-Nitrophenol	330 or MDL	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
3,3'-Dichlorobenzidine	NC	ug/kg	707 U	706 U	710 U	706 U	732 U	732 U
m-Nitroaniline	500 or MDL	ug/kg	857 U	856 U	861 U	856 U	887 U	888 U
4-Bromophenylphenylether	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
4-Chloroaniline	220 or MDL	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
4-Chlorophenyl phenyl ether	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
p-Nitroaniline	NC	ug/kg	857 U	856 U	861 U	856 U	887 U	888 U
4-Nitrophenol	100 or MDL	ug/kg	857 U	856 U	861 U	856 U	887 U	888 U
Acenaphthene	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Acenaphthylene	41000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Anthracene	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Benzo(a)anthracene	224 or MDL	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Benzo(a)pyrene	61 or MDL	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Benzo(b)fluoranthene	1100	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Benzo(g,h,i)perylene	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Benzo(k)fluoranthene	1100	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Bis(2-chloroethoxy)methane	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Bis(2-chloroethyl)ether	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 9
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location Name	TP-17	TP-17	TP-18	TP-19	TP-39	TP-39
		Sample Name	NNF-SS-TP17-1138	NNF-SS-X15-1139 (Dup)	NNF-SS-TP18-1137	NNF-SS-TP19-1136	NNF-SS-TP39-1148	NNF-SS-X16-1149 (Dup)
		Sample Date	12/1/2003	12/1/2003	12/1/2003	11/26/2003	12/4/2003	12/4/2003
	NYDEC TAGM	Depth Interval	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	**4046**	**Unit**						
Butyl benzyl phthalate	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Carbazole	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Chrysene	400	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Dibenzofuran	6200	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Dichlorobenzenes (1,2-)	7900	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Dichlorobenzenes (1,3-)	1600	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Dichlorobenzenes (1,4-)	8500	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Diethyl phthalate	7100	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Dimethyl phthalate	2000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Di-n-butylphthalate	8100	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Di-n-octyl phthalate	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Diphenylamine	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Fluoranthene	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Fluorene	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Hexachlorobenzene	410	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Hexachlorobutadiene	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Hexachlorocyclopentadiene	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Hexachloroethane	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Isophorone	4400	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
m,p-Cresols	900	ug/kg	357 U	357 U	359 U	357 U	370 U	370 U
Naphthalene	13000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Nitrobenzene	200 or MDL	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
N-Nitrosodipropylamine	NC	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
o-Cresol	100 or MDL	ug/kg	357 U	357 U	359 U	357 U	370 U	370 U
Pentachlorophenol	1000 or MDL	ug/kg	857 U	856 U	861 U	856 U	887 U	888 U
Phenanthrene	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Phenol	30 or MDL	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Pyrene	50000	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U
Trichlorobenzenes (1,2,4-)	3400	ug/kg	354 U	353 U	356 U	353 U	366 U	367 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 10
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location Name	TP-11	TP-12	TP-13	TP-14	TP-15	TP-16
		Sample Name	NNF-SS-TP11-1145	NNF-SS-TP12-1144	NNF-SS-TP13-1147	NNF-SS-TP14-1146	NNF-SS-TP15-1143	NNF-SS-TP16-1142
		Sample Date	12/3/2003	12/3/2003	12/4/2003	12/4/2003	12/2/2003	12/2/2003
	NYSDEC	Depth Interval	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit						
Aroclor-1016	1000	ug/kg	84.9 U	90.0 U	85.0 U	85.7 U	92.5 U	85.0 U
Aroclor-1221	1000	ug/kg	84.9 U	90.0 U	85.0 U	85.7 U	92.5 U	85.0 U
Aroclor-1232	1000	ug/kg	84.9 U	90.0 U	85.0 U	85.7 U	92.5 U	85.0 U
Aroclor-1242	1000	ug/kg	84.9 U	90.0 U	85.0 U	85.7 U	92.5 U	85.0 U
Aroclor-1248	1000	ug/kg	84.9 U	90.0 U	85.0 U	85.7 U	92.5 U	85.0 U
Aroclor-1254	1000	ug/kg	170 U	180 U	170 U	171 U	185 U	170 U
Aroclor-1260	1000	ug/kg	170 U	180 U	170 U	171 U	185 U	170 U

Notes: U - Not detected, J - Estimated value, Detects in **BOLD**.

Table 10
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location Name	TP-17	TP-17	TP-18	TP-19	TP-39	TP-39
		Sample Name	NNF-SS-TP17-1138	NNF-SS-X15-1139 (Dup)	NNF-SS-TP18-1137	NNF-SS-TP19-1136	NNF-SS-TP39-1148	NNF-SS-X16-1149 (Dup)
		Sample Date	12/1/2003	12/1/2003	12/1/2003	11/26/2003	12/4/2003	12/4/2003
	NYSDEC	Depth Interval	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit						
Aroclor-1016	1000	ug/kg	85.7 U	85.6 U	86.1 U	85.6 U	88.7 U	88.8 U
Aroclor-1221	1000	ug/kg	85.7 U	85.6 U	86.1 U	85.6 U	88.7 U	88.8 U
Aroclor-1232	1000	ug/kg	85.7 U	85.6 U	86.1 U	85.6 U	88.7 U	88.8 U
Aroclor-1242	1000	ug/kg	85.7 U	85.6 U	86.1 U	85.6 U	88.7 U	88.8 U
Aroclor-1248	1000	ug/kg	85.7 U	85.6 U	86.1 U	85.6 U	88.7 U	88.8 U
Aroclor-1254	1000	ug/kg	171 U	171 U	172 U	171 U	177 U	178 U
Aroclor-1260	1000	ug/kg	171 U	171 U	172 U	171 U	**14.8 J**	**18.4 J**

Notes: U - Not detected, J - Estimated value, Detects in **BOLD**.

Table 11
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Inorganics

		Location ID	TP-11	TP-12	TP-13	TP-14	TP-15
		Sample ID	NNF-SS-TP11-1145	NNF-SS-TP12-1144	NNF-SS-TP13-1147	NNF-SS-TP14-1146	NNF-SS-TP15-1143
		Sample Date	12/3/2003	12/3/2003	12/4/2003	12/4/2003	12/2/2003
	Soil	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	8570	11500	9600	10800	13700
Antimony	0.29	mg/kg	**0.805 BN*J**	**1.170 BN*J**	**0.899 BN*J**	**0.968 BN*J**	**0.366 BN*J**
Arsenic	8.8	mg/kg	5.650	6.970	6.670	6.990	**9.31**
Barium	97.4	mg/kg	44.1 N*J	71.3 N*J	43.8 N*J	57.0 N*J	81.0 N*J
Beryllium	1.1	mg/kg	0.427 B	0.665	0.496 B	0.593	0.819
Cadmium	0.3	mg/kg	0.035 U	0.040 U	0.104 B	0.100 B	0.041 U
Calcium	31600	mg/kg	22000 E*J	29300 E*J	21300 E*J	26700 E*J	2230 E*J
Chromium	18.8	mg/kg	11.8 NJ	16.6 NJ	14.9 NJ	16.5 NJ	**19.1 NJ**
Cobalt	14.4	mg/kg	8.760 ENJ	10.8 ENJ	10.2 ENJ	11.1 ENJ	13.9 ENJ
Copper	38.1	mg/kg	28.4	32.9	29.5	33.4	**39.9**
Cyanide	NSB	mg/kg	0.099 J	0.0161 UJ	0.137 J	3.34 J	0.846 J
Iron	35700	mg/kg	21400 EJ	25600 EJ	23500 EJ	26200 EJ	30100 EJ
Lead	15.7	mg/kg	8.70 ENJ	12.2 ENJ	14.3 ENJ	15.1 ENJ	15.2 ENJ
Magnesium	9362	mg/kg	9190 EJ	**12700 EJ**	**10100 EJ**	**11100 EJ**	5380 EJ
Manganese	745	mg/kg	427 E*J	520 E*J	461 E*J	590 E*J	614 E*J
Mercury	0.09	mg/kg	0.018 B	0.033	0.023	0.024	0.045
Nickel	33.8	mg/kg	20.9 ENJ	26.1 ENJ	24.4 ENJ	27.3 ENJ	32.3 ENJ
Potassium	1870	mg/kg	942 *	1460 *	1010 *	1300 *	1270 *
Selenium	0.21	mg/kg	**2.030 B**	**2.070 B**	**2.420 B**	**2.600 B**	**2.660 B**
Silver	0.09	mg/kg	0.047 U	0.054 U	0.050 U	0.051 U	0.054 U
Sodium	130	mg/kg	47.2 B	70.7 B	37.4 B	39.9 B	52.9 B
Thallium	0.26	mg/kg	0.158 U	0.180 U	0.169 U	0.174 U	0.182 U
Vanadium	25.4	mg/kg	13.6	19.6	15.9	17.6	22.7
Zinc	82.9	mg/kg	76.0 NJ	68.8 NJ	54.7 NJ	64.8 NJ	77.0 NJ

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
NC - No criteria, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 11
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Inorganics

		Location ID	TP-16	TP-17	TP-17	TP-18	TP-19
		Sample ID	NNF-SS-TP16-1142	NNF-SS-TP17-1138	NNF-SS-X15-1139 (Dup)	NNF-SS-TP18-1137	NNF-SS-TP19-1136
		Sample Date	12/2/2003	12/1/2003	12/1/2003	12/1/2003	11/26/2003
	Soil	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	8550	7950 EJ	10200 EJ	11800 EJ	7000 EJ
Antimony	0.29	mg/kg	**0.693 BN*J**	**0.449 BN*J**	0.334 UN*J	**0.663 BN*J**	**0.897 BN*J**
Arsenic	8.8	mg/kg	7.230	6.700	7.92	8.49	4.890 B
Barium	97.4	mg/kg	38.0 N*J	48.2 EN*J	43.8 EN*J	64.1 EN*J	42.3 BEN*J
Beryllium	1.1	mg/kg	0.427 B	0.408 B	0.509 B	0.61	0.455 B
Cadmium	0.3	mg/kg	0.044 B	0.061 U	0.093 B	0.138 B	0.064 U
Calcium	31600	mg/kg	**32400 E*J**	21500 E*J	22600 E*J	23000 E*J	**69400 E*J**
Chromium	18.8	mg/kg	13.2 NJ	13.2 EJ	17.2 EJ	**20.0 EJ**	12.0 EJ
Cobalt	14.4	mg/kg	11.3 ENJ	9.920 EJ	12.0 EJ	13.3 EJ	8.140 EJ
Copper	38.1	mg/kg	**40.1**	30.0 ENJ	29.9 ENJ	34.5 ENJ	22.9 ENJ
Cyanide	NSB	mg/kg	0.0689 J	1.00 UJ	1.00 UJ	1.00 UJ	0.0446 UJ
Iron	35700	mg/kg	23100 EJ	23100 EJ	28100 EJ	31600 EJ	22400 EJ
Lead	15.7	mg/kg	11.9 ENJ	10.1 EN*J	14.1 EN*J	**16.7 EN*J**	9.710 EN*J
Magnesium	9362	mg/kg	**9460 EJ**	**9560 E*J**	**11200 E*J**	**12000 E*J**	**38400 E*J**
Manganese	745	mg/kg	499 E*J	468 E*J	571 E*J	623 E*J	682 E*J
Mercury	0.09	mg/kg	0.021	0.016 B	0.021 B	0.021	0.018 B
Nickel	33.8	mg/kg	24.9 ENJ	23.6 ENJ	29.8 ENJ	**34.7 ENJ**	19.5 ENJ
Potassium	1870	mg/kg	1040 *	1000 E*J	1110 E*J	1360 E*J	914 BE*J
Selenium	0.21	mg/kg	**2.270 B**	**1.060 B**	**1.580 B**	**1.640 B**	**0.857 B**
Silver	0.09	mg/kg	0.048 U	0.198 U	0.202 U	0.203 U	0.208 U
Sodium	130	mg/kg	34.0 B	67.9 B	75.6 B	75.9 B	89.3 B
Thallium	0.26	mg/kg	0.162 U	0.409 U	0.416 U	0.418 U	0.428 U
Vanadium	25.4	mg/kg	15.2	14.6 EJ	17.5 EJ	19.2 EJ	17.2 EJ
Zinc	82.9	mg/kg	75.8 NJ	51.9 ENJ	59.9 ENJ	65.8 ENJ	42.7 ENJ

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
NC - No criteria, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection l
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 11
Knolls Atomic Power Laboratory
Land Disposal Area: North Field
Test Pit Results (Soil)
Inorganics

		Location ID	TP-39	TP-39
		Sample ID	NNF-SS-TP39-1148	NNF-SS-X16-1149 (Dup)
		Sample Date	12/4/2003	12/4/2003
	Soil	Depth Interval (ft)	4 - 4	4 - 4
Chemical Name	Background	Unit		
Aluminum	15200	mg/kg	11900	12200
Antimony	0.29	mg/kg	**0.658 BN*J**	**0.918 BN*J**
Arsenic	8.8	mg/kg	5.650	7.110
Barium	97.4	mg/kg	59.3 N*J	76.8 N*J
Beryllium	1.1	mg/kg	0.558	0.671
Cadmium	0.3	mg/kg	0.039 U	0.039 U
Calcium	31600	mg/kg	6910 E*J	16500 E*J
Chromium	18.8	mg/kg	14.9 NJ	17.7 NJ
Cobalt	14.4	mg/kg	14.4 ENJ	12.5 ENJ
Copper	38.1	mg/kg	26.9	34.5
Cyanide	NSB	mg/kg	0.0881 J	1.00 UJ
Iron	35700	mg/kg	24900 EJ	26500 EJ
Lead	15.7	mg/kg	12.5 ENJ	12.7 ENJ
Magnesium	9362	mg/kg	6430 EJ	8040 EJ
Manganese	745	mg/kg	814 E*J	526 E*J
Mercury	0.09	mg/kg	0.029	0.031
Nickel	33.8	mg/kg	26.8 ENJ	27.9 ENJ
Potassium	1870	mg/kg	916 *	1590 *
Selenium	0.21	mg/kg	2.430 B	2.430 B
Silver	0.09	mg/kg	0.052 U	0.052 U
Sodium	130	mg/kg	43.0 B	73.1 B
Thallium	0.26	mg/kg	0.436 U	0.175 U
Vanadium	25.4	mg/kg	19.4	21.0
Zinc	82.9	mg/kg	56.6 NJ	71.8 NJ

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
NC - No criteria, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection l
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 12
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB-3	SB-4	SB-4	SB-5	SB-6
		Sample ID	NMDA-SS-SB03-1021	NMDA-SS-SB04-1027	NMDA-SS-X2-1028 (Dup)	NMDA-SS-SB05-1038	NMDA-SS-SB06-1042
		Sample Date	7/1/2003	7/1/2003	7/1/2003	7/2/2003	7/2/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 2	0 - 2	0 - 2	0 - 0.5
Chemical Name	TAGM 4046	Unit					
1,1,1-Trichloroethane	800	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.9 UJ	12.2 U	12.4 U	12.1 U	13.9 UJ
1,1,2-Trichloroethane	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
1,1-Dichloroethane	200	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
1,1-Dichloroethylene	400	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
1,2-Dichloroethane	100	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
1,2-Dichloropropane	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
2-Butanone	300	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
2-Hexanone	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
4-Methyl-2-pentanone	1000	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Acetone	200	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Benzene	60	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Bromodichloromethane	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Bromoform	NC	ug/kg	11.9 UJ	12.2 U	12.4 U	12.1 U	13.9 UJ
Bromomethane	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Carbon disulfide	2700	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Carbon tetrachloride	600	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Chlorobenzene	1700	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Chloroethane	1900	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Chloroform	300	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Chloromethane	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
cis-1,2-Dichloroethylene	250	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Dibromochloromethane	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Ethylbenzene	5500	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Methylene chloride	100	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Styrene	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Tetrachloroethylene	1400	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Toluene	1500	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
trans-1,2-Dichloroethylene	300	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Trichloroethylene	700	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Vinyl chloride	200	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U
Xylenes, Total	1200	ug/kg	11.9 U	12.2 U	12.4 U	12.1 U	13.9 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**, NC - No criteria.

Table 12
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB-7	SB-8	SB-9	SB-10	SB-11
		Sample ID	NMDA-SS-SB07-1044	NMDA-SS-SB08-1029	NMDA-SS-SB09-1040	NMDA-SS-SB10-1023	NMDA-SS-SB11-1022
		Sample Date	7/2/2003	7/1/2003	7/2/2003	7/1/2003	7/1/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 2	0 - 2	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit					
1,1,1-Trichloroethane	800	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
1,1,2,2-Tetrachloroethane	600	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
1,1,2-Trichloroethane	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
1,1-Dichloroethane	200	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
1,1-Dichloroethylene	400	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
1,2-Dichloroethane	100	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
1,2-Dichloropropane	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
2-Butanone	300	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
2-Hexanone	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
4-Methyl-2-pentanone	1000	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Acetone	200	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Benzene	60	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Bromodichloromethane	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Bromoform	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Bromomethane	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Carbon disulfide	2700	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Carbon tetrachloride	600	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Chlorobenzene	1700	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Chloroethane	1900	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Chloroform	300	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Chloromethane	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
cis-1,2-Dichloroethylene	250	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
cis-1,3-Dichloropropylene	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Dibromochloromethane	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Ethylbenzene	5500	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Methylene chloride	100	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Styrene	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Tetrachloroethylene	1400	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Toluene	1500	ug/kg	21.2 UJ	12.0 U	**4.5 J**	**0.66 J**	**2.7 J**
trans-1,2-Dichloroethylene	300	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
trans-1,3-Dichloropropylene	NC	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Trichloroethylene	700	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Vinyl chloride	200	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U
Xylenes, Total	1200	ug/kg	21.2 UJ	12.0 U	12.1 U	11.6 U	13.2 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**, NC - No criteria.

Table 12
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Volatile Organic Compounds

Chemical Name	NYSDEC TAGM 4046	Unit	Location ID / Sample ID / Sample Date / Depth Interval (ft)				
			SB-12 / NMDA-SS-SB12-1034 / 7/2/2003 / 0 - 0.5	SB-13 / NMDA-SS-SB13-1036 / 7/2/2003 / 0 - 0.5	SB-14 / NMDA-SS-SB14-1024 / 7/1/2003 / 0 - 0.5	SB-15 / NMDA-SS-SB15-1025 / 7/1/2003 / 0 - 0.5	SB-16 / NMDA-SS-SB16-1026 / 7/1/2003 / 0 - 0.5
1,1,1-Trichloroethane	800	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
1,1,2,2-Tetrachloroethane	600	ug/kg	12.7 U	13.0 U	12.5 U	12.5 UJ	11.9 UJ
1,1,2-Trichloroethane	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
1,1-Dichloroethane	200	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
1,1-Dichloroethylene	400	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
1,2-Dichloroethane	100	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
1,2-Dichloropropane	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
2-Butanone	300	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
2-Hexanone	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
4-Methyl-2-pentanone	1000	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Acetone	200	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Benzene	60	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Bromodichloromethane	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Bromoform	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 UJ	11.9 UJ
Bromomethane	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Carbon disulfide	2700	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Carbon tetrachloride	600	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Chlorobenzene	1700	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Chloroethane	1900	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Chloroform	300	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Chloromethane	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
cis-1,2-Dichloroethylene	250	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
cis-1,3-Dichloropropylene	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Dibromochloromethane	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Ethylbenzene	5500	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Methylene chloride	100	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Styrene	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Tetrachloroethylene	1400	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Toluene	1500	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	0.90 J
trans-1,2-Dichloroethylene	300	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Trichloroethylene	700	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Vinyl chloride	200	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U
Xylenes, Total	1200	ug/kg	12.7 U	13.0 U	12.5 U	12.5 U	11.9 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**, NC - No criteria.

Table 12
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB-17	SB-18
		Sample ID	NMDA-SS-SB17-1030	NMDA-SS-SB18-1031
		Sample Date	7/1/2003	7/1/2003
	NYSDEC	Depth Interval (ft)	0 - 2	0 - 2
Chemical Name	TAGM 4046	Unit		
1,1,1-Trichloroethane	800	ug/kg	12.3 U	12.5 U
1,1,2,2-Tetrachloroethane	600	ug/kg	12.3 U	12.5 U
1,1,2-Trichloroethane	NC	ug/kg	12.3 U	12.5 U
1,1-Dichloroethane	200	ug/kg	12.3 U	12.5 U
1,1-Dichloroethylene	400	ug/kg	12.3 U	12.5 U
1,2-Dichloroethane	100	ug/kg	12.3 U	12.5 U
1,2-Dichloropropane	NC	ug/kg	12.3 U	12.5 U
2-Butanone	300	ug/kg	12.3 U	12.5 U
2-Hexanone	NC	ug/kg	12.3 U	12.5 U
4-Methyl-2-pentanone	1000	ug/kg	12.3 U	12.5 U
Acetone	200	ug/kg	12.3 U	12.5 U
Benzene	60	ug/kg	12.3 U	12.5 U
Bromodichloromethane	NC	ug/kg	12.3 U	12.5 U
Bromoform	NC	ug/kg	12.3 U	12.5 U
Bromomethane	NC	ug/kg	12.3 U	12.5 U
Carbon disulfide	2700	ug/kg	12.3 U	12.5 U
Carbon tetrachloride	600	ug/kg	12.3 U	12.5 U
Chlorobenzene	1700	ug/kg	12.3 U	12.5 U
Chloroethane	1900	ug/kg	12.3 U	12.5 U
Chloroform	300	ug/kg	12.3 U	12.5 U
Chloromethane	NC	ug/kg	12.3 U	12.5 U
cis-1,2-Dichloroethylene	250	ug/kg	12.3 U	12.5 U
cis-1,3-Dichloropropylene	NC	ug/kg	12.3 U	12.5 U
Dibromochloromethane	NC	ug/kg	12.3 U	12.5 U
Ethylbenzene	5500	ug/kg	12.3 U	12.5 U
Methylene chloride	100	ug/kg	12.3 U	12.5 U
Styrene	NC	ug/kg	12.3 U	12.5 U
Tetrachloroethylene	1400	ug/kg	12.3 U	12.5 U
Toluene	1500	ug/kg	12.3 U	12.5 U
trans-1,2-Dichloroethylene	300	ug/kg	12.3 U	12.5 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.3 U	12.5 U
Trichloroethylene	700	ug/kg	12.3 U	12.5 U
Vinyl chloride	200	ug/kg	12.3 U	12.5 U
Xylenes, Total	1200	ug/kg	12.3 U	12.5 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-3	SB-4	SB-5	SB-6	SB-6	SB-6
		Sample ID	NMDA-SS-SB03-1003	NMDA-SS-SB04-1015	NMDA-SS-SB05-1016	NMDA-SS-SB06-1004	NMDA-SS-SB06-1042	NMDA-SS-SB06-1043
		Sample Date	11/5/2002	11/7/2002	11/7/2002	11/5/2002	7/2/2003	7/2/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 2	0 - 2	0 - 0.5	0 - 0.5	0.5 - 1.5
Chemical Name	TAGM 4046	Unit						
2,4,5-Trichlorophenol	100	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
2,4,6-Trichlorophenol	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
2,4-Dichlorophenol	400	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
2,4-Dimethylphenol	NC	ug/kg	414 U	393 U	403 U	436 U	460 UJ	396 UJ
2,4-Dinitrophenol	200 or MDL	ug/kg	1000 U	952 U	977 U	1050 U	1110 UJ	959 UJ
2,4-Dinitrotoluene	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
2,6-Dinitrotoluene	1000	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
2-Chloronaphthalene	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
2-Chlorophenol	800	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	1000 U	952 U	977 U	1050 U	1110 UJ	959 U
2-Methylnaphthalene	36400	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
o-Nitroaniline	430 or MDL	ug/kg	1000 U	952 U	977 U	1050 U	1110 U	959 U
2-Nitrophenol	330 or MDL	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
3,3'-Dichlorobenzidine	NC	ug/kg	828 U	786 U	806 U	870 U	919 U	791 U
m-Nitroaniline	500 or MDL	ug/kg	1000 U	952 U	977 U	1050 U	1110 U	959 U
4-Bromophenylphenylether	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
4-Chloroaniline	220 or MDL	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
4-Chlorophenyl phenyl ether	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
p-Nitroaniline	NC	ug/kg	1000 U	952 U	977 U	1050 U	1110 U	959 U
4-Nitrophenol	100 or MDL	ug/kg	1000 U	952 U	977 U	1050 U	1110 U	959 U
Acenaphthene	50000	ug/kg	414 U	393 U	403 U	**12.1 J**	460 U	396 U
Acenaphthylene	41000	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Anthracene	50000	ug/kg	414 U	393 U	403 U	**27.9 J**	460 U	396 U
Benzo(a)anthracene	224 or MDL	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Benzo(a)pyrene	61 or MDL	ug/kg	414 U	393 U	403 U	**167 J ***	460 U	396 U
Benzo(b)fluoranthene	1100	ug/kg	414 U	393 U	403 U	**243 J**	460 U	396 U
Benzo(g,h,i)perylene	50000	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Benzo(k)fluoranthene	1100	ug/kg	414 UJ	393 UJ	403 UJ	436 UJ	460 U	396 U
Bis(2-chloroethoxy)methane	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Bis(2-chloroethyl)ether	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	414 U	393 U	403 U	436 U	**71.7 J**	**52.6 J**
Butyl benzyl phthalate	50000	ug/kg	414 UJ	393 UJ	403 UJ	436 UJ	460 U	396 U
Carbazole	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-3	SB-4	SB-5	SB-6	SB-6	SB-6
		Sample ID	NMDA-SS-SB03-1003	NMDA-SS-SB04-1015	NMDA-SS-SB05-1016	NMDA-SS-SB06-1004	NMDA-SS-SB06-1042	NMDA-SS-SB06-1043
		Sample Date	11/5/2002	11/7/2002	11/7/2002	11/5/2002	7/2/2003	7/2/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 2	0 - 2	0 - 0.5	0 - 0.5	0.5 - 1.5
Chemical Name	TAGM 4046	Unit						
Chrysene	400	ug/kg	414 UJ	393 UJ	403 UJ	**75.2 J**	460 U	396 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Dibenzofuran	6200	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Dichlorobenzenes (1,2-)	7900	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Dichlorobenzenes (1,3-)	1600	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Dichlorobenzenes (1,4-)	8500	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Diethyl phthalate	7100	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Dimethyl phthalate	2000	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Di-n-butylphthalate	8100	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Di-n-octyl phthalate	50000	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Diphenylamine	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Fluoranthene	50000	ug/kg	**33.4 J**	393 U	403 U	**186 J**	460 U	396 U
Fluorene	50000	ug/kg	414 U	393 U	403 U	**10.6 J**	460 U	396 U
Hexachlorobenzene	410	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Hexachlorobutadiene	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Hexachlorocyclopentadiene	NC	ug/kg	414 UJ	393 UJ	403 UJ	436 UJ	460 U	396 UJ
Hexachloroethane	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	414 U	393 U	403 U	**255 J**	460 U	396 U
Isophorone	4400	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
m,p-Cresols	900	ug/kg	418 U	397 U	407 U	440 U	464 U	400 U
Naphthalene	13000	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Nitrobenzene	200 or MDL	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
N-Nitrosodipropylamine	NC	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
o-Cresol	100 or MDL	ug/kg	418 U	397 U	407 U	440 U	464 U	400 U
Pentachlorophenol	1000 or MDL	ug/kg	1000 U	952 U	977 U	1050 U	1110 U	959 U
Phenanthrene	50000	ug/kg	414 U	393 U	403 U	**140 J**	460 U	396 U
Phenol	30 or MDL	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U
Pyrene	50000	ug/kg	**77.2 J**	393 UJ	403 UJ	**157 J**	460 U	396 UJ
Trichlorobenzenes (1,2,4-)	3400	ug/kg	414 U	393 U	403 U	436 U	460 U	396 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-7	SB-7	SB-7	SB-7	SB-8	SB-9
		Sample ID	NMDA-SS-SB07-1005	NMDA-SS-X1-1006 (Dup)	NMDA-SS-SB07-1044	NMDA-SS-SB07-1045	NMDA-SS-SB08-1017	NMDA-SS-SB09-1018
		Sample Date	11/5/2002	11/5/2002	7/2/2003	7/2/2003	11/7/2002	11/7/2002
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 1.5	0 - 2	0 - 2
Chemical Name	TAGM 4046	Unit						
2,4,5-Trichlorophenol	100	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
2,4,6-Trichlorophenol	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
2,4-Dichlorophenol	400	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
2,4-Dimethylphenol	NC	ug/kg	471 U	490 U	701 UJ	411 UJ	402 U	415 U
2,4-Dinitrophenol	200 or MDL	ug/kg	1140 U	1190 U	1700 UJ	995 UJ	973 U	1000 U
2,4-Dinitrotoluene	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
2,6-Dinitrotoluene	1000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
2-Chloronaphthalene	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
2-Chlorophenol	800	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	1140 U	1190 U	1700 UJ	995 UJ	973 U	1000 U
2-Methylnaphthalene	36400	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
o-Nitroaniline	430 or MDL	ug/kg	1140 U	1190 U	1700 UJ	995 U	973 U	1000 U
2-Nitrophenol	330 or MDL	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
3,3'-Dichlorobenzidine	NC	ug/kg	941 U	979 U	1400 UJ	821 U	803 U	829 U
m-Nitroaniline	500 or MDL	ug/kg	1140 U	1190 U	1700 UJ	995 U	973 U	1000 U
4-Bromophenylphenylether	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
4-Chloroaniline	220 or MDL	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
4-Chlorophenyl phenyl ether	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
p-Nitroaniline	NC	ug/kg	1140 U	1190 U	1700 UJ	995 U	973 U	1000 U
4-Nitrophenol	100 or MDL	ug/kg	1140 U	1190 U	1700 UJ	995 U	973 U	1000 U
Acenaphthene	50000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Acenaphthylene	41000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Anthracene	50000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Benzo(a)anthracene	224 or MDL	ug/kg	471 U	**31.2 J**	701 UJ	411 U	402 U	415 U
Benzo(a)pyrene	61 or MDL	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Benzo(b)fluoranthene	1100	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Benzo(g,h,i)perylene	50000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Benzo(k)fluoranthene	1100	ug/kg	471 UJ	490 UJ	701 UJ	411 U	402 UJ	415 UJ
Bis(2-chloroethoxy)methane	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Bis(2-chloroethyl)ether	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	471 U	490 U	**136 J**	**66 J**	402 U	415 U
Butyl benzyl phthalate	50000	ug/kg	471 UJ	490 UJ	701 UJ	411 U	402 UJ	415 UJ
Carbazole	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-7	SB-7	SB-7	SB-7	SB-8	SB-9
		Sample ID	NMDA-SS-SB07-1005	NMDA-SS-X1-1006 (Dup)	NMDA-SS-SB07-1044	NMDA-SS-SB07-1045	NMDA-SS-SB08-1017	NMDA-SS-SB09-1018
		Sample Date	11/5/2002	11/5/2002	7/2/2003	7/2/2003	11/7/2002	11/7/2002
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0.5 - 1.5	0 - 2	0 - 2
Chemical Name	TAGM 4046	Unit						
Chrysene	400	ug/kg	471 UJ	**26.8 J**	701 UJ	411 U	402 UJ	415 UJ
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Dibenzofuran	6200	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Dichlorobenzenes (1,2-)	7900	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Dichlorobenzenes (1,3-)	1600	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Dichlorobenzenes (1,4-)	8500	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Diethyl phthalate	7100	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Dimethyl phthalate	2000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Di-n-butylphthalate	8100	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Di-n-octyl phthalate	50000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Diphenylamine	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Fluoranthene	50000	ug/kg	**44.5 J**	**51.9 J**	701 UJ	411 U	402 U	415 U
Fluorene	50000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Hexachlorobenzene	410	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Hexachlorobutadiene	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Hexachlorocyclopentadiene	NC	ug/kg	471 UJ	490 UJ	701 UJ	411 U	402 UJ	415 UJ
Hexachloroethane	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Isophorone	4400	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
m,p-Cresols	900	ug/kg	475 U	494 U	707 UJ	415 U	406 U	419 U
Naphthalene	13000	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Nitrobenzene	200 or MDL	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
N-Nitrosodipropylamine	NC	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
o-Cresol	100 or MDL	ug/kg	475 U	494 U	707 UJ	415 U	406 U	419 U
Pentachlorophenol	1000 or MDL	ug/kg	1140 U	1190 U	1700 UJ	995 U	973 U	1000 U
Phenanthrene	50000	ug/kg	**26.3 J**	**33.1 J**	701 UJ	411 U	402 U	415 U
Phenol	30 or MDL	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U
Pyrene	50000	ug/kg	**41.7 J**	**45.6 J**	701 UJ	411 U	**37 J**	415 UJ
Trichlorobenzenes (1,2,4-)	3400	ug/kg	471 U	490 U	701 UJ	411 U	402 U	415 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-10	SB-11	SB-12	SB-13	SB-14	SB-15
		Sample ID	NMDA-SS-SB10-1007	NMDA-SS-SB11-1008	NMDA-SS-SB12-1009	NMDA-SS-SB13-1010	NMDA-SS-SB14-1011	NMDA-SS-SB15-1012
		Sample Date	11/5/2002	11/5/2002	11/6/2002	11/6/2002	11/6/2002	11/6/2002
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit						
2,4,5-Trichlorophenol	100	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
2,4,6-Trichlorophenol	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
2,4-Dichlorophenol	400	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
2,4-Dimethylphenol	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
2,4-Dinitrophenol	200 or MDL	ug/kg	984 U	988 U	1040 U	1050 U	1010 U	978 U
2,4-Dinitrotoluene	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
2,6-Dinitrotoluene	1000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
2-Chloronaphthalene	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
2-Chlorophenol	800	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	984 U	988 U	1040 U	1050 U	1010 U	978 U
2-Methylnaphthalene	36400	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
o-Nitroaniline	430 or MDL	ug/kg	984 U	988 U	1040 U	1050 U	1010 U	978 U
2-Nitrophenol	330 or MDL	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
3,3'-Dichlorobenzidine	NC	ug/kg	812 U	815 U	862 U	865 U	832 U	807 U
m-Nitroaniline	500 or MDL	ug/kg	984 U	988 U	1040 U	1050 U	1010 U	978 U
4-Bromophenylphenylether	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
4-Chloroaniline	220 or MDL	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
4-Chlorophenyl phenyl ether	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
p-Nitroaniline	NC	ug/kg	984 U	988 U	1040 U	1050 U	1010 U	978 U
4-Nitrophenol	100 or MDL	ug/kg	984 U	988 U	1040 U	1050 U	1010 U	978 U
Acenaphthene	50000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Acenaphthylene	41000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Anthracene	50000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Benzo(a)anthracene	224 or MDL	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Benzo(a)pyrene	61 or MDL	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Benzo(b)fluoranthene	1100	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Benzo(g,h,i)perylene	50000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Benzo(k)fluoranthene	1100	ug/kg	406 UJ	408 UJ	431 UJ	433 UJ	416 UJ	404 UJ
Bis(2-chloroethoxy)methane	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Bis(2-chloroethyl)ether	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Butyl benzyl phthalate	50000	ug/kg	406 UJ	408 UJ	431 UJ	433 UJ	416 UJ	404 UJ
Carbazole	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-10	SB-11	SB-12	SB-13	SB-14	SB-15
		Sample ID	NMDA-SS-SB10-1007	NMDA-SS-SB11-1008	NMDA-SS-SB12-1009	NMDA-SS-SB13-1010	NMDA-SS-SB14-1011	NMDA-SS-SB15-1012
		Sample Date	11/5/2002	11/5/2002	11/6/2002	11/6/2002	11/6/2002	11/6/2002
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit						
Chrysene	400	ug/kg	406 UJ	408 UJ	431 UJ	433 UJ	416 UJ	404 UJ
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Dibenzofuran	6200	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Dichlorobenzenes (1,2-)	7900	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Dichlorobenzenes (1,3-)	1600	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Dichlorobenzenes (1,4-)	8500	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Diethyl phthalate	7100	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Dimethyl phthalate	2000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Di-n-butylphthalate	8100	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Di-n-octyl phthalate	50000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Diphenylamine	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Fluoranthene	50000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Fluorene	50000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Hexachlorobenzene	410	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Hexachlorobutadiene	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Hexachlorocyclopentadiene	NC	ug/kg	406 UJ	408 UJ	431 UJ	433 UJ	416 UJ	404 UJ
Hexachloroethane	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Isophorone	4400	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
m,p-Cresols	900	ug/kg	410 U	412 U	435 U	437 U	420 U	407 U
Naphthalene	13000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Nitrobenzene	200 or MDL	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
N-Nitrosodipropylamine	NC	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
o-Cresol	100 or MDL	ug/kg	410 U	412 U	435 U	437 U	420 U	407 U
Pentachlorophenol	1000 or MDL	ug/kg	984 U	988 U	1040 U	1050 U	1010 U	978 U
Phenanthrene	50000	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Phenol	30 or MDL	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U
Pyrene	50000	ug/kg	406 UJ	408 UJ	431 UJ	433 UJ	416 UJ	404 UJ
Trichlorobenzenes (1,2,4-)	3400	ug/kg	406 U	408 U	431 U	433 U	416 U	404 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-16	SB-17	SB-18	SB-22	SB-23	SB-23
		Sample ID	NMDA-SS-SB16-1013	NMDA-SS-SB17-1019	NMDA-SS-SB18-1020	NMDA-SS-SB22-1046	NMDA-SS-SB23-1047	NMDA-SS-X3-1048 (Dup)
		Sample Date	11/6/2002	11/7/2002	11/7/2002	7/3/2003	7/3/2003	7/3/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 2	0 - 2	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit						
2,4,5-Trichlorophenol	100	ug/kg	420 U	411 U	408 U	NA	NA	NA
2,4,6-Trichlorophenol	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
2,4-Dichlorophenol	400	ug/kg	420 U	411 U	408 U	NA	NA	NA
2,4-Dimethylphenol	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
2,4-Dinitrophenol	200 or MDL	ug/kg	1020 U	995 U	988 U	NA	NA	NA
2,4-Dinitrotoluene	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
2,6-Dinitrotoluene	1000	ug/kg	420 U	411 U	408 U	NA	NA	NA
2-Chloronaphthalene	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
2-Chlorophenol	800	ug/kg	420 U	411 U	408 U	NA	NA	NA
2-Methyl-4,6-dinitrophenol	NC	ug/kg	1020 U	995 U	988 U	NA	NA	NA
2-Methylnaphthalene	36400	ug/kg	420 U	411 U	408 U	NA	NA	NA
o-Nitroaniline	430 or MDL	ug/kg	1020 U	995 U	988 U	NA	NA	NA
2-Nitrophenol	330 or MDL	ug/kg	420 U	411 U	408 U	NA	NA	NA
3,3'-Dichlorobenzidine	NC	ug/kg	839 U	821 U	815 U	NA	NA	NA
m-Nitroaniline	500 or MDL	ug/kg	1020 U	995 U	988 U	NA	NA	NA
4-Bromophenylphenylether	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
4-Chloro-3-methylphenol	240 or MDL	ug/kg	420 U	411 U	408 U	NA	NA	NA
4-Chloroaniline	220 or MDL	ug/kg	420 U	411 U	408 U	NA	NA	NA
4-Chlorophenyl phenyl ether	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
p-Nitroaniline	NC	ug/kg	1020 U	995 U	988 U	NA	NA	NA
4-Nitrophenol	100 or MDL	ug/kg	1020 U	995 U	988 U	NA	NA	NA
Acenaphthene	50000	ug/kg	420 U	411 U	408 U	**11.7 J**	415 U	415 U
Acenaphthylene	41000	ug/kg	420 U	411 U	408 U	395 U	415 U	415 U
Anthracene	50000	ug/kg	420 U	411 U	408 U	395 U	415 U	415 U
Benzo(a)anthracene	224 or MDL	ug/kg	420 U	411 U	408 U	395 U	415 U	**33 J**
Benzo(a)pyrene	61 or MDL	ug/kg	420 U	411 U	408 U	395 U	415 U	415 UJ
Benzo(b)fluoranthene	1100	ug/kg	420 U	411 U	408 U	**156 J**	**130 J**	**144 J**
Benzo(g,h,i)perylene	50000	ug/kg	420 U	411 U	408 U	395 U	415 U	415 UJ
Benzo(k)fluoranthene	1100	ug/kg	420 UJ	411 UJ	408 UJ	395 U	415 U	**37.8 J**
Bis(2-chloroethoxy)methane	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
Bis(2-chloroethyl)ether	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
Bis(2-ethylhexyl)phthalate	50000	ug/kg	420 U	411 U	408 U	NA	NA	NA
Butyl benzyl phthalate	50000	ug/kg	420 UJ	411 UJ	408 UJ	NA	NA	NA
Carbazole	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-16	SB-17	SB-18	SB-22	SB-23	SB-23
		Sample ID	NMDA-SS-SB16-1013	NMDA-SS-SB17-1019	NMDA-SS-SB18-1020	NMDA-SS-SB22-1046	NMDA-SS-SB23-1047	NMDA-SS-X3-1048 (Dup)
		Sample Date	11/6/2002	11/7/2002	11/7/2002	7/3/2003	7/3/2003	7/3/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 2	0 - 2	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit						
Chrysene	400	ug/kg	420 UJ	411 UJ	408 UJ	395 U	415 U	**32.6 J**
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	420 U	411 U	408 U	395 U	415 U	415 UJ
Dibenzofuran	6200	ug/kg	420 U	411 U	408 U	NA	NA	NA
Dichlorobenzenes (1,2-)	7900	ug/kg	420 U	411 U	408 U	NA	NA	NA
Dichlorobenzenes (1,3-)	1600	ug/kg	420 U	411 U	408 U	NA	NA	NA
Dichlorobenzenes (1,4-)	8500	ug/kg	420 U	411 U	408 U	NA	NA	NA
Diethyl phthalate	7100	ug/kg	420 U	411 U	408 U	NA	NA	NA
Dimethyl phthalate	2000	ug/kg	420 U	411 U	408 U	NA	NA	NA
Di-n-butylphthalate	8100	ug/kg	420 U	**68.4 J**	408 U	NA	NA	NA
Di-n-octyl phthalate	50000	ug/kg	420 U	411 U	408 U	NA	NA	NA
Diphenylamine	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
Fluoranthene	50000	ug/kg	420 U	411 U	408 U	**73.6 J**	**34 J**	**57.2 J**
Fluorene	50000	ug/kg	420 U	411 U	408 U	395 U	415 U	415 U
Hexachlorobenzene	410	ug/kg	420 U	411 U	408 U	NA	NA	NA
Hexachlorobutadiene	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
Hexachlorocyclopentadiene	NC	ug/kg	420 UJ	411 UJ	408 UJ	NA	NA	NA
Hexachloroethane	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
Indeno (1,2,3-cd)pyrene	3200	ug/kg	420 U	411 U	408 U	395 U	415 U	415 UJ
Isophorone	4400	ug/kg	420 U	411 U	408 U	NA	NA	NA
m,p-Cresols	900	ug/kg	424 U	414 U	412 U	NA	NA	NA
Naphthalene	13000	ug/kg	420 U	411 U	408 U	395 U	415 U	415 U
Nitrobenzene	200 or MDL	ug/kg	420 U	411 U	408 U	NA	NA	NA
N-Nitrosodipropylamine	NC	ug/kg	420 U	411 U	408 U	NA	NA	NA
o-Cresol	100 or MDL	ug/kg	424 U	414 U	412 U	NA	NA	NA
Pentachlorophenol	1000 or MDL	ug/kg	1020 U	995 U	988 U	NA	NA	NA
Phenanthrene	50000	ug/kg	420 U	411 U	408 U	**43.3 J**	415 U	**26.1 J**
Phenol	30 or MDL	ug/kg	420 U	411 U	408 U	NA	NA	NA
Pyrene	50000	ug/kg	420 UJ	411 UJ	408 UJ	**75.5 J**	**27 J**	**54 J**
Trichlorobenzenes (1,2,4-)	3400	ug/kg	420 U	411 U	408 U	NA	NA	NA

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-24	SB-25
		Sample ID	NMDA-SS-SB24-1049	NMDA-SS-SB25-1050
		Sample Date	7/3/2003	7/3/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit		
2,4,5-Trichlorophenol	100	ug/kg	NA	NA
2,4,6-Trichlorophenol	NC	ug/kg	NA	NA
2,4-Dichlorophenol	400	ug/kg	NA	NA
2,4-Dimethylphenol	NC	ug/kg	NA	NA
2,4-Dinitrophenol	200 or MDL	ug/kg	NA	NA
2,4-Dinitrotoluene	NC	ug/kg	NA	NA
2,6-Dinitrotoluene	1000	ug/kg	NA	NA
2-Chloronaphthalene	NC	ug/kg	NA	NA
2-Chlorophenol	800	ug/kg	NA	NA
2-Methyl-4,6-dinitrophenol	NC	ug/kg	NA	NA
2-Methylnaphthalene	36400	ug/kg	NA	NA
o-Nitroaniline	430 or MDL	ug/kg	NA	NA
2-Nitrophenol	330 or MDL	ug/kg	NA	NA
3,3'-Dichlorobenzidine	NC	ug/kg	NA	NA
m-Nitroaniline	500 or MDL	ug/kg	NA	NA
4-Bromophenylphenylether	NC	ug/kg	NA	NA
4-Chloro-3-methylphenol	240 or MDL	ug/kg	NA	NA
4-Chloroaniline	220 or MDL	ug/kg	NA	NA
4-Chlorophenyl phenyl ether	NC	ug/kg	NA	NA
p-Nitroaniline	NC	ug/kg	NA	NA
4-Nitrophenol	100 or MDL	ug/kg	NA	NA
Acenaphthene	50000	ug/kg	392 U	427 UJ
Acenaphthylene	41000	ug/kg	392 U	427 UJ
Anthracene	50000	ug/kg	392 U	427 UJ
Benzo(a)anthracene	224 or MDL	ug/kg	392 U	427 UJ
Benzo(a)pyrene	61 or MDL	ug/kg	392 U	427 UJ
Benzo(b)fluoranthene	1100	ug/kg	392 U	427 UJ
Benzo(g,h,i)perylene	50000	ug/kg	392 U	427 UJ
Benzo(k)fluoranthene	1100	ug/kg	392 U	427 UJ
Bis(2-chloroethoxy)methane	NC	ug/kg	NA	NA
Bis(2-chloroethyl)ether	NC	ug/kg	NA	NA
Bis(2-ethylhexyl)phthalate	50000	ug/kg	NA	NA
Butyl benzyl phthalate	50000	ug/kg	NA	NA
Carbazole	NC	ug/kg	NA	NA

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 13
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Semi Volatile Organic Compounds

		Location ID	SB-24	SB-25
		Sample ID	NMDA-SS-SB24-1049	NMDA-SS-SB25-1050
		Sample Date	7/3/2003	7/3/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit		
Chrysene	400	ug/kg	392 U	427 UJ
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	392 U	427 UJ
Dibenzofuran	6200	ug/kg	NA	NA
Dichlorobenzenes (1,2-)	7900	ug/kg	NA	NA
Dichlorobenzenes (1,3-)	1600	ug/kg	NA	NA
Dichlorobenzenes (1,4-)	8500	ug/kg	NA	NA
Diethyl phthalate	7100	ug/kg	NA	NA
Dimethyl phthalate	2000	ug/kg	NA	NA
Di-n-butylphthalate	8100	ug/kg	NA	NA
Di-n-octyl phthalate	50000	ug/kg	NA	NA
Diphenylamine	NC	ug/kg	NA	NA
Fluoranthene	50000	ug/kg	**70.7 J**	**38.2 J**
Fluorene	50000	ug/kg	392 U	427 UJ
Hexachlorobenzene	410	ug/kg	NA	NA
Hexachlorobutadiene	NC	ug/kg	NA	NA
Hexachlorocyclopentadiene	NC	ug/kg	NA	NA
Hexachloroethane	NC	ug/kg	NA	NA
Indeno (1,2,3-cd)pyrene	3200	ug/kg	392 U	427 UJ
Isophorone	4400	ug/kg	NA	NA
m,p-Cresols	900	ug/kg	NA	NA
Naphthalene	13000	ug/kg	392 U	427 UJ
Nitrobenzene	200 or MDL	ug/kg	NA	NA
N-Nitrosodipropylamine	NC	ug/kg	NA	NA
o-Cresol	100 or MDL	ug/kg	NA	NA
Pentachlorophenol	1000 or MDL	ug/kg	NA	NA
Phenanthrene	50000	ug/kg	**46.4 J**	**24.3 J**
Phenol	30 or MDL	ug/kg	NA	NA
Pyrene	50000	ug/kg	**210 J**	**39.5 J**
Trichlorobenzenes (1,2,4-)	3400	ug/kg	NA	NA

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
NA - Not analyzed, MDL - Method detection limit, Detects in **BOLD**, NC - No criteria.

Table 14
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Polychlorinated Biphenyls

		Location ID	SB-3	SB-4	SB-5	SB-6	SB-7	SB-7
		Sample ID	NMDA-SS-SB03-1003	NMDA-SS-SB04-1015	NMDA-SS-SB05-1016	NMDA-SS-SB06-1004	NMDA-SS-SB07-1005	NMDA-SS-X1-1006 (Dup)
		Sample Date	11/5/2002	11/7/2002	11/7/2002	11/5/2002	11/5/2002	11/5/2002
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 2	0 - 2	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit						
Aroclor-1016	1000	ug/kg	100 U	95.2 U	97.7 U	105 U	114 U	119 U
Aroclor-1221	1000	ug/kg	100 U	95.2 U	97.7 U	105 U	114 U	119 U
Aroclor-1232	1000	ug/kg	100 U	95.2 U	97.7 U	105 U	114 U	119 U
Aroclor-1242	1000	ug/kg	100 U	95.2 U	97.7 U	105 U	114 U	119 U
Aroclor-1248	1000	ug/kg	100 U	95.2 U	97.7 U	105 U	114 U	119 U
Aroclor-1254	1000	ug/kg	201 U	190 U	195 U	211 U	228 U	237 U
Aroclor-1260	1000	ug/kg	**9.3 J**	190 U	195 U	**3.7 J**	228 U	237 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**.

Table 14
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Polychlorinated Biphenyls

		Location ID	SB-8	SB-9	SB-10	SB-11	SB-12	SB-13
		Sample ID	NMDA-SS-SB08-1017	NMDA-SS-SB09-1018	NMDA-SS-SB10-1007	NMDA-SS-SB11-1008	NMDA-SS-SB12-1009	NMDA-SS-SB13-1010
		Sample Date	11/7/2002	11/7/2002	11/5/2002	11/5/2002	11/6/2002	11/6/2002
	NYSDEC	Depth Interval (ft)	0 - 2	0 - 2	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit						
Aroclor-1016	1000	ug/kg	97.3 U	100 U	98.4 U	98.8 U	104 U	105 U
Aroclor-1221	1000	ug/kg	97.3 U	100 U	98.4 U	98.8 U	104 U	105 U
Aroclor-1232	1000	ug/kg	97.3 U	100 U	98.4 U	98.8 U	104 U	105 U
Aroclor-1242	1000	ug/kg	97.3 U	100 U	98.4 U	98.8 U	104 U	105 U
Aroclor-1248	1000	ug/kg	97.3 U	100 U	98.4 U	98.8 U	104 U	105 U
Aroclor-1254	1000	ug/kg	195 U	201 U	197 U	198 U	209 U	210 U
Aroclor-1260	1000	ug/kg	195 U	201 U	**2.6 J**	**1.4 J**	209 U	210 U

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**.

Table 14
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Polychlorinated Biphenyls

		Location ID	SB-14	SB-15	SB-16	SB-17	SB-18	SB-22
		Sample ID	NMDA-SS-SB14-1011	NMDA-SS-SB15-1012	NMDA-SS-SB16-1013	NMDA-SS-SB17-1019	NMDA-SS-SB18-1020	NMDA-SS-SB22-1046
		Sample Date	11/6/2002	11/6/2002	11/6/2002	11/7/2002	11/7/2002	7/3/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 2	0 - 2	0 - 0.5
Chemical Name	TAGM 4046	Unit						
Aroclor-1016	1000	ug/kg	101 U	97.8 U	102 U	99.5 U	98.8 U	95.6 U
Aroclor-1221	1000	ug/kg	101 U	97.8 U	102 U	99.5 U	98.8 U	95.6 U
Aroclor-1232	1000	ug/kg	101 U	97.8 U	102 U	99.5 U	98.8 U	95.6 U
Aroclor-1242	1000	ug/kg	101 U	97.8 U	102 U	99.5 U	98.8 U	95.6 U
Aroclor-1248	1000	ug/kg	101 U	97.8 U	102 U	99.5 U	98.8 U	95.6 U
Aroclor-1254	1000	ug/kg	202 U	196 U	203 U	199 U	198 U	191 U
Aroclor-1260	1000	ug/kg	202 U	196 U	203 U	199 U	198 U	**6.4 J**

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**.

Table 14
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Polychlorinated Biphenyls

		Location ID	SB-23	SB-23	SB-24	SB-25
		Sample ID	NMDA-SS-SB23-1047	NMDA-SS-X3-1048 (Dup)	NMDA-SS-SB24-1049	NMDA-SS-SB25-1050
		Sample Date	7/3/2003	7/3/2003	7/3/2003	7/3/2003
	NYSDEC	Depth Interval (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	TAGM 4046	Unit				
Aroclor-1016	1000	ug/kg	100 U	100 U	94.9 U	103 U
Aroclor-1221	1000	ug/kg	100 U	100 U	94.9 U	103 U
Aroclor-1232	1000	ug/kg	100 U	100 U	94.9 U	103 U
Aroclor-1242	1000	ug/kg	100 U	100 U	94.9 U	103 U
Aroclor-1248	1000	ug/kg	100 U	100 U	94.9 U	103 U
Aroclor-1254	1000	ug/kg	201 U	201 U	190 U	207 U
Aroclor-1260	1000	ug/kg	**4.3 J**	**4.4 J**	**7.2 J**	**5.4 J**

Notes: U - Not detected, J - Estimated value,
Detects in **BOLD**.

Table 15
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Inorganics

		Location ID	SB-3	SB-4	SB-5	SB-5	SB-5
		Sample ID	NMDA-SS-SB03-1003	NMDA-SS-SB04-1015	NMDA-SS-SB05-1016	NMDA-SS-SB05-1038	NMDA-SS-SB05-1039
		Sample Date	11/5/2002	11/7/2002	11/7/2002	7/2/2003	7/2/2003
		Depth Interval (ft)	0 - 0.5	0 - 2	0 - 2	0 - 2	2 - 3
Chemical Name	Soil Background	Unit					
Aluminum	15200	mg/kg	17100	23100	28600	19000	21900
Antimony	0.29	mg/kg	0.601 UNJ	0.533 UNJ	0.542 UNJ	**0.528 B**	**0.623 B**
Arsenic	8.8	mg/kg	5.800 B	8.64	8.31	7.450	8.14
Barium	97.4	mg/kg	68.2	88.7	**130**	97.1	**153**
Beryllium	1.1	mg/kg	0.711	1.11	1.34	1.08	**1.38**
Cadmium	0.3	mg/kg	**0.311 B**	**0.332 B**	**0.323 B**	0.085 B	0.107 B
Calcium	31600	mg/kg	1070	1470	2590	2600	4550
Chromium	18.8	mg/kg	18.7	**24.3**	**27.1**	**21.5**	**24.6**
Cobalt	14.4	mg/kg	9.350	**14.8**	**21.8**	12.5	**15.3**
Copper	38.1	mg/kg	15.9	28.1	31.1	27.2	30.6
Cyanide	NSB	mg/kg	0.423 J	0.0856 J	1.00 U	NA	NA
Iron	35700	mg/kg	23200	**36300**	**40100**	34100	**43300**
Lead	15.7	mg/kg	**16.4 EJ**	9.950 EJ	11.1 EJ	10.7	12.0
Magnesium	9362	mg/kg	3820	5270	6350	4940	6020
Manganese	745	mg/kg	631	472	530	427	705
Mercury	0.09	mg/kg	0.085	0.041	0.039	0.046	0.032
Nickel	33.8	mg/kg	17.1	23.1	26.8	24.6	33.8
Potassium	1870	mg/kg	1460 EJ	**2070 EJ**	**2610 EJ**	1660	**2280**
Selenium	0.21	mg/kg	**0.444 B**	**0.580 B**	**0.900 B**	0.382 U	0.421 U
Silver	0.09	mg/kg	0.144 U	0.128 U	0.130 U	0.192 U	0.211 U
Sodium	130	mg/kg	42.2 B	74.5 B	88.8 B	75.1 B	**292 B**
Thallium	0.26	mg/kg	1.560 U	2.770 U	2.820 U	0.410 U	0.452 U
Vanadium	25.4	mg/kg	**32.6 N**	**39.3 N**	**44.8 N**	**31.8**	**44.1**
Zinc	82.9	mg/kg	65.1	61.6	72	66.8	81.6

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
NC - No criteria, NA - Not analyzed, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 15
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Inorganics

		Location ID	SB-6	SB-6	SB-6	SB-7	SB-7
		Sample ID	NMDA-SS-SB06-1004	NMDA-SS-SB06-1042	NMDA-SS-SB06-1043	NMDA-SS-SB07-1005	NMDA-SS-X1-1006 (Dup)
		Sample Date	11/5/2002	7/2/2003	7/2/2003	11/5/2002	11/5/2002
		Depth Interval (ft)	0 - 0.5	0 - 0.5	0.5 - 1.5	0 - 0.5	0 - 0.5
Chemical Name	**Soil Background**	**Unit**					
Aluminum	15200	mg/kg	**20900**	14800	**17300**	**16100**	12800
Antimony	0.29	mg/kg	0.614 UNJ	0.482 U	**0.700 B**	0.664 UNJ	0.677 UNJ
Arsenic	8.8	mg/kg	6.850	5.500 B	7.000	5.760 B	4.750 B
Barium	97.4	mg/kg	**119**	67.2	66.5	79.6	79.0
Beryllium	1.1	mg/kg	0.91	0.674 B	0.775	0.729	0.596 B
Cadmium	0.3	mg/kg	**0.435 B**	0.195 B	0.074 U	**0.517 B**	**0.553 B**
Calcium	31600	mg/kg	2340	3190	1410	4750	5480
Chromium	18.8	mg/kg	**20.7**	16.7	**19.6**	**19.2**	15.3
Cobalt	14.4	mg/kg	**18.8**	8.810	11.4	9.520	9.130
Copper	38.1	mg/kg	19.8	17.5	21.1	23.7	20.2
Cyanide	NSB	mg/kg	7.50	1.54	0.159 J	0.380 J	1.31
Iron	35700	mg/kg	31600	25000	31700	24800	19500
Lead	15.7	mg/kg	**15.9 EJ**	**19**	14.5	**19.1 EJ**	14.8 EJ
Magnesium	9362	mg/kg	4790	3740	4350	5000	3830
Manganese	745	mg/kg	**3900**	505	433	448	570
Mercury	0.09	mg/kg	**0.13**	**0.144**	**0.15**	**0.698**	**0.831**
Nickel	33.8	mg/kg	21.1	18.5	19.7	23	18.6
Potassium	1870	mg/kg	1690 EJ	1280	1340	**1920 EJ**	**1940 EJ**
Selenium	0.21	mg/kg	**0.846 B**	**0.721 B**	0.380 U	**0.431 B**	**0.755 B**
Silver	0.09	mg/kg	0.736 U	**0.263 B**	0.191 U	0.159 U	0.162 U
Sodium	130	mg/kg	60.6 B	42.4 B	56.2 B	62.7 B	56.9 B
Thallium	0.26	mg/kg	0.638 U	0.507 U	0.408 U	1.730 U	0.704 U
Vanadium	25.4	mg/kg	**37.2 N**	**27.8**	**31.7**	**30.9 N**	**26.5 N**
Zinc	82.9	mg/kg	78.9	75.1	55.2	**91.4**	82.4

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
NC - No criteria, NA - Not analyzed, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detectior
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 15
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Inorganics

		Location ID	SB-7	SB-7	SB-8	SB-9	SB-9
		Sample ID	NMDA-SS-SB07-1044	NMDA-SS-SB07-1045	NMDA-SS-SB08-1017	NMDA-SS-SB09-1018	NMDA-SS-SB09-1040
		Sample Date	7/2/2003	7/2/2003	11/7/2002	11/7/2002	7/2/2003
		Depth Interval (ft)	0 - 0.5	0.5 - 1.5	0 - 2	0 - 2	0 - 2
Chemical Name	Soil Background	Unit					
Aluminum	15200	mg/kg	11000 J	**18700**	**20200**	**25200**	**21600**
Antimony	0.29	mg/kg	0.674 UJ	**0.760 B**	0.545 UNJ	0.573 UNJ	**0.448 B**
Arsenic	8.8	mg/kg	3.740 BJ	**9.07**	5.570 B	6.720	7.61
Barium	97.4	mg/kg	73.5 J	**131**	83.4	**182**	**108**
Beryllium	1.1	mg/kg	0.550 BJ	**1.13**	0.795	**1.68**	1.05
Cadmium	0.3	mg/kg	**0.652 BJ**	0.131 B	**0.336 B**	**0.351 B**	0.074 U
Calcium	31600	mg/kg	6020 J	2940	2680	2220	2310
Chromium	18.8	mg/kg	13.8 J	**22.7**	**22.4**	**25.5**	**23.3**
Cobalt	14.4	mg/kg	6.830 BJ	12.9	9.290	**18.3**	11.3
Copper	38.1	mg/kg	19.7 J	34.6	15.6	28.6	27.7
Cyanide	NSB	mg/kg	0.808 J	0.0139 U	0.333 J	1.00 U	NA
Iron	35700	mg/kg	18700 J	**38800**	24500	35400	**39100**
Lead	15.7	mg/kg	14.8 J	14.3	**18.8 EJ**	11.0 EJ	11.7
Magnesium	9362	mg/kg	3340 J	4970	4170	5970	5330
Manganese	745	mg/kg	348 J	455	490	511	388
Mercury	0.09	mg/kg	**0.796 J**	**0.284**	**0.091**	0.040	0.052
Nickel	33.8	mg/kg	17.7 J	28.9	19.1	29.6	25.8
Potassium	1870	mg/kg	1740 J	**2490**	1450 EJ	**2820 EJ**	**1970**
Selenium	0.21	mg/kg	0.660 UJ	0.417 U	**0.594 B**	**0.462 B**	0.381 U
Silver	0.09	mg/kg	**0.421 BJ**	0.209 U	0.131 U	0.137 U	0.191 U
Sodium	130	mg/kg	51.6 BJ	110 B	60.0 B	128 B	98.6 B
Thallium	0.26	mg/kg	0.709 UJ	0.448 U	2.830 U	5.960 U	0.410 U
Vanadium	25.4	mg/kg	22.5 J	**34.8**	**35.0 N**	**41.6 N**	**37.8**
Zinc	82.9	mg/kg	**90.7 J**	78.1	74.7	78.2	67.6

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
NC - No criteria, NA - Not analyzed, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detectior
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 15
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Inorganics

		Location ID	SB-9	SB-10	SB-11	SB-12	SB-12
		Sample ID	NMDA-SS-SB09-1041	NMDA-SS-SB10-1007	NMDA-SS-SB11-1008	NMDA-SS-SB12-1009	NMDA-SS-SB12-1034
		Sample Date	7/2/2003	11/5/2002	11/5/2002	11/6/2002	7/2/2003
		Depth Interval (ft)	2 - 3	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	**Soil Background**	**Unit**					
Aluminum	15200	mg/kg	**15700**	**17100**	**18000**	**27200**	**23400**
Antimony	0.29	mg/kg	**0.555 B**	0.551 UNJ	0.548 UNJ	0.626 UNJ	**0.445 B**
Arsenic	8.8	mg/kg	7.44	5.760	6.150	6.840	7.77
Barium	97.4	mg/kg	**102**	59.0	65.3	**169**	**145**
Beryllium	1.1	mg/kg	0.978	0.736	0.759	**1.44**	**1.45**
Cadmium	0.3	mg/kg	0.072 U	0.278 B	**0.322 B**	**0.337 B**	0.078 U
Calcium	31600	mg/kg	2140	563 B	969	2630	1920
Chromium	18.8	mg/kg	**19.7**	17.8	**18.9**	**28**	**25.2**
Cobalt	14.4	mg/kg	10.3	10.0	9.210	14.4	**18.2**
Copper	38.1	mg/kg	29.6	14.5	16.2	27.2	28.7
Cyanide	NSB	mg/kg	NA	0.180 J	0.160 J	0.0157 U	NA
Iron	35700	mg/kg	34800	24800	25600	**36600**	**41000**
Lead	15.7	mg/kg	11.1	13.8 EJ	**16.6 EJ**	12.8 EJ	14.2
Magnesium	9362	mg/kg	3960	3640	3870	6230	5630
Manganese	745	mg/kg	417	630	407	543	551
Mercury	0.09	mg/kg	0.042	0.043	**0.126**	0.039	0.063
Nickel	33.8	mg/kg	22.8	16	17.3	29.8	28.9
Potassium	1870	mg/kg	1500	1220 EJ	1590 EJ	**3010 EJ**	**2560**
Selenium	0.21	mg/kg	**0.498 B**	**0.675 B**	**0.477 B**	0.349 U	0.402 U
Silver	0.09	mg/kg	0.186 U	0.132 U	0.131 U	0.150 U	0.202 U
Sodium	130	mg/kg	74.7 B	38.7 B	44.6 B	**145 B**	107 B
Thallium	0.26	mg/kg	0.398 U	2.870 U	1.420 U	3.250 U	0.432 U
Vanadium	25.4	mg/kg	**28.8**	**30.8 N**	**34.2 N**	**45.9 N**	**40.6**
Zinc	82.9	mg/kg	63.2	58.6	58.9	**86.8**	79.8

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
NC - No criteria, NA - Not analyzed, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detectior
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 15
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Inorganics

