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RCRA Facility Investigation Report

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SECTION 1

INTRODUCTION

1.1 Objectives of the RCRA Facility Investigation (RFI)

The RFI was performed at the Akzo Nobel Chemicals Inc. (Akzo Nobel) facility in Burt, New York. The purpose of the RFI was to investigate the nature and extent of contamination, if any, associated with SWMUs and AOCs, as described in detail in Revision 01 to the RFI Work Plan (November 1995). TRC Environmental Corporation (TRC) was retained by Akzo Nobel to develop and implement a RCRA Facility Investigation at six SWMUs and one AOC at the facility. The RFI Work Plan Rev. 01 was prepared to address NYSDEC review comments (February 16, 1996) which were received by Akzo Nobel on February 20, 1996. NYSDEC and Akzo Nobel met March 12, 1996 regarding the modifications necessary to secure NYSDEC approval of the Work Plan. Akzo Nobel also held a conference call with NYSDEC representatives to gain further input regarding the Work Plan. As requested by NYSDEC, Akzo Nobel submitted a memorandum to NYSDEC on April 17, 1996 documenting the discussions between Akzo Nobel and NYSDEC, the agreements reached between Akzo Nobel and NYSDEC and the proposed changes to the Work Plan. A meeting was held on April 23, 1996 to discuss the proposed changes to the Work Plan and to reach concurrence on the approach. The RFI Work Plan was approved by NYSDEC by letter dated July 19, 1996. Field work was implemented on August 12, 1996 and was completed October 11, 1996. Laboratory analysis and data validation per EPA Region II SOPs were completed February 13, 1997.

The goal of the RFI was to fully characterize the extent of identified releases and to gather the data necessary to support Corrective Measures Study (CMS), if needed. This RFI Report provides the recently generated data relevant to: (1) further characterization of soil and ground water at certain SWMUs/AOC identified during the RCRA Facility Assessment- Sampling Visit (RFA-SV); and (2) support of the implementation of corrective measures, if necessary at the Akzo Nobel facility in Burt, New York. Previous relevant reports, prepared by Akzo Nobel under this corrective action program include:

- RCRA Facility Assessment - Sampling Visit Work Plan, September 22, 1994,
- RCRA Facility Assessment - Sampling Visit Report, December 1994,
- RCRA Facility Investigation Description of Current Conditions Report, September 1995, and
- RCRA Facility Investigation Pre-Investigation Evaluation of Corrective Measures Report, September 1995.
- RCRA Facility Investigation Work Plan, Revision 01, June 1996.

This RFI has been conducted in accordance with the requirements set forth in Akzo Nobel's 6 New York Code of Rules and Regulations (NYCRR) Part 373 Permit (Module III) and Appendix III-B (Scope of Work for a RCRA Facility Investigation).

1.2 Report Organization

This RCRA Facility Investigation Report contains nine sections: (1) Introduction; (2) Background; (3) Physiographic Setting; (4) RFI Implementation; (5) Nature and Extent of Contamination; (6) Fate and Transport/Intermedia Transfer; (7) Health and Environmental Assessment; (8) Need for Interim Measures/Remedial Actions; (9) Conclusions and Recommendations.

Eight appendices are also provided with this work plan: (A) Soil Gas Survey Data Summary Table; (B) Ground Water Headspace Data Table; (C) Soil Boring Logs; (D) Summary of Ground Water Elevations (E) Sample Chains of Custody; (F) Photographic Documentation; (G) Analytical Data Tables; and (H) Lab Data Deliverables.

Section 2, Background, presents a synopsis of the findings of the RFA-SV Report and describes the scope of the RFI. A complete regulatory history, description of historical/current plant operations and waste disposal practices is provided in the Description of Current Conditions Report, dated September, 1995.

Section 3, Physiographic Setting, describes the geologic and hydrogeologic setting at the Akzo Nobel facility in Burt, New York.

Section 4, RFI Implementation, summarizes actions taken to implement the scope of work as presented in the RFI work plan, and actions taken as necessary to account for site-specific conditions encountered in the field.

Section 5, Nature and Extent of Contamination, presents the results of the investigation. The field and laboratory analytical data regarding the distribution and extent of presence/absence of contaminants of concern in soil and ground water at the Akzo Nobel facility in Burt, New York are discussed.

Section 6, Fate and Transport, presents the physical and chemical characteristics of contaminants of concern found at the facility, and discusses the implications regarding likely contaminant movement and fate in the environment.

Section 7, Health and Environmental Assessment, presents an evaluation of contaminants of concern, toxicity assessment, hazard identification, and exposure assessment. It provides a comparison of detected contaminants per media with NYSDEC TAGM 3038 and 6NYCRR 703.5 Standards.

Section 8, Need for Interim Measures/Remedial Actions addresses the site risks and evaluates the potential need for interim risk reduction measures. This section also presents an analysis

regarding the potential remedial actions that may be deployed at the facility to remedy contamination encountered.

Section 9 presents the conclusions and recommendations of the RFI.

SECTION 2

BACKGROUND

2.1 Facility Background

Akzo Nobel Chemicals Inc. (Akzo Nobel) is currently operating its Burt, New York, facility under a 6 New York Code of Rules and Regulations (NYCRR) Part 373 Permit; therefore, it is subject to Corrective Action (CA) under 6 NYCRR Section 373 - 2.6. The CA module (Module III) of the 6 NYCRR Part 373 Permit requires initiation of corrective action to evaluate releases to the environment that have or may have occurred from past waste management activities.

The 350 acre Akzo Nobel property is located at 2153 Lockport-Olcott Road in the Hamlet of Burt, Niagara County, New York (see Figure 1). Property lines and dimensions for the active portion of the facility are depicted in Figure 2, the facility location map. An outline of the entire property is available in the Current Conditions Report. Akzo Nobel produces organic peroxides including benzoyl peroxide, methyl ethyl ketone peroxide, actyl acetone peroxide, 2,4-dichlorobenzoyl peroxide, and parachlorobenzoyl peroxide at the Burt, New York facility.

The production portion of the facility encompasses approximately 30 acres, and approximately 80 acres of the property are fenced. Areas associated with Akzo Nobel operations include: buildings, hazardous waste container storage pads, inactive landfills, an inactive burning cage, a closed clay pad storage area, venturi scrubbers, a fume scrubber, drum storage areas, a closed waste sulfuric acid storage tank, closed underground storage tank (UST) locations, a fire pond, and numerous structures associated with the wastewater treatment facility and process sewer.

2.2 Documents, Studies, and Investigations

A Preliminary Review Report was prepared by DPRA Incorporated, an Environmental Protection Agency (EPA) contractor; the final revision is dated July 1990. A Visual Site Inspection (VSI) of the Akzo Nobel facility was conducted on August 27 and 28, 1990, by DPRA and NYSDEC. A VSI report titled RCRA Facility Assessment Phase 2: Visual Site Inspection, was prepared by DPRA in 1990 and was revised based on supplemental NYSDEC inspections. The final version of the VSI report is dated September 13, 1991. Forty-two SWMUs/AOCs were identified in the VSI Report Summary, dated November 1990.

The VSI Summary Report recommended that 24 of the 42 SWMUs/AOCs needed further investigation. No further action was recommended for the remaining 17 SWMUs/AOCs. Module III Conditions E.5 of the 6 NYCRR Part 373 Permit (February 24, 1994, revision), added the Building 16 Drum Storage Area (SWMU 31) to the list of SWMUs that required further investigation. Therefore, 25 SWMUs/AOCs required the implementation of a RCRA Facility Assessment (RFA-Phase 3: SV). Table 1 provides a list of all SWMUs and AOCs identified for further action during the VSI and their current status as of the date of submittal of this RFI Report.

TABLE 1. REGULATORY STATUS OF SWMUs AND AOCs		
SWMU/ AOC	Description	Akzo Nobel Determination[a]
1	Hazardous Waste Container Storage Pad -Area 1	No Action -VSI
2	Hazardous Waste Container Storage Pad -Area 2	No Action -VSI
3[b]	Process Sewer	RFI
4	Destruction Tank	No Action -VSI
5[b]	East Influent Well	RFI[c]
6[b]	West Influent Well	RFI[c]
7	Holding Tank	No Action -VSI
8[b]	Equalization Basin	Deferred until scheduling permits
9	Settling Channel	No Action -VSI
10	Filter Carts	No Action -VSI
11	Primary Clarifier	No Action -VSI
12	East Sludge Tank	No Action -VSI
13	West Sludge Tank	No Action -VSI
14	Process Reactor	No Action -VSI
15[b]	Building 2 Sump	Deferred until scheduling permits
16[b]	Building 2B Separator	RFI
17[b]	Former UST No. 2 Area	RFI
18[b]	Former UST No. 9 Area	No Action Proposed - RFA-SV Addendum
19[b]	Sewer Pre-treatment Pit	One soil boring proposed for VOC analysis (RFA-SV Addendum)
20	Inside Building 2B Accumulation Area	No Action -VSI
21	Outside Building 2B Accumulation Area	No Action -VSI
22	QC Laboratory Accumulation Area	No Action -VSI
23[b]	Burning Cage	RFI
24[b]	Landfill Site No. 1	RFI
25[b]	Landfill Site No. 2	No Action - RFA-SV

TABLE 1. REGULATORY STATUS OF SWMUs AND AOCs		
SWMU/ AOC	Description	Akzo Nobel Determination[a]
26[b]	Landfill Site No. 3	No Action - RFA-SV
27[b]	Former Clay Pad Storage Area	No. Action - RFA-SV
28[b]	·Dimethyl Phthalate Meter Leak	No Action - RFA-SV
29	Venturi Scrubber	No Action -VSI
30	Fume Scrubber	No Action -VSI
31[b]	Building 16 Drum Storage Area	RFI
32[b]	Debris Pile	No Action - RFA-SV
33[b]	Former Waste Sulfuric Acid Tank Area	No Action Proposed - RFA-SV Addendum
34	Empty Drum Storage Area No. 1	No Action -VSI
35[b]	Empty Drum Storage Area No. 2	No Action - RFA-SV
36[b]	Empty Drum Storage Area No. 3	No Action - RFA-SV
37	Truck Trailer Storage Area	No Action -VSI
A[b]	Dimethyl Phthalate Spill Area	No Action - RFA-SV
B[b]	Building 32 Fuel Line Leak	No Action Proposed - RFA-SV Addendum
C[b]	Former Underground Storage Tank No. 11 Area	No Action Proposed - RFA-SV Addendum
D[b]	Former Underground Storage Tank No. 12 Area	No Action Proposed - RFA-SV Addendum
E[b]	Former Underground Storage Tank No. 20 Area	RFI

([a])Determination based on Akzo Nobel's July 10, 1995 responses to NYSDEC comments from Thaddeus Moskal, P.E. dated June 13, 1995.

([b])Evaluated during RFA-SV.

([C])Added to RFI scope voluntarily by Akzo Nobel in July 1996 following preliminary RFA work.

2.3 Results of the RFA-SV and Observations During Sewer Line Replacement Project

2.3.1 Overview

Akzo Nobel retained Ground Water Technology, Inc. to develop a work plan describing the RFA-Sampling Visit strategies and methodologies. This work plan, dated October 31, 1994, was approved verbally by the NYSDEC Project Manager (Thaddeus E. Moskal, P.E.) in August 1994, and with a letter of approval, on October 31, 1994.

The objective of the RFA-SV was to determine if contamination was present above NYSDEC HWR-92-4046 Cleanup Objectives in the 20 SWMUs and 5 AOCs designated for evaluation in the RFA-SV Work Plan. If contaminant levels were less than the NYSDEC Soil Cleanup Objectives, no further action was recommended.

The 20 SWMUs and 5 AOCs which were evaluated during the RFA-SV in accordance with the NYSDEC-approved Work Scope are identified in Table 1. The RFA included the following:

- An electromagnetic survey of the Burning Cage and former landfill areas (SWMUs 23, 24, 25 and 26) was conducted to help define locations of nonnative materials. These locations were subsequently marked for sampling and analysis. A total of 21 soil borings were advanced in these locations, with continuous sampling and PID field screening to the depth below ground surface (BGS) defined in the RFA-SV Work Plan. At each boring, the sample with the highest PID reading was selected for further chemical analysis.

- Physical integrity testing was conducted at process sewers and treatment areas (SWMUs 3, 5, 6, 8, 15, 16, and 19). Confirmatory soil sampling and analysis was conducted at potential leak locations, based on the integrity test results and guidance from NYSDEC. A total of 23 borings were advanced in these areas, as close to the sewer line as feasible (generally within 1 to 3 feet) and to a depth of approximately 6 to 8 feet BGS. Samples were collected continuously and field screened with a PID. Samples were selected for laboratory analysis based on PID results and visual sample inspection as directed in the RFA-SV Work Plan.

- A soil boring program was also conducted at SWMUs 17, 18, 27, 28, 31, 32, 33, 35, 36 and AOCs A, B, C, D, and E. A total of 47 borings were advanced in these areas at locations which were agreed upon with NYSDEC at a meeting on August 11, 1994. Samples from each of the SWMUs/AOCs were tested for the analytes specified in the RFA-SV Work Plan. SWMUs/AOCs involving impacts or potential impacts to the surface were sampled to a depth of 6 feet BGS. SWMUs or AOCs involving potential subsurface impacts (e.g., former locations of underground storage tanks) were investigated by boring to a depth of 2 feet below the bottom of the underground element. At each borehole, the sample with the strongest evidence of a chemical impact, based on odor, staining or elevated headspace readings, was analyzed for the compounds specified for that SWMU/AOC. At SWMUs/AOCs targeted for TPH analysis, samples that

demonstrated significant petroleum impacts (via field analysis of petroleum hydrocarbons using EPA Method 418.1), were also analyzed for polynuclear aromatic hydrocarbons using EPA Method 8270. SWMUs/AOCs being investigated for methyl ethyl ketone (MEK), benzene, toluene and xylenes were analyzed in the field using a portable gas chromatograph. If no signs of chemical impacts were noted at the borehole location, the bottom borehole sample was sent to the laboratory. The locations of all SWMUs and of the soil borings advanced during the RFA-SV are detailed in figures in the RFA-SV Report (December 1994).