		Location ID	SB-12	SB-13	SB-13	SB-13	SB-14
		Sample ID	NMDA-SS-SB12-1035	NMDA-SS-SB13-1010	NMDA-SS-SB13-1036	NMDA-SS-SB13-1037	NMDA-SS-SB14-1011
		Sample Date	7/2/2003	11/6/2002	7/2/2003	7/2/2003	11/6/2002
		Depth Interval (ft)	0.5 - 1.5	0 - 0.5	0 - 0.5	0.5 - 1.5	0 - 0.5
Chemical Name	**Soil Background**	**Unit**					
Aluminum	15200	mg/kg	**16100**	**27800**	**15300**	**18400**	**23500**
Antimony	0.29	mg/kg	**0.697 B**	0.628 UNJ	0.416 U	**0.775 B**	0.554 UNJ
Arsenic	8.8	mg/kg	7.61	7.86	6.760	7.200	7.490
Barium	97.4	mg/kg	**97.5**	**178**	77.3	**136**	84.9
Beryllium	1.1	mg/kg	0.845	**1.56**	0.834	**1.11**	0.913
Cadmium	0.3	mg/kg	0.078 U	**0.422 B**	0.117 B	0.076 U	0.296 B
Calcium	31600	mg/kg	2040	3760	1770	3460	749
Chromium	18.8	mg/kg	**20.3**	**29.6**	17.5	**22**	**24.5**
Cobalt	14.4	mg/kg	11.5	13.7	9.510	12.3	8.47
Copper	38.1	mg/kg	35.2	32.1	21.2	30.8	21.6
Cyanide	NSB	mg/kg	NA	0.0249 U	NA	NA	1.0 U
Iron	35700	mg/kg	32500	**42300**	29300	**38000**	35100
Lead	15.7	mg/kg	11.5	12.4 EJ	15.0	12.0	9.610 EJ
Magnesium	9362	mg/kg	4170	6620	3790	5560	4880
Manganese	745	mg/kg	545	643	429	524	315
Mercury	0.09	mg/kg	0.040	0.043	0.077	0.027	0.028
Nickel	33.8	mg/kg	24.7	33.1	19.8	28.9	20.2
Potassium	1870	mg/kg	1460	**3130 EJ**	1570	**2270**	**2130 EJ**
Selenium	0.21	mg/kg	0.399 U	**0.629 B**	0.407 U	0.390 U	0.309 U
Silver	0.09	mg/kg	0.200 U	0.151 U	**0.220 B**	0.195 U	0.133 U
Sodium	130	mg/kg	65.2 B	**250 B**	56.0 B	**212 B**	63.0 B
Thallium	0.26	mg/kg	0.429 U	3.270 U	0.437 U	0.418 U	2.880 U
Vanadium	25.4	mg/kg	**27.5**	**54.0 N**	**29.3**	**35.1**	**39.6 N**
Zinc	82.9	mg/kg	71.5	**89.3**	60.7	74.2	64.2

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
NC - No criteria, NA - Not analyzed, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detectior
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 15
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Inorganics

		Location ID	SB-15	SB-16	SB-17	SB-18	SB-22
		Sample ID	NMDA-SS-SB15-1012	NMDA-SS-SB16-1013	NMDA-SS-SB17-1019	NMDA-SS-SB18-1020	NMDA-SS-SB22-1046
		Sample Date	11/6/2002	11/6/2002	11/7/2002	11/7/2002	7/3/2003
		Depth Interval (ft)	0 - 0.5	0 - 0.5	0 - 2	0 - 2	0 - 0.5
Chemical Name	**Soil Background**	**Unit**					
Aluminum	15200	mg/kg	**17500**	**25100**	**19000**	**17600**	14000
Antimony	0.29	mg/kg	0.533 UNJ	0.585 UNJ	0.573 UNJ	0.543 UNJ	**0.586 BNJ**
Arsenic	8.8	mg/kg	6.360	6.440	5.860 B	6.590	5.250 B
Barium	97.4	mg/kg	87.2	**102**	62.7	60.8	66.6 NJ
Beryllium	1.1	mg/kg	0.84	0.946	0.748	0.766	0.659
Cadmium	0.3	mg/kg	**0.306 B**	**0.336 B**	0.233 B	0.269 B	0.096 B
Calcium	31600	mg/kg	1340	816	536 B	441 B	1350
Chromium	18.8	mg/kg	**20.5**	**23.8**	**19.6**	18.3	16.1
Cobalt	14.4	mg/kg	13.3	9.730	9.770	10.8	8.740 EJ
Copper	38.1	mg/kg	21.2	22.1	15.1	13.7	16.9
Cyanide	NSB	mg/kg	0.0867 J	0.118 J	0.0395 U	0.0146 U	0.258 J
Iron	35700	mg/kg	28300	33800	27000	26400	23200
Lead	15.7	mg/kg	**21.3 EJ**	12.8 EJ	12.1 EJ	14.5 EJ	**25.1**
Magnesium	9362	mg/kg	4300	4970	4040	3650	3380
Manganese	745	mg/kg	728	397	499	684	616
Mercury	0.09	mg/kg	0.053	0.046	0.035	0.035	**0.14**
Nickel	33.8	mg/kg	20.6	22.8	16.8	15.8	17.3
Potassium	1870	mg/kg	1810 EJ	**2130 EJ**	1310 EJ	1160 EJ	1120
Selenium	0.21	mg/kg	**0.696 B**	**0.681 B**	**0.609 B**	**0.689 B**	**0.609 B**
Silver	0.09	mg/kg	0.128 U	0.140 U	0.137 U	0.130 U	**0.316 B**
Sodium	130	mg/kg	56.0 B	81.3 B	49.4 B	41.5 B	35.1 B
Thallium	0.26	mg/kg	2.770 U	3.050 U	2.980 U	2.820 U	0.435 U
Vanadium	25.4	mg/kg	**36.2 N**	**41.4 N**	**32.7 N**	**31.9 N**	**29.6**
Zinc	82.9	mg/kg	70.2	70	60.4	58.9	62.6

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
NC - No criteria, NA - Not analyzed, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detectior
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 15
Knolls Atomic Power Laboratory
Land Disposal Area: Mercury Disposal Area
Hand Boring Results (Soil)
Inorganics

		Location ID	SB-23	SB-23	SB-24	SB-25
		Sample ID	NMDA-SS-SB23-1047	NMDA-SS-X3-1048 (Dup)	NMDA-SS-SB24-1049	NMDA-SS-SB25-1050
		Sample Date	7/3/2003	7/3/2003	7/3/2003	7/3/2003
		Depth Interval (ft)	0 - 0.5	0 - 0.5	0 - 0.5	0 - 0.5
Chemical Name	Soil Background	Unit				
Aluminum	15200	mg/kg	**17600**	15100	15000	14300
Antimony	0.29	mg/kg	**0.486 BNJ**	0.417 UNJ	**1.120 BNJ**	**0.611 BNJ**
Arsenic	8.8	mg/kg	5.970 B	6.020 B	6.490	5.830 B
Barium	97.4	mg/kg	75.2 NJ	63.6 NJ	63.3 NJ	67.5 NJ
Beryllium	1.1	mg/kg	0.791	0.7	0.74	0.659
Cadmium	0.3	mg/kg	0.086 B	0.080 U	0.075 U	0.129 B
Calcium	31600	mg/kg	979	1310	1150	1640
Chromium	18.8	mg/kg	18.7	17.1	18.5	17.2
Cobalt	14.4	mg/kg	12.4 EJ	9.980 EJ	13.2 EJ	9.060 EJ
Copper	38.1	mg/kg	19.6	16.9	19.4	18.9
Cyanide	NSB	mg/kg	0.290 J	0.446 J	10.8	0.886 J
Iron	35700	mg/kg	28400	25500	31800	25000
Lead	15.7	mg/kg	**22.6**	**28**	**26.7**	**24**
Magnesium	9362	mg/kg	4160	3540	4170	3680
Manganese	745	mg/kg	**816**	727	**1030**	510
Mercury	0.09	mg/kg	**0.173**	**0.125**	**0.129**	**0.128**
Nickel	33.8	mg/kg	20.6	18.1	19.6	18.4
Potassium	1870	mg/kg	1360	1240	1240	1320
Selenium	0.21	mg/kg	**0.424 B**	**0.681 B**	**0.516 B**	**0.689 B**
Silver	0.09	mg/kg	0.207 U	**0.259 B**	0.194 U	**0.343 B**
Sodium	130	mg/kg	49.3 B	43.7 B	33.5 B	35.2 B
Thallium	0.26	mg/kg	0.444 U	0.439 U	0.415 U	0.428 U
Vanadium	25.4	mg/kg	**33.5**	**32.7**	**31.4**	**29.9**
Zinc	82.9	mg/kg	68.7	64	70	68

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
NC - No criteria, NA - Not analyzed, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detectior
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 16
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Volatile Organic Compounds

Chemical Name	NYSDEC TAGM 4046	Location ID / Sample ID / Sample Date / Depth Interval (ft) / Unit	TP-22 NWF-SS-TP22-1194 7/14/2004 4 - 4	TP-23 NWF-SS-TP23-1174 6/30/2004 4 - 4	TP-24 NWF-SS-TP24-1156 6/21/2004 4 - 4	TP-25 NWF-SS-TP25-1152 6/17/2004 4 - 4	TP-25 NWF-SS-X17-1153 (Dup) 6/17/2004 4 - 4	TP-26 NWF-SS-TP26-1151 6/17/2004 4 - 4
1,1,1-Trichloroethane	800	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
1,1,2,2-Tetrachloroethane	600	ug/kg	12.3 U	11.9 UJ	12.1 U	10.9 U	10.9 U	12.5 U
1,1,2-Trichloroethane	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
1,1-Dichloroethane	200	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
1,1-Dichloroethylene	400	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
1,2-Dichloroethane	100	ug/kg	12.3 U	**20.9**	12.1 U	10.9 U	10.9 U	12.5 U
1,2-Dichloropropane	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
2-Butanone	300	ug/kg	12.3 U	11.9 U	12.1 U	10.9 UJ	10.9 UJ	12.5 UJ
2-Hexanone	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
4-Methyl-2-pentanone	1000	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Acetone	200	ug/kg	12.3 U	11.9 U	12.1 U	10.9 UJ	10.9 UJ	12.5 UJ
Benzene	60	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Bromodichloromethane	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Bromoform	NC	ug/kg	12.3 U	11.9 UJ	12.1 U	10.9 U	10.9 U	12.5 U
Bromomethane	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Carbon disulfide	2700	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Carbon tetrachloride	600	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Chlorobenzene	1700	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Chloroethane	1900	ug/kg	12.3 U	11.9 U	12.1 UJ	10.9 U	10.9 U	12.5 U
Chloroform	300	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Chloromethane	NC	ug/kg	12.3 U	11.9 U	12.1 UJ	10.9 U	10.9 U	12.5 U
cis-1,2-Dichloroethylene	250	ug/kg	**5.2 J**	**9.5 J**	12.1 U	10.9 U	10.9 U	12.5 U
cis-1,3-Dichloropropylene	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Dibromochloromethane	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Ethylbenzene	5500	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Methylene chloride	100	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Styrene	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Tetrachloroethylene	1400	ug/kg	**0.92 J**	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Toluene	1500	ug/kg	12.3 U	11.9 U	**0.44 J**	10.9 U	10.9 U	12.5 U
trans-1,2-Dichloroethylene	300	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Trichloroethylene	700	ug/kg	**2.4 J**	**4.6 J**	12.1 U	10.9 U	10.9 U	12.5 U
Vinyl chloride	200	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U
Xylenes, Total	1200	ug/kg	12.3 U	11.9 U	12.1 U	10.9 U	10.9 U	12.5 U

Notes: U - Not detected, J - Estimated value, NC - No criteria,
Detects in **BOLD**.

Table 16
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Volatile Organic Compounds

		Location ID	TP-27	TP-28	TP-28	TP-29	TP-30	TP-31
		Sample ID	NWF-SS-TP27-1150	NWF-SS-TP28-1172	NWF-SS-X19-1173 (Dup)	NWF-SS-TP29-1171	NWF-SS-TP30-1157	NWF-SS-TP31-1159
		Sample Date	6/16/2004	6/29/2004	6/29/2004	6/29/2004	6/21/2004	6/22/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
1,1,2,2-Tetrachloroethane	600	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 UJ
1,1,2-Trichloroethane	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
1,1-Dichloroethane	200	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
1,1-Dichloroethylene	400	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
1,2-Dichloroethane	100	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
1,2-Dichloropropane	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
2-Butanone	300	ug/kg	12.6 UJ	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
2-Hexanone	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
4-Methyl-2-pentanone	1000	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Acetone	200	ug/kg	12.6 UJ	12.7 U	13.3 U	12.7 U	**7.9 J**	15.2 U
Benzene	60	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Bromodichloromethane	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Bromoform	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 UJ
Bromomethane	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Carbon disulfide	2700	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Carbon tetrachloride	600	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Chlorobenzene	1700	ug/kg	12.6 U	12.7 U	13.3 U	12.7 UJ	12.5 U	15.2 U
Chloroethane	1900	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 UJ	15.2 UJ
Chloroform	300	ug/kg	12.6 U	**0.78 J**	**0.80 J**	**0.75 J**	12.5 U	15.2 U
Chloromethane	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 UJ	15.2 UJ
cis-1,2-Dichloroethylene	250	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
cis-1,3-Dichloropropylene	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Dibromochloromethane	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Ethylbenzene	5500	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Methylene chloride	100	ug/kg	12.6 U	**2.8 J**	**3.2 J**	**3.1 J**	12.5 U	15.2 U
Styrene	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Tetrachloroethylene	1400	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Toluene	1500	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
trans-1,2-Dichloroethylene	300	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Trichloroethylene	700	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Vinyl chloride	200	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U
Xylenes, Total	1200	ug/kg	12.6 U	12.7 U	13.3 U	12.7 U	12.5 U	15.2 U

Notes: U - Not detected, J - Estimated value, NC - No criteria,
Detects in **BOLD**.

Table 16
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Volatile Organic Compounds

		Location ID	TP-31	TP-32	TP-33	TP-34	TP-35	TP-35
		Sample ID	NWF-SS-X18-1160 (Dup)	NWF-SS-TP32-1169	NWF-SS-TP33-1170	NWF-SS-TP34-1163	NWF-SS-TP35-1164	NWF-SS-TP35-1165
		Sample Date	6/22/2004	6/28/2004	6/28/2004	6/24/2004	6/24/2004	6/24/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	6 - 6
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
1,1,2,2-Tetrachloroethane	600	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 UJ	12.9 U
1,1,2-Trichloroethane	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
1,1-Dichloroethane	200	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
1,1-Dichloroethylene	400	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
1,2-Dichloroethane	100	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
1,2-Dichloropropane	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
2-Butanone	300	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
2-Hexanone	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
4-Methyl-2-pentanone	1000	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Acetone	200	ug/kg	13.0 U	13.3 U	12.5 U	**6.8 J**	12.7 U	**18.1**
Benzene	60	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Bromodichloromethane	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Bromoform	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 UJ	12.9 U
Bromomethane	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Carbon disulfide	2700	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Carbon tetrachloride	600	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Chlorobenzene	1700	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Chloroethane	1900	ug/kg	13.0 UJ	13.3 U	12.5 U	12.0 UJ	12.7 UJ	12.9 UJ
Chloroform	300	ug/kg	13.0 U	13.3 U	**0.75 J**	12.0 U	12.7 U	12.9 U
Chloromethane	NC	ug/kg	13.0 UJ	13.3 U	12.5 U	12.0 UJ	12.7 UJ	12.9 UJ
cis-1,2-Dichloroethylene	250	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	**2.8 J**	**1.5 J**
cis-1,3-Dichloropropylene	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Dibromochloromethane	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Ethylbenzene	5500	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Methylene chloride	100	ug/kg	13.0 U	13.3 U	**3.1 J**	12.0 U	12.7 U	12.9 U
Styrene	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Tetrachloroethylene	1400	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Toluene	1500	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
trans-1,2-Dichloroethylene	300	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
trans-1,3-Dichloropropylene	NC	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Trichloroethylene	700	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	**26.9**	**4.1 J**
Vinyl chloride	200	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U
Xylenes, Total	1200	ug/kg	13.0 U	13.3 U	12.5 U	12.0 U	12.7 U	12.9 U

Notes: U - Not detected, J - Estimated value, NC - No criteria,
Detects in **BOLD**.

Table 16
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Volatile Organic Compounds

		Location ID	TP-35	TP-36	TP-37	TP-40
		Sample ID	NWF-SS-TP35-1166	NWF-SS-TP36-1161	NWF-SS-TP37-1162	NWF-SS-TP40-1158
		Sample Date	6/24/2004	6/23/2004	6/23/2004	6/22/2004
	NYSDEC	Depth Interval (ft)	6 - 6	4 - 4	4 - 4	4 - 4
Chemical Name	**TAGM 4046**	**Unit**				
1,1,1-Trichloroethane	800	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
1,1,2,2-Tetrachloroethane	600	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
1,1,2-Trichloroethane	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
1,1-Dichloroethane	200	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
1,1-Dichloroethylene	400	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
1,2-Dichloroethane	100	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
1,2-Dichloropropane	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
2-Butanone	300	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
2-Hexanone	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
4-Methyl-2-pentanone	1000	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Acetone	200	ug/kg	**4.8 J**	11.8 U	12.5 U	12.2 U
Benzene	60	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Bromodichloromethane	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Bromoform	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Bromomethane	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Carbon disulfide	2700	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Carbon tetrachloride	600	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Chlorobenzene	1700	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Chloroethane	1900	ug/kg	12.4 UJ	11.8 UJ	12.5 UJ	12.2 UJ
Chloroform	300	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Chloromethane	NC	ug/kg	12.4 UJ	11.8 UJ	12.5 UJ	12.2 UJ
cis-1,2-Dichloroethylene	250	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
cis-1,3-Dichloropropylene	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Dibromochloromethane	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Ethylbenzene	5500	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Methylene chloride	100	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Styrene	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Tetrachloroethylene	1400	ug/kg	12.4 U	**61.9**	12.5 U	12.2 U
Toluene	1500	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
trans-1,2-Dichloroethylene	300	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Trichloroethylene	700	ug/kg	**0.62 J**	11.8 U	12.5 U	12.2 U
Vinyl chloride	200	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U
Xylenes, Total	1200	ug/kg	12.4 U	11.8 U	12.5 U	12.2 U

Notes: U - Not detected, J - Estimated value, NC - No criteria,
Detects in **BOLD**.

Table 17
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

Chemical Name	NYDEC TAGM 4046	Location ID / Sample ID / Sample Date / Depth Interval (ft) / Unit	TP-22 NWF-SS-TP22-1194 7/14/2004 4 - 4	TP-23 NWF-SS-TP23-1174 6/30/2004 4 - 4	TP-24 NWF-SS-TP24-1156 6/21/2004 4 - 4	TP-25 NWF-SS-TP25-1152 6/17/2004 4 - 4	TP-25 NWF-SS-X17-1153 (Dup) 6/17/2004 4 - 4	TP-26 NWF-SS-TP26-1151 6/17/2004 4 - 4
2,4,5-Trichlorophenol	100	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
2,4,6-Trichlorophenol	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
2,4-Dichlorophenol	400	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
2,4-Dimethylphenol	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
2,4-Dinitrophenol	200 or MDL	ug/kg	986 UJ	9530 U	968 U	2620 U	2610 U	3000 U
2,4-Dinitrotoluene	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
2,6-Dinitrotoluene	1000	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
2-Chloronaphthalene	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
2-Chlorophenol	800	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	986 UJ	9530 U	968 U	2620 U	2610 U	3000 U
2-Methylnaphthalene	36400	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
o-Nitroaniline	430 or MDL	ug/kg	986 UJ	9530 U	968 U	2620 U	2610 U	3000 U
2-Nitrophenol	330 or MDL	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
3,3'-Dichlorobenzidine	NC	ug/kg	813 UJ	7860 U	799 U	2160 U	2160 U	2480 U
m-Nitroaniline	500 or MDL	ug/kg	986 UJ	9530 U	968 U	2620 U	2610 U	3000 U
4-Bromophenylphenylether	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
4-Chloroaniline	220 or MDL	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
4-Chlorophenyl phenyl ether	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
p-Nitroaniline	NC	ug/kg	986 UJ	9530 U	968 U	2620 U	2610 U	3000 U
4-Nitrophenol	100 or MDL	ug/kg	986 UJ	9530 U	968 UJ	2620 U	2610 U	3000 U
Acenaphthene	50000	ug/kg	407 UJ	**229 J**	**11.3 J**	1080 U	1080 U	1240 U
Acenaphthylene	41000	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Anthracene	50000	ug/kg	407 UJ	3940 U	**25.5 J**	1080 U	1080 U	1240 U
Benzo(a)anthracene	224 or MDL	ug/kg	407 UJ	**1590 J ***	**73.1 J**	1080 U	1080 U	1240 U
Benzo(a)pyrene	61 or MDL	ug/kg	407 UJ	**1870 J ***	**61.2 J ***	1080 U	1080 U	1240 U
Benzo(b)fluoranthene	1100	ug/kg	407 UJ	**1720 J ***	**114 J**	1080 U	1080 U	1240 U
Benzo(g,h,i)perylene	50000	ug/kg	407 UJ	**1070 J**	**210 J**	1080 U	1080 U	1240 U
Benzo(k)fluoranthene	1100	ug/kg	407 UJ	**662 J**	400 U	1080 U	1080 U	1240 U
Bis(2-chloroethoxy)methane	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Bis(2-chloroethyl)ether	NC	ug/kg	407 UJ	3940 U	400 U	1080 UJ	1080 UJ	1240 UJ
Bis(2-ethylhexyl)phthalate	50000	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 17
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-22	TP-23	TP-24	TP-25	TP-25	TP-26
		Sample ID	NWF-SS-TP22-1194	NWF-SS-TP23-1174	NWF-SS-TP24-1156	NWF-SS-TP25-1152	NWF-SS-X17-1153 (Dup)	NWF-SS-TP26-1151
		Sample Date	7/14/2004	6/30/2004	6/21/2004	6/17/2004	6/17/2004	6/17/2004
	NYDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	**TAGM 4046**	**Unit**						
Butyl benzyl phthalate	50000	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Carbazole	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Chrysene	400	ug/kg	407 UJ	**2370 J ***	**69.6 J**	1080 U	1080 U	1240 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	407 UJ	3940 UJ	400 U	1080 U	1080 U	1240 U
Dibenzofuran	6200	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Dichlorobenzenes (1,2-)	7900	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Dichlorobenzenes (1,3-)	1600	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Dichlorobenzenes (1,4-)	8500	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Diethyl phthalate	7100	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Dimethyl phthalate	2000	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Di-n-butylphthalate	8100	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Di-n-octyl phthalate	50000	ug/kg	407 UJ	3940 UJ	400 U	1080 U	1080 U	1240 U
Diphenylamine	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Fluoranthene	50000	ug/kg	407 UJ	**2290 J**	**133 J**	1080 U	1080 U	1240 U
Fluorene	50000	ug/kg	407 UJ	3940 U	**11.0 J**	1080 U	1080 U	1240 U
Hexachlorobenzene	410	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Hexachlorobutadiene	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Hexachlorocyclopentadiene	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Hexachloroethane	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	407 UJ	**977 J**	**197 J**	1080 U	1080 U	1240 U
Isophorone	4400	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
m,p-Cresols	900	ug/kg	411 UJ	3970 U	404 U	1090 U	1090 U	1250 U
Naphthalene	13000	ug/kg	407 UJ	**274 J**	400 U	1080 U	1080 U	1240 U
Nitrobenzene	200 or MDL	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
N-Nitrosodipropylamine	NC	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
o-Cresol	100 or MDL	ug/kg	411 UJ	3970 U	404 U	1090 U	1090 U	1250 U
Pentachlorophenol	1000 or MDL	ug/kg	986 UJ	9530 U	968 U	2620 U	2610 U	3000 U
Phenanthrene	50000	ug/kg	407 UJ	**1770 J**	**92.8 J**	1080 U	1080 U	1240 U
Phenol	30 or MDL	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U
Pyrene	50000	ug/kg	407 UJ	**3440 J**	**88.9 J**	1080 U	1080 U	1240 U
Trichlorobenzenes (1,2,4-)	3400	ug/kg	407 UJ	3940 U	400 U	1080 U	1080 U	1240 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 17
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-27	TP-28	TP-28	TP-29	TP-30	TP-31
		Sample ID	NWF-SS-TP27-1150	NWF-SS-TP28-1172	NWF-SS-X19-1173 (Dup)	NWF-SS-TP29-1171	NWF-SS-TP30-1157	NWF-SS-TP31-1159
		Sample Date	6/16/2004	6/29/2004	6/29/2004	6/29/2004	6/21/2004	6/22/2004
	NYDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit						
2,4,5-Trichlorophenol	100	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
2,4,6-Trichlorophenol	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
2,4-Dichlorophenol	400	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
2,4-Dimethylphenol	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
2,4-Dinitrophenol	200 or MDL	ug/kg	3040 U	1020 U	1060 U	1010 U	1000 U	1300 U
2,4-Dinitrotoluene	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
2,6-Dinitrotoluene	1000	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
2-Chloronaphthalene	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
2-Chlorophenol	800	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	3040 U	1020 U	1060 U	1010 U	1000 U	1300 U
2-Methylnaphthalene	36400	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
o-Nitroaniline	430 or MDL	ug/kg	3040 U	1020 U	1060 U	1010 U	1000 U	1300 U
2-Nitrophenol	330 or MDL	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
3,3'-Dichlorobenzidine	NC	ug/kg	2500 U	839 U	877 U	836 U	828 U	1070 U
m-Nitroaniline	500 or MDL	ug/kg	3040 U	1020 U	1060 U	1010 U	1000 U	1300 U
4-Bromophenylphenylether	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
4-Chloroaniline	220 or MDL	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
4-Chlorophenyl phenyl ether	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
p-Nitroaniline	NC	ug/kg	3040 U	1020 U	1060 U	1010 U	1000 U	1300 U
4-Nitrophenol	100 or MDL	ug/kg	3040 U	1020 U	1060 U	1010 UJ	1000 UJ	1300 UJ
Acenaphthene	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Acenaphthylene	41000	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Anthracene	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	**61.6 J**
Benzo(a)anthracene	224 or MDL	ug/kg	1250 U	420 U	439 U	418 U	414 U	**1060 ***
Benzo(a)pyrene	61 or MDL	ug/kg	1250 U	420 U	439 U	**86.3 J ***	414 U	**1500 J ***
Benzo(b)fluoranthene	1100	ug/kg	1250 U	420 U	439 U	**28.7 J**	414 U	**1740 J ***
Benzo(g,h,i)perylene	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	**853**
Benzo(k)fluoranthene	1100	ug/kg	1250 U	420 U	439 U	418 U	414 U	**695**
Bis(2-chloroethoxy)methane	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Bis(2-chloroethyl)ether	NC	ug/kg	1250 UJ	420 U	439 U	418 U	414 U	537 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 17
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-27	TP-28	TP-28	TP-29	TP-30	TP-31
		Sample ID	NWF-SS-TP27-1150	NWF-SS-TP28-1172	NWF-SS-X19-1173 (Dup)	NWF-SS-TP29-1171	NWF-SS-TP30-1157	NWF-SS-TP31-1159
		Sample Date	6/16/2004	6/29/2004	6/29/2004	6/29/2004	6/21/2004	6/22/2004
	NYDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit						
Butyl benzyl phthalate	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Carbazole	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	**37.5 J**
Chrysene	400	ug/kg	1250 U	420 U	439 U	418 U	414 U	**909 ***
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Dibenzofuran	6200	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Dichlorobenzenes (1,2-)	7900	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Dichlorobenzenes (1,3-)	1600	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Dichlorobenzenes (1,4-)	8500	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Diethyl phthalate	7100	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Dimethyl phthalate	2000	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Di-n-butylphthalate	8100	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Di-n-octyl phthalate	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Diphenylamine	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Fluoranthene	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	**951**
Fluorene	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	**10.0 J**
Hexachlorobenzene	410	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Hexachlorobutadiene	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Hexachlorocyclopentadiene	NC	ug/kg	1250 U	420 U	439 U	418 UJ	414 U	537 U
Hexachloroethane	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	1250 U	420 U	439 U	418 U	414 U	**895**
Isophorone	4400	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
m,p-Cresols	900	ug/kg	1260 U	424 U	443 U	422 U	418 U	542 U
Naphthalene	13000	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Nitrobenzene	200 or MDL	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
N-Nitrosodipropylamine	NC	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
o-Cresol	100 or MDL	ug/kg	1260 U	424 U	443 U	422 U	418 U	542 U
Pentachlorophenol	1000 or MDL	ug/kg	3040 U	1020 U	1060 U	1010 U	1000 U	1300 U
Phenanthrene	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	**217 J**
Phenol	30 or MDL	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U
Pyrene	50000	ug/kg	1250 U	420 U	439 U	418 U	414 U	**718**
Trichlorobenzenes (1,2,4-)	3400	ug/kg	1250 U	420 U	439 U	418 U	414 U	537 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 17
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-31	TP-32	TP-33	TP-34	TP-35	TP-35
		Sample ID	NWF-SS-X18-1160 (Dup)	NWF-SS-TP32-1169	NWF-SS-TP33-1170	NWF-SS-TP34-1163	NWF-SS-TP35-1164	NWF-SS-TP35-1165
		Sample Date	6/22/2004	6/28/2004	6/28/2004	6/24/2004	6/24/2004	6/24/2004
	NYDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	6 - 6
Chemical Name	TAGM 4046	Unit						
2,4,5-Trichlorophenol	100	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
2,4,6-Trichlorophenol	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
2,4-Dichlorophenol	400	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
2,4-Dimethylphenol	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
2,4-Dinitrophenol	200 or MDL	ug/kg	1040 U	1070 U	1000 U	956 U	1010 U	1040 U
2,4-Dinitrotoluene	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
2,6-Dinitrotoluene	1000	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
2-Chloronaphthalene	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
2-Chlorophenol	800	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	1040 U	1070 U	1000 U	956 U	1010 U	1040 U
2-Methylnaphthalene	36400	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
o-Nitroaniline	430 or MDL	ug/kg	1040 U	1070 U	1000 U	956 U	1010 U	1040 U
2-Nitrophenol	330 or MDL	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
3,3'-Dichlorobenzidine	NC	ug/kg	856 U	880 U	828 U	789 U	837 U	854 U
m-Nitroaniline	500 or MDL	ug/kg	1040 U	1070 U	1000 U	956 U	1010 U	1040 U
4-Bromophenylphenylether	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
4-Chloroaniline	220 or MDL	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
4-Chlorophenyl phenyl ether	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
p-Nitroaniline	NC	ug/kg	1040 U	1070 U	1000 U	956 U	1010 U	1040 U
4-Nitrophenol	100 or MDL	ug/kg	1040 UJ	1070 U	1000 U	956 UJ	1010 UJ	1040 UJ
Acenaphthene	50000	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Acenaphthylene	41000	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Anthracene	50000	ug/kg	429 U	441 U	414 U	395 U	**28.6 J**	427 U
Benzo(a)anthracene	224 or MDL	ug/kg	**40.3 J**	441 U	414 U	**43.0 J**	**100 J**	427 U
Benzo(a)pyrene	61 or MDL	ug/kg	**34.2 J**	441 U	414 U	**50.4 J**	**97.5 J ***	427 U
Benzo(b)fluoranthene	1100	ug/kg	**44.6 J**	441 U	414 U	**59.2 J**	**124 J**	427 U
Benzo(g,h,i)perylene	50000	ug/kg	**222 J**	441 U	414 U	**208 J**	**229 J**	427 U
Benzo(k)fluoranthene	1100	ug/kg	429 U	441 U	414 U	**25.0 J**	**50.8 J**	427 U
Bis(2-chloroethoxy)methane	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Bis(2-chloroethyl)ether	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 17
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-31	TP-32	TP-33	TP-34	TP-35	TP-35
		Sample ID	NWF-SS-X18-1160 (Dup)	NWF-SS-TP32-1169	NWF-SS-TP33-1170	NWF-SS-TP34-1163	NWF-SS-TP35-1164	NWF-SS-TP35-1165
		Sample Date	6/22/2004	6/28/2004	6/28/2004	6/24/2004	6/24/2004	6/24/2004
	NYDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	6 - 6
Chemical Name	TAGM 4046	Unit						
Butyl benzyl phthalate	50000	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Carbazole	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Chrysene	400	ug/kg	**32.0 J**	441 U	414 U	**44.3 J**	**96.2 J**	427 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Dibenzofuran	6200	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Dichlorobenzenes (1,2-)	7900	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Dichlorobenzenes (1,3-)	1600	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Dichlorobenzenes (1,4-)	8500	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Diethyl phthalate	7100	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Dimethyl phthalate	2000	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Di-n-butylphthalate	8100	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Di-n-octyl phthalate	50000	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Diphenylamine	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Fluoranthene	50000	ug/kg	**57.2 J**	441 U	414 U	**68.4 J**	**169 J**	427 U
Fluorene	50000	ug/kg	429 U	441 U	414 U	**5.2 J**	**10.2 J**	427 U
Hexachlorobenzene	410	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Hexachlorobutadiene	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Hexachlorocyclopentadiene	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Hexachloroethane	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	**204 J**	441 U	414 U	**192 J**	**218 J**	427 U
Isophorone	4400	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
m,p-Cresols	900	ug/kg	432 U	445 U	418 U	398 U	423 U	431 U
Naphthalene	13000	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Nitrobenzene	200 or MDL	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
N-Nitrosodipropylamine	NC	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
o-Cresol	100 or MDL	ug/kg	432 U	445 U	418 U	398 U	423 U	431 U
Pentachlorophenol	1000 or MDL	ug/kg	1040 U	1070 U	1000 U	956 U	1010 U	1040 U
Phenanthrene	50000	ug/kg	**38.2 J**	441 U	414 U	**38.6 J**	**94.2 J**	427 U
Phenol	30 or MDL	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U
Pyrene	50000	ug/kg	**38.8 J**	441 U	414 U	**52.1 J**	**134 J**	427 U
Trichlorobenzenes (1,2,4-)	3400	ug/kg	429 U	441 U	414 U	395 U	419 U	427 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 17
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

Chemical Name	NYDEC TAGM 4046	Location ID / Sample ID / Sample Date / Depth Interval (ft) / Unit	TP-35 NWF-SS-TP35-1166 6/24/2004 6 - 6	TP-36 NWF-SS-TP36-1161 6/23/2004 4 - 4	TP-37 NWF-SS-TP37-1162 6/23/2004 4 - 4	TP-40 NWF-SS-TP40-1158 6/22/2004 4 - 4
2,4,5-Trichlorophenol	100	ug/kg	409 U	389 U	414 U	403 U
2,4,6-Trichlorophenol	NC	ug/kg	409 U	389 U	414 U	403 U
2,4-Dichlorophenol	400	ug/kg	409 U	389 U	414 U	403 U
2,4-Dimethylphenol	NC	ug/kg	409 U	389 U	414 U	403 U
2,4-Dinitrophenol	200 or MDL	ug/kg	990 U	942 U	1000 U	975 U
2,4-Dinitrotoluene	NC	ug/kg	409 U	389 U	414 U	403 U
2,6-Dinitrotoluene	1000	ug/kg	409 U	389 U	414 U	403 U
2-Chloronaphthalene	NC	ug/kg	409 U	389 U	414 U	403 U
2-Chlorophenol	800	ug/kg	409 U	389 U	414 U	403 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	990 U	942 U	1000 U	975 U
2-Methylnaphthalene	36400	ug/kg	409 U	389 U	414 U	403 U
o-Nitroaniline	430 or MDL	ug/kg	990 U	942 U	1000 U	975 U
2-Nitrophenol	330 or MDL	ug/kg	409 U	389 U	414 U	403 U
3,3'-Dichlorobenzidine	NC	ug/kg	817 U	777 U	827 U	805 U
m-Nitroaniline	500 or MDL	ug/kg	990 U	942 U	1000 U	975 U
4-Bromophenylphenylether	NC	ug/kg	409 U	389 U	414 U	403 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	409 U	389 U	414 U	403 U
4-Chloroaniline	220 or MDL	ug/kg	409 U	389 U	414 U	403 U
4-Chlorophenyl phenyl ether	NC	ug/kg	409 U	389 U	414 U	403 U
p-Nitroaniline	NC	ug/kg	990 U	942 U	1000 U	975 U
4-Nitrophenol	100 or MDL	ug/kg	990 UJ	942 UJ	1000 UJ	975 UJ
Acenaphthene	50000	ug/kg	409 U	389 U	414 U	403 U
Acenaphthylene	41000	ug/kg	409 U	389 U	414 U	403 U
Anthracene	50000	ug/kg	409 U	389 U	414 U	403 U
Benzo(a)anthracene	224 or MDL	ug/kg	409 U	389 U	414 U	403 U
Benzo(a)pyrene	61 or MDL	ug/kg	409 U	389 U	414 U	403 U
Benzo(b)fluoranthene	1100	ug/kg	409 U	389 U	414 U	403 U
Benzo(g,h,i)perylene	50000	ug/kg	409 U	389 U	414 U	403 U
Benzo(k)fluoranthene	1100	ug/kg	409 U	389 U	414 U	403 U
Bis(2-chloroethoxy)methane	NC	ug/kg	409 U	389 U	414 U	403 U
Bis(2-chloroethyl)ether	NC	ug/kg	409 U	389 U	414 U	403 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	409 U	389 U	414 U	403 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 17
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location ID	TP-35	TP-36	TP-37	TP-40
		Sample ID	NWF-SS-TP35-1166	NWF-SS-TP36-1161	NWF-SS-TP37-1162	NWF-SS-TP40-1158
		Sample Date	6/24/2004	6/23/2004	6/23/2004	6/22/2004
	NYDEC	Depth Interval (ft)	6 - 6	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit				
Butyl benzyl phthalate	50000	ug/kg	409 U	389 U	414 U	403 U
Carbazole	NC	ug/kg	409 U	389 U	414 U	403 U
Chrysene	400	ug/kg	409 U	389 U	414 U	403 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	409 U	389 U	414 U	403 U
Dibenzofuran	6200	ug/kg	409 U	389 U	414 U	403 U
Dichlorobenzenes (1,2-)	7900	ug/kg	409 U	389 U	414 U	403 U
Dichlorobenzenes (1,3-)	1600	ug/kg	409 U	389 U	414 U	403 U
Dichlorobenzenes (1,4-)	8500	ug/kg	409 U	389 U	414 U	403 U
Diethyl phthalate	7100	ug/kg	409 U	389 U	414 U	403 U
Dimethyl phthalate	2000	ug/kg	409 U	389 U	414 U	403 U
Di-n-butylphthalate	8100	ug/kg	409 U	389 U	414 U	403 U
Di-n-octyl phthalate	50000	ug/kg	409 U	389 U	414 U	403 U
Diphenylamine	NC	ug/kg	409 U	389 U	414 U	403 U
Fluoranthene	50000	ug/kg	409 U	389 U	414 U	**20.5 J**
Fluorene	50000	ug/kg	409 U	389 U	414 U	403 U
Hexachlorobenzene	410	ug/kg	409 U	389 U	414 U	403 U
Hexachlorobutadiene	NC	ug/kg	409 U	389 U	414 U	403 U
Hexachlorocyclopentadiene	NC	ug/kg	409 U	389 U	414 U	403 U
Hexachloroethane	NC	ug/kg	409 U	389 U	414 U	403 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	409 U	389 U	414 U	403 U
Isophorone	4400	ug/kg	409 U	389 U	414 U	403 U
m,p-Cresols	900	ug/kg	413 U	392 U	418 U	406 U
Naphthalene	13000	ug/kg	409 U	389 U	414 U	403 U
Nitrobenzene	200 or MDL	ug/kg	409 U	389 U	414 U	403 U
N-Nitrosodipropylamine	NC	ug/kg	409 U	389 U	414 U	403 U
o-Cresol	100 or MDL	ug/kg	413 U	392 U	418 U	406 U
Pentachlorophenol	1000 or MDL	ug/kg	990 U	942 U	1000 U	975 U
Phenanthrene	50000	ug/kg	409 U	389 U	414 U	403 U
Phenol	30 or MDL	ug/kg	409 U	389 U	414 U	403 U
Pyrene	50000	ug/kg	409 U	389 U	414 U	403 U
Trichlorobenzenes (1,2,4-)	3400	ug/kg	409 U	389 U	414 U	403 U

Notes: U - Not detected, J - Estimated value, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 18
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location ID	TP-22	TP-23	TP-24	TP-25	TP-25	TP-26
		Sample ID	NWF-SS-TP22-1194	NWF-SS-TP23-1174	NWF-SS-TP24-1156	NWF-SS-TP25-1152	NWF-SS-X17-1153 (Dup)	NWF-SS-TP26-1151
		Sample Date	7/14/2004	6/30/2004	6/21/2004	6/17/2004	6/17/2004	6/17/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit						
Aroclor-1016	1000	ug/kg	4.1 U	198 U	4.0 U	10.9 U	10.9 U	12.5 U
Aroclor-1221	1000	ug/kg	4.1 U	198 U	4.0 U	10.9 U	10.9 U	12.5 U
Aroclor-1232	1000	ug/kg	4.1 U	198 U	4.0 U	10.9 U	10.9 U	12.5 U
Aroclor-1242	1000	ug/kg	4.1 U	198 U	4.0 U	10.9 U	10.9 U	12.5 U
Aroclor-1248	1000	ug/kg	4.1 U	198 U	4.0 U	10.9 U	10.9 U	12.5 U
Aroclor-1254	1000	ug/kg	**0.81 J**	**339**	**9.3**	10.9 U	10.9 U	12.5 U
Aroclor-1260	1000	ug/kg	**2.3 J**	**92.6 J**	**13.6**	10.9 U	10.9 U	12.5 U

Notes: U - Not dectected, J - Estimated value, Detects in **BOLD**,
P - Greater than 25% difference for the detected concentrations between the two GC columns.

Table 18
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location ID	TP-27	TP-28	TP-28	TP-29	TP-30	TP-31
		Sample ID	NWF-SS-TP27-1150	NWF-SS-TP28-1172	NWF-SS-X19-1173 (Dup)	NWF-SS-TP29-1171	NWF-SS-TP30-1157	NWF-SS-TP31-1159
		Sample Date	6/16/2004	6/29/2004	6/29/2004	6/29/2004	6/21/2004	6/22/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	**TAGM 4046**	**Unit**						
Aroclor-1016	1000	ug/kg	12.6 U	4.2 U	4.4 U	21.1 U	4.2 U	5.4 U
Aroclor-1221	1000	ug/kg	12.6 U	4.2 U	4.4 U	21.1 U	4.2 U	5.4 U
Aroclor-1232	1000	ug/kg	12.6 U	4.2 U	4.4 U	21.1 U	4.2 U	5.4 U
Aroclor-1242	1000	ug/kg	12.6 U	4.2 U	4.4 U	21.1 U	4.2 U	5.4 U
Aroclor-1248	1000	ug/kg	12.6 U	4.2 U	4.4 U	21.1 U	4.2 U	5.4 U
Aroclor-1254	1000	ug/kg	12.6 U	4.2 U	4.4 U	**74.1 P**	**7**	**32.4**
Aroclor-1260	1000	ug/kg	12.6 U	**2.1 J**	4.4 U	**182 J**	**18**	**66.9**

Notes: U - Not dectected, J - Estimated value, Detects in **BOLD**,
P - Greater than 25% difference for the detected concentrations between the two GC columns.

Table 18
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location ID	TP-31	TP-32	TP-33	TP-34	TP-35	TP-35
		Sample ID	NWF-SS-X18-1160 (Dup)	NWF-SS-TP32-1169	NWF-SS-TP33-1170	NWF-SS-TP34-1163	NWF-SS-TP35-1164	NWF-SS-TP35-1165
		Sample Date	6/22/2004	6/28/2004	6/28/2004	6/24/2004	6/24/2004	6/24/2004
	NYSDEC	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4	6 - 6
Chemical Name	**TAGM 4046**	**Unit**						
Aroclor-1016	1000	ug/kg	4.3 U	4.4 U	4.2 U	19.9 U	21.1 U	4.3 U
Aroclor-1221	1000	ug/kg	4.3 U	4.4 U	4.2 U	19.9 U	21.1 U	4.3 U
Aroclor-1232	1000	ug/kg	4.3 U	4.4 U	4.2 U	19.9 U	21.1 U	4.3 U
Aroclor-1242	1000	ug/kg	4.3 U	4.4 U	4.2 U	19.9 U	21.1 U	4.3 U
Aroclor-1248	1000	ug/kg	4.3 U	4.4 U	4.2 U	19.9 U	21.1 U	4.3 U
Aroclor-1254	1000	ug/kg	**44.5**	4.4 U	4.2 U	**54.9**	**294**	**64.8**
Aroclor-1260	1000	ug/kg	**76.7**	**14.0**	4.2 U	**229**	**81.4**	**50.3**

Notes: U - Not dectected, J - Estimated value, Detects in **BOLD**,
P - Greater than 25% difference for the detected concentrations between the two GC columns.

Table 18
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location ID	TP-35	TP-36	TP-37	TP-40
		Sample ID	NWF-SS-TP35-1166	NWF-SS-TP36-1161	NWF-SS-TP37-1162	NWF-SS-TP40-1158
		Sample Date	6/24/2004	6/23/2004	6/23/2004	6/22/2004
	NYSDEC	Depth Interval (ft)	6 - 6	4 - 4	4 - 4	4 - 4
Chemical Name	TAGM 4046	Unit				
Aroclor-1016	1000	ug/kg	4.1 U	3.9 U	4.2 U	4.1 U
Aroclor-1221	1000	ug/kg	4.1 U	3.9 U	4.2 U	4.1 U
Aroclor-1232	1000	ug/kg	4.1 U	3.9 U	4.2 U	4.1 U
Aroclor-1242	1000	ug/kg	4.1 U	3.9 U	4.2 U	4.1 U
Aroclor-1248	1000	ug/kg	4.1 U	3.9 U	4.2 U	4.1 U
Aroclor-1254	1000	ug/kg	**6.6**	**3.5 J**	**2.1 J**	**10.2**
Aroclor-1260	1000	ug/kg	**2.5 J**	**10.6**	**3.1 J**	**14.4**

Notes: U - Not dectected, J - Estimated value, Detects in **BOLD**,
P - Greater than 25% difference for the detected concentrations between the two GC columns.

Table 19
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Inorganics

		Location ID	TP-22	TP-23	TP-24	TP-25	TP-25
		Sample ID	NWF-SS-TP22-1194	NWF-SS-TP23-1174	NWF-SS-TP24-1156	NWF-SS-TP25-1152	NWF-SS-X17-1153 (Dup)
		Sample Date	7/14/2004	6/30/2004	6/21/2004	6/17/2004	6/17/2004
	Soil	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	14600	14400	**16600**	10800	11600
Antimony	0.29	mg/kg	0.423 UNJ	**4.3 BNJ**	0.411 UNJ	**0.968 BNJ**	**0.846 BNJ**
Arsenic	8.8	mg/kg	6.3	**9.1**	7.5	6.460 J	8.270 J
Barium	97.4	mg/kg	72	**157**	**122**	54.0	60.2
Beryllium	1.1	mg/kg	0.77	0.66	0.89	0.65	0.665
Cadmium	0.3	mg/kg	0.22 B	**5.3**	**0.39 B**	0.169 B	0.161 B
Calcium	31600	mg/kg	2850	21000 *	9290 *	7820	21900
Chromium	18.8	mg/kg	17.2	**151**	**19.4**	16.1	**19.3**
Cobalt	14.4	mg/kg	7 E	12.4 EJ	11.4	9.620 E	11.6 E
Copper	38.1	mg/kg	23.4	**1920 ENJ**	21.5	24.3 *	35.6 *
Cyanide	NSB	mg/kg	1.00 U	0.191 HJ	0.144 J	0.0371 U	0.0371 U
Iron	35700	mg/kg	25000	35300	28300	24100	29200
Lead	15.7	mg/kg	8	**179 *NJ**	12.7	10.7	13.9
Magnesium	9362	mg/kg	3680	**9480**	5250	6720	9330
Manganese	745	mg/kg	356	**1360**	**1860**	529 *	633 *
Mercury	0.09	mg/kg	0.054	**2.2 *NJ**	**0.11 NJ**	0.042	0.020
Nickel	33.8	mg/kg	18.6	**369 EJ**	23.7	22.8	27.6
Potassium	1870	mg/kg	1620 ENJ	1690 ENJ	1590 NJ	1790 ENJ	**1900 ENJ**
Selenium	0.21	mg/kg	**0.51 B**	**5.2**	**1.5 BJ**	**0.248 B**	**0.799 B**
Silver	0.09	mg/kg	0.111 U	**1.5**	0.108 U	0.096 U	0.097 U
Sodium	130	mg/kg	97.7 B	**369 B**	85.9 B	52.9 B	58.6 B
Thallium	0.26	mg/kg	1.23 U	1.19 U	1.2 U	1.070 U	1.070 U
Vanadium	25.4	mg/kg	**30.7**	**124**	**31.9**	20.9	24.3
Zinc	82.9	mg/kg	51.4	**1700 NJ**	71.4	66.9	**97.1**

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
h - Sample preparation or preservation holding time exceeded,
H - Analytical holding time exceeded, NC - No criteria, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 19
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Inorganics

		Location ID	TP-26	TP-27	TP-28	TP-28	TP-29
		Sample ID	NWF-SS-TP26-1151	NWF-SS-TP27-1150	NWF-SS-TP28-1172	NWF-SS-X19-1173 (Dup)	NWF-SS-TP29-1171
		Sample Date	6/17/2004	6/16/2004	6/29/2004	6/29/2004	6/29/2004
	Soil	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	12900	**15900**	11600	13700	**15500**
Antimony	0.29	mg/kg	**1.610 BNJ**	0.431 UNJ	0.431 UNJ	**1.1 BNJ**	**1.8 BNJ**
Arsenic	8.8	mg/kg	7.980 J	6.970 J	5.7	6.5	**9.6**
Barium	97.4	mg/kg	57.9	65.1	49.9	59.6	**114**
Beryllium	1.1	mg/kg	0.71	0.759	0.55 B	0.64 B	0.76
Cadmium	0.3	mg/kg	0.126 B	0.060 U	0.12 B	0.26 B	**2.6**
Calcium	31600	mg/kg	1900	2360	2710 *	2820 *	9200 *
Chromium	18.8	mg/kg	15.3	17.5	13.3	15.9	**34.5**
Cobalt	14.4	mg/kg	9.750 E	7.570 E	6.4 EJ	8.2 EJ	10.3 E
Copper	38.1	mg/kg	27.2 *	26.3 *	21.7 ENJ	22.7 ENJ	**90.8 ENJ**
Cyanide	NSB	mg/kg	0.00626 U	0.0189 U	0.0365 HUhJ	0.0628 HJh	0.0812 HJh
Iron	35700	mg/kg	27200	28100	20900	23000	**52100**
Lead	15.7	mg/kg	8.160	6.270	5.1 *NJ	6.5 *NJ	**85.8 *NJ**
Magnesium	9362	mg/kg	3250	3950	3180	3540	4990
Manganese	745	mg/kg	**1030 ***	428 *	671	**762**	**1250**
Mercury	0.09	mg/kg	0.030	0.034	0.026 NJ*	0.03 *NJ	**0.17 *NJ**
Nickel	33.8	mg/kg	19	19.5	16.9 EJ	19.6 EJ	**35.8 E**
Potassium	1870	mg/kg	1170 ENJ	1440 ENJ	1270 ENJ	1320 ENJ	1350 ENJ
Selenium	0.21	mg/kg	**0.903 B**	**0.769 B**	**0.4 BJ**	**0.67 BJ**	**3 B**
Silver	0.09	mg/kg	0.111 U	0.113 U	0.113 U	0.119 U	**0.21 B**
Sodium	130	mg/kg	53.0 B	76.1 B	77 B	79.4 B	**135 B**
Thallium	0.26	mg/kg	1.230 U	1.250 U	1.25 U	1.32 U	1.26 U
Vanadium	25.4	mg/kg	**27.5**	**30.2**	23	**26.1**	**30.7**
Zinc	82.9	mg/kg	**47.7**	52.6	39.4 NJ	47.2 NJ	**221 NJ**

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
h - Sample preparation or preservation holding time exceeded,
H - Analytical holding time exceeded, NC - No criteria, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 19
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Inorganics

		Location ID	TP-30	TP-31	TP-31	TP-32	TP-33
		Sample ID	NWF-SS-TP30-1157	NWF-SS-TP31-1159	NWF-SS-X18-1160 (Dup)	NWF-SS-TP32-1169	NWF-SS-TP33-1170
		Sample Date	6/21/2004	6/22/2004	6/22/2004	6/28/2004	6/28/2004
	Soil	Depth Interval (ft)	4 - 4	4 - 4	4 - 4	4 - 4	4 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	14100	**20400**	14300	**16900**	15100
Antimony	0.29	mg/kg	0.421 UNJ	**5.5 BNJ**	**9.2 NJ**	**1.1 BNJ**	**0.74 BNJ**
Arsenic	8.8	mg/kg	7.7	**17.5**	**15.4**	7.3	7.3
Barium	97.4	mg/kg	78.6	**1300**	**715**	**121**	73.6
Beryllium	1.1	mg/kg	0.7	0.97	0.69	**1.2**	0.75
Cadmium	0.3	mg/kg	**0.31 B**	**1.7**	**1.6**	**1.3**	0.28 B
Calcium	31600	mg/kg	4850 *	12800 *	23500 *	11900 *	2790 *
Chromium	18.8	mg/kg	**19.8**	**50.6**	**60.8**	**85.4**	17
Cobalt	14.4	mg/kg	9.5	12.7	10.8	11 EJ	11.5 EJ
Copper	38.1	mg/kg	18.4	**201**	**139**	**212 ENJ**	30.7 ENJ
Cyanide	NSB	mg/kg	1.00 U	0.190 J	0.0716 J	0.151 HJh	0.214 HJh
Iron	35700	mg/kg	23700	**59500**	**39600**	28800	26900
Lead	15.7	mg/kg	12.6	**172**	**200**	**98 *NJ**	9.1 *NJ
Magnesium	9362	mg/kg	4170	5590	**13300**	4970	3750
Manganese	745	mg/kg	546	623	649	**1130**	**1150**
Mercury	0.09	mg/kg	0.062 NJ	**0.43 NJ**	**0.17 NJ**	0.087 *NJ	0.034 *NJ
Nickel	33.8	mg/kg	17.9	**49.5**	**69.3**	**75.3 EJ**	22.2 EJ
Potassium	1870	mg/kg	1430 NJ	**2090 NJ**	1860 NJ	1570 ENJ	1600 ENJ
Selenium	0.21	mg/kg	**0.31 B**	0.65 BJ	**1.1 B**	**0.47 BJ**	**0.79 BJ**
Silver	0.09	mg/kg	0.111 U	**0.63 B**	**0.65 B**	0.120 U	0.113 U
Sodium	130	mg/kg	84 B	**761**	**310 B**	**339 B**	99.1 B
Thallium	0.26	mg/kg	1.23 U	1.62 U	1.27 U	1.33 U	1.25 U
Vanadium	25.4	mg/kg	**37.7**	**52.3**	**45.6**	**31.1**	**29.6**
Zinc	82.9	mg/kg	58.7	**1170**	**622**	**329 NJ**	53.4 NJ

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
h - Sample preparation or preservation holding time exceeded,
H - Analytical holding time exceeded, NC - No criteria, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 19
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Inorganics

		Location ID	TP-34	TP-35	TP-35	TP-35	TP-36
		Sample ID	NWF-SS-TP34-1163	NWF-SS-TP35-1164	NWF-SS-TP35-1165	NWF-SS-TP35-1166	NWF-SS-TP36-1161
		Sample Date	6/24/2004	6/24/2004	6/24/2006	6/24/2004	6/23/2004
	Soil	Depth Interval (ft)	4 - 4	4 - 4	6 - 6	6 - 6	4 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	12600	13700	14400	10900	14600
Antimony	0.29	mg/kg	**1 BNJ**	**1.3 BNJ**	**1.6 BNJ**	**0.44 BNJ**	**0.87 BNJ**
Arsenic	8.8	mg/kg	8.2	6.6	6.9	7.5	8.6
Barium	97.4	mg/kg	96.3	**131**	86.1	51.2	59.7
Beryllium	1.1	mg/kg	0.71	0.8	0.7	0.56 B	0.74
Cadmium	0.3	mg/kg	**0.35 B**	**3.9**	**1**	**0.31 B**	0.17 B
Calcium	31600	mg/kg	7650 *	**143000 ***	6390 *	3030 *	18000 *
Chromium	18.8	mg/kg	17.8	**23.4**	**25.5**	12.8	16.1
Cobalt	14.4	mg/kg	**17.6**	10.6	8.8	8.6	9.1
Copper	38.1	mg/kg	35.7	**138**	**397**	26.5	26.4
Cyanide	NSB	mg/kg	0.0837 J	0.381 J	0.0391 U	1.00 U	0.0654 J
Iron	35700	mg/kg	24900	23600	24800	22900	24300
Lead	15.7	mg/kg	**27**	**110**	**81.9**	7.4	10.8
Magnesium	9362	mg/kg	5210	6930	3980	3450	**11700**
Manganese	745	mg/kg	**1620**	**1070**	651	**818**	577
Mercury	0.09	mg/kg	**0.12 NJ**	**6.3 NJ**	**0.52 NJ**	0.026 NJ	0.063 NJ
Nickel	33.8	mg/kg	23.6	**36.2**	28.9	19	18
Potassium	1870	mg/kg	1370 NJ	**2210 NJ**	1640 NJ	1490 NJ	1540 NJ
Selenium	0.21	mg/kg	**0.961 BJ**	**0.27 BJ**	**0.62 B**	**0.25 B**	0.189 U
Silver	0.09	mg/kg	0.107 U	**0.62 B**	**0.41 B**	0.11 U	0.105 U
Sodium	130	mg/kg	**151 B**	**143 B**	**242 B**	**170 B**	80.8 B
Thallium	0.26	mg/kg	1.19 B	1.23 U	1.28 U	1.22 U	1.17 U
Vanadium	25.4	mg/kg	**27.3**	25.3	**26.2**	22.2	**27.7**
Zinc	82.9	mg/kg	80.3	**236**	**135**	47.3	57.8

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
h - Sample preparation or preservation holding time exceeded,
H - Analytical holding time exceeded, NC - No criteria, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 19
Knolls Atomic Power Laboratory
Land Disposal Area: West Field
Test Pit Results (Soil)
Inorganics

		Location ID	TP-37	TP-40
		Sample ID	NWF-SS-TP37-1162	NWF-SS-TP40-1158
		Sample Date	6/23/2004	6/22/2004
	Soil	Depth Interval (ft)	4 - 4	4 - 4
Chemical Name	Background	Unit		
Aluminum	15200	mg/kg	**16600**	**17900**
Antimony	0.29	mg/kg	**1 BNJ**	**1.6 BNJ**
Arsenic	8.8	mg/kg	8.4	6.1
Barium	97.4	mg/kg	78.1	93.6
Beryllium	1.1	mg/kg	0.83	0.83
Cadmium	0.3	mg/kg	0.11 B	0.24 B
Calcium	31600	mg/kg	2460 *	3260 *
Chromium	18.8	mg/kg	17.3	18.1
Cobalt	14.4	mg/kg	10.7	9.3
Copper	38.1	mg/kg	29.6	22.8
Cyanide	NSB	mg/kg	0.0282 U	0.0962 J
Iron	35700	mg/kg	28800	25100
Lead	15.7	mg/kg	10.5	9.9
Magnesium	9362	mg/kg	4250	3980
Manganese	745	mg/kg	**858**	463
Mercury	0.09	mg/kg	0.034 NJ	0.051 NJ
Nickel	33.8	mg/kg	23.1	18.8
Potassium	1870	mg/kg	1740 NJ	1640 NJ
Selenium	0.21	mg/kg	**0.56 B**	**0.75 B**
Silver	0.09	mg/kg	0.113 U	0.11 U
Sodium	130	mg/kg	**158 B**	112 B
Thallium	0.26	mg/kg	1.25 U	1.21 U
Vanadium	25.4	mg/kg	**29.3**	**29.5**
Zinc	82.9	mg/kg	55.6	64.7

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
h - Sample preparation or preservation holding time exceeded,
H - Analytical holding time exceeded, NC - No criteria, SB - Soil background,
NSB - No soil background concentration available, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 20
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Volatile Organic Compounds

Chemical Name	NYSDEC TAGM 4046	Location ID / Sample ID / Sample Date / Depth Interval (ft) / Unit	TP-20 NNF-SS-TP20-1134 11/26/2003 0.5 - 0.5	TP-20 NNF-SS-TP20-1135 11/26/2003 4 - 4	TP-21 NNF-SS-TP21-1133 11/25/2003 4 - 4	TP-38 NWF-SS-TP38-1190 7/13/2004 6.5 - 6.5	TP-38 NWF-SS-X21-1191 (Dup) 7/13/2004 6.5 - 6.5
1,1,1-Trichloroethane	800	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.8 U	10.8 R	11.0 R	13.7 U	13.4 U
1,1,2-Trichloroethane	NC	ug/kg	11.8 U	10.8 UJ	11.0 UJ	13.7 U	13.4 U
1,1-Dichloroethane	200	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
1,1-Dichloroethylene	400	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
1,2-Dichloroethane	100	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
1,2-Dichloropropane	NC	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
2-Butanone	300	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
2-Hexanone	NC	ug/kg	11.8 U	10.8 UJ	11.0 UJ	13.7 U	13.4 U
4-Methyl-2-pentanone	1000	ug/kg	11.8 U	10.8 UJ	11.0 UJ	13.7 U	13.4 U
Acetone	200	ug/kg	11.8 UJ	10.8 UJ	11.0 UJ	13.7 U	13.4 U
Benzene	60	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Bromodichloromethane	NC	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Bromoform	NC	ug/kg	11.8 U	10.8 R	11.0 R	13.7 U	13.4 U
Bromomethane	NC	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Carbon disulfide	2700	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Carbon tetrachloride	600	ug/kg	11.8 UJ	10.8 UJ	11.0 UJ	13.7 U	13.4 U
Chlorobenzene	1700	ug/kg	11.8 U	10.8 UJ	11.0 UJ	13.7 U	13.4 U
Chloroethane	1900	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Chloroform	300	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Chloromethane	NC	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
cis-1,2-Dichloroethylene	250	ug/kg	11.8 U	10.8 U	11.0 U	**10.3 J**	**8.8 J**
cis-1,3-Dichloropropylene	NC	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Dibromochloromethane	NC	ug/kg	11.8 U	10.8 UJ	11.0 UJ	13.7 U	13.4 U
Ethylbenzene	5500	ug/kg	11.8 U	10.8 UJ	11.0 UJ	13.7 U	13.4 U
Methylene chloride	100	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Styrene	NC	ug/kg	11.8 U	10.8 UJ	11.0 UJ	**0.88 J**	**0.75 J**
Tetrachloroethylene	1400	ug/kg	11.8 U	10.8 UJ	11.0 UJ	**24.7**	**16.8**
Toluene	1500	ug/kg	11.8 U	**1.2 J**	**0.94 J**	13.7 U	13.4 U
trans-1,2-Dichloroethylene	300	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.8 U	10.8 UJ	11.0 UJ	13.7 U	13.4 U
Trichloroethylene	700	ug/kg	11.8 U	10.8 U	11.0 U	**2.4 J**	**1.6 J**
Vinyl chloride	200	ug/kg	11.8 U	10.8 U	11.0 U	13.7 U	13.4 U
Xylenes, Total	1200	ug/kg	11.8 U	10.8 UJ	11.0 UJ	13.7 U	13.4 U

Notes: U - Not detected, J - Estimated value, R - Unusable data, D - Dilution,
* - TAGM exceedance, NC - No criteria, Detects in **BOLD**.

Table 20
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Volatile Organic Compounds

Chemical Name	NYSDEC TAGM 4046	Location ID / Sample ID / Sample Date / Depth Interval (ft) / Unit	TP-41 NWF-SS-TP41-1192 7/14/2004 4 - 4	TP-41 NWF-SS-TP41-1193 7/14/2004 5 - 5
1,1,1-Trichloroethane	800	ug/kg	11.1 U	11.4 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.1 U	11.4 U
1,1,2-Trichloroethane	NC	ug/kg	11.1 U	11.4 U
1,1-Dichloroethane	200	ug/kg	11.1 U	11.4 U
1,1-Dichloroethylene	400	ug/kg	11.1 U	11.4 U
1,2-Dichloroethane	100	ug/kg	11.1 U	11.4 U
1,2-Dichloropropane	NC	ug/kg	11.1 U	11.4 U
2-Butanone	300	ug/kg	11.1 U	11.4 U
2-Hexanone	NC	ug/kg	11.1 U	11.4 U
4-Methyl-2-pentanone	1000	ug/kg	11.1 U	11.4 U
Acetone	200	ug/kg	11.1 U	11.4 U
Benzene	60	ug/kg	11.1 U	11.4 U
Bromodichloromethane	NC	ug/kg	11.1 U	11.4 U
Bromoform	NC	ug/kg	11.1 U	11.4 U
Bromomethane	NC	ug/kg	11.1 U	11.4 U
Carbon disulfide	2700	ug/kg	11.1 U	11.4 U
Carbon tetrachloride	600	ug/kg	11.1 U	11.4 U
Chlorobenzene	1700	ug/kg	11.1 U	11.4 U
Chloroethane	1900	ug/kg	11.1 U	11.4 U
Chloroform	300	ug/kg	11.1 U	11.4 U
Chloromethane	NC	ug/kg	11.1 U	11.4 U
cis-1,2-Dichloroethylene	250	ug/kg	**23.9**	**13.9**
cis-1,3-Dichloropropylene	NC	ug/kg	11.1 U	11.4 U
Dibromochloromethane	NC	ug/kg	11.1 U	11.4 U
Ethylbenzene	5500	ug/kg	11.1 U	11.4 U
Methylene chloride	100	ug/kg	11.1 U	11.4 U
Styrene	NC	ug/kg	11.1 U	11.4 U
Tetrachloroethylene	1400	ug/kg	**6190 D ***	**18900 D ***
Toluene	1500	ug/kg	11.1 U	11.4 U
trans-1,2-Dichloroethylene	300	ug/kg	**2.0 J**	**1.0 J**
trans-1,3-Dichloropropylene	NC	ug/kg	11.1 U	11.4 U
Trichloroethylene	700	ug/kg	**82.8**	**64.4**
Vinyl chloride	200	ug/kg	11.1 U	11.4 U
Xylenes, Total	1200	ug/kg	11.1 U	11.4 U

Notes: U - Not detected, J - Estimated value, R - Unusable data, D - Dilution,
* - TAGM exceedance, NC - No criteria, Detects in **BOLD**.

Table 21
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location Name	TP-20	TP-20	TP-21	TP-38	TP-38
		Sample Name	NNF-SS-TP20-1134	NNF-SS-TP20-1135	NNF-SS-TP21-1133	NWF-SS-TP38-1190	NWF-SS-X21-1191 (Dup)
		Sample Date	11/26/2003	11/26/2003	11/25/2003	7/13/2004	7/13/2004
	NYDEC TAGM	Depth Interval	0.5 - 0.5	4 - 4	4 - 4	6.5 - 6.5	6.5 - 6.5
Chemical Name	4046	Unit					
2,4,5-Trichlorophenol	100	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
2,4,6-Trichlorophenol	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
2,4-Dichlorophenol	400	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
2,4-Dimethylphenol	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
2,4-Dinitrophenol	200 or MDL	ug/kg	945 U	865 U	881 U	< 4400 U	< 1070 U
2,4-Dinitrotoluene	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
2,6-Dinitrotoluene	1000	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
2-Chloronaphthalene	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
2-Chlorophenol	800	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	945 U	865 U	881 U	< 4400 U	< 1070 U
2-Methylnaphthalene	36400	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
o-Nitroaniline	430 or MDL	ug/kg	945 U	865 U	881 U	< 4400 U	< 1070 U
2-Nitrophenol	330 or MDL	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
3,3'-Dichlorobenzidine	NC	ug/kg	779 U	714 U	727 U	< 3630 U	< 887 U
m-Nitroaniline	500 or MDL	ug/kg	945 U	865 U	881 U	< 4400 U	< 1070 U
4-Bromophenylphenylether	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
4-Chloroaniline	220 or MDL	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
4-Chlorophenyl phenyl ether	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
p-Nitroaniline	NC	ug/kg	945 U	865 U	881 U	< 4400 U	< 1070 U
4-Nitrophenol	100 or MDL	ug/kg	945 U	865 U	881 U	< 4400 U	< 1070 U
Acenaphthene	50000	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Acenaphthylene	41000	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Anthracene	50000	ug/kg	390 U	357 U	364 U	< 1820 U	**24.8 J**
Benzo(a)anthracene	224 or MDL	ug/kg	**48.2 J**	357 U	364 U	< 1820 U	**206 J**
Benzo(a)pyrene	61 or MDL	ug/kg	**42.2 J**	357 U	364 U	**1150 J ***	**942 ***
Benzo(b)fluoranthene	1100	ug/kg	**66.7 J**	357 U	364 U	**1360 J ***	**1180 ***
Benzo(g,h,i)perylene	50000	ug/kg	390 U	357 U	364 U	**1560 J**	**1500 J**
Benzo(k)fluoranthene	1100	ug/kg	**32.2 J**	357 U	364 U	< 1820 U	< 444 U
Bis(2-chloroethoxy)methane	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Bis(2-chloroethyl)ether	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U

Notes: U - Not detected, J - Estimated value, * - TAGM Exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 21
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location Name	TP-20	TP-20	TP-21	TP-38	TP-38
		Sample Name	NNF-SS-TP20-1134	NNF-SS-TP20-1135	NNF-SS-TP21-1133	NWF-SS-TP38-1190	NWF-SS-X21-1191 (Dup)
		Sample Date	11/26/2003	11/26/2003	11/25/2003	7/13/2004	7/13/2004
	NYDEC TAGM	Depth Interval	0.5 - 0.5	4 - 4	4 - 4	6.5 - 6.5	6.5 - 6.5
Chemical Name	**4046**	**Unit**					
Butyl benzyl phthalate	50000	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Carbazole	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Chrysene	400	ug/kg	**51.8 J**	357 U	364 U	**290 J**	**283 J**
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Dibenzofuran	6200	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Dichlorobenzenes (1,2-)	7900	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Dichlorobenzenes (1,3-)	1600	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Dichlorobenzenes (1,4-)	8500	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Diethyl phthalate	7100	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Dimethyl phthalate	2000	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Di-n-butylphthalate	8100	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Di-n-octyl phthalate	50000	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Diphenylamine	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Fluoranthene	50000	ug/kg	**87.8 J**	357 U	364 U	**283 J**	**261 J**
Fluorene	50000	ug/kg	**5.5 J**	357 U	364 U	< 1820 U	< 444 U
Hexachlorobenzene	410	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Hexachlorobutadiene	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Hexachlorocyclopentadiene	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Hexachloroethane	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	390 U	357 U	364 U	**1350 J**	**1290 J**
Isophorone	4400	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
m,p-Cresols	900	ug/kg	394 U	360 U	367 U	< 1830 U	< 448 U
Naphthalene	13000	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Nitrobenzene	200 or MDL	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
N-Nitrosodipropylamine	NC	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
o-Cresol	100 or MDL	ug/kg	394 U	360 U	367 U	< 1830 U	< 448 U
Pentachlorophenol	1000 or MDL	ug/kg	945 U	865 U	881 U	< 4400 U	< 1070 U
Phenanthrene	50000	ug/kg	**49.0 J**	357 U	364 U	**131 J**	**118 J**
Phenol	30 or MDL	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U
Pyrene	50000	ug/kg	**64.5 J**	357 U	364 U	**429 J**	**378 J**
Trichlorobenzenes (1,2,4-)	3400	ug/kg	390 U	357 U	364 U	< 1820 U	< 444 U

Notes: U - Not detected, J - Estimated value, * - TAGM Exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 21
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location Name	TP-41	TP-41
		Sample Name	NWF-SS-TP41-1192	NWF-SS-TP41-1193
		Sample Date	7/14/2004	7/14/2004
	NYDEC TAGM	Depth Interval	4 - 4	5 - 5
Chemical Name	4046	Unit		
2,4,5-Trichlorophenol	100	ug/kg	< 1460 U	< 1510 U
2,4,6-Trichlorophenol	NC	ug/kg	< 1460 U	< 1510 U
2,4-Dichlorophenol	400	ug/kg	< 1460 U	< 1510 U
2,4-Dimethylphenol	NC	ug/kg	< 1460 U	< 1510 U
2,4-Dinitrophenol	200 or MDL	ug/kg	< 3550 U	< 3650 U
2,4-Dinitrotoluene	NC	ug/kg	< 1460 U	< 1510 U
2,6-Dinitrotoluene	1000	ug/kg	< 1460 U	< 1510 U
2-Chloronaphthalene	NC	ug/kg	< 1460 U	< 1510 U
2-Chlorophenol	800	ug/kg	< 1460 U	< 1510 U
2-Methyl-4,6-dinitrophenol	NC	ug/kg	< 3550 U	< 3650 U
2-Methylnaphthalene	36400	ug/kg	< 1460 U	< 1510 U
o-Nitroaniline	430 or MDL	ug/kg	< 3550 U	< 3650 U
2-Nitrophenol	330 or MDL	ug/kg	< 1460 U	< 1510 U
3,3'-Dichlorobenzidine	NC	ug/kg	< 2930 U	< 3010 U
m-Nitroaniline	500 or MDL	ug/kg	< 3550 U	< 3650 U
4-Bromophenylphenylether	NC	ug/kg	< 1460 U	< 1510 U
4-Chloro-3-methylphenol	240 or MDL	ug/kg	< 1460 U	< 1510 U
4-Chloroaniline	220 or MDL	ug/kg	< 1460 U	< 1510 U
4-Chlorophenyl phenyl ether	NC	ug/kg	< 1460 U	< 1510 U
p-Nitroaniline	NC	ug/kg	< 3550 U	< 3650 U
4-Nitrophenol	100 or MDL	ug/kg	< 3550 U	< 3650 U
Acenaphthene	50000	ug/kg	< 1460 U	**53.1 J**
Acenaphthylene	41000	ug/kg	< 1460 U	< 1510 U
Anthracene	50000	ug/kg	< 1460 U	**153 J**
Benzo(a)anthracene	224 or MDL	ug/kg	**157 J**	**376 J ***
Benzo(a)pyrene	61 or MDL	ug/kg	**115 J ***	**290 J ***
Benzo(b)fluoranthene	1100	ug/kg	**173 J**	**328 J**
Benzo(g,h,i)perylene	50000	ug/kg	< 1460 UJ	**175 J**
Benzo(k)fluoranthene	1100	ug/kg	< 1460 U	**153 J**
Bis(2-chloroethoxy)methane	NC	ug/kg	< 1460 U	< 1510 U
Bis(2-chloroethyl)ether	NC	ug/kg	< 1460 U	< 1510 U
Bis(2-ethylhexyl)phthalate	50000	ug/kg	< 1460 U	< 1510 U

Notes: U - Not detected, J - Estimated value, * - TAGM Exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 21
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Semi Volatile Organic Compounds

		Location Name	TP-41	TP-41
		Sample Name	NWF-SS-TP41-1192	NWF-SS-TP41-1193
		Sample Date	7/14/2004	7/14/2004
	NYDEC TAGM	Depth Interval	4 - 4	5 - 5
Chemical Name	4046	Unit		
Butyl benzyl phthalate	50000	ug/kg	< 1460 U	< 1510 U
Carbazole	NC	ug/kg	< 1460 U	< 1510 U
Chrysene	400	ug/kg	**113 J**	**333 J**
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	< 1460 U	< 1510 U
Dibenzofuran	6200	ug/kg	< 1460 U	< 1510 U
Dichlorobenzenes (1,2-)	7900	ug/kg	< 1460 U	< 1510 U
Dichlorobenzenes (1,3-)	1600	ug/kg	< 1460 U	< 1510 U
Dichlorobenzenes (1,4-)	8500	ug/kg	< 1460 U	< 1510 U
Diethyl phthalate	7100	ug/kg	< 1460 U	< 1510 U
Dimethyl phthalate	2000	ug/kg	< 1460 U	< 1510 U
Di-n-butylphthalate	8100	ug/kg	< 1460 U	< 1510 U
Di-n-octyl phthalate	50000	ug/kg	< 1460 U	< 1510 U
Diphenylamine	NC	ug/kg	< 1460 U	< 1510 U
Fluoranthene	50000	ug/kg	**199 J**	**668 J**
Fluorene	50000	ug/kg	**20.6 J**	**63.8 J**
Hexachlorobenzene	410	ug/kg	< 1460 U	< 1510 U
Hexachlorobutadiene	NC	ug/kg	< 1460 U	< 1510 U
Hexachlorocyclopentadiene	NC	ug/kg	< 1460 U	< 1510 U
Hexachloroethane	NC	ug/kg	< 1460 U	< 1510 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	< 1460 UJ	**170 J**
Isophorone	4400	ug/kg	< 1460 U	< 1510 U
m,p-Cresols	900	ug/kg	< 1480 U	< 1520 U
Naphthalene	13000	ug/kg	< 1460 U	< 1510 U
Nitrobenzene	200 or MDL	ug/kg	< 1460 U	< 1510 U
N-Nitrosodipropylamine	NC	ug/kg	< 1460 U	< 1510 U
o-Cresol	100 or MDL	ug/kg	< 1480 U	< 1520 U
Pentachlorophenol	1000 or MDL	ug/kg	< 3550 U	< 3650 U
Phenanthrene	50000	ug/kg	**184 J**	**662 J**
Phenol	30 or MDL	ug/kg	< 1460 U	< 1510 U
Pyrene	50000	ug/kg	**238 J**	**781 J**
Trichlorobenzenes (1,2,4-)	3400	ug/kg	< 1460 U	< 1510 U

Notes: U - Not detected, J - Estimated value, * - TAGM Exceedance,
Detects in **BOLD**, NC - No criteria, MDL - Method detection limit.

Table 22
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Polychlorinated Biphenyls

		Location Name	TP-20	TP-20	TP-21	TP-38	TP-38	TP-41	TP-41
		Sample Name	NNF-SS-TP20-1134	NNF-SS-TP20-1135	NNF-SS-TP21-1133	NWF-SS-TP38-1190	NWF-SS-X21-1191 (Dup)	NWF-SS-TP41-1192	NWF-SS-TP41-1193
		Sample Date	11/26/2003	11/26/2003	11/25/2003	7/13/2004	7/13/2004	7/14/2004	7/14/2004
	NYSDEC	Depth Interval	0.5 - 0.5	4 - 4	4 - 4	6.5 - 6.5	6.5 - 6.5	4 - 4	5 - 5
Chemical Name	TAGM 4046	Unit							
Aroclor-1016	1000	ug/kg	94.5 U	86.5 U	88.1 U	4.6 U	4.5 U	3.7 U	3.8 U
Aroclor-1221	1000	ug/kg	94.5 U	86.5 U	88.1 U	4.6 U	4.5 U	3.7 U	3.8 U
Aroclor-1232	1000	ug/kg	94.5 U	86.5 U	88.1 U	4.6 U	4.5 U	3.7 U	3.8 U
Aroclor-1242	1000	ug/kg	94.5 U	86.5 U	88.1 U	4.6 U	4.5 U	**8.5**	3.8 U
Aroclor-1248	1000	ug/kg	94.5 U	86.5 U	88.1 U	4.6 U	4.5 U	3.7 U	3.8 U
Aroclor-1254	1000	ug/kg	189 U	173 U	176 U	**22.5**	**15.8**	**44.2**	**42.9**
Aroclor-1260	1000	ug/kg	**3.0 J**	173 U	176 U	**24.1**	**23.7**	**67.1**	**66.2**

Notes: U - Not detected, J - Estimated value, Detects in **BOLD**.

Table 23
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Inorganics

		Location ID	TP-20	TP-20	TP-21	TP-38	TP-38
		Sample ID	NNF-SS-TP20-1134	NNF-SS-TP20-1135	NNF-SS-TP21-1133	NWF-SS-TP38-1190	NWF-SS-X21-1191 (Dup)
		Sample Date	11/26/2003	11/26/2003	11/25/2003	7/13/2004	7/13/2004
	Soil	Depth Interval (ft)	0.5 - 0.5	4 - 4	4 - 4	6.5 - 6.5	6.5 - 6.5
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	6440 EJ	7880 EJ	11400 EJ	14300	**16500**
Antimony	0.29	mg/kg	**7.060 BN*J**	**0.449 BN*J**	**0.775 BN*J**	**6.3 NJ**	**12 NJ**
Arsenic	8.8	mg/kg	0.316 B	6.860	7.53	8.5	8
Barium	97.4	mg/kg	20.9 BEN*J	47.6 EN*J	**103 EN*J**	**206**	**186**
Beryllium	1.1	mg/kg	0.131 B	0.457 B	0.605	0.68	0.76
Cadmium	0.3	mg/kg	0.330 U	0.063 U	0.068 B	**2**	**1.8**
Calcium	31600	mg/kg	1150 BE*J	23500 E*J	26700 E*J	19300	12900
Chromium	18.8	mg/kg	**106 EJ**	18.4 EJ	18.2 EJ	**132**	**45**
Cobalt	14.4	mg/kg	**30.5 EJ**	**15.8 EJ**	12.7 EJ	12.6 E	8.6 E
Copper	38.1	mg/kg	**81.8 ENJ**	28.0 ENJ	37.8 ENJ	**216**	**104**
Cyanide	NSB	mg/kg	0.0491 J	1.00 UJ	1.00 UJ	0.234 J	0.338 J
Iron	35700	mg/kg	**154000 EJ**	28400 EJ	29000 EJ	30100	26600
Lead	15.7	mg/kg	1.230 BENJ*	10.7 EN*J	12.7 EN*J	**142**	**162**
Magnesium	9362	mg/kg	1580 BE*J	8630 E*J	**11600 E*J**	5530	5590
Manganese	745	mg/kg	292 E*J	714 E*J	566 E*J	430	342
Mercury	0.09	mg/kg	0.046	0.021	0.016 B	**2.3**	**1.3**
Nickel	33.8	mg/kg	**42.3 ENJ**	28.9 ENJ	32.4 ENJ	**513 J**	**109 J**
Potassium	1870	mg/kg	910 E*J	810 E*J	1470 E*J	1700 ENJ	1740 ENJ
Selenium	0.21	mg/kg	**5.410 BJ**	**1.260 B**	**1.560 B**	**1.1 B**	**0.58 B**
Silver	0.09	mg/kg	**0.412 B**	0.204 U	0.216 U	**1.4**	**1.2**
Sodium	130	mg/kg	26.1 B	54.3 B	68.5 B	**165 B**	**152 B**
Thallium	0.26	mg/kg	0.442 U	0.421 U	0.445 U	1.33 U	1.34 U
Vanadium	25.4	mg/kg	**374 EJ**	**31.0 EJ**	19.0 EJ	**103**	**106**
Zinc	82.9	mg/kg	67.2 ENJ	67.7 ENJ	**96.2 ENJ**	**518**	**457**

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
NC - No criteria, SB - Soil background,
NSB - No soil background concentration available.
IDL - Instrument Detection Limit
MDL - Method Detection Limit
CRDL - Contract Required Detection Limit

Table 23
Knolls Atomic Power Laboratory
Land Disposal Area: Pyrophoric Area
Test Pit Results (Soil)
Inorganics

		Location ID	TP-41	TP-41
		Sample ID	NWF-SS-TP41-1192	NWF-SS-TP41-1193
		Sample Date	7/14/2004	7/14/2004
	Soil	Depth Interval (ft)	4 - 4	5 - 5
Chemical Name	Background	Unit		
Aluminum	15200	mg/kg	13400	**15800**
Antimony	0.29	mg/kg	**3.1 BNJ**	**0.45 BNJ**
Arsenic	8.8	mg/kg	7.8	7.2
Barium	97.4	mg/kg	94.1	86.7
Beryllium	1.1	mg/kg	0.7	0.76
Cadmium	0.3	mg/kg	**0.71**	**0.8**
Calcium	31600	mg/kg	**32600**	12600
Chromium	18.8	mg/kg	**20.1**	**26.1**
Cobalt	14.4	mg/kg	11.4 E	12.6 E
Copper	38.1	mg/kg	**54.9**	**60.1**
Cyanide	NSB	mg/kg	1.00 U	1.00 U
Iron	35700	mg/kg	26000	28200
Lead	15.7	mg/kg	**250**	**104**
Magnesium	9362	mg/kg	**16400**	7840
Manganese	745	mg/kg	632	530
Mercury	0.09	mg/kg	**4.5**	**5.2**
Nickel	33.8	mg/kg	32.3	33.2
Potassium	1870	mg/kg	**2030 ENJ**	**1880 ENJ**
Selenium	0.21	mg/kg	**0.54 B**	**1.2 B**
Silver	0.09	mg/kg	**0.89 B**	**1.1**
Sodium	130	mg/kg	112 B	85.3 B
Thallium	0.26	mg/kg	1.08 U	1.12 U
Vanadium	25.4	mg/kg	**43.2**	**37.1**
Zinc	82.9	mg/kg	**141**	**148**

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control.
NC - No criteria, SB - Soil background,
NSB - No soil background concentration available.
IDL - Instrument Detection Limit
MDL - Method Detection Limit
CRDL - Contract Required Detection Limit

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1002-3-B1	LA1002-3-B1	LA1002-3-B1	LA1002-3-B1	LA1002-3-B2
		Sample ID	LA1002-3-B1-1-1	LA1002-3-B1-2-1	KAPL FD03 (Dup)	LA1002-3-B1-3-1	LA1002-3-B2-1-1
		Sample Date	7/26/2004	7/26/2004	7/26/2004	7/26/2004	7/27/2004
	NYSDEC	Depth Interval (ft)	0 - 0.5	0.5 - 2	0.5 - 2	2 - 4	0 - 0.5
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	1480 U	366 U	364 U	355 U	1610 U
Acenaphthylene	41000	ug/kg	1480 U	366 U	364 U	355 U	1610 U
Anthracene	50000	ug/kg	1480 U	366 U	364 U	355 U	1610 U
Benzo(a)anthracene	224 or MDL	ug/kg	1480 U	**48.3 J**	**73.6 J**	355 U	1610 U
Benzo(a)pyrene	61 or MDL	ug/kg	1480 U	**118 J ***	**142 J ***	355 U	1610 U
Benzo(b)fluoranthene	1100	ug/kg	1480 U	**78.4 J**	**98.5 J**	355 U	1610 U
Benzo(g,h,i)perylene	50000	ug/kg	1480 U	**177 J**	**203 J**	355 U	1610 U
Benzo(k)fluoranthene	1100	ug/kg	1480 U	**30.1 J**	**55.7 J**	355 U	1610 U
Chrysene	400	ug/kg	1480 U	**51.9 J**	**84.1 J**	355 U	1610 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	1480 U	366 U	364 U	355 U	1610 U
Fluoranthene	50000	ug/kg	1480 U	**84.0 J**	**150 J**	355 U	1610 U
Fluorene	50000	ug/kg	1480 U	366 U	364 U	355 U	1610 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	1480 U	**185 J**	**206 J**	355 U	1610 U
Naphthalene	13000	ug/kg	1480 U	366 U	364 U	355 U	1610 U
Phenanthrene	50000	ug/kg	1480 U	**33.0 J**	**56.9 J**	355 U	1610 U
Pyrene	50000	ug/kg	1480 U	**77.0 J**	**112 J**	355 U	1610 U

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1002-3-B2A	LA1002-3-B2A	LA1002-3-B3	LA1002-3-B3	LA1002-3-B3
		Sample ID	LA1002-3-B2A-2-1	LA1002-3-B2A-3-1	LA1002-3-B3-1-1	LA1002-3-B3-2-1	LA1002-3-B3-3-1
		Sample Date	7/27/2004	7/27/2004	7/28/2004	7/28/2004	7/28/2004
	NYSDEC	Depth Interval (ft)	0.5 - 2	2 - 3.2	0 - 0.5	0.5 - 2	2 - 4
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	361 U	362 U	396 U	396 U	359 U
Acenaphthylene	41000	ug/kg	361 U	362 U	396 U	396 U	359 U
Anthracene	50000	ug/kg	361 U	362 U	396 U	396 U	359 U
Benzo(a)anthracene	224 or MDL	ug/kg	**38.7 J**	362 U	396 U	396 U	359 U
Benzo(a)pyrene	61 or MDL	ug/kg	**102 J ***	**66.0 J ***	396 U	**79.4 NJ ***	359 U
Benzo(b)fluoranthene	1100	ug/kg	**54.0 J**	362 U	396 U	**22.6 NJ**	359 U
Benzo(g,h,i)perylene	50000	ug/kg	**162 J**	362 U	396 U	396 U	359 U
Benzo(k)fluoranthene	1100	ug/kg	**29.9 J**	362 U	396 U	396 U	359 U
Chrysene	400	ug/kg	**41.5 J**	362 U	396 U	396 U	359 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	361 U	362 U	396 U	396 U	359 U
Fluoranthene	50000	ug/kg	**60.9 J**	362 U	396 U	**24.7 J**	359 U
Fluorene	50000	ug/kg	361 U	362 U	396 U	396 U	359 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	**172 J**	362 U	396 U	396 U	359 U
Naphthalene	13000	ug/kg	361 U	362 U	396 U	396 U	359 U
Phenanthrene	50000	ug/kg	**20.8 J**	362 U	396 U	396 U	359 U
Pyrene	50000	ug/kg	**53.3 J**	362 U	**4.8 J**	**20.6 J**	359 U

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1002-3-B4	LA1002-3-B4	LA1002-3-B4	LA1002-3-B5	LA1002-3-B5
		Sample ID	LA1002-3-B4-1-1	LA1002-3-B4-2-1	LA1002-3-B4-3-1	LA1002-3-B5-1-1	LA1002-3-B5-2-1
		Sample Date	7/26/2004	7/26/2004	7/26/2004	7/26/2004	7/26/2004
	NYSDEC	Depth Interval (ft)	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	366 U	**9.6 J**	355 U	362 U	**43.0 J**
Acenaphthylene	41000	ug/kg	366 U	356 U	355 U	362 U	1420 U
Anthracene	50000	ug/kg	366 U	**27.5 J**	355 U	362 U	**123 J**
Benzo(a)anthracene	224 or MDL	ug/kg	366 U	**159 J**	355 U	362 U	**614 J ***
Benzo(a)pyrene	61 or MDL	ug/kg	**72.8 J ***	**230 J ***	355 U	**109 J ***	**878 J ***
Benzo(b)fluoranthene	1100	ug/kg	366 U	**250 J**	355 U	**60.7 J**	**843 J**
Benzo(g,h,i)perylene	50000	ug/kg	366 U	**253 J**	355 U	**171 J**	**1010 J**
Benzo(k)fluoranthene	1100	ug/kg	366 U	**92.1 J**	355 U	**28.0 J**	**395 J**
Chrysene	400	ug/kg	366 U	**160 J**	355 U	**46.1 J**	**643 J ***
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	366 U	356 U	355 U	362 U	1420 U
Fluoranthene	50000	ug/kg	366 U	**310 J**	355 U	**72.6 J**	**1210 J**
Fluorene	50000	ug/kg	366 U	**8.2 J**	355 U	362 U	**39.7 J**
Indeno (1,2,3-cd)pyrene	3200	ug/kg	366 U	**253 J**	355 U	**180 J**	**998 J**
Naphthalene	13000	ug/kg	366 U	356 U	355 U	362 U	1420 U
Phenanthrene	50000	ug/kg	366 U	**116 J**	355 U	**22.9 J**	**476 J**
Pyrene	50000	ug/kg	366 U	**240 J**	355 U	**62.2 J**	**942 J**

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1004-3-S	LA1004-3-S	LA1004-3-S	LA1004-6-S	LA1004-6-S
		Sample ID	LA1004-3-S-1-1	LA1007-3-S-2-1	LA1004-3-S-3-1	LA1004-6-S-1-1	LA1004-6-S-2-1
		Sample Date	7/15/2004	7/15/2004	7/15/2004	7/15/2004	7/15/2004
	NYSDEC	Depth Interval (ft)	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	396 U	376 U	374 U	466 U	398 U
Acenaphthylene	41000	ug/kg	396 U	376 U	374 U	466 U	398 U
Anthracene	50000	ug/kg	396 U	376 U	374 U	466 U	398 U
Benzo(a)anthracene	224 or MDL	ug/kg	**113 J**	376 U	374 U	466 U	398 U
Benzo(a)pyrene	61 or MDL	ug/kg	**112 J ***	376 U	374 U	466 U	**93.9 J ***
Benzo(b)fluoranthene	1100	ug/kg	**159 J**	376 U	374 U	**53.2 J**	**36.8 J**
Benzo(g,h,i)perylene	50000	ug/kg	**76.5 J**	376 U	374 U	466 U	**170 J**
Benzo(k)fluoranthene	1100	ug/kg	**60.0 J**	376 U	374 U	466 U	398 U
Chrysene	400	ug/kg	**133 J**	376 U	374 U	**39.4 J**	**34.8 J**
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	396 U	376 U	374 U	466 U	398 U
Fluoranthene	50000	ug/kg	**196 J**	376 U	374 U	**60.9 J**	**75.8 J**
Fluorene	50000	ug/kg	**5.6 J**	376 U	374 U	466 U	398 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	**78.5 J**	376 U	374 U	466 U	**182 J**
Naphthalene	13000	ug/kg	396 U	376 U	374 U	466 U	398 U
Phenanthrene	50000	ug/kg	**93.8 J**	376 U	374 U	**35.0 J**	**42.0 J**
Pyrene	50000	ug/kg	**221 J**	376 U	374 U	**76.3 J**	**60.8 J**

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1004-6-S	LA1004-9-S	LA1004-9-S	LA1004-9-S	LA1007-1-S
		Sample ID	LA1004-6-S-3-1	LA1004-9-S-1-1	LA1004-9-S-2-1	LA1004-9-S-3-1	LA1007-1-S-1-1
		Sample Date	7/15/2004	7/15/2004	7/15/2004	7/15/2004	7/22/2004
	NYSDEC	Depth Interval (ft)	2 - 4	0 - 0.5	0.5 - 2	2 - 3.1	0 - 0.5
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	369 U	**12.8 J**	387 U	367 U	**120 J**
Acenaphthylene	41000	ug/kg	369 U	472 U	387 U	367 U	3880 U
Anthracene	50000	ug/kg	369 U	**45.4 J**	387 U	367 U	3880 U
Benzo(a)anthracene	224 or MDL	ug/kg	369 U	**225 J ***	**27.0 J**	367 U	3880 U
Benzo(a)pyrene	61 or MDL	ug/kg	369 U	**177 J ***	387 U	367 U	**989 J ***
Benzo(b)fluoranthene	1100	ug/kg	369 U	**229 J**	387 U	367 U	**515 J**
Benzo(g,h,i)perylene	50000	ug/kg	369 U	**82.0 J**	387 U	367 U	**1710 J**
Benzo(k)fluoranthene	1100	ug/kg	369 U	**120 J**	387 U	367 U	**218 J**
Chrysene	400	ug/kg	369 U	**215 J**	**22.2 J**	367 U	**522 J ***
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	369 U	472 U	387 U	367 U	3880 U
Fluoranthene	50000	ug/kg	369 U	**375 J**	**32.0 J**	367 U	**950 J**
Fluorene	50000	ug/kg	369 U	**13.1 J**	387 U	367 U	**75.6 J**
Indeno (1,2,3-cd)pyrene	3200	ug/kg	369 U	**93.2 J**	387 U	367 U	**1820 J**
Naphthalene	13000	ug/kg	369 U	472 U	387 U	367 U	3880 U
Phenanthrene	50000	ug/kg	369 U	**230 J**	387 U	367 U	**682 J**
Pyrene	50000	ug/kg	369 U	**404 J**	**40.3 J**	367 U	**956 J**

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1007-1-S	LA1007-1-S	LA1007-2-B	LA1007-2-B	LA1007-2-B
		Sample ID	LA1007-1-S-2-1	LA1007-1-S-3-1	LA1007-2-B-1-1	LA1007-2-B-2-1	LA1007-2-B-3-1
		Sample Date	7/22/2004	7/22/2004	7/21/2004	7/21/2004	7/21/2004
	NYSDEC	Depth Interval (ft)	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	2 - 4
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	372 U	371 U	4490 U	408 U	369 U
Acenaphthylene	41000	ug/kg	372 U	371 U	4490 U	408 U	369 U
Anthracene	50000	ug/kg	372 U	371 U	4490 U	408 U	369 U
Benzo(a)anthracene	224 or MDL	ug/kg	372 U	371 U	4490 U	408 U	369 U
Benzo(a)pyrene	61 or MDL	ug/kg	**84.4 J ***	371 U	**1010 J ***	**126 J ***	369 U
Benzo(b)fluoranthene	1100	ug/kg	**28.1 J**	371 U	**384 J**	**83.1 J**	369 U
Benzo(g,h,i)perylene	50000	ug/kg	**158 J**	371 U	**1890 J**	**200 J**	369 U
Benzo(k)fluoranthene	1100	ug/kg	372 U	371 U	4490 U	**37.7 J**	369 U
Chrysene	400	ug/kg	**25.4 J**	371 U	**300 J**	**81.4 J**	369 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	372 U	371 U	4490 U	408 U	369 U
Fluoranthene	50000	ug/kg	**45.6 J**	371 U	**492 J**	**140 J**	369 U
Fluorene	50000	ug/kg	372 U	371 U	4490 U	**6.2 J**	369 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	**169 J**	371 U	**2020 NJ**	**205 J**	369 U
Naphthalene	13000	ug/kg	372 U	371 U	4490 U	408 U	369 U
Phenanthrene	50000	ug/kg	**26.6 J**	371 U	4490 U	**73.7 J**	369 U
Pyrene	50000	ug/kg	**42.7 J**	371 U	**504 J**	**124 J**	369 U

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1007-3-B	LA1007-3-B	LA1007-3-B	LA1007-4-B1	LA1007-4-B1
		Sample ID	LA1007-3-B-1-1	LA1007-3-B-2-1	LA1007-3-B-3-1	LA1007-4-B1-1-1	LA1007-4-B1-2-1
		Sample Date	7/21/2004	7/21/2004	7/21/2004	7/20/2004	7/20/2004
	NYSDEC	Depth Interval (ft)	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	**147 J**	**168 J**	3730 U	433 U	369 U
Acenaphthylene	41000	ug/kg	4340 U	3630 U	3730 U	433 U	369 U
Anthracene	50000	ug/kg	**346 J**	**351 J**	3730 U	433 U	369 U
Benzo(a)anthracene	224 or MDL	ug/kg	**1650 J ***	3630 U	3730 U	**58.7 J**	369 U
Benzo(a)pyrene	61 or MDL	ug/kg	**2250 J ***	**1460 J ***	**921 J ***	**53.6 J**	369 U
Benzo(b)fluoranthene	1100	ug/kg	**2600 J ***	**1470 J ***	**450 J**	**72.7 J**	369 U
Benzo(g,h,i)perylene	50000	ug/kg	**2630 J**	**1880 J**	**1640 J**	**40.4 J**	369 U
Benzo(k)fluoranthene	1100	ug/kg	**1060 J**	**498 J**	**194 J**	**26.8 J**	369 U
Chrysene	400	ug/kg	**2170 J ***	**1150 J ***	**452 J ***	**64.6 J**	369 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	4340 U	3630 U	3730 U	433 U	369 U
Fluoranthene	50000	ug/kg	**4110 J**	**2570 J**	**1060 J**	**110 J**	369 U
Fluorene	50000	ug/kg	**151 J**	**168 J**	**86.8 J**	433 U	369 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	**2660 J**	**1930 J**	**1750 J**	**42.4 J**	369 U
Naphthalene	13000	ug/kg	4340 U	3630 U	3730 U	433 U	369 U
Phenanthrene	50000	ug/kg	**2310 J**	**1910 J**	**946 J**	**46.8 J**	369 U
Pyrene	50000	ug/kg	**3650 J**	**2630 J**	**976 J**	**95.0 J**	369 U

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1007-4-B1	LA1007-4-B1	LA1007-4-B2	LA1007-4-B2	LA1007-4-B2
		Sample ID	KAPL FD02 (Dup)	LA1007-4-B1-3-1	LA1007-4-B2-1-1	LA1007-4-B2-2-1	KAPL FD01 (Dup)
		Sample Date	7/20/2004	7/20/2004	7/16/2004	7/16/2004	7/16/2004
	NYSDEC	Depth Interval (ft)	0.5 - 2	2 - 3.2	0 - 0.5	0.5 - 2	0.5 - 2
Chemical Name	**TAGM 4046**	**Unit**					
Acenaphthene	50000	ug/kg	369 U	363 U	416 U	379 U	378 U
Acenaphthylene	41000	ug/kg	369 U	363 U	416 U	379 U	378 U
Anthracene	50000	ug/kg	369 U	363 U	416 U	379 U	378 U
Benzo(a)anthracene	224 or MDL	ug/kg	369 U	363 U	**53.4 J**	379 U	378 U
Benzo(a)pyrene	61 or MDL	ug/kg	369 U	363 U	**54.0 J**	379 U	378 U
Benzo(b)fluoranthene	1100	ug/kg	369 U	363 U	416 U	379 U	378 U
Benzo(g,h,i)perylene	50000	ug/kg	369 U	363 U	416 U	379 U	378 U
Benzo(k)fluoranthene	1100	ug/kg	369 U	363 U	416 U	379 U	378 U
Chrysene	400	ug/kg	369 U	363 U	**67.4 J**	379 U	378 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	369 U	363 U	416 U	379 U	378 U
Fluoranthene	50000	ug/kg	369 U	363 U	**105 J**	379 U	378 U
Fluorene	50000	ug/kg	369 U	363 U	416 U	379 U	378 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	369 U	363 U	**32.0 J**	379 U	378 U
Naphthalene	13000	ug/kg	369 U	363 U	416 U	379 U	378 U
Phenanthrene	50000	ug/kg	369 U	363 U	**45.2 J**	379 U	378 U
Pyrene	50000	ug/kg	369 U	363 U	**98.3 J**	379 U	378 U

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1007-4-B2	LA1007-6-S	LA1007-6-S	LA1007-6-S	LA1007-7-S
		Sample ID	LA1007-4-B2-3-1	LA1007-6-S-1-1	LA1007-6-S-2-1	LA1007-6-S-3-1	LA1007-7-S-1-1
		Sample Date	7/16/2004	7/20/2004	7/20/2004	7/20/2004	7/16/2004
	NYSDEC	Depth Interval (ft)	2 - 4	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	**30.5 J**	407 U	362 U	379 U	**29.3 J**
Acenaphthylene	41000	ug/kg	377 U	407 U	362 U	379 U	397 U
Anthracene	50000	ug/kg	**73.9 J**	407 U	362 U	379 U	**73.5 J**
Benzo(a)anthracene	224 or MDL	ug/kg	**128 J**	407 U	362 U	379 U	**139 J**
Benzo(a)pyrene	61 or MDL	ug/kg	**90.0 J ***	407 U	362 U	379 U	**100 J ***
Benzo(b)fluoranthene	1100	ug/kg	**106 J**	407 U	362 U	379 U	**107 J**
Benzo(g,h,i)perylene	50000	ug/kg	377 U	407 U	362 U	379 U	**55.8 J**
Benzo(k)fluoranthene	1100	ug/kg	**53.2 J**	407 U	362 U	379 U	**68.9 J**
Chrysene	400	ug/kg	**112 J**	407 U	362 U	379 U	**110 J**
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	377 U	407 U	362 U	379 U	397 U
Fluoranthene	50000	ug/kg	**250 J**	407 U	362 U	379 U	**288 J**
Fluorene	50000	ug/kg	**23.6 J**	407 U	362 U	379 U	**23.6 J**
Indeno (1,2,3-cd)pyrene	3200	ug/kg	**55.9 J**	407 U	362 U	379 U	**61.7 J**
Naphthalene	13000	ug/kg	377 U	407 U	362 U	379 U	397 U
Phenanthrene	50000	ug/kg	**238 J**	407 U	362 U	379 U	**258 J**
Pyrene	50000	ug/kg	**237 J**	407 U	362 U	379 U	**236 J**

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1007-7-S	LA1007-7-S	LA1007-8-S	LA1007-8-S	LA1007-8-S
		Sample ID	LA1007-7-S-2-1	LA1007-7-S-3-1	LA1007-8-S-1-1	LA1007-8-S-2-1	LA1007-8-S-3-1
		Sample Date	7/16/2004	7/16/2004	7/19/2004	7/19/2004	7/19/2004
	NYSDEC	Depth Interval (ft)	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	2 - 4
Chemical Name	TAGM 4046	Unit					
Acenaphthene	50000	ug/kg	357 U	358 U	435 U	366 U	359 U
Acenaphthylene	41000	ug/kg	357 U	358 U	435 U	366 U	359 U
Anthracene	50000	ug/kg	357 U	358 U	435 U	366 U	359 U
Benzo(a)anthracene	224 or MDL	ug/kg	357 U	358 U	435 U	366 U	359 U
Benzo(a)pyrene	61 or MDL	ug/kg	357 U	358 U	435 U	366 U	359 U
Benzo(b)fluoranthene	1100	ug/kg	357 U	358 U	**26.9 J**	366 U	359 U
Benzo(g,h,i)perylene	50000	ug/kg	357 U	358 U	435 U	366 U	359 U
Benzo(k)fluoranthene	1100	ug/kg	357 U	358 U	435 U	366 U	359 U
Chrysene	400	ug/kg	357 U	358 U	435 U	366 U	359 U
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	357 U	358 U	435 U	366 U	359 U
Fluoranthene	50000	ug/kg	357 U	358 U	**30.1 J**	366 U	359 U
Fluorene	50000	ug/kg	357 U	358 U	435 U	366 U	359 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	357 U	358 U	435 U	366 U	359 U
Naphthalene	13000	ug/kg	357 U	358 U	435 U	366 U	359 U
Phenanthrene	50000	ug/kg	357 U	358 U	435 U	366 U	359 U
Pyrene	50000	ug/kg	357 U	358 U	**25.8 J**	366 U	359 U

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 24
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Polynuclear Aromatic Hydrocarbons

		Location ID	LA1007-9-S	LA1007-9-S	LA1007-9-S	LA1016-8-S
		Sample ID	LA1007-9-S-1-1	LA1007-9-S-2-1	LA1007-9-S-3-1	LA1016-8-S-1-1
		Sample Date	7/19/2004	7/19/2004	7/19/2004	7/22/2004
	NYSDEC	Depth Interval (ft)	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5
Chemical Name	TAGM 4046	Unit				
Acenaphthene	50000	ug/kg	368 U	359 U	354 U	3670 U
Acenaphthylene	41000	ug/kg	368 U	359 U	354 U	3670 U
Anthracene	50000	ug/kg	368 U	359 U	354 U	3670 U
Benzo(a)anthracene	224 or MDL	ug/kg	**20.4 J**	359 U	354 U	3670 U
Benzo(a)pyrene	61 or MDL	ug/kg	368 U	359 U	354 U	**811 J ***
Benzo(b)fluoranthene	1100	ug/kg	**27.1 J**	359 U	354 U	**263 J**
Benzo(g,h,i)perylene	50000	ug/kg	368 U	359 U	354 U	**1550 J**
Benzo(k)fluoranthene	1100	ug/kg	368 U	359 U	354 U	3670 U
Chrysene	400	ug/kg	368 U	359 U	354 U	**196 J**
Dibenzo(a,h)anthracene	14 or MDL	ug/kg	368 U	359 U	354 U	3670 U
Fluoranthene	50000	ug/kg	**32.6 J**	359 U	354 U	**361 J**
Fluorene	50000	ug/kg	368 U	359 U	354 U	3670 U
Indeno (1,2,3-cd)pyrene	3200	ug/kg	368 U	359 U	354 U	**1660 J**
Naphthalene	13000	ug/kg	368 U	359 U	354 U	3670 U
Phenanthrene	50000	ug/kg	368 U	359 U	354 U	**191 J**
Pyrene	50000	ug/kg	**25.5 J**	359 U	354 U	**392 J**

Notes: U - Not detected, J - Estimated value, N - Tentatively Identified Compound,
* - TAGM exceedance, Detects in **BOLD**, MDL - Method detection limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1002-3-B1	LA1002-3-B1	LA1002-3-B1	LA1002-3-B1	LA1002-3-B2
		Sample ID	LA1002-3-B1-1-1	LA1002-3-B1-2-1	KAPL FD03 (Dup)	LA1002-3-B1-3-1	LA1002-3-B2-1-1
		Sample Date	7/26/2004	7/26/2004	7/26/2004	7/26/2004	7/27/2004
	Soil	Depth Interval (ft)	0 - 0.5	0.5 - 2	0.5 - 2	2 - 4	0 - 0.5
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	14200	15100	14200	**16300**	**16800**
Antimony	0.29	mg/kg	0.385 UNJ	0.378 UNJ	**0.51 BNJ**	**0.63 BNJ**	**0.52 BNJ**
Arsenic	8.8	mg/kg	7	5.7	6.3	5.9	5.2
Barium	97.4	mg/kg	**98.5 NJ**	79 NJ	78.8 NJ	76.7 NJ	94.1 NJ
Beryllium	1.1	mg/kg	0.71	0.66	0.71	0.64	0.78
Cadmium	0.3	mg/kg	0.11 B	0.0527 U	0.07 B	0.055 B	0.0568 U
Calcium	31600	mg/kg	11400	22600	22800	13400	9580
Chromium	18.8	mg/kg	17.9	18	**19.3**	18.8	**20.3**
Cobalt	14.4	mg/kg	10.1	9.7	11.7	8.5	9.4
Copper	38.1	mg/kg	26.5	25.5	33.2	23.5	24.8
Iron	35700	mg/kg	25600 *	24800 *	27800 *	27100 *	27800
Lead	15.7	mg/kg	11.5	12.6	14.7	10.8	10.3
Magnesium	9362	mg/kg	6580	7730	**12600**	6630	6630
Manganese	745	mg/kg	624	455	493	398	468
Mercury	0.09	mg/kg	0.032	0.037	0.034	0.044	0.036
Nickel	33.8	mg/kg	23	24.2	28.5	22	27.3
Potassium	1870	mg/kg	**1920 ENJ**	1700 ENJ	1870 ENJ	1780 ENJ	**2020 ENJ**
Selenium	0.21	mg/kg	**1 BJ**	**0.71 BJ**	**0.76 BJ**	0.174 UJ	**1.1 B**
Silver	0.09	mg/kg	0.101 U	**0.11 B**	0.097 U	0.097 U	0.107 U
Sodium	130	mg/kg	94.1 B	83.1 B	82.9 B	80.3 B	88.9 B
Thallium	0.26	mg/kg	1.12 UJ	1.1 UJ	1.08 UJ	1.08 UJ	1.19 U
Vanadium	25.4	mg/kg	**26.8**	**36**	**36.9**	**36.9**	**32.8**
Zinc	82.9	mg/kg	62.2	66.9	74.1	62.3	67.1

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1002-3-B2A	LA1002-3-B2A	LA1002-3-B3	LA1002-3-B3	LA1002-3-B3
		Sample ID	LA1002-3-B2A-2-1	LA1002-3-B2A-3-1	LA1002-3-B3-1-1	LA1002-3-B3-2-1	LA1002-3-B3-3-1
		Sample Date	7/27/2004	7/27/2004	7/28/2004	7/28/2004	7/28/2004
	Soil	Depth Interval (ft)	0.5 - 2	2 - 3.2	0 - 0.5	0.5 - 2	2 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	12900	13400	**15800**	**17300**	14500
Antimony	0.29	mg/kg	0.372 UNJ	**0.63 BNJ**	**0.84 BNJ**	**0.91 BNJ**	0.372 UNJ
Arsenic	8.8	mg/kg	8.3	4.8 B	6.3	7.2	6.3
Barium	97.4	mg/kg	75 NJ	57.3 NJ	97.3 NJ	**100 NJ**	73.8 NJ
Beryllium	1.1	mg/kg	0.67	0.53	0.77	0.87	0.68
Cadmium	0.3	mg/kg	0.091 B	0.0523 U	0.12 B	0.094 B	0.518 U
Calcium	31600	mg/kg	27500	9030	9050 *	5910 *	1380 *
Chromium	18.8	mg/kg	**19.8**	15.4	**19.3**	**22.5**	17.8
Cobalt	14.4	mg/kg	8.6	10.6	11.2	12.4	10.1
Copper	38.1	mg/kg	32.5	16.8	26.8	29.9	27.7
Iron	35700	mg/kg	27600	19400	26100	30100	25800
Lead	15.7	mg/kg	**19.2**	11.6	10.6	14.1	10.3
Magnesium	9362	mg/kg	**12300**	4480	6290	6130	4050
Manganese	745	mg/kg	**1330**	**783**	551	454	592
Mercury	0.09	mg/kg	0.053	0.055	0.028	0.038	0.036
Nickel	33.8	mg/kg	29.9	15.1	26	**56.8**	22.1
Potassium	1870	mg/kg	1830 ENJ	1220 ENJ	**2430**	**2290**	1860
Selenium	0.21	mg/kg	**2.9 B**	**0.9 B**	**1.6 B**	**1.1 B**	**1.2 B**
Silver	0.09	mg/kg	**0.14 B**	**0.15 B**	0.108 U	**0.11 B**	0.0978 U
Sodium	130	mg/kg	72.4 B	68.5 B	98.4 B	91.9 B	65.0 B
Thallium	0.26	mg/kg	1.08 U	1.09 U	1.19 U	1.2 U	1.08 U
Vanadium	25.4	mg/kg	**73.8**	25.3	**30.9**	**34.5**	**28.7**
Zinc	82.9	mg/kg	72.4	51.6	66.2	76.5	70

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1002-3-B4	LA1002-3-B4	LA1002-3-B4	LA1002-3-B5	LA1002-3-B5
		Sample ID	LA1002-3-B4-1-1	LA1002-3-B4-2-1	LA1002-3-B4-3-1	LA1002-3-B5-1-1	LA1002-3-B5-2-1
		Sample Date	7/26/2004	7/26/2004	7/26/2004	7/26/2004	7/26/2004
	Soil	Depth Interval (ft)	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	**16200**	10900	14900	14600	13200
Antimony	0.29	mg/kg	**0.69 BNJ**	0.366 UNJ	**0.55 BNJ**	**0.72 BNJ**	**0.54 BNJ**
Arsenic	8.8	mg/kg	8.6	6.1	5.6	7.4	6
Barium	97.4	mg/kg	**109 NJ**	70.5 NJ	85.7 NJ	86.7 NJ	83.8 NJ
Beryllium	1.1	mg/kg	0.92	0.57	0.67	0.78	0.65
Cadmium	0.3	mg/kg	0.07 B	0.2 B	0.0508 U	0.14 B	0.0511 U
Calcium	31600	mg/kg	11200	**32300**	9450	28700	13300
Chromium	18.8	mg/kg	**25**	15.2	18.5	**20.2**	17.7
Cobalt	14.4	mg/kg	12.2	7.9	8.5	11.2	10.6
Copper	38.1	mg/kg	**38.5**	24.1	21.3	30.8	28.2
Iron	35700	mg/kg	34700 *	21400 *	25500 *	29000 *	26000 *
Lead	15.7	mg/kg	15.3	14.7	10.5	**16.8**	12
Magnesium	9362	mg/kg	7990	**16000**	5810	**13000**	**10500**
Manganese	745	mg/kg	675	493	497	543	618
Mercury	0.09	mg/kg	0.028	0.04	0.037	0.025	0.036
Nickel	33.8	mg/kg	31.2	23	20.5	27.3	24.7
Potassium	1870	mg/kg	**2270 ENJ**	1710 ENJ	1650 ENJ	**2380 ENJ**	**1970 ENJ**
Selenium	0.21	mg/kg	**0.43 BJ**	**0.73 BJ**	**0.49 BJ**	**0.32 BJ**	**0.78 BJ**
Silver	0.09	mg/kg	0.098 U	**0.16 B**	0.0958 U	0.0968 U	0.0964 U
Sodium	130	mg/kg	**187 B**	91.5 B	110 B	104 B	68.7 B
Thallium	0.26	mg/kg	1.09 UJ	1.06 UJ	1.06 UJ	1.07 UJ	1.07 UJ
Vanadium	25.4	mg/kg	**27.8**	**48.6**	**26**	**28**	24.8
Zinc	82.9	mg/kg	82.9	61.1	57.6	81.9	66.3

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1004-3-S	LA1004-3-S	LA1004-3-S	LA1004-6-S	LA1004-6-S
		Sample ID	LA1004-3-S-1-1	LA1007-3-S-2-1	LA1004-3-S-3-1	LA1004-6-S-1-1	LA1004-6-S-2-1
		Sample Date	7/15/2004	7/15/2004	7/15/2004	7/15/2004	7/15/2004
	Soil	Depth Interval (ft)	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	11600	12300	14900	**15400**	**17000**
Antimony	0.29	mg/kg	**1.1 BJ**	**0.59 BJ**	**0.5 BJ**	**0.78 BJ**	**0.76 BJ**
Arsenic	8.8	mg/kg	7.8	4 B	4.1 B	7.5	8.1
Barium	97.4	mg/kg	68.8 J	65.7 J	46.5 J	77 J	**108 J**
Beryllium	1.1	mg/kg	0.56 B	0.55 B	0.55 B	0.66	0.85
Cadmium	0.3	mg/kg	**0.6**	0.24 B	0.14 B	0.3 B	**0.35 B**
Calcium	31600	mg/kg	8780	2420	882	2740	3730
Chromium	18.8	mg/kg	16.4	12.9	14.3	17.5	**19.2**
Cobalt	14.4	mg/kg	8.2	5.5	6.7	8.2	11.6
Copper	38.1	mg/kg	36.2	16.1	13.4	16.7	25.2
Iron	35700	mg/kg	22400	16400	19000	21200	30700
Lead	15.7	mg/kg	**37.1**	9.8	6.5	**17.2**	**18.3**
Magnesium	9362	mg/kg	6630	3290	2970	3780	5090
Manganese	745	mg/kg	408	409	251	476	**1100**
Mercury	0.09	mg/kg	**0.57 ***	**0.096 ***	0.023 *	0.074 *	0.038 *
Nickel	33.8	mg/kg	21.1	14.9	17.1	18	27.4
Potassium	1870	mg/kg	1680 J	1020 J	1080 J	1600 J	1750 J
Selenium	0.21	mg/kg	**0.32 B**	0.183 U	**0.49 B**	**0.39 B**	**1.3 B**
Silver	0.09	mg/kg	**1.2**	**0.33 B**	0.102 U	0.124 U	0.108 U
Sodium	130	mg/kg	58.8 B	37.8 B	43.5 B	51.1 B	49.1 B
Thallium	0.26	mg/kg	1.17 U	1.13 U	1.13 U	1.38 U	1.19 U
Vanadium	25.4	mg/kg	**27.3**	20.7	23.9	**29.1**	**32.4**
Zinc	82.9	mg/kg	**99.4 J**	55.6 J	45.1 J	65.9 J	80.1 J

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1004-6-S	LA1004-9-S	LA1004-9-S	LA1004-9-S	LA1007-1-S
		Sample ID	LA1004-6-S-3-1	LA1004-9-S-1-1	LA1004-9-S-2-1	LA1004-9-S-3-1	LA1007-1-S-1-1
		Sample Date	7/15/2004	7/15/2004	7/15/2004	7/15/2004	7/22/2004
	Soil	Depth Interval (ft)	2 - 4	0 - 0.5	0.5 - 2	2 - 3.1	0 - 0.5
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	12600	**19100**	**16300**	14300	14600
Antimony	0.29	mg/kg	**0.76 BJ**	0.48 UJ	**0.88 BJ**	**0.76 BJ**	**1.5 BNJ**
Arsenic	8.8	mg/kg	6.5	5.9	5.7	7.7	**11.7**
Barium	97.4	mg/kg	**128 J**	**102 J**	96.3 **J**	**117 J**	79.6 *
Beryllium	1.1	mg/kg	0.63	0.82	0.74	0.76	0.72
Cadmium	0.3	mg/kg	0.24 B	**0.45 B**	0.26 B	0.24 B	**0.35 B**
Calcium	31600	mg/kg	**32900**	3880	5350	18100	5590
Chromium	18.8	mg/kg	17.4	**21.7**	**19.4**	**20.7**	18.8
Cobalt	14.4	mg/kg	11.9	9.7	10.5	13	9.7
Copper	38.1	mg/kg	28	22.2	20.2	34.2	36.1 NJ
Iron	35700	mg/kg	25400	25200	24100	29300	26300
Lead	15.7	mg/kg	10.9	**21.7**	15.6	12.9	**29.9 NJ**
Magnesium	9362	mg/kg	7920	4770	4870	8910	5070
Manganese	745	mg/kg	**819**	612	**754**	618	556 *
Mercury	0.09	mg/kg	0.026 *	**0.11** *	0.059 *	0.021 *	**0.24**
Nickel	33.8	mg/kg	28.1	23.2	22.3	33.6	22.5
Potassium	1870	mg/kg	**2320 J**	**2140 J**	1830 J	**2560 J**	**2120 NJ**
Selenium	0.21	mg/kg	**0.29 B**	0.227 U	**0.72 B**	**0.47 B**	**1.8 B**
Silver	0.09	mg/kg	0.0999 U	**0.21 B**	0.103 U	0.0989 U	**0.93 BEJ**
Sodium	130	mg/kg	74.6 B	61.4 B	50.9 B	70.5 B	**147 B*NJ**
Thallium	0.26	mg/kg	1.11 U	1.4 U	1.15 U	1.1 U	1.17 U
Vanadium	25.4	mg/kg	24	**37.1**	**29.5**	**26.4**	**30.5 NJ**
Zinc	82.9	mg/kg	67.1 J	**83.3 J**	68.9 J	78.1 J	**105**

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1007-1-S	LA1007-1-S	LA1007-2-B	LA1007-2-B	LA1007-2-B
		Sample ID	LA1007-1-S-2-1	LA1007-1-S-3-1	LA1007-2-B-1-1	LA1007-2-B-2-1	LA1007-2-B-3-1
		Sample Date	7/22/2004	7/22/2004	7/21/2004	7/21/2004	7/21/2004
	Soil	Depth Interval (ft)	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	2 - 4
Chemical Name	**Background**	**Unit**					
Aluminum	15200	mg/kg	13800	14700	**15600**	**19200**	**18300**
Antimony	0.29	mg/kg	0.384 UNJ	0.386 UNJ	**0.85 BNJ**	**0.55 BNJ**	**0.65 BNJ**
Arsenic	8.8	mg/kg	5.2	5.1	**8.9**	**12.7**	5.2
Barium	97.4	mg/kg	59.3 *	51.7 *	**99.2 NJ**	83.5 NJ	94.8 NJ
Beryllium	1.1	mg/kg	0.53	0.63	0.77	0.81	0.66
Cadmium	0.3	mg/kg	0.15 B	0.0537 U	**1.9**	**0.88**	0.0535 U
Calcium	31600	mg/kg	1530	1020	4770	2260	1570
Chromium	18.8	mg/kg	14.8	15.1	**74.3**	**41.1**	**23.8**
Cobalt	14.4	mg/kg	6.3	7.2	9	9.2	6.5
Copper	38.1	mg/kg	18.4 NJ	22.6 NJ	**125**	**68.1**	25.7
Iron	35700	mg/kg	19200	23100	22300	**36300**	28000
Lead	15.7	mg/kg	11.3 NJ	8.6 N	**65.5**	**31.1**	9.8
Magnesium	9362	mg/kg	3420	3460	4400	6650	5440
Manganese	745	mg/kg	266 *	300 *	482	407	255
Mercury	0.09	mg/kg	**0.11**	0.028	**4.4**	**1.2**	0.047
Nickel	33.8	mg/kg	16.4	17.1	31.8 *NJ	31 *NJ	22.9 *NJ
Potassium	1870	mg/kg	1340 NJ	1530 NJ	**2220 NJ**	**1990 NJ**	**2520 NJ**
Selenium	0.21	mg/kg	**1.2 B**	**0.71 B**	**0.89 B**	**1.1 BJ**	**0.52 BJ**
Silver	0.09	mg/kg	**0.6 BEJ**	0.101 UEJ	**14.4**	**4.5**	0.101 U
Sodium	130	mg/kg	**259 B*NJ**	44.4 B*NJ	61.2 B	57.8 B	60.2 B
Thallium	0.26	mg/kg	1.12 U	1.12 U	1.36 U	1.23 UJ	1.12 UJ
Vanadium	25.4	mg/kg	22.7 NJ	22.5 NJ	**34.8**	**34.9**	**28.6**
Zinc	82.9	mg/kg	61.4	55.5	**256**	**139**	53.5

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1007-3-B	LA1007-3-B	LA1007-3-B	LA1007-4-B1	LA1007-4-B1
		Sample ID	LA1007-3-B-1-1	LA1007-3-B-2-1	LA1007-3-B-3-1	LA1007-4-B1-1-1	LA1007-4-B1-2-1
		Sample Date	7/21/2004	7/21/2004	7/21/2004	7/20/2004	7/20/2004
	Soil	Depth Interval (ft)	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	11500	12300	**15700**	**15500**	13600
Antimony	0.29	mg/kg	**0.62 BNJ**	**0.78 BNJ**	**0.62 BNJ**	0.446 UJ	**0.63 BJ**
Arsenic	8.8	mg/kg	6.3	8.7	7.5	8	6.8
Barium	97.4	mg/kg	58 NJ	65.5 NJ	81.1 NJ	88.3 J	95.6 J
Beryllium	1.1	mg/kg	0.59	0.77	0.83	0.73	0.68
Cadmium	0.3	mg/kg	**0.44 B**	0.21 B	0.087 B	**0.65**	**0.38 B**
Calcium	31600	mg/kg	12100	**39600**	7810	3550 J	18200
Chromium	18.8	mg/kg	17.2	**19**	18.8	**21.3**	**19.2**
Cobalt	14.4	mg/kg	7.5	8.4	10.1	9.6	11.4
Copper	38.1	mg/kg	25.3	29.7	26.8	**41.1**	31
Iron	35700	mg/kg	21800	25800	28800	24500	26900
Lead	15.7	mg/kg	**34.5**	**22.8**	**16**	**27.1**	11.7
Magnesium	9362	mg/kg	6270	**22500**	5790	5140	7800
Manganese	745	mg/kg	331	457	550	494	580
Mercury	0.09	mg/kg	0.058	0.049	0.042	**0.23**	0.041
Nickel	33.8	mg/kg	20.2 *NJ	22.3 *NJ	22.4 *NJ	24.7	28.8
Potassium	1870	mg/kg	**2070 NJ**	**2420 NJ**	**2040 NJ**	**2030**	**2390**
Selenium	0.21	mg/kg	**0.36 BJ**	**0.78 BJ**	**0.54 BJ**	**1.1 B**	**0.25 B**
Silver	0.09	mg/kg	0.117 U	0.0973 U	0.101 U	**0.9 B**	0.0984 U
Sodium	130	mg/kg	66 B	76.7 B	**141 B**	67.2 B	112 B
Thallium	0.26	mg/kg	1.29 UJ	1.08 UJ	1.12 UJ	1.3 U	1.09 U
Vanadium	25.4	mg/kg	23.9	25	**29.9**	**34.8**	**27.9**
Zinc	82.9	mg/kg	**84.3**	73.4	66	**94.6**	67.2

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1007-4-B1	LA1007-4-B1	LA1007-4-B2	LA1007-4-B2	LA1007-4-B2
		Sample ID	KAPL FD02 (Dup)	LA1007-4-B1-3-1	LA1007-4-B2-1-1	LA1007-4-B2-2-1	KAPL FD01 (Dup)
		Sample Date	7/20/2004	7/20/2004	7/16/2004	7/16/2004	7/16/2004
	Soil	Depth Interval (ft)	0.5 - 2	2 - 3.2	0 - 0.5	0.5 - 2	0.5 - 2
Chemical Name	**Background**	**Unit**					
Aluminum	15200	mg/kg	14400	14400	**16100**	**16600**	15200
Antimony	0.29	mg/kg	0.379 UJ	0.371 UJ	0.424 UJ	**0.67 BJ**	**0.69 BJ**
Arsenic	8.8	mg/kg	7	7.3	6.8	7.4	7.1
Barium	97.4	mg/kg	94 J	**104 J**	84.7 J	85.9 J	82.1 J
Beryllium	1.1	mg/kg	0.7	0.71	0.7	0.77	0.7
Cadmium	0.3	mg/kg	**0.36 B**	0.3 B	**0.33 B**	0.190 B	0.15 B
Calcium	31600	mg/kg	15100 J	26100	2460	1670	1550
Chromium	18.8	mg/kg	**20**	**24.1**	**19.9**	**20.5**	**19.3**
Cobalt	14.4	mg/kg	11.1	13.9	10.2	14.7	**21.6**
Copper	38.1	mg/kg	30.6	33.6	22.7	24.4	24.6
Iron	35700	mg/kg	27200	30700	25300	29800	28900
Lead	15.7	mg/kg	13.4	14.1	**19.1**	13.2	13.6
Magnesium	9362	mg/kg	7370	8660	4860	5270	5100
Manganese	745	mg/kg	468	**753**	619	659	**878**
Mercury	0.09	mg/kg	0.03	0.031	**0.13 ***	0.038 *	0.042 *
Nickel	33.8	mg/kg	27.6	29.5	23.3	25.1	25.8
Potassium	1870	mg/kg	**2320**	**2610**	**2060 J**	**2130 J**	**1920 J**
Selenium	0.21	mg/kg	**0.42 B**	**0.54 B**	**0.69 B**	**0.81 B**	**0.79 B**
Silver	0.09	mg/kg	**0.1 B**	0.0974 U	**0.49 B**	0.101 U	0.102 U
Sodium	130	mg/kg	103 B	94.1 B	46.3 B	50.7 B	48.2 B
Thallium	0.26	mg/kg	1.1 U	1.08 U	1.23 U	1.12 U	1.13 U
Vanadium	25.4	mg/kg	**29.1**	**30.3**	**32.1**	**29.8**	**27.7**
Zinc	82.9	mg/kg	73.4	74.7	71 J	62.2 J	56.8 J

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1007-4-B2	LA1007-6-S	LA1007-6-S	LA1007-6-S	LA1007-7-S
		Sample ID	LA1007-4-B2-3-1	LA1007-6-S-1-1	LA1007-6-S-2-1	LA1007-6-S-3-1	LA1007-7-S-1-1
		Sample Date	7/16/2004	7/20/2004	7/20/2004	7/20/2004	7/16/2004
	Soil	Depth Interval (ft)	2 - 4	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	15800	15600	15400	16400	11300
Antimony	0.29	mg/kg	0.388 UJ	**0.44 BJ**	0.369 UJ	0.382 UJ	**0.47 BJ**
Arsenic	8.8	mg/kg	7.2	10	7.5	8.2	6.2
Barium	97.4	mg/kg	**115 J**	**106 J**	**107 J**	**98.3 J**	74.2 J
Beryllium	1.1	mg/kg	0.8	0.79	0.73	0.8	0.58 B
Cadmium	0.3	mg/kg	0.16 B	**0.6**	**0.32 B**	0.3 B	0.23 B
Calcium	31600	mg/kg	2300	3390	13300	15800	12400
Chromium	18.8	mg/kg	**20.6**	**33.4**	**22.5**	**28.4**	15.7
Cobalt	14.4	mg/kg	12.2	13.8	**16.1**	9.5	10
Copper	38.1	mg/kg	31.8	**39.1**	38.1	30.9	26.9
Iron	35700	mg/kg	28500	31200	32000	**44700**	22700
Lead	15.7	mg/kg	12.8	**24.5**	14.1	**18.8**	**16.9**
Magnesium	9362	mg/kg	5300	5970	8850	10200	9030
Manganese	745	mg/kg	619	**967**	663	441	507
Mercury	0.09	mg/kg	0.041 *	**0.26**	0.039	0.035	0.029 *
Nickel	33.8	mg/kg	32.6	30.1	33.2	30.2	25.5
Potassium	1870	mg/kg	**2430 J**	**2230**	**2480**	**2270**	1830 J
Selenium	0.21	mg/kg	**1.3 B**	**1.4 B**	**0.81 B**	**0.42 B**	**0.68 B**
Silver	0.09	mg/kg	0.102 U	0.25 B	0.097 U	0.16 B	0.107 U
Sodium	130	mg/kg	76.7 B	70.7 B	102 B	90.4 B	83.8 B
Thallium	0.26	mg/kg	1.13 U	1.21 U	1.08 U	1.11 U	1.19 U
Vanadium	25.4	mg/kg	**29.4**	**34.9**	**29.6**	**29.9**	23.3
Zinc	82.9	mg/kg	70.9 J	**89.2**	76.5	70.1	63.8 J

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1007-7-S	LA1007-7-S	LA1007-8-S	LA1007-8-S	LA1007-8-S
		Sample ID	LA1007-7-S-2-1	LA1007-7-S-3-1	LA1007-8-S-1-1	LA1007-8-S-2-1	LA1007-8-S-3-1
		Sample Date	7/16/2004	7/16/2004	7/19/2004	7/19/2004	7/19/2004
	Soil	Depth Interval (ft)	0.5 - 2	2 - 4	0 - 0.5	0.5 - 2	2 - 4
Chemical Name	Background	Unit					
Aluminum	15200	mg/kg	12800	12700	13200	14100	14300
Antimony	0.29	mg/kg	**1.4 BJ**	**0.38 BJ**	0.445 UJ	**0.62 BJ**	**0.75 BJ**
Arsenic	8.8	mg/kg	7.6	7.3	5.6	6.2	6.3
Barium	97.4	mg/kg	88.4 J	**98.5 J**	80.8 J	**112 J**	**117 J**
Beryllium	1.1	mg/kg	0.67	0.71	0.76	0.78	0.78
Cadmium	0.3	mg/kg	0.24 B	0.15 B	0.062 U	0.0515 U	0.052 U
Calcium	31600	mg/kg	15100	29400	6900	**33400**	22200
Chromium	18.8	mg/kg	**19.5**	18.4	**30**	**21**	**21.7**
Cobalt	14.4	mg/kg	11	11.3	9.8	13.4	11.2
Copper	38.1	mg/kg	31.3	27.3	**152**	35.5	34.6
Iron	35700	mg/kg	28600	27200	25000	26600	26900
Lead	15.7	mg/kg	13.1	11.2	**34.1**	11.4	10.9
Magnesium	9362	mg/kg	8470	**9690**	7320	**11900**	**10500**
Manganese	745	mg/kg	559	582	421	690	534
Mercury	0.09	mg/kg	0.02 *	0.021 *	0.067	0.029	0.022
Nickel	33.8	mg/kg	29.3	28.7	**45.5**	32.8	29.1
Potassium	1870	mg/kg	**2160 J**	**2550 J**	**3100**	**3730**	**3850**
Selenium	0.21	mg/kg	**1.1 B**	**0.31 B**	**2.3 BJ**	**1.7 BJ**	**1.5 BJ**
Silver	0.09	mg/kg	0.0968 U	0.0956 U	**1.8**	**0.32 B**	**0.31 B**
Sodium	130	mg/kg	63.5 B	78.2 B	95.6 B	128 B	127 B
Thallium	0.26	mg/kg	1.07 U	1.06 U	**2.4 B**	**2 B**	**2.1 B**
Vanadium	25.4	mg/kg	23.9	23.6	**35.1**	**27.4**	**28**
Zinc	82.9	mg/kg	77.1 J	61.6 J	**145**	65.2	57

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 25
Knolls Atomic Power Laboratory
Land Disposal Area: SPRU Supplemental Samples
Drilled Boring Results (Soil)
Metals

		Location ID	LA1007-9-S	LA1007-9-S	LA1007-9-S	LA1016-8-S
		Sample ID	LA1007-9-S-1-1	LA1007-9-S-2-1	LA1007-9-S-3-1	LA1016-8-S-1-1
		Sample Date	7/19/2004	7/19/2004	7/19/2004	7/22/2004
	Soil	Depth Interval (ft)	0 - 0.5	0.5 - 2	2 - 4	0 - 0.5
Chemical Name	Background	Unit				
Aluminum	15200	mg/kg	14100	13600	15100	11400
Antimony	0.29	mg/kg	**0.47 BJ**	0.366 UJ	**0.68 BJ**	**0.89 BNJ**
Arsenic	8.8	mg/kg	5.5	6.2	7.8	6.5
Barium	97.4	mg/kg	**75.6**	**109 J**	**118 J**	**235 ***
Beryllium	1.1	mg/kg	0.73	0.78	0.82	0.85
Cadmium	0.3	mg/kg	0.0518 U	0.0509 U	0.0507 U	**2.1**
Calcium	31600	mg/kg	10200	18300	22500	**64600**
Chromium	18.8	mg/kg	**20.8**	**21**	**22**	**27.8**
Cobalt	14.4	mg/kg	10.7	11.3	10.9	7
Copper	38.1	mg/kg	31.7	30.8	32.5	**106 NJ**
Iron	35700	mg/kg	26900	26700	28100	21900
Lead	15.7	mg/kg	**13.5**	13.5	10.5	**77.9 NJ**
Magnesium	9362	mg/kg	8030	8620	**10300**	**26300**
Manganese	745	mg/kg	495	535	514	620 *
Mercury	0.09	mg/kg	0.027	0.027	0.025	**1.6**
Nickel	33.8	mg/kg	27.5	28.5	29.5	33
Potassium	1870	mg/kg	**2680**	**3560**	**3820**	**2000 NJ**
Selenium	0.21	mg/kg	**2.3 BJ**	**1.7 BJ**	**1.9 BJ**	**1.4 B**
Silver	0.09	mg/kg	**0.32 B**	**0.26 B**	**0.31 B**	**8.1 EJ**
Sodium	130	mg/kg	89.6 B	108 B	120 B	**348 B*NJ**
Thallium	0.26	mg/kg	**1.9 B**	**2 B**	**1.9 B**	1.09 U
Vanadium	25.4	mg/kg	**27.6**	**30.8**	**28.7**	**37.7 NJ**
Zinc	82.9	mg/kg	61.4	66.9	64.1	**251**

Notes: U - Not detected, J - Estimated value,
Soil background exceedance in **BOLD**,
B - Result reported above IDL/MDL but below the CRDL,
E - % Difference between the parent sample and its serial dilution's concentrations exceeds 10%,
N - The matrix or pre-digested spike sample recovery for the analyte is not within specified control limit,
* - The duplicate sample analysis for the analyte is out of control,
SB - Soil background, IDL - Instrument Detection Limit,
MDL - Method Detection Limit, CRDL - Contract Required Detection Limit.