Ground Water Technology, Inc. prepared the RFA-SV Report for Akzo Nobel's submittal to NYSDEC in December 1994. That report provides results from the laboratory analysis of soil boring samples and the QA/QC results and comparison of reported concentrations to NYSDEC Soil Cleanup Objectives. The RFA-SV indicates that, of the 25 SWMUs/AOCs evaluated in accordance with the NYSDEC-approved RFA-SV Work Plan, contamination was not detected above NYSDEC Soil Cleanup Objectives in 8 SWMUs/AOCs which were recommended for no further action. Eight SWMUs/AOCs were recommended for limited soil resampling to be addressed in the RFA-SV Addendum. SWMUs 8 and 15 were deferred until scheduling permits. The following seven SWMUs/AOC listed below, were recommended to be addressed in the RFI.

- Process Sewer (SWMU 3),
- Building 2B Separator (SWMU 16),
- Former UST No. 2 Area (SWMU 17),
- Burning Cage (SWMU 23),
- Landfill Site No. 1 (SWMU 24),
- Building 16 Drum Storage Area (SWMU 31), and
- Former UST No. 20 Area (AOC E).

Akzo Nobel retained TRC Environmental Corporation to develop and implement the RFI. TRC worked with Akzo Nobel to prepare the RFI Work Plan which was submitted to NYSDEC on November 8, 1995. Review comments from NYSDEC, dated February 16, 1996, were received by Akzo Nobel. The NYSDEC comment letter also requested a meeting with Akzo Nobel to discuss the Work Plans. On March 12, 1996, Akzo Nobel met with NYSDEC representatives to discuss the NYSDEC comments and seek agreement regarding the modifications to the Work Plan necessary to secure NYSDEC approval. Akzo Nobel also held a conference call with NYSDEC representatives to gain further input regarding the Work Plan. As requested by NYSDEC, Akzo Nobel submitted a memorandum to NYSDEC on April 17, 1996 documenting the discussions between Akzo Nobel and NYSDEC, the agreements reached between Akzo Nobel and NYSDEC and the proposed changes to the Work Plan. A meeting was held on April 23, 1996 to discuss the proposed changes to the Work Plan and to reach concurrence on the approach. The RFI Work Plan was approved by NYSDEC by letter dated July 19, 1996. Field work commenced on August 12,1996 and was completed October 11, 1996. Laboratory analysis and data validation per EPA Region II SOPs were completed February 13, 1997.

Six SWMUs/AOCs were evaluated under the RFA-SV Addendum program, including SWMU 18, SWMU 19, SWMU 33, AOC B, AOC C, and AOC D. Activities were conducted by TRC for Akzo Nobel in accordance with the RFA-SV Addendum Work Plan dated June 1996, and consisited primarily of soil sampling and analysis. The Addendum Work Plan was approved by NYSDEC in a letter dated July 19, 1996. Further assessment of SWMUs 5 and 6 were originally proposed to be evaluated under the Addendum program. However, based on initial field investigations, Akzo Nobel decided to address these SWMUs under the RFI program.

Results of the RFA-SV Work Plan Addendum program are submitted under separate cover to the Department. The report summarizes the results from investigation of 16 soil borings and analysis of 22 soil samples from six SWMUs/AOCs. Detected constituents were below NYSDEC Soil Cleanup Objectives for the samples collected at SWMU 18, SWMU 33, AOC B, AOC, C and AOC D. Therefore no further action is recommended for these SWMUs. Soil Cleanup Objectives were exceeded for acetone and chloroform in the soil boring advanced to the east of SMWU 19, the Sewer Retreatment Pit, at the surface (0 to 2 feet BGS) and just above the water table (6 to 8 feet BGS). These constituents did not exceed Soil Cleanup Objectives in samples collected from borings to the north, south and west of SWMU 19. Installation and sampling of one soil boring further east of SWMU 19 is proposed to define the limits of VOC contamination. No impact to ground water is expected from this SMWU, based on the absence of elevated ground water headspace and soil gas readings in this vicinity during the RFI. No further investigation of ground water is proposed.

Presented below is a synopsis of the historical data available regarding each of the SWMUs/AOC investigated in the RFI. Note that the sampling locations described below are portrayed in Figure 3 and in figures in the RFA-SV Report.

2.3.2 Process Sewer (SWMU 3)

The Process Sewer has two main trunk lines (the east trunk line and the west trunk line) that run along the central portion of the facility. Approximately 3,000 linear feet of process sewer are in operation at the site. The Process Sewer consists primarily of two main components; the sewer pipes themselves and their associated manholes. The sewer lines are constructed of vitrified clay pipe and were initially constructed in 1954. The system was expanded to its present extent in 1976.

The Process Sewer directs liquid wastewater effluent from plant buildings to the on-site Wastewater Treatment Plant. Facility wastewater generated in Buildings 3, 20, 22, 24, 31, and the Building 2 complex, enters the sewer system and is transported to either the West Influent Well or the East Influent Well. After entering these wells, the water is pumped to the on-site wastewater treatment plant for equalization and processing. The treated wastewater is then discharged to the Town of Newfane, New York, publicly owned treatment works (POTW) system.

The RFA-SV included physical integrity testing of the subsurface process sewer lines and accessible laterals in accordance with the RFA-SV Work Plan. Confirmatory soil sampling and

analysis was conducted at potential leak locations, based on the integrity test results and guidance from NYSDEC. A total of 22 borings were advanced at potential leak locations, as close to the sewer line as feasible (generally within 1 to 3 feet) and to a depth of approximately the bottom of the pipe. Samples were collected continuously and field screened with a PID. Samples were selected for laboratory analysis based on PID results and visual sample inspection as directed in the RFA-SV Work Plan. Samples were analyzed for the likely constituents flowing through the process sewers at potential leak locations. The analyte list, determined with NYSDEC concurrence, included target volatile organics (EPA Method 8240), target semivolatiles (EPA Method 8270), target PCB (modified EPA Method 8080) and TPH (EPA Method 418.1). During the RFA-SV, methyl ethyl ketone (MEK) was detected at sample location SB-PS-11 (4- to 6-foot sampling interval) at a concentration of 1,200 µg/kg, which is above the NYSDEC Soil Cleanup Objective of 300 µg/kg. Soil borings were also advanced about 30 feet east (SB-PS-12), 40 feet north (SB-PS-10), and 120 feet north (SB-PS-9) of SB-PS-11 with no exceedances of NYSDEC Soil Cleanup Objectives.

Note that another borehole, SB-PS-20, was also completed proximate to SWMU 16 and the process sewer lateral in this general location. The NYSDEC Cleanup Objective for target phthalates was exceeded at this location.

The RFA-SV results indicated that the concentration of MEK in soil exceeds NYSDEC Soil Cleanup Objectives in a single, localized area at SB-PS-11; but that the potential exists for ground water contamination at other locations along the sewer line.

Water and soils suspected of being contaminated were encountered during the sewer line replacement project in the fall of 1995. The samples were collected from areas which appeared contaminated based on visual or olfactory observations and subjected to analysis for VOCs by Method 8240 and SVOCs (base-neutrals only) by Method 8270. Data sheets reporting laboratory results were provided as Appendix F to the June 1996 RFI Work Plan. These data are included in Appendix H to this report and discussed in Section 5. Since the intent of the data collection activity was to evaluate for the presence of gross contamination, no quality control samples (blanks, duplicates) were collected with the field samples. In addition, the laboratory was not required to follow the stringent quality control reporting protocols (surrogates, matrix spikes) which are requisite for RCRA Corrective Action investigations. Consequently, the data should be considered qualitative from the sampling and analysis perspective.

Because of concerns regarding the data quality and the representativeness of the sewer line samples, the reported concentrations cannot be compared to threshold benchmark concentrations. The impact of releases from the sewer line to soil and ground water is one of the objectives of the RFI. The data collected during the sewer replacement activities were useful in that they were gathered from locations with the highest probability of impact from releases from the process sewer. Soils were removed and disposed off site in accordance with legal requirements as part of the sewer line project. The data indicated the apparent worst case contamination consisted of a limited number of VOC analytes and a very limited number of SVOC analytes, at relatively low concentrations at that time.

2.3.3 *Replacement of The East and West Influent Wells (SWMUs 5 and 6)*

The East and West Influent Wells (SWMUs 5 and 6) are located along the process sewer line in the center of the facility. Process wastewater flows to these influent wells from the process sewer line which subsequently feeds to the plant wastewater treatment system. Integrity testing, reported in the RFA-SV Report, indicated that leaks were not detected in the East and West Influent wells using the test methods cited. NYSDEC requested, in a memorandum dated June 13 1995, that Akzo Nobel address the possibility of prior releases in these units. Akzo Nobel's June 1996 RCRA Facility Assessment Sampling Visit Work Plan Addendum (Revision 01) proposed that the units be decontaminated and abandoned in place, replaced with new units and the surrounding soil evaluated for evidence of contamination, with limited soil removal. NYSDEC approved of this approach.

During June 1996, Akzo Nobel installed replacement wells for the East and West Influent Wells. As noted in Revision 01 to the Work Plan Addendum, environmental professionals from TRC evaluated excavated soil for evidence of contamination by the presence of discolored soil PID and/or FID readings and olfactory evidence. On June 12, TRC and Akzo Nobel observed widespread evidence of discolored soil, indicating that the limited soil removal approach, presented to the Department in Revision 01 to the Work Plan, needed re-evaluation. Akzo Nobel proceeded with the well replacement activities, upgraded the plan to include removal of the former wells (rather than the proposed decontamination) and tasked TRC to document activities photographically and to collect samples from the most visually contaminated soil for laboratory analysis.

Two samples were collected by TRC on June 12, 1996 and submitted for analysis of VOCs by EPA Method 8240 and dimethyl and di-n-butyl phthalate by EPA Method 8270. These samples were collected from the walls of the excavation at approximately 4 to 6 feet BGS. An additional three samples were collected by TRC on June 20, 1996 and submitted for analysis of VOCs by EPA Method 8240 and base-neutral extractables by EPA Method 8270. These samples were collected from the backhoe buckets containing soil removed from beneath the former East Well and from between the former East and West Wells at depths of 10 to 12 feet BGS. All five samples were collected from product-saturated, visually contaminated soil. Department representatives were onsite on June 20, 1996.

Results of laboratory analysis of the five samples indicated no exceedances of TAGM 3028 "Contained-in" Criteria. However, contaminants in two of the samples exceeded TAGM 4046/3038 Soil Cleanup Objectives for dimethyl phthalate, acetone, MEK (2-butanone), 4-methyl-2-pentanone (MIBK) and chloroform. A draft copy of the data is provided in Appendix H. Note that data validation of these results has not been conducted because the samples collected were product-saturated soils below the water table and thus not representative of soil or ground water conditions for the purpose of comparisons to action levels. The unvalidated results show that even when sampling from the worst-case locations of product-saturated, stained soil immediately beneath the former influent wells, only a limited number of VOC and SVOC analytes were detected, at fairly low concentrations. Based on these results, Akzo Nobel marked the limits of the excavation, temporarily backfilled the existing excavation, and disposed of

approximately 400 cubic yards of excavated soil. Further, Akzo Nobel proposed to proactively examine the potential for impacts to soil and ground water from the former East and West Influent Wells during the RFI activities which were conducted in late summer 1996. Akzo Nobel summarized the findings of the well replacement project and proposed to add the influent wells to the RFI scope in a memorandum to the Department dated July 30, 1996

2.3.4 Status of the Old and New Process Sewer Lines

- Description of Old Process Sewer Line

Akzo Nobel replaced the main process sewer trunk lines and manholes in 1995/1996. This work was largely complete at the time of the 1996 RFI field work. There is now a new process sewer and an old process sewer. These two systems are illustrated in Figure 4.

The Old Process Sewer formerly directed liquid wastewater effluent from plant buildings to the on-site Wastewater Treatment Plant. Facility wastewater generated in Buildings 3, 20, 22, 24, 31, and the Building 2 complex, entered the sewer system and was transported to either the West Influent Well or the East Influent Well. After entering these wells, the water was pumped to the on-site wastewater treatment plant for equalization and processing.

The Old Process Sewer had two main trunk lines (the east trunk line and the west trunk line) that run along the central portion of the facility. Approximately 3,000 linear feet of process sewer was in operation at the site. Thus the Old Process Sewer system consisted of west and east sections. The basic wastewater flow in the western sewer sector was west to east to the west influent well; flow in the eastern sewer sector was from east to west to the east influent well. Waste waters then flowed from the influent wells through waste water treatment to the sewer discharge line, which exits the facility to the east (illustrated on Figure 7). The treated wastewater was discharged to the Town of Newfane, New York, publicly owned treatment works (POTW) system.

The Old Process Sewer consists primarily of two main components; the sewer pipes themselves and their associated manholes. The sewer lines were constructed of vitrified clay pipe and were initially constructed in 1954. The system was expanded to its present extent in 1976, and was replaced/modified in 1995/1996.

The Old Process Sewer was directly connected to SWMU 16, the Building 2B Separator, and SWMUs 5 and 6, the Influent Wells. The influent wells and Building 2B Separator were replaced in the process sewer upgrade. These units, identified as separate SWMUs, are simply specific subgrade structures associated with the Process Sewer.

The western reach of the Old Process Sewer has been completely replaced with the new process sewer, with the exception of a small segment of sewer line exiting Building 1. The eastern reach of the Old Process Sewer has been largely replaced; specific segments of the Old Process Sewer are still in use, consisting of pipe runs and manholes identified in Tables 2 and 3.