Table 26
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Semi Volatile Organic Compounds

		Location ID	SB/LMW-16
		Sample ID	NLDA-GW-MW16-1019
	NYS Class GA	Sample Date	9/30/2002
Chemical Name	Groundwater Standards	Unit	
2,4,5-Trichlorophenol	NC	ug/l	11.4 UJ
2,4,6-Trichlorophenol	NC	ug/l	11.4 UJ
2,4-Dichlorophenol	5	ug/l	11.4 UJ
2,4-Dimethylphenol	50(1)	ug/l	11.4 UJ
2,4-Dinitrophenol	10(1)	ug/l	28.4 UJ
2,4-Dinitrotoluene	5(1)	ug/l	11.4 UJ
2,6-Dinitrotoluene	5(1)	ug/l	11.4 UJ
2-Chloronaphthalene	10(1)	ug/l	11.4 UJ
2-Chlorophenol	NC	ug/l	11.4 UJ
2-Methyl-4,6-dinitrophenol	NC	ug/l	28.4 UJ
2-Methylnaphthalene	NC	ug/l	11.4 UJ
o-Nitroaniline	5	ug/l	28.4 UJ
2-Nitrophenol	NC	ug/l	11.4 UJ
3,3'-Dichlorobenzidine	5	ug/l	22.7 UJ
m-Nitroaniline	5	ug/l	28.4 UJ
4-Bromophenylphenylether	NC	ug/l	11.4 UJ
4-Chloro-3-methylphenol	NC	ug/l	11.4 UJ
4-Chloroaniline	5	ug/l	11.4 UJ
4-Chlorophenyl phenyl ether	NC	ug/l	11.4 UJ
p-Nitroaniline	5	ug/l	28.4 UJ
4-Nitrophenol	NC	ug/l	28.4 UJ
Acenaphthene	20(1)	ug/l	11.4 UJ
Acenaphthylene	NC	ug/l	11.4 UJ
Anthracene	50(1)	ug/l	11.4 UJ
Benzo(a)anthracene	0.002(1)	ug/l	11.4 UJ
Benzo(a)pyrene	0	ug/l	11.4 UJ
Benzo(b)fluoranthene	0.002(1)	ug/l	11.4 UJ
Benzo(g,h,i)perylene	NC	ug/l	11.4 UJ
Benzo(k)fluoranthene	0.002(1)	ug/l	11.4 UJ
Bis(2-chloroethoxy)methane	5	ug/l	11.4 UJ
Bis(2-chloroethyl)ether	1	ug/l	11.4 UJ
Bis(2-ethylhexyl)phthalate	5	ug/l	11.4 UJ

Notes: U - Not detected, J - Estimated value, NC - No criteria, Detects in **BOLD**,
(1) Value is a guidance value and not a standard.

Table 26
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Semi Volatile Organic Compounds

		Location ID	SB/LMW-16
		Sample ID	NLDA-GW-MW16-1019
	NYS Class GA	Sample Date	9/30/2002
Chemical Name	Groundwater Standards	Unit	
Butyl benzyl phthalate	50(1)	ug/l	11.4 UJ
Carbazole	NC	ug/l	11.4 UJ
Chrysene	0.002(1)	ug/l	11.4 UJ
Dibenzo(a,h)anthracene	NC	ug/l	11.4 UJ
Dibenzofuran	NC	ug/l	11.4 UJ
Dichlorobenzenes (1,2-)	NC	ug/l	11.4 UJ
Dichlorobenzenes (1,3-)	NC	ug/l	11.4 UJ
Dichlorobenzenes (1,4-)	NC	ug/l	11.4 UJ
Diethyl phthalate	50(1)	ug/l	4.4 J
Dimethyl phthalate	50(1)	ug/l	11.4 UJ
Di-n-butylphthalate	50(1)	ug/l	11.4 UJ
Di-n-octyl phthalate	50(1)	ug/l	11.4 UJ
Diphenylamine	5	ug/l	11.4 UJ
Fluoranthene	50(1)	ug/l	11.4 UJ
Fluorene	50(1)	ug/l	11.4 UJ
Hexachlorobenzene	0.04	ug/l	11.4 UJ
Hexachlorobutadiene	0.5	ug/l	11.4 UJ
Hexachlorocyclopentadiene	5	ug/l	11.4 UJ
Hexachloroethane	5	ug/l	11.4 UJ
Indeno (1,2,3-cd)pyrene	0.002(1)	ug/l	11.4 UJ
Isophorone	50(1)	ug/l	11.4 UJ
m,p-Cresols	NC	ug/l	11.4 UJ
Naphthalene	NC	ug/l	11.4 UJ
Nitrobenzene	0.4	ug/l	11.4 UJ
N-Nitrosodipropylamine	NC	ug/l	11.4 UJ
o-Cresol	NC	ug/l	11.4 UJ
Pentachlorophenol	NC	ug/l	28.4 UJ
Phenanthrene	50(1)	ug/l	11.4 UJ
Phenol	NC	ug/l	11.4 UJ
Pyrene	50(1)	ug/l	11.4 UJ
Trichlorobenzenes (1,2,4-)	NC	ug/l	11.4 UJ

Notes: U - Not detected, J - Estimated value, NC - No criteria, Detects in **BOLD**,
(1) Value is a guidance value and not a standard.

Table 27
Land Disposal Area SV
Groundwater Levels and Elevations (feet)

Well ID	September 18, 2003 Depth to Water	September 18, 2003 Groundwater Elevation	March 1, 2004 Depth to Water	March 1, 2004 Groundwater Elevation
SV Wells				
LMW-1	3.46	294.62	Frozen	--
LMW-2	6.58	296.56	Frozen	--
LMW-3	8.43	296.85	7.71	297.57
LMW-4	16.54	297.35	16.67	297.22
LMW-5	11.08	299.83	11.62	299.29
LMW-6	7.61	300.68	Frozen	--
LMW-8	Dry	--	Dry	--
LMW-9	10.75	302.77	11.66	301.86
LMW-10	15.20	298.31	14.28	299.23
LMW-12	6.33	309.47	6.57	309.23
LMW-14	15.57	306.22	15.28	306.51
LMW-15	19.23	306.03	19.29	305.97
LMW-15A	18.79	306.04	18.86	305.97
LMW-16	16.66	307.64	17.06	307.24
LMW-16A	17.58	306.34	17.84	306.08
LMW-17	18.83	306.05	18.93	305.95
LMW-18	20.34	306.36	20.50	306.20
LMW-19	8.45	296.73	8.38	296.80
LMW-20	10.64	302.66	10.67	302.63
LMW-21	4.79	295.93	4.65	296.07
LMW-22	12.54	296.59	12.60	296.53
LMW-23	20.00	296.99	20.03	296.96
LMW-24	19.53	306.87	16.76	309.64
LMW-24A	19.35	306.53	19.46	306.42
LMW-25	18.78	306.89	18.95	306.72
LMW-26	14.51	306.41	14.60	306.32
LMW-27	23.13	306.50	23.23	306.40
LMW-28	17.37	306.41	17.45	306.33
LMW-29	21.33	306.70	21.45	306.58
LMW-34	NA	--	9.89	313.85
LMW-35	NA	--	15.39	306.17
LMW-36	NA	--	7.21	306.09
LMW-37	NA	--	12.21	305.98
Existing Wells				
W-1	15.11	316.35	16.22	315.24
W-2	20.32	306.29	20.36	306.25
W-4	3.24	284.06	3.42	283.88
MW-2	15.74	307.33	15.13	307.94
MW-3	17.92	307.46	9.56	315.82
W-8	-2.09*	304.80	Frozen	--

NA - Not available; well not yet installed on this date
-- No elevation
* - Water level above ground surface within riser stickup

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-1	SB/LMW-1	SB/LMW-2	SB/LMW-2	SB/LMW-2	SB/LMW-3
		Sample ID	NLDA-SS-SB01-1001	NLDA-SS-SB01-1004	NLDA-SS-SB02-1010	NLDA-SS-SB02-1013	NLDA-SS-X2-1014 (Dup)	NLDA-SS-SB03-1008
		Depth Interval (ft)	1 - 2	10.5 - 11	5.5 - 6	13.5 - 14	13.5 - 14	7.5 - 8
	NYSDEC	Sample Date	7/17/2002	7/18/2002	7/30/2002	7/30/2002	7/30/2002	7/25/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.8 U	10.8 R	12.6 U	12.3 R	12.1 UJ	12.0 U
1,1,2-Trichloroethane	NC	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
1,1-Dichloroethane	200	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
1,1-Dichloroethylene	400	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
1,2-Dichloroethane	100	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
1,2-Dichloropropane	NC	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
2-Butanone	300	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
2-Hexanone	NC	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
4-Methyl-2-pentanone	1000	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
Acetone	200	ug/kg	11.8 U	10.8 U	12.6 U	**5.6 J**	**7.3 J**	12.0 U
Benzene	60	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Bromodichloromethane	NC	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Bromoform	NC	ug/kg	11.8 U	10.8 R	12.6 U	12.3 R	12.1 UJ	12.0 U
Bromomethane	NC	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Carbon disulfide	2700	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Carbon tetrachloride	600	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Chlorobenzene	1700	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
Chloroethane	1900	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Chloroform	300	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Chloromethane	NC	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
cis-1,2-Dichloroethylene	250	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.8 U	10.8 U	12.6 UJ	12.3 UJ	12.1 UJ	12.0 UJ
Dibromochloromethane	NC	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
Ethylbenzene	5500	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
Methylene chloride	100	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Styrene	NC	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
Tetrachloroethylene	1400	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
Toluene	1500	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U
trans-1,2-Dichloroethylene	300	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.8 U	10.8 UJ	12.6 UJ	12.3 UJ	12.1 UJ	12.0 UJ
Trichloroethylene	700	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Vinyl chloride	200	ug/kg	11.8 U	10.8 U	12.6 U	12.3 U	12.1 U	12.0 U
Xylenes, Total	1200	ug/kg	11.8 U	10.8 UJ	12.6 U	12.3 UJ	12.1 U	12.0 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-3	SB/LMW-4	SB/LMW-4	SB/LMW-5	SB/LMW-5	SB/LMW-6
		Sample ID	NLDA-SS-SB03-1009	NLDA-SS-SB04-1037	NLDA-SS-SB04-1038	NLDA-SS-SB05-1034	NLDA-SS-SB05-1036	NLDA-SS-SB06-1016
		Depth Interval (ft)	10.5 - 11	14.5 - 15	20 - 20.5	6.5 - 7	15 - 15.5	6 - 7
	NYSDEC	Sample Date	7/25/2002	8/21/2002	8/21/2002	8/19/2002	8/19/2002	8/5/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
1,1,2,2-Tetrachloroethane	600	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
1,1,2-Trichloroethane	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
1,1-Dichloroethane	200	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
1,1-Dichloroethylene	400	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
1,2-Dichloroethane	100	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
1,2-Dichloropropane	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
2-Butanone	300	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
2-Hexanone	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
4-Methyl-2-pentanone	1000	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Acetone	200	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Benzene	60	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Bromodichloromethane	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Bromoform	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Bromomethane	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Carbon disulfide	2700	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Carbon tetrachloride	600	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Chlorobenzene	1700	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Chloroethane	1900	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Chloroform	300	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Chloromethane	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
cis-1,2-Dichloroethylene	250	ug/kg	12.3 U	13.1 U	**0.74 J**	13.5 U	11.4 U	12.3 U
cis-1,3-Dichloropropylene	NC	ug/kg	12.3 UJ	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Dibromochloromethane	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Ethylbenzene	5500	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Methylene chloride	100	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Styrene	NC	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Tetrachloroethylene	1400	ug/kg	12.3 U	**69.6**	**202 D**	13.5 U	**116 D**	12.3 U
Toluene	1500	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
trans-1,2-Dichloroethylene	300	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.3 UJ	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Trichloroethylene	700	ug/kg	12.3 U	**1.4 J**	**5.7 J**	13.5 U	**7.0 J**	12.3 U
Vinyl chloride	200	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U
Xylenes, Total	1200	ug/kg	12.3 U	13.1 U	10.9 U	13.5 U	11.4 U	12.3 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-6	SB/LMW-6	SB-7	SB/LMW-8	SB/LMW-8	SB/LMW-8
		Sample ID	NLDA-SS-X3-1017 (Dup)	NLDA-SS-SB06-1020	NLDA-SS-SB07-1015	NLDA-SS-SB08-1027	NLDA-SS-X4-1028 (Dup)	NLDA-SS-SB08-1029
		Depth Interval (ft)	6 - 7	9.5 - 10	8.5 - 9.5	5.5 - 6	5.5 - 6	15 - 15.5
	NYSDEC	Sample Date	8/5/2002	8/5/2002	7/31/2002	8/14/2002	8/14/2002	8/14/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
1,1,2,2-Tetrachloroethane	600	ug/kg	12.4 U	12.2 R	11.4 UJ	12.8 U	12.6 U	12.1 U
1,1,2-Trichloroethane	NC	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
1,1-Dichloroethane	200	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
1,1-Dichloroethylene	400	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
1,2-Dichloroethane	100	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
1,2-Dichloropropane	NC	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
2-Butanone	300	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
2-Hexanone	NC	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
4-Methyl-2-pentanone	1000	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Acetone	200	ug/kg	12.4 U	6.1 J	11.4 U	12.8 U	12.6 U	12.1 U
Benzene	60	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Bromodichloromethane	NC	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Bromoform	NC	ug/kg	12.4 U	12.2 R	11.4 UJ	12.8 U	12.6 U	12.1 U
Bromomethane	NC	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Carbon disulfide	2700	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Carbon tetrachloride	600	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Chlorobenzene	1700	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Chloroethane	1900	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Chloroform	300	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Chloromethane	NC	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
cis-1,2-Dichloroethylene	250	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
cis-1,3-Dichloropropylene	NC	ug/kg	12.4 U	12.2 UJ	11.4 UJ	12.8 U	12.6 U	12.1 U
Dibromochloromethane	NC	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Ethylbenzene	5500	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Methylene chloride	100	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Styrene	NC	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Tetrachloroethylene	1400	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Toluene	1500	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
trans-1,2-Dichloroethylene	300	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.4 U	12.2 UJ	11.4 UJ	12.8 U	12.6 U	12.1 U
Trichloroethylene	700	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Vinyl chloride	200	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U
Xylenes, Total	1200	ug/kg	12.4 U	12.2 UJ	11.4 U	12.8 U	12.6 U	12.1 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-9	SB/LMW-9	SB/LMW-10	SB-11	SB/LMW-12	SB/LMW-12
		Sample ID	NLDA-SS-SB09-1022	NLDA-SS-SB09-1023	NLDA-SS-SB10-1024	NLDA-SS-SB11-1021	NLDA-SS-SB12-1039	NLDA-SS-SB12-1040
		Depth Interval (ft)	5.5 - 6	15 - 15.5	14 - 14.5	9.5 - 10.5	14 - 14.5	17 - 17.5
	NYSDEC	Sample Date	8/7/2002	8/7/2002	8/8/2002	8/6/2002	8/22/2002	8/22/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
1,1,2,2-Tetrachloroethane	600	ug/kg	12.2 U	11.5 UJ	11.7 U	11.2 R	12.4 UJ	1240 U
1,1,2-Trichloroethane	NC	ug/kg	12.2 U	11.5 U	11.7 U	11.2 UJ	12.4 U	1240 U
1,1-Dichloroethane	200	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
1,1-Dichloroethylene	400	ug/kg	12.2 U	**0.60 J**	11.7 U	11.2 U	12.4 U	1240 U
1,2-Dichloroethane	100	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
1,2-Dichloropropane	NC	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
2-Butanone	300	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
2-Hexanone	NC	ug/kg	12.2 U	11.5 U	11.7 U	11.2 UJ	12.4 U	1240 U
4-Methyl-2-pentanone	1000	ug/kg	12.2 U	11.5 U	11.7 U	11.2 UJ	12.4 U	1240 U
Acetone	200	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
Benzene	60	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
Bromodichloromethane	NC	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
Bromoform	NC	ug/kg	12.2 U	11.5 UJ	11.7 U	11.2 R	12.4 UJ	1240 U
Bromomethane	NC	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 UJ	**481 J**
Carbon disulfide	2700	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
Carbon tetrachloride	600	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
Chlorobenzene	1700	ug/kg	12.2 U	11.5 U	11.7 U	11.2 UJ	12.4 U	1240 U
Chloroethane	1900	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
Chloroform	300	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
Chloromethane	NC	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
cis-1,2-Dichloroethylene	250	ug/kg	12.2 U	**25.0**	11.7 U	11.2 U	12.4 U	**475 J ***
cis-1,3-Dichloropropylene	NC	ug/kg	12.2 U	11.5 U	11.7 UJ	11.2 U	12.4 U	1240 U
Dibromochloromethane	NC	ug/kg	12.2 U	11.5 U	11.7 U	11.2 UJ	12.4 U	1240 U
Ethylbenzene	5500	ug/kg	12.2 U	11.5 U	11.7 U	11.2 UJ	12.4 U	1240 U
Methylene chloride	100	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
Styrene	NC	ug/kg	12.2 U	11.5 U	11.7 U	11.2 UJ	12.4 U	1240 U
Tetrachloroethylene	1400	ug/kg	12.2 U	**6760 D ***	11.7 U	11.2 UJ	**4.7 J**	**43600 D ***
Toluene	1500	ug/kg	12.2 U	11.5 U	11.7 U	**0.40 J**	12.4 U	1240 U
trans-1,2-Dichloroethylene	300	ug/kg	12.2 U	11.5 U	11.7 U	11.2 U	12.4 U	1240 U
trans-1,3-Dichloropropylene	NC	ug/kg	12.2 U	11.5 U	11.7 UJ	11.2 UJ	12.4 U	1240 U
Trichloroethylene	700	ug/kg	12.2 U	**51.7**	11.7 U	11.2 U	12.4 U	**2360 ***
Vinyl chloride	200	ug/kg	12.2 U	**1.1 J**	11.7 U	11.2 U	**8.0 J**	1240 U
Xylenes, Total	1200	ug/kg	12.2 U	11.5 U	11.7 U	11.2 UJ	12.4 U	1240 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB-13	SB/LMW-14	SB/LMW-14	SB/LMW-14	SB/LMW-14	SB/LMW-15
		Sample ID	NLDA-SS-SB13-1057	NLDA-SS-SB14-1041	NLDA-SS-SB14-1042	NLDA-SS-SB14-1045	NLDA-SS-X6-1046 (Dup)	NLDA-SS-SB15-1051
		Depth Interval (ft)	6 - 6.5	6 - 6.5	9.5 - 10	15 - 15.5	15 - 15.5	15 - 15.5
	NYSDEC	Sample Date	9/10/2002	8/26/2002	8/26/2002	8/27/2002	8/27/2002	9/3/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.2 U	11.6 UJ	11.6 UJ	11.8 U	11.3 U	11.7 U
1,1,2-Trichloroethane	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
1,1-Dichloroethane	200	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
1,1-Dichloroethylene	400	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
1,2-Dichloroethane	100	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	**0.51 J**
1,2-Dichloropropane	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
2-Butanone	300	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
2-Hexanone	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
4-Methyl-2-pentanone	1000	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Acetone	200	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Benzene	60	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Bromodichloromethane	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Bromoform	NC	ug/kg	11.2 U	11.6 UJ	11.6 UJ	11.8 U	11.3 U	11.7 U
Bromomethane	NC	ug/kg	11.2 U	11.6 UJ	11.6 UJ	11.8 U	11.3 U	11.7 U
Carbon disulfide	2700	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Carbon tetrachloride	600	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Chlorobenzene	1700	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Chloroethane	1900	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Chloroform	300	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Chloromethane	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
cis-1,2-Dichloroethylene	250	ug/kg	11.2 U	11.6 U	**5.1 J**	**18.8**	**9.5 J**	**0.97 J**
cis-1,3-Dichloropropylene	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Dibromochloromethane	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Ethylbenzene	5500	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Methylene chloride	100	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Styrene	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Tetrachloroethylene	1400	ug/kg	11.2 U	**12.4 J**	**8.6 J**	**1920 D ***	**1060 D**	**33.8**
Toluene	1500	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
trans-1,2-Dichloroethylene	300	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Trichloroethylene	700	ug/kg	11.2 U	**11.4 J**	**4.6 J**	**102**	**78**	**2.4 J**
Vinyl chloride	200	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U
Xylenes, Total	1200	ug/kg	11.2 U	11.6 U	11.6 U	11.8 U	11.3 U	11.7 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-15	SB/LMW-15A	SB/LMW-16	SB/LMW-16	SB/LMW-16A	SB/LMW-16A
		Sample ID	NLDA-SS-SB15-1052	NLDA-SS-SB15A-1077	NLDA-SS-SB16-1047	NLDA-SS-SB16-1048	NLDA-SS-SB16A-1078	NLDA-SS-SB16A-1079
		Depth Interval (ft)	24 - 24.5	31 - 31.5	9 - 9.5	23 - 23.5	26.5 - 27	28.5 - 29
	NYSDEC	Sample Date	9/4/2002	12/4/2002	8/28/2002	8/28/2002	12/4/2002	12/4/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	**3.7 J**	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
1,1,2,2-Tetrachloroethane	600	ug/kg	55.4 U	11.4 R	12.6 U	12.9 UJ	13.8 R	10.5 U
1,1,2-Trichloroethane	NC	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 U
1,1-Dichloroethane	200	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
1,1-Dichloroethylene	400	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
1,2-Dichloroethane	100	ug/kg	**9.0 J**	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
1,2-Dichloropropane	NC	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
2-Butanone	300	ug/kg	55.4 U	11.4 UJ	**8.2 J**	12.9 U	13.8 UJ	10.5 UJ
2-Hexanone	NC	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 U
4-Methyl-2-pentanone	1000	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 U
Acetone	200	ug/kg	55.4 U	11.4 U	**56.3 J**	**12.5 J**	13.8 U	**9.8 J**
Benzene	60	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
Bromodichloromethane	NC	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
Bromoform	NC	ug/kg	55.4 U	11.4 R	12.6 U	12.9 UJ	13.8 R	10.5 U
Bromomethane	NC	ug/kg	55.4 UJ	11.4 U	12.6 U	12.9 UJ	13.8 U	10.5 U
Carbon disulfide	2700	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
Carbon tetrachloride	600	ug/kg	55.4 U	11.4 UJ	12.6 U	12.9 U	13.8 UJ	10.5 UJ
Chlorobenzene	1700	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 U
Chloroethane	1900	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
Chloroform	300	ug/kg	**5.0 J**	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
Chloromethane	NC	ug/kg	55.4 UJ	11.4 UJ	12.6 U	12.9 U	13.8 UJ	10.5 UJ
cis-1,2-Dichloroethylene	250	ug/kg	**47 J**	**2.3 J**	12.6 U	12.9 U	**19.8**	10.5 U
cis-1,3-Dichloropropylene	NC	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
Dibromochloromethane	NC	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 UJ
Ethylbenzene	5500	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 U
Methylene chloride	100	ug/kg	55.4 U	**2.9 J**	12.6 U	12.9 U	13.8 U	**7.0 J**
Styrene	NC	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 U
Tetrachloroethylene	1400	ug/kg	**3440 D ***	**20.6 J**	12.6 U	12.9 U	**1150 J**	**5.6 J**
Toluene	1500	ug/kg	55.4 U	**0.68 J**	**1.3 J**	12.9 U	13.8 R	**2.5 J**
trans-1,2-Dichloroethylene	300	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
trans-1,3-Dichloropropylene	NC	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 U
Trichloroethylene	700	ug/kg	**150**	**1.6 J**	12.6 U	12.9 U	**49.3**	10.5 U
Vinyl chloride	200	ug/kg	55.4 U	11.4 U	12.6 U	12.9 U	13.8 U	10.5 U
Xylenes, Total	1200	ug/kg	55.4 U	11.4 R	12.6 U	12.9 U	13.8 R	10.5 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-17	SB/LMW-17	SB/LMW-17	SB/LMW-18	SB/LMW-19	SB/LMW-19
		Sample ID	NLDA-SS-SB17-1053	NLDA-SS-X7-1054 (Dup)	NLDA-SS-SB17-1055	NLDA-SS-SB18-1056	NLDA-SS-SB19-1005	NLDA-SS-X1-1006 (Dup)
		Depth Interval (ft)	15 - 15.5	15 - 15.5	22 - 22.5	19 - 19.5	11 - 11.5	11 - 11.5
	NYSDEC	Sample Date	9/5/2002	9/5/2002	9/5/2002	9/9/2002	7/22/2002	7/22/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.1 U	11.0 U	10.8 UJ	10.7 U	14.3 U	13.2 U
1,1,2-Trichloroethane	NC	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
1,1-Dichloroethane	200	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
1,1-Dichloroethylene	400	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
1,2-Dichloroethane	100	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
1,2-Dichloropropane	NC	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
2-Butanone	300	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
2-Hexanone	NC	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
4-Methyl-2-pentanone	1000	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Acetone	200	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Benzene	60	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Bromodichloromethane	NC	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Bromoform	NC	ug/kg	11.1 U	11.0 U	10.8 UJ	10.7 U	14.3 U	13.2 U
Bromomethane	NC	ug/kg	11.1 UJ	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Carbon disulfide	2700	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Carbon tetrachloride	600	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Chlorobenzene	1700	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Chloroethane	1900	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Chloroform	300	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Chloromethane	NC	ug/kg	11.1 UJ	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
cis-1,2-Dichloroethylene	250	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Dibromochloromethane	NC	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Ethylbenzene	5500	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Methylene chloride	100	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Styrene	NC	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Tetrachloroethylene	1400	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	**4.9 J**	13.2 U
Toluene	1500	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
trans-1,2-Dichloroethylene	300	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Trichloroethylene	700	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Vinyl chloride	200	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U
Xylenes, Total	1200	ug/kg	11.1 U	11.0 U	10.8 U	10.7 U	14.3 U	13.2 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-19	SB/LMW-20	SB/LMW-20	SB/LMW-21	SB/LMW-21	SB/LMW-22
		Sample ID	NLDA-SS-SB19-1007	NLDA-SS-SB20-1030	NLDA-SS-SB20-1031	NLDA-SS-SB21-1069	NLDA-SS-SB21-1070	NLDA-SS-SB22-1067
		Depth Interval (ft)	14 - 14.5	5 - 5.5	18.5 - 19	2.5 - 3	14 - 14.5	6 - 6.5
	NYSDEC	Sample Date	7/24/2002	8/15/2002	8/15/2002	11/25/2002	11/26/2002	11/25/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
1,1,2-Trichloroethane	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
1,1-Dichloroethane	200	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
1,1-Dichloroethylene	400	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
1,2-Dichloroethane	100	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
1,2-Dichloropropane	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
2-Butanone	300	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
2-Hexanone	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
4-Methyl-2-pentanone	1000	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Acetone	200	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Benzene	60	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Bromodichloromethane	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Bromoform	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Bromomethane	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Carbon disulfide	2700	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Carbon tetrachloride	600	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Chlorobenzene	1700	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Chloroethane	1900	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Chloroform	300	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Chloromethane	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
cis-1,2-Dichloroethylene	250	ug/kg	11.0 U	12.6 U	**26.8**	12.2 U	11.7 U	11.3 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Dibromochloromethane	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Ethylbenzene	5500	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Methylene chloride	100	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Styrene	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Tetrachloroethylene	1400	ug/kg	11.0 U	12.6 U	**12000 ***	**1.4 J**	11.7 U	11.3 U
Toluene	1500	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
trans-1,2-Dichloroethylene	300	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Trichloroethylene	700	ug/kg	11.0 U	12.6 U	**67.3**	12.2 U	11.7 U	11.3 U
Vinyl chloride	200	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U
Xylenes, Total	1200	ug/kg	11.0 U	12.6 U	12.0 U	12.2 U	11.7 U	11.3 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-22	SB/LMW-23	SB/LMW-23	SB/LMW-23	SB/LMW-24	SB/LMW-24
		Sample ID	NLDA-SS-SB22-1068	NLDA-SS-SB23-1062	NLDA-SS-SB23-1063	NLDA-SS-X8-1064 (Dup)	NLDA-SS-SB24-1060	NLDA-SS-SB24-1061
		Depth Interval (ft)	15 - 15.5	16.5 - 17	24.5 - 25	24.5 - 25	5 - 5.5	18 - 18.5
	NYSDEC	Sample Date	11/25/2002	11/20/2002	11/21/2002	11/21/2002	11/12/2002	11/12/2002
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 UJ	33.5 UJ
1,1,2,2-Tetrachloroethane	600	ug/kg	11.5 U	11.4 U	11.0 U	11.2 UJ	11.9 U	33.5 UJ
1,1,2-Trichloroethane	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
1,1-Dichloroethane	200	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
1,1-Dichloroethylene	400	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
1,2-Dichloroethane	100	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 UJ	33.5 UJ
1,2-Dichloropropane	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
2-Butanone	300	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	**16.4**	33.5 U
2-Hexanone	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
4-Methyl-2-pentanone	1000	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Acetone	200	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	**101 J**	33.5 UJ
Benzene	60	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Bromodichloromethane	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Bromoform	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 UJ	11.9 UJ	33.5 UJ
Bromomethane	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Carbon disulfide	2700	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Carbon tetrachloride	600	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 UJ	33.5 UJ
Chlorobenzene	1700	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Chloroethane	1900	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Chloroform	300	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Chloromethane	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 UJ	33.5 UJ
cis-1,2-Dichloroethylene	250	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	**1.2 J**	33.5 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Dibromochloromethane	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Ethylbenzene	5500	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Methylene chloride	100	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Styrene	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Tetrachloroethylene	1400	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Toluene	1500	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
trans-1,2-Dichloroethylene	300	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U
Trichloroethylene	700	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	**134**
Vinyl chloride	200	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	**4.6 J**	**9.6 JN**
Xylenes, Total	1200	ug/kg	11.5 U	11.4 U	11.0 U	11.2 U	11.9 U	33.5 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-24A	SB/LMW-25	SB/LMW-25	SB/LMW-25	SB/LMW-25	SB/LMW-26
		Sample ID	NLDA-SS-SB24A-1107	NLDA-SS-SB25-1071	NLDA-SS-SB25-1072	NLDA-SS-X9-1073 (Dup)	NLDA-SS-SB25-1074	NLDA-SS-SB26-1084
		Depth Interval (ft)	27.7 - 27.7	15.5 - 16	16 - 16.5	16 - 16.5	17 - 17.4	13.5 - 13.5
	NYSDEC	Sample Date	7/23/2003	11/26/2002	11/27/2002	11/27/2002	11/27/2002	7/9/2003
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
1,1,2,2-Tetrachloroethane	600	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
1,1,2-Trichloroethane	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
1,1-Dichloroethane	200	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
1,1-Dichloroethylene	400	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
1,2-Dichloroethane	100	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
1,2-Dichloropropane	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
2-Butanone	300	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
2-Hexanone	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
4-Methyl-2-pentanone	1000	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Acetone	200	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	13.9 UJ
Benzene	60	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Bromodichloromethane	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Bromoform	NC	ug/kg	11.5 UJ	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Bromomethane	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Carbon disulfide	2700	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Carbon tetrachloride	600	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Chlorobenzene	1700	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Chloroethane	1900	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Chloroform	300	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Chloromethane	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
cis-1,2-Dichloroethylene	250	ug/kg	**1.0 J**	11.8 U	12.5 U	12.8 U	11.3 U	**9.2 J**
cis-1,3-Dichloropropylene	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Dibromochloromethane	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Ethylbenzene	5500	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Methylene chloride	100	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Styrene	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Tetrachloroethylene	1400	ug/kg	**83.2**	**22.6**	**93 DJ**	**257**	**177 D**	11.2 UJ
Toluene	1500	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
trans-1,2-Dichloroethylene	300	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
trans-1,3-Dichloropropylene	NC	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Trichloroethylene	700	ug/kg	**3.2 J**	**0.63 J**	**4.7 J**	**6.4 J**	**5.2 J**	**0.55 J**
Vinyl chloride	200	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ
Xylenes, Total	1200	ug/kg	11.5 U	11.8 U	12.5 U	12.8 U	11.3 U	11.2 UJ

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-26	SB/LMW-26	SB/LMW-27	SB/LMW-27	SB/LMW-28	SB/LMW-28
		Sample ID	NLDA-SS-X10-1085 (Dup)	NLDA-SS-SB26-1086	NLDA-SS-SB27-1082	NLDA-SS-SB27-1083	NLDA-SS-SB28-1087	NLDA-SS-SB28-1090
		Depth Interval (ft)	13.5 - 13.5	27.7 - 27.7	20.5 - 20.5	26 - 26	10.8 - 10.8	29.3 - 29.3
	NYSDEC	Sample Date	7/9/2003	7/9/2003	7/8/2003	7/8/2003	7/10/2003	7/10/2003
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
1,1,2,2-Tetrachloroethane	600	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 R
1,1,2-Trichloroethane	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
1,1-Dichloroethane	200	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
1,1-Dichloroethylene	400	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
1,2-Dichloroethane	100	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
1,2-Dichloropropane	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
2-Butanone	300	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
2-Hexanone	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
4-Methyl-2-pentanone	1000	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Acetone	200	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	18.2 UJ	11.1 UJ
Benzene	60	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Bromodichloromethane	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Bromoform	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 R
Bromomethane	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Carbon disulfide	2700	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Carbon tetrachloride	600	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Chlorobenzene	1700	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Chloroethane	1900	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Chloroform	300	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Chloromethane	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
cis-1,2-Dichloroethylene	250	ug/kg	**6.9 J**	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
cis-1,3-Dichloropropylene	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Dibromochloromethane	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Ethylbenzene	5500	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Methylene chloride	100	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Styrene	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Tetrachloroethylene	1400	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Toluene	1500	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
trans-1,2-Dichloroethylene	300	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
trans-1,3-Dichloropropylene	NC	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Trichloroethylene	700	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	**36.9 J**	11.1 UJ
Vinyl chloride	200	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ
Xylenes, Total	1200	ug/kg	11.4 UJ	10.9 UJ	11.4 UJ	10.8 UJ	11.5 UJ	11.1 UJ

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-29	SB/LMW-29	SB/LMW-29	SB/LMW-34	SB/LMW-35	SB/LMW-35
		Sample ID	NLDA-SS-SB29-1091	NLDA-SS-X11-1092 (Dup)	NLDA-SS-SB29-1093	NLDA-SS-SB34-1128	NLDA-SS-SB35-1126	NLDA-SS-SB35-1127
		Depth Interval (ft)	10 - 10	10 - 10	19.5 - 19.5	22 - 22	15.8 - 15.8	26 - 26
	NYSDEC	Sample Date	7/15/2003	7/15/2003	7/15/2003	10/16/2003	10/15/2003	10/16/2003
Chemical Name	TAGM 4046	Unit						
1,1,1-Trichloroethane	800	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
1,1,2,2-Tetrachloroethane	600	ug/kg	11.1 U	11.7 U	11.0 R	53.4 UJ	11.2 U	56.3 U
1,1,2-Trichloroethane	NC	ug/kg	11.1 U	11.7 U	54.8 UJ	53.4 U	11.2 U	56.3 U
1,1-Dichloroethane	200	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
1,1-Dichloroethylene	400	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
1,2-Dichloroethane	100	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
1,2-Dichloropropane	NC	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
2-Butanone	300	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
2-Hexanone	NC	ug/kg	11.1 U	11.7 U	54.8 UJ	53.4 U	11.2 U	56.3 U
4-Methyl-2-pentanone	1000	ug/kg	11.1 U	11.7 U	54.8 UJ	53.4 U	11.2 U	56.3 U
Acetone	200	ug/kg	11.1 U	**4.9 J**	**13.5 J**	**18.1 J**	**12.7**	**23.8 J**
Benzene	60	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
Bromodichloromethane	NC	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
Bromoform	NC	ug/kg	11.1 U	11.7 U	11.0 R	53.4 UJ	11.2 U	56.3 U
Bromomethane	NC	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
Carbon disulfide	2700	ug/kg	11.1 U	11.7 U	**2.6 J**	10.7 UJ	11.2 U	**4.0 J**
Carbon tetrachloride	600	ug/kg	11.1 UJ	11.7 UJ	54.8 UJ	10.7 UJ	11.2 U	11.3 UJ
Chlorobenzene	1700	ug/kg	11.1 U	11.7 U	54.8 UJ	53.4 U	11.2 U	56.3 U
Chloroethane	1900	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
Chloroform	300	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
Chloromethane	NC	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
cis-1,2-Dichloroethylene	250	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
cis-1,3-Dichloropropylene	NC	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
Dibromochloromethane	NC	ug/kg	11.1 U	11.7 U	54.8 UJ	53.4 U	11.2 U	56.3 U
Ethylbenzene	5500	ug/kg	11.1 U	11.7 U	54.8 UJ	53.4 U	11.2 U	56.3 U
Methylene chloride	100	ug/kg	11.1 U	11.7 U	**4.3 J**	**2.5 J**	11.2 U	11.3 UJ
Styrene	NC	ug/kg	11.1 U	11.7 U	54.8 UJ	53.4 U	11.2 U	56.3 U
Tetrachloroethylene	1400	ug/kg	**1.6 J**	**1.2 J**	54.8 UJ	53.4 U	11.2 U	56.3 U
Toluene	1500	ug/kg	11.1 U	11.7 U	**6.1 J**	53.4 U	11.2 U	**2.0 J**
trans-1,2-Dichloroethylene	300	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
trans-1,3-Dichloropropylene	NC	ug/kg	11.1 U	11.7 U	54.8 UJ	53.4 U	11.2 U	56.3 U
Trichloroethylene	700	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	**124 D**	**0.65 J**
Vinyl chloride	200	ug/kg	11.1 U	11.7 U	54.8 U	10.7 UJ	11.2 U	11.3 UJ
Xylenes, Total	1200	ug/kg	11.1 U	11.7 U	**1.1 J**	53.4 U	11.2 U	56.3 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 28
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Drilled Boring Results (Soil)
Volatile Organic Compounds

		Location ID	SB/LMW-36	SB/LMW-36	SB/LMW-37	SB/LMW-37	SB/LMW-37
		Sample ID	NLDA-SS-SB36-1124	NLDA-SS-SB36-1125	NLDA-SS-SB-37-1119	NLDA-SS-X14-1120 (Dup)	NLDA-SS-SB37-1123
		Depth Interval (ft)	8.5 - 8.5	14 - 14	5 - 5	5 - 5	21.5 - 21.5
	NYSDEC	Sample Date	10/14/2003	10/14/2003	10/13/2003	10/13/2003	10/13/2003
Chemical Name	TAGM 4046	Unit					
1,1,1-Trichloroethane	800	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
1,1,2,2-Tetrachloroethane	600	ug/kg	11.9 U	51.8 UJ	12.9 U	12.2 U	53.9 U
1,1,2-Trichloroethane	NC	ug/kg	11.9 U	51.8 U	12.9 U	12.2 U	53.9 U
1,1-Dichloroethane	200	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
1,1-Dichloroethylene	400	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
1,2-Dichloroethane	100	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
1,2-Dichloropropane	NC	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
2-Butanone	300	ug/kg	11.9 U	10.4 UJ	**6.7 J**	12.2 U	10.8 U
2-Hexanone	NC	ug/kg	11.9 U	51.8 U	12.9 U	12.2 U	53.9 U
4-Methyl-2-pentanone	1000	ug/kg	11.9 U	51.8 U	12.9 U	12.2 U	53.9 U
Acetone	200	ug/kg	11.9 U	**26.7 J**	**31.4**	**11.1 J**	**4.9 J**
Benzene	60	ug/kg	11.9 U	10.4 UJ	**0.66 J**	12.2 U	10.8 U
Bromodichloromethane	NC	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
Bromoform	NC	ug/kg	11.9 U	51.8 UJ	12.9 U	12.2 U	53.9 U
Bromomethane	NC	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
Carbon disulfide	2700	ug/kg	11.9 U	10.4 UJ	**4.4 J**	12.2 U	10.8 U
Carbon tetrachloride	600	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
Chlorobenzene	1700	ug/kg	11.9 U	51.8 U	**7.8 J**	**6.1 J**	53.9 U
Chloroethane	1900	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
Chloroform	300	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
Chloromethane	NC	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
cis-1,2-Dichloroethylene	250	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
cis-1,3-Dichloropropylene	NC	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
Dibromochloromethane	NC	ug/kg	11.9 U	51.8 U	12.9 U	12.2 U	53.9 U
Ethylbenzene	5500	ug/kg	11.9 U	51.8 U	**50.6 J**	**2.4 J**	53.9 U
Methylene chloride	100	ug/kg	11.9 U	**4.8 J**	12.9 U	12.2 U	10.8 U
Styrene	NC	ug/kg	11.9 U	51.8 U	12.9 U	12.2 U	53.9 U
Tetrachloroethylene	1400	ug/kg	11.9 U	51.8 U	12.9 U	12.2 U	53.9 U
Toluene	1500	ug/kg	11.9 U	**1.7 J**	**1.3 J**	12.2 U	53.9 U
trans-1,2-Dichloroethylene	300	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
trans-1,3-Dichloropropylene	NC	ug/kg	11.9 U	51.8 U	12.9 U	12.2 U	53.9 U
Trichloroethylene	700	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
Vinyl chloride	200	ug/kg	11.9 U	10.4 UJ	12.9 U	12.2 U	10.8 U
Xylenes, Total	1200	ug/kg	11.9 U	51.8 U	**12.8 J**	12.2 U	53.9 U

Notes: - J - Estimated value, U - Not detected, R - Unusable data,
N - Tentatively identified compound, D - Dilution, * - TAGM exceedance,
Detects in **BOLD**, NC - No criteria.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

Chemical Name	NYS Class GA Groundwater Standards	Location ID / Sample ID / Sample Date / Unit	SB/LMW-1 NLDA-GW-MW01-1001 9/25/2002	SB/LMW-1 NLDA-GW-LMW1-1061 8/7/2003	SB/LMW-2 NLDA-GW-MW02-1002 9/25/2002	SB/LMW-2 NLDA-GW-LMW2-1056 8/6/2003	SB/LMW-3 NLDA-GW-MW03-1003 9/25/2002
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Chloroform	7	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	50.0 U	NA	50.0 U	NA	50.0 U
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	**0.59 J**	**0.42 J**	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	1.0 U	**0.52 J**	1.0 U	1.0 U	1.0 U
Vinyl chloride	2	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloroproplyene and trans-dichloroproplyene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

Chemical Name	NYS Class GA Groundwater Standards	Location ID / Sample ID / Sample Date / Unit	SB/LMW-3 NLDA-GW-LMW3-1055 8/6/2003	SB/LMW-4 NLDA-GW-MW04-1009 9/26/2002	SB/LMW-4 NLDA-GW-LMW4-1064 8/7/2003	SB/LMW-5 NLDA-GW-MW05-1008 9/26/2002	SB/LMW-5 NLDA-GW-LMW5-1066 8/7/2003
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	50.0 U	5.0 U	10.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	50.0 U	5.0 U	10.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	50.0 U	5.0 U	10.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	50.0 U	5.0 U	10.0 U
Benzene	1	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Chloroethane	5	ug/l	1.0 UJ	1.0 U	10.0 UJ	1.0 U	2.0 UJ
Chloroform	7	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Chloromethane	NC	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
cis-1,2-Dichloroethylene	5	ug/l	1.0 U	**5.9 ***	**4.5 J**	**2.0**	**0.92 J**
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	50.0 U	5.0 U	10.0 U
Hexane	NC	ug/l	NA	50.0 U	NA	50.0 U	NA
Styrene	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Tetrachloroethylene	5	ug/l	1.0 U	**886 D ***	**842 ***	**407 D ***	**138 ***
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	50.0 U	5.0 U	10.0 U
Toluene	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Trichloroethylene	5	ug/l	1.0 U	**21.2 ***	**19.8 ***	**8.9 ***	**5.0**
Vinyl chloride	2	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	10.0 U	1.0 U	2.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloropropylene and trans-dichloropropylene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

Chemical Name	NYS Class GA Groundwater Standards	Location ID / Sample ID / Sample Date / Unit	SB/LMW-6 NLDA-GW-MW06-1004 9/26/2002	SB/LMW-6 NLDA-GW-LMW6-1054 8/6/2003	SB/LMW-9 NLDA-GW-MW09-1011 9/30/2002	SB/LMW-9 NLDA-GW-LMW9-1053 8/6/2003	SB/LMW-10 NLDA-GW-LMW10-1051 8/5/2003
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ
Chloroform	7	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	**39.6 ***	**0.44 J**	1.0 U
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	**0.25 J**	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	50.0 U	NA	50.0 U	NA	NA
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	1.0 U	1.0 U	**3610 D ***	**50.3 ***	**1.4**
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	**1.1**	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	**0.71 J**	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	1.0 U	1.0 U	**70.1 ***	**0.78 J**	**0.60 J**
Vinyl chloride	2	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	**1.2**	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloropropylene and trans-dichloropropylene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

Chemical Name	NYS Class GA Groundwater Standards	Location ID / Sample ID / Sample Date / Unit	SB/LMW-12 NLDA-GW-MW12-1012 9/30/2002	SB/LMW-12 NLDA-GW-X1-1013 (Dup) 9/30/2002	SB/LMW-12 NLDA-GW-LMW12-1050 8/5/2003	SB/LMW-14 NLDA-GW-MW14-1021 10/1/2002	SB/LMW-14 NLDA-GW-LMW14-1037 7/31/2003
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Chloroform	7	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	NC	ug/l	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	**52 ***	**56.2 ***	**97.4 ***	**16.5 ***	**31.2 ***
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	50.0 U	50.0 U	NA	50.0 U	NA
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	**48.2 ***	**44.2 ***	**3.6**	**5740 D ***	**2420 D ***
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	**0.84 J**	**0.48 J**	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	**0.43 J**	**0.51 J**	**0.99 J**	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	**36 ***	**38.4 ***	**25.2 ***	**37.5 ***	**77.6 ***
Vinyl chloride	2	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes, Total	5(3)	ug/l	**0.27 J**	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloropropylene and trans-dichloropropylene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

		Location ID	SB/LMW-15	SB/LMW-15	SB/LMW-15	SB/LMW-15A	SB/LMW-15A
		Sample ID	NLDA-GW-MW15-1014	NLDA-GW-X2-1015 (Dup)	NLDA-GW-LMW15-1040	NLDA-GW-LMW15A-1028	NLDA-GW-LMW15A-1039
	NYS Class GA	Sample Date	9/30/2002	9/30/2002	7/31/2003	1/14/2003	7/31/2003
Chemical Name	Groundwater Standards	Unit					
1,1,1-Trichloroethane	5	ug/l	**1.8**	**2.1**	**1.2**	**4.4**	**4.8**
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	**0.57 J**	1.0 U
1,2-Dichloroethane	0.6	ug/l	**22.8 ***	**23.8 ***	**35.2 ***	**36.3 ***	**22.4 ***
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	7	ug/l	**1.9**	**2.2**	**1.3**	**4.3**	**4.6**
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	**18.5 ***	**19.5 ***	**14.2 ***	**34.6 ***	**35.9 ***
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	50.0 U	**0.21 J**	NA	50.0 U	NA
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	**207 D ***	**207 D ***	**337 D ***	**335 D ***	**418 D ***
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	**22 ***	**24.2 ***	**17.3 ***	**40.6 ***	**50.3 ***
Vinyl chloride	2	ug/l	**1.5**	**1.7**	**2.7 ***	**3.3 ***	**3.0**
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloroproplyene and trans-dichloroproplyene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

Chemical Name	NYS Class GA Groundwater Standards	Location ID / Sample ID / Sample Date / Unit	SB/LMW-16 NLDA-GW-MW16-1019 9/30/2002	SB/LMW-16 NLDA-GW-LMW16-1036 7/30/2003	SB/LMW-16A NLDA-GW-LMW16A-1024 1/14/2003	SB/LMW-16A NLDA-GW-X3-1025 (Dup) 1/14/2003	SB/LMW-16A NLDA-GW-LMW16A-1035 7/30/2003
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	7	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	**0.91 J**	**1.1**	1.0 U
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	50.0 U	NA	50.0 U	50.0 U	NA
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	**1.4**	**0.68 J**	**30.3 ***	**34 ***	**20.2 ***
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	1.0 U	1.0 U	**1.4**	**1.9**	**1.0**
Vinyl chloride	2	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**2.0**
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloroproplyene and trans-dichloroproplyene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

		Location ID	SB/LMW-17	SB/LMW-17	SB/LMW-18	SB/LMW-18	SB/LMW-19
		Sample ID	NLDA-GW-MW17-1018	NLDA-GW-LMW17-1043	NLDA-GW-MW18-1020	NLDA-GW-LMW18-1044	NLDA-GW-MW19-1007
	NYS Class GA	Sample Date	9/30/2002	7/31/2003	9/30/2002	8/4/2003	9/26/2002
Chemical Name	Groundwater Standards	Unit					
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	7	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	50.0 U	NA	50.0 U	NA	50.0 U
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**5.0**
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	**0.68 J**	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	2	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloroproplyene and trans-dichloroproplyene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

Chemical Name	NYS Class GA Groundwater Standards	Location ID / Sample ID / Sample Date / Unit	SB/LMW-19 NLDA-GW-LMW19-1057 8/6/2003	SB/LMW-20 NLDA-GW-MW20-1010 9/26/2002	SB/LMW-20 NLDA-GW-LMW20-1052 8/7/2003	SB/LMW-21 NLDA-GW-LMW21-1031 1/15/2003	SB/LMW-21 NLDA-GW-LMW21-1060 8/6/2003
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	**0.34 J**	**0.35 J**
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ
Chloroform	7	ug/l	1.0 U	1.0 U	1.0 U	**0.57 J**	**0.64 J**
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	1.0 U	**2.7**	**1.4**	**1.1**	**1.6**
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	NA	50.0 U	NA	50.0 U	NA
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	**6.7 ***	**346 D ***	**59.6 ***	**13.3 ***	**25 ***
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	1.0 U	**5.3 ***	**1.7**	**1.5**	**3.6**
Vinyl chloride	2	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloroproplyene and trans-dichloroproplyene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

Chemical Name	NYS Class GA Groundwater Standards	Location ID / Sample ID / Sample Date / Unit	SB/LMW-22 NLDA-GW-LMW22-1030 1/15/2003	SB/LMW-22 NLDA-GW-LMW22-1065 8/7/2003	SB/LMW-23 NLDA-GW-LMW23-1029 1/14/2003	SB/LMW-23 NLDA-GW-LMW23-1062 8/7/2003	SB/LMW-23 NLDA-GW-X6-1063 (Dup) 8/7/2003
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 UJ
Chloroform	7	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	50.0 U	NA	50.0 U	NA	NA
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	2	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloropropylene and trans-dichloropropylene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

		Location ID	SB/LMW-24	SB/LMW-24	SB/LMW-24	SB/LMW-24A	SB/LMW-25
		Sample ID	NLDA-GW-LMW24-1022	NLDA-GW-LMW24-1033	NLDA-GW-X4-1034 (Dup)	NLDA-GW-LMW24A-1032	NLDA-GW-LMW25-1023
	NYS Class GA	Sample Date	1/13/2003	7/30/2003	7/30/2003	7/30/2003	1/13/2003
Chemical Name	Groundwater Standards	Unit					
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	**2.6**
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	50.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	50.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	50.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	50.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	**0.41 J**
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Chloroform	7	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	**0.90 J**
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	**5.6 ***	**4.8**	**4.2**	**3.9 J**	**2.6**
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	50.0 U	5.0 U
Hexane	NC	ug/l	50.0 U	NA	NA	NA	50.0 U
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Tetrachloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	**647 ***	**1280 D ***
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	50.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U
Trichloroethylene	5	ug/l	**641 D ***	**582 D ***	**622 D ***	**10.6 ***	**15.4 ***
Vinyl chloride	2	ug/l	1.0 U	**1.5**	**1.2**	10.0 U	1.0 U
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloroproplyene and trans-dichloroproplyene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

		Location ID	SB/LMW-25	SB/LMW-26	SB/LMW-27	SB/LMW-28	SB/LMW-29
		Sample ID	NLDA-GW-LMW25-1038	NLDA-GW-LMW26-1047	NLDA-GW-LMW27-1048	NLDA-GW-LMW28-1046	NLDA-GW-LMW29-1049
	NYS Class GA	Sample Date	7/31/2003	8/4/2003	8/4/2003	8/4/2003	8/5/2003
Chemical Name	Groundwater Standards	Unit					
1,1,1-Trichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	**1.2**	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	**1.7**	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	**1.9**	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	1.0 U	1.0 U	**2.6 ***	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.2 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	**0.53 J**	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ
Chloroform	7	ug/l	**0.55 J**	1.0 U	1.0 U	**2.2**	1.0 U
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	**1.2**	**5.6 ***	1.0 U	**27.6 ***	1.0 U
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	NA	NA	NA	NA	NA
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	**605 D ***	1.0 U	1.0 U	**19.2 ***	**4.4**
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	**9.8 ***	1.0 U	1.0 U	**17.2 ***	**0.43 J**
Vinyl chloride	2	ug/l	1.0 U	**1.8**	**1.5**	**1.3**	1.0 U
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloropropylene and trans-dichloropropylene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 29
Knolls Atomic Power Laboratory
Land Disposal Area: Groundwater Investigation
Groundwater Results
Volatile Organic Compounds

Chemical Name	NYS Class GA Groundwater Standards	Location ID / Sample ID / Sample Date / Unit	SB/LMW-34 NLDA-GW-LMW34-1132 10/30/2003	SB/LMW-35 NLDA-GW-LMW35-1130 10/30/2003	SB/LMW-35 NLDA-GW-X7-1131 (Dup) 10/30/2003	SB/LMW-36 NLDA-GW-LMW36-1135 11/4/2003	SB/LMW-37 NLDA-GW-LMW37-1129 10/30/2003
1,1,1-Trichloroethane	5	ug/l	1.0 U	**1.5**	**1.6**	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**3.1**
1,1-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	0.6	ug/l	1.0 U	**0.32 J**	**0.32 J**	1.0 U	1.0 U
1,2-Dichloropropane	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	NC	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	1	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**1.1 ***
Bromodichloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	5(1)	ug/l	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Carbon disulfide	60(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**1.6**
Chloroethane	5	ug/l	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	**3.2 J**
Chloroform	7	ug/l	1.0 U	**1.4**	**1.4**	1.0 U	1.0 U
Chloromethane	NC	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	5	ug/l	1.0 U	**3.2**	**2.8**	1.0 U	**73.6 ***
cis-1,3-Dichloropropylene	0.4(2)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	50(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**2.8**
Methylene chloride	5	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Hexane	NC	ug/l	NA	NA	NA	NA	NA
Styrene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**0.98 J**
Tetrahydrofuran	50(1)	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**7.6 ***
trans-1,2-Dichloroethylene	5	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**0.55 J**
trans-1,3-Dichloropropylene	0.4(1)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	5	ug/l	1.0 U	**135 D ***	**133 D ***	1.0 U	**418 D ***
Vinyl chloride	2	ug/l	1.0 U	**2.4 ***	**2.1 ***	1.0 U	**14.2 ***
Xylenes, Total	5(3)	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	**5.6 ***

Notes: U - Not detected, J - Estimated value, D - Dilution, * - Exceeds standards, Detects in **BOLD**, NC - No criteria, NA - Not analyzed.
(1) Value is a guidance value and not a standard. (2) Standard for 1,3-Dichloropropane applies to the sum of cis-dichloropropylene and trans-dichloropropylene.
(3) Standard for Xylenes (total) applies to the sum of 1,2-xylene, 1,3-xylene, and 1,4-xylene.

Table 30
Knolls Atomic Power Laboratory
Land Disposal Area
Groundwater Investigation
Seeps/Surface Water Results
Volatile Organic Compounds

Location ID		Seep-1	Seep-2	Seep-3	Seep-4	SW-01	SW-02
Sample ID		NFLF-SW-SEEP1-1005	NFLF-SW-SEEP2-1004	NFLF-SW-SEEP3-1003	NFLF-SW-SEEP4-1002	NEBS-SW-SW01-1001	NEBS-SW-SW02-1006
Sample Date		11/3/2003	11/3/2003	11/3/2003	11/3/2003	11/3/2003	11/3/2003
Chemical Name	**Unit**						
1,1,1-Trichloroethane	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/l	1.0 U	**1.0**	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethylene	ug/l	1.0 U	**0.54 J**	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/l	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Carbon disulfide	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/l	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Chloroform	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethylene	ug/l	**22.1**	**20**	**10.9**	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropylene	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethylene	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	ug/l	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethylene	ug/l	1.0 U	1.0 U	**0.53 J**	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropylene	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethylene	ug/l	**7.4**	**21**	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/l	**5.8**	**7.0**	**11.9**	1.0 U	1.0 U	1.0 U
Xylenes, Total	ug/l	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes: U - Not detected, J - Estimated value, Detects in **BOLD**.