Table 2. Old Process Sewer Line Status – West Sewer Line	
Sewer Line Appurtenance	**Old Sewer Line Status**
MH-1	Has been removed
MH-1 to MH-2 pipe run	Abandoned in place
MH-2	Abandoned in place
MH-2 to MH-3 pipe run	Abandoned in place
MH-3	Abandoned in place
MH-3 to MH-4 pipe run	Abandoned in place
MH-4	Removed/Replaced with new manhole in vicinity of former manhole location
MH-4 to MH-5 pipe run	Abandoned in place
MH-5	Removed/Replaced with new manhole in vicinity of former manhole location
MH-5 to MH-6 pipe run	Abandoned in place
MH-6	Removed/Replaced with new manhole in vicinity of former manhole location
MH-4 to MH-7 pipe run	Abandoned in place
MH-7	Abandoned in place
MH-7 to SWMU 16 pipe run	Abandoned in place
SWMU 16 to Bldg. 2B pipe run	Abandoned in place
MH-8	Removed/Replaced with new manhole in vicinity of former manhole location
MH-8 to MH-9 pipe run	Abandoned in place; approximately 20 ft. Removed during upgrade
MH-9	Removed with part of pipe run; replaced with new manhole located within Bldg. 3
MH-7 to MH-10	Abandoned in place
MH-10	Removed/Replaced with new manhole in vicinity of former manhole location
MH-10 to MH-11 pipe run	Abandoned in place

Table 2. Old Process Sewer Line Status - West Sewer	
Sewer Line Appurtenance	**Old Sewer Line Status**
MH-11	Removed/Replaced with new manhole in vicinity of former manhole location
MH-11 pipe run North (Abandoned Line)	Abandoned in place
MH-11 pipe run to Waste Water Bldg.	Abandoned in place

Table 3 Old Process Sewer Line Status - East Sewer	
Sewer Line Appurtenance	**Old Sewer Line Status**
MH-18 pipe run to Waste Water Bldg.	Abandoned in place; approximately 20 ft. Removed during upgrade
MH-18	Abandoned in place
MH-18 to Former Bldg. 9 pipe run	Abandoned in place
MH-18 to MH-17 pipe run	Abandoned in place
MH-17	Abandoned in place
MH-17 to MH-16 pipe run	Abandoned in place
MH-17 to Bldg. 23	**Currently In service**
MH-16	Abandoned in place
MH-16 to MH-15 pipe run	Abandoned in place
MH-15	Abandoned in place
MH-15 to Bldg. 20	Abandoned in place
MH-16 to Bulk Tank Storage pipe run	Abandoned in place
MH-16 to MH-13 pipe run	Abandoned in place
MH-14 to Bldg. 20 pipe run	**Currently In service**
MH-14	**Currently In service**
MH-14 to MH-13 pipe run	**Currently In service**
MH-13	Removed/Replaced with new manhole in vicinity of former manhole location
MH-13 to MH-12 pipe run	Abandoned in place

Table 3 Old Process Sewer Line Status - East Sewer	
Sewer Line Appurtenance	**Old Sewer Line Status**
MH-12	Removed/Replaced with new manhole in vicinity of former manhole location
MH-12 to Bldg. 22 pipe run	Old pipe removed/replaced
Bldg. 22 to Former Bldg. 32 pipe run	Abandoned in place

- Description of the New Process Sewer Line

The new process sewer line has replaced the old process sewer line with the limited exceptions noted above. The New Process Sewer Line is constructed of fused polyethylene (heat welded) with linked seals for each manhole penetration. The manholes are constructed of concrete. The piping and manholes were subject to proveout hydrostatic testing and were certified hydrostatic tight by a registered professional engineer. Thus the potential for continuing releases from the process sewer in areas associated with production are limited to those four limited segments noted in Table 3 along the East Sewer.

2.3.5 Former Building 2B Separator (SWMU 16)

The Former Building 2B Separator was located in the west-central portion of the site; next to Buildings 2 and 2B. It could be accessed via a 24-inch manhole. The Former Building 2B Separator was an integral, in-line component of the Process Sewer. The separator, a 3,150-gallon underground tank, was an over/under separator that was used for separating peroxide solids from the Building 2B wastewater stream before the wastewater was discharged to the facility Process Sewer. The separator was abandoned in place during the 1995/1996 sewer line replacement project. A new separator has been installed to the north of the former separator, across the road (see Figure 4).

An integrity test performed during the RFA-SV indicated that the former separator leaked. Leaks were suspected to be occurring through a visible seam identified near the top of the tank. However, the liquid level of the tank was typically below this seam.

Based on the integrity testing and inspection results, and given the proximity of the Process Sewer to this SWMU, two soil boreholes (SB-PS-19 and SB-PS-20) were completed to a depth of approximately 8 feet below grade in the general SWMU area during the RFA-SV. Soil samples from grade to the base of the borehole were collected continuously. Each soil sample was field screened with a PID. The sample from the 6- to 8-foot depth interval was selected for analysis based on PID readings and on the visual sample inspection as directed by the RFA-SV Work Plan. The samples were analyzed for the selected target analytes in accordance with EPA Method 8270 (base/neutral fraction compounds) and for PCB using modified EPA Method 8080.

The laboratory results for SB-PS-20 indicated that 540,000 (J) µg/kg of butylbenzylphthalate and 580,000 (J) µg/kg of di-n-butylphthalate (J denotes an estimated value) were detected in the submitted sample. Target phthalates were not detected in the sample from SB-PS-19. NYSDEC Soil Cleanup Objective values for these compounds are 50,000 µg/kg and 8,100 µg/kg, respectively. In addition, PCB was detected the samples at 42 ug/kg (SB-PS-19) and 69 ug/kg (SB-PS-20), concentrations which are below the NYSDEC Soil Cleanup objective of 10,000 µg/kg. Note that the RCRA Soil Action Level for PCBs is 1,000 ug/kg.

2.3.6 Former UST No. 2 Area (SWMU 17)

The former UST No. 2 Area is located in the west-central portion of the site, just southeast of Building 2 and south of Building 2B. This 8,000-gallon steel UST was installed in 1955. The UST was used to store No. 2 fuel oil. On February 22, 1985, the tank was overfilled. On June 18, 1987, the tank was cleaned, and closed in place by filling with sand. Niagara County Department of Health (NCDOH) inspected the cleaned tank and excavated soil and noted no deficiencies, thus excavated soils were returned to the excavation area. The area was then converted into a fiber drum storage area. This storage area now has a concrete base.

During the RFA-SV, four soil boreholes (SB-17-1, SB-17-2, SB-17-3, and SB-17-4) were drilled in this area to a depth of approximately 16 feet below grade. Soil samples were collected continuously and each sample was field screened with a PID. In addition, selected samples from each borehole were further analyzed in the field for total petroleum hydrocarbons (TPH) via field spectrophotometry (FSP). Field TPH results ranged from 100 mg/kg (SB-17-4, 10 to 12 feet) to 2,080 mg/kg (SB-17-2, 8 to 10 feet).

Further, the sample from each borehole with the highest PID reading was also sent to the laboratory for TPH analysis using EPA Method 418.1. The fixed-base laboratory TPH results indicated that TPH was detected in these samples at concentrations ranging from 500 mg/kg (SB-17-4, 6 to 8 feet) to 15,921 mg/kg (SB-17-2, 8 to 10 feet). Of the four samples sent to the laboratory for TPH analysis, two of the samples (SB-17-1 at 6 to 8 feet, and SB-17-2 at 8 to 10 feet) were analyzed for target PAHs using EPA Method 8270.

EPA Method 8270 analyses indicated that compounds that are typically associated with a fuel oil-type impact were detected in both samples. Most notably, naphthalene was present at a concentration of 32,000 µg/kg in the SB-17-2 (8 to 10 feet) sample. This concentration is above the NYSDEC Soil Cleanup Objective of 13,000 µg/kg.

2.3.7 Burning Cage (SWMU 23)

The Burning Cage is located in the north-central portion of the property. Between 1955 and 1972, the Burning Cage was used for uncontrolled, open burning of miscellaneous trash, packaging materials, and other combustible debris. Wastes were placed in a steel mesh cage and burned. The metal cage was located directly on the ground. The cage has been removed and the area is currently covered with grass.

Three soil boreholes were completed in this area (SB-23-1, SB-23-2, and SB-23-3). The borehole locations were selected based on the results of the EM-31 electromagnetic survey conducted in this area. The survey indicated that anomalies were present; therefore, each significant anomaly was targeted for further investigation via a soil borehole. Each soil borehole was continuously sampled to a depth of approximately 6 feet below grade, as prescribed by the RFA-SV Work Plan. Soils were screened in the field with a PID. The sample from each borehole location with the highest PID reading was submitted to the laboratory for target compound analysis using EPA Method 8270 (base/neutral fraction) and PCB using modified EPA Method 8080.

The results indicate that dimethyl phthalate was present at a concentration value, just above the NYSDEC Soil Cleanup Objective limit of 2,000 µg/kg.

2.3.8 Landfill Site No.1 (SWMU 24)

Landfill Site No. 1 is located in the north-central portion of the facility just west of the Burning Cage. Landfill Site No. 1 consisted of five unlined pits. Between 1955 and 1969, the landfill was used to dispose of wastes. The area is currently covered with grass.

Six soil boreholes were completed in this area (SB-24-1A, SB-24-2, SB-24-3, SB-24-4, SB-24-5, and SB-24-6). The borehole locations were selected based on the results of the EM-31 electromagnetic survey conducted in this area. The survey indicated that anomalies were present; therefore, each significant anomaly was targeted for further investigation via a soil borehole. Each borehole was advanced to approximately 10 feet below grade and continuously sampled. Each sample was screened with a PID. The soil sample from each borehole with the highest PID reading was further field screened for methyl ethyl ketone (MEK) using the field PGC.

The sample from each borehole location with the highest PID reading was also submitted to the laboratory to be analyzed for target compounds 2-butanone (MEK) and total xylenes using EPA Method 8240 (volatile organic compounds) and target base/neutral fraction semivolatiles using EPA Method 8270.

The field PGC did not detect MEK in any of the samples above the respective method detection limits. In each of the samples submitted to the laboratory for analysis MEK was detected at concentrations ranging from 120 µg/kg (SB-24-2, 2 to 4 feet) to 5,100 µg/kg (SB-24-5, 4 to 6 feet). The NYSDEC Soil Cleanup Objective for MEK is 300 µg/kg. Di-n-butylphthalate was detected at concentrations ranging from 3,100 µg/kg (SB-24-2, 2 to 4 feet) to 730,000 µg/kg (SB-24-1A, 4 to 6 feet). The NYSDEC Cleanup Objective for di-n-butylphthalate is 8,100 µg/kg. Dimethyl phthalate was detected at concentrations ranging from 6,400 µg/kg (SB-24-6) to 5,300,000 µg/kg (SB-24-5). The NYSDEC Cleanup Objective for dimethyl phthalate is 2,000 µg/kg. Butylbenzylphthalate was detected at concentrations ranging from 570 µg/kg (SB-24-2) to 150,000 µg/kg (SB-24-1A). The NYSDEC Cleanup Objective for butylbenzylphthalate is 50,000 µg/kg.

2.3.9 Building 16 Drum Storage Area (SWMU 31)

The Building 16 Drum Storage Area is located in the southeast corner of the facility; just southwest of the Former Clay Pad Storage Area. Building 16 burned down in February 1987. All that remains is a 20-foot by 40-foot concrete foundation surrounded, except at the entry, by a four-inch high concrete curb. Dicumyl peroxide and lauroyl peroxide were in the building when it burned down. A decomposition by-product of these compounds is acetophenone.

During the RFA-SV, four soil boreholes were completed in this area (SB-31-1, SB-31-2, SB-31-3, and SB-31-4). Each soil borehole was continuously sampled to a depth of approximately 6 feet below grade, as prescribed by the RFA-SV Work Plan. Soils were screened in the field with a PID. The sample from the base of each borehole was submitted to the laboratory for analysis (generally all PID readings from each borehole were similar). An additional soil sample from SB-31-1 (0- to 2-foot sampling interval) was also submitted for analysis (highest PID reading from that particular borehole).

The selected samples were submitted to the laboratory for analysis of the target compound acetophenone using EPA Method 8270. Acetophenone were detected at 85,000 µg/kg (SB-31-1, 0 to 2 feet BGS) and 88,000 µg/kg (SB-31-3, 4 to 6 feet). The general NYSDEC individual semivolatile organic compound Soil Cleanup Objective limit is 50,000 µg/kg. Based upon the laboratory analytical results, the target analyte concentration reported at selected borehole locations exceeded the general limit.

2.3.10 Former UST No. 20 Area (AOC E)

The Former UST No. 20 area is located near the east end of the facility; southwest of Building 20. This 10,000-gallon steel UST, installed in 1968, was used to store No. 2 fuel oil. On May 20, 1987, the tank was cleaned and closed in place by filling with sand. NCDOH inspected the cleaned tank and noted no deficiencies; thus excavated soils were deemed uncontaminated and returned to the excavated area.

Three soil boreholes were completed at this location (SB-E-1, SB-E-2, and SB-E-4). SB-E-3 was abandoned due to interference with a facility water line. Each borehole was continuously sampled to a depth of 12 to 16 feet below grade (location specific) as prescribed by the RFA-SV Work Plan. Soil samples from the three boreholes were screened in the field with a PID and for TPH via field PGC. The sample from each borehole location with the highest PID reading was submitted to the laboratory for analysis for TPH. If PID results were similar throughout the borehole, or olfactory/visual evidence, as determined by the field geologist, was significant, the sample with the most pronounced olfactory/visual evidence or the base of the borehole was submitted.

Field TPH results ranged from non detect (SB-E-4, 14 to 16 feet) to 400 mg/kg (SB-E-4, 4 to 6 feet). Concentrations of 221 mg/kg TPH was reported via EPA Method 418.1 in the SB-E-2, 2 to 4-foot sample submitted to the laboratory. Two additional samples were also submitted to the laboratory for PAH analysis via EPA Method 8270 (SB-E-2, 2 to 4 feet, and SB-E-4, 8 to

10 feet). Target PAHs were detected in the SB-E-2 sample. The only exceedance of NYSDEC Cleanup Objectives was for benzo(a)pyrene, which was detected at a concentration of 66 (J) µg/kg. The NYSDEC Cleanup Objective for benzo(a)pyrene is 61 µg/kg.

2.3.11 RFA SWMUs and AOCs

An addendum to the RFA-SV Report is being submitted separately to address SWMUs and AOCs addressed by Akzo Nobel pursuant to the NYSDEC-approved June, 1996 RFA Work Plan Addendum.

SECTION 3

PHYSIOGRAPHIC SETTING

3.1 Environmental Setting

The Akzo Nobel property is situated in a rural, agricultural location, with no other industry in the immediate area. Niagara County Agricultural District No. 4 lies to the west, northeast, and southeast of Akzo Nobel. Numerous orchards, as well as small residential sections, surround and abut the facility property.

3.1.1 Topography and Surface Water Drainage

The topography of the site ranges from approximately 320 to 330 feet above mean sea level. The site is basically flat with the higher elevations generally in the southeast corner of the site and the lower elevations typically in the northwest corner of the site.

Surface drainage from the site flows to the west and north into Eighteenmile Creek, located approximately 300 feet to the west of the Akzo Nobel property line. Eighteenmile Creek then flows for approximately 2 miles before discharging into Lake Ontario.

3.1.2 Climate

Niagara County has a humid, continental climate. The average daily maximum temperature at Lockport is 57°F, and average daily minimum temperature is 38°F. The yearly average precipitation at Lockport (approximately 10 miles south of the site) is 32.6 inches. The yearly average snowfall is 56 inches.

3.2 Geology

3.2.1 Regional Geology

The site is located in the north central portion of Niagara County, New York, north of the Niagara Escarpment. Pleistocene-aged glacial till and lacustrine deposits comprise a large part of the surface area of the county. Unconsolidated sediments beneath the surface of the Akzo Nobel site were formed in sand bars and deltas of preglacial Lake Iroquois.

Soils mapped in the vicinity of the site belong to two major soil series: the Arkport Series and the Galen Series. The Arkport Series is located in the extreme western portion of the site, and the Galen Series is located in the remainder of the property. Both soil groups are approximately 8 inches thick and consist of dark brown, slightly acid, very fine sandy loams. These loams are moderately well drained and have a moderately coarse texture. The surface layers are underlain by friable, very fine sandy loams. Thickness of the site soil strata ranges from 30 to 60 inches.

Bedrock beneath the site has been mapped as the Upper Ordovician Queenston Shale. Depth to bedrock below the site is unknown; however, boreholes in the nearby town of Somerset and local outcrops along Eighteenmile Creek suggest depths to bedrock of approximately 18 to 35 feet below grade.

3.2.2 Site Geology

Based on 1996 RFI/RFA-SV drilling activities and 1994 RFA-SV drilling activities, unconsolidated sediments were encountered in borings advanced from 3 to 16 feet below grade. These unconsolidated sediments varied across the site, but consisted primarily of silty sands, clays, and gravels of lacustrine origin.

Three cross-sections were compiled to illustrate the subsurface information and are presented on Figure 5. The geology of these cross-sections was compiled using observations from soil borings completed during the 1996 RFI/RFA-SV and the 1994 RFA-SV activities. Boring logs for soil borings completed during the 1994 RFA-SV and the 1996 RFI/RFA-SV activities are included in Appendix C.

Across the site, five sedimentary units were observed during completion of drilling activities. These units were a silty sand, a sandy silt or clayey silt, a silty clay, and a sand with clay and gravel. The most prevalent sedimentary unit observed was the silty sand unit which was typically also the shallowest. In some areas of the site these units appear to be continuous (as shown on cross-section A-A'). Typically the observed stratigraphic order of these units was an upper unit that was a brown to reddish-brown silty sand overlying a stiff brown clayey silt. Beneath these two sedimentary layers was a brown silty, sandy, and/or clayey gravel. In the southeastern portion of the site, a 1- to 2-foot thick layer of silty clayey gravel was observed associated with the stiff clayey silt.

In addition, the following sedimentary materials were observed during RFI/RFA drilling activities: organic material and gravel. At one boring, B-14, organic peat with plant roots (classified as peat on Figure 5 in cross-section B-B') was observed at a depth of approximately six feet below grade in the bottom of the sandy silt layer indicating that these may not be in-situ deposits. This boring was completed in the vicinity of an area where an underground storage tank was removed and the area was backfilled. A gravel layer was encountered at a depth of approximately eight feet in the north and northwest corner of the site in the vicinity of ground water screening locations GWS-8W450, GWS-7W450, and GWS-7W390.

These sedimentary units were not continuous across the site however, and, as shown on the two south-north cross-sections, B-B' and C-C', abrupt changes in the stratigraphy were observed at locations in close proximity to each other. Other observations made during 1996 drilling activities included isolated clay lenses in several of the borings, peat in soil boring B-14, and a lack of in-situ sedimentary bedding planes. The discontinuous nature of the sedimentary deposits and lack of in-situ features indicate the possibility that some of the sedimentary materials encountered during drilling activities may not be in-situ deposits. This is not

unexpected, as borings were placed to investigate specific subsurface structures, past and present.

During advancement of the microprobes for the RFI field activities, refusal was encountered in two areas of the site. The first area was the area south of the Buildings 3, 3A, 4, 4A where several trial dry holes were advanced including ground water screening location GWS-4S150. Refusal was encountered at GWS-4S150 at a depth of five and a half feet below grade. The second area where refusal was encountered was in the southeastern corner of the site, southeast of Buildings 25 and 26. Refusal was encountered at a depth of three feet below grade in the ground water screening location of B-12E90. Field activities in 1996 did not include coring to confirm bedrock occurrence. It appears therefore that bedrock highs are present in these two locations on the site. The presence of bedrock could be confirmed, if necessary, during future drilling activities on the site.

3.3 Hydrogeology

Ground water elevations measured across the site during the fall of 1996 were relatively shallow and were measured to range from approximately 2 to 11 feet below grade. Water level measurements were collected on September 16 and 30, 1996 and October 6 and 11, 1996 at the ground water screening locations. A table summarizing water elevations is included as Appendix D. An initial review of the measurements revealed several areas with anomalous values especially in the eastern portion of the site. Multiple survey elevations and water level measurements were completed at several of the ground water screening locations to verify values in those areas where values initially appeared to be inconsistent. Typically, survey elevations were consistent, however, it was noted in the that some shifting of the PVC casing did occur as well as breakage due to site activities and consequently different survey measurements were used to calculate water elevation values for some screening locations. To gather additional information for areas with the apparently anomalous ground water values, additional survey and water depth measurements were completed on several ground water screening locations in the vicinity of these areas as shown in Appendix D. Several measurements were completed during the October 11, 1996 measurement round to provide information for locations where ground water elevation data was limited.

Ground water elevation maps with ground water contours were constructed for ground water measurements collected on September 16, 1996 and October 6, 1996. Data gaps for ground water elevation data for these dates were addressed by reviewing the additional ground water elevations collected on other dates and using these values as a guide when preparing ground water contours for the site. These maps are included as Figures 6 and 7.

In general, the direction of ground water flow is towards the northwest with a low horizontal gradient across the central portion of the site and relatively higher horizontal gradients in three areas, the northeast corner, the southeast corner and the southwest corner. Horizontal gradients were calculated using the October 6, 1996 data for the central portion of the site, the southwest corner, the northeast corner, and the southeast corner of the site. These calculated horizontal gradients were: 0.0006 in the central portion of the site from ground water screening locations P-

H to P-1 (a 0.57 foot head change over 905 feet in distance); 0.01 in the southwest portion of the site from ground water screening locations GWS-4 to GWS-PA (a 2.94 foot head change over 300 feet in distance); 0.007 in the northeast portion of the site from ground water screening locations PK to GWS-12W60 (a 1.31 foot head change over 195 feet in distance), and 0.03 in the southeast portion of the site from ground water screening locations B-12 to GWL-6AW60 (a 3.69 foot head change over 125 feet in distance).

Because of a lack of screened monitoring wells across the site, vertical gradients and permeability values of the stratigraphic units could not be calculated.

The apparent bedrock highs described in the geology section in the southeast and southwest corners of the site appear to influence local ground water flow by forming areas with increased horizontal gradients with ground water flow towards the northwest and north respectively as shown on Figure 7. The ground water flow in the northeast corner also appears to be influenced by a localized geologic feature such as another bedrock high. In this area, however, there is also a localized ground water low in the vicinity of the ground water screening location GWS-11W that is likely influenced by a pumping well associated with the fire pond.

Due to the basically flat horizontal gradient across the site, preferential pathways along the process sewer lines are not immediately obvious but two preferential pathways may be present on the site. The first preferred pathway appears to be present oriented east-west along the road where manholes MH-4, -7, -10, -18, and -17 are located. The presence of this pathway is indicated by the grouping of the ground water contours on the water table contour map prepared from the September 16, 1996 data (Figure 6), and by the small changes in ground water elevations measured on October 6, 1996 ranging from 319.22 to 319.38 feet above mean sea level (MSL) (Figure 7). Ground water elevations in the vicinity of the process sewer line oriented north south from manholes MH-10 and MH-11 and running towards the north appear to show the presence of a second preferential pathway with almost identical ground water elevation values ranging from 319.02 to 319.08 feet above MSL (Figure 7). It should be noted that due to the flat horizontal gradient, these preferential pathways do not appear to strongly influence the flow of ground water on the site and the primary influences of ground water flow are the bedrock highs.

Localized perched water conditions were encountered during the RFI; see boring SB-C-5. This boring was advanced adjacent to the old process sewer. The perched water conditions were infrequent and localized, and did not appear to be related to the reworking of native materials adjacent to the old process sewer.

The relationship of the Old Process Sewer Line to ground water is not defined at this time. Based on the depth to ground water information gathered during the RFI, it appears that the old process sewer, could have functioned as both a gaining and losing conduit, depending on ground water elevation fluctuations and the particular reach or manhole in question. Thus, at certain locations under certain ground water conditions (such as those encountered during the fall 1996 RFI field program), portions of the process sewer could gain ground water (infiltration), and other locations could release to the ground water (exfiltration). The existing data are limited with regards to the relationship, both due to the fact that no seasonal ground water elevation

fluctuation data exist, and the fact that the old process sewer was largely out of service during the RFI field program (replaced with the new process sewer). As noted previously in this section, the September ground water elevation figure indicates a localized, limited ground water depression along a portion of the axis of the old process sewer in the center of the facility (see Figure 6). TRC concludes this may indicate a discharge from ground water to the sewer system, most likely due to the presence of either storm water drains and/or subgrade utilities in that area. This line is still in service; the old process sewer line is no longer in service in this area, and was not in service during the RFI.

SECTION 4

RFI IMPLEMENTATION

4.1 Field Investigation Activities

This section reports the RFI implementation specifics. Implementation information was previously conveyed to NYSDEC in the Quarterly Report No. 1, Akzo Nobel Chemicals Inc., Burt NY, RFI and RFA Addendum, for the period 7/22/96 to 10/22/96, submitted to NYSDEC in in October, 1996. It is presented herein for reference.

The primary objective of the RCRA corrective action program is to clean up releases of hazardous waste or hazardous constituents that threaten human health or the environment. The RCRA corrective action program consists of three phases: the RCRA Facility Assessment (RFA), the RCRA Facility Investigation (RFI) and corrective measures (CM). The intent of the RFA was to identify and gather information on releases at the facility, to evaluate SWMUs/AOCs for releases to all environmental media, to make preliminary determinations regarding releases and the need for further actions and interim measures at the facility, and to remove from further investigation the SWMUs/AOCs that do not pose a threat to human health or the environment. The RFI is intended to be an investigation to fully characterize the extent of contamination from identified releases that require further action. During the CM phase, the extent of remedial measures required is determined, and remedies for the identified problems are selected and implemented.

The RFA-SV, which was conducted by Ground Water Technologies, Inc. for Akzo Nobel, and summarized previously in Section 2, provided a large volume of data relative to site soil chemical characterization. Each SWMU/AOC in the soil boring program was investigated with a minimum of 4 soil borings and the Process Sewer (SWMU 3) was subjected to an extensive program of 22 borings. Figure 3 presents the locations of the samples collected during the RFA-SV. Where possible, RFA-SV sample collection was focused by integrity testing, electromagnetic surveys, headspace PID screening, field TPH analysis and field GC analysis. The investigations conducted during the RFA-SV were more intensive than those usually performed at this stage of the corrective action process; yet, soil contamination was found to be limited to a few areas and localized within those areas. Consequently, the RFI conducted at Akzo Nobel's Burt, New York facility was focused to primarily confirm RFA-SV soil results at most SWMUs/AOC, with limited ground water investigation at all SWMUs.

The focus of this RCRA Facility Investigation was to characterize the extent of contamination from releases at SWMUs 3, 5, 6, 16, 17, 23, 24, 31 and AOC E. Both soil and ground water contamination were investigated at the eight SWMUs, and soil contamination was evaluated at AOC E. Analytes included those detected during the RFA-SV above NYSDEC Soil Cleanup Objective in addition to the VOCs cited in Table 5-1 of the Quality Assurance Project Plan (QAPP) submitted as Appendix C to the RFI Work Plan. The RFI did not include a study of specific geologic and hydrogeologic characteristics which may affect ground water flow, and did

not include soil classification with respect to hydraulic conductivity, relative permeability, sorptive capacity, or cation exchange capacity. The scope of this investigation did not include an evaluation of air, subsurface gas (except along the process sewer line), surface water or sediment.

The direct push small diameter ground water sampling technique to collect ground water for analysis was used. Geoprobe tooling was used to direct push a 5 foot length of 10 slot (0.010 inch) PVC Screen for approximately 5 feet, and the screen plus a threaded solid 5 foot riser were subsequently pneumatically hammered into place. These techniques are conservative because they tend to bias results to higher concentrations.

Akzo Nobel retained TRC Environmental Corporation to implement the RFI. With Akzo Nobel's approval, TRC retained the services of the following:

- Parrat Wolff, Inc., East Syracuse, New York - drilling, Geoprobe/Hydropunch operations;
- IEA Connecticut Laboratory, Monroe, Connecticut - laboratory analysis: and
- Chemtech Consulting Group, Englewood, New Jersey - data validation.

4.1.1 Hydrologic Investigation

The RFI generated hydrologic data from three piezometers established at the north-central, northwest, and southeast quadrants of the Akzo Nobel Burt, NY facility. The piezometer locations are indicated on Figure 6. Piezometers were installed in the first water bearing strata encountered upon boring advancement at these locations. The ground water levels were allowed to stabilize following piezometer installation (24 hours or greater), and the ground water elevation at each piezometer location was established by surveying the top of riser to a vertical accuracy of 0.01 feet, measuring the depth to water from the reference point, and calculating the ground water elevation relative to a facility-specific vertical datum benchmark. The piezometer-derived ground water elevation data served to determine the overall ground water flow direction and gradient at the facility.

At each SWMU/AOC sampled for ground water, ground water elevations were determined from the direct push downhole tooling used to gather ground water samples. The downhole tooling consisted of an expendable push point and a slotted screen connected to a solid riser that were installed via direct push and hammer techniques. Ground water elevations were determined in a limited number of temporary ground water sampling points by installing the sampling points, allowing ground water levels to stabilize (12 hours minimum), and following the same elevation determination procedures as described for piezometers. This information significantly supplemented the facility-wide piezometer-derived information and was used to develop an understanding of the facility-wide hydrologic conditions.