Appendix A

Groundwater Investigation
Boring Logs and Well Completion Logs

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-1	COORDINATES: NA	DATE:	7/17/2002
ELEVATION: NA	GROUNDWATER LEVEL: 5.5'	DATE STARTED:	7/17/2002
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 12'	DATE INSTALL.:	7/18/2002
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT & CLAY, Little Fine Sand w/ roots	ML			0	moist
	SS-1	NA	3.1'	same as above				0	NLDA-SS-SB1-1001 (1-2')
				Brown CLAY, Little Medium (-)- Fine Gravel, Little (-) Silt, Trace (-) Fine Sand	CL			0	
5				Brown Fine SAND, Little (-) Silt	SM			0	saturated
		NA	4.0'	Brown Fine SAND, Little (-) Silt, W/2" Medium Gravel layer @ 6.3'				0	saturated
				Brown CLAY, Trace (-) Fine Sand & Silt	CL			0	moist/wet
				same as above				0	moist
				Brown Fine SAND	SW			0	saturated
10		NA	4.0'	Brown Fine SAND, Little (-) Medium (-) - Fine Gravel, Little (-) Silt	SW			0	saturated
	SS-2			same as above				0	NLDA-SS-SB1-1004 (10.5-11')
				Grey CLAY, Little Medium - Fine Gravel, Little (-) Silt (Till)	CL			0	saturated
				BOTTOM OF BORING 12'					
15									
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING

Drilling Equipment: GEOPROBE

Driller: Marty Bachner

grout

bentonite

morie sand

1" solid Riser

1" Slotted Riser

NA: Not Applicable

RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME:	KAPL - LDA SV		
BORING NUMBER:	SB/LMW-2	COORDINATES:	NA	DATE:	7/29/2002
ELEVATION:	NA	GROUNDWATER LEVEL:	5.5'	DATE STARTED:	7/29/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH:	14'	DATE INSTALL.:	7/30/2002
DRILLING METHODS:	GEOPROBE /DIRECT PUSH			PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT, Little (-) Clay W/ roots	ML			0	dry
		NA	3.75'	same as above				0	dry
				Brown SILT, W/ 2" Medium (-) - Fine Gravel layer @ 2'	ML			0	dry
				Brown Fine SAND	SW			0	dry/ moist
5			.5'	Brown Fine SAND				0	dry/ moist
	SS-1	NA	4.0'	Brown Fine SAND, Little Silt	SM			0	NLDA-SS-SB02-1010 (5.5-6')
				same as above				0	saturated
				s.a.a. With 3" Coarse - Fine Gravel layer, Little Clay, Little (-)	SM			0	moist
				Silt, Trace Coarse - Fine Sand @ 7.5', Bec. Brown Fine Sand				0	saturated
10		NA	4.0'	Brown Fine SAND				0	saturated
				same as above				0	
				same as above				0	saturated
				Brown CLAY, Little Medium-Fine Gravel, Trace Fine Sand	CL			0	NLDA-SS-SB02-1013 (13.5-14")
	SS-2			Grey CLAY, Trace Medium (-) - Fine Gravel (Till)				0	NLDA-SS-X2-1014 (13.5-14")
15			3.0'	same as above				0	
				same as above				0	moist
				BOTTOM OF BORING 16'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-3	COORDINATES: NA	DATE:	7/25/2002
ELEVATION: NA	GROUNDWATER LEVEL: 7.5'	DATE STARTED:	7/25/2002
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 11'	DATE INSTALL.:	7/25/2002
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT W/ roots	ML			0	dry
		NA	4.0'	Brown SILT, Trace (-) Clay				0	dry
				Brown CLAY, Little Medium(-)- Fine Gravel, Little (-) Silt, Trace (-) Fine Sand	CL			0	dry
5				Brown Fine SAND, Little (-) Silt	SM			0	moist
		NA	4.0'	same as above w/ 2" Medium Gravel layer @ 6.3'				0	moist
	SS-1			Brown CLAY, Trace (-) Fine Sand & Silt				0	NLDA-SS-SB3-1008 (7.5-8')
				same as above				0	moist
				Brown Fine SAND	SM			0	saturated
10		NA	4.0'	Brown Fine SAND, Little Silt & Clay				0	saturated
	SS-2			Grey CLAY, Trace Fine Gravel (Till)	CL			0	NLDA-SS-SB3-1009 (10.5-11')
				RFSL BOTTOM OF BORING 11'					
15									
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-4	COORDINATES: NA	DATE: 8/21/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 16'	DATE STARTED: 8/21/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 21'	DATE INSTALL.: 8/21/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Grass & Roots over Brown SILT				0	dry
		NA	4.0'	Brown SILT	ML			0	dry
				same as above				0	dry
				Brown SILT, Trace (-) Clay	ML			0	dry
5				Brown SILT & CLAY				0	dry
		NA	4.0'	Brown CLAY, Little Silt	ML			0	dry/moist
				same as above				0	dry/moist
				Brown SILT, Little (-) Clay				0	dry/slightly moist
				Brown CLAY	OH			0	dry/slightly moist
10		NA	4.0'	Brown CLAY, W/ 3" Coarse- Fine SAND & GRAVEL Lyr. @ 9.5'	OH			0	dry/moist
				Brown Clay	OH			0	dry/moist
				same as above				0	dry/moist
				Brown Clay, Trace (+) Medium (-)- Fine Gravel	ML			0	moist
				same as above				0	moist
15	SS-1		4.0'	same as above				0	NLDA-SS-SB4-1037 (14.5'-15')
				Brown-Grey Coarse- Fine SAND & Medium (-)-Fine Gravel	GM			0	wet
				Brown-Grey Coarse- Fine SAND, and Medium-Fine Gravel	GM			0	saturated
				Brown SILT & CLAY, Little (-) Medium-Fine Gravel	GM			0	
			2.5'	Brown SILT	ML			0	saturated
20								0	
	SS-2		1.8'	Grey Coarse-Fine GRAVEL and SAND and Fine SAND, Little Clay (Till)	Cl			0	NLDA-SS-SB4-1038 (20'-20.5')
									wet
				BOTTOM OF BORING 21.8'					
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-5	COORDINATES: NA	DATE: 8/19/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 9.5'	DATE STARTED: 8/19/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 16'	DATE INSTALL.: 8/19/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT W/ grass & roots	ML			0	dry
		NA	4.0'	same as above				0	dry
				Brown SILT, Trace (-) Clay				0	dry
				Brown SILT				0	dry
5				same as above				0	dry
		NA	4.0'	Brown CLAY & SILT Trace Fine (-) Gravel	ML			0	moist/wet
	SS-1			Brown CLAY & SILT				0	NLDA-SS-SB05-1034 (6.5-7')
				Brown SILT, Little (-) Clay				0	NLDA-SS-X5-1035 (6.5-7')
				Brown SILT	ML			0	wet
10		NA	4.0'	Grey SILT, Trace (-) Clay				0	wet
				same as above				0	
				Brown SILT				0	saturated
				Brown Coarse-Fine Gravel, Coarse-Fine Sand	SW			0	
				Brown Clay, Some (-) Med. - Fn. Gravel, Little Coarse - Fine Sand & Silt	CL			0	saturated
15			3.0'	Brown SILT, Trace Fine Sand, Bec. Br. CLAY. M(-) - F Gr., L (-) C-F Sand				0	
	SS-2			15.8' Grey Clay, Some Medium - Fine Gravel, Little Coarse - Fine Sand	CL			0	NLDA-SS-SB05-1036 (15-15.5")
				BOTTOM OF BORING 16'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-6	COORDINATES: NA	DATE:	8/5/2002
ELEVATION: NA	GROUNDWATER LEVEL: 6.5'	DATE STARTED:	8/5/2002
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 11'	DATE INSTALL.:	8/05/2002
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT W/ roots	ML			0	(sand pack to .5')
		NA	3.5'	Brown SILT, W/1" root layer @1.5'				0	dry
				Brown SILT				0	dry
				Brown SILT, Little (-) Clay W/ roots at 8'	ML			0	dry
5				same as above				0	moist
		NA	4.0'	Brown SILT, Little (-) Fine Sand	ML			0	moist
	SS-1			Brown Fine SAND, bec. Brown SAND & SILT, Little(-) Clay	SM			0	NLDA-SS-SB6-1016 (6-7')
				Brown SILT, Medium - Fine Gravel, Little (-) Fine Clay				0	NLDA-SS-X3-1017 (6-7')
				Brown SILT & CLAY, Trace Fine Gravel & Sand	ML			0	dry
10	SS-2	NA	4.0'	same as above				0	NLDA-SS-SB6-1020 (9.5'-10')
				Grey CLAY, Trace Medium - Fine Gravel	CL			0	
				RFSL BOTTOM OF BORING 11'					
15									
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB-7	COORDINATES: NA	DATE: 7/31/2002	
ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE STARTED: 7/31/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: NA	DATE INSTALL.: 7/312002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT, Trace (-) Medium Gravel W/ roots	ML		NA	0	dry
		NA	4.0'	same as above				0	dry
				same as above				0	dry
				Brown Fine SILT, Trace Fine Gravel &Clay	ML			0	dry
5				Brown SILT, Trace Clay				0	dry
		NA	4.0'	same as above				0	dry
				same as above				0	dry
				Brown SILT, Little (-) Clay @ 7.8'				0	dry
	SS-1			Silt, Trace Coarse - Fine Sand @ 7.5', Bec. Brown Fine Sand				0	NLDA-SS-SB07-1015 (8.5-9.5')
10		NA	3.0'	9.5' Grey Clay, Little(-) Medium-fine Gravel	CL			0	dry
				same as above				0	dry
				same as above				0	dry/moist
			3.0'					0	dry/moist
				Grey CLAY, Trace Medium (-) - Fine Gravel	CL			0	
15				RFSL BOTTOM OF BORING 14'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand

1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-8	COORDINATES: NA	DATE: 8/14/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 5.5'	DATE STARTED: 8/14/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 16'	DATE INSTALL.: 8/14/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT, W/ roots	ML			0	dry
		NA	3.75'	same as above				0	dry
				same as above				0	dry
				Brown silt, becoming SILT &CLAY @ 8'	CL			0	
5				Brown SILT & CLAY				0	
	SS-1	NA	4.0'	same as above				0	NLDA-SS-SB08-1027 (5.5-6')
								0	NLDA-SS-X4-1028 (5.5-6')
				same as above				0	wet
				same as above				0	wet
10		NA		Brown CLAY, Trace Silt	CL			0	moist
			4.0'	Brown CLAY				0	moist
				same as above				0	moist
				Brown CLAY, Little Medium - Fine Gravel, Little (-) Coarse - Fine Sand	CL			0	moist
								0	moist
15			4.0'	same as above				0	moist
	SS-2			Grey CLAY, Little Coarse - Fine Gravel, Little (-) Coarse - Fine Sand (Till)	CL			0	NLDA-SS-SB8-1029 (15.15.5")
				BOTTOM OF BORING 16'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" S+U16lotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-9	COORDINATES: NA	DATE: 8/7/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 5.5'	DATE STARTED: 8/7/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 14'	DATE INSTALL.: 8/7/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT, W/ roots	ML			0	dry
		NA	3.8'	same as above				0	dry
				same as above				0	dry
				Brown silt, W/ 2" Silt & Fine Sand layer @ 4'				0	dry
5				Brown SILT, Little (-) Sand	ML			0	moist
	SS-1	NA	4.0'	same as above				0	NLDA-SS-SB09-1022 (5.5-6')
				Brown Fine SAND	SM			0	saturated
				same as above				0	saturated
				same as above				0	saturated
10		NA		Brown SILT & CLAY Little (-) Fine Sand	CL			0	saturated
			4.0'	Brown Fine Sand				0	saturated
				same as above				0	saturated
				Brown Fine SAND, Little Silt,, Little (-) Fine Gravel	SW			0	saturated
				Brown SILT & CLAY Little (-) Fine Sand & Gravel				0	wet
15			4.0'	Brown Fine SAND, Little (+) Medium - Fine Gravel				0	NLDA-SS-SB9-1023 (15.15.5")
	SS-2			Grey CLAY, Little (-) Medium - Fine Gravel (Till)	CL				wet
				BOTTOM OF BORING 16'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME:	KAPL - LDA SV		
BORING NUMBER:	SB/LMW-10	COORDINATES:	NA	DATE:	8/8/2002
ELEVATION:	NA	GROUNDWATER LEVEL:	NA	DATE STARTED:	8/8/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH:	15'	DATE INSTALL.:	8/8/2002
DRILLING METHODS:	GEOPROBE /DIRECT PUSH			PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT, W/ roots	ML			0	dry
		NA	4.0'	Brown SILT, Trace Clay				0	dry
				Brown SILT, Little (-) Clay,				0	moist
				same as above				0	moist
5				Brown SILT, Little (-) Clay				0	moist
		NA	4.0'	Brown CLAY	CL			0	moist
				Brown Fine SAND				0	moist
				same as above				0	saturated
				same as above				0	dry
10		NA		Brown CLAY, Trace Silt				0	dry
			4.0'	Brown SILT & CLAY Little (-) Fine Sand	ML			0	dry
				same as above				0	dry
				Brown Clay, becoming Grey Clay @ 12.5'	CL			0	dry
		NA		same as above				0	dry/soft
15	SS-1		4.0'	Grey CLAY, and Medium - Fine Gravel (Till)				0	NLDA-SS-SB10-1024 (14.14.5')
				RFSL BOTTOM OF BORING 15'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB-11	COORDINATES: NA	DATE:	8/6/2002
ELEVATION: NA	GROUNDWATER LEVEL: NA	DATE STARTED:	8/6/2002
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: NA	DATE INSTALL.:	8/6/2002
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT W/ roots	ML		NA	0	dry
		NA	4.0'	same as above				0	dry
								0	dry
				same as above				0	dry
5				same as above				0	dry
		NA	4.0'	Brown SILT, Little (-) Medium - Fine Gravel, Trace(-) Clay	ML			0	dry
								0	dry
				same as above				0	dry
				Brown SILT, Little (-) Coarse (-) - Fine Gravel				0	dry
10	SS-1	NA	4.0'	same as above				0	NLDA-SS-SB11-1021 (9.5-10.5)
				Grey CLAY, Little Coarse (-) - Fine Gravel, (Till)	CL			0	dry
				RFSL BOTTOM OF BORING 11'					
15									
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand

1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-12	COORDINATES: NA	DATE: 8/22/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 14'	DATE STARTED: 8/22/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 18.5'	DATE INSTALL.: 8/22/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				grass & roots				0	dry
		NA	4.0'	Brown SILT	ML			0	dry
				same as above				0	dry
				same as above	ML			0	dry
5				Brown SILT, Little (-) Clay				0	moist
		NA	4.0'	same as above	ML			0	moist
				Brown CLAY, Little (-) Silt	ML			0	moist
				same as above				0	moist
				Brown CLAY, Little (-) Silt	CL			0	moist
10		NA	4.0'	same as above	CL			0	moist
				same as above	CL			0	moist
				same as above				0	moist
				Brown Clay, Little (-) Silt	CL			0	wet
				Brown Clay, Little (+) Silt				0	wet
15	SS-1	NA	4.0'	Brown CLAY, bec. Fine SAND and CLAY and SILT	ML			0	NLDA-SS-SB12-1039(14-14.5)
				Grey CLAY	ML			0	saturated
				Brown-Grey Coarse- Fine SAND, and Medium-Fine Gravel	GM			0	wet/soft
	SS-2			Brown SILT & CLAY, Little(-) Medium-Fine Gravel	GM			0	NLDA-SS-SB12-1040(17-17.5)
		NA	2.7'	Grey CLAY, Little(-) Medium (-)- Fine Gravel (Till)	CL				wet
20				BOTTOM OF BORING 18.7'					
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME:	KAPL - LDA SV		
BORING NUMBER:	SB-13	COORDINATES:	NA	DATE:	9/10/2002
ELEVATION:	NA	GROUNDWATER LEVEL:	NA	DATE STARTED:	9/10/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH:	NA	DATE INSTALL.:	9/10/2002
DRILLING METHODS:	GEOPROBE /DIRECT PUSH			PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				GRASS AND ROOTS			NA	0	dry
		NA	4.0'	Brown SILT & Clay	ML			0	dry
				Brown SILT, Trace(-) Coarse(-) - Fine Gravel	ML			0	dry
				same as above				0	dry
5				Brown Coarse- Fine Gravel, Little Coarse-Fine Sand and Silt	GM			0	dry
		NA	4.0'	same as above				0	dry
	SS-1			Grey CLAY, Little Coarse (-) - Fine Gravel and Sand (Till)				0	NLDA-SS-SB13-1057 (6-6.5)
					CL			0	dry
				BOTTOM OF BORING 8'					
10									
15									
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand

1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME:	KAPL - LDA SV		
BORING NUMBER:	SB/LMW-14	COORDINATES:	NA	DATE:	8/26/2002
ELEVATION:	NA	GROUNDWATER LEVEL:	9.5'	DATE STARTED:	8/26/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH:	20'	DATE INSTALL.:	8/27/2002
DRILLING METHODS:	GEOPROBE /DIRECT PUSH			PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Grass and Roots				0	dry
		NA	3.5'	Dark Brown SILT and Clay, bec. Grey Coarse-Fine GRAVEL and SAND	CL			0	dry
				Brown SILT				0	dry
				Brown SILT and Coarse(-) Fine GRAVEL and Coarse-Fine SAND, Tr. Clay	CL			0	dry
5				Grey and Brown SILT and CLAY, bec. Coarse-Fine GRAVEL, Little Coarse	CL			0	dry
		NA	4.0'	to Fine Sand				0	moist/wet
	SS-1			Brown CLAY, Little Silt	CH			0	NLDA-SS-SB14-1041 (8.6.5)
				Brown SILT, and CLAY, Trace Fine Sand	CL			0	dry
				Brown CLAY	CH			0	dry
10	SS-2	NA	4.0'	Same as above	CH			0	NLDA-SS-SB14-1042 (9.5-10')
				Brown SILT				0	wet/saturated
				Same as above				0	saturated
				Brown SILT, Trace (-) Clay	ML			0	saturated
		NA		Same as above				0	saturated
15			4.0'	Brown and Grey CLAY and SILT and Coarse-Fine GRAVEL, Little Coarse-	MH			0	saturated
	SS-3			Fine Sand				0	NLDA-SS-SB14-1045 (15-15.5")
				Grey CLAY and Coarse-Fine Gravel, Little Coarse-fine Sand (Till)	CL			0	
			4.0'					0	wet
		NA		Same as above				0	
20					CL				
				BOTTOM OF BORING 20'					
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-15	COORDINATES: NA	DATE: 9/3/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 16'	DATE STARTED: 9/3/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 22'	DATE INSTALL.: 9/4/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Grass and Roots				0	dry
		NA	4.0'	Brown SILT and Clay, With Coarse (+)-Fine Gravel	CL			0	dry
				Brown SILT				0	dry
				Brown SILT	ML			0	dry
5				Same as above	ML			0	dry
		NA	4.0'	Same as above				0	dry
				Brown & Grey Coarse-Fine SAND	SW			0	dry
				Same as above				0	dry
				Brown & Grey Coarse-Fine SAND, Little(-) Medium(-)-Fine Gravel	SP			0	dry
10		NA	4.0'	Same as above				0	dry
								0	dry
				Same as above				0	dry
				Same as above, bec Medium-Fine GRAVEL (at 12.9')	SP			0	dry
				Brown &Grey Coarse-Fine SAND, Little(-) Medium(-)-Fine Gravel				0	dry
15		NA	4.0'	Brown Coarse(+)-Fine SAND, Trace Medium(-)-Fine Gravel, Trace Silt	SP			0	dry
	SS-1			Same as above				0	NLDA-SS-SB15-1051 (15-15.5")
				Brown & Grey Coarse-Fine Gravel, Little Coarse-fine Sand, Trace Silt & Clay	CL			0	Moist/wet
			4.0'					0	Saturated
				Same as above				0	Saturated
20				Brown & Grey Coarse-Fine GRAVEL, Little(-)-Fine Sand, Trace Silt & Clay	GM			0	Saturated
				Same as above				0	Saturated
			3.5'					0	Saturated
				Same as above				0	Saturated
				Brown & Grey Coarse-Fine GRAVEL, Little-Fine Sand, Little (-) Silt & Clay	GM			0	Saturated
25	SS-2			Grey SILT & CLAY, Little Coarse-Fine Sand	CL			0	NLDA-SS-SB15-1052 (24-24.5")
				Grey Coarse-Fine GRAVEL, Little(-) Coarse-Fine Sand, Trace Silt				0	Saturated
			4.0'	Same as above				0	Saturated
				Same as above	CL			0	Saturated
				BOTTOM OF BORING 26'					
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME: KAPL - LDA SV	
BORING NUMBER:	SB/LMW-15A	COORDINATES: NA	DATE: 12/3/2002
ELEVATION: NA		GROUNDWATER LEVEL: 16'	DATE STARTED: 12/3/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH: 32'	DATE INSTALL.: 12/3/2002
DRILLING METHODS:	HOLLOW STEM AUGERS		PAGE: 1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				AUGERED					
10									
20				TO 28' BGS					
30	28-28.05'	50/1"	NR	NO RECOVERY					MOIST
	30'-32'	23/18/29/43	24"	Brn. Grey C(+)-Fn. SAND bec. Gry CLAY ,L M-Fn Gravel, L(-) C-F Sand (Till)	CL			0	NLDA-SS-SB15A-1077 (31'-31.5')
				BOTTOM OF BORING 32'					

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: Hollow Stem Auger
Driller: Roger B.

grout
bentonite
morie sand
2" Solid Riser
2" Slotted Riser

NR: No Recovery
NA: Not Applicable
RFSL: REFUSAL

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-16	COORDINATES: NA	DATE: 8/272002	
ELEVATION: NA	GROUNDWATER LEVEL: 18'	DATE STARTED: 8/272002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 28'	DATE INSTALL.: 8/272002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Grass and Roots				0	dry
		NA	2.0'	Grey Coarse (+)- Fine(-) GRAVEL, Medium(-) - Fine Sand	GM			0	dry
								0	dry
				Grey Coarse - Fine SAND, Coarse(+)- Fine Gravel	SW			0	dry
5				Same as above With brick fragments	SW			0	dry
		NA	2.5'	Same as above				0	dry
					SW			0	dry
				Brown & Grey SILT & CLAY, Little(-) Coarse-Fine Sand	ML			0	dry
				Brown CLAY, Little (-) Silt	CL			0	wet
10	SS-1	NA	4.0'	Same as above				0	NLDA-SS-SB16-1047 (9-9.5")
				Brown SILT, Trace Clay				0	
				Same as above				0	wet
				Brown SILT, Trace Fine Gravel	ML			0	wet
				Same as above				0	wet
15		NA	4.0'	Brown CLAY, Little (-) Silt	CL			0	wet
				Same as above				0	wet
				Brown & Grey CLAY, Trace Medium(-)-Fine Gravel	MH			0	Moist/wet
			4.0'	Same as above				0	Moist/wet
								0	wet
20				Grey CLAY	CH			0	wet
				Same as above				0	wet
			4.0	Same as above				0	wet
								0	wet
	SS-2			Same as above, W/ 4" layer Clay & Sand @23'	CH			0	NLDA-SS-SB16-1048 (23-23.5")
25				Grey CLAY	CL			0	wet
				Same as above				0	wet
			4.0'	Brown CLAY, Little(-) Medium(-)-Fine Gravel				0	wet
				27.5' Grey Clay, Little Coarse-Fine Gravel, Little(-) Coarse-Fine Sand (Till)	CL			0	dry
				BOTTOM OF BORING 28'					
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1"- Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-16A	COORDINATES: NA	DATE: 12/4/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 12'	DATE STARTED: 12/4/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 29'	DATE INSTALL.: 12/4/2002	
DRILLING METHODS: HOLLOW STEM AUGERS		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				AUGERED TO 5'					
	5'-7'	8/4/8/4	22"	Brown C-Fn SAND, Little M-Fn Gravel (cinders)	SP			0	dry
10	7'-9'	3/2/3/2	20"	Same bec. Brown SILT, C-Fn Sand	ML			0	dry
	9'-11'	3/2/3/5	18"	Brown SILT, Trace Clay	OL			0	wet
20				AUGERED TO 25'					
	25-27'	2/4/5/1	24"	Grey CLAY, bec. Brown SILT and CLAY	CL			0	NLDA-SS-SB16A-1078(26.5'-27)
	27-29'	14/16/23/22	18"	Grey CLAY, Little Coarse-fine Sand, Medium (-) Fn Gravel (Till)	CL			0	NLDA-SS-SB16A-1079(28.5'-29')
30				BOTTOM OF BORING 29'					moist

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: Hollow Stem Auger
Driller: Roger B.

grout
bentonite
morie. sand
2" Solid Riser
2" Slotted Riser

NR: No Recovery
NA: Not Applicable
RFSL: REFUSAL

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME:	KAPL - LDA SV		
BORING NUMBER:	SB/LMW-17	COORDINATES:	NA	DATE:	9/4/2002
ELEVATION:	NA	GROUNDWATER LEVEL:	18'	DATE STARTED:	9/4/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH:	24'	DATE INSTALL.:	9/5/2002
DRILLING METHODS:	GEOPROBE /DIRECT PUSH			PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Grass and Roots				0	dry
		NA	4.0'	Brown SILT & CLAY, with 1" fine Gravel layer @ 2'	CL			0	dry
				Brown SILT	ML			0	dry
				Same as above	ML			0	dry
5				Brown SILT, Little (-) Clay	CL			0	dry
		NA	4.0'	Same as above	CL			0	dry
				Brown CLAY	CL			0	dry
				7.8' Brown Medium-Fine Sand	SP			0	dry
				Brown SILT & CLAY	CL			0	wet
10		NA	3.0'	Brown Coarse to fine SAND				0	
				Same as above				0	wet
				Same as above				0	wet
				Brown CLAY & SILT	CL			0	wet
				Dark Brown Coarse-Fine SAND, Trace Medium-Fine Gravel	SP			0	wet
15		NA	3.5'					0	
	SS-1			Same as above				0	NLDA-SS-SB17-1053 (15-15.5")
				Same as above	SP			0	Moist/wet
			2.0'	Same as above				0	Moist/wet
				Dark Brown Coarse-Fine SAND, Little(-) Coarse(-)-Fine Gravel, Trace Silt	SP			0	wet
20				Same as above				0	wet
				Brown Coarse to fine SAND, Little Coarse(-)-fine Gravel	SP			0	wet
			4.0	Same as above				0	
	SS-2			Grey Clay, Little Coarse-Fine Gravel, Little(-) Coarse-Fine Sand (Till)				0	NLDA-SS-SB17-1055 (22-22.5")
				Same as above	CL			0	wet
25				BOTTOM OF BORING 24'					
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

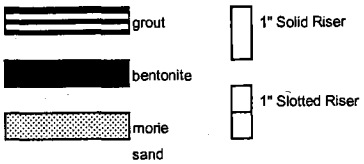
BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-18	COORDINATES: NA	DATE: 9/9/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 19'	DATE STARTED: 9/9/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 27'	DATE INSTALL.: 9/9/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Grass and Roots				0	dry
		NA	4.0'	Brown SILT, Little(-) Clay, Trace Fine Gravel	CL			0	dry
				Brown SILT, Trace Fine Gravel & Sand				0	dry
				Same as above				0	dry
5				Brown SILT, Trace Clay	CL			0	dry/moist
		NA	4.0'	Same as above				0	moist
				Brown CLAY, Trace Silt	CL			0	dry
				Same as above				0	dry
				Brown CLAY, Trace Silt	CL			0	wet
10		NA	3.5'	Same as above with roots				0	
				Brown Fine SAND				0	dry
				Brown & Grey, Coarse-Fine GRAVEL, Little Coarse-Fine Sand	GW			0	dry
				Same as above				0	dry
				Same as above				0	dry
15		NA	4.0'	Same as above				0	
				Same as above				0	
				Brown Coarse(-)-Fine GRAVEL & SAND, Little(-) Silt & Clay	GM			0	dry
			2.0'	Same as above				0	dry
				Same as above				0	wet
20	SS-1			Same as above				0	NLDA-SS-SB18-1056 (19-19.5")
				Brown & Grey Coarse-Fine GRAVEL, And Coarse-fine Sand	GW			0	wey/sat
			3.0.	Same as above				0	wet/sat
								0	wet/sat
				Same as above	GW			0	
25								0	
								0	
			NR					0	
				RFSL BOTTOM OF BORING 27'					
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner



NR: No Recovery
NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

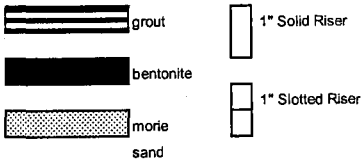
BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME:	KAPL - LDA SV		
BORING NUMBER:	SB/LMW-19	COORDINATES:	NA	DATE:	7/22/2002
ELEVATION:	NA	GROUNDWATER LEVEL:	11'	DATE STARTED:	7/22/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH:	15'	DATE INSTALL.:	7/24/2002
DRILLING METHODS:	GEOPROBE /DIRECT PUSH			PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown SILT, And Fine Sand W/ roots	ML			0	dry
		NA	4.0'	Brown SILT, And Fine Sand				0	dry
				Brown SILT, And Fine Sand , Little (-) Clay				0	dry
				same as above				0	dry
5				Brown CLAY	CH			0	dry
		NA	4.0'	same as above				0	dry
				Brown & Tan CLAY				0	dry
				Brown CLAY, Trace (+) Medium - Fine Gravel				0	wet
				Brown SILT, Trace Fine Sand	SM			0	wet
10		NA		same as above				0	
			3.8'	Brown SILT Little Silt, & Fine Sand				0	NLDA-SS-SB19-1005 (11-11.5')
	SS.-1			same as above				0	NLDA-SS-X1-1006 (11-11.5')
				Brown Clay, becoming Grey Clay @ 12.5'	CH			0	dry
		NA	2.5'	same as above				0	
15	SS.-2			Grey CLAY, and Medium - Fine Gravel (Till)	CL			0	NLDA-SS-SB19-1007 (14-14.5')
				BOTTOM OF BORING 15'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner



NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME:	KAPL - LDA SV		
BORING NUMBER:	SB/LMW-20	COORDINATES:	NA	DATE:	8/15/2002
ELEVATION:	NA	GROUNDWATER LEVEL:	9'	DATE STARTED:	8/15/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH:	20'	DATE INSTALL.:	8/15/2002
DRILLING METHODS:	GEOPROBE /DIRECT PUSH			PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				grass & roots				0	dry
		NA	4.0'	Brown SILT, Trace Clay	ML			0	dry
				same as above				0	dry
				same as above	ML			0	dry
5				Brown SILT, Little Clay				0	wet
	SS-1	NA	4.0'	Brown SILT, Trace Clay	ML			0	NLDA-SS-SB20-1030 (5'-5.5')
				Brown CLAY and SILT				0	moist/dry
				Brown Clay and SILT, Little (-) Fine Sand				0	
				Brown Silt, Trace (+) Clay	CH			0	saturated
10		NA	4.0'	same as above	CH			0	saturated
				same as above	CH			0	saturated
				same as above				0	saturated
				same as above				0	saturated
		NA		same as above				0	saturated
15			4.0'	Brown Fine Sand, Little (-) Silt	SM			0	saturated
				same as above				0	wet
				SKIPPED TO 17' BSG AND RESUMED ADVANCEMENT				0	saturated
				Brown Medium(-) to Fine Sand	SP			0	
	SS-2	NA	2.5'	same as above				0	NLDA-SS-SB20-1031 (18.5'-19')
20				Grey CLAY, Little(+) Medium to Fine Gravel (Till)	CL			0	
			1.8'	same as above					
				BOTTOM OF BORING 21'					
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-21	COORDINATES: NA	DATE: 11/25/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 5.5'	DATE STARTED: 11/25/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 13.5'	DATE INSTALL.: 11/26/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Brown Coarse-Fine SAND, Little Medium-Fine Gravel	SP			0	moist
		NA	3.0'					0	
	SS-1			same as above				0	NLDA-SS-SB21-1069(2.5'-3')
				Brown Coarse(-)- Fine SAND, Trace Fine Gravel	SP			0	wet
5				Brown & Grey Coarse(-)- Fine SAND, Trace Silt	SP			0	
		NA	4.0'					0	saturated
				same as above	SP			0	
								0	
				Brown Coarse(-)-Fine GRAVEL, Little(+) Coarse-Fine Sand, Trace(+) Silt	GM			0	saturated
10		NA	3.0'	and Clay				0	moist
								0	
				same as above	GM			0	saturated
				same as above	GM			0	
		NA		Brown CLAY& SILT, Trace Medium-Fine Gravel	CL			0	saturated
15			4.0'					0	
	SS-2			Grey Clay, Little, Medium(-)-Fine Gravel, Little(-) Coarse- Fine Sand (Till)	CL			0	NLDA-SS-SB21-1070 (14-14.5")
				RFSL BOTTOM OF BORING 15.5'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER:	823311	PROJECT NAME:	KAPL - LDA SV		
BORING NUMBER:	SB/LMW-22	COORDINATES:	NA	DATE:	11/25/2002
ELEVATION:	NA	GROUNDWATER LEVEL:	8'	DATE STARTED:	11/25/2002
ENGINEER/GEOLOGIST:	T. LECALVEZ	TOTAL WELL DEPTH:	15.0'	DATE INSTALL.:	11/25/2002
DRILLING METHODS:	GEOPROBE /DIRECT PUSH			PAGE:	1 OF 1

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
		NA	4.0'	Grass/Roots over Brown SILT & CLAY	CL			0	wet
								0	
				same as above	CL			0	dry
								0	
5		NA	4.0'	same as above	CL			0	
								0	saturated
	SS-1			Brown & Grey Coarse-Fine SAND, Little(-) Medium-Fine Gravel, Trace(-) Silt	SP			0	NLDA-SS-SB22-1067(6'-8.5)
								0	
		NA	3.0'	Brown Coarse-Fine SAND, Little(-) Medium-Fine Gravel	SP			0	wet
10								0	saturated
								0	
				same as above	GM			0	saturated
		NA	4.0'	same as above	GM			0	
					CL			0	saturated
15								0	
	SS-2			Grey Clay, Little, Medium(-)-Fine Gravel, Little(-) Coarse- Fine Sand (Till)	CL			0	NLDA-SS-SB22-1068 (15-15.5")
				BOTTOM OF BORING 16'					
20									
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-23	COORDINATES: NA	DATE: 11/202002	
ELEVATION: NA	GROUNDWATER LEVEL: 16'	DATE STARTED: 11/20/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 24'	DATE INSTALL.: 11/20/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Grass over Brown Silt, Trace (-) Clay	ML			0	moist
		NA	2.0'	same as above	ML			0	
								0	moist
				Brown SILT, Little (-) Clay, Trace(-) Fine Sand and Gravel	ML			0	
5				same as above	ML			0	moist
		NA	4.0'					0	dry
				Brown &GreyBrown Coarse-Fine SAND, Trace Fine Gravel	SP			0	dry
								0	dry
				Grey, White & Brown Coarse-Fine SAND, Little(-) Medium(-)-Fine Gravel	SP			0	dry
10		NA	4.0'					0	dry
								0	dry
				same as above	SP			0	dry
				Brown Coarse-Fine SAND, Coarse(-)- Fine Gravel, Trace Silt	SP			0	dry
								0	dry
15		NA	4.0'		SP			0	dry
				same as above				0	moist
	SS-1			Red Brown Coarse-Fine SAND, Little(-) Gravel	SP			0	NLDA-SS-SB23-1062(16.5'-17')
		NA	4.0'					0	wet
								0	saturated
20				same as above	SP			0	saturated
								0	saturated
		NA	4.0'	same as above				0	saturated
				Brown Coarse-Fine Gravel and SAND, Little(-) Silt & Clay	GC			0	saturated
								0	saturated
25	SS-2	NA	2.0'	Grey Clay, Little Medium-Fine Gravel & Sand (Till)	CL			0	NLDA-SS-SB23-1063 (24.5-25")
									NLDA-SS-X8-1064
				RFSL BOTTOM OF BORING 26'					
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-24	COORDINATES: NA	DATE: 11/12/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 12'	DATE STARTED: 11/12/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 23'	DATE INSTALL.: 11/13/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
				Grass over Brown Silt, Little Fine Sand	ML			0	moist
		NA	2.0'	Brown Silt, Little Fine Sand, Trace Fine Gravel	ML			0	
								0	moist
				same as above w/ 1" brick layer @ 3' (bgs)	ML			0	
5				Brown SILT and SAND, w/ 3" Medium-Fine Gravel layer @4.5'	ML			0	moist
	SS-1	NA	4.0'	Grey Brown SILT, Little Fine Sand				0	NLDA-SS-SB24-1060(5'-5.5')
				same as above	ML			0	
				Red Brown CLAY	CH			0	saturated
				Red Brown CLAY and SILT	CH			0	moist
10		NA	4.0'		CH			0	moist
				Red Brown CLAY, Little(-) Silt				0	
								0	
				Red Brown SILT and CLAY	CH			0	moist
								0	
15		NA	4.0'	same as above				0	
				Dark Red Brown CLAY	CH			0	moist
								0	
		NA	4.0'	Brown CLAY, Little Silt	CH			0	
	SS-2							0	NLDA-SS-SB24-1061(18'-18.5')
20				Brown CLAY, Little Silt, w/ 2" layr Coarse-Fine Sand @19'	CH			0	saturated
								0	
		NA	4.0'	Grey CLAY	MH			0	
								0	
				Grey Coarse-Fine SAND, Trace Fine Gravel, Trace(-) Silt				0	
25				Brown Coarse-Fine SAND, Little Fine Gravel, Trace(-) Silt	MH			0	
									saturated
				same as above	MH				
				BOTTOM OF BORING 28'					
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

Drilling Log

Monitoring Well **SB/LMW-24A**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *54.5 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *8 in.*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC, Schd. 40/10 slot in.*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Morie sand/bentonite* Rig/Core *Mobile B-59*

Drill Co. *ADT* Method *HSA*

Driller *Roger Bulley* Log By *M. Puglisi* Date *7/23/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Grass at surface. No samples, augering to 25' BGS.
2							
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Continued Next Page

Drilling Log

Monitoring Well **SB/LMW-24A**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
							Continued
24							
26		0.0	1 30%	9 14 15 14		SP	Brown, m-sand, some c-sand and little f-c gravel, soft.
28		0.0	2 65%	9 10 10 17		SP SM	M-sand, same as above, bottom 0.6' is gray till (27.4'), took sample NLDA-SS-SB24A-1107.
30		0.0	3 20%	12 21 27/5 50/0		SP SM	Gray till.
32							Softened up for less than 1', before becoming hard again.
34							
36							
38							
40							Softened up at 39', tried spoon, had refusal. Alternating lenses of softer and hard material.
42							
44							Refusal of spoon at 39'.
46							
48							
50							
52							
54							Refusal of spoon at 54.5, bottom of boring.
56							

IT_COMMERCIAL Rev: 12/6/99 KAPLLDABL.GPJ IT_CORP.GDT 10/26/04

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: SB/LMW-25	COORDINATES: NA	DATE: 11/26/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 14'	DATE STARTED: 11/26/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 20'	DATE INSTALL.: 11/27/2002	
DRILLING METHODS: GEOPROBE /DIRECT PUSH		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
		NA	4.0'	Brown SILT, Little(-) Medium-Fine Gravel, Trace Fine Sand				0	dry/moist
								0	
				same as above (S.A.A)				0	
				Red Brown Medium-Fine SAND				0	moist
5		NA	4.0'	S.A.A				0	
								0	
				S.A.A				0	
								0	
								0	
10		NA	4.0'	S.A.A.				0	
								0	
								0	
								0	
		NA		S.A.A.				0	
15			4.0'					0	NLDA-SS-SB25-1071(15.5-16)
	SS-1							0	NLDS-SS-SB25-1072(16'-16.5')
	SS-2			Brown Coarse-Fine SAND				0	NLDA-SS-X9-1073
	SS-3							0	NLDA-SS-SB25-1074(17-17.5)
		NA	4.0'						wet
20				Grey CLAY, Little Medium-Fine Gravel, Little(-) Medium-Fine Sand (Till)					
				BOTTOM OF BORING 20'					
25									
30									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: GEOPROBE
Driller: Marty Bachner

grout
bentonite
morie sand
1" Solid Riser
1" Slotted Riser

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

Drilling Log

Monitoring Well **SB/LMW-26**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *30.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial ▽ *13.5 ft.* Static *NA* Diameter *2.125 in.*

Screen: Dia *1 in.* Length *10 ft.* Type/Size *PVC, Schd. 40/10 slot in.*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Morie sand/bentonite* Rig/Core *Van mounted Geoprobe*

Drill Co. *ADT* Method *Direct push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *7/9/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
							Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0							Mix of brown and gray till material, bottom 0.5', has piece of styrofoam + plastic, soil is moist above plastic, has slight septic odor.
2		0.0	1 / 80%			SP SM	
4							Top 1' is gray, remainder is brown, with some gray mottling, f-silty sand, moist, trace c-sand, f-gravel. No odors or staining.
6		0.0	2 / 100%			SP SC	
8							Used closed piston. Top 0.8' is same as above, soft, remainder of tube is f-c sand, loose, moist. No odors or staining.
10		0.0	3 / 50%			SP	
12							M-c sand, and f-c gravel, wet, bottom 0.5' is saturated. No odors or staining, water contact at 13.5', NLDA-SS-SB26–1084, field dupe NLDA-SS-X10-1085.
▽ 14		0.0	4 / 50%			SP	
16							Saturated, sand + gravel in top 0.6' - fining downward to f-m sand, brown, no odors or staining.
18		0.0	5 / 50%			SP	
20							M-c sand + f-c gravel, saturated, no staining or odor.
22		0.0	6 / 65%			SP	
24							

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Drilling Log

Monitoring Well **SB/LMW-26**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
24							*Continued*
26		0.0	7 / 100%			SP	Same as above, bottom 2' of tube is gray f-sand, bottom 0.3' is gray till (27.7'). Took sample NLDA-SS-SB26-1086.
28		0.0	8 / 100%			SP SM	Gray till, tight, dry, no odor or staining.
30							
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

IT_COMMERCIAL Rev: 12/6/99 KAPLLDABL.GPJ IT_CORP.GDT 10/28/04

Drilling Log

Monitoring Well **SB/LMW-27**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *26.3 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial ▽ *20.5 ft.* Static *NA* Diameter *2.125 in.*

Screen: Dia *1 in.* Length *10 ft.* Type/Size *PVC, Schd. 40/10 slot in.*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Morie sand/bentonite* Rig/Core *Van mounted Geoprobe*

Drill Co. *ADT* Method *Direct push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *7/8/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0							
2		0.0	1 / 100%			SP	Dry, brown, f-sand, and f-c gravel for first 2', bottom 2' is f-m sand, moist, brown, trace c- sand, no odors or staining.
4							Moist, dark brown- some black, f-m sand, trace f-gravel, no staining or odors.
6		0.0	2 / 90%			SP	
8							Same as above, stopped short to prevent overpacking. Will use closed piston from here down.
10		0.0	3 / 85%			SP	
12							Lost bottom 1' on trip out. Same as above, with some f-c gravel, moist.
14		0.0	4 / 75%			SP	
16							Same as above, becoming more coarse with depth, bottom 0.3' is moist to wet.
18		0.0	5 / 90%			SP	
20 ▽							F-c sand, trace c-gravel, wet saturated below 20.5', took voc sample NLDA-SS-SB27-1082. Rock in drive shoe- reason for poor recovery.
22		0.0	6 / 50%			SP	
24							

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Drilling Log

Monitoring Well **SB/LMW-27**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
24							*Continued*
26		0.0	7 / 100%			SP SM	Gray till, contact at 26', wet, no odor. Took sample NLDA-SS-SB27-1083. Refusal at 26.3'.
28							
30							
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

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Drilling Log

Monitoring Well **SB/LMW-28**

Project: Land Disposal Area | Owner: KAPL

Location: Niskayuna | Proj. No.: 844097

Surface Elev.: NA | Total Hole Depth: 31.3 ft. | North: | East:

Top of Casing: NA | Water Level Initial: ▽ 10.8 ft. | Static: NA | Diameter: 2.125 in.

Screen: Dia: 1 in. | Length: 10 ft. | Type/Size: PVC, Schd. 40/10 slot in.

Casing: Dia: NA | Length: NA | Type: NA

Fill Material: Morie sand/bentonite | Rig/Core: Van mounted Geoprobe

Drill Co.: ADT | Method: Direct push

Driller: Roger Bulley | Log By: M. Puglisi | Date: 7/10/03 | Permit #: NA

Checked By: | License No.:

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Brown, dry, f-sand, silt, no odors or staining (fill).
2		0.0	1 / 100%				
4							Brown, clayey silt, little gray mottling through out, becoming moist to wet with depth, no odors or staining, wetness may be from yesterdays rain.
6		0.0	2 / 100%			ML	
8							Same as above, 0.8' thick sand lens at 10.8' of m-c sand, saturated, material goes back to clayey silt below sand. Sand is possible water table, silt is also saturated below sand, took sample and may use as water contact- NLDA-SS-SB28-1087.
10 ▽		0.0	3 / 100%			ML	
12							Clayey silt top 0.7', then changes to m-c sand + f-c gravel, saturated. No odors or stains.
14		0.0	4 / 90%			ML	
16							M-sand, saturated, little c-sand, trace c-gravel, no odors or staining.
18		0.0	5 / 70%			SP	
20							M-c sand and f-c gravel, saturated. No odors or staining.
22		0.0	6 / 75%			SP	
24							

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Monitoring Well **SB/LMW-28**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
24							*Continued*
26		0.0	7 / 50%			SP	Same as above.
28							Bottom 2' is gray till, top is same as above. Gray till contact at 29.3', took sample with MS/MSD NLDA-SS-SB28-1090. No odors or staining.
30		0.0	8 / 100%			SP SM	
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Monitoring Well **SB/LMW-29**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *22.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial ▽ *10.0 ft.* Static *NA* Diameter *2.125 in.*

Screen: Dia *1 in.* Length *10 ft.* Type/Size *PVC, Schd. 40/10 slot in.*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Morie sand/bentonite* Rig/Core *Van mounted Geoprobe*

Drill Co. *ADT* Method *Direct push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *7/15/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Brown, dry to moist, f-m sand, trace f-gravel, no odors or staining.
2		0.0	1 / 95%			SP	
4							Brown and black, m-sand, little c-sand, moist.
6		0.0	2 / 100%			SP	
8							Top 1.8' is same as above-becoming wetter. At 10' is water contact, 0.3' lens of f-sand, then 0.6' lens of m-sand, then remainder of tube has alternating bands of f- m sand. Water contact 10' sample NLDA-SS-SB29-1091, field dupe NLDA-SS-X11-1092.
10 ▽		0.0	3 / 95%			SP	
12							Saturated f-m sand no odors or staining.
14		0.0	4 / 70%			SP	
16							Opened piston at 16.5' - cone was loose in hole so we could not open sampler, pushed 0.5' to tighten it up. F-m sand, trace f-c gravel, bottom 0.6' is gray till (18.7'), tight, no odors or staining. Took sample NLDA-SS-SB29-1093 with MS/MSD.
18		0.0	5 / 90%			SP	
20							Gray till.
22		0.0	6 / 100%			SP SM	
24							

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Drilling Log

Soil Boring **SB-30**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *14.9 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter _____

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van mounted Geoprobe*

Drill Co. *ADT* Method *Direct push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *7/17/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	Gray till, damp at surface, took sample from 4', NLDA-SS-SB30-1098.
4						Gray till, stuck liner, pounded out.
6	0.0	2 / 100%			SP SM	
8						Gray till, tight.
10	0.0	3 / 100%			SP SM	Gray till.
12	0.0	4 / 100%			SP SM	Gray till.
14	0.0	5 / 100%			SP SM	
16	0.0	6 / 100%			SP SM	Gray till with fractured rock in bottom 0.4', moist. Took bottom sample above rock, NLDA-SS-SB30-1099.
18						
20						
22						
24						

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Drilling Log

Soil Boring **SB-31**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *9.9 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter _____

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *7/21/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 40%			SP SM	Top 1' is brown silty f-sand, little m-c. Bottom 0.5' is gray till, took till contact sample NLDA-SS-SB31-1100, field dupe NLDA-SS-X12-1101.
4						
6	0.0	2 / 100%			SP SM	Gray till, refusal at 6.9', overpacked liner by picking up material from above.
8	0.0	3 / 100%			SP SM	Opened closed piston at 7', pushed to 9'. All gray till.
10	0.0	4 / 100%			SP SM	Gray till, refusal at 9.9', sample NLDA-SS-SB31-1102
12						
14						
16						
18						
20						
22						
24						

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Drilling Log

Soil Boring **SB-32**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *14.5 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter _____

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van mounted Geoprobe*

Drill Co. *ADT* Method *Direct push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *7/16/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	Root material, reworked gray till, damp, no odors or staining.
4						
6	0.0	2 / 100%			SP SM	Gray till, damp, becomes very tight at 5.7'. Used 5.7' as gray till contact, NLDA-SS-SB32-1096.
8	0.0	3 / 100%			SP SM	Gray till, tight.
10	0.0	4 / 100%			SP SM	Used closed piston. Gray till.
12	0.0	5 / 100%			SP SM	Gray till, bottom 0.3' is f-m sand, damp, refusal at 14.5'. Taking sample from sand, NLDA-SS-SB32-1097.
14						
16						
18						
20						
22						
24						

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Drilling Log

Soil Boring **SB-33**

Project *Land Disposal Area* Owner *KAPL*

Location *Niskayuna* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *11.1 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter _____

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *7/21/03* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown, f-m sand, some f-c gravel.
2	0.0	1 / 95%			SP	
4						0.2' of material-same as above, remainder is gray till, took sample NLDA-SS-SB33-1103 with MS/MSD.
6	0.0	2 / 100%			SP SM	
8						Gray till, taking sample at bottom, NLDA-SS-SB33-1106. Refusal at 11.1'.
10	0.0	3 / 100%			SP SM	
12						
14						
16						
18						
20						
22						
24						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Monitoring Well **SB/LMW-34**

Project: Land Disposal Area, Additional Wells — Owner: KAPL

Location: Niskayuna, NY — Proj. No.: 844097

Surface Elev.: NA — Total Hole Depth: 24.0 ft. — North: — East: —

Top of Casing: NA — Water Level Initial: ▽ 9.0 ft. — Static: NA — Diameter: 2.125 in.

Screen: Dia: 1 in. — Length: 10 ft. — Type/Size: PVC, Schd. 40/10 in.

Casing: Dia: NA — Length: NA — Type: NA

Fill Material: Morie sand/bentonite — Rig/Core: Small Track Mounted Geoprobe

Drill Co.: ADT — Method: Direct Push

Driller: Roger Bulley — Log By: R. Eaton — Date: 10/16/03 — Permit #: NA

Checked By: NA — License No.: NA

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Brown, f-silty sand, dry, no stains or odor.
2		0.0	1 / 100%			SM	
4							Brown silty clay, moist to wet, no stains or odors.
6		0.0	2 / 100%			OL	
8							Same as above, 2' of sluff, 2' silty clay. Perched water contact at 9', no sample collected.
▽		0.0	3 / 100%			OL	
10							1' of sluff, wet, 2' gray silty clay, moist.
		0.0	4 / 100%			OL	
12							0.8' sluff, brown silty clay, 0.4' of gray silty clay (lacustrine).
		0.0	5 / 50%			OL	
14							No recovery.
		0.0	6 / 0%				
16							Gray lacustrine clay, 2.8', 0.2' brown f-m sand, dry, no stains or odors.
18		0.0	7 / 75%			OL	
20							2' of brown f-m sand, wet. Then 2' of gray till at 22', sample NLDA-SS-SB34-1128.
						SP	
22		0.0	8 / 100%			SP SM	
24							

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDAADWLS.GPJ IT_CORP.GDT 10/26/04

Drilling Log

Monitoring Well **SB/LMW-35**

Project: Land Disposal Area, Additional Wells — Owner: KAPL

Location: Niskayuna, NY — Proj. No.: 844097

Surface Elev.: NA — Total Hole Depth: 28.0 ft. — North: — East: —

Top of Casing: NA — Water Level Initial: ▽ 15.8 ft. — Static: NA — Diameter: 2.125 in.

Screen: Dia: 1 in. — Length: 10 ft. — Type/Size: PVC, Schd. 40/10 in.

Casing: Dia: NA — Length: NA — Type: NA

Fill Material: Morie sand/bentonite — Rig/Core: Small Track Mounted Geoprobe

Drill Co.: ADT — Method: Direct Push

Driller: Roger Bulley — Log By: M. Puglisi/R. Eaton — Date: 10/14/03 — Permit #: NA

Checked By: NA — License No.: NA

COMMENTS

Started on 10/14/03, did not finish until 10/16/03 due to difficulties with the sampler and weather.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0							
2		0.0	1 / 95%			SP SM	Brown, f-silty sand, no odors, stains.
4							
6		0.0	2 / 75%			SP SM	1' of f-silty sand, 2' f-sand, brown, no odors, stains, dry.
8							
10		0.0	3 / 100%			SP	Brown, f-m sand, dry, no stains/odor.
12		0.0	4 / 75%			SP	Brown, f-m sand, dry, no stains/odors.
14		0.0	5 / 100%			SP	Brown, f-m sand, dry, no stains/odors. Wet at 15.8', sample NLDA-SS-SB35-1126.
16 ▽		0.0	6 / 100%			SP	Brown, f-m sand, dry, no stains/odors, moist to wet.
18		0.0	7 / 100%			SP	Brown, saturated, f-m sand, no stains/odors.
20		0.0	8 / 100%			SP	Same as above.
22		0.0	9 / 100%			SP	Stuck liner, same as above, small lens of silt at 23.2'-23.7', no stains/odors.
24							

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Drilling Log

Monitoring Well **SB/LMW-35**

Project *Land Disposal Area, Additional Wells* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
24							*Continued*
			10				No recovery, liner was stuck in macro core, could not pound out.
26							
		0.0	11 / 100%			SP SM	Sand sluff, till contact at 26', sample NLDA-SS-SB35-1127, wet gray till.
28							
30							
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

IT_COMMERCIAL Rev: 12/6/99 KAPLLDAADWLS.GPJ IT_CORP.GDT 10/28/04

Drilling Log

Monitoring Well **SB/LMW-36**

Project: Land Disposal Area, Additional Wells — Owner: KAPL

Location: Niskayuna, NY — Proj. No.: 844097

Surface Elev.: NA — Total Hole Depth: 17.0 ft. — North: — East: —

Top of Casing: NA — Water Level Initial: ▽ 8.5 ft. — Static: NA — Diameter: 2.125 in.

Screen: Dia: 1 in. — Length: 10 ft. — Type/Size: PVC, Schd. 40/10 in.

Casing: Dia: NA — Length: NA — Type: NA

Fill Material: Morie sand/bentonite — Rig/Core: Small Track Mounted Geoprobe

Drill Co.: ADT — Method: Direct Push

Driller: Roger Bulley — Log By: M. Puglisi — Date: 10/14/03 — Permit #: NA

Checked By: NA — License No.: NA

COMMENTS

Original well found broken at ~8.7'; obstructed could not sample. Installed new well in adjacent bore-hole.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Brown, f-m sand, soft, moist, no odors/stains.
2		0.0	1 / 85%			SP	
4							Brown, wet, f-m sand, no stains/odors, soft, got a little harder at 6.6'.
6		0.0	2 / 75%			SP	
8 ▽							Brown, f-m sand, no stains/odor, saturated at 8.5', took sample NLDA-SS-SB36-1124 with MS/MSD.
10		0.0	3 / 100%			SP	
12						SP	Same as above, hit gray till at 14', took sample NLDA-SS-SB36-1125, till was wet.
14		0.0	4 / 100%			SP SM	
16		0.0	5 / 100%			SP SM SW SP SM	0.3' of gray till, then gray m-sand for 0.7', then back to gray till, no stains/odors.
18							
20							
22							
24							

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/8/99 KAPLLDAADWLS.GPJ IT_CORP.GDT 10/26/04

Drilling Log

Monitoring Well **SB/LMW-37**

Page: 1 of 1

Project *Land Disposal Area, Additional Wells* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *26.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial ▽ *5.0 ft.* Static *NA* Diameter *2.125 in.*

Screen: Dia *1 in.* Length *10 ft.* Type/Size *PVC, Schd. 40/10 in.*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Morie sand/bentonite* Rig/Core *Small Track Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/13/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Initial refusal at 6.5', move north 1', refusal at 7.3', all newspaper in tube and rocks in drive shoe. Will drive to 8' in same hole with drive point. We made it to 8', and continued sampling.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0							Brown, sand + gravel, fining to 3.5' then just f-m sand, soft, little silty clayey, moist.
2		0.0	1 / 70%			SP	
4	▽						Saturated, clayey f-m sand, water contact at 5', sample NLDA-SS-SB37-1119, field dupe NLDA-SS-X14-1120. Pieces of cardboard/paper, with some fibrous material-possibly some type of insulation. Refusal at 6.5'.
6		0.0	2 / 100%				
8		0.0	3 / 100%			SP	Drove to 8' with drive point in same hole. Saturated, m-sand starting at 8.5', black/gray.
10		0.0	4 / 100%			SP	Same as above, no stains/odors, little dryer.
12							Same as above with some c-sand, becomes saturated again.
14		0.0	5 / 60%			SP	
16							Same as above, turning brown with depth, bottom 0.7' is f-silty sand.
18		0.0	6 / 85%			SP	
20						SP	Same as above, gray till at 21.5' tight, wet, took sample NLDA-SS-SB37-1123.
22		0.0	7 / 100%			SP SM	
24						SP SM	All tight wet, gray till.
26		0.0	8 / 100%				

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDAADWLS.GPJ IT_CORP.GDT 10/26/04

SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC

KNOLLS ATOMIC POWER LABORATORY

BORING LOG

PROJECT NUMBER: 823311	PROJECT NAME: KAPL - LDA SV		
BORING NUMBER: W-3	COORDINATES: NA	DATE: 10/15/2002	
ELEVATION: NA	GROUNDWATER LEVEL: 12.5'	DATE STARTED: 10/15/2002	
ENGINEER/GEOLOGIST: T. LECALVEZ	TOTAL WELL DEPTH: 54'	DATE INSTALL.: 10/15/2002	
DRILLING METHODS: HOLLOW STEM AUGERS		PAGE: 1 OF 1	

DEPTH (ft)	SAMPLE INTERVAL	BLOW CT (6")	RECOVERY	DESCRIPTION	USCS SYMBOL	GRAPHIC LOG	WELL CONST.	PID (ppm)	Remarks
	NA	NA	NA	NA	NA	NA		NA	2" of sacrete to -2" bsg and a 3' riser and well protector above surface grade
10	NA	NA	NA	NA	NA	NA		NA	
20	NA	NA	NA	NA	NA	NA		NA	concrete/bentonite seal (-2' to -44')
30	NA	NA	NA	NA	NA	NA		NA	
40	NA	NA	NA	NA	NA	NA		NA	Bentonite Seal (-44' to -47')
50	NA	NA	NA	NA	NA	NA			# 1 - Sand Pack (-47' to 54)'
60									

NOTES:

Drilling Contractor: AQUIFER DRILLING & TESTING
Drilling Equipment: HOLLOW STEM AUGERS
Driller: Roger B.
Water used to assist in the well installation came from an on-site hydrant containing municipal water

NA: Not Applicable
RFSL: REFUSAL (macro sampler)

SACRETE
grout
bentonite
morie Sand
2"- Solid PVC-Riser
2" - Slotted PVC Riser

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-1
PROJECT Knolls Atomic Power Laboratory		
CLIENT CATOH Environmental Companies, Inc.		SHEET 1 OF 3
DRILLING CONTRACTOR CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942
PURPOSE		ELEVATION
GROUNDWATER	CASING / SAMPLE / CORE	DATUM
DATE / TIME / DEPTH / CASING / TYPE	SS	DATE STARTED
DIAMETER	2" OD	DATE FINISHED
WEIGHT	140#	DRILLER
FALL	30"	INSPECTOR Walter O. Howard

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
5		S-1	2, 2, 2, 3	ML/CL		Br Cy$ Brown Clayey SILT	
10		S-2	5, 6, 6, 7	ML/CL		DO	
						Inferred 13.5'	
15		S-3	3, 4, 4, 3	CL/ML		Gr C & $ Gray CLAY & SILT	
20						(GLACIOLACUSTRINE)	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-1
PROJECT Knolls Atomic Power Laboratory		SHEET 2 OF 3
CLIENT CATOH Environmental Companies, Inc.		JOB NO. 401-16-

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-4	4 5 5 5	CL/ ML		Gr C&S	
						(GLACIOLACUSTRINE) Inferred 23.5'	
25		S-5	14 17 17 19	GM		Gr C(-) mfGs, fS, s(-)$&C G angular - subrounded	
		S-6	45 57 75	GM		DO Gray coarse (-) to fine GRAVEL and, fine Sand, and (-) Silty Clay.	
35		S-7	61 59 68	ML/ GM		Gr Cy$ a, fS, s(+)mfG G subrounded	
40		S-8	61 72	ML/ GM		DO	
						(GLACIAL TILL)	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-1
PROJECT Knolls Atomic Power Laboratory		SHEET 3 OF 3
CLIENT CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
						No sample available 40-42'	
45		S-10	32 51 60	ML/ GM		Gr Cy$ a, mfS, s(-)c(-)mfG	
		S-11	42 61	ML/ GM		Gr Cy$S, mfS, s(-)mfG Gray Clayey SILT and (+), medium to fine Sand, some (+) medium to fine Gravel.	
55		S-12	35 51 60	GM		Gr cmfGa, cmfS, lCy$	
60		S-13	16 24 41	ML/ GM		Gr S&C s, f S, s(-) mf G	
		S-14	Washed sample			(GLACIAL TILL) 64.0' Bedrock : Dk Gr to bk shale Bottom of Boring at 69.0'	Roller Cone to 69'

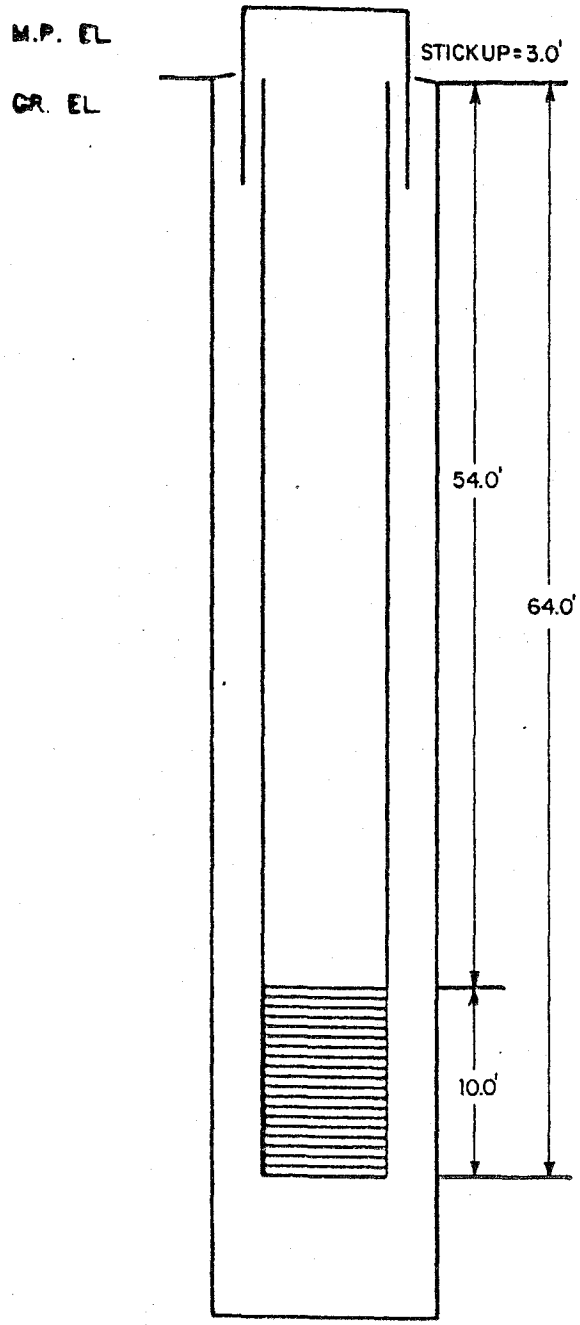
MONITORING WELL COMPLETION LOG

WELL NO. W-1

DUNN GEOSCIENCE CORPORATION

Project Knolls Atomic Power Lab.
Client CATOH Environmental Co.
Project No. 401-16-4942
Date Drilled _____
Date Developed _____
Area Desig. _____

WELL CONSTRUCTION DETAIL



NOT TO SCALE

Inspector Walter O. Howard
Drilling Contractor CATOH Environmental Co., Inc.

Type of Well
Static Water Level _____ **Date** _____
Measuring Point _____
Total Depth of Well _____
Total Depth of Boring _____

Drilling Method
Type HSA **Diameter** 4¼"
Casing _____

Sampling Method
Type _____ **Diameter** _____
Weight _____ **Fall** _____
Interval _____

Riser Pipe left in Place
Material PVC **Diameter** 2"
Length 57.0' **Joint Type** _____

Screen
Material PVC **Diameter** 2"
Slot Size 010 **Interval** _____
Stratigraphic Unit Screened _____

Filter Pack
Sand Sand Pack **Gravel** _____ **Natural** _____
Amount _____ **Interval** 6-69.0'

Seal(s)
Type Bentonite Pellets **Interval** _____
Type _____ **Interval** _____

Locking Casing ☐ Yes ☐ No

Notes: a 2" PVC sump, 5.0' in length, extends from the bottom of the screen to 69.0'

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-2
PROJECT Knolls Atomic Power Laboratory		
CLIENT CATOH Environmental Companies, Inc.		SHEET 1 OF 3
DRILLING CONTRACTOR CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942
PURPOSE		ELEVATION
GROUNDWATER	CASING / SAMPLE / CORE	DATUM

DATE	TIME	DEPTH	CASING	TYPE		SS		DATE STARTED
				DIAMETER		2" OD		DATE FINISHED
				WEIGHT		140#		DRILLER
				FALL		30"		INSPECTOR Walter O. Howard

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
5		S-1	4 5 5 5	ML/ CL		Br Cy$	
10		S-2	12 12 13 14	ML/ CL		DO Brown Clayey SILT.	
15		S-3	7 7 7 8	ML/ CL		Gr lt br $&C	
20						(GLACIOLACUSTRINE)	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-2
PROJECT Knolls Atomic Power Laboratory		SHEET 2 OF 3
CLIENT CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-4	10 11 12 14	ML/ CL		Gr Cy$	
						(GLACIOLACUSTRINE)	
25		S-5	13 13 12 10	CL/ SP		Br c(-)mf(+)S, t$, 1(+)mfG Ins Br $ C inferred 26.5'	
30		S-6	10 11 10 12	SM		Br cmfS, 1(-)$, s(-) mfG Brown coarse to fine SAND, little (-) Silt, some (-) medium to fine Gravel. (GLACIAL OUTWASH) inferred 33.5'	G subrounded
35		S-7	21 34 36 47	GM		Gr c(-)mfG a, mfS, 1Cy$ Gray medium to fine SAND, and Clayey Silt, and coarse (-) to fine (+) Gravel.	
40		S-8	39 50 56	ML/ GM		Gr C&$ s, fS, s(-) mf(+)G (GLACIAL TILL) inferred 43.5' (GLACIAL OUTWASH)	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-2
PROJECT Knolls Atomic Power Laboratory		SHEET 3 OF 3
CLIENT CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-9	14 20 16 18	SM		Br cmfS, 1$, 1(-)fG Brown coarse to fine SAND, little Silt, little (-) fine Gravel. (GLACIAL OUTWASH) inferred 48.5'	
50		S-10	21 33 41 51	ML-GM		Gr $&C s, mfS, s(-) mfG	
55		S-11	19 27 32	ML/GM		Gr $y C s(+), mfS, s mf(+)G Gray SILT & CLAY some (+), medium to fine Sand, some medium to fine Gravel.	
60		S-12	52 70	ML/GM		Gr $yC a, c(-)mfS, smfG (GLACIAL TILL) 61.0' Bedrock : Dark Gray Shale	t Bedrock fgmt Roller Cone to 66'
65						Bottom of Boring: 66.0'	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-3
PROJECT Knolls Atomic Power Laboratory		
CLIENT CATOH Environmental Companies, Inc.		SHEET 1 OF 2
DRILLING CONTRACTOR CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942
PURPOSE		ELEVATION

GROUNDWATER					CASING	SAMPLE	CORE	
DATE	TIME	DEPTH	CASING	TYPE		SS		DATE STARTED
				DIAMETER		2"OD		DATE FINISHED
				WEIGHT		140#		DRILLER
				FALL		30"		INSPECTOR Walter O. Howard

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-1	3 4 4 3	ML/ CL		Br Cy$	
5		S-2	5 6 6 8	ML		Br $(-), occ Cy$	
10		S-3	3 3 3 4	ML/ CL		Lt Br tn $&C Brown clayey SILT	
15		S-4	3 4 4 3	ML		Br $ SILT (GLACIOLACUSTRINE)	
20		S-5	3 3	ML/ CL		Br $&C 1, c(-)mf(+)S, tfG (GLACIOLACUSTRINE)	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-3
PROJECT Knolls Atomic Power Laboratory		SHEET 2 OF 3
CLIENT CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-5	3 4	ML/ CL		(GLACIOLACUSTRINE)	
						inferred 22.5'	
			12 20 26 35			Gr $&C s(-), cmfS, 1 m(-)fG	
25		S-6					
		S-7	17 26 38 52	ML/ GM		DO Gray SILT and CLAY some, coarse to fine Sand, little (+) coarse (-) to fine Gravel.	
30							
		S-8	19 29 56 100/.3	ML/ GM		Gr $&C a, cmfS, sc(-)mfG	
35							
		S-9	22 33 56 51	ML/ GM		DO	
40							
						(GLACIAL TILL)	
		S-10	37 100/.3	ML/ CL		Gr C&$ 1, cmfS, 1(-)mfG 44.8' Bedrock at 44.8' Dark Gray Shale	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-3
PROJECT Knolls Atomic Power Laboratory		SHEET 3 OF 3
CLIENT CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
						DO	
			100/.3				
50							
							Roller Cone to 54'
						Bottom of Boring at 54.0'	
55							

MONITORING WELL COMPLETION LOG

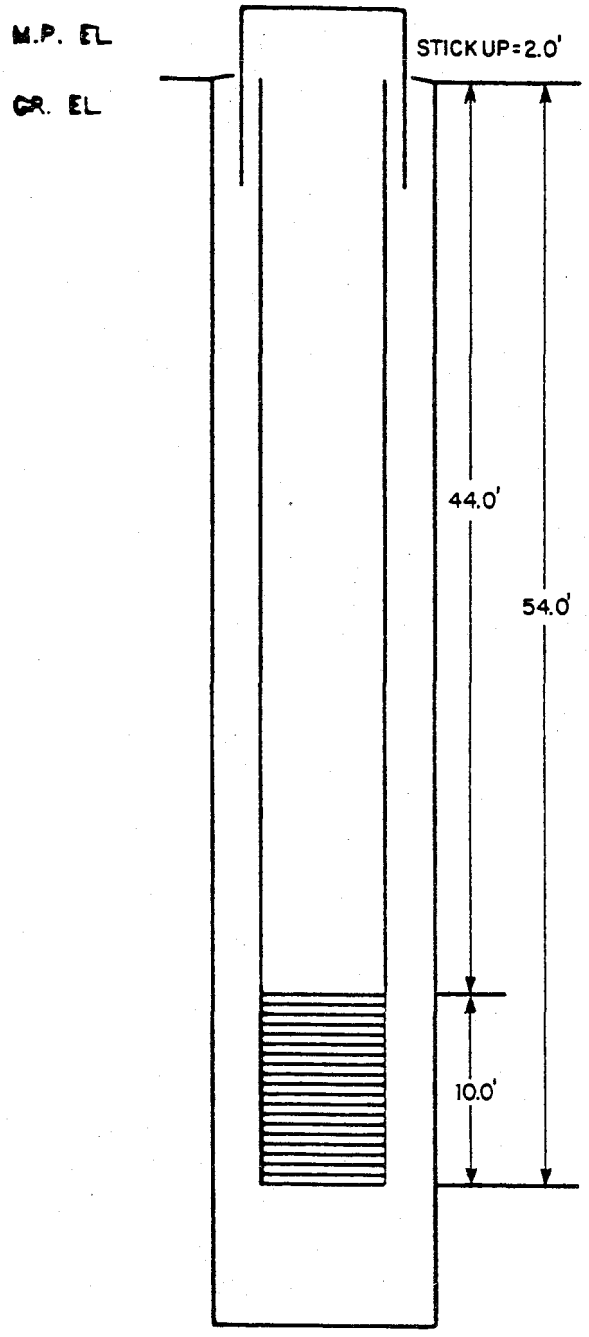
WELL NO. W-3

DUNN GEOSCIENCE CORPORATION

Project Knolls Atomic Power Lab.
Client CATOH Environmental Co., Inc.
Project No. 401-16-4942
Date Drilled _____
Date Developed _____
Area Desig. _____

GR 309.92
PVC 3(2,1)

WELL CONSTRUCTION DETAIL



NOT TO SCALE

Inspector Walter O. Howard
Drilling Contractor CATOH Environmental Co., Inc.