The facility was thought to possibly have bedding plane materials installed in the immediate vicinity of subgrade structures (i.e. process sewers, etc.) that might differ substantially from native soils and overburden with regards to hydraulic conductivity and other characteristics. TRC located a number of ground water sampling points in the immediate vicinity of subgrade structures to investigate the possible presence of perched ground water within fill.

At each SWMU/AOC, the determination of down gradient locations, for the purposes of collecting down gradient ground water samples, was made by considering both the facility-wide ground water flow direction and local ground water flow patterns. The facility-wide flow direction was confirmed for the specific location by gathering two or more ground water elevations in the presumed up and down gradient locations. In the process sewer line vicinity, additional determinations were made to investigate the potential perched water in fill conditions. The specific determinations made are summarized in the following table:

Table 4. SWMU/AOC HYDROLOGY DETERMINATIONS COMPLETED

SWMU/AOC	Determinations	No. GW Elevation Determinations Made
Process Sewer Line SWMU 3	Perched water determinations, local down gradient locations	15 adjacent to process sewer line
Building 2B Separator SWMU 16	Down gradient location	4 (GWL-1, GWL-2, GWL-2S90, GWS-5)
Former UST No. 2 Area SWMU 17	Down gradient location	3 (GWL-3, P-17, GWS-4)
Burning Cage SWMU 23	Combined with SWMU 24	Combined with SWMU 24
Landfill Site No. 1 SWMU 24	Down gradient location	4 (GWL-4, GWL-5, GWS-10W, GWS-J)
Building 16 Drum Storage Area SWMU 31	Down gradient location	6 (GWL-6, GWL-6A, B-12W60, B-12S30, GWL6AN60, B-12N60)
Former UST No. 20 Area AOC E	None (Ground water not sampled.)	None (Ground water not sampled.)

The number of hydrologic determinations made either met or exceeded the number proposed in Table 2 of the RFI Work Plan for SMWUs listed above.

4.1.2 Soil and Ground Water Quality Investigation

Figures depicting actual RFI sampling locations (Figures 8 through 15) and a summary of the RFI field sampling implementation are provided in this section. The RFI QAPjP, submitted as part of the RFI Work Plan, provided detailed information on sampling methods, field screening activities and QA/QC procedures implemented by the sampling team. Specific details regarding methods as implemented are discussed below.

Table 5 summarizes the field samples collected during the RFI. Comparison of the numbers of samples proposed in the RFI Work Plan (Table 4) with the table presented below indicates that Akzo Nobel's field program met or exceeded the minimum sampling requirements established in the plan. The numbers of samples exceeded the proposed number for the following parameters:

- Soil vapor head space - 50 proposed, 470 collected;
- Soil borings at soil vapor "hot spots" - 3 proposed, 12 collected; and
- Ground water screening samples - 14 proposed, 247 collected.

The RFI Work Plan proposed that soil vapor would not be collected within 15 feet of soil borings, advanced during the RFA-SV, which were found to be less than 5 ppm via headspace PID (SB-PS-1, -2, -3, -4, -8, -9, -12, -15, -16, -17, -22, -23, -24). The presence of elevated soil vapor readings in samples immediately proximate to the sewer line and manholes necessitated the implementation of the grid extension approach to systematically investigate positive readings. Application of the grid extension criterion superseded prior observations in the RFA soil boring program such that soil vapor was collected at the locations previously sampled, where warranted.

Another voluntary addition to the proposed program was the analysis of VOCs in ground water at SWMUs 16 and 31. These analyses were conducted in response to elevated headspace readings during the soil boring program.

Another change from the proposed program was the implementation of EPA Method 8260 in place of EPA Method 8240. Method 8260 was selected because it incorporates the use of a capillary column which is preferable to the Method 8240 packed column to separate the components of interest. The change in methods would be expected to have a positive impact on the program.

TABLE 5. Field Samples Collected During the RFI

SWMU/AOC ID	Sample Locations			Media	Depth	Total Samples	Analytical Parameters
SWMU 3 (Process Sewer), including SWMU 5, 6 (Influent Wells)	Surround manholes and every 15 feet along sewer line; extend grid above 10 ppmv total VOC. See Appendix A and Figures 8, 9 and 10 for locations of soil gas readings.			Soil gas head space	1.5 to 3 feet BGS or immed. above water table; at 1 ft. BGS additional at 4 to 9 lateral	Approx. 470 dual readings per location	Total VOC screen using FID/FID with charcoal filter
	"Hotspot " borings at the following soil vapor hot spots. See Appendix A and Figures 8, 9 and 10.			Soil	Highest FID/ PID reading	13	EPA Method 8260 VOCs on all samples and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270, TOC, pH and grain size on select samples
	Figure No.	Soil Vapor "Hotspot" Points	Soil Boring				
	9	1	SB-G				
	9	28	SB-S3-2				
	8	56	SB-S3-3				
	9	106	SB-C-5				
	9	112	SB-I				
	10	146	SB-B				
	10	157	SB-K				
	9	371	SB-E				
	9	482	SB-J				
	9	485	SB-D				
	8	605	SB-F				
	10	644	SB-A				
	Figure No.	Soil Vapor "Not detected" Point	Soil Boring Point	Soil	1.5 to 3 feet BGS	1	EPA Method 8260 VOCs and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270, TOC, pH and grain size
	9	331	SB-S3-1				

TABLE 5. Field Samples Collected During the RFI

SWMU/AOC ID	Sample Locations		Media	Depth	Total Samples	Analytical Parameters
	GWS-1 to -14 and soil gas hot spots; extend grid above 5 ppm above background. See Appendix B and Figure 11		Ground water screening	Water table	Approx. 247 location specific readings	Total VOC screen using headspace-OVA
	GWL-7, -8 from SWMU 5/6; and 7 each from headspace VOC hotspots and judgmental areas. See Figure 12 for locations.		Ground water	Water table	2 from SWMU 5/6, 7 from hotspots; 7 from judgmental areas	EPA Method 8260 VOCs and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270
	"Hotspot" Locations	Judgmental Locations				
	GWS-10W	GWS-12E				
	GWS-11	GWS-1W60N180				
	GWS-13W60	GWS-5				
	GWS-1N60	GWS-6W360				
	GWS-4	GWS-ASW60				
	GWS-5W180	GWS-J				
	GWS-6W90	GWL-4W60				
SWMU 16 - Building 2B Separator	B-1, B-2, B-3		Soil	2-4, 4-6, 6-7	9	Butylbenzyl and di-n-butylphthalates using EPA Method 8270, TOC, pH and grain size
	GWL-1, -2		Ground water	Water table	2	EPA Method 8260 VOCs, Butylbenzyl and di-n-butylphthalates using EPA Method 8270

TABLE 5. Field Samples Collected During the RFI					
SWMU/AOC ID	**Sample Locations**	**Media**	**Depth**	**Total Samples**	**Analytical Parameters**
SWMU 17 (Former UST No. 2 Area)	B-4, B-5	Soil	Highest FID/PID reading	2	Naphthalene by EPA Method 8270, EPA Method 8260 BTEX, TOC, pH and grain size
	GWL-3	Ground water	Water table	1	Naphthalene by EPA Method 8270, EPA Method 8260 BTEX
SWMU 23 (Burning Cage)	B-6	Soil	0-2, Highest FID/ PID reading	2	Dimethyl and di-n-butyl phthalates by EPA Method 8270, TOC, pH and grain size
SWMU 24 (Landfill Site No. 1)	B-7, -8, -9, -10	Soil	0-2, Highest FID/ PID reading	8	Butylbenzyl, dimethyl and di-n-butylphthalates using EPA Method 8270, EPA Method 8260 VOCs, TOC, pH and grain size
	GWL-4, -5	Ground water	Water table	2	Butylbenzyl, dimethyl and di-n-butylphthalates using EPA Method 8270, EPA Method 8260 VOCs
SWMU 31 (Building 16 Drum Storage Area)	B-11, -12, -13	Soil	0-2, Highest FID/ PID reading	6	EPA Method 8260 VOCs, Acetophenone, TOC, pH and grain size
	GWL-6A (GWL-6 dry)	Ground water	Water table	1	Acetophenone
AOC E (Former UST No. 20 Area	B-14	Soil	Highest FID/PID reading	1	Benzo(a)pyrene, BTEX, TOC, pH and grain size

Process Sewer (SWMU 3)

Soil Gas Survey

The presence/absence of total non-methane VOCs in soil gas (using a dual FID with single charcoal filtration) and the presence/absence of total VOCs in ground water headspace (OVA) were used to evaluate the presence/absence of soil or ground water contamination along the process sewer line. Dual OVA readings, with charcoal filtering of one OVA was used to determine the methane contribution.

The goal of the soil gas investigation was to systematically investigate the extent of positive non-methane soil gas readings in the vicinity of the historic sewer line (Akzo Nobel was replacing the main process sewer trunk lines and manholes. Akzo Nobel marked the locations of former manholes and locations where soil excavation was conducted. Soil gas sampling during the RFI was conducted at the locations of former manholes for those manholes which have been replaced). The goal of systematically investigating the extent of non-methane soil gas readings was achieved. Soil gas samples were collected from the subsurface at a depth of 1.5 to 3 feet below grade, immediately above the water table. Along the Manhole 4 to 9 Lateral, shallower soil gas samples were collected in addition to those immediately above the water table.

Soil gas samples were analyzed at locations closely surrounding each manhole in four directions; a sample of soil gas was also analyzed every 15 feet along the process sewer line, proceeding away from the manholes, to assess contamination along the sewer line bedding. The survey continued until an organic vapor reading of 10 ppm or lower (total non-methane VOCs) was attained.

Elevated (above 10 ppm total non-methane VOCs) organic vapor readings were detected at numerous locations, and grids with a spacing of 10 feet by 10 feet were initially established surrounding those locations, with nodes at right angles. Elevated organic vapor readings were detected along the perimeter of the grid, and the grid was extended and the soil gas survey was continued along the new grid nodes. Extension of the grid boundaries ceased when organic vapor concentrations, as determined by the screening method referenced above, were no longer greater than 10 ppm non-methane VOCs for the external grid nodes. Figures 8, 9, and 10 show the locations of the 470 soil vapor samples collected during the RFI. Appendix A provides a summary of the survey locations, dates collected, depth intervals and non-methane VOC readings.

Ground Water Screening

Soil gas results from immediately above the water table were used to identify locations potentially having ground water contamination. Additionally, ground water was sampled and screened at locations not based on soil gas results. Ground water samples were also collected and screened from locations hydraulically downgradient of manholes, in addition to the hot spots identified on the soil gas concentration isopleths.

The objective of ground water screening along the sewer line was to identify areas with VOC contamination that should be further characterized using laboratory quality data and, to prepare a preliminary plume map of contamination, if present. This objective was achieved. Ground water screening along the process sewer line included the advancement of well over the planned 14 Geoprobe/ Hydropunch well points; see Table 5 and Appendix B. These samples were located downslope of manholes in order to be placed in the most likely location of contamination, if present. Two samples (GWS-1 and -2) were located downgradient of RFA-SV sample location SB-PS-11 (near Manhole 3) in light of the reported exceedance of the NYSDEC Soil Cleanup Objective for MEK. An additional ground water screening location (GWS-4) was located downgradient of SB-PS-25 (near Manhole 9), in response to concerns expressed by NYSDEC.

Ground water samples were field screened via headspace-OVA in the survey mode for total VOCs. Ground water samples were collected and field screened for total VOCs from hot spots identified during the soil gas survey along the process sewer lines and surrounding the manholes. Total VOCs were detected at 5 ppm above background in many locations, and a 30 foot by 30 foot grid was initially extended from the elevated reading locations. Subsequent ground water samples were collected at offset locations, and TRC adopted a headspace plume tracking approach consisting of the following. First, the direction of ground water flow was determined. Second, TRC tracked the headspace plume along the axis of ground water flow direction. Third, TRC defined the lateral extent of the headspace plume. TRC departed from the 30 foot offset grid as planned, under the provisions of this general plume tracking approach. TRC achieved the 5 ppm VOC concentrations in ground water headspace above background cutoff objective in some but not all locations, as illustrated in Figure 11. The grid was extended to the extent feasible given field conditions (i.e. flooded land, wooded areas) encountered. TRC discussed these adjustments with NYSDEC representatives during an October 4, 1996 site visit and the October 9, 1996 conference call.

Ground Water Lab Analysis

The planned number of ground water samples (14) was collected for laboratory analysis of VOCs by EPA Method 8260 and target phthalates; see Table 5. The 7 sampling locations selected based on hotspot VOC headspace readings are identified in Table 5. The locations of the judgmental samples are identified in Table 5 and described in the table below. The locations where laboratory samples were collected are portrayed along with the soil gas and ground water headspace concentration contours on Figure 12.

Judgmental Sampling Location	Rationale for Sample Selection
GWS-12E	Confirm low ground water headspace reading, adjacent to MH-13
GWS-1W60N180	Confirm low ground water headspace reading near site downgradient perimeter

Judgmental Sampling Location	Rationale for Sample Selection
GWS-5	Confirm low ground water headspace reading, downgradient of high headspace readings at GWL-1 and -2
GWS-6W360	Confirm low ground water headspace reading, downgradient of high headspace readings at GWS-5W180 and GWS-6W90, near site perimeter
GWS-ASW60	Confirm low ground water headspace reading, downgradient of high headspace reading at hotspot location GWS-13W60
GWS-J	Confirm low ground water headspace reading in area of high soil gas reading
GWL-4W60	Confirm low ground water headspace reading downgradient of high headspace readings at GWL-4

Ground water samples for laboratory analysis were collected from 1 inch (ID) PVC temporary wells, which were screened across the water table (5 foot screens). Sampling was conducted using dedicated disposable teflon bailers. At each sampling location, a total of five bailer volumes was purged prior to sampling. Measurements of pH, temperature and conductivity were recorded in the field logbook at each location.

As noted on the chain of custody forms for the ground water samples, the preservation of several samples with acid (1:1 HCl) induced effervescence which rendered the sample unusable. Replacement samples were collected and preserved with 1:1 H_2SO_4. When similar effervescence occurred, the samples were again collected and cooled to 4°C as described in Table 6-1 of the QAPP to the RFI Work Plan. The laboratory was forewarned that analysis of these samples should be expedited to minimize loss of volatile analytes. Expedited analysis minimized the holding time to a period of between 5 and 7 days. The samples affected were GWL-8, GWS-6W90, GWS-69, GWS-5W-180, GWS-5, GWL-4W60, and GWS-10W. The VOC results for these samples should be valid regardless of the absence of chemical preservative. NYSDEC's RCRA Quality Assurance Plan Guidance (March 29, 1991) specifies a holding time of 7 days for samples preserved only by refrigeration to 4°C (Tables D-II and D-III).

Soils Lab Analysis

Continuous split spoon soil samples were collected using a modified CME Model 55 drilling rig equipped with a Geoprobe, Inc. hydraulically-powered percussion drive head. Standard two inch split spoon samplers were advanced using a combination of direct push and the Geoprobe drive head. The split spoons were decontaminated between soil sampling intervals following the procedures identified in the RFI Work Plan. Soil boring logs are provided in Appendix C.

Soil samples were collected from the vadose zone at twelve "hot spot" locations; see Table 5. One soil boring (SB-S3-1) was advanced in a soil gas "not detected" area and a vadose zone

sample was collected for laboratory analysis of EPA Method 8260 VOCs and target phthalates. This sample was collected from a depth of 1 to 3 feet BGS to confirm the soil gas screening results. The sample was taken from a location adjacent to an area of elevated soil gas.

Building 2B Separator (SWMU 16)

Three borings (B-1, B-2 and B-3) were advanced to the saturated zone, per the RFI Work Plan. Sample locations are shown in Figure 13. Subsurface samples from each boring were collected from each 2-foot interval to the water table starting with the 2 to 4 foot interval BGS and analyzed for the two phthalates detected previously in addition to VOCs by Method 8260, TOC, pH, and grain size .

Two ground water samples (GWL-1 and GWL-2) were collected at the water table and analyzed for butylbenzyl and di-n-butyl phthalates. The samples were collected close to the sewer line, one to either side of the line, and in the direction determined to be downgradient from the separator.

Former UST No. 2 Area (SWMU 17)

Two soil borings (B-4 and B-5) were advanced to the saturated zone and a subsurface sample was collected for naphthalene analysis from the most contaminated interval based on visual, olfactory and field screening results, per the RFI Work Plan. Field screening was conducted via headspace FID. Samples from these borings were analyzed for naphthalene (EPA Method 8270), EPA Method 8260 BTEX, TOC, pH, and grain size. Sample locations are shown in Figure 13.

A ground water sample (GWL-3) was collected in close proximity to SB-17-1. Ground water flow directions were established in the field as discussed above. The ground water sample collected from this SWMU was analyzed for naphthalene and the EPA Method 8260 BTEX.

Burning Cage (SWMU 23)

As shown in Figure 14, Akzo Nobel advanced a single soil boring, B-6, to the east of SB-23-2, and sampled at the surface and the most contaminated interval as determined by visual, olfactory and FID screening. The deepest soil sample above the saturated zone (4 to 6 feet BGS), was submitted for analysis of dimethyl phthalate, TOC, pH, and grain size. This depth also evidenced the highest headspace FID reading.

Landfill Site No. 1 (SWMU 24)

Four soil borings (B-7, -8A, -9, and -10), one each to the south, west, northwest and north of the previously sampled area were advanced to the water table during the RFI. These locations are shown in Figure 14. Soil samples from each boring were screened using a FID and a sample was collected from the surface and the most contaminated interval for analysis of EPA Method 8260 VOCs, the target phthalates, TOC, pH, and grain size . Samples were screened using FID headspace, visual and other sensorial observations. Samples were collected from the most contaminated (highest FID headspace reading) except at Boring B-8A, where, per the

requirements of the Work Plan, the sample was collected from the deepest interval from above the water table where screening indicators at other intervals were equivalent.

Two ground water samples (GWL-4 and GWL-5) were collected downgradient of these borings, and analyzed for EPA Method 8260 VOCs and target phthalates.

Building 16 Drum Storage Area (SWMU 31)

Akzo Nobel advanced two soil borings (B-12 and B-13) immediately adjacent to the locations of former doors where the foundation is not built above ground level and runoff could have caused some migration of acetophenone. In addition, a boring (B-11) was drilled outside the foundation to the south of the building to assess whether material could have spilled outside of the foundation. Surface samples and a subsurface sample from the most contaminated interval, based on field screening and visual inspection, was analyzed for acetophenone. Field screening was conducted via headspace FID. The locations of the borings are shown on Figure 15.

A ground water sample (GWL-6A) was collected at the water table, adjacent to the former northern door, since this location is appropriate to evaluate ground water impacts from the release.

Former UST No. 20 Area (AOC E)

TRC advanced a single soil boring (B-14) immediately north of SB-E-2 to sample native soils for benzo(a)pyrene (EPA Method 8270) and EPA Method 8260 BTEX. Based on field screening (FID), visual and olfactory screening results, a sample was submitted for laboratory analysis. A sample was collected immediately above the water table which was also the location of the highest headspace reading. Figure 15 depicts the sampling location.

4.2 Data Quality Summary

Analytical data were validated for soil and ground water analysis of VOCs and SVOCs. Validation was conducted using EPA Region II SOPs. Validation reports are provided in Appendix H. Validation qualifiers are shown on the summary tables in Appendix G and in the tables summarizing analytes detected in Section 5. The "U" qualifier indicates that the analyte was not detected above the reported sample quantitation limit. "J" indicates that the analyte was positively identified, and the associated numerical value is the approximate concentration of the analyte in the sample. The "UJ" qualifier indicates that the analyte was not detected above the reported sample quantitation limit and that the reported limit is approximate.

In accordance with the RFI Work Plan (QAPP Section 14.0), data quality was assessed for precision, accuracy, and completeness. This section briefly summarizes overall data quality, as measured by these indicators, based on the results of validation.

Precision was assessed by the analysis of duplicate field samples and expressed as the relative percent difference (RPD) according to the following equation:

$$\text{Relative \% difference} = \frac{\text{Value 1 - Value 2}}{\text{Arithmetic Mean of Value 1 and 2}} \times 100$$

Precision objectives were defined in Table 5-2 of the QAPP as 100 percent RPD for soil and 30 percent RPD for ground water. For the RFI program, Akzo Nobel collected two pairs of soil duplicate samples for VOCs and SVOCs and one soil pair for VOCs only. Two pairs of ground water duplicate samples were collected for VOCs and SVOCs. Results of analysis of these samples are presented in Table 6 for soil and Table 7 for ground water. RPD can be calculated for a pair of duplicates only when the analyte is detected in both of the samples at or above the detection limit. Since few analytes were quantified above the detection limit in the Akzo Nobel RFI duplicates, the number of actual RPD calculations is few; however, the absence of analytes in both samples of a duplicate pair is an indication of good precision. Several analytes are reported at estimated concentrations below the detection limit for both soil and ground water. Quantitative assessments of precision were not calculated for these analytes because the reported values were qualified estimates. Review of Tables 6 and 7 indicate that the precision objectives were met for all samples.

Accuracy was assessed by the analysis of surrogate spikes, matrix spikes and laboratory control samples. Accuracy is calculated using the following formulas:

$$\text{Percent Recovery} = 100 \times \frac{\text{Measured Value}}{\text{True Value}}$$

$$\text{Matrix Spike Percent Recovery} = 100 \times \frac{\text{(Sample conc. + spike conc.) - sample conc.}}{\text{spike conc.}}$$

Surrogate spikes, matrix spikes and laboratory control samples were analyzed at the frequency specified in the QAPP. Data quality objectives for accuracy were defined in Table 5-2 of the QAPP. Evaluation of the results of analysis during the data validation process indicated that data quality objectives for accuracy were not met in all samples; however, the exceedance of these objectives was infrequent and minor and never resulted in rejection of any data. Comprehensive reports of accuracy measurements are provided in Appendix H. Where appropriate, data are flagged with a "J" qualifier to indicate that the result is an estimate.

TABLE 6. PRECISION OF SOIL DUPLICATE SAMPLES

SAMPLE	SB-K-4	SB-T-4	RPD*	SB-5/6-2-4	SB-5/6-6-4	RPD*	SB-F-4	SB-R-4	RPD*
DATE SAMPLED	09/20/96	09/19/96	(%)	09/19/96	09/19/96	(%)	09/19/96	09/19/96	(%)
SDG ID	1889B	1889A		1889A	1889B		1889A	1889B	
ANALYTE	CONCENTRATION (ug/kg)								
VOLATILE ORGANIC COMPOUNDS									
Acetone	67	84	4	210	380 J	58	ND	ND	NC
Benzene	ND	ND	NC	ND	ND	NC	ND	ND	NC
Bromoform	ND	ND	NC	ND	ND	NC	ND	ND	NC
Bromomethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
2-Butanone	15 J	< 16	NC	ND	ND	NC	ND	ND	NC
Carbon Disulfide	ND	ND	NC	ND	ND	NC	ND	ND	NC
Chloroform	ND	ND	NC	ND	ND	NC	ND	ND	NC
Chloromethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,4-Dichlorobenzene	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,2-Dichlorobenzene	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,3-Dichlorobenzene	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,1-Dichloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,2-Dichloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
Ethylbenzene	1 J	< 16	NC	ND	ND	NC	ND	ND	NC
Methylene Chloride	6 J	< 16	NC	ND	ND	NC	ND	ND	NC
Styrene	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,1,2,2-Tetrachloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
Tetrachloroethene	< 12	1 J	NC	ND	ND	NC	ND	ND	NC
Toluene	2 J	4 J	NC	2 J	2 J	NC	ND	ND	NC
1,1,1-Trichloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,1,2-Trichloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
Trichloroethene	ND	ND	NC	ND	ND	NC	ND	ND	NC
Xylene (Total)	3 J	< 16	NC	ND	ND	NC	ND	ND	NC
SEMI-VOLATILE ORGANIC COMPOUNDS									
Acetophenone	NA	NA	NC	NA	NA	NC	NA	NA	NC
Bis(2-Ethylhexyl)phthalate	NA	NA	NC	NA	NA	NC	NA	NA	NC
2-Methylnaphthalene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Dimethylphthalate	63 J	41 J	NC	NA	NA	NC	ND	ND	NC
Di-n-Butylphthalate	ND	ND	NC	NA	NA	NC	ND	ND	NC
Di-n-Octylphthalate	NA	NA	NC	NA	NA	NC	NA	NA	NC
Flourene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Phenanthrene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Anthracene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Flouranthene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Pyrene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Benzo(a)Pyrene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Benzo(a)anthracene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Butylbenzylphthalate	ND	ND	NC	NA	NA	NC	ND	ND	NC
Chrysene	NA	NA	NC	NA	NA	NC	NA	NA	NC

NOTES:
This table presents a comparison of detections for duplicate samples.
*RPD objective for soil duplicates equals 100% (QAPP Table 5-2).
J: estimated detection
NA: not applicable for component. NA indicates a non-detect for one or more of the samples.
NC: not calculated
ND: not detected

TABLE 7. PRECISION OF GROUND WATER DUPLICATE SAMPLES

SAMPLE DATE SAMPLED SDG ID	GWL-4 10/08/96 2129A	GWL-49 10/08/96 2129A	RPD* (%)	GWS-6W90 10/09/96 2129B	GWS-69 10/09/96 2129B	RPD* (%)
ANALYTES	CONCENTRATION (ug/L)					
VOLATILE ORGANIC COMPONENTS						
Acetone	58,000 J	45,000 J	25	5 J	6 J	NC
Benzene	ND	ND	NC	12	13	8
Bromodichloromethane	ND	ND	NC	ND	ND	NC
2-Butanone	ND	ND	NC	ND	ND	NC
Carbon Disulfide	< 5,000	2,100 J	NC	ND	ND	NC
Chlorobenzene	ND	ND	NC	11	11	0
Chloroethane	ND	ND	NC	3 J	4 J	NC
1,1-Dichloroethane	ND	ND	NC	1 J	1 J	NC
1,2-Dichloroethene(Total)	ND	ND	NC	ND	ND	NC
1,1-Dichloroethene	ND	ND	NC	ND	ND	NC
1,3-Dichlorobenzene	ND	ND	NC	0.6 J	0.5 J	NC
1,4-Dichlorobenzene	ND	ND	NC	0.6 J	0.6 J	NC
1,2-Dichlorobenzene	ND	ND	NC	1 J	1 J	NC
Ethylbenzene	ND	ND	NC	ND	ND	NC
Tetrachloroethene	ND	ND	NC	ND	ND	NC
Toluene	ND	ND	NC	0.8 J	0.9 J	NC
1,1,1-Trichloroethane	ND	ND	NC	ND	ND	NC
Trichloroethene	ND	ND	NC	ND	ND	NC
Xylenes(Total)	ND	ND	NC	ND	ND	NC
SEMI-VOLATILE ORGANIC COMPOUNDS						
Butylbenzenephthalate	ND	ND	NC	ND	ND	NC
Dimethylphthalate	ND	ND	NC	ND	ND	NC
Di-n-butylphthalate	ND	ND	NC	ND	ND	NC
Naphthalene	NA	NA	NC	NA	NA	NC

NOTES:
This table presents a comparison of detections for duplicate samples.
*RPD objective for ground water duplicates equals 30% (QAPP Table 5-2).
J: estimated detection
NA: not applicable for component. NA indicates a non-detect for one or more of the samples.
NC: not calculated

Overall sensitivity requirements established in Table 5-1 of the QAPP were met for those samples not requiring dilution due to the presence of analytes above the upper limit of the calibration curve or indications that dilution was required in the laboratory screening analysis.

Completeness of data is calculated at 100 percent for all water and soil for all analyses conducted.

As detailed in the QAPP for this project, specific SWMUs and AOCs were subject to limited analyte lists based upon agreements between Akzo Nobel and NYSDEC. The Appendix H laboratory data provides analysis results for VOCs and SVOCs using gas chromatography/mass spectrometry (GC/MS) methods. In addition, Appendix H provides all laboratory raw data in the format specified for New York State ASP Category B. Thus, for each sample, in addition to the Form 1 Data Sheet, a sample quantitation report printout, total ion chromatogram (TIC), and mass spectral abundance scan series is provided for each target compound identified from the analysts list. In some instances, the quantitation report may indicate concentration units for a compound which was not included on the Akzo Nobel analyte list. Data users should note that those data for analytes not on the Akzo Nobel analysts list cannot be considered quantitative because the laboratory was not required to confirm these identifications, nor were they required to meet calibration criteria for these analytes. Thus the quality of the identification and the accuracy of the concentration are questionable.