Type of Well
Static Water Level _____ **Date** _____
Measuring Point _____
Total Depth of Well _____
Total Depth of Boring _____

Drilling Method
Type HSA **Diameter** 4¼"
Casing _____

Sampling Method
Type _____ **Diameter** _____
Weight _____ **Fall** _____
Interval _____

Riser Pipe left in Place
Material PVC **Diameter** 2"
Length 46.0' **Joint Type** _____

Screen
Material PVC **Diameter** 2"
Slot Size 010 **Interval** _____
Stratigraphic Unit Screened _____

Filter Pack
Sand Sand Pack **Gravel** _____ **Natural** _____
Amount _____ **Interval** 7.0-54.0'

Seal(s)
Type Bentonite Pellets **Interval** _____
Type _____ **Interval** _____

Locking Casing ☐ Yes ☐ No
Notes:

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-4
PROJECT Knolls Atomic Power Laboratory		
CLIENT CATOH Environmental Companies, Inc.		SHEET 1 OF 2
DRILLING CONTRACTOR CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942
PURPOSE		ELEVATION
GROUNDWATER	CASING / SAMPLE / CORE	DATUM
DATE / TIME / DEPTH / CASING	TYPE: SS	DATE STARTED
	DIAMETER: 2"OD	DATE FINISHED
	WEIGHT: 140#	DRILLER
	FALL: 30"	INSPECTOR Walter O. Howard

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-1	100/.5 Washed Sample	ML/ CL		Br C&$t, fS; t rts Brown black CLAY & SILT some (-), coarse (-) to fine (+) Sand; trace roots	
5		S-2	5 6 8 8	ML/ CL		Dk Br bk Cy$ a, c(-)mf(+)S (FILL) inferred 7.5'	
10		S-3	19 26 72 58	GM/ CL/ ML		Dk Gr c(-)mfG a, cmf(+)S, a(-)C&$; t cbl fgmt (qtzite)	
15		S-4	62 100/.5	CL/ ML/ GM		Dk Gr C&$ a(-), c(-)mfS, s(-)mfG Dark Gray CLAY & SILT and, coarse (-) to fine (+) Sand, some (+) coarse (-) to fine (+) Gravel.	
20		S-5	38 100/.3	ML/ GM		Dk Gr $&C s, mfS, 1(+)mfG (GLACIAL TILL)	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-4
PROJECT Knolls Atomic Power Laboratory		SHEET 2 OF 2
CLIENT CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSI-FICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-6	Cuttings			Dk Gr Shale, tr Qtz and calcite	Roller cone 19.8' to 24.8'
25						Bottom of boring = 24.8'	

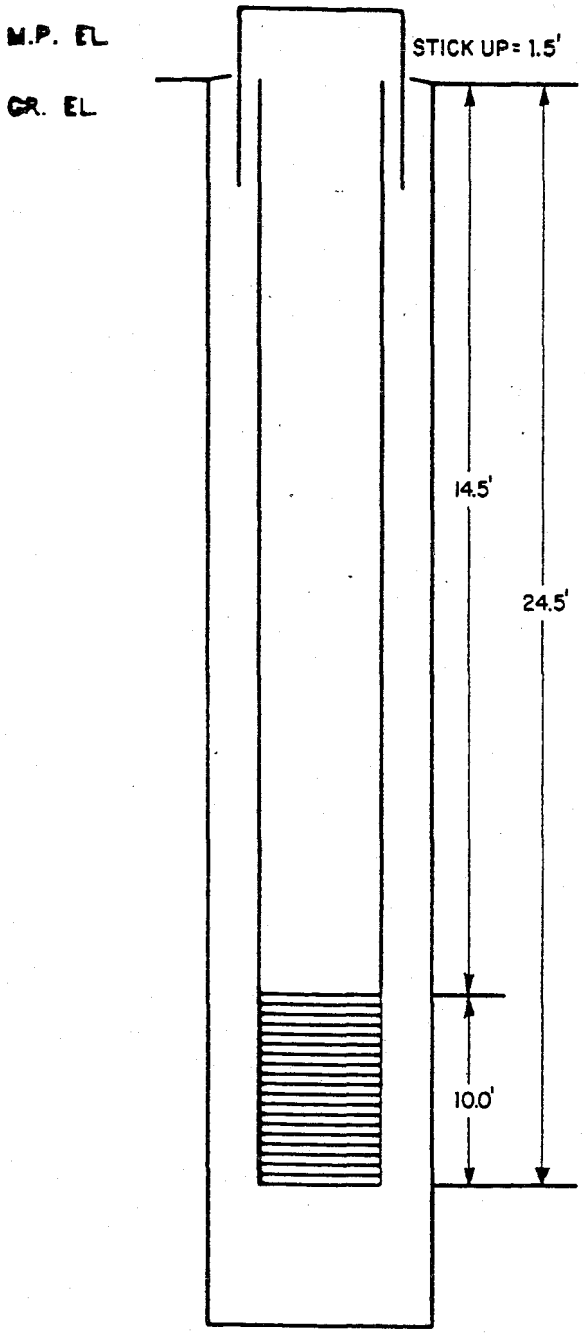
MONITORING WELL COMPLETION LOG

WELL NO. W-4

DUNN GEOSCIENCE CORPORATION

Project Knolls Atomic Power Laborato
Client CATOH Environmental Co. Inc.
Project No. 401-16-4942
Date Drilled _____
Date Developed _____
Area Desig. _____

WELL CONSTRUCTION DETAIL



NOT TO SCALE

Inspector Walter O. Howard
Drilling Contractor CATOH Environmental Co., Inc.

Type of Well
Static Water Level _____ Date _____
Measuring Point _____
Total Depth of Well _____
Total Depth of Boring _____

Drilling Method
Type HSA Diameter 4¼"
Casing _____

Sampling Method
Type _____ Diameter _____
Weight _____ Fall _____
Interval _____

Riser Pipe left in Place
Material PVC Diameter 2"
Length 16 Joint Type _____

Screen
Material PVC Diameter 2"
Slot Size 010 Interval 10.0'
Stratigraphic Unit Screened _____

Filter Pack
Sand Sand Pack Gravel _____ Natural _____
Amount _____ Interval 6.0-24.5'

Seal(s)
Type Bentonite Pellets Interval _____
Type _____ Interval _____

Locking Casing ☐ Yes ☐ No
Notes:

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-8
PROJECT Knolls Atomic Power Laboratory		
CLIENT CATOH Environmental Companies, Inc.		SHEET 1 OF 2
DRILLING CONTRACTOR CATOH Environmental, Inc.		JOB NO. 401-16-4942
PURPOSE		ELEVATION
GROUNDWATER	CASING / SAMPLE / CORE	DATUM

DATE	TIME	DEPTH	CASING	TYPE		SAMPLE	CORE	
						SS		DATE STARTED
				DIAMETER		2" OD		DATE FINISHED
				WEIGHT		140#		DRILLER
				FALL		30"		INSPECTOR Walter O. Howard

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-1	1 1 2 6	SM		Lt Br tn Gr cmfS, a C&$, s mf G; t rts Light Brown tan gray coarse to fine SAND, and Clay & Silt, some medium to fine Gravel, trace roots. (FILL) inferred 3.5'	
5		S-2	21 34 42 60	SM/ SP		Dk Gr gn cmfS, s(+)$, s c(-)mfG	
10		S-3	42 51	ML/ GM		Gr $ a, c(-)mf(+)S, s mf G Gray Clayey SILT and (+), coarse (-) to fine Sand, some (+) coarse (-) to fine (+) Gravel.	
15		S-4	54 62	ML/ GM/ SM		DO; lyr Gr c(+)mf S, l(-)$, s fG	
20						(GLACIAL TILL)	

DUNN GEOSCIENCE CORPORATION LATHAM, NEW YORK (518) 783-8102	TEST BORING LOG	BORING NO. W-8
PROJECT Knolls Atomic Power Laboratory		SHEET 2 OF 2
CLIENT CATOH Environmental Companies, Inc.		JOB NO. 401-16-4942

DEPTH FT.	CASING BLOWS	SAMPLE NUMBER	BLOWS ON SAMPLE SPOON PER 6"	UNIFIED CLASSIFICATION	GRAPHIC LOG	IDENTIFICATION	REMARKS
		S-5	31 52	ML/ GM		DO; No Lyrs	
25		S-6	62 71	ML/ CL/ GM		Gr $&C s, f S, s(-)mfG; poss lyr Gr mfG 1 (+), cmfS, t $&C Gray Clayey SILT and (+), coarse (-) to fine Sand, some (+) coarse (-) to fine (+) Gravel.	
30		S-7	51 79	GM/ ML		Gr mf(+) G a, cmf S, 1(+) $&C	
35		S-8	78 100	ML/ CL/ GM		Gr $&C a, c(-)mfS, s c(-)mfG (GLACIAL TILL)	Roller Cone 36.0' to 41.0'
		S-9	Washed sample			Bedrock = 36' Dark Gray Shale	
40						Bottom of Boring = 41.0'	

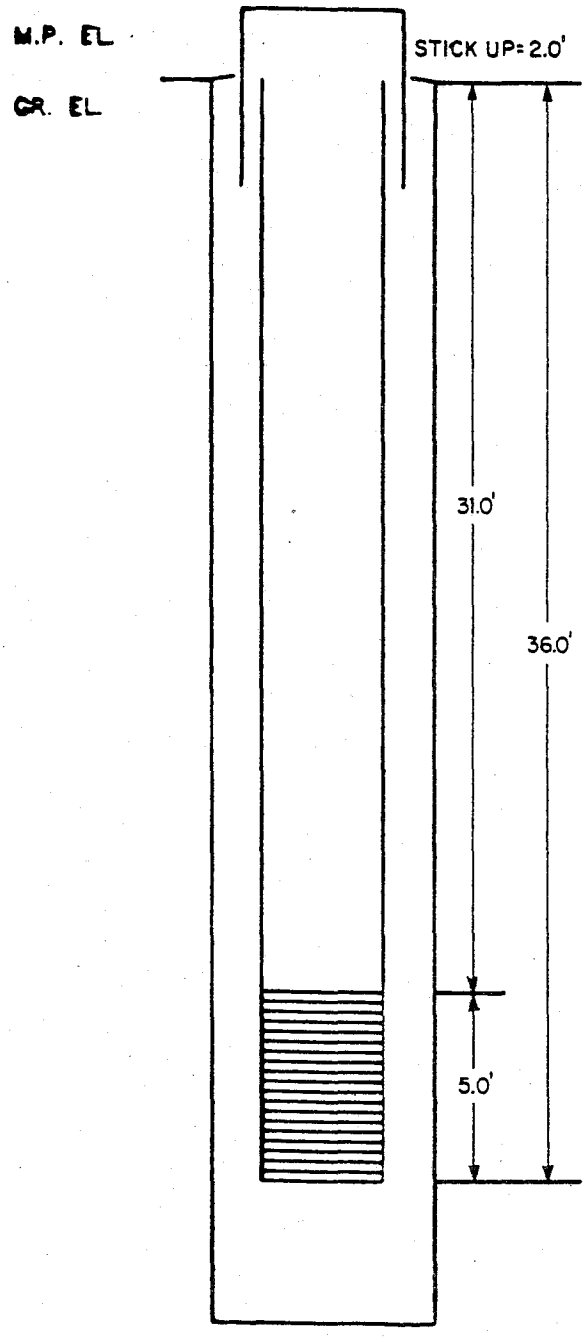
MONITORING WELL COMPLETION LOG

WELL NO. W-8

DUNN GEOSCIENCE CORPORATION

Project Knolls Atomic Power Laborato:
Client CATOH Environmental Co., Inc.
Project No. 401-16-4942
Date Drilled
Date Developed
Area Desig.

WELL CONSTRUCTION DETAIL



NOT TO SCALE

Inspector Walter O. Howard
Drilling Contractor

Type of Well
Static Water Level Date
Measuring Point
Total Depth of Well
Total Depth of Boring

Drilling Method
Type HSA Diameter 4¼"
Casing

Sampling Method
Type Diameter
Weight Fall
Interval

Riser Pipe left in Place
Material PVC Diameter 2"
Length 33.0' Joint Type

Screen
Material PVC Diameter 2"
Slot Size 010 Interval
Stratigraphic Unit Screened

Filter Pack
Sand Sand Pack Gravel Natural
Amount Interval 6.0-41.0'

Seal(s)
Type Bentonite Pellets Interval
Type Interval

Locking Casing ☐ Yes ☐ No

Notes:
a 2" PVC sump, 5.0' in length, extends from the bottom of the screen to 41.0'

DATE
STARTED 2-10-88
FINISHED 2-10-88
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

HOLE NO. MW-2
SURF. ELEV.
G. W. DEPTH See Tabulation

PROJECT Proposed C & D Landfill
Knolls Atomic Power Laboratory

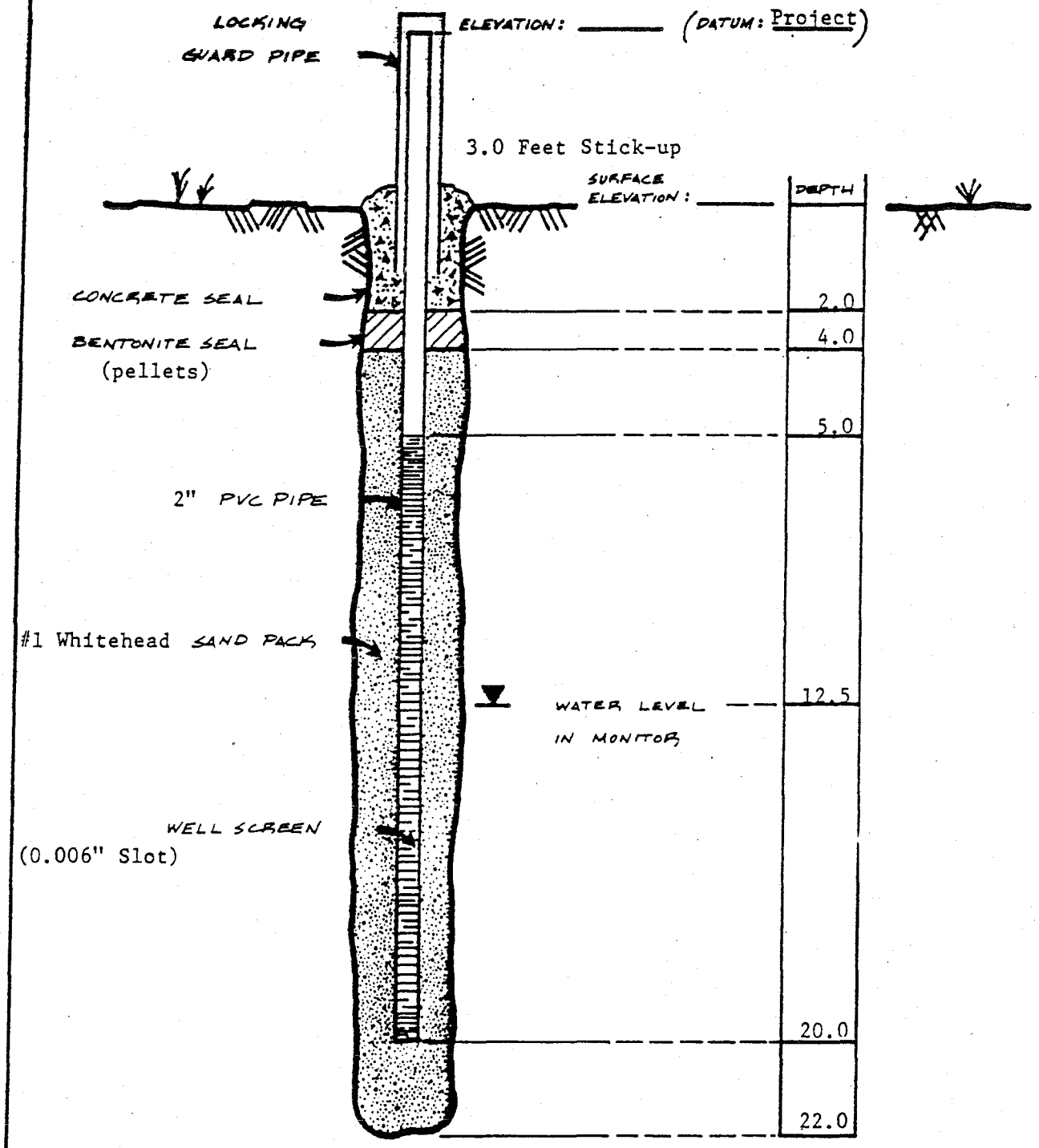
LOCATION Niskayuna, New York

DEPTH FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	REC.	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	4	2		3	1.3	Light brown CLAY, Some Silt, trace organics as root fibers.	Note #1: First saturated sample was recovered from 10 - 12 feet.
			1	2					
5		2	1	2		4	2.0	grades light brown SILT, little clay with thin seams of light brown CLAY, little silt.	
			2	2					
10		3	3	4		7	2.0	Brown CLAY, Some Silt with thin seams of light brown CLAY, little silt, grading to gray CLAY, Some Silt with thin seams of light brown CLAY, little silt.	
			3	4					
								(Moist to Wet-Soft to Medium)	
15		4	9	17		44	1.5	Brownish gray fine to coarse SAND and gravel, little silt.	
			27	22					
								(Wet - Compact)	Note #2: Auger change noted at ±18.5 feet.
20		5	9	19		48	1.8	Glacial Till: Gray Silt, little clay with Some embedded medium and coarse Sand and fine to coarse Gravel.	
			29	28					
								(Damp - Compact)	
								Boring Complete @ 22.0'	

N = No blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow.

CLASSIFICATION Visual by Geologist

METHOD OF INVESTIGATION 4¼" I.D. Hollow Stem Auger Casing



WELL No

MW-2

EMPIRE

MONITORING WELL DETAILS

Proposed C & D Landfill
KAPL - Niskayuna, New York

DR BY	KM	SCALE	N.T.S.	PROJ NO	ATA-87-257
CK'D BY		DATE	2-88	DRWG NO	2

DATE
STARTED 2-9-88
FINISHED 2-10-88
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC. — **SUBSURFACE LOG**

HOLE NO. MW-3
SURF. ELEV.
G. W. DEPTH See Tabulation

PROJECT Proposed C & D Landfill
Knolls Atomic Power Laboratory

LOCATION Niskayuna, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	REC.	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	3 2	2 3		4	1.2	Light brown CLAY, little to Some Silt trace organics as root fibers.	
5		2	1 3	1 2		4	2.0	similar with thin seams of desicated CLAY, little silt.	
10		3	1 2	1 2		3	2.0	grades gray CLAY, Some Silt with thin seams of light gray CLAY, little silt. (Moist to Wet - Soft)	Note #1: Lower portion of sample 3 was saturated. Note 2: Auger change noted at ±14.0 feet.
15		4	16	28	44	72	1.3	Brown fine to medium SAND, little coarse sand and fine gravel, trace silt.	
20		5	16	23	33	56	1.4	grades gray fine SAND, Some Silt, little medium and coarse sand, trace fine gravel. (Wet - Very Compact)	Note #3: Auger change noted at ±23.0 feet.
25		6	28	33	67	100	1.2	Glacial Till: Dark gray SILT, little clay with Some embedded medium to coarse sand and fine gravel, trace fine sand. (Damp - Very Compact)	
30								Boring Complete @ 26.5'	

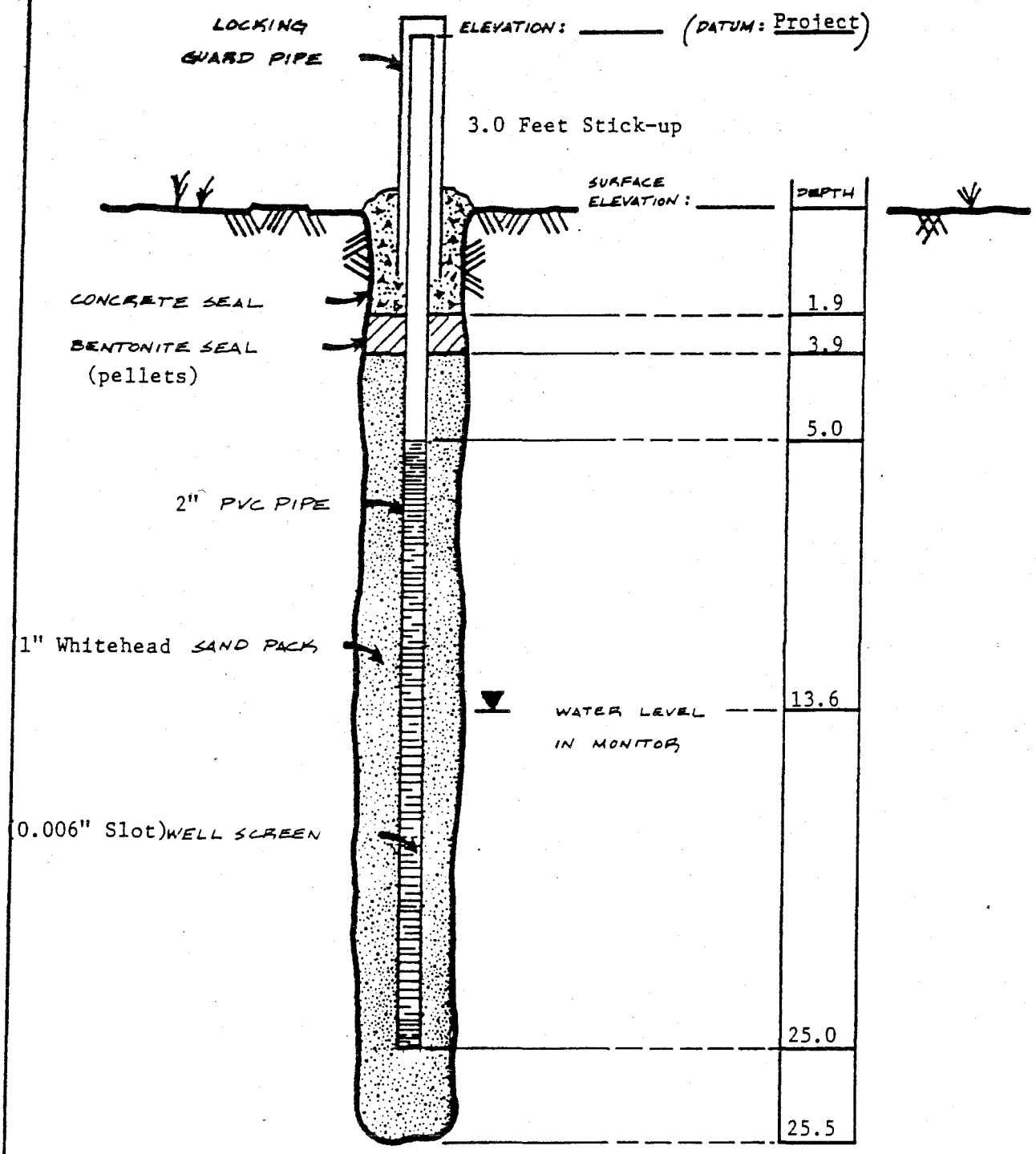
GL 322.75 / 307.75

N = No blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow

C = No blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow

CLASSIFICATION Visual by Geologist

METHOD OF INVESTIGATION: 4¼" I.D. Hollow Stem Auger Casing



WELL No

MW-3

EMPIRE SOIL INVESTIGATION, INC.

MONITORING WELL DETAILS

Proposed C & D Landfill
KAPL - Niskayuna, New York

DR BY	KM	SCALE	N.T.S.	PROJ NO	ATA-87-257
CK'D BY		DATE	2-88	DRWG NO	3

Appendix B

SPRU Supplemental Soil Sampling
Former Slurry Drum Storage Area
Boring Logs

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1002-3-B1

LOCATION : Land Area
START DATE: 7/26/04
FINISH DATE: 7/26/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626066.5364
NORTHING (ft) : 1027308.8382
SURFACE ELEVATION (ft): 330.76

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	330.3	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little f-m gravel, trace clay, trace organics (Damp) (10YR 4/3)	Grass at surface. Sample taken by hand trowel. Wood, slag and asphalt noted.
1		0.5-2	100	0			Brown SILT, Some f-m Sand, little f-m-c gravel, little clay (10YR 4/4)	First interval has 10YR 6/2 and 10YR 5/6 mottling. Two advances were made. The second was 6" north of original location for adequate recovery for field duplicate. Slag noted.
	329.0							
2	328.8						Brown SILTand f-m SAND, Some f-m-c Gravel, trace organics (10YR 4/4)	
		2-4	100	0			Brown SILT, Some f-m Sand, little f-m-c gravel, trace clay (10YR 4/3)	Slag noted.
3								
	326.8							
4							End of Boring @ 4.0'	Borehole abandoned with bentonite and hydrated.
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1002-3-B2

LOCATION : Land Area
START DATE: 7/27/04
FINISH DATE: 7/27/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626058.6616
NORTHING (ft) : 1027317.4485
SURFACE ELEVATION (ft): 330.87

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
	330.4	0-0.5	NA	0		SM	Brown SILT, little f sand, little f-m-c gravel, trace clay, trace organics (Wet) (10YR 3/3)	Grass at surface. Sample taken by hand trowel. Wood and asphalt noted.
1	329.8	0.5-1.1	NA	NA			End of Boring @ 1.1'	Split-spoon refusal at 1.1'. Borehole abandoned with bentonite and hydrated.
2								
3								
4								
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1002-3-B2a

LOCATION : Land Area
START DATE: 7/27/04
FINISH DATE: 7/27/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626059.2434
NORTHING (ft) : 1027315.9893
SURFACE ELEVATION (ft): 330.99

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	330.5	0-0.5	NA	0		SM	Brown SILT, little f sand, little f-m-c gravel, trace clay, trace organics (Wet) (10YR 3/3)	Grass at surface. Boring offset 18" due south.
1	329.7	0.5-2	87	0			Same as above. Brown SILT and f-m SAND, little f-m-c gravel (Damp) (10YR 3/3)	Wood and slag present.
2	329.0						Same as above.	
3	328.4 327.8	2-3.2	100	0			Brown SILT, Some f-m Sand, little f-m-c gravel (10YR 4/4)	
							End of Boring @ 3.2'	Split-spoon refusal at 3.2'. Borehole abandoned with bentonite and hydrated.
4								
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1002-3-B3

LOCATION : Land Area
START DATE: 7/28/04
FINISH DATE: 7/28/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626077.0318
NORTHING (ft) : 1027313.6814
SURFACE ELEVATION (ft): 329.41

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	328.9	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little f-m-c gravel, trace clay, trace organics (Moist) (10YR 5/3)	Grass at surface. Sample taken by hand trowel.
1		0.5-2	67	0			Brown SILT, Some f-m Sand, little f-m-c gravel, trace clay, trace organics (Moist) (10YR 4/3)	Wood present. 10YR 6/1 and 10YR 5/6 mottling.
2	327.4							
3		2-4	100	0			Brown SILT, Some f-m-c Sand, little f-m gravel (Damp) (10YR 4/6)	10YR 7/3 and 10YR 6/1 mottling.
4	325.4						End of Boring @ 4.0'	Borehole abandoned with bentonite and hydrated.
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1002-3-B4

LOCATION : Land Area
START DATE: 7/26/04
FINISH DATE: 7/26/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626076.0156
NORTHING (ft) : 1027302.3710
SURFACE ELEVATION (ft): 330.34

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	329.8	0-0.5	NA	0		SM	Brown SILT, Some f-m Sand, little f-m-c gravel, trace clay, trace organics (Damp) (10YR 4/3)	Grass at surface. Wood noted. Sample taken by hand trowel.
1		0.5-2	100	0			Same as above (10YR 3/2)	Slag present in sample. 10YR 4/6, 10YR 6/4 and 10YR 6/1 mottling.
2	328.3							
3		2-4	100	0			Brown f-m SAND and SILT, little f-m-c gravel, trace organics (Damp) (10YR 5/6)	Slag present.
4	326.3						End of Boring @ 4.0'	Borehole abandoned with bentonite and hydrated.
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1002-3-B5

LOCATION : Land Area
START DATE: 7/26/04
FINISH DATE: 7/26/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626061.3328
NORTHING (ft) : 1027302.3504
SURFACE ELEVATION (ft): 330.80

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	330.3	0-0.5	NA	0		SM	Brown SILT, little sand, little f-m gravel, trace clay, trace organics (Damp) (10YR 3/4)	Grass at surface. Wood noted. Sample taken by hand trowel.
1	329.3	0.5-2	100	0			Brown SILT, Some f Sand, little f-m-c gravel, trace clay, trace organics (Damp) (10YR 3/4)	Asphalt present in sample.
2	328.2	2-2.6	100	0			Brown f-m SAND, Some Silt and f-m-c Gravel, trace organics (10YR 3/4)	
3							End of Boring @ 2.6'	Split-spoon refusal at 2.6'. Borehole abandoned with bentonite and hydrated.
4								
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1004-3-S

LOCATION : Land Area
START DATE: 7/15/04
FINISH DATE: 7/15/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625922.9104
NORTHING (ft) : 1027474.5914
SURFACE ELEVATION (ft): 322.50

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
	322.0	0-0.5	NA	0.1		ML	Brown SILT, little f sand, little f-m-c gravel, trace clay, trace organics (Damp) (10YR 3/3)	Grass at surface. Wood noted. Advanced with hand trowel.
1		0.5-2	100	0		SM	Brown SILT, Some f-m Sand, little f-m gravel, trace clay, trace organics (Damp) (10YR 4/3)	
2	320.5							
							Brown f-m SAND, Some Silt, trace f-m gravel, trace organics (Damp) (10YR 5/6)	
3		2-4	100	0				
4	318.5					SP	Brown f-m-c SAND, Some Silt, trace f-m gravel (Moist) (10YR 3/4)	
5		4-6	100	0				
6	316.5						End of Boring @ 6.0'	Borehole abandoned with bentonite and hydrated.
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1004-6-S

LOCATION : Land Area
START DATE: 7/15/04
FINISH DATE: 7/15/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625976.5334
NORTHING (ft) : 1027474.0571
SURFACE ELEVATION (ft): 323.32

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	322.8	0-0.5	NA	0		ML	Brown SILT, little f sand, trace clay, trace f-m-c gravel, trace organics (Moist) (10YR 3/2)	Grass at surface. Wood noted. Advanced with hand trowel.
1		0.5-2	87	0			Brown SILT, Some f Sand, little f-m-c gravel, trace clay, trace organics (Moist) (10YR 4/3)	10YR 5/6 mottling.
2	321.3							
3		2-4	100	0			Brown SILT, Some f Sand, little clay, little f-m-c gravel, trace organics (Moist) (10YR 4/4)	10YR 5/6, 10YR 6/8, and 10YR 5/1 mottling.
4	319.3	4-4.7	100	0			Same as above (Wet) (10YR 5/4)	
	318.6						End of Boring @ 4.7'	Split-spoon refusal at 4.7'. Borehole abandoned with bentonite and hydrated.
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1004-9-S

LOCATION : Land Area
START DATE: 7/15/04
FINISH DATE: 7/15/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626023.1267
NORTHING (ft) : 1027469.8198
SURFACE ELEVATION (ft): 323.60

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	323.1	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little f-m-c gravel, trace clay, trace organics (Moist) (10YR 3/3)	Grass at surface. Advanced with hand trowel.
							Same as above (10YR4/3)	2nd split-spoon pushed 6" south of original for more sample volume.
1		0.5-2	100	0				
2	321.6							
		2-3.1	100	0		ML	Brown SILT, little f sand, little f-m-c gravel, trace clay (Damp) (10YR 4/3)	
3	320.5							
							End of Boring @ 3.1'	Split-spoon refusal at 3.1'. Borehole abandoned with bentonite and hydrated.
4								
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-1-S

LOCATION : Land Area
START DATE: 7/22/04
FINISH DATE: 7/22/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625924.7527
NORTHING (ft) : 1027523.3793
SURFACE ELEVATION (ft): 321.04

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	320.5	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little f-m-c gravel, trace organics (Damp) (10YR 3/3)	Grass at surface. Sample taken with hand trowel.
							Same as above.	
1	320.0	0.5-2	100	0			Brown f-m SAND, Some Silt, trace f-m gravel, trace organics (Damp) (10YR 3/6)	
2	319.0							
		2-4	100	0			Brown f-m-c SAND, Some Silt, trace f-m gravel, trace organics (Damp) (10YR 4/4)	
3								
4	317.0							
		4-6	100	0			Same as above.	
5								
6	315.0							
		6-8	100	0			Brown f-m-c SAND, little silt, little f-m-c gravel, trace organics (Moist) (10YR 3/3)	
7	314.0						Brown SILT, Some f Sand, little f-m-c gravel, trace organics (Moist) (10YR 4/6)	
8	313.0						End of Boring @ 8.0'	Borehole abandoned with bentonite and hydrated.
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-2-B

LOCATION : Land Area
START DATE: 7/21/04
FINISH DATE: 7/21/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625950.7727
NORTHING (ft) : 1027591.8885
SURFACE ELEVATION (ft): 316.97

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
	316.5	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little clay, trace f-m-c gravel, trace organics (Damp) (10YR 2/2)	Grass at surface. Sample taken with hand trowel. Wood noted.
	316.2						Same as above.	
1		0.5-2	87	0			Brown SILT, Some f Sand, little f-m-c gravel, trace clay, trace organics (Moist) (10YR 4/6)	
2	315.0							
		2-4	100	0			Brown SILT, Some f-m-c Sand, little f-m-c gravel, little clay, trace organics (Damp) (10YR 4/3)	10YR 6/1 and 10YR 5/8 mottling.
3	313.0							
4							Brown SILT, Some f Sand, little f-m-c gravel, little clay, trace organics (Damp) (10YR 3/3)	
5		4-6	100	0				
6	311.0							
							Brown SILT, Some f-m Sand, little f-m-c gravel, little clay, trace organics (Damp) (10YR 4/3)	
7		6-8	80	0				
8	309.0							
							Same as above.	
9		8-10	50	0				
10	307.0							
							End of Boring @ 10.0'	Borehole abandoned with bentonite and hydrated.

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-3-B

LOCATION : Land Area
START DATE: 7/21/04
FINISH DATE: 7/21/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625925.8014
NORTHING (ft) : 1027640.5074
SURFACE ELEVATION (ft): 318.18

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	317.7	0-0.5	NA	0		SM	Brown SILT, Some f-m Sand, little f-m-c gravel, trace clay, trace organics (Damp) (10YR 3/2)	Grass at surface. Sample taken with hand trowel.
1		0.5-2	87	0			Same as above.	
2	316.2							
3		2-4	100	0			Brown SILT, little f sand, little f-m-c gravel, trace clay, trace organics (Damp) (10YR 4/3)	10YR 5/1 and 10YR 5/6 mottling.
4	314.2							
5		4-6	100	0			Same as above.	Asphalt pieces noted.
6	312.2							
7		6-7.4	43	0			Same as above.	
	310.8							
8							End of Boring @ 7.4'	Split-spoon refusal at 7.4'. Borehole abandoned with bentonite and hydrated.
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-4-B1

LOCATION : Land Area
START DATE: 7/20/04
FINISH DATE: 7/20/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625976.3074
NORTHING (ft) : 1027548.2962
SURFACE ELEVATION (ft): 318.81

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	318.3	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little f-m-c gravel, trace clay, trace organics (Damp) (10YR 3/3)	Grass at surface. Sample taken by hand trowel. Wood present.
1		0.5-2	100	0			Brown SILT, Some f-m Sand, little f-m-c gravel, little clay, trace organics (Damp) (10YR 4/3)	10YR 2/2 mottling. 2nd push advanced 6" north of original location.
2	316.8	2-3.2	100	0			Brown SILT, Some f-m Sand, little f-m-c gravel, trace clay (Damp) (10YR 3/3)	
3	315.6						End of Boring @ 3.2'	Split-spoon refusal @ 3.2'. Borehole abandoned with bentonite and hydrated.
4								
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-4-B2

LOCATION : Land Area
START DATE: 7/16/04
FINISH DATE: 7/16/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625954.2279
NORTHING (ft) : 1027507.3944
SURFACE ELEVATION (ft): 321.10

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	320.6	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little f-m-c gravel, trace clay, trace organics (Moist) (10YR 3/2)	Grass at surface. Advanced with trowel. Wood noted.
1		0.5-2	100	0			Brown SILT, Some f-m Sand, little clay, little f-m-c gravel (Damp) (10YR 5/3)	2nd split-spoon advanced 6" west of original location (10YR 6/1, 10YR 5/6, and 10YR 6/8 mottling).
2	319.1							
3		2-4	100	0			Brown SILT, Some f Sand, little f-m-c gravel, little clay, trace organics (Damp) (10YR 4/3)	10YR 6/1 mottling.
4	317.1							
5		4-6	80	0			Brown SILT, Some f-m Sand, little f-m-c gravel, little clay, trace organics (Damp) (10YR 5/3)	10YR 7/3, 10YR 6/1, and 10YR 6/6 mottling.
6	315.1							
7		6-8	50	0			Same as above.	10YR 6/1 and 10YR 5/6 mottling.
8	313.1						End of Boring @ 8.0'	Borehole abandoned with bentonite and hydrated.
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-6-S

LOCATION : Land Area
START DATE: 7/20/04
FINISH DATE: 7/20/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625970.9855
NORTHING (ft) : 1027626.9751
SURFACE ELEVATION (ft): 316.03

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	315.5	0-0.5	NA	0		SM	Brown SILT, little f-m sand, little f-m-c gravel, trace clay, trace organics (Moist) (10YR 4/3)	Grass at surface. Sample taken by hand trowel.
1		0.5-2	NA	0			Brown SILT, little f-m-c sand, little clay, trace f-m-c gravel, trace organics (Moist) (10YR 4/3)	
2	314.0							
3		0	100	2-4			Brown SILT, little f sand, little clay, trace f-m gravel (Damp) (10YR 4/3)	10YR 6/4 and 10YR 5/1 mottling.
4	312.0							
5		4-5.8	72	0			Same as above.	
6	310.2						End of Boring @ 5.8'	Split-spoon refusal at 5.8'. Borehole abandoned with bentonite and hydrated.
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-7-S

LOCATION : Land Area
START DATE: 7/16/04
FINISH DATE: 7/16/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626023.2437
NORTHING (ft) : 1027523.8593
SURFACE ELEVATION (ft): 320.59

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	320.1	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little clay, little f-m-c gravel, trace organics (Moist) (10YR 3/2)	Grass at surface. Advanced with trowel. Wood noted.
							Brown SILT, Some f-m-c Gravel, trace clay (Damp) (10YR 4/3)	10YR 3/1 mottling.
1		0.5-2	100	0				
2	318.6					ML	Brown SILT, Some f Sand, little clay, trace f-m-c gravel (Damp) (10YR 3/3)	10YR 3/1 mottling.
3	317.6	2-4	100	0			Gray SILT, Some f Sand, little clay, trace f-m-c gravel (Damp) (10YR 3/1)	10YR 4/3 mottling.
4	316.6						End of Boring @ 4.0'	Borehole abandoned with bentonite and hydrated.
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-8-S

LOCATION : Land Area
START DATE: 7/19/04
FINISH DATE: 7/19/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626022.3157
NORTHING (ft) : 1027576.2550
SURFACE ELEVATION (ft): 318.99

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	318.5	0-0.5	NA	0		SM	Brown SILT, little f sand, little f-m-c gravel, trace organics (Wet) (10YR 2/2)	Grass at surface. Sample taken by hand trowel.
							Brown SILT, Some f Sand, little clay, little f-m-c gravel, trace organics (Wet) (10YR 3/2)	10YR 4/1 mottling.
1		0.5-2	93	0				
2	317.0							
		2-4	100	0		ML	Gray SILT, little f sand, little clay, trace f-m gravel (Damp) (10YR 3/3)	10YR 3/3 mottling.
3								
4	315.0						End of Boring @ 4.0'	Borehole abandoned with bentonite and hydrated.
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1007-9-S

LOCATION : Land Area
START DATE: 7/19/04
FINISH DATE: 7/19/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 626021.7618
NORTHING (ft) : 1027623.8059
SURFACE ELEVATION (ft): 317.85

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
0	317.4	0-0.5	NA	0		SM	Brown SILT, Some f-m Sand, little f-m-c gravel, trace clay, trace organics (Damp) (10YR 4/3)	Grass at surface. Sample taken by hand trowel.
1		0.5-2	100	0		ML	Gray SILT, Some f Sand, little clay, little f-m-c gravel (Damp) (10YR 4/1)	10YR 4/4 mottling.
2	315.9							
3		2-4	100	0			Same as above.	10YR 4/4 mottling.
4	313.9						End of Boring @ 4.0'	Borehole abandoned with bentonite and hydrated.
5								
6								
7								
8								
9								
10								

SOIL BORING LOG
SPRU OUTSIDE CHARACTERIZATION
KAPL Knolls Site, Niskayuna, NY

SOIL BORING ID: LA1016-8-S

LOCATION : Land Area
START DATE: 7/22/04
FINISH DATE: 7/22/04
DRILLER: Aquifer Drilling and Testing, Inc.
DRILLING METHOD: Push 3" split-barrel sampler

GEOLOGIST: CT Male/CH2M HILL
LOGGED BY: Ron Utter
EASTING (ft) : 625873.8539
NORTHING (ft) : 1027574.1312
SURFACE ELEVATION (ft): 319.16

DEPTH (ft bgs)	ELEVATION (ft msl)	SAMPLE: INTERVAL (ft)	SAMPLE: RECOVERY (%)	SAMPLE: PID (ppm)	SAMPLE: LITHOLOGY	SAMPLE CLASSIFICATION: USCS	SAMPLE CLASSIFICATION	COMMENTS
	318.7	0-0.5	NA	0		SM	Brown SILT, Some f Sand, little f-m-c gravel, trace organics (Damp) (10YR 2/2)	Grass at surface. Sample taken with hand trowel.
1							End of Boring @ 0.5'	Borehole abandoned due to construction and demolition debris. Borehole backfilled with bentonite and hydrated.
2								
3								
4								
5								
6								
7								
8								
9								
10								

Appendix C

Test Pit Logs and Pre-Test Pit Boring Logs

Test Pit Logs

Land Disposal Area SV
Test Pit Findings Summary

Test Pit	Total Depth (feet)	Fill Material	Fill Depth (feet)	Comments
TP-1	6	X	3.5	Gray till at 6 feet. Concrete, brick debris; 5-gallon pail, rebar
TP-2	6			Gray till at 5.8 feet
TP-3	5			Gray till at 2.8 feet; refusal at 5 feet
TP-4	5			Gray till at 1 feet; refusal at 5 feet
TP-5	5			Gray till at 2 feet; refusal at 5 feet
TP-6	4			Gray till at 1.5 feet; refusal at 4 feet
TP-7	4.5			Brown till soil to 1.2 feet. Gray till at 1.2 feet; refusal at 4.5 feet. Concrete and rebar at surface
TP-8	4.3			Gray till at 0.75 feet; refusal at 4.3 feet.
TP-9	6			Sand and gravel fill. Boring logs show gray till at approx. 6 feet.
TP-10	6	X	1	Concrete rubble pile; C&D debris to 1 foot.
TP-11	6			Gray till at surface.
TP-12	6			Silty sand to 2 feet; then mixed with coarse gravel; large cobbles in 3-4 foot interval
TP-13	4.5			Brown till soil to 1.6 feet. Gray till at 1.6 feet; refusal at 4.5 feet; piece of rebar on surface.
TP-14	4.7			Gray till at surface; refusal at 4.7 feet.
TP-15	6			Brown till; no gray till.
TP-16	4.8			Gray till at 3 feet; refusal at 4.8 feet. Silty sand with cobbles above gray till.
TP-17	6			Gray till at 1.5 feet; silty sand above gray till.
TP-18	6			Gray till at surface.
TP-19	6			Gray till at 1 feet; silty sand above gray till.
TP-20	6	X	0.5	Black sandy material in upper 0.5 feet. Brown till to 5 feet. Gray till at 5 feet.
TP-21	6			Gray till at surface; 0.1 feet of silty clay at surface.
TP-22	6			Test pit adjacent to toe of fill material. Debris at surface adjacent to the fill. Fine sandy silt.
TP-23	5.5	X	5.5	Silty sand and gravel fill with debris to 3 feet, then concentrated debris. Timbers prevented further excavation. Borings indicate clayey silt below fill.
TP-24	6	X	4	Sand and gravel fill to 2 feet. Sporadic debris within sandy gravel fill 2-4 feet. Silty sand underies the fill.
TP-25	6			Sand and gravel, becoming coarse at depth.
TP-26	6			Fine sand and silt.
TP-27	6			Fine sand and silt.
TP-28	6			Fine sand and silt.
TP-29	4	X	4	Silty sand 0-1 feet. Silty sand with debris 1-2 feet. Concentrated debris from 2 to 4 feet. Silty sand underlies the fill. Water in pit.
TP-30	5	X	7.8	Sand and gravel 0-1 feet, then mixed with debris 1-3 feet. Brush at 4 feet at west end of test pit. Water in pit. Fill depth estimated from borings.
TP-31	6	X	4.2	Sand and gravel fill to 2 feet. Concentrated debris 2-4.2 feet. Clayey silt underlies debris.
TP-32	4	X	4	Sand and debris 0-2 feet. Concentrated debris 2-4 feet. Silty sand to clayey silt underlies the fill. Water in pit. Fill depth estimated from borings.
TP-33	6			Fine sand and silt.
TP-34	6	X	4	Sand and gravel 0-1 feet. Sand and gravel with debris 1-4 feet. Possible till fill from 4-6 feet.
TP-35	5.5	X	6	Sand and gravel fill 0-1 feet. Concentrated debris 1-6 feet. Clayey silt underlies debris.
TP-36	6	X	3	Sand and gravel mixed with debris 0-3 feet. Silt underlies debris.
TP-37	6	X	1	Gravelly sandy fill to 2 feet, piece of brick at the surface. Fine sandy silt underlies the fill.
TP-38	6.5	X	6	Concentrated debris. Pilings indicate bottom of fill at 6 feet. Silt and clay underlies the fill.
TP-39	4.6			Silty sand to 1 feet, then brown till with cobbles. Refusal on large cobble.
TP-40	6	X	3	Gravelly sandy fill with debris to 3 feet, then silt.
TP-41	7	X	5	Sand and gravel fill with debris to 5 feet. Silty sand to sandy silt underlies fill.

Drilling Log

Test Pit **TP-1**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/12/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
	0.0	100%			SP SM	Six inches of brown topsoil, then brown till, dry.
1						
	0.0	100%			SP SM	Brown till, east side is tight, west is more loose.
2						
	0.0	100%			SP SM	Same as above, moist, 5 gallon pail and concrete pieces found at west end, red brick.
3						
	0.0	100%			SP SM / SP	Same as above to 3.5', then entire pit became soft, loose, some gray mottling, some wood (roots), no debris, some m-sand, NCD1-SS-TP1-1188.
4						
	0.0	100%			SP	Same as above, piece of rebar on east end.
5						
	0.0	100%			SP	Same as above-no debris, hit gray till at 6'.
6						
7						

Drilling Log

Test Pit **TP-2**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/7/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
No debris noted in hole.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
	0	100%			SP SM	Light brown, dry, fine sand and silt, roots.
1						
	0	100%			SP SM	Same as above, less roots.
2						
	0	100%			SP SM	Same as above, tighter with some orange and gray mottling, little f-gravel.
3						
	0	100%			SP SM	Same as above, tighter, sample NCD1-SS-TP2-1181 with MS/MSD.
4						
	0	100%			SP SM	Same as above, turning dark brown.
5						
	0	100%			SP SM	Hit gray till at ~5.8', very tight.
6						
7						

Drilling Log

Test Pit **TP-3**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *5.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/8/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP SM	Dark brown topsoil with roots to 0.8', then brown till, dry.
1	0	100%			SP SM	Brown till with large cobbles/boulders.
2	0	100%			SP SM	Same as above, hit gray till at 2.8'.
3	0	100%			SP SM	Gray till, sample NCD1-SS-TP3-1185.
4	0	100%			SP SM	Refusal at 5', gray till.
5						
6						
7						

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Drilling Log

Test Pit **TP-4**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *5.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/6/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%				Dark brown topsoil with little cobbles.
1	0	100%			SP SM	Gray till contact at 1', tight.
2	0	100%			SP SM	Same as above.
3	0	100%			SP SM	Same as above, sample NCD1-SS-TP4-1180.
4	0	100%			SP SM	Same as above, refusal at 5'.
5						
6						
7						

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Drilling Log

Test Pit **TP-5**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *5.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/6/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP SM	Brown, dry reworked till.
1	0	100%			SP SM	Same as above, bottom becoming darker and more moist, tighter.
2	0	100%			SP SM	Gray till, tight.
3	0	100%			SP SM	Same as above, sample NCD1-SS-TP5-1179.
4	0	100%			SP SM	Same as above, refusal at 5'.
5						
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-6**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/8/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						
	0	100%				Dark brown topsoil, roots, some c-gravel.
1						Same as above, hit gray till at 1.5'.
	0	100%			SP SM	
2						Same as above, tight.
	0	100%			SP SM	
3						Same as above, sample NCD1-SS-TP6-1183, field dupe NCD1-SS-X20-1184, refusal at 4'.
	0	100%			SP SM	
4						
5						
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-7**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.5 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/12/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Surface debris, metal flashing, concrete, rebar.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP SM	Brown, dry reworked till-concrete and rebar at surface.
1	0	100%			SP SM	Gray till starts at ~1.2', tight, dry.
2	0	100%			SP SM	Gray till.
3	0	100%			SP SM	Same as above, sample NCD1-SS-TP7-1189.
4	0	100%			SP SM	Same as above, refusal at 4.5'.
5						
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-8**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.3 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/1/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP SM	Two inches of brown topsoil, then 6" of brown till, then gray till.
1	0	100%			SP SM	Gray till.
2	0	100%			SP SM	Same as above.
3	0	100%			SP SM	Same as above, 4' sample NCD1-SS-TP8-1176.
4	0	100%			SP SM	Same as above, refusal at 4.3'.
5						
6						
7						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATP.GPJ IT_CORP.GDT 11/17/04

Drilling Log

Test Pit **TP-9**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/7/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Brown, f-sand and f-c gravel, some large cobbles, dry.
1	0	100%			SP	Same as above.
2	0	100%			SP	Same as above, tight.
3	0	100%			SP	Same as above.
4	0	100%			SP	Same as above, larger cobbles- ~12", 4' sample NCD1-SS-TP9-1182.
5	0	100%			SP	Same as above.
6						
7						

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Drilling Log

Test Pit **TP-10**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/1/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP	C+D debris at surface, then f-sand + silt, c-gravel, little cobbles, roots.
1	0	100%			SP	Same as above, no debris.
2	0	100%			SP	Same as above, getting tighter.
3	0	100%			SP	Same as above, NCD1-SS-TP10-1175.
4	0	100%			SP	Same as above, brown till, tight.
5	0	100%			SP	Same as above, large boulder at north end.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-11**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *12/3/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
To cold out for PID to operate.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0		100%			SP SM	Gray till, firm, some coarse angular gravel, moist.
1		100%			SP SM	Same as above.
2		100%			SP SM	Same as above, little c-cobbles, tightening up.
3		100%			SP SM	Same as above,some smaller cobbles as well, sampled NNF-SS-TP11-1145.
4		100%			SP SM	Same as above.
5		100%			SP SM	Same as above.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Test Pit **TP-12**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *12/3/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
To cold out for PID to operate.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	NA	100%			SP SM	Brown, moist, silty sand, some orange mottling.
1	NA	100%			SP SM	Same as above.
2	NA	100%			SP	Same as above, little c-gravel.
3	NA	100%			SP	Same as above,trace large cobbles, sampled NNF-SS-TP12-1144.
4	NA	100%			SP	Same as above, no cobble.
5	NA	100%			SP	Same as above, no gray till.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATP.GPJ IT_CORP.GDT 11/17/04

Drilling Log

Test Pit **TP-13**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.5 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *12/4/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP SM	Brown silty clayey sand, piece of rebar at surface, some f-c gravel.
1	0	100%			SP SM	Same as above. Gray till contact at ~1.6', large cobbles noted as well.
2	0	100%			SP SM	All gray till, tight, very rocky.
3	0	100%			SP SM	All gray till, tight, large cobbles, sample NNF-SS-TP13-1147.
4	0	100%			SP SM	Same as above, refusal at 4.5'.
5						
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-14**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.7 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *12/3/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP SM	Gray till, firm, some coarse gravel, moist.
1	0	100%			SP SM	Same as above, little small cobbles.
2	0	100%			SP SM	Same as above.
3	0	100%			SP SM	Same as above, sampled NNF-SS-TP14-1146 with MS/MSD.
4	0	100%			SP SM	Same as above, refusal at 4.7', material is too hard for machine to dig deeper.
5						
6						
7						

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Drilling Log

Test Pit **TP-15**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *12/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP SM	Brown, moist, silty sand, little clay, trace c-gravel.
1	0	100%			SP SM	Same as above.
2	0	100%			SP	Same as above.
3	0	100%			SP	Same as above, with some orange and gray mottling, sampled NNF-SS-TP15-1143.
4	0	100%			SP	Same as above.
5	0	100%			SP	Same as above, no gray till.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Test Pit **TP-16**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.8 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *12/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						
	0	100%			SP SM	Dark brown/gray f-silty sand, trace cobbles, wet.
1						
	0	100%			SP SM	Same as above, more small cobbles - c-gravel.
2						
	0	100%			SP SM	Same as above.
3						
	0	100%			SP SM	Sampled NNF-SS-TP16-1142 with MS/MSD. Gray till contact at 3', some small cobbles, trace coarse, tight.
4						
	0	100%			SP SM	Same as above, refusal at 4.8'.
5						
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-17**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *12/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown silty sand, roots.
	0	100%			SP SM	
1					SP SM	Same as above to 1.5' then gray till, with large rounded to subrounded cobbles.
	0	100%			SP SM	
2						Gray till, small to large cobbles, dry, tight.
	0	100%			SP SM	
3						Gray till, same as above, sampled NNF-SS-TP17-1138, field dupe NNF-SS-X15-1139.
	0	100%			SP SM	
4						Same as above.
	0	100%			SP SM	
5						Same as above.
	0	100%			SP SM	
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-18**

Project: Land Disposal Area, Test Pits | Owner: KAPL | Proj. No.: 844097

Location: Niskayuna, NY

Surface Elev.: NA | Total Hole Depth: 6.0 ft. | North: | East:

Top of Casing: NA | Water Level Initial: NA | Static: NA | Diameter: NA in.

Screen: Dia: NA | Length: NA | Type/Size: NA

Casing: Dia: NA | Length: NA | Type: NA

Fill Material: Native | Rig/Core: Kubota Mini Track Hoe

Drill Co.: Shaw | Method: NA

Driller: NA | Log By: M. Puglisi | Date: 12/1/03 | Permit #: NA

Checked By: NA | License No.: NA

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
	0	100%			SP SM	Gray till, wet, firm.
1	0	100%			SP SM	Gray till, becomes dry, more tight, some pieces of angular c-gravel.
2	0	100%			SP SM	Gray till, dry, tight, more gravel.
3	0	100%			SP SM	Gray till, dry, tight, little small cobbles, sampled NNF-SS-TP18-1137.
4	0	100%			SP SM	Same as above, no cobbles.
5	0	100%			SP SM	Same as above.
6						
7						

Drilling Log

Test Pit **TP-19**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *R. Eaton* Date *11/26/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						
	0	100%			SP SM	Moist, brown silty sand, no waste indicators.
1						
	0	100%			SP SM	Gray till, no waste indicators.
2						
	0	100%			SP SM	Same as above.
3						
	0	100%			SP SM	Same as above, sampled NNF-SS-TP19-1136.
4						
	0	100%			SP SM	Same as above.
5						
	0	100%			SP SM	Same as above.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-20**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *R. Eaton* Date *11/26/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP SM	Dark black sandy silt, organic odor, sample collected for TCL VOCs, SVOCs,PCBs, TAL INORG. NNF-SS-TP20-1134, no waste indicators.
1	0	100%			SP SM	Brown silty sand with trace gravel/cobble. No waste indicators.
2	0	100%			SP SM	Same as above.
3	0	100%			SP SM	Same as above, sampled NNF-SS-TP20-1135 at 4',
4	0	100%			SP SM	Gray till at 5', no waste indicators.
5	0	100%			SP SM	Gray till, no waste indicators.
6						
7						

Drilling Log

Test Pit **TP-21**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *R. Eaton* Date *11/25/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP SM	0.1' of brown silty clay, 0.9' of gray till, no waste indicators.
1	0	100%			SP SM	Gray till. No waste indicators.
2	0	100%			SP SM	Gray till with cobble present. No waste indicators.
3	0	100%			SP SM	Same as above, sampled NNF-SS-TP21-1133 at 4'.
4	0	100%			SP SM	Same as above.
5	0	100%			SP SM	Same as above.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Test Pit **TP-22**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/14/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Brown, moist, f-silty sand, no debris except top 2" at bank.
1	0	100%			SP	Light brown silt, little f-sand, some orange mottling.
2	0	100%			SP	Same as above.
3	0	100%			SP	Same as above,some gray mottling, sample NWF-SS-TP22-1194 with MS/MSD.
4	0	100%			SP	Same as above.
5	0	100%			SP	Same as above.
6						
7						

Drilling Log

Test Pit **TP-23**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *5.5 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/30/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Only staining is from burnt wood pieces, some black tar like material-possibly roofing tar, sample taken NCD1-SS-TP23-1174.

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Fine sand, silt, dry, f-c gravel, cobbles, piece of asphalt and red brick.
1	0	100%			SP	Same as above, no asphalt, white brick, red brick, concrete block.
2	0	100%			SP SM	Brown till, with piece of glass, and ceramic dish, becoming tight.
3	0	100%			SP	Same as above, piece of transite, copper wire, burnt wood, glass, metal flashing, large timber, porcelain piece, asbestos lagging like material, organic decay odor noted, no PID hits, pieces of what appears to be remnants of one gallon pail;see comments.
4	0	100%			SP	Same as above plus a orange rubber glove. 4' sample NWF-SS-TP23-1174.
5	0	100%			SP	Same as above, more timbers-can not dig deeper than 5.5' with machine.
6						
7						

Drilling Log

Test Pit **TP-24**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/21/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Trip Blank NWF-SS-TB19-1155, Equipment Blank NWF-SS-EB19-1154 - SVOC jars are just shy of being 1L each.

Piece of pipe on west end of wall at ~2' BGS.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Brown, f-sand and f-c gravel-some rounded, some angular, organics-roots, moist.
1	0	100%			SP	Same as above.
2	0	100%			SP	Same as above, noted red brick ~6"-8" below surface at end of pit. Observed piece of metal flashing and a piece of broken glass.
3	0	100%			SP	Same as above, piece of rebar, and piece of slag-pulling from end wall. Sample NWF-SS-TP24-1156.
4	0	100%			SM	F-silty sand, trace clay, some orange mottling-band of black sand at 4'-5' interface.
5	0	100%			SM	Same as above.
6						
7						

Drilling Log

Test Pit **TP-25**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/17/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Brown, f-sand and f-c gravel(rounded), organics (roots).
1	0	100%			SP	Same as above.
2	0	100%			SP	Same as above.
3	0	100%			SP	Same as above, sample NWF-SS-TP25-1152, dupe NWF-SS-X17-1153.
4	0	100%			SP	Same as above, sand becoming more coarse to med.
5	0	100%			SP	Same as above, some coarse sand to c-gravel.
6						
7						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATP.GPJ IT_CORP.GDT 11/17/04

Drilling Log

Test Pit **TP-26**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/17/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SM	Organic material (roots), f-sand and silt, brown, moist.
1	0	100%			SM	Same as above, less roots.
2	0	100%			SM	Same as above, some light gray mottling at 2.8', becoming tighter.
3	0	100%			SM	Same as above, taking sample with MS/MSD NWF-SS-TP26-1151.
4	0	100%			SM	Same as above.
5	0	100%			SM	Same as above, no debris found.
6						
7						

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATP.GPJ IT_CORP.GDT 11/17/04

Drilling Log

Test Pit **TP-27**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/16/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SM	Light brown, f-silty sand, some organics, trace clay, dry, no debris, stains or odors.
1	0	100%			SM	Same as above, becoming moist and tighter.
2	0	100%			SM	Same as above, slight orange mottling.
3	0	100%			SM	Same as above, becoming softer. Sampled NWF-SS-TP27-1150.
4	0	100%			SM	Same as above.
5	0	100%			SM	Same as above, water noted at bottom of pit, no debris found.
6						
7						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATP.GPJ IT_CORP.GDT 6/3/05

Drilling Log

Test Pit **TP-28**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/29/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SM	Brown, f-sand, some silt, moist.
1	0	100%			SM	Same as above.
2	0	100%			SM	Same as above.
3	0	100%			SM	Same as above, some orange and gray mottling, some water seeping up from bottom. Took sample NWF-SS-TP28-1172, NWF-SS-X19-1173.
4	0	100%			SM	Same as above.
5	0	100%			SM	Same as above.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATP.GPJ IT_CORP.GDT 11/17/04

Drilling Log

Test Pit **TP-29**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/29/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Septic type odor noted with water. Test pit terminated at 4' BGS due to water in pit.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SM	Fine sand, some silt.
1	0	100%			SM	Same as above, piece of metal pipe, rebar.
2	0	100%			SM	Same as above plus pieces of cut stone, transite, wood, wire, glass.
3	0	100%			SM	Same as above, plus tile like material, steel cable, red brick, aluminum flashing, large wood timber. Took sample with MS/MSD from spoils pile NWF-SS-TP29-1171.
4						
5						
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Test Pit **TP-30**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *5.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/21/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Test pit terminated at 5' BGS due to water in pit.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Six inches of topsoil, then brown f-silty sand, dry, and f-c gravel, angular and rounded.
1	0	100%			SP	Same as above, piece of asphalt at 1', some gray till mixed in.
2	0	100%			SP	Same as above, large pieces of concrete.
3	0	100%			SP SM	Becoming moist, reworked gray till with brown material worked in. Some pieces of concrete, some black mottling noted. Sampled-NWF-SS-TP30-1157.
4	0	100%			SP SM	Wet, till, some brush noted at west end-when removed water began entering pit, ~1' of water. Wood which may have a charred surface.
5						
6						
7						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATP.GPJ IT_CORP.GDT 11/17/04

Drilling Log

Test Pit **TP-31**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/22/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

4' sample taken from spoils pile due to water in pit, NWF-SS-TP31-1159, field dupe NWF-SS-X18-1160.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP	F-m sand, brown, moist, f-c gravel, cobbles.
1	0	100%			SP	Same as above.
2	0	100%			SP	Same as above, some debris-wire, ss banding, steel plate, white lagging type material, some slag, red brick.
3	0	100%			SP	Same as above, water started entering just below 3'.
4	0	100%			ML	4.2' starts gray/orange mottled silt, little clayey.
5	0	100%			ML	Same as above.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-32**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/28/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Pit terminated at 4' due to water.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%				Brown topsoil, moist, some wire, glass, nails, banding.
1	0	100%			SP	Brown, f-sand, moist, some debris, plus circular ring-2"-3" wide ~12" diameter, BX cable, angle iron.
2	0	100%				All debris-wet, glass, wood, metal wire, tubing, transite.
3	0	100%				Same as above, west end becoming cleaner, a lot of water entering pit, one spot of sheen, welding rods, lab bottles. 4' sample NWF-SS-TP32-1169
4						
5						
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-33**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/28/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%				Brown, topsoil, roots, no debris.
1	0	100%			SM	Brown, f-silty sand, no debris
2	0	100%			SP	Same as above, some orange mottling, becoming tight.
3	0	100%			SP	Same as above, some gray mottling also, took 4' sample NWF-SS-TP33-1170.
4	0	100%			SP	Same as above.
5	0	100%			SP	Same as above, no gray mottling.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-34**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/24/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Brown, moist, f-sand, and f-c gravel
1	0	100%			SP	Same as above, piece of transite noted, wire, concrete.
2	0	100%			SP	Same as above, (no transite), wire, some burnt wood.
3	0	100%			SP	Same as above, some black mottling, what appears to be asbestos lagging, pieces of glass, wood, some water entering from bottom, sample NWF-SS-TP34-1163.
4	0	100%			SP SM	Brown till with some gray/orange mottling, damp.
5	0	100%			SP SM	Same as above.
6						
7						

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Drilling Log

Test Pit **TP-35**

Project: Land Disposal Area, Test Pits | Owner: KAPL

Location: Niskayuna, NY | Proj. No.: 844097

Surface Elev.: NA | Total Hole Depth: 6.5 ft. | North: | East:

Top of Casing: NA | Water Level Initial: NA | Static: NA | Diameter: NA in.