SECTION 5

NATURE AND EXTENT OF CONTAMINATION

5.1 Introduction

This section presents the findings of the 1996 RFI investigation, integrated with previous findings during the 1994 RFA-SV and Akzo Nobel's sewer line replacement activities conducted during 1995 and 1996. The field and laboratory analytical data regarding the distribution and extent of presence/absence of contaminants of concern in soil and ground water at the Akzo Nobel facility in Burt, New York are discussed. The section presents results of soil and ground water investigations across the facility as well as a generalized discussion of facility-wide ground water quality.

5.2 Results of Soil Gas and Soil Investigations of the Old Process Sewer Line (SWMU 3)

5.2.1 Soil Gas Surveys of Old Process Sewer Line

The Old Process Sewer consists primarily of two main components; the sewer pipes themselves and their associated manholes. The sewer lines were constructed of vitrified clay pipe and were initially constructed in 1954. The system was expanded to its present extent in 1976, and was replaced/modified, as described above, in 1995/1996.

The Old Process Sewer was directly connected to SWMU 16, the Building 2B Separator, and SWMUs 5 and 6, the Influent Wells. These areas are addressed in this section as well as (i.e. for SWMU 16) in certain separate sections of this RFI report to be consistent with the treatment of these units in the past. However, they are simply specific subgrade structures associated with the Old Process Sewer.

Based on facility data, MEK, dimethyl phthalate, butylbenzyl phthalate, and di-n-butyl phthalate constitute more than 99 percent of the hazardous constituents entering the process sewer. Table 8 lists the constituents presently and historically used at the QC laboratories and maintenance shops.

TABLE 8. CONSTITUENTS USED AT QC LABORATORY AND MAINTENANCE SHOPS

Acetonitrile	1,1,1,2-Tetrachlorethane
Carbon Tetrachloride	1,1,2,2-Tetrachlorethane
Chlorobenzene	Tetrachloroethylene
Chloroform	Toluene
1,1-Dichloroethylene	1,1,2-Trichloroethane

TABLE 8. CONSTITUENTS USED AT QC LABORATORY AND MAINTENANCE SHOPS	
Methyl Chloride	Trichloroethylene
Methylene Chloride	1,1,1-Trichloroethane
Pyridine	1,1-Dichloroethane

The goal of the soil gas investigation was to systematically investigate the extent of positive non-methane soil gas readings in the vicinity of the sewer line. Thus the focus of the investigation was to first evaluate those areas with the highest potential for elevated soil gas readings, i.e., at the manholes and at locations along the sewer lines found to leak in the RFA-SV.

A soil gas survey was conducted by TRC along the Old Process Sewer. Akzo Nobel marked the locations of former manholes and locations where soil excavations associated with the sewer line replacement was conducted. The soil gas survey was conducted at the locations of former manholes for those manholes which have been replaced.

Prior Soil Gas Studies of the Old Process Sewer Line

Some reaches of the Old Process Sewer Line were characterized in the RFA-SV, performed in 1994. The RFA-SV included physical integrity testing of the subsurface process sewer lines and accessible laterals in accordance with the RFA-SV Work Plan. Confirmatory soil sampling and analysis was conducted at potential leak locations, based on the integrity test results and guidance from NYSDEC (these RFA results are discussed in conjunction with RFI soil sample results later in this section). A total of 22 borings were advanced at potential leak locations, as close to the sewer line as feasible (generally within 1 to 3 feet) and to a depth of approximately the bottom of the pipe. Samples were collected continuously and field screened with a PID. The maximum PID readings per boring encountered during the RFA are illustrated on Figures 8, 9, and 10.

Akzo Nobel's Activities in the Area Subject to Study

Akzo Nobel conducted sewer improvement-related soils removals along the old process sewer line during 1995 and 1996. This soils removal program was largely complete by August 1996, with the exception of the area located east of Building 22. The area east of Building 22 was subject to the TRC RFI soil gas survey, and soils in this area were subsequently excavated and disposed off site during the course of pipe replacement actions. A total of 3,853.5 tons of soil were removed and appropriately disposed off site by Akzo Nobel. Soils removed were stained and or visually determined to be potentially contaminated. Limited sampling to support the removal action was conducted by Akzo Nobel. The results of this sampling are discussed later in this section.

RFI Soil Gas Survey Results

The soil gas survey was conducted to determine the presence/absence of total non-methane VOCs in soil gas (using dual FIDs with single charcoal filtration) to evaluate the presence/absence of soil or ground water contamination along the process sewer line. Dual OVA readings, with charcoal filtering of one OVA to determine the methane contribution, were made on soil gas extracted directly from probe holes installed from 1.5 to 2.5 feet BGS. Prior to conducting the survey, boreholes were manually advanced to determine the depth to the capillary fringe, in order to allow for installation of soil gas probes above the saturated zone and in soil without significant pore water. The depth to ground water along the sewer line was generally noted at 4 to 6 feet BGS during the RFA-SV. The depth to first water in the immediate vicinity of the sewer line was determined in the RFI to be 3 to 5.5 ft. BGS. Along the Manhole 4 to 9 Lateral, shallower soil gas samples were collected in addition to those immediately above the water table (this was performed since the constituents potentially released in the Manhole 4 to 9 Lateral area are significantly less mobile than MEK and residual contamination could be retained in the soil).

Soil gas samples were analyzed at locations closely surrounding each manhole in four directions, to the extent possible given field constraints. Samples of soil gas were also analyzed every 15 feet along the process sewer line proceeding away from the manholes to assess contamination along the sewer line bedding. Soil gas was also collected at the vicinity of locations where leaks were detected (and not sampled) in the line during the RFA-SV (20 feet north of MH-15, 80 feet north of MH-15, 10 feet west of MH-16, 20 feet east of MH-16, and 60 feet west of MH-4).

The RFI sampling plan called for expansion of the soil gas survey if positive soil gas determinations were encountered. If elevated (above 10 ppm total non-methane VOCs) organic vapor readings were detected at any location, a grid with a spacing of 10 feet by 10 feet was to be established surrounding that location with nodes at right angles. If elevated organic vapor readings were detected along the perimeter of the grid, the grid was to be extended and the soil gas survey continued along the new grid nodes. Extension of the grid boundaries was to cease when organic vapor concentrations, as determined by the screening method referenced above, no longer exceeded 10 ppmv non-methane VOCs for two continuous grid nodes. The actual RFI field work encountered a significant number of locations with soil gas values exceeding 10 ppmv non-methane VOCs. First attempts to implement the 10 foot grid spacings resulted in an exponential expansion of the soil gas survey. TRC modified the planned approach by expanding the grid by greater distances, based on the judgement of the field crew, and by establishing grid termination criteria as the first reading was less than 10 ppmv non-methane VOCs. This field adjustment was necessary to account for the conditions encountered, and provides an identification of soil gas hotspots, consistent with the intent of the RFI work plan.

Results of the soil gas survey are presented in Appendix A and are illustrated in Figures 8, 9, and 10. Additionally, Figures 8 through 10 present the non-methane VOCs (NMOC) and isoconcentration contours for soil gas data. The data are presented with reference to specific process sewer line appurtenances in Tables 9 and 10 below. Note that at several locations the FID was extinguished by the presence of excessive soil gas concentrations; and thus a

measurement cannot be recorded at these locations. TRC interpreted this occurrence conservatively as an area of elevated soil gas. The notation "NOD" is used in Appendix A and Figures 8, 9, and 10 to signify this occurrence.

Table 9. Old Process Sewer Line Summary of Soil Gas Conditions - West Sewer

Sewer Line	Old Sewer Line	Soil Gas Conditions
MH-1	Has been removed	Previously found < 5 ppmv by PID in RFA
MH-1 to MH-2 pipe run	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-2	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-2 to MH-3 pipe run	Abandoned in place	Under Asphalt; closest readings 10 ppmv or less NMOC by FID in RFI
MH-3	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-3 to MH-4 pipe run	Abandoned in place	>10,000 ppmv total VOCs, plus >8,000 NMOC in vicinity. May be related to a gas line leak in this area in RFI
MH-4	Removed/Replaced with new manhole in vicinity of former manhole location	West side has >10,000 ppmv total VOCs, plus 5,000 NMOC in vicinity; East side has 10 ppmv or less NMOC by FID in RFI
MH-4 to MH-5 pipe run	Abandoned in place	Under concrete slab and a compressor/inaccessible
MH-5	Removed/Replaced with new manhole in vicinity of former manhole location	West side has >10,000 ppmv total VOCs in vicinity; up to 25 ppmv NMOC around manhole
MH-5 to MH-6 pipe run	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-6	Removed/Replaced with new manhole in vicinity of former manhole location	10 ppmv or less NMOC by FID in RFI
MH-4 to MH-7 pipe run	Abandoned in place	Previously found < 5 ppmv by PID in RFA, plus 10 ppmv or less NMOC by FID in RFI
MH-7	Abandoned in place	597 ppmv NMOC by FID in RFI

Table 9 Old Process Sewer Line Summary of Soil Gas Conditions - West Sewer		
Sewer Line	**Old Sewer Line**	**Soil Gas Conditions**
MH-7 to SWMU 16 pipe run	Abandoned in place	597 ppmv NMOC by FID in RFI
SWMU 16 to Bldg. 2B pipe run	Abandoned in place	1119 ppmv NMOC by FID in RFI
MH-8	Removed/Replaced with new manhole in vicinity of former manhole location	Under pavement, not surveyed
MH-8 to MH-9 pipe run	Abandoned in place; approximately 20 ft. Removed during upgrade	Partially under pavement, surveyed portion 10 ppmv or less NMOC by FID in RFI
MH-9	Removed with part of pipe run; replaced with new manhole located within Bldg. 3	993 ppmv NMOC by FID in RFI at one survey location
MH-7 to MH-10	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-10	Removed/Replaced with new manhole in vicinity of former manhole location	10 ppmv or less NMOC by FID in RFI
MH-10 to MH-11 pipe run	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-11	Removed/Replaced with new manhole in vicinity of former manhole location	10 ppmv or less NMOC by FID in RFI
MH-11 pipe run North (Abandoned Line)	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-11 pipe run to Waste Water Bldg.	Abandoned in place	10 ppmv or less NMOC by FID in RFI

For the West Sewer, the areas of elevated soil gas are restricted to areas in the vicinity of manholes MH-3 to MH-5, MH-7 to Building 2B, and MH-9.

Table 10. Old Process Sewer Line Summary of Soil Gas Conditions - East Sewer

Sewer Line Appurtenance	Old Sewer Line Status	Soil Gas Conditions
MH-18 pipe run to Waste Water Bldg.	Abandoned in place; approximately 20 ft. Removed during upgrade	10 ppmv or less NMOC by FID in RFI
MH-18	Abandoned in place	590 ppmv NMOC by FID in RFI
MH-18 to Former Bldg. 9 pipe run	Abandoned in place	1590 ppmv NMOC by FID in RFI
MH-18 to MH-17 pipe run	Abandoned in place	Proximate to line 1648 ppmv NMOC by FID in RFI; parallel but south of line >10,000 ppmv total VOCs; midway between Bldg. 8 and 10B >10,000 ppmv total VOCs
MH-17	Abandoned in place	698 ppmv NMOC by FID in RFI
MH-17 to MH-16 pipe run	Abandoned in place	Generally 10 ppmv or less NMOC by FID in RFI; higher close proximity to MH-16
MH-17 to Bldg. 23	Currently In service	4993 ppmv NMOC by FID in RFI
MH-16	Abandoned in place	48 ppmv NMOC by FID in RFI
MH-16 to MH-15 pipe run	Abandoned in place	18 ppmv NMOC by FID in RFI
MH-15	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-15 to Bldg. 20	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-16 to Bulk Tank Storage pipe run	Abandoned in place	>8,500 ppmv NMOC by FID in RFI
MH-16 to MH-13 pipe run	Abandoned in place	23 ppmv NMOC by FID in RFI
MH-14 to Bldg. 20 pipe run	Currently In service	10 ppmv or less NMOC by FID in RFI
MH-14	Currently In service	65 ppmv NMOC by FID in RFI

Table 10: Old Process Sewer Line Summary of Soil Gas Conditions - East Sewer		
Sewer Line Appurtenance	**Old Sewer Line Status**	**Soil Gas Conditions**
MH-14 to MH-13 pipe run	Currently In service	10 ppmv or less NMOC by FID in RFI
MH-13	Removed/Replaced with new manhole in vicinity of former manhole location	43 ppmv NMOC by FID in RFI
MH-13 to MH-12 pipe run	Abandoned in place	76 ppmv NMOC by FID in RFI
MH-12	Removed/Replaced with new manhole in vicinity of former manhole location	32 ppmv NMOC by FID in RFI
MH-12 to Bldg. 22 pipe run	Removed/Replaced with new pipe run	898 ppmv NMOC by FID in RFI
Bldg. 22 to Former Bldg. 32 pipe run	Abandoned in place	43 ppmv NMOC by FID in RFI

For the East Sewer Line, the areas of elevated soil gas were restricted to the MH-18 to Former Building 9 pipe run, one location along the MH-18 to MH-17 run and two areas south of the run, the MH-17 to Building 23 run, the MH-16 to Bulk Tank Storage run and the MH-12 to Building 22 run.

Discussion of Soil Gas Survey Results

The goal of the soil gas investigation was to systematically investigate the extent of positive non-methane soil gas readings in the vicinity of the sewer line. Thus the focus of the investigation was to first evaluate those areas with the highest potential for elevated soil gas readings, i.e., at the manholes and at locations along the sewer lines found to leak in the RFA-SV. The interpretation of soil gas results is based on the partitioning of VOCs in the vapor phase of the unsaturated zone environment. The vapor can originate from free product in the unsaturated zone, free product on the water table, VOCs in soils solid matrix, VOCs in ground water, and VOCs solely in vapor phase (i.e. migrated soil gas or historical soil gas). The following discussion of soil gas survey results focuses on the unsaturated (vadose) zone soils in the vicinity of the old process sewer. Soil gas data will also be considered in ground water discussions.

Soil gas isopleths presented in Figures 8, 9, and 10 indicate eleven areas in proximity to the old sewer line that exhibited soil gas NMOC readings in excess of 1,000 ppmv, and approximately

20 locations with soil gas NMOC readings exceeding 100 ppmv. In some instances the instrument readings did not allow for a differentiation between methane and NMOC. In such instances the results were conservatively interpreted for isocontouring purposes. An example of this instance is east of Building 22 (see "NOD" notation on Figure 10).