Screen: Dia: NA | Length: NA | Type/Size: NA

Casing: Dia: NA | Length: NA | Type: NA

Fill Material: Native | Rig/Core: Kubota Mini Track Hoe

Drill Co.: Shaw | Method: NA

Driller: NA | Log By: M. Puglisi | Date: 6/24/04 | Permit #: NA

Checked By: NA | License No.: NA

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						
	0	100%			SP	Brown, dry, f-sand, and f-c gravel, no debris.
1						
	0	100%			SP	Same as above, moist, some metal banding, wire, glass, piece of transite, white brick material, some black mottling.
2						
	0	100%			SP	Same as above, some glass and metal tubing, piece of pinkish fibrous material, part of a metal container, 30 gallon drum noted at 3'-3.5' took photo
3						
	0	100%			SP	Same as above.
4						
	0	100%			SP SM	Same as above. 4' sample NWF-SS-TP35-1164.
5						
	0	100%			SP SM	Same as above, to 6' then becomes brown silt, with gray mottling. 6' sample NWF-SS-TP35-1165. Soil/wast contact at ~6' NWF-SS-TP35-1166.
6					SM	
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Test Pit **TP-36**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/23/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP	F-sand and gravel (angular), large pieces of concrete.
1	0	100%			SP	Same as above.
2	0	100%			SP	Same as above with pieces of cut granite, pieces of rebar, piece of wire.
3	0	100%			ML	Lighter brown, silt, no debris, sample at 4' NWF-SS-TP36-1161.
4	0	100%			ML	Same as above.
5	0	100%			ML	Same as above, some water seeping in at bottom of pit.
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Test Pit **TP-37**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/23/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Dry, brown, f-sand and f-c gravel, piece of red brick.
1	0	100%			SP	Same as above, no brick.
2	0	100%			SM	Light brown, f-sand and silt, moist, no debris.
3	0	100%			SM	Same as above, sample NWF-SS-TP37-1162.
4	0	100%			SM	Same as above.
5	0	100%			SM	Same as above.
6						
7						

Drilling Log

Test Pit **TP-38**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.5 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/13/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Dry, brown, f-m sand, chunks of white plaster like material, pieces of re brick, asphalt, electrical conduit, concrete, welding rod.
1	0	100%			SP	Same as above, some red tile, 1 gallon metal pail, glass lab ware, wire/tubing.
2	0	100%			SP	Same as above, copper pipe, galvanized pipe, plastic caps, fibrous remnants of fabric/carpet, wood.
3	0	100%			SP	Same as above, metal screening, concrete block, transite pieces.
4	0	100%			SP	Same as above.
5	0	100%			SP	Same as above, lots of debris, south wall is caving in, tree stump.
6	0	100%			SP	Same as above, hit ground water, some black sooty debris, metal garbage can. Sample NWF-SS-TP38-1190, field dupe NWF-SS-X21-1191.
7						

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Drilling Log

Test Pit **TP-39**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *4.8 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *12/4/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0	0	100%			SP SM	Brown, silty sand, lots of root material, moist, trace c-gravel.
1	0	100%			SP SM	Same as above, little small cobbles, getting tight, Brown till.
2	0	100%			SP SM	Same as above.
3	0	100%			SP SM	Same as above, some large cobbles also, sampled and field dupe NNF-SS-TP39-1148, NNF-SS-X16-1149.
4	0	100%			SP SM	Refusal on large cobble, some brown till, refusal at 4.8'.
5						
6						
7						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Test Pit **TP-40**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *6.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *6/22/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP	Grass, moist, brown, f-sand with f-gravel, some c-gravel rounded and angular, pieces of red brick, gray brick, asphalt.
1	0	100%			SP	Same as above, tighter.
2	0	100%			SP SM	Same as above (brown till), piece of metal flashing, pipe, some copper wire.
3	0	100%			SP SM	Same as above, except for no c-gravel, turns light brown, sample with MS/MSD NWF-SS-TP40-1158.
4	0	100%			SP SM	Same as above, tight, moist.
5	0	100%			SP SM	Same as above.
6						
7						

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Drilling Log

Test Pit **TP-41**

Project *Land Disposal Area, Test Pits* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *7.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *NA in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Kubota Mini Track Hoe*

Drill Co. *Shaw* Method *NA*

Driller *NA* Log By *M. Puglisi* Date *7/14/04* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0	0	100%			SP SM	Dry, reworked till, couple pieces of asphalt, brown, no debris-some debris showing up at the 1' level.
1	0	100%			SP SM	Same as above, metal debris, transite pieces, wood, metal car muffler, yellow brick material.
2	4.5	100%			SP SM	Same as above plus concrete pieces.
3	17.8	100%			SP SM	Brown, moist, reworked till, small amount of debris-blocks, PID reading of 17.8ppm, sample NWF-SS-TP41-1192, no staining or odors.
4	17.7	100%			SP SM	Same as above-more sandy, had reading of 231ppm at 5', has faint chlorinated solvent odor, took sample NWF-SS-TP41-1193.
5	8.4	100%			SM	No debris, light brown, f-sandy silt, little clayey.
6	3.2	100%			SM	Same as above.
7						

Pre-Test Pit Soil Borings

Drilling Log

Soil Boring **TP-1A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 85%			SP SM	Moist, brown till, large rock at 3', no stains/odors.
4	0.0	2 / 80%			SP	Refusal at original location at 4', moved 1' east and sampled 4'-6'. Saturated, brown, silty f-sand and c-sand and f-gravel. No stains/odors.
6	0.0	3 / 100%			SP SM	Gray till, tight.
8						
10						
12						

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-1B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Soft, brown till, wet, piece of black slag material at ~2', no stains/odors.
2	0.0	1 / 80%			SP SM	
4						Wet, silty f-sand, little f-gravel.
	0.0	2 / 100%			SP	
6						Gray till, no odor/stains.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-1C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 75%			SP SM	Moist, soft, brown till, no stains/odors.
4	0.0	2 / 100%			SP SM	Brown till, somewhat tight.
6	0.0	3 / 100%			SP SM	Same as above, gray till at 6.5', no stains/odors.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-2A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						2.8' of light brown silty f-sand, dry, some orange mottling, bottom 1.2' is brown till, tight.
2	0.0	1 / 100%			SP SM	
4					SP SM	Brown till, changes to gray till, both tight and dry.
6	0.0	2 / 100%			SP SM	Gray till, tight, dry.
8	0.0	3 / 100%			SP SM	
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-2B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						3' of f-silty sand with 0.7' thick lens of silt at 1.5', all brown. Then bottom 1' is brown till, no stains/odors.
2	0.0	1 / 100%			SP SM	
4					SP SM	All tight, brown till, no stains/odors.
6	0.0	2 / 100%			SP SM	Same as above.
8	0.0	3 / 100%			SP SM	
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-2C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown, f-silty sand to 3.7', then brown till, no stains/odors.
2	0.0	1 / 100%			SP SM	
4					SP SM	Dry, tight, brown till, no stains/odors.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-3A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 90%			SP SM	Soft, moist, brown till, no stains/odors.
4						0.3' of brown till, then tight gray till.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-3B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

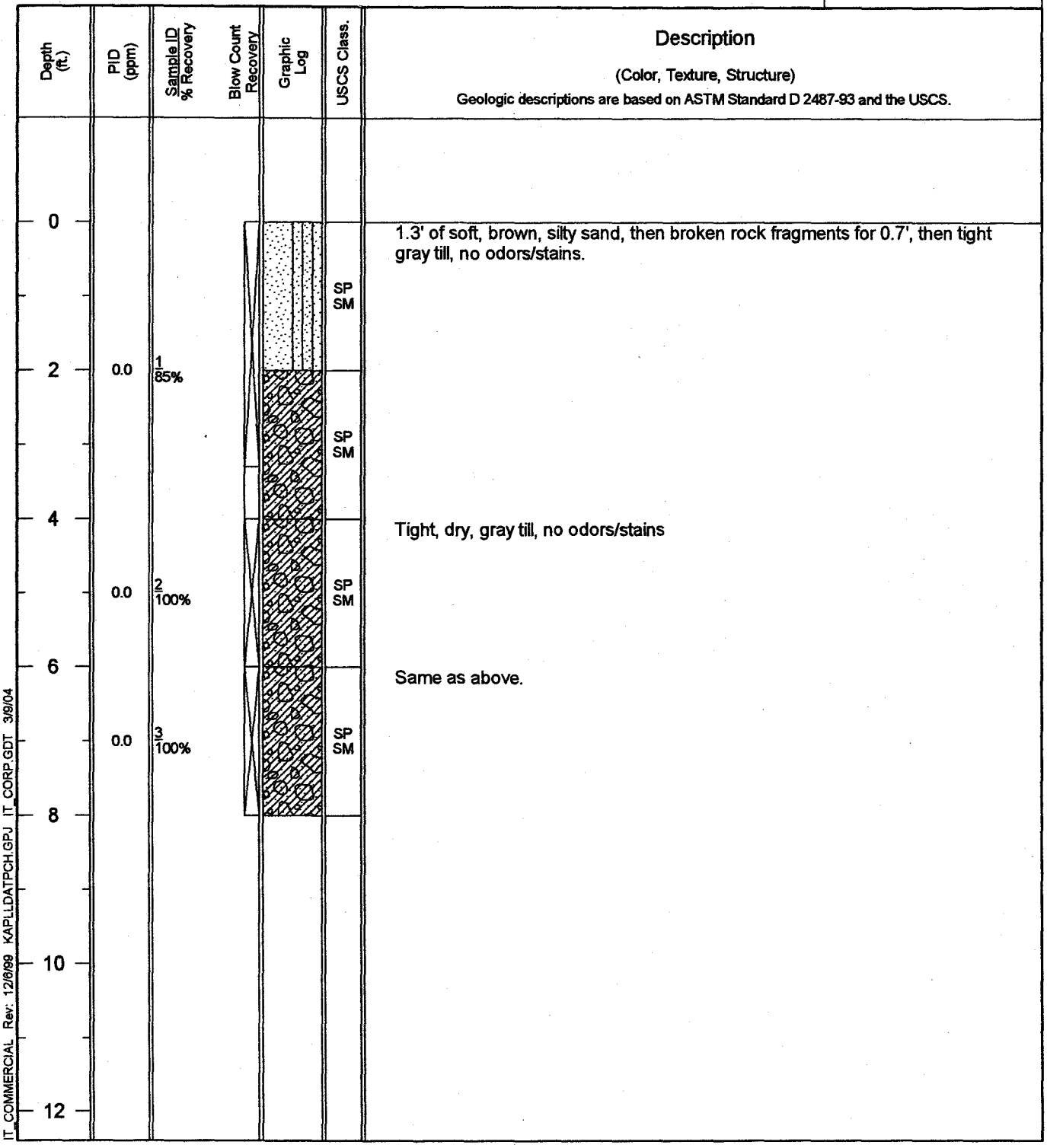
Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS



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Drilling Log

Soil Boring **TP-3C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 85%			SP SM	1.3' of soft, brown, wet till, then gray, tight, till, dry, no odors/stains.
4	0.0	2 / 100%			SP SM	Tight, dry, gray till, no odors/stains
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-4A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *R. Eaton* Date *9/18/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 75%			SP SM	0.2' brown topsoil, brown till to 3.8' transitions to gray till at bottom of sampler.
4	0.0	2 / 100%			SP SM	Brown till sluff ~0.5', gray till, dry large gravel @5', no stains/odors.
6	0.0	3 / 100%			SP SM	Gray till, no stains/odor, dry, tight.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-4B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *R. Eaton* Date *9/18/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP SM	0.5' Brown topsoil, brown till 0.5'-1.5'. Brown till changing to gray till at 1.5', no odors/stains, dry, tight soil.
4	0.0	2 / 100%			SP SM	Gray till, tight, dry, no odors/stains.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-4C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *R. Eaton/M. Puglisi* Date *9/18/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 95%			SP SM	First location had no recovery, found rock in drive shoe which split shoe, moved 12" NE of original hole. 0.8' of Brown, wet, topsoil, then tight gray till. No odors/stains, large fragment of rock at ~2.2'
4	0.0	2 / 100%			SP SM	Poor recovery due to rock in drive shoe. Moved 12" south of original local., drove 4'-6' again, gray till.
6	0.0	3 / 100%			SP SM	Gray till, dry, no odors/stains.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-5A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/18/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 85%			SP SM	Refusal at 2.6', 0.2' of soft, brown topsoil, then brown till changing to gray at bottom of tube.
4	0.0	2 / 100%			SP SM	Moved 1' North, brown till, changing to gray at 3', no stains/odors.
6	0.0	3 / 100%			SP SM	Gray till, very tight, dry.
8	0.0	4 / 100%			SP SM	Same as above.
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-5B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/18/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP SM	0.3' of brown topsoil, with grass at surface, then brown till ~2', then changes to gray till, only top 0.3' is moist to wet, rest is dry.
4	0.0	2 / 100%			SP SM	Tight, dry, gray till, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

IT_COMMERCIAL Rev.: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-5C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/17/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
TP-5C is eastern most location.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown till changing to gray till at 2', no odors/stains.
2	0.0	1 / 100%			SP SM	
4						Gray till, tight, dry.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-6A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *R. Eaton* Date *10/7/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
	0	1 100%			SP SM	Refusal at 2.8'. 0.5' top soil, 1.5' of reworked soft brown till, 0.8' of gray till. Relocate , attach drive point, drive to 3'.
2						
4	0	2 100%			SP SM	0.1' sluff-reworked brown till, moist, 3.9' gray till, dry.
6						Gray till, dry, tight.
	0	3 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPILLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-6B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *R. Eaton/M. Puglisi* Date *10/7/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						0.5' brown topsoil, 0.8' brown till-reworked, dry. Gray till 1.3' to 4.0'. TCL VOC samples from 2' NLDA-SS-TP6B-1113, and from 4' NLDA-SS-TP6B-1114.
2	0.0	1 / 100%			SP SM	
4						Gray till, dry. TCL VOCs collected at 6' NLDA-SS-TP6B-1115.
	0.0	2 / 100%			SP SM	
6						Gray till, dry, TCL VOC 8260 at 8' NLDA-SS-TP6B-1116.
	0.0	3 / 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-6C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0					SP	1.2' of f-m sand, brown, moist, then tight, gray till, no stains or odors.
2	0.0	1 / 65%			SP SM	
4						Gray till, sluff was all sand, saturated, no odors or stains.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-7A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/17/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
TP-7 has only A and C locations.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.8' of brown soft topsoil, then gray till, poor recovery.
2	0.0	1 / 50%			SP SM	
4						Tight, dry, gray till.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-7C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/17/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 90%			SP SM	0.6' of brown soft topsoil, grass at surface, then gray till, damp to dry at depth.
4	0.0	2 / 100%			SP SM	Tight, dry, gray till.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-8A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/17/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.8' of brown topsoil, then gray till, moist, no odors/stains.
2	0.0	1 / 100%			SP SM	
4	0.0	2 / 100%			SP SM	Tight gray till, damp.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-8B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/17/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 95%			SP SM	0.4' of brown topsoil, then tight, dry gray till.
4	0.0	2 / 100%			SP SM	Tight gray till, dry, no stains/odors.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-8C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/17/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.5' of brown topsoil, remainder is gray till, tight, dry.
2	0.0	1 / 95%			SP SM	
4						Tight gray till, dry, no stains/odors.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-9A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/7/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Soft, brown reworked till, wet, becomes tight at 3.0', no stains/odors.
2	0.0	1 / 85%			SP SM	
4						Brown till, changing to gray at ~5', no stains/odors.
	0.0	2 / 100%			SP SM	
6						All gray till, no odors/stains.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-9B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/7/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP SM	Soft, brown, reworked till, moist. Took chem. sample at 2' with field dupe NLDA-SS-TP9B-1108, NLDA SS-X13-1109, and from 4' NLDA-SS-TP9B-1110.
4	0.0	2 / 100%			SP SM	Brown till to gray till, tight, dry. TCL VOCs collected at 6' NLDA-SS-TP9B-1111.
6	0.0	3 / 100%			SP SM	Gray till, tight, dry, TCL VOC 8260 at 8' NLDA-SS-TP9B-1112.
8						
10						
12						

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Drilling Log

Soil Boring **TP-9C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/7/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 95%			SP SM	Soft, brown reworked till, top 0.8' is wet, then becomes dry, large rock at 3.8', no stains/odors.
4	0.0	2 / 100%			SP SM	Tighter brown till, dry, large rock at bottom of tube, becoming darker brown near bottom.
6	0.0	3 / 100%			SP SM	Brown to gray till, dry, tight, no odors/stains.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-10B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/6/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
TP 10 has only B and C locations.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown till, soft, moist to wet.
2	0.0	1 / 80%			SP SM	
4						Tight brown till, moist
	0.0	2 / 100%			SP SM	
6						Same as above, dry.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-10C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/6/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
					SP	Brown m-sand to ~2', then brown till, tight, no odors/stains, piece of wood at 0.8'.
2	0.0	1 / 100%			SP SM	
4						Tight brown till, dry.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-11A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/16/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Top 0.2' is brown topsoil with grass, then tight gray till, starts damp and drys out with depth.
2	0.0	1 / 100%			SP SM	
4						Tight gray till, dry, no odors/stains.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-11B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/16/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
					SP SM	Top 0.4' is brown topsoil then tight gray till, moist, no odors/staining.
2						
4						Tight gray till, dry, liner was stuck.
					SP SM	
6						Same as above.
					SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-11C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/16/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 95%			SP SM	Gray till, tight, dry to moist, no odors/staining.
4	0.0	2 / 100%			SP SM	Tight gray till, dry, no odors/staining.
6	0.0	3 / 100%			SP SM	Gray till, hole was open over night- has standing water in hole due to rain event.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-12A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/16/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.4' of brown, wet topsoil, then all brown till material, no odors/stains, moist.
2	0.0	1 / 100%			SP SM	
4						Brown till, somewhat tight, water entering boring from above.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-12B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/16/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP SM	0.2' of brown topsoil, then brown till material, no odors/stains, moist, some gray mottling near bottom of tube.
4	0.0	2 / 100%			SP SM	All tight brown till, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above, turning gray ~ 7.3'-gradual change.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-12C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/16/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	Brown till, tight, over packed liner, no odors or staining.
4						Same as above, over packed liner, pounded out.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-13A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/15/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	1.2' of brown till,then tight gray till, no odors/stains.
4						All tight gray till, no odors or staining.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-13B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/15/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 95%			SP SM	1.2' of tight, brown till,then tight gray till, no odors/stains.
4	0.0	2 / 100%			SP SM	All tight gray till, damp, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-13C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/15/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 95%			SP SM	1' of brown till,then tight gray till, damp, no odors/stains.
4	0.0	2 / 100%			SP SM	Tight gray till, damp.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-14A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/15/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.1' of brown topsoil, then gray till, no odors or staining.
2	0.0	1 / 100%			SP SM	
4						Gray till, no odors or staining.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-14B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/11/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	0.3' of brown topsoil, then gray till, no odors or staining.
4	0.0	2 / 100%			SP SM	Gray till, no odors or staining, tight, damp.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-14C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/15/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP SM	0.4' of brown topsoil with grass at surface, then tight gray till, damp.
4	0.0	2 / 100%			SP SM	Gray till, tight, damp, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-15A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/11/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown till, moist, somewhat tight, no odors/staining.
2	0.0	1 / 95%			SP SM	
4						Brown till, same as above.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-15B**

Page: 1 of 1

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/11/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						0.6' of dark brown topsoil, then 1' of light brown and light gray till with orange mottling, then brown till. Somewhat soft push, material is damp to moist, no odors or stains.
2	0.0	1 / 95%			SP SM	
4						Same as bottom from above.
	0.0	2 / 100%			SP SM	
6						Brown till, fairly tight, moist, no odors or stains, little orange mottling.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-15C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/11/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 100%			SP SM	1.2' dark brown topsoil, then remainder is brown till, moist, soft. No odors or stains.
4						Brown till - stuck liner.
6	0.0	2 100%			SP SM	
8						
10						
12						

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Drilling Log

Soil Boring **TP-16A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/10/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Gray till, damp at top, tight, no staining or odors.
2	0.0	1 / 90%			SP SM	
4	0.0	2 / 100%			SP SM	Gray till, same as above, dry.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-16B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/10/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 80%			SP SM	Top 1.3' is brownish gray till, then all gray till, tight, moist, no odors or staining.
4	0.0	2 / 100%			SP SM	Gray till, tight, dry, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-16C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/10/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 90%			SP SM	0.3' of brown topsoil, remainder is tight, gray till, dry, no stains or odor.
4	0.0	2 / 100%			SP SM	Gray till, tight, dry, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-17A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/11/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	1.3' of brown till, then gray till, no odors or staining.
4	0.0	2 / 100%			SP SM	Gray till, had refusal at 5.5', no odors or staining.
6	0.0	3 / 100%			SP SM	All gray till to bottom 0.4', then black, wet f-m sand, no odors or staining.
8						
10						
12						

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Drilling Log

Soil Boring **TP-17B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/11/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	0.5' of dark brown topsoil, then brown till to 2', then all gray till, no stains or odor.
4	0.0	2 / 100%			SP SM	Gray till, tight, dry, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-17C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/10/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 90%			SP SM	Top 1.5' is brown and gray till, remainder is all gray till, no odor or staining.
4	0.0	2 / 100%			SP SM	Gray till, tight, dry, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-18A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/10/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 95%			SP SM	0.3' of black topsoil with grass on it, remainder is gray till, dry, tight, no odors or staining.
4	0.0	2 100%			SP SM	Gray till, tight, dry.
6	0.0	3 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-18B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP SM	0.3' of black topsoil with grass on it, remainder is gray till, dry, tight, no odors or staining.
4	0.0	2 / 100%			SP SM	Gray till, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-18C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
C is the northern most location.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.1' of brown topsoil with grass on it, remainder is gray till, dry, tight.
2	0.0	1 / 100%			SP SM	
4						Gray till, tight, dry, no odors or staining.
	0.0	2 / 100%			SP SM	
6						Gray till, tight, dry, no odors or staining.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-19A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/6/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
C is the northern most location.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP SM	Brown till with some c-gravel, changes to gray at 3.5', moist to dry, no stains/odors.
4	0.0	2 / 100%			SP SM	Gray till, tight, dry, no odors or staining.
6	0.0	3 / 100%			SP SM	Same as above.
8						
10						
12						

Drilling Log

Soil Boring **TP-19B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/6/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
C is the northern most location.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						1.2' of brown till, then all gray, moist, tight, no stains/odors.
2	0.0	1 / 100%			SP SM	
4						Gray till, tight, dry.
	0.0	2 / 100%			SP SM	
6						Same as above.
	0.0	3 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Soil Boring **TP-19C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Small track mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/6/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
C is the northern most location.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						1' of brown till, then all gray till, moist to dry.
2	0.0	1 / 100%			SP SM	
4	0.0	2 / 100%			SP SM	First attempt has refusal at 4.4', all gray till. Moved 1' east, drove to 5', and sampled 5'-8'.
6	0.0	3 / 100%			SP SM	All tight, gray till.
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

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Drilling Log

Soil Boring **TP-20A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 95%			SP SM	0.2' of black topsoil with moss at surface, then 0.5' of black f-sand, moist. Remainder of tube is brown till, little gray mottling. Some f-c gravel, tight, no odors or staining.
4	0.0	2 100%			SP SM	Gray till, large pieces of stone, tight, no odors or staining.
6	0.0	3 100%			SP SM	Tight gray till, no odors or staining.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-20B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP SM	0.2' of black topsoil with moss at surface, then 0.5' of black f-sand, moist. Remainder is brown and gray till, large rock ~2.5' BGS, no staining or odors.
4	0.0	2 / 100%			SP SM	Gray till with some c-gravel-angular, dry, no odors or staining.
6	0.0	3 / 100%			SP SM	Gray till, no odors or staining.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-20C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.8' of black topsoil-moist to wet, then brown silty sand with f-gravel (brown till), had refusal at 2.8', appears to be on a large rock, no odors or staining. Moved 1' west , had same material as original hole to 4'.
2	0.0	1 / 100%			SP SM	
4						Gray till, no odors or staining.
	0.0	2 / 100%			SP SM	
6	0.0	3 / 100%				Gray till, no odors or staining.
					SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-21A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	0.3' of topsoil and grass, brown. Remainder is gray till, moist, fairly tight, some coarse angular gravel, no staining or odors.
4						Dry till from above, bottom 1' is wet s+g (f-c sand, f-c gravel), black to gray.
6	0.0	2 / 100%			SP SM	
8	0.0	3 / 100%			SP SM	0.5' of sand from above, remainder is gray till. Sand lens is saturated, no staining or odors.
10						
12						

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Drilling Log

Soil Boring **TP-21B**

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Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						0.5' of topsoil with grass, brown, remainder is gray till, dry, no stains or odors.
2	0.0	1 / 100%			SP SM	
4						0.8' thick sand lens at 4.5', remainder is gray till, no stains or odors, sand lens is saturated.
	0.0	2 / 100%			SP SM	
6	0.0	3 / 100%				Gray till, dry, no odors or staining, some water from above.
					SP SM	
8						
10						
12						

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Drilling Log

Soil Boring **TP-21C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/8/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 95%			SP SM	0.2' of brown topsoil, grass, remainder is gray till, tight, bottom 1.5' is moist, no stains or odors.
4	0.0	2 / 100%			SP SM	Gray till,no odors or staining.
6	0.0	3 / 100%			SP SM	Gray till, sluff from above, no odors or staining.
8						
10						
12						

Drilling Log

Soil Boring **TP-22A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			OL	Brown, transitions to light brown ~2', clayey silt, no stains/odors.
4						Brown silty clay.
6	0.0	2 / 100%			CL ML	
8						
10						
12						

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Drilling Log

Soil Boring **TP-22B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/25/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 90%			CL ML	Brown to light brown silty clay, with orange mottling, no odors/staining.
4						first try had no recovery. Second attempt with basket also had no recovery.
6	NA	2 / 0%				
8						Saturated clayey silt, no stains/odors, brown.
10	0.0	3 / 100%			ML	
12						

Drilling Log

Soil Boring **TP-22C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/25/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 50%			SP SM	Brown, silty f-sand, some m-sand, wet, no stains/odors.
4						Same as above, piece of c-gravel at 5.8', saturated, no odors/stain.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

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Drilling Log

Soil Boring **TP-23A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/22/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown topsoil + grass, remainder is brown, till like. At 3' piece of wood, some black material with petroleum odor present, bottom 0.4' is black, sandy material with strong pet. odor-no PID hits.
2	0.0	1 / 100%			SP SM	
4						Same as above, some staining ~6', has same odor from above, no PID readings.
6	0.0	2 / 75%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-23B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/22/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brownish gray with some black streaking. No odors or stains, tight, sandy silt.
2	0.0	1 / 75%			ML	
4	0.0	2 / 100%			ML	Refusal at 5.7', 0.2' of material from above, then all wood, copper wire noted in wood, moving south 1' and try again, refusal at 4.8' on second location, moving north of original hole.
6	0.0	3 / 45%			CL	0.1' of black fibrous material (most likely wood), then gray/green clay with black streaks from above on it.
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-23C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/22/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 80%			SP SM	0.8' of brown topsoil, then dark gray - reworked till with pieces of brick at 2.5'.
4						0.7' of f-c sand, then 0.8' of wood chips, then remainder is gray silt with little clay. No odors, some staining below wood chips.
6	0.0	2 / 70%				
8						
10						
12						

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Drilling Log

Soil Boring **TP-24A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/25/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 90%			SP	0.6' of topsoil, dark brown, then brown f-m sand, some f-c gravel, tight, moist, no odors/stains
4						Tight, wet, brown till, no odors/stains.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-24B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/25/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 95%			SP	0.7' of brown topsoil, then brown f-m sand, tight, bottom 0.2' is black m-c sand, trace f-c gravel, no odors/stains.
4						Tight, wet, brown till, no odors/stains.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-24C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/25/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP	1.2' of topsoil, dark brown, then brown f-m sand, little f-gravel, no odors/stains.
4						Tight, wet, till, no odors/stains.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-25A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 70%			SP	Brown, 0.4' of topsoil, then f-m sand and f-c gravel. Bottom 0.6' is f-m sand with some c-sand.
4						Same as above first 1.2', then all m-sand, trace c-sand, wet.
6	0.0	2 / 95%			SP	
8						
10						
12						

Drilling Log

Soil Boring **TP-25B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Heavy rain yesterday.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 60%			SP	Brown, f-m sand, and f-c gravel, top 0.2' is brown topsoil, no stains or odors, wet.
4						Top 1.4' is same as above, then all black and brown m-sand, little coarse, wet.
6	0.0	2 / 90%			SP	
8						
10						
12						

Drilling Log

Soil Boring **TP-25C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/22/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Borings oriented N-S, C is most south.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 90%			SP	Dark brown topsoil first 0.6', then f-m sand and c-sand and f-gravel, moist, no stains/odors.
4						Brown f-m sand, little c-sand. At 6.2' BGS, 0.1' thick lens of white m-sand.
6	0.0	2 / 80%			SP	
8						
10						
12						

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Drilling Log

Soil Boring **TP-26A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Borings oriented N-S, C is most south.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.3' of dark brown topsoil, then all silty f-sand, moist, orange-brown, no odors/stains.
2	0.0	1 / 100%			SP SM	
4						Same as above, with a silty clay lens at 6' for 0.3'. Bottom 1' is saturated and soft, no stains/odors.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-26B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	Silty, f-sand, firm, moist, brown, no odor/stains.
4						Same as above, saturated, -liner was stuck.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-26C**

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Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	0.2' of dark brown topsoil, remainder is orange-brown silty f-sand, moist, firm, no stains/odor.
4						Silty f-sand, fining to clayey silt, brown, saturated at 7', firm, little gray mottling between 5' and 6', no odors/stains.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

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Drilling Log

Soil Boring **TP-27A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 100%			SP SM	F-silty sand, brown, moist, some orange mottling.
4						Same as above.
6	0.0	2 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-27B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	F-silty sand, brown, moist, no odors/staining.
4						Same as above.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-27C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 60%			SP SM	F-silty sand, brown, no odors/staining.
4						Same as above.
6	0.0	2 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-28A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	F-silty sand, brown, moist to wet.
4						Brown, silty, f-sand, wet to saturated.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-28B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 90%			SP SM	Wet, silty f-sand to clayey silt, no odors/stains.
4						No recovery.
6	NA	2 / 0%			SP SM	
8						Saturated clayey silt, no odor/stains.
10	0.0	3 / 75%			ML	
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-28C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 60%			SM	Silty f-sand, soft, wet, no odors/stains.
4						Same as above.
6	NA	2 / 45%			SM	
8						Same as above, f-sand to silty clay.
10	0.0	3 / 95%			ML	
12						

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-29A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown, loose silty f-sand, some med. and coarse.
2	0.0	1 / 55%			SP SM	
4						Loose m-c sand and f-gravel for 0.3' with piece of flat metal, below is f-silty sand, saturated.
6	0.0	2 / 100%			SP	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-29B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 55%			SP SM	Brown, silty f-m sand, at bottom of tube is black staining with pieces of metal, no odors.
4						Brown, silty f-sand, no stains/odors.
6	0.0	2 65%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-29C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/2/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 90%			SP SM	0.3' of brown topsoil, then f-silty sand, some black staining at ~3', no odors.
4						F-silty sand, brown, saturated, no stains/odors.
6	0.0	2 / 75%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-30A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/25/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 95%			SP SM	Tight, brown, silty f-sand, some m-sand, bottom is turning grayish, with a little f-gravel, no stains/odors.
4						
6	0.0	2 / 75%			ML	Gray, soft, clayey silt, some c-sand and f-gravel, saturated. Piece of wood at 7.8' with black staining below, no odor or sheen.
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-30B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/25/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	0.8' of brown topsoil, then intermixed brown and gray, soft, moist, f-silty sand, some c-gravel, no odors/stains.
4						Gray till material, tight, bottom has septic odor.
6	0.0	2 / 75%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-30C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/29/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 75%			SP SM	Refusal at 2.4' on first attempt, 0.2' of brown topsoil, then silty f-sand. Second location is 1' south of original, material is the same.
4						Intermixed gray and brown till material, bottom 0.8' is gray clayey silt.
6	0.0	2 / 90%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-31A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/29/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 75%			SP	M-c sand, some gravel, some silt, pieces of brick at ~2', wet, no odors/stains.
4						All brown, clayey silt, saturated, some orange mottling throughout, no odors/stains.
6	0.0	2 95%			ML	
8						
10						
12						

Drilling Log

Soil Boring **TP-31B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/29/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 80%			SP	Brown, silty f-c sand, some f-c gravel, wet, no odors/stains.
4						No recovery.
6	NA	2 / 0%				
8						Starts out as clayey silt, changes to silty clay at bottom, no odors/stains.
10	0.0	3 / 50%			ML	
12						

Drilling Log

Soil Boring **TP-31C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/29/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 50%			SP	Brown, silty f-m sand, little c-sand and f-gravel, moist to wet, no odors/stains.
4						Loose, brown, saturated sand, then at 6' tighter, clayey silt, all saturated, no stains/odors.
6	0.0	2 / 75%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-32A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						
2	0.0	1 / 30%			SP	M-sand, some course, f-c gravel, pieces of copper wire.
4						Silty f- sand, wet, brown.
6	0.0	2 / 25%			SP SM	
8						Silty f-sand, fining downward to clayey silt, changing from brown to gray at ~11.3'.
10	0.0	3 / 75%			ML	
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-32B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						
2	0.0	1 / 50%			SP	Brown, wet, f-c sand, silty, trace c-gravel.
4						Same as above-used basket and still had poor recovery.
6	0.0	2 / 20%			SP	
8						Brown, silty f-sand, bottom is clayey silt, no odors/stains.
10	0.0	3 / 60%			ML	
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-32C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 55%			SP	Brown, f-m sand, little silt, little f-gravel, soft, wet, no odors or stains.
4						Same as above, piece of metal found in soil.
6	0.0	2 / 20%			SP	
8						Same as above for 0.4', then brown silty f-sand, fining downward to clayey silt, changing to gray at 11.5', wet.
10	0.0	3 / 95%			SP SM	
12						

Drilling Log

Soil Boring **TP-33A**

Page: 1 of 1

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 25%			SP	Brown topsoil, then brown m-c sand + gravel, some silt.
4						Brown, silty f-sand grading to clayey silt, some orange mottling.
6	0.0	2 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-33B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Brown, silty f-sand, no stains/odors.
2	0.0	1 / 55%			SP SM	
4						Same as above.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-33C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *10/1/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 95%			SP SM	0.2' of brown topsoil, then brown silty f-sand, some orange mottling, no stains/odors.
4						Silty f-sand, orange mottling through out.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-34A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 80%			SP	0.2' of brown topsoil, then brown silty f-m sand, some f-c gravel, piece of wood at 3.8' with some black staining below it.
4						Light brown, silty f-sand, saturated, no odors/stains.
6	0.0	2 90%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-34B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 90%			SP	0.3' of brown topsoil, brown and black (with little orange mottling), m-c sand, little c-gravel, wet, no odors/stains.
4						Same as bottom from above-saturated, no odors/stains.
6	0.0	2 45%			SP	
8						
10						
12						

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Drilling Log

Soil Boring **TP-34C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 65%			SP	0.6' of topsoil, then brown and black, m-c sand, little c-gravel, moist to wet, no odors/stains.
4						Saturated, m-c sand and f-gravel, bottom 0.1' is silty f-sand.
6	0.0	2 / 10%			SP	
8						Soft, saturated, silty f-sand.
10	0.0	3 / 55%			SP SM	
12						

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Drilling Log

Soil Boring **TP-35A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 55%			SP	Brown m-sand, little f and c-sand, moist, no odors/stains.
4						Same as above for 0.8', then light brown silty f-sand, no odors/stains.
6	0.0	2 80%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-35B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 90%			SP	0.3' of brown topsoil, then gray/brown m-sand some f-c gravel. Bottom 0.3' is wet, no stains or odors, some pieces of wire found in soil.
4						Silty f-sand, no odors/stains, more wire, nails, and other debris.
6	0.0	2 / 80%			SP SM	
8						
10						
12						

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Drilling Log

Soil Boring **TP-35C**

Page: 1 of 1

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 90%			SP SM	0.3' of brown topsoil, then brown silty f-sand, trace c-gravel, no odors/stains.
4						No recovery.
6	NA	2 / 0%				
8						Silty f-sand loose for 0.3' then tighter clayey silt, bottom 0.4' is silty clay, light brown. No odors or staining.
10	0.0	3 / 80%			ML	
12						

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Drilling Log

Soil Boring **TP-36A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *12.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/29/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 55%			SP	0.3' of brown topsoil, then silty sand + gravel, moist, no odors/stains.
4						With basket we had poor recovery. Clayey silt, wet.
6	0.0	2 / 20%			ML	
8						Brown, clayey silt, then quick change to gray clay at 11.2', no odors or stains.
10	0.0	3 / 90%			ML	
12						

Drilling Log

Soil Boring **TP-36B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/29/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 85%			SP SM	0.8' of brown topsoil, then large pieces of rock fragments, to 3.2', then brown silty fine sand.
4						Clayey silt, brown, no odors/stains.
6	0.0	2 / 100%			ML	
8						
10						
12						

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Drilling Log

Soil Boring **TP-36C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/29/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 100%			SP	Dark brown to light brown, top 3.5' is f-m sand, some f-c gravel, bottom 0.5' is silty f-sand. No stains/odors.
4						Same as bottom 0.5' from above, wet, no odor/stains.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-37A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	0.2' of brown topsoil, then gray, silty f-sand, some c-gravel, then light brown silty f-sand, no odors/stains.
4						Light brown, silty f-sand, fining to clayey silt, wet, no odors/stains.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-37B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	0.3' of brown topsoil, then gray + brown f-m sand, silty to 2', then light brown silty f-sand, moist, no odors/stains.
4						Light brown, silty f-sand, wet, no odors/stains.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-37C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/30/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 100%			SP SM	0.2' of topsoil, dark brown f-m sand, little f-c gravel to 1.2', then light brown silty f-sand, moist, no odors/stains.
4						Light brown, silty f-sand, moist to wet, no odors/stains.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

Drilling Log

Soil Boring **TP-38A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 50%				0.4' of brown topsoil, then fill material, large pieces of red brick and concrete with f-m sand.
4						Brown f-c sand, wet, bottom 0.7' is gray/green clay, saturated.
6	0.0	2 / 50%			SP	
8						
10						
12						

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Drilling Log

Soil Boring **TP-38B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS
Tried 4'-8' in four locations, all with poor recovery, 0.4' at most. Material was all fill.

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 50%				0.4' of topsoil with grass, then fill material with large pieces of red brick, bottom 0.1' is grayish m-c sand.
4						Pushed to 8'-only got 0.4' of recovery on first location, piece of wood in shoe. Moved north 1', only 0.2' of recovery, piece of red brick. Moved 1' south of original hole, no recovery. Moved 1' west of original hole, 0.4' of recovery, m-sand.
6	0.0	2 / 10%				
8						
10						
12						

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Drilling Log

Soil Boring **TP-38C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 50%			SP	0.2' of topsoil, then brown/black m-c sand and f-c gravel, no stains/odors.
4						Fill, pieces of red brick, concrete block, no stains or odors.
6	0.0	2 / 30%				
8						
10						
12						

Drilling Log

Soil Boring **TP-39A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
	0.0	1 100%			SP SM	Brown till, tight, refusal at 3.1', no stains or odors. Will move 1' west and try again.
2						
	0.0	2 100%			SP SM	Brown till from surface to 4' BGS in second location.
4						
	0.0	3 100%			SP SM	Brown till, tight, dry, no staining or odors.
6						
	0.0	4 100%			SP SM	Brown till to gray till at 6.8', tight, dry.
8						
10						
12						

Drilling Log

Soil Boring **TP-39B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 100%			SP SM	Brown till, tight, dry, no stains or odors.
4	0.0	2 100%			SP SM	Brown till, same as above.
6	0.0	3 100%			SP SM	Brown to gray till at 7', no stains or odors.
8						
10						
12						

Drilling Log

Soil Boring **TP-39C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *Van Mounted Geoprobe*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/9/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 100%			SP SM	Brown till, some c-gravel, no stains or odors.
4	0.0	2 100%			SP SM	Brown till, no odors or staining.
6	0.0	3 100%			SP SM	Brown to gray till, no stains or odors.
8						
10						
12						

Drilling Log

Soil Boring **TP-40A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/22/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 100%			SP SM	0.8' of brown topsoil, then 1' of brown till and gravel-soft, remainder appears to be brown till, soft.
4						All brown, moist, tight - appears to be all silt with little clay, some orange-brown mottling, no stains or odors.
6	0.0	2 100%			ML	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-40B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/22/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						0.6' of dark brown topsoil with grass, then reworked till, piece of glass at 2', less coarse material with depth.
2	0.0	1 / 100%			SP SM	
4						All brown, moist, tight, clayey silt, some orange-brown mottling, no stains or odors.
6	0.0	2 / 100%			ML	
8						
10						
12						

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

Drilling Log

Soil Boring **TP-40C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/22/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
0						
2	0.0	1 / 95%			ML	0.2' of dark brown topsoil, 1.6' of brown sand + gravel, remainder is wet, clayey silt, little orange brown mottling.
4						Clayey silt, brown, tight, damp, orange-brown mottling.
6	0.0	2 / 100%			ML	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-41A**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

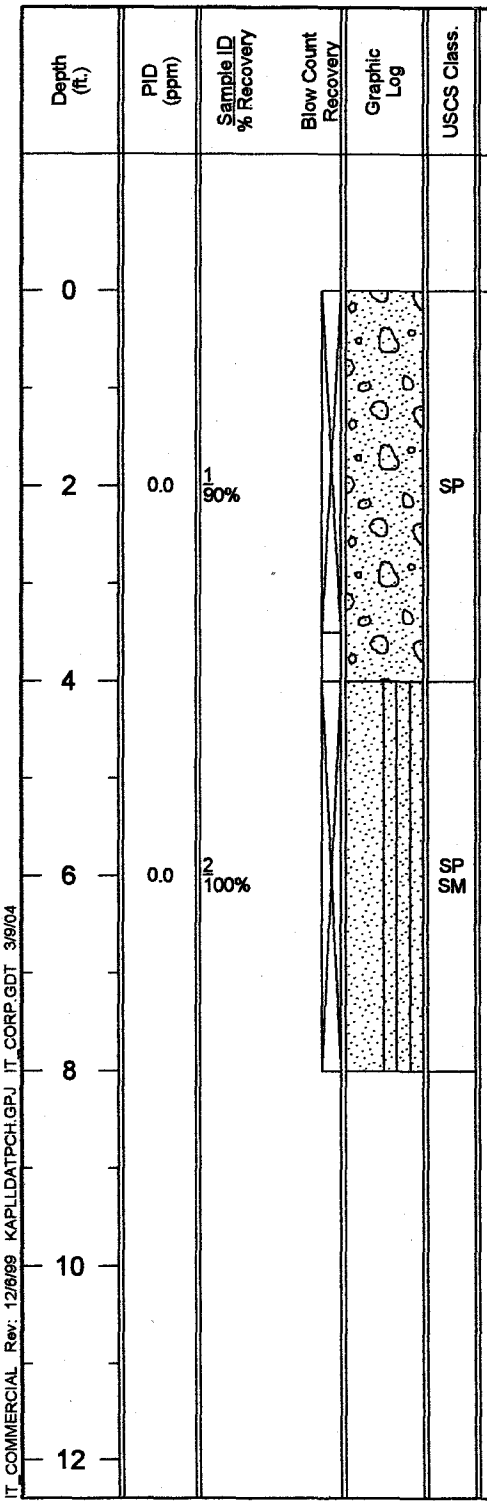
Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS



Description

(Color, Texture, Structure)

Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.

0.4' of brown topsoil, then brown, f-m sand and f-c gravel, no stains or odors.

Same as above to 5.3', then becoming light brown, f-silty sand, trace c-sand, no odors/staining.

IT_COMMERCIAL Rev: 12/8/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-41B**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

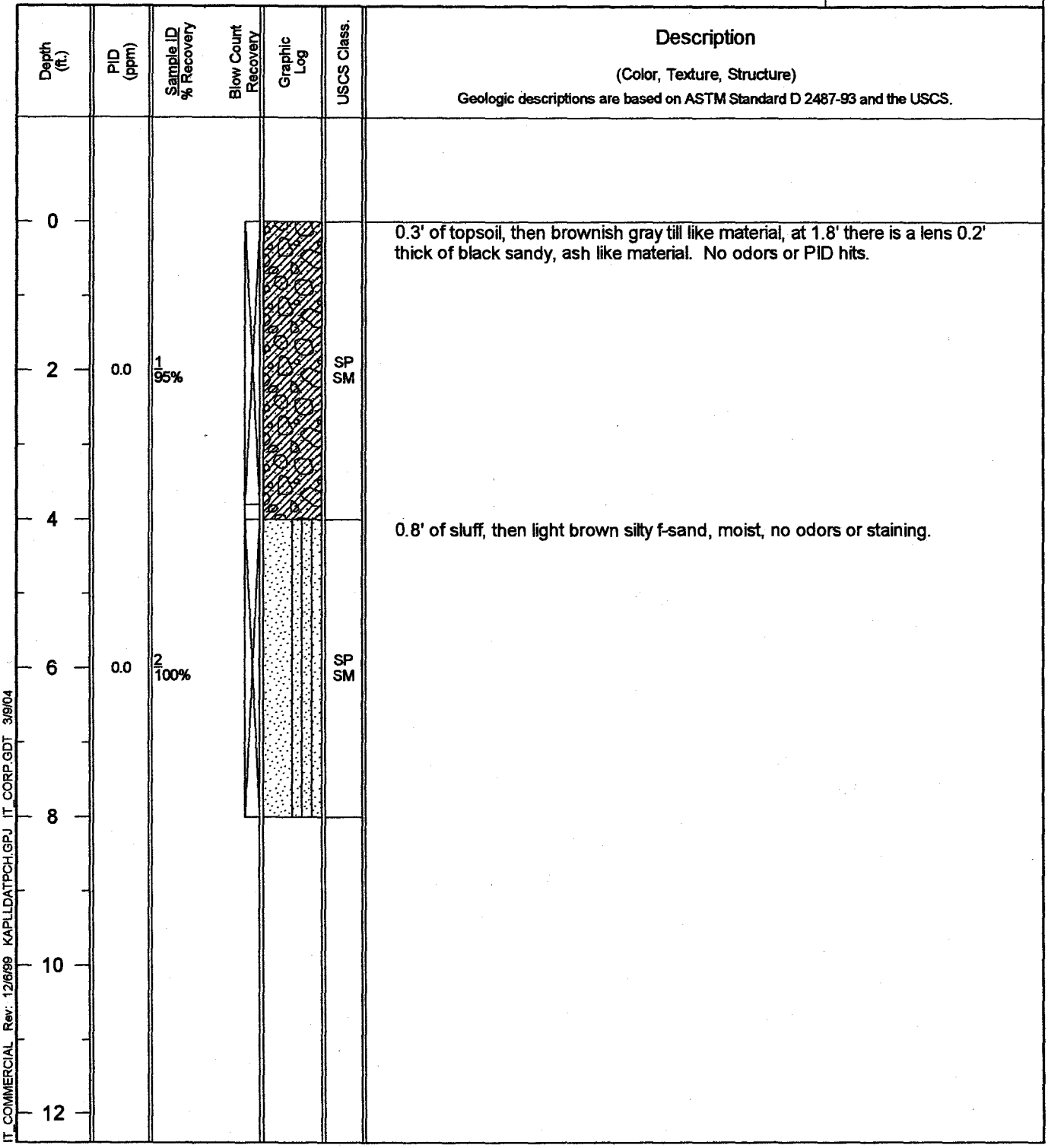
Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS



IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Drilling Log

Soil Boring **TP-41C**

Project *Land Disposal Area, Test Pit Characterization* Owner *KAPL*

Location *Niskayuna, NY* Proj. No. *844097*

Surface Elev. *NA* Total Hole Depth *8.0 ft.* North _____ East _____

Top of Casing *NA* Water Level Initial *NA* Static *NA* Diameter *2.125 in.*

Screen: Dia *NA* Length *NA* Type/Size *NA*

Casing: Dia *NA* Length *NA* Type *NA*

Fill Material *Native* Rig/Core *6610 Track Rig*

Drill Co. *ADT* Method *Direct Push*

Driller *Roger Bulley* Log By *M. Puglisi* Date *9/24/03* Permit # *NA*

Checked By *NA* License No. *NA*

COMMENTS

Depth (ft.)	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure)
0						Geologic descriptions are based on ASTM Standard D 2487-93 and the USCS.
2	0.0	1 / 95%			SP SM	0.3' of brown topsoil, till like material. At 2', 0.3' thick lens of tan brick like material, no odors/stains.
4						0.4' of sluff, then light brown silty f-sand, no odors/staining.
6	0.0	2 / 100%			SP SM	
8						
10						
12						

IT_COMMERCIAL Rev: 12/6/99 KAPLLDATPCH.GPJ IT_CORP.GDT 3/9/04

Appendix D

Test Pit Photographs

Test Pit #1

(Photo taken 7/12/2004)



Location: C&D Area No. 1

View showing rebar at ~4 foot depth of the test pit.

Test Pit #1

(Photo taken 7/12/04)



Location: C&D Area No. 1

View showing gray till shown at bottom of test pit (~6 foot depth).

Test Pit #1

(Photo taken 7/12/04)

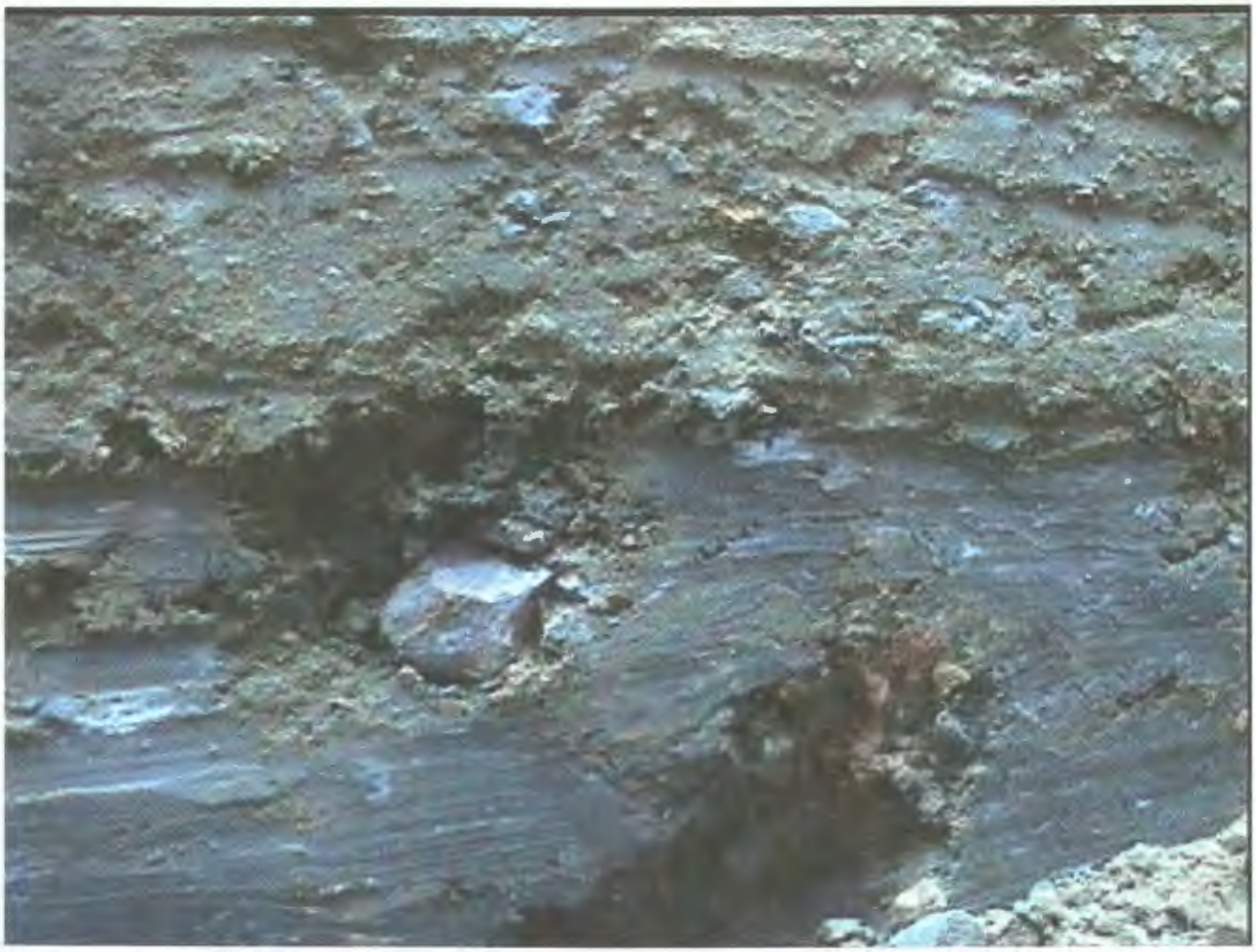


Location: C&D Area No. 1

View showing remnants of 5 gallon metal pail removed from test pit.

Test Pit #2

(Photo taken 7/7/04)



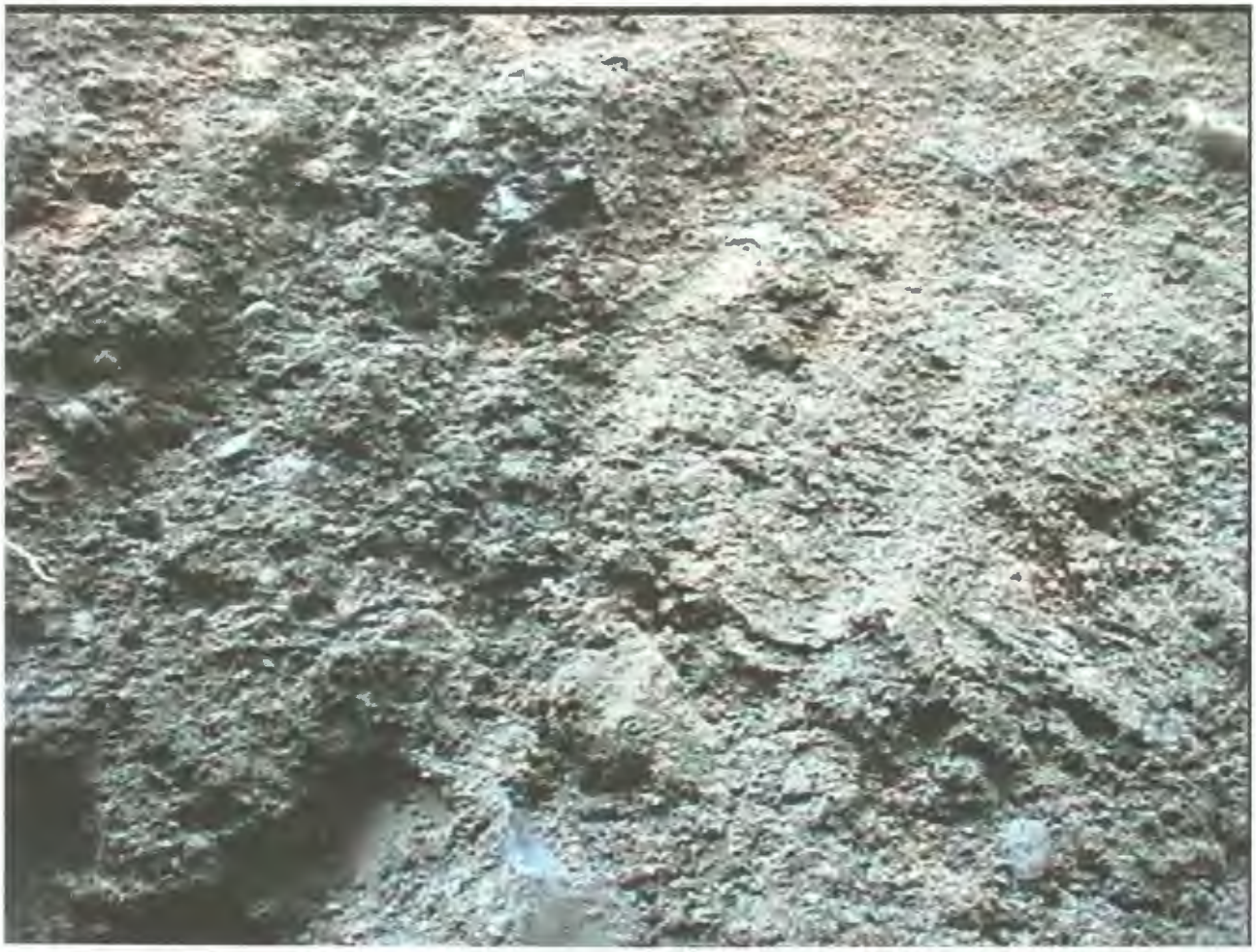
Location: C&D Area No. 1

View showing transition from brown till to gray till at ~5.8 feet.

Waste debris not found.

Test Pit #3

(Photo taken 7/8/04)



Location: C&D Area No. 1

View showing brown till on sidewall of test pit.

Gray till (not shown) encountered at ~2.8 feet.

Waste debris not found.

Test Pit #4

(Photo taken 7/6/04)



Location: C&D Area No. 1

View showing gray till on sidewall of test pit; gray till encountered at ~1 foot.

Waste debris not found.

Test Pit #5

(Photo taken 7/6/04)



Location: C&D Area No. 1

View showing gray till in test pit; brown soil is fall-in from surface.

Reworked brown till encountered from surface to ~1.5 feet.

Waste debris not found.

Test Pit #6

(Photo taken 7/8/04)



Location: C&D Area No. 1

View showing gray till contact at ~1.5 feet.

Waste debris not found.

Test Pit #7

(Photo taken 7/12/04)



Location: C&D Area No. 1

View showing gray till in test pit; brown soil is fall-in from surface.

Reworked brown till encountered from surface to ~1.2 feet.

Concrete and rebar encountered at ground surface.

Test Pit #8

(Photo taken 7/1/04)



Location: C&D Area No. 1

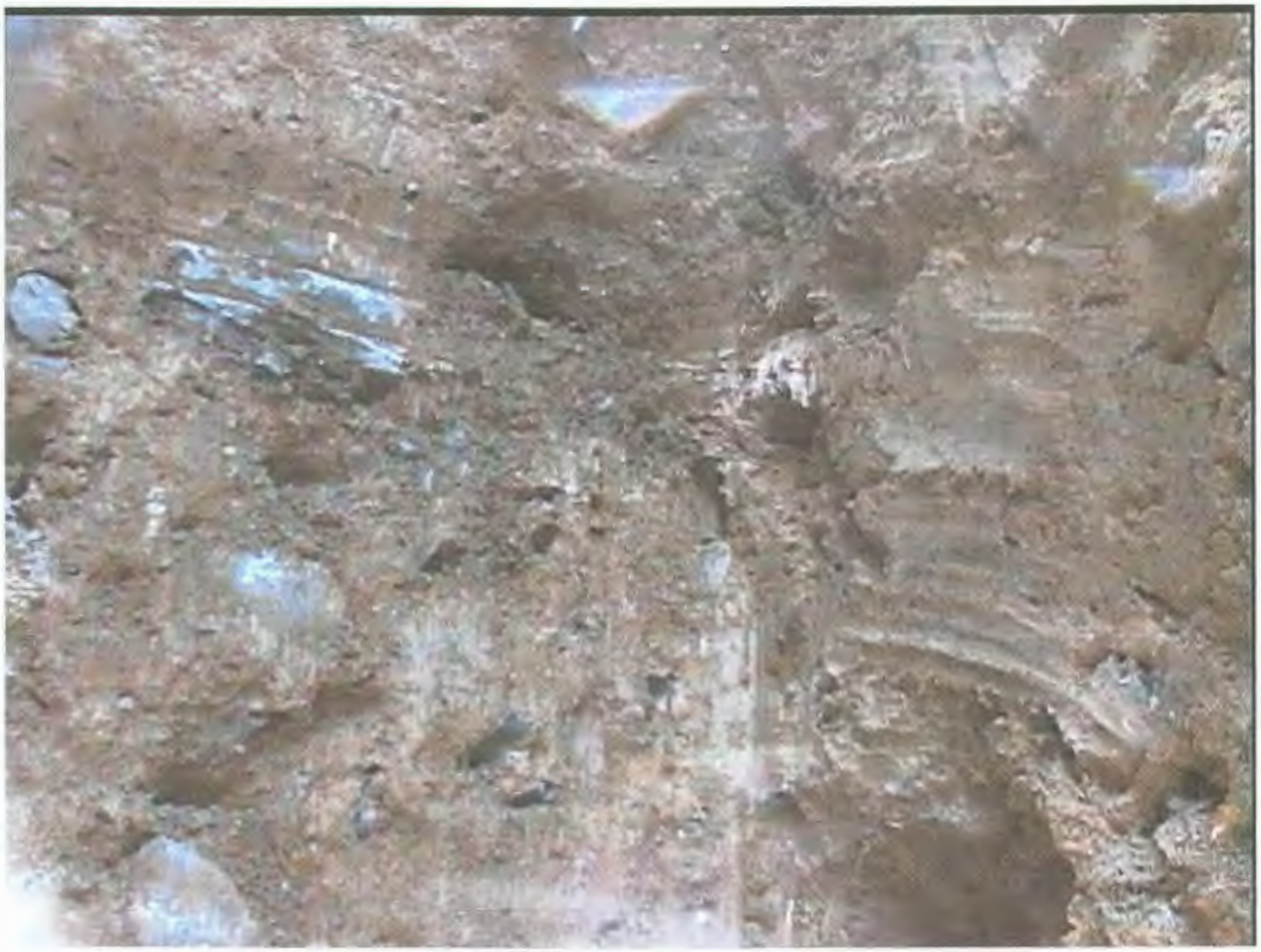
View showing gray till in test pit; brown soil is fall-in from surface.

Reworked brown till encountered from surface to ~0.7 feet.

Waste debris not found.

Test Pit #9

(Photo taken 7/7/04)



Location: C&D Area No. 1

View showing sand and gravel fill with cobbles.

Gray till not encountered at bottom of test pit (~6 feet).

Waste debris not found.

Test Pit #10

(Photo taken 7/1/04)



Location: Approximately 75 feet southeast of C&D Area No. 1

View showing brown till along sidewall of test pit, becoming more gray at bottom (~6 feet).

C&D debris at surface (0-1 foot); no debris noted deeper.

Test Pit #11

Photo Taken 12/3/03



Location: North Field

View showing gray till encountered from ground surface to bottom of test pit.

(Note: Brown color in center of photo is from camera lighting)

Waste debris not found.

Test Pit #12

Photo Taken 12/3/03



Location: North Field

View showing brown till throughout test pit.

Waste debris not found.

Test Pit #13

(Photo Taken 12/4/03)



Location: North Field

View showing contact between brown till and gray till (at ~1.1 foot depth) in test pit.
One piece of rebar found at surface.

Test Pit #14

(Photo Taken 12/4/03)



Location: North Field

View showing gray till encountered from ground surface to bottom of test pit (backhoe refusal at ~4.7 feet).
Waste debris not found.

Test Pit #15

(Photo Taken 12/2/03)



Location: North Field

View showing brown till throughout test pit.

Waste debris not found.

Test Pit #16

(Photo Taken 12/2/03)



Location: North Field

View showing brown till overlying gray till; contact at ~3 feet.

Backhoe refusal at ~4.8 feet.

Waste debris not found.

Test Pit #17

(Photo Taken 12/1/03)



Location: North Field

View showing brown till overlying gray till; contact at ~1.5 feet.

Waste debris not found.

Test Pit #18

(Photo Taken 12/1/03)



Location: North Field

View showing gray till encountered from ground surface to bottom of test pit.

Waste debris not found.

Test Pit #19

(Photo Taken 11/26/03)



Location: North Field

View showing brown till overlying gray till contact at ~1 foot.

Waste debris not found.

Test Pit #20

(Photo Taken 11/26/03)



Location: Pyrophoric Area

View showing black sandy material at surface to ~0.5 to 1 feet deep; possible Pyrophoric burn residue.

Brown till below black surface material, gray till encountered at ~5 feet.

Waste debris not found below black material.

Test Pit #21

(Photo Taken 11/25/03)



Location: Pyrophoric Area

View showing gray till encountered from ~0.1 feet to bottom of test pit.

Note: Water in test pit is a result of surface water run in.

Waste debris not found.

Test Pit #22

(Photo Taken 7/14/04)



Location: West Field Extended

View showing sandy silt encountered throughout test pit.

Debris noted at surface and adjacent fill face, but not at depth.

Test Pit #23

(Photo Taken 6/30/04)



Location: West Field Extended

View showing example of debris found in test pit; lumber, wire.

Test Pit #23

(Photo Taken 6/30/04)



Location: West Field Extended

View showing example of debris found in test pit.

Large timbers precluded digging past ~5.5 feet.

Test Pit #23

(Photo Taken 6/30/04)



Location: West Field Extended

View showing example of debris found in test pit;
Burnt wood, slag and section of metal ring.

Test Pit #24

(Photo Taken 6/21/04)



Location: West Field Extended

View showing section of rebar at ~3 foot depth of test pit;

Waste debris sporadic within sandy fill material.

Test Pit #24

(Photo Taken 6/21/04)



Location: West Field Extended

View showing band of black sand on wall from ~ 4 foot to ~5 foot depth.

Silty clayey fine sand underlies waste debris.

Photo also shows lack of concentrated waste debris within sandy fill material.

Test Pit #25

(Photo Taken 6/17/04)



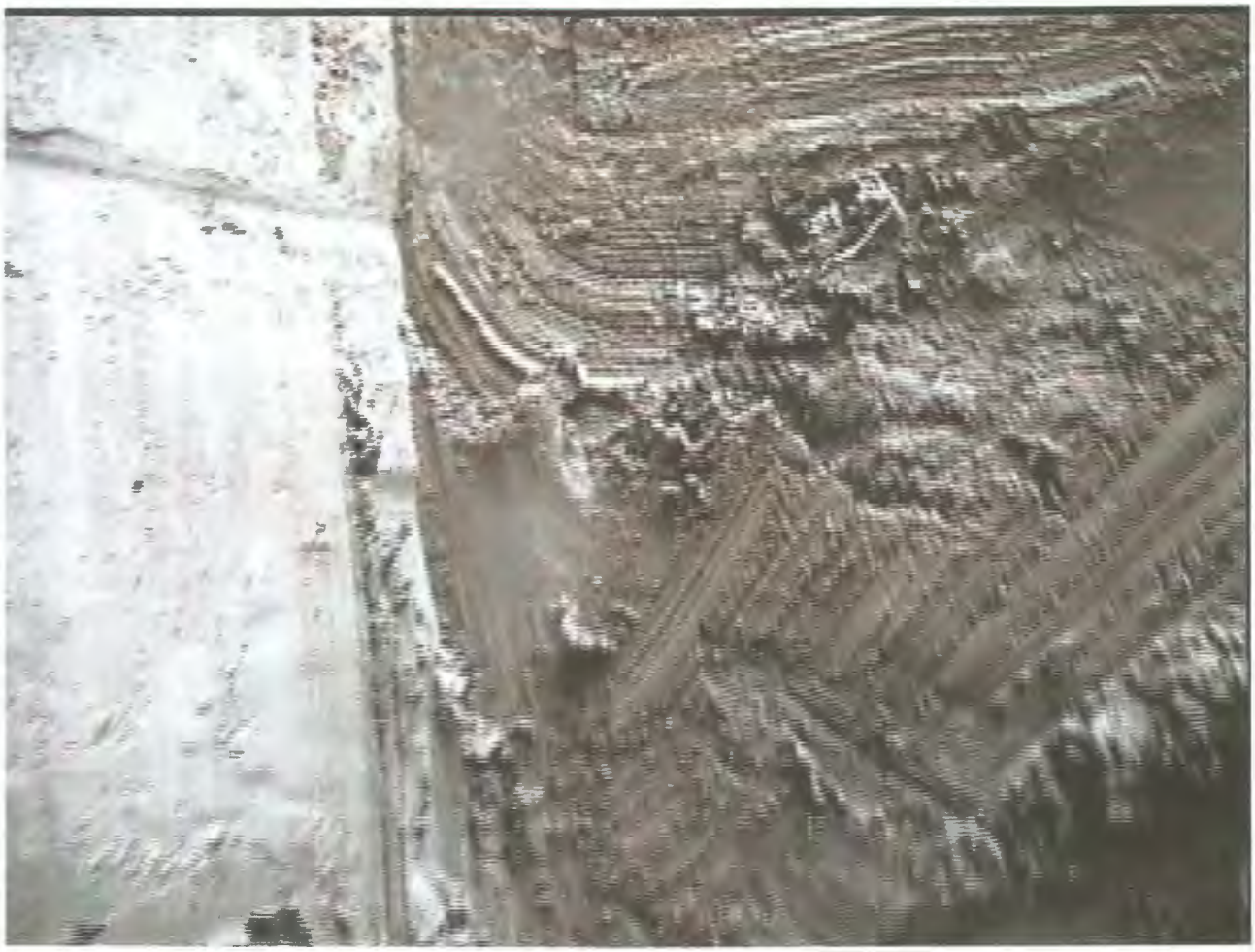
Location: West Field Extended

View showing sand and gravel encountered throughout test pit.

Waste debris not found.

Test Pit #26

(Photo Taken 6/17/04)



Location: West Field Extended

View showing sandy silt encountered throughout test pit.

Waste debris not found.

Test Pit #27

(Photo Taken 6/16/04)



Location: West Field Extended

View showing silty fine sand encountered throughout test pit.

Waste debris not found.

Test Pit #28

(Photo Taken 6/29/04)



Location: West Field

View showing silty fine sand found throughout test pit.

Water in test pit is seeping up from bottom.

Test Pit #29

(Photo Taken 6/29/04)



Location: West Field

View showing example of waste debris found in test pit; steel cable, brick, rebar.

Water draining from debris layer into test pit.

Test Pit #29

(Photo Taken 6/29/04)



Location: West Field

View showing example of waste debris found in test pit; metal pipe, cut stone.

Test Pit #30

(Photo Taken 6/21/04)



Location: West Field

View showing example of mostly soil fill with sporadic debris .

Water in pit drained from buried brush pile (not shown) encountered at ~4 feet.

Test Pit #30

(Photo Taken 6/21/04)



Location: West Field

View showing example of mostly soil fill with sporadic debris .

Water in pit drained from buried brush pile (not shown) encountered at ~4 feet.

Test Pit #31

(Photo Taken 6/22/04)



Location: West Field

View showing example of debris found in test pit;
steel banding, steel plate and slag.

Test Pit #31

(Photo Taken 6/22/04)



Location: West Field

View showing soil fill with debris overlying undisturbed clayey silt at ~4 feet.

Test Pit #32

(Photo Taken 6/28/04)



Location: West Field

View showing example of debris found in test pit;
bent metal plates, wire and welding rods.

Test Pit #33

(Photo Taken 6/28/04)



Location: West Field

View showing silty fine sand found throughout test pit.

Waste debris not found.

Test Pit #34

(Photo Taken 6/24/04)



Location: West Field

View showing example of debris found in test pit;
soil fill with brick and burnt wood.

Test Pit #35

(Photo Taken 6/24/04)



Location: West Field

View showing crushed 30 gallon drum found at ~3 to 3.5 feet.

Test Pit #35

(Photo Taken 6/24/04)



Location: West Field

View showing remnants of crushed 30 gallon drum found in test pit.

Test Pit #35

(Photo Taken 6/24/04)



Location: West Field

View showing glass bottle found in test pit.

Test Pit #35

(Photo Taken 6/24/04)



Location: West Field

View showing example of debris found in test pit;
lumber, wire, metal turnings and lab glassware.

Test Pit #35

(Photo Taken 6/24/04)



Location: West Field

View showing example wire and metal turnings found in test pit.

Test Pit #36

(Photo Taken 6/23/04)



Location: West Field

View showing contact between soil fill with debris (e.g. rebar and cut granite) and underlying silt. Contact at ~ 3 feet.

Test Pit #36

(Photo Taken 6/23/04)



Location: West Field

View showing silt at bottom of test pit.

Test Pit #37

(Photo Taken 6/23/04)



Location: West Field

View showing fine sandy silt found from ~2 to 6 foot depth of test pit.

Upper ~2 feet (not shown) is sandy fill with pieces of red brick in upper 1 foot.

Test Pit #38

(Photo Taken 7/13/04)



Location: Pyrophoric Area

View showing example of debris found in test pit; wood, brick, tile, wire and fabric/carpet remnants.

Test Pit #38

(Photo Taken 7/13/04)



Location: Pyrophoric Area

View showing example of debris found in test pit; crushed garbage can and laboratory glassware.

Test Pit #38

(Photo Taken 7/13/04)



Location: Pyrophoric Area

View showing laboratory glassware (along with rebar and brick) found in test pit.

Test Pit #38

(Photo Taken 7/13/04)



Location: Pyrophoric Area

View showing example of debris found in test pit
including black sooty debris found at ~6 foot depth in foreground.
(Note: Concrete block and wood shown in background are not from test pit.)

Test Pit #39

(Photo Taken 12/4/03)



Location: North Field

View showing brown till throughout test pit.

Waste debris not found.

Backhoe refusal encountered at ~ 4.8 feet.

Test Pit #40

(Photo Taken 6/22/04)



Location: West Field Extended

View showing soil fill with debris overlaying clayey silt.

Debris includes copper wire, pieces of brick and asphalt.

Contact with clayey silt at ~3 feet.

Test Pit #40

(Photo Taken 6/22/04)



Location: West Field Extended

View showing clayey silt underlying fill.

(Lighter area is from camera lights)

Test Pit #41

(Photo Taken 7/14/04)



Location: Pyrophoric Area

View showing metal flashing debris mixed with soil fill material.

Test Pit #41

(Photo Taken 7/14/04)



Location: Pyrophoric Area

View showing example of debris found in test pit; vehicle muffler, tan brick and metal flashing.

Test Pit #41

(Photo Taken 7/14/04)



Location: Pyrophoric Area

View showing clayey, fine sandy silt at ~5 feet to the bottom of the test pit (~7 feet). Waste debris not found in bottom silt.

Appendix E

Well Development, Groundwater Sample Purging, Seep, and Surface Water Field Parameter Summary Tables

LDA SV
Groundwater Well Development
Field Parameter Summary

Well	Development Date(s)	Final/Stabilized Field Parameters Temperature (°C)	pH	Conductivity (µmhos)	Turbidity (ntus)	Water Removed (gallons)	Well Volumes	Purge Method	Water Column (feet)	Did Well Dewater ?
LMW-1	9/16/2002	17.6	6.51	2200	>1000	1	5	Pump	5.01	No
LMW-2	9/17/2002	14.7	6.82	600	780	0.8	3.1	Pump	5.97	No
LMW-3	9/17-9/18/2002	14.9	6.89	7450	48.2	0.6	5	Pump	2.78	Yes
LMW-4	9/19-9/24/2002	10.5	7.22	654	>1000	2	11.9	Pump	4.1	Yes
LMW-5	9/19/2002	13.3	6.94	650	375	2.5	17.7	Pump	3.45	No
LMW-6	9/17-9/23/2002	15.8	7.02	NA	>1000	0.3	2.3	Pump	3.1	Yes
LMW-8	Dry									
LMW-9	9/19/2002	15.3	6.88	735	219	0.9	13.2	Pump	1.6	No
LMW-10	Dry									
LMW-12	9/19-9/23/2002	15.6	7.1	495	325	1.3	6.8	Pump	6.9	Yes
LMW-14	9/18-9/23/2002	14.4	6.96	6340	>1000	0.5	3	Pump	4.4	Yes
LMW-15	9/24/2002	15.8	7.43	880	70	2.2	9.4	Pump	4.02	No
LMW-15A	12/10/2002	11.9	8.68	647	58	9.4	4.1	Pump	14.37	No
LMW-16	9/18-9/23/2002	16.5	7.31	1172	>1000	0.6	1.7	Pump	8.85	Yes
LMW-16A	12/11/2002	9.1	6.15	945	>1000	11.2	4	Pump	17.5	No
LMW-17	9/24/2002	14.4	7.17	774	>1000	1	4.2	Pump	5.91	No
LMW-18	9/24/2002	14.9	7.43	928	>1000	1	4.2	Pump	5.83	No
LMW-19	9/17/2002	15.6	7.19	370	65.3	4.5	19.6	Pump	5.56	No
LMW-20	9/19/2002	15.8	6.91	651	438	2.5	11.9	Pump	5.19	No
LMW-21	12/5/2002	15	7.09	405	>1000	1	3	Pump	7.96	No
LMW-22	12/5/2002	8.3	7.03	500	380	1	4	Pump	6.11	No
LMW-23	12/5/2002	9.4	7.49	642	712	2	7	Pump	6.97	No
LMW-24	11/18-11/19/2002	9.8	7.49	743	318	1.3	5	Pump	6.3	No
LMW-24A	7/29/2003	12	7.21	806	>1000	15.5	7	Bailer	13.6	No
LMW-25	12/11/2002	9.3	6.31	321	978	0.9	6	Pump	3.8	No
LMW-26	7/28/2003	13.2	6.84	1039	19.2	2.8	7	Pump	9.72	No
LMW-27	7/29/2003	13.2	6.79	555	>1000	1.5	8	Pump/Bailer	4.5	No
LMW-28	7/28/2003	14.3	6.87	964	20.9	3	10	Pump	7.28	No
LMW-29	7/29/2003	13.8	7.12	491	>1000	0.2	2	Pump/Bailer	2.85	Yes
LMW-34	10/28/2003	12.6	7.49	643	>1000	1	2	Pump	11.85	Yes
LMW-35	10/28/2003	11.4	6.76	2007	9.84	3	9	Pump	8.15	No
LMW-36	11/14/2003	12	7.55	387.6	>1000	3.1	9	Pump	8.4	No
LMW-37	10/27/2003	12.4	6.45	910	>1000	1.5	7	Pump	5.39	No

Pump = Peristaltic pump

LDA SV
Groundwater Well Development
Field Parameter Summary

Well	Comments
LMW-1	After parameter stabilization, continued pumping to reduce turbidity. Removed 6 gallons and turbidity dropped to 88.6 NTUs.
LMW-2	After parameter stabilization, continued pumping to reduce turbidity. Removed 4 gallons and turbidity dropped to 99.3 NTUs.
LMW-3	Developed on 2 days. Dewatered after 4 well volumes on first day, and dewatered after 1 well volume on second day.
LMW-4	Developed on 2 days. On second day, added 1 gallon DI water to enhance development.
LMW-5	
LMW-6	Developed on 4 days. Well dewatered each day after removing 1 pint or less.
LMW-8	Well was dry at time of development
LMW-9	After parameter stabilization, continued pumping to reduce turbidity. Removed 1 gallon and turbidity dropped to 5.8 NTUs.
LMW-10	Well was dry at time of development
LMW-12	Developed on 2 days. Dewatered after 0.5 gallons on first day. Stabilized on second day after removal of 0.75 gallons.
LMW-14	Dewatered on each of 2 days.
LMW-15	Added 1 gallon DI water to enhance development.
LMW-15A	
LMW-16	Dewatered on each of 2 days. Slight sheen on water. After field parameter recordings, added 4 gallons DI water and removed 5 gallons.
LMW-16A	
LMW-17	After parameter stabilization, continued pumping to reduce turbidity. Removed 4.5 gallons and turbidity dropped to 50 NTUs.
LMW-18	After parameter stabilization, continued pumping to reduce turbidity. Removed 4.5 gallons and turbidity dropped to 27 NTUs.
LMW-19	
LMW-20	After parameter stabilization, continued pumping to reduce turbidity. Removed 1.5 gallons and turbidity dropped to 63.9 NTUs.
LMW-21	After parameter stabilization, continued pumping to reduce turbidity. Removed 1.6 gallons and turbidity dropped to 26.2 NTUs.
LMW-22	Added DI water on first day to suspend sediment and removed 1.5 gallons. Developed and measured field parameters on second day.
LMW-23	
LMW-24	
LMW-24A	
LMW-25	
LMW-26	
LMW-27	Used bailer when water level dropped below lifting capacty of the peristaltic pump.
LMW-28	
LMW-29	Pump ineffectual, used bailer. Dewatered after 2 well volumes; measured parameters. Dewatered again after 2 bailers.
LMW-34	Dewatered after 2 well volumes. Added DI water to enhance sediment removal; pumped dry 3 times; sediment still packed in well.
LMW-35	
LMW-36	
LMW-37	

LDA SV
First Phase of Groundwater Sampling
Well Purging Field Parameter Summary

Well	Purge Date	Sample Date	Final/Stabilized Field Parameters Temperature (°C)	pH	Conductivity (µmhos)	Turbidity (ntus)	Water Removed (gallons)	Well Volumes	Purge/Sampling Method	Water Column (feet)	Did Well Dewater ?
LMW-1	9/25/2002	9/25/2002	16.8	7.19	457	38	1.2	3	Bailer	10.04	No
LMW-2	9/25/2002	9/25/2002	14.6	7.19	598	62.1	1.4	3	Bailer	11.67	No
LMW-3	9/25/2002	9/25/2002	17.4	7.4	784	130	0.3	2.2	Bailer	3.53	Yes
LMW-4	9/26/2002	9/26/2002	12.5	7.23	700	706	0.8	4	Bailer	4.89	No
LMW-5	9/26/2002	9/26/2002	12.8	7.17	655	860	0.5	3	Bailer	3.88	No
LMW-6	9/25/2002	9/26/2002	17.9	7.81	Not Measured Insufficient Water	>1000	0.05	1	Bailer	1.19	Yes
LMW-8	Dry										
LMW-9	9/30/2002	9/30/2002	12.2	7.41	694	56.7	0.27	3	Bailer	2.2	No
LMW-10	Dry										
LMW-12	9/30/2002	9/30/2002	15.2	7.35	666	520	1.5	3	Bailer	12.21	No
LMW-14	9/30/2002	10/1/2002	14.1	7.16	825	315	0.3	1.5	Bailer	4.05	Yes
LMW-15	9/30/2002	9/30/2002	14.2	7.12	852	>1000	0.81	3	Bailer	6.7	No
LMW-15A	1/14/2003	1/14/2003	8.3	8.2	726	>1000	7.5	3	Bailer	14.9	No
LMW-16	9/30/2002	9/30/2002	13.4	7.54	906	>1000	0.73	1.5	Bailer	11.85	Yes
LMW-16A	1/14/2003	1/14/2003	8.5	7.86	1222	>1000	8.4	3	Bailer	16.5	No
LMW-17	9/30/2002	9/30/2002	14.8	7.24	554	87.4	0.75	3	Bailer	6.16	No
LMW-18	9/30/2002	9/30/2002	18.2	7.5	1331	87.2	0.9	3	Bailer	7.3	No
LMW-19	9/26/2002	9/26/2002	13.2	7.22	317	780	0.9	3	Bailer	7.05	No
LMW-20	9/26/2002	9/26/2002	13.8	7.2	672	851	0.8	3	Bailer	6.65	No
LMW-21	1/15/2003	1/15/2003	8.6	8.56	394	>1000	1.1	3	Bailer	9.3	No
LMW-22	1/15/2003	1/15/2003	8.5	8.6	580	>1000	1	3	Bailer	7.6	No
LMW-23	1/14/2003	1/14/2003	8.5	8.45	464	>1000	0.8	3	Bailer	7.08	No
LMW-24	1/13/2003	1/13/2003	8.9	6.71	711	>1000	0.8	3	Bailer	6.65	No
LMW-25	1/13/2003	1/13/2003	8.3	6.87	487	216	0.5	3	Bailer	3.85	No

LDA SV
First Phase of Groundwater Sampling
Well Purging Field Parameter Summary

Well	Comments
LMW-1	
LMW-2	
LMW-3	Dewatered after 2.2 well volumes. Sample collected 1 hour later.
LMW-4	
LMW-5	
LMW-6	Dewatered after 1 well volume. Overnight recovery necessary to sample. Insufficient water for field parameters on sample date.
LMW-8	
LMW-9	
LMW-10	
LMW-12	
LMW-14	Dewatered after 1.5 well volumes. Overnight recovery necessary to sample. Insufficient water for field parameters on sample date.
LMW-15	
LMW-15A	
LMW-16	Dewatered after 1.5 well volumes. Sample collected 4 hours later.
LMW-16A	
LMW-17	
LMW-18	
LMW-19	
LMW-20	
LMW-21	
LMW-22	
LMW-23	
LMW-24	
LMW-25	

LDA SV
Second Phase of Groundwater Sampling
Well Purging Field Parameter Summary

Well	Purge Date	Sample Date	Final/Stabilized Field Parameters Temperature (°C)	pH	Conductivity (µmhos)	Turbidity (ntus)	Water Removed (gallons)	Well Volumes	Purge/Sampling Method	Water Column (feet)	Did Well Dewater ?
LMW-1	8/7/2003	8/7/2003	17.7	6.74	524	>1000	1.4	3	Bailer	11.25	No
LMW-2	8/6/2003	8/6/2003	18	6.92	557	97.3	1.6	3	Bailer	12.65	No
LMW-3	8/6/2003	8/6/2003	17.6	6.84	678	820	1.1	3	Bailer	8.85	No
LMW-4	8/7/2003	8/7/2003	12.9	7.06	526	>1000	0.8	3	Bailer	6.45	No
LMW-5	8/7/2003	8/7/2003	13.7	6.59	512	>1000	1.3	3	Pump	13.45	No
LMW-6	8/6/2003	8/6/2003	18.8	7.07	540	>1000	1.1	3	Bailer	8.75	No
LMW-8	Dry										
LMW-9	8/6/2003	8/6/2003	17	7.22	472	333	1.3	3	Bailer	10.64	No
LMW-10	8/5/2003	8/5/2003	17.9	7.45	726	>1000	0.3	6	Bailer	1	No
LMW-12	8/5/2003	8/5/2003	19.6	6.86	983	921	2.1	3	Bailer	17.45	No
LMW-14	7/31/2003	7/31/2003	12.5	6.88	482	>1000	0.8	3	Bailer	6.58	No
LMW-15	7/31/2003	7/31/2003	14.3	6.75	952	>1000	0.9	3	Bailer	7.15	No
LMW-15A	7/31/2003	7/31/2003	12.9	7.05	1003	>1000	6.8	3	Bailer	13.81	No
LMW-16	7/30/2003	7/30/2003	18	7.22	1283	>1000	1.4	3	Bailer	11.55	No
LMW-16A	7/30/2003	7/30/2003	12.9	7.15	1367	>1000	7.2	3	Bailer	14.81	No
LMW-17	7/31/2003	7/31/2003	13	6.74	774	>1000	0.8	3	Bailer	6.5	No
LMW-18	8/4/2003	8/4/2003	13.3	7.34	1426	>1000	1	3	Bailer	7.99	No
LMW-19	8/6/2003	8/6/2003	13.6	7.18	302.3	>1000	1.1	3	Bailer	9.3	No
LMW-20	8/5/2003	8/5/2003	15.1	7.8	586	>1000	1.7	3	Bailer	13.95	No
LMW-21	8/6/2003	8/6/2003	17.3	6.87	915	>1000	1	3	Bailer	7.9	No
LMW-22	8/7/2003	8/7/2003	17.2	6.91	354	>1000	0.5	3	Bailer	3.96	No
LMW-23	8/7/2003	8/7/2003	12.6	7.2	653	>1000	0.7	3	Bailer	5.4	No
LMW-24	7/30/2003	7/30/2003	13.3	7.25	861	>1000	0.7	3	Bailer	5.25	No
LMW-24A	7/30/2003	7/30/2003	11	7.32	773	>1000	6.5	3	Bailer	13.2	No
LMW-25	7/31/2003	7/31/2003	13	7.16	263.8	>1000	0.3	3	Bailer	2.45	No
LMW-26	8/4/2003	8/4/2003	13.7	6.69	896	>1000	1.4	3	Bailer	11.17	No
LMW-27	8/4/2003	8/4/2003	15	6.73	525	>1000	0.5	3	Bailer	3.97	No
LMW-28	8/4/2003	8/4/2003	12.3	7.02	900	>1000	0.9	3	Bailer	7.34	No
LMW-29	8/5/2003	8/5/2003	14.4	7.28	510	>1000	0.2	1	Bailer	2.9	Yes
LMW-34	10/30/2003	10/30/2003	13	7.63	636	>1000	0.8	1.5	Bailer	12.65	Yes
LMW-35	10/30/2003	10/30/2003	12.1	7.09	2024	>1000	1	3	Bailer	8.38	No
LMW-36	11/4/2003	11/4/2003	11.9	7.87	369.3	>1000	1	3	Bailer	8.4	No
LMW-37	10/30/2003	10/30/2003	11.9	6.99	839	>1000	0.8	4	Bailer	5.1	No

Pump = Peristaltic pump

LDA SV
Second Phase of Groundwater Sampling
Well Purging Field Parameter Summary

Well	Comments
LMW-1	
LMW-2	
LMW-3	
LMW-4	
LMW-5	Bailer would not drop into the well; needed to use peristaltic pump to collect sample.
LMW-6	Surface water drainage around well.
LMW-8	Water column 0.72 feet on 8/6/03; bailed dry. No water on following day.
LMW-9	Standing water around well.
LMW-10	Insufficient water in a well volume for field parameter readings. Purged 6 well volumes, measured field parameters, and then sampled.
LMW-12	
LMW-14	
LMW-15	
LMW-15A	
LMW-16	Slow recharge, but did not dry out.
LMW-16A	
LMW-17	
LMW-18	
LMW-19	
LMW-20	
LMW-21	
LMW-22	
LMW-23	
LMW-24	
LMW-24A	
LMW-25	Insufficient water in a well volume for field parameter readings. Purged 3 well volumes, measured field parameters, and then sampled.
LMW-26	
LMW-27	
LMW-28	
LMW-29	Dewatered after 1 well volume. Collected sample 0.5 hours later.
LMW-34	Dewatered after 1.25 well volumes. Collected sample approximately 1.5 hours later.
LMW-35	
LMW-36	
LMW-37	

LDA SV
Seep and Surface Water Sampling
Field Parameter Summary

Seep/Surface Water Location	Sample Date	Field Parameters			
		Temperature (°C)	pH	Conductivity (µmhos)	Turbidity (ntus)
Seep 1	11/3/2003	13.4	7.5	849	7.92
Seep 2	11/3/2003	12.5	7.46	1191	73.5
Seep 3	11/3/2003	11.7	7.77	1218	96.9
Seep 4	11/3/2003	11.2	8.25	651	83.4
SW-1	11/3/2003	12.6	8.75	593	86.3
SW-2	11/3/2003	12.4	7.95	599	13.4

Appendix F

Tabulated Land Survey Coordinates and Elevations

LDA SV - Knolls Site
Groundwater Investigation
Survey Coordinates and Elevations for
Soil Borings, Monitoring Wells, Surface Water Locations, and Seep Locations

Boring/Well	Northing	Easting	Elevation Ground	Elevation PVC
SB/LMW-1	1028034.7913	625906.9787	294.96	298.08
SB/LMW-2	1027926.1022	625896.8578	299.84	303.14
SB/LMW-3	1027921.3802	625922.4133	301.70	305.28
SB/LMW-4	1027852.9654	625803.5212	310.68	313.89
SB/LMW-5	1027840.6038	625853.7173	307.33	310.91
SB/LMW-6	1027842.3548	625907.7823	304.51	308.29
SB-7	1027817.0698	625944.5549	309.44	NA
SB/LMW-8	1027758.8251	625778.6522	315.21	318.99
SB/LMW-9	1027732.2583	625872.3342	309.68	313.52
SB/LMW-10	1027745.7145	625815.2616	310.95	313.51
SB-11	1027744.8642	625928.5822	310.19	NA
SB/LMW-12	1027680.7143	625772.3726	311.47	315.80
SB-13	1027652.3230	625971.0834	315.36	NA
SB/LMW-14	1027621.7563	625886.2770	317.74	321.79
SB/LMW-15	1027559.1022	625698.1240	320.84	325.26
SB/LMW-15A	1027558.0664	625700.4903	320.80	324.83
SB/LMW-16	1027551.2759	625798.8001	319.95	324.30
SB/LMW-16A	1027549.2502	625800.3826	319.87	323.92
SB/LMW-17	1027519.1373	625627.6222	321.15	324.88
SB/LMW-18	1027433.0746	625636.3029	323.17	326.70
SB/LMW-19	1027949.5876	625827.0796	301.97	305.18
SB/LMW-20	1027740.1946	625850.1686	309.83	313.30
SB/LMW-21	1028013.9550	625792.1721	297.73	300.72
SB/LMW-22	1027960.8666	625735.4396	304.98	309.13
SB/LMW-23	1027878.4206	625723.3682	313.07	316.99
SB/LMW-24	1027448.2712	625780.1285	322.82	326.40
SB/LMW-24A	1027446.9310	625776.6857	322.95	325.88
SB/LMW-25	1027523.4736	625890.5693	321.83	325.67
SB/LMW-26	1027275.3220	625787.6769	321.05	320.92
SB/LMW-27	1027363.4290	625845.1294	326.19	329.63
SB/LMW-28	1027343.3680	625703.2379	323.92	323.78
SB/LMW-29	1027408.0080	625890.2945	324.84	328.03
SB-30	1028137.6740	626147.8736	321.89	NA
SB-31	1028109.4670	626188.2762	324.95	NA
SB-32	1028095.4510	626147.2022	322.07	NA
SB-33	1028114.3830	626227.5804	326.87	NA
SB/LMW-34	1027279.6815	625556.2258	323.71	323.74
SB/LMW-35	1027223.5436	625712.2860	321.58	321.56
SB/LMW-36	1027131.1908	625632.1076	313.41	313.30
SB/LMW-37	1027185.4271	625799.8280	318.12	318.19
Existing Wells				
W-1	1027363.2331	625286.2646	329.24	331.46
W-2	1027401.8796	625776.5848	324.37	326.61
W-3*	1027736.4547	625849.9817	309.97	313.15
W-4	1028209.7911	625917.2892	283.75	287.30
MW-2	1027741.0996	625531.5194	319.79	323.07
MW-3	1027549.6403	625539.8462	322.40	325.38
W-8	1027091.8599	625791.9256	300.62	302.71
Seep and Surface Water Locations				
Seep-1	1027127.3864	625813.2199	298.71	NA
Seep-2	1027135.9095	625828.6603	299.89	NA
Seep-3	1027053.5463	625842.0191	292.48	NA
Seep-4	1027026.3856	625988.9998	285.56	NA
SW-1	1026953.7021	626071.7265	278.73	NA
SW-2	1027001.0930	625673.6370	296.32	NA

* - W-3 was overdrilled and replaced during the SV.

NA - Not applicable

LDA SV - Knolls Site
SPRU Supplemental Soil Sampling
Survey Coordinates and Elevations for Soil Borings

Boring	Northing	Easting	Elevation Ground	Abbreviated Map ID
LA1002-3-B1	1027308.8382	626066.5364	330.76	02-3-B1
LA1002-3-B2	1027317.4485	626058.6616	330.87	02-3-B2
LA1002-3-B2a	1027315.9893	626059.2434	330.99	02-3-B2a
LA1002-3-B3	1027313.6814	626077.0318	329.41	02-3-B3
LA1002-3-B4	1027302.3710	626076.0156	330.34	02-3-B4
LA1002-3-B5	1027302.3504	626061.3328	330.80	02-3-B5
LA1004-3-S	1027474.5914	625922.9104	322.50	04-3-S
LA1004-6-S	1027474.0571	625976.5334	323.32	04-6-S
LA1004-9-S	1027469.8198	626023.1267	323.60	04-9-S
LA1007-1-S	1027523.3793	625924.7527	321.04	07-1-S
LA1007-2-B	1027591.8885	625950.7727	316.97	07-2-B
LA1007-3-B	1027640.5074	625925.8014	318.18	07-3-B
LA1007-4-B1	1027548.2962	625976.3074	318.81	07-4-B1
LA1007-4-B2	1027507.3944	625954.2279	321.10	07-4-B2
LA1007-6-S	1027626.9751	625970.9855	316.03	07-6-S
LA1007-7-S	1027523.8593	626023.2437	320.59	07-7-S
LA1007-8-S	1027576.2550	626022.3157	318.99	07-8-S
LA1007-9-S	1027623.8059	626021.7618	317.85	07-9-S
LA1016-8-S	1027574.1312	625873.8539	319.16	16-8-S

Abbreviated map IDs posted on map.

LDA SV - Knolls Site
Shallow Soil Investigation - Test Pits
Survey Coordinates and Elevations

Test Pit	Northing	Easting	Elevation Ground	
TP-1	1028267.3189	626180.7470	328.42	
TP-2	1028230.6458	626292.9555	329.49	
TP-3	1028237.0061	626186.1935	325.48	
TP-4	1028220.8223	626259.4695	324.15	
TP-5	1028193.0000	626203.0000	324.53	GPS coordinates.
TP-6	1028146.5281	626242.0444	324.77	
TP-7	1028152.2640	626161.5227	322.34	
TP-8	1028132.5440	626129.1099	321.57	
TP-9	1028109.8609	626246.1933	327.92	
TP-10	1028037.0000	626335.0000	333.83	GPS coordinates.
TP-11	1027977.8133	626100.4914	320.66	
TP-12	1027952.6569	626002.6108	315.66	
TP-13	1027909.9736	626158.0089	315.56	
TP-14	1027875.4239	626096.5462	321.04	
TP-15	1027798.7626	625997.8015	317.80	
TP-16	1027756.0000	626094.0000	321.81	GPS coordinates.
TP-17	1027751.6192	626166.2951	323.13	
TP-18	1027654.0000	626056.0000	320.44	GPS coordinates.
TP-19	1027599.9775	626151.7788	322.42	
TP-20	1027558.0000	626081.0000	322.67	GPS coordinates.
TP-21	1027579.4881	626040.0636	319.77	
TP-22	1027678.3276	625781.9545	311.50	
TP-23	1027460.1168	625721.9322	322.53	
TP-24	1027501.2264	625620.7658	321.95	
TP-25	1027576.7404	625677.1825	322.69	
TP-26	1027664.9600	625546.0735	322.62	
TP-27	1027608.5723	625375.5360	325.25	
TP-28	1027527.1898	625494.4144	321.99	
TP-29	1027499.7503	625512.5350	321.70	
TP-30	1027489.8826	625592.0078	322.16	
TP-31	1027460.0792	625541.3493	323.18	
TP-32	1027486.3325	625444.0423	322.81	
TP-33	1027494.5422	625414.7002	323.58	
TP-34	1027441.8411	625502.2551	323.67	
TP-35	1027422.9281	625475.3492	324.87	
TP-36	1027413.9811	625559.3024	324.45	
TP-37	1027388.5590	625580.8612	324.31	
TP-38	1027543.0083	625797.7433	319.94	
TP-39	1027651.8766	625966.2880	322.29	
TP-40	1027433.0341	625637.3501	323.40	
TP-41	1027588.5187	625896.2509	318.13	

Coordinates for test pits adjusted in the field were determined using GPS. Elevations were not resurveyed and therefore should be considered as close estimates.

LDA SV - Knolls Site
Shallow Soil Investigation - Hand Borings
Survey Coordinates and Elevations

C&D Area No.1

Hand Boring	Northing	Easting	Elevation Ground
SB-1	1028109.3910	626188.6037	325.25
SB-2	1028095.1300	626237.8000	329.18

Mercury Disposal Area

Hand Boring	Northing	Easting	Elevation Ground
SB-3	1027459.4013	626257.0315	324.86
SB-4	1027468.8701	626252.4852	325.94
SB-5	1027468.0522	626260.8263	325.59
SB-6	1027463.0363	626262.8129	323.91
SB-7	1027459.7253	626268.2496	322.97
SB-8	1027466.3228	626269.1671	325.60
SB-9	1027472.8109	626278.2852	324.95
SB-10	1027478.3482	626258.6095	325.15
SB-11	1027476.8280	626264.7309	322.84
SB-12	1027481.2475	626267.8620	323.23
SB-13	1027473.1823	626268.0305	323.87
SB-14	1027477.8883	626273.0072	323.67
SB-15	1027480.4837	626280.8520	323.92
SB-16	1027491.3548	626273.2645	324.29
SB-17	1027493.1350	626264.0875	325.96
SB-18	1027485.2724	626259.6690	326.36
SB-22	1027462.2190	626250.6218	325.11
SB-23	1027449.3725	626257.2867	324.62
SB-24	1027448.9521	626267.9633	324.15
SB-25	1027459.0910	626278.0802	323.58

Midline Stream (sediment)

Hand Boring	Northing	Easting	Elevation Ground
SB-19	1027980.7000	625528.4000	306.73
SB-20	1028184.5000	625882.2000	284.42
SB-21	1028093.5000	625785.5000	291.66

Appendix G

Soil VOC Data, Locations, and Logs for SPRU SV Soil Borings in the Former Landfill and Pyrophoric Area (Extracted From SPRU SV Report, February 2002)

TABLE 7-2
SPRU SAMPLING VISIT

LAND AREA SWMU-035
VOCs IN SOIL (µg/kg = ppb)

	Sample ID	LDA35002	LDA35004	LDA35006	LDA35012	LDA35014	LDA35016	LDA35018	FDLD001*	LDA35028	LDA35030	LDA35032
	Location ID	B3501	B3502	B3503	B3506	B3507	B3508	B3509	B3509	B3514	B3515	B3516
	Depth Interval (ft bg)	2-4	2-4	2-3.33	2-2.42	2-3.5	2-4	2-4	2-4	2-3.33	2-4	2-2.42
Parameter	Soil Criteria[1]											
2-Hexanone	NA	<13J	<12	<13J	<13	<11	<12J	<11J	<11J	<11J	<11J	<12
Acetone	200	19	11J	<13	<13J	<11	<12	<11	<11J	<11	<11	<12
Carbon Disulfide	2700	<6	<6	<6	<6	<6	<6	<6	<6J	<6	<6	<6
Chlorobenzene	1700	<6	<6	<6J	<6	<6	<6J	<6J	<6J	<6J	<6J	<6
Ethylbenzene	5500	<6	<6	<6J	<6	<6	<6J	<6J	<6J	<6J	<6J	<6
Methyl Ethyl Ketone	300	<13	<12	<13	<13	<11	<12	<11	<11J	<11	<11	<12
Methylene Chloride	100	24	<20	20	<14	10J	45J	8J	11J	38	23J	11J
Tetrachloroethylene	1400	<6	<6	<6J	<6	1J	<6J	<6J	<6J	<6J	<6J	100
Toluene	1500	<6	<6	<6J	1J	<6	2J	<6J	2J	1J	<6J	<6
Total 1,2-Dichloroethene	250	<6	<6	<6	<6	<6	<6	<6	<6J	<6	<6	<6
Trichloroethylene	700	<6	<6	<6	<6	<6	<6	<6	<6J	<6	<6	25
Xylenes, Total	1200	<6	<6	<6J	<6	<6	<6J	<6J	<6J	<6J	<6J	<6

TABLE 7-2 (CONTINUED)
SPRU SAMPLING VISIT

LAND AREA SWMU-035
VOCs IN SOIL (µg/kg = ppb)

Sample ID		LDA35034	LDA35036	LDA35038	LDA35040	LDA35048	LDA35054	LDA35056	LDA35062	LDA35063V	LDA35066	FDLD005*
Location ID		B3517	B3518	B3519	B3520	B3524	B3527	B3528	B3531	B3532	B3533	B3533
Depth Interval (ft bg)		2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-3	1-1.16	2-4	2-4
Parameter	Soil Criteria[1]											
2-Hexanone	NA	<11J	<13J	2J	<10J	<12	<11J	<12J	<13	<10.8	<11	<12
Acetone	200	<11	<13J	<12J	<10	<12	18	18	32J	<10.8	17J	<20
Carbon Disulfide	2700	<6	<6	<6	<5	<6	<6	<6	2J	2.9J	<6	<6
Chlorobenzene	1700	<6J	<6	<6	<5J	<6	<6	<6	3J	0.6J	<6	<6
Ethylbenzene	5500	<6J	<6	<6	<5J	<6	<6	<6	7	18.4	<6	2J
Methyl Ethyl Ketone	300	<11	<13	16	<10	<12	<11	<12	<13J	<10.8	<11	<12
Methylene Chloride	100	<20	<24	<29	22J	16J	23	22	<23	<5.4	15	<21
Tetrachloroethylene	1400	2J	180	<6	<5J	<6	<6	1J	<6	<5.4	<6	<6
Toluene	1500	1J	<6	2J	3J	<6	<6	<6	<6	5.4J	1J	6J
Total 1,2-Dichloroethene	250	<6	<6	2J	<5	<6	<6	<6	<6	17	4J	17
Trichloroethylene	700	<6	<6	130	<5J	<6	<6	<6	<6	<5.4	<6	<6
Xylenes, Total	1200	<6J	<6	<6	<5J	<6	<6	<6	10	14.9	1J	5J

TABLE 7-2 (CONTINUED)
SPRU SAMPLING VISIT

LAND AREA SWMU-035
VOCs IN SOIL (µg/kg = ppb)

Sample ID		B35370810	LDA35081	LDA35084	LDA35086	LDA35104	LDA35108	LDA35117	LDA35126	LDA35128	LDA35129	LDA35130
Location ID		B3537	B3539	B3540	B3541	B3547	B3548	B3551	B3554	B3555	B3555	B3556
Depth Interval (ft bg)		8-10.	4-6	4-6	3.33-3.83	2-3.5	4-6	4.66-6	4-6.	2-3.25	4-5	0.16-2
Parameter	Soil Criteria[1]											
2-Hexanone	NA	<12	<12	<11	<12	<12	<12	<11	<10	<11	<11	<10
Acetone	200	<12	<12J	<11J	<12	<12	<12	<11J	<10	33J	110J	<10
Carbon Disulfide	2700	<6	<6	<6	<6	<6	<6	<6	<5	<6	<6	<5
Chlorobenzene	1700	<6	<6	<6	<6	<6	<6	<6	<5	<6	<6	<5
Ethylbenzene	5500	<6	<6	<6	<6	<6	<6	<6	<5	27	110	3J
Methyl Ethyl Ketone	300	<12	<12	<11	<12	<12	<12	<11	<10	<11J	180J	<10
Methylene Chloride	100	24	9	8	13J	11	23	17	<18	<16	<14	<11
Tetrachloroethylene	1400	<6	<6	<6	<6	<6	<6	<6	<5	<6	120J	<5
Toluene	1500	<6	<6	<6	<6	<6	<6	<6	<5	<6	23J	<5
Total 1,2-Dichloroethene	250	<6	<6	<6	<6	<6	<6	<6	<5	<6	4J	<5
Trichloroethylene	700	<6	<6	<6	<6	<6	<6	<6	2J	<6	2J	<5
Xylenes, Total	1200	<6	<6	<6	<6	<6	<6	<6	<5J	140J	700	5J

TABLE 7-2 (CONTINUED)
SPRU SAMPLING VISIT

LAND AREA SWMU-035
VOCs IN SOIL (µg/kg = ppb)

	Sample ID	LDA35131
	Location ID	B3556
	Depth Interval (ft bg)	2-3.16
Parameter	Soil Criteria[1]	
2-Hexanone	NA	<11
Acetone	200	<11J
Carbon Disulfide	2700	<6
Chlorobenzene	1700	<6
Ethylbenzene	5500	18
Methyl Ethyl Ketone	300	<11J
Methylene Chloride	100	<15
Tetrachloroethylene	1400	<6
Toluene	1500	63
Total 1,2-Dichloroethene	250	<6
Trichloroethylene	700	<6
Xylenes, Total	1200	60J

Notes: This table shows only samples with detected VOCs

The full VOC dataset is presented in Appendix C

[1] NYSDEC TAGM #4046 Soil Cleanup Objectives (Reference (13))

* = Duplicate of preceding sample

J = Estimated concentration or laboratory reporting limit

< = Less than laboratory reporting limit

ft bg = feet below grade

Land Survey Coordinates and Elevations for SPRU SV Soil Borings in the Pyrophoric Area and Former Landfill That Contained VOCs

(Adapted from SPRU Sampling Visit Report Appendix E-1)

Land Area Boring/Sampling ID	Northing [2] NAD27 U.S. Survey FT	Easting [2] NAD27 U.S. Survey FT	Elevation [1] NGVD29 U.S. Survey FT
B3506	1027765.74	625936.38	310.11
B3507	1027738.13	626032.41	319.04
B3508	1027723.26	626082.01	321.82
B3509	1027661.96	626116.80	321.87
B3514	1027600.37	626151.13	322.63
B3516	1027654.29	625958.45	314.78
B3517	1027680.41	625863.71	315.68
B3518	1027558.09	625931.78	319.98
B3519	1027541.79	625977.55	319.50
B3520	1027517.34	626076.37	321.95
B3528	1027461.47	625902.39	323.70
B3531	1027256.16	625898.30	320.31
B3532	1027197.02	625941.46	318.98
B3533	1027181.33	625980.19	319.25
B3554	1027217.63	626049.17	322.83
B3555	1027228.15	625995.29	320.42
B3556	1027245.64	625939.33	320.33

(1) Vertical datum established from National Geodetic Vertical Datum (N.G.V.D.) 1929. Based on KAPL control monument No. 20, KAPL-Elevation 252.619.

(2) North orientation and bearings are based on the New York State Plane Coordinate System, East Zone, North American Datum (NAD) 1927. Determined through conventional survey methods based on KAPL monuments Nos. 1,2,3,4, & 20.

Former Landfill
SPRU SV Boring Logs

SPRU SAMPLING VISIT
KAPL Knolls Site, Niskayuna, NY
BORING LOG

Boring ID: B3531
Location: Land Area
Start Date: 11/17/00
End Date: 11/17/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625898.302
Northing (ft): 1027256.156

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	320.3			Ground Surface	
	0.0 / 320.1			**TOPSOIL** Dk. Brown SILT, Some f-m Sand, little clay, f-m gravel	Background PID = 0 ppm (all intervals at background unless otherwise noted)
	0.2	100		**TILL DERIVED FILL** Brown CLAY, Some Silt, little f-m sand, moist, soft (10YR 4/4) (CL)	Sample collected 0.16'-2'
2	318.3			Debris & refuse (i.e. plastic, foam-rubber, decomposed paper, office waste) material present 1.7'-3'	
	2.0	50		**TILL DERIVED FILL** Brown CLAY, Some Silt, little f-m sand, moist, soft (10YR 4/4) (CL) with waste material consisting of debris & refuse (i.e. plastic, foam-rubber, decomposed paper, office waste) material present 1.7'-3'	Sample collected 2'-3'
	316.8 / 3.5			No Recovery	
4	316.3 / 4.0				End of Boring at 4'

SPRU SAMPLING VISIT

KAPL Knolls Site, Niskayuna, NY

BORING LOG

Boring ID: B3532
Location: Land Area
Start Date: 11/27/00
End Date: 11/27/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625941.461
Northing (ft): 1027197.02

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	319.0			Ground Surface	
	0.0			**TOPSOIL**	Background PID = 0 ppm (all intervals at background unless otherwise noted)
	318.7				
	0.3			**GRANULAR FILL** Brown f-c GRAVEL, Some Silt, little f-m sand, trace clay, damp, loose (10YR 3/3) (SC)	
	318.5				
	0.5			**TILL DERIVED FILL** Brown-Gray SILT, Some Gravel, little f-m sand, clay, trace plant material, damp, stiff-hard (10YR 2/1-3/4) (SC)	Sample collected 0.33'-2'
		100			Sample collected 1'-1.16'
2	317.0				
	2.0	100		No log/sample collected-refuse (i.e., paper and office waste) at 2.08'-2.16'	PID = Off-scale (i.e., >999 ppm)
	316.8				
	2.2				End of Boring at 2.2'

SPRU SAMPLING VISIT
KAPL Knolls Site, Niskayuna, NY
BORING LOG

Boring ID: B3533
Location: Land Area
Start Date: 11/21/00
End Date: 11/21/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625980.19
Northing (ft): 1027181.328

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
	319.3			Ground Surface	
0	0.0			**TILL DERIVED FILL** Brown SILT and f-c GRAVEL, little f-m sand, damp, medium (10YR 4/3) (SC)	Background PID = 0 ppm (all intervals at background unless otherwise noted)
		100			Sample collected 0.08'-2'
	317.3				
2	317.3			**TILL DERIVED FILL** Same as above, hard	
	2.0			**GRANULAR FILL** f-c GRAVEL, Some Silt, little f-m sand, trace clay (SC-CL)	
		100			Sample collected 2'-4'
	315.3				
4	4.0				End of Boring at 4'

SPRU SAMPLING VISIT

KAPL Knolls Site, Niskayuna, NY

BORING LOG

Boring ID: B3554
Location: Land Area
Start Date: 11/21/00
End Date: 11/21/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 626049.169
Northing (ft): 1027217.629

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	322.8			Ground Surface	
	0.0	.100		**TILL DERIVED FILL** Dk. Brown SILT, Some f-m Sand, little clay, trace f-m gravel, damp, soft-med (10YR 3/3)(SC)	Background PID = 0 ppm (all intervals at background unless otherwise noted)
2	320.8				Sample collected 0.08'-2'
	2.0			**TILL DERIVED FILL** Same as above (SC)	
	320.3				
	2.5	100		**TILL DERIVED FILL** Brown SILT and f-c GRAVEL, Some f-m Sand, little clay, damp, stiff (10YR 4/3) (CL)	Sample collected 2'-4'
4	318.8				
	4.0			**TILL DERIVED FILL** Brown SILT and f-c GRAVEL, Some f-m Sand, little clay, damp, stiff (10YR 4/3) (SC)	Refusal at 4', moved location and re-bored
	317.8				
	5.0	100		**BROWN TILL** Brown SILT, Some Clay, f-c gravel, little f-m sand, damp, hard (10YR 4/3-3/4) (SC)	Sample collected 4'-6'
6	316.8				Refusal at 6.08'
	6.1				End of Boring at 6.08'

SPRU SAMPLING VISIT

KAPL Knolls Site, Niskayuna, NY

BORING LOG

Boring ID: B3555
Location: Land Area
Start Date: 11/20/00
End Date: 11/20/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625995.287
Northing (ft): 1027228.151

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	320.4			Ground Surface	
	0.0	100		**TOPSOIL**	Background PID = 0 ppm (all intervals at background unless otherwise noted) Sample collected 0.16'-2'
				TILL DERIVED FILL Brown SILT, Some Clay, little f-m gravel, trace f-m sand, damp, med-stiff (10YR 4/2)(SC-CL)	
2	318.4				
	2.0	63		**TILL DERIVED FILL** Same as above	Sample collected 2'-3.25' PID = 300-500 ppm
	317.2				
	3.3			**REFUSE** Decomposed paper-other materials, little Brown silt, f-c gravel, wet, soft (10YR 3/3)	
4	316.4				
	4.0	50		**REFUSE** Same as above	Sample collected 4'-5' PID = 20-50 ppm
6	314.4				
	6.0	100		**REFUSE** Same as above	
8	312.4				
	8.0	100		**REFUSE** Same as above	
	311.1				
	9.3			**GRANULAR FILL** Brown/tan f-c SAND, little gravel, trace silt, odor-decomposed paper, moist (10YR 4/2)(SC)	
10	310.4				End of Boring at 10'
	10.0				

SPRU SAMPLING VISIT
KAPL Knolls Site, Niskayuna, NY
BORING LOG

Boring ID: B3556
Location: Land Area
Start Date: 11/20/00
End Date: 11/20/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625939.332
Northing (ft): 1027245.64

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	320.3			Ground Surface	Background PID = 0 ppm (all intervals at background unless otherwise noted)
	0.0 / 320.2	100		**TOPSOIL**	
	0.2			**GRANULAR FILL** Dk. Brown SILT, Some f-m Sand, little clay, little plant material, wet, loose (10YR 3/3) (SC)	Sample collected 0.16'-2'
					PID = 100 ppm
					Sample collected 1'-2'
	318.6				
	1.8 / 318.3			**GRANULAR FILL** Dk. Gray-Gray (stained) f-c SAND, sewage-type odor (SC)	
2	2.0			**GRANULAR FILL** Brown SILT, Some f-m Sand, little clay, little plant material, contains garbage/refuse, wet, loose (10YR 3/3) (SC)	PID = 40-100 ppm Sample collected 2'-3.16'
	317.5				Refusal at 3.17', moved probe 1', blind probe to 4' and continued sampling. No recovery. Made 2 attempts with 2" x 4' Macrocore sampler.
	2.8 / 317.2	58		**REFUSE** Decomposed Paper	
	3.2			**REFUSE** Same as above	
4	316.2				Refusal at 4.17' (2 attempts with Macrocore sampler)
	4.2				End of Boring at 4.17'

Pyrophoric Area
SPRU SV Boring Logs

SPRU SAMPLING VISIT
KAPL Knolls Site, Niskayuna, NY
BORING LOG

Boring ID: B3507
Location: Land Area
Start Date: 10/31/00
End Date: 10/31/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 626032.413
Northing (ft): 1027738.134

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	319.0			Ground Surface	
	0.0			**TOPSOIL** Dk. Brown SILT, little f sand, little clay, trace f-m gravel, rootzone	Background PID = 0 ppm (all intervals at background unless otherwise noted)
	318.9				
	0.2			**TILL DERIVED FILL** Brown SILT, Some Clay, little f-m gravel, damp, stiff (10YR 4/3)(SC)	
	318.5				
	0.5			**BROWN TILL** Brown SILT, Some Clay, Some f-m Gravel, little f-m sand, hard (gravel is embedded) (10YR 4/3) (SC)	
		100			Sample collected 0.16'-2'
2	317.0				
	2.0			**BROWN TILL** Same as above	
		75			Sample collected 2'-3.5'
	315.5				Refusal at 3.5'
	3.5				End of Boring at 3.5'
4					

SPRU SAMPLING VISIT
KAPL Knolls Site, Niskayuna, NY
BORING LOG

Boring ID: B3516
Location: Land Area
Start Date: 10/31/00
End Date: 10/31/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625958.446
Northing (ft): 1027654.287

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	314.8			Ground Surface	
	0.0 / 314.6			**TOPSOIL** Dk. Brown SILT, little f sand, little clay, trace f-m gravel, rootzone	Background PID = 0 ppm (all intervals at background unless otherwise noted)
	0.2	100		**BROWN TILL** Brown SILT and CLAY, Some f-m Gravel (embedded), damp-moist, medium-hard (10YR 4/3) (SC-CL)	Sample collected 0.16'-2'
2	312.8 / 2.0			**BROWN TILL** Same as above	Sample collected 2'-2.42'
	312.4 / 2.4	100		**BROWN TILL** Brown SILT, Some Clay, Some f-c Gravel (embedded), little f sand, damp, hard (10YR 4/2) (SC-CL)	Sample collected 2'-4'
4	310.8 / 4.0				End of boring at 4'

SPRU SAMPLING VISIT
KAPL Knolls Site, Niskayuna, NY
BORING LOG

Boring ID: B3517
Location: Land Area
Start Date: 11/1/00
End Date: 11/1/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625863.709
Northing (ft): 1027680.408

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	315.7			Ground Surface	
	0.0			**TOPSOIL** Dk. Brown SILT, little f-m sand, little clay, trace f-m gravel, rootzone	Background PID = 0 ppm (all intervals at background unless otherwise noted)
	315.0				
	0.7			**TILL DERIVED FILL** Brown SILT and CLAY, little f-m gravel, little f-m sand, damp, medium (10YR 3/2) (SC-CL)	
		100			Sample collected 0.66'-2'
	313.9				
	1.8			**GRANULAR FILL** f-c GRAVEL and f-c SAND, trace silt, damp (10YR 2/2)	
2	313.7				
	2.0			**GRANULAR FILL** Same as above	
		100			Sample collected 2'-4'
4	311.7				End of Boring at 4'
	4.0				

SPRU SAMPLING VISIT
KAPL Knolls Site, Niskayuna, NY
BORING LOG

Boring ID: B3518
Location: Land Area
Start Date: 11/6/00
End Date: 11/6/00
Drilling Method: Open-bucket hand auger

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625931.778
Northing (ft): 1027558.089

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	320.0			Ground Surface	
	0.0			**TOPSOIL** Dk. Brown SILT, little f sand, trace clay, trace f gravel, damp, roots	Background PID = 0 ppm (all intervals at background unless otherwise noted)
	319.5				
	0.5	100		**TILL DERIVED FILL** Dk. Brown SILT, Some f Sand, little clay, trace f-m gravel, damp, soft (10YR 4/4) (SC-CL)	Sample collected 0.5'-2'
2	318.0				
	2.0	100		**TILL DERIVED FILL** Same as above	Sample collected 2'-4'
4	316.0				End of Boring at 4'
	4.0				

SPRU SAMPLING VISIT
KAPL Knolls Site, Niskayuna, NY
BORING LOG

Boring ID: B3519
Location: Land Area
Start Date: 11/6/00
End Date: 11/6/00
Drilling Method: Open-bucket hand auger

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625977.549
Northing (ft): 1027541.787

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	319.5			Ground Surface	
	0.0			**TOPSOIL** Brown SILT, little f sand, trace clay, trace f gravel, roots (SC)	Background PID = 0 ppm (all intervals at background unless otherwise noted)
	319.0				
	0.5			**TILL DERIVED FILL** Brown CLAY, Some Silt, little f sand, trace f gravel, orange to lt. gray mottles (10YR 5/6 to 5/1), damp, hard (10YR 3/4)(SC)	
		100			Sample collected 0.5'-2'
	317.8				
	1.8			**TILL DERIVED FILL** Brown SILT, Some f Sand, trace clay, damp, medium (10YR 3/4)	
2	317.5				
	2.0			**TILL DERIVED FILL** Same as above	
		100			Sample collected 2'-4'
4	315.5				End of Boring at 4'
	4.0				

SPRU SAMPLING VISIT

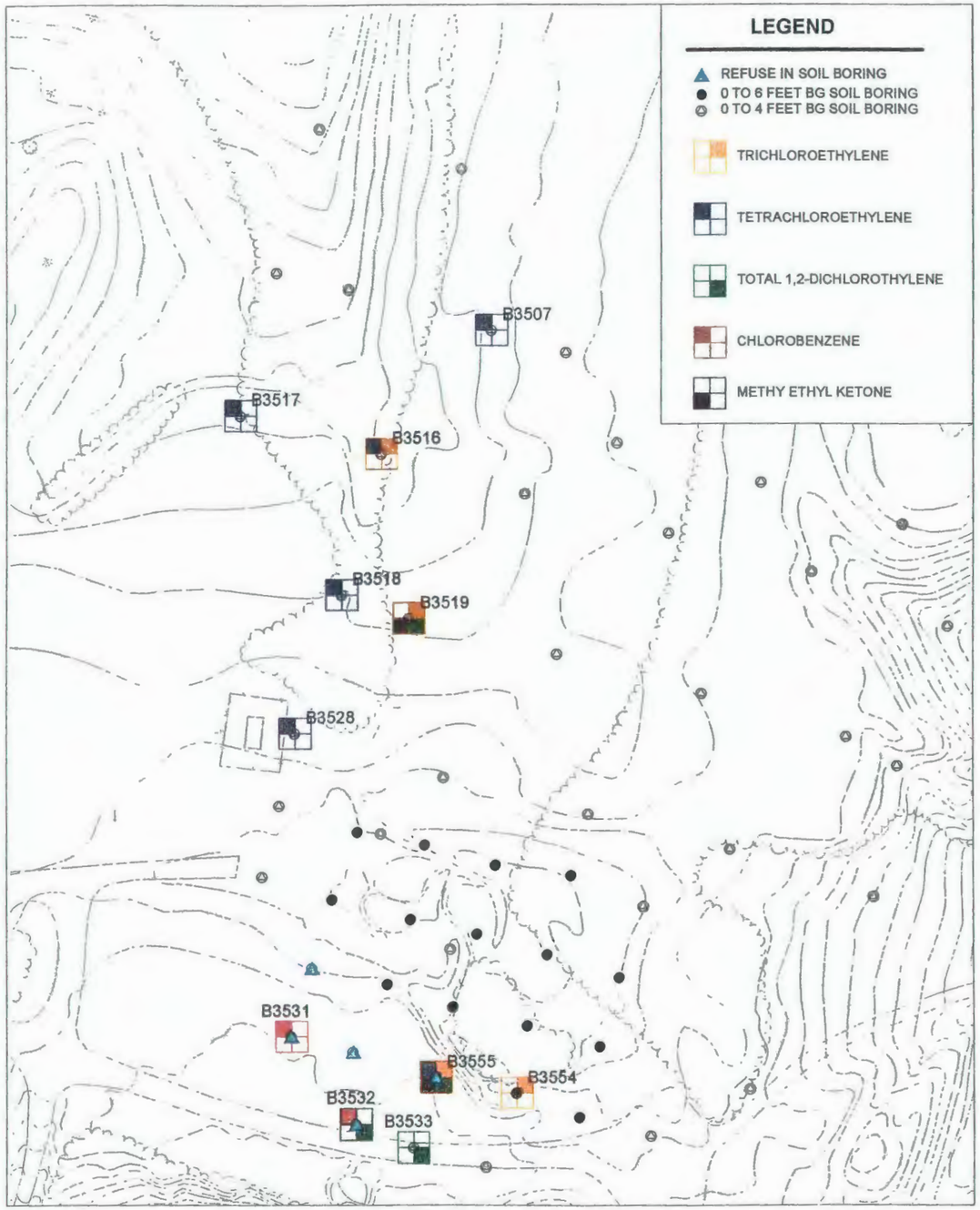
KAPL Knolls Site, Niskayuna, NY

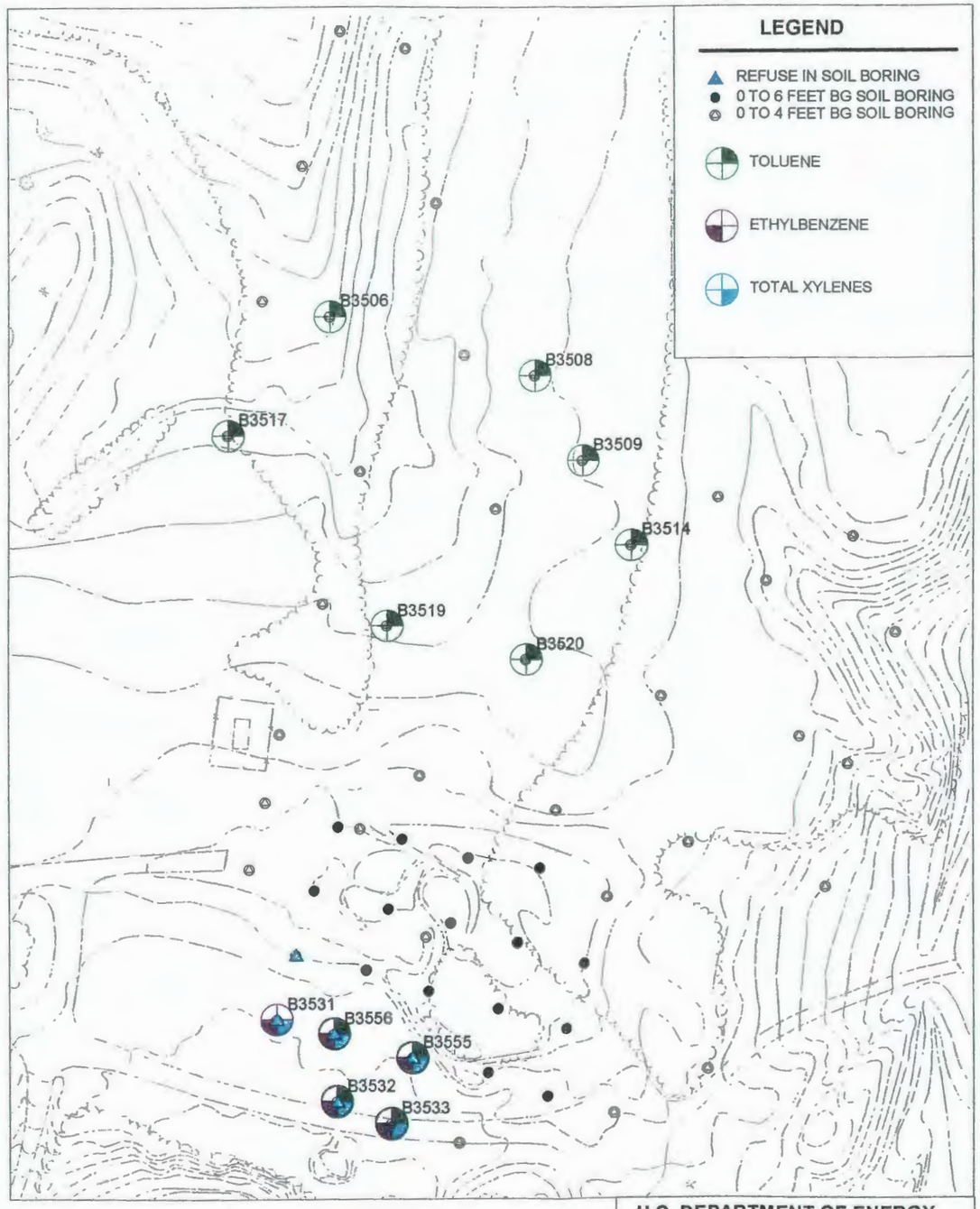
BORING LOG

Boring ID: B3528
Location: Land Area
Start Date: 11/3/00
End Date: 11/3/00
Drilling Method: Push 3" split-barrel sampler

Driller: Aquifer Drilling and Testing
Geologist: CT Male/CH2M HILL
Logged by: Rich Totino
Easting (ft): 625902.387
Northing (ft): 1027461.474

Depth (ft bgs)	Elevation (feet msl)	Recovery (%)	Lithology	Sample Classification	Comments
0	323.7			Ground Surface	
	0.0				Background PID = 0 ppm (all intervals at background unless otherwise noted)
	323.5			**TOPSOIL** Dk. Brown SILT, little f sand, clay, rootzone	
	0.2			**GRANULAR FILL** Brown f-m SAND, Some Silt, trace clay, trace f-m gravel, damp, loose (10YR 3/4)	
		100			Sample collected 0.16'-2'
2	321.7				
	2.0			**GRANULAR FILL** Same as above	
		100			Sample collected 2'-4'
4	319.7				End of Boring at 4'
	4.0				





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SCALE

30 0 30 60 Feet

NOTES:
1) VOCS DETECTED IN ONE OR MORE SAMPLE INTERVALS.

2) THE FOLLOWING VOCS ARE NOT SHOWN SINCE THEY WERE PRESENT IN LABORATORY OR FIELD BLANKS:
ACETONE, METHYLENE CHLORIDE, 2-HEXANONE, AND CARBON DISULFIDE.

U.S. DEPARTMENT OF ENERGY
OAKLAND SPRU FIELD OFFICE
KNOLLS ATOMIC POWER LABORATORY

SPRU SAMPLING VISIT

FIGURE 7-7
LAND AREA SWMU-035
VOC DISTRIBUTION IN SOIL