In general, the soil gas isopleths do not indicate the old process sewer line has contributed to soil gas along its length, with the exception of certain locations. The previous RFA-SV integrity testing and subsequent sewer line replacement activities indicated the presence of leaks at most of the manholes and at several locations along the process sewer lines. These leaks historically provided a potential mechanism for release of process sewer line hazardous constituents to subsurface soil and ground water (most of the Old Process Sewer Line has been replaced with a new process sewer, as discussed above). The soil gas survey provides data useful in evaluating whether this potential for release was realized, and whether it had any impact to surrounding soils and ground water.

The specific soil gas hotspot areas are discussed as encountered from west to east across the site.

MH-3 to MH-4 Pipe Run

This run was abandoned in place. The soil gas survey revealed greater than 10,000 ppmv total VOCs, plus greater than 8,000 NMOC in the vicinity of this pipe run (see Figure 8). This isopleth may be related to a natural gas line leak in this area, according to information provided TRC by Akzo Nobel representatives during the course of conducting the RFI. It was largely within a paved area, and soil gas data from the MH-4 to MH-6 run were not elevated. The diffuse pattern and abundance of elevated soil gas at this location is markedly different from other locations at the Akzo Nobel facility, and does not appear linked to any particular old process sewer structure. This area is located hydrologically down gradient of the former lab. This area was sampled by TRC and a soils sample (SB-F) was analyzed for VOCs (and SVOCs), as discussed later in this section.

MH-9

Manhole 9 was removed along with part of pipe run during the sewer line upgrade and was replaced with a new manhole located within Building 3. Readings of 993 ppmv NMOC by FID in the RFI were noted in one survey location. The shallow and deeper soil gas work done along the pipe run from MH-8 to MH-9 demonstrated the absence of soil gas except in the immediate vicinity of former MH-9. This area was sampled by TRC and a soils sample (SB-S3-3) was analyzed for VOCs (and SVOCs), as discussed later in this section.

SWMU 16 to Building 2B Pipe Run

This run was abandoned in place. The soil gas survey revealed a very localized maximum reading of 1119 ppmv NMOC by FID in the RFI. This location is essentially at the former separator that is designated SWMU 16. A smaller zone of elevated soil gas was noted south of MH- 7. The pattern of soil gas indicates the pipe run was not a release source, while MH-7 and

the former separator likely experienced releases of VOCs. These areas were sampled by TRC and soils samples (B-1, B-2 and B-3) were analyzed for SVOCs (associated with the Building 2B Separator), as discussed later in this section.

MH-18 to Former Building 9 Pipe Run

This run was abandoned in place. The soil gas survey revealed a longitudinal pattern of soil gas closely aligned with the pipe run (see Figure 9). Readings of NMOC of up to 1590 ppmv NMOC by FID were measured during the RFI. The pattern of soil gas readings suggest a significant portion of this run has been a source for releases of VOCs. These areas were sampled by TRC and soils samples (SB-S-3-1, -2) were analyzed for VOCs (and SVOCs), as discussed later in this section.

MH-18 to MH-17 Pipe Run

This run was abandoned in place. The soil gas survey revealed a longitudinal pattern of soil gas loosely aligned with the eastern half of the pipe run (Figure 9). This area was impacted by a surface spill of product, which was cleaned up by Akzo Nobel in December 1995. The surface spill may have resulted in residual soil gas in this area, in addition to the contribution of VOCs from the old process sewer line. Soil gas readings up to 1648 ppmv NMOC by FID were recorded during the RFI. These areas were sampled by TRC and soils samples were analyzed for VOCs (SB-D, E, G, J), as discussed later in this section.

MH-17 to Building 23 Pipe Run

This pipe run remains in service, and was incorporated into the new process sewer line (Figure 9). The soil gas pattern indicates one location along this line is a concern. The specific location noted coincides with the location of the Akzo Nobel facility 15 inch diameter process and sanitary combined discharge line that exits the facility to the east. Soil gas readings up to 4993 ppmv NMOC by FID were recorded during the RFI at this location. This area was sampled by TRC and a soils sample (SB-I) was analyzed for VOCs (and SVOCs), as discussed later in this section.

MH-16 to Bulk Tank Storage Pipe Run

This pipe run was abandoned in place. During the RFI, soil gas readings of greater than 8,500 ppmv NMOC by FID were encountered at locations immediately adjacent to portions of two AST farms (see Figure 10). These AST farms have both contained VOCs over the history of the Akzo Nobel facility. The pattern of soil gas does not follow the axis of the old process sewer line in this area. These areas were sampled by TRC and soils samples (SB-A and SB-B) were analyzed for VOCs (and SVOCs), as discussed later in this section.

MH-12 to Building 22 Pipe Run

This area was subject to a large soil removal effort following TRC's soil gas survey during the RFI. The old pipe was taken out of service and removed during this action. The soil gas survey recorded up to 898 ppmv NMOC by FID in the RFI, where definable. The soil removal effort and associated chemical data are discussed later in this section. This area was sampled by TRC and a soils sample (SB-K) was analyzed for VOCs, as discussed later in this section.

5.2.2 Confirmatory Soil Sampling of Soil Gas Survey Hotspots Identified Along the Old Process Sewer Line

The RFA sewer line integrity test and the RFI soil gas survey both provide a focus for soil sampling and characterization along the Old Process Sewer run. Soil sampling was performed during both the 1994 RFA-SV and the RFI at locations determined to have the greatest potential for contamination. In addition, observations were made and samples were collected and analyzed during the course of the sewer replacement project. Each of these sets of data are considered in the following discussions.

RFA-SV Soil Sample Results

The RFA-SV, which was conducted by Ground Water Technologies, Inc. for Akzo Nobel, provided a large volume of data relative to site soil chemical characterization. The Process Sewer (SWMU 3) was subjected to an extensive program of 22 borings. Figures 8, 9 and 10 present the locations of the Process Sewer samples collected during the RFA-SV. Where possible, RFA-SV sample collection was focused by integrity testing, electromagnetic surveys, headspace PID screening, field TPH analysis and field GC analysis. Samples were selected for laboratory analysis based on PID results and visual sample inspection as directed in the RFA-SV Work Plan. Samples were analyzed for the likely constituents flowing through the process sewers at potential leak locations. The analyte list, determined with NYSDEC concurrence, included target volatile organics (EPA Method 8240), target semivolatiles (EPA Method 8270), target PCB (modified EPA Method 8080) and TPH (EPA Method 418.1).

During the RFA-SV, methyl ethyl ketone (MEK, also known as 2-Butanone) was detected at sample location SB-PS-11 (4- to 6-foot sampling interval) at a concentration of 1,200 µg/kg, which is above the NYSDEC Soil Cleanup Objective of 300 µg/kg. Soil borings were also advanced about 30 feet east (SB-PS-12), 40 feet north (SB-PS-10), and 120 feet north (SB-PS-9) of SB-PS-11 with no exceedances of NYSDEC Soil Cleanup Objectives. The only other exceedance of NYSDEC soil cleanup objectives was for target phthalates at SB-PS-20. SBPS-20 was completed proximate to SWMU 16 and the sewer lateral from SWMU 16 to manhole 7.

The investigations conducted during the RFA-SV were more intensive than those usually performed at this stage of the corrective action process. RFA-SV sampling results indicated soil contamination is limited to a few areas and is localized within those areas.

Observations Made During the Sewer Line Replacement Project

Soils suspected of being contaminated were encountered during the sewer line replacement project in the fall of 1995 through fall of 1996. Areas where contamination was suspected based on observation and/or testing include:

- East of Building 22,
- Manhole 4 Vicinity,
- Manhole 1 Vicinity,
- East of Building 3,
- Building 2 Loading Dock,
- East Influent Well Vicinity,
- West Influent Well Vicinity,
- Manhole 11 Vicinity,
- Sump Within Building 2, and
- Building 2A Manhole (MH-19).

The samples were collected from areas which appeared contaminated based on visual or olfactory observations and subjected to analysis for VOCs by Method 8240 and SVOCs (base-neutrals only) by Method 8270. The data are useful in that they were gathered from locations that should provide the worst case scenario for a release from the process sewer.

However, since the intent of the data collection activity was to evaluate for the presence of gross contamination, no quality control samples (blanks, duplicates) were collected with the field samples. In addition, the laboratory was not required to follow the stringent quality control reporting protocols (surrogates, matrix spikes) which are requisite for RCRA Corrective Action investigations. Consequently, the data should be considered qualitative from the sampling and analysis perspective.

Soil samples were collected from visually contaminated soils that were removed and also from soils left in place. While all severely impacted soils were excavated, not all visually contaminated soils were removed.

The detected contaminants are presented in Table 11 (data tables were included in the RFI Work Plan).

Table 11
Detected Contaminants in Soil During Sewer Line Replacement Activities

Constituent	Concentration in Soil, ug/kg	Location
Acetone	2,097	QC Lab MH 1
	31,355	East Well Soil
	54.4	MH 11
	98.1	Building 2 Sump
	266.9	Building 2 Loading Dock MH
	307	Building 2A Manhole
Benzene	3.1	Building 2 Sump
2-Butanone	20,000	East Well Soil
	4,602	West of West Wall
	53.1	MH 11
Chlorobenzene	6.0	Building 2 Sump
	120	Northwest of West Well
Ethylbenzene	119	Building 2A Manhole
1,1-Dichloroethane	378	East of Building 3
4-Methyl-2-pentanone	11,000	East Well Soil
Tetrachloroethene	6,140	East of Building 3
1,1,1-Trichloroethane	3,132	East of Building 3
Toluene	981	East of Building 3
Styrene	4.7	S-1, Building 22
	3.9	Building 2 Sump
	63	Building 2A Manhole
m,p-Xylene	365	East Well Soil
Dimethyl phthalate	1,867	QC Lab MH 1
	68,000	East Well
	771,841	West of West Well
Di-n-butyl phthalate	657,961	East of Building 3
	23,294	Building 2 Loading dock MH
Butylbenzylphthalate	621,264	East of Building 3
	38,218	Building 2 Loading dock MH

Table 11 Detected Contaminants in Soil During Sewer Line Replacement Activities		
Di-n-octylphthalate	4,276	Building 2 Loading dock MH
Bis (2-ethylhexyl) phthalate	5,675	East Well Soil
	409	Building 2A Manhole

The data in Table 11 indicates levels of contaminants detected from sample locations with the highest probability of being contaminated (i.e. adjacent to leak locations within an excavation), a limited number of VOC and SVOC analytes were detected.

Three VOCs, acetone, MEK, and 4-methyl-2-pentanone were detected at over 10 ppm in soils, with greatest concentrations near the Influent Wells and MH-11; chlorinated solvent VOCs at concentrations over 1 ppm in soils were found only at the location east of Building 3. The highest phthalates levels were also found east of Building 3, plus the Influent Well area. The Building 2 loading dock area yielded samples with significant phthalate presence.

Soils were removed and disposed off site in accordance with legal requirements as part of the sewer line project. In fact, the data confirm that the apparent worst case contamination consisted of a limited number of VOC analytes and a very limited number of SVOC analytes.

RFI Soil Sample Results

During the RFI, TRC advanced borings and collected soil samples from locations identified during the soil gas survey as having the greatest likelihood of yielding evidence of contamination. Soil borings were advanced at each of the major soil gas hotspots previously identified in this section. The locations of borings relative to the soil gas hotspot locations are illustrated in Figures 8, 9, and 10. The soils were sampled continuously, with the sample interval exhibiting the greatest headspace reading sent to the lab for analysis. This was the case for all samples keyed to the soil gas survey results. One sample, from boring SB-S3-1, was from an area with low NMOC soil gas results but adjacent to a location with higher NMOC soil gas results. The sample from boring SB-S3-1 fulfilled a requirement in the RFI work plan to send a soil sample from a low NMOC soil gas location to check the soil gas survey validity.

The results of sample analysis are presented in Table 12 and Appendix G. Table 12 presents only analytes detected while Appendix G presents all data including all non-detect information. Relative to the benchmark recommended soil cleanup objectives as derived from NYSDEC guidance and previously presented in the RFI Work Plan, one RFI sample location exhibited an exceedance of the 200 ug/kg acetone benchmark; a duplicate sample reported acetone presence at 210/380J ug/kg. All other samples for all other analytes were found not to exceed any recommended soil cleanup objectives. Thus none of the SVOC, and only one of the VOC contaminants of concern, was found present above the TAGM 3038 and 6NYCRR 703.5-based benchmark criteria.

TABLE 12. SUMMARY OF ANALYTES DETECTED IN SOIL (RFI)

	SAMPLE	B-10-2	B-10-6	B-12-2	B-13-8	B-14-8	B-2-6	B-3-4	B-3-8	B-4-6	B-6-2
	DATE SAMPLED	09/13/96	09/13/96	09/11/96	09/11/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/13/96
	SDG ID	1889A	1889A	1860B	1860B	1860B	1860B	1860B	1860B	1860B	1889A
ANALYTE		CONCENTRATION (ug/kg)									
VOLATILE ORGANIC COMPONENTS	**REC. SOIL CLEANUP OBJECTIVES[1]**										
Acetone	200	14	31	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NS	14 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	300	14 UJ	15 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	300	7 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NS	14 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1,600	14 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	200	7 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5,500	7 UJ	15 U	NA	NA	8 U	NA	NA	NA	7	NA
Methylene Chloride	100	2 J	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1,400	7 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,500	7 U	15 U	NA	NA	8 U	NA	NA	NA	7 U	NA
Trichloroethene	700	7 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (Total)	1,200	7 U	15 U	NA	NA	1 J	NA	NA	NA	7 U	NA
Total VOCs	10,000	16	31	ND	ND	1	ND	ND	ND	7	ND
SEMI-VOLATILE ORGANIC COMPOUNDS	**REC. SOIL CLEANUP OBJECTIVES[1]**										
Acetophenone	50,000	NA	NA	7300	32 J	NA	NA	NA	NA	NA	NA
Dimethylphthalate	2,000	380 U	380 U	NA	NA	NA	NA	NA	NA	NA	390 U
Di-n-Butylphthalate	8,100	25 J	17 J	NA	NA	NA	360 U	380 U	370 U	NA	17 J
Benzo(a)Pyrene	61	NA	NA	NA	NA	38 J	NA	NA	NA	NA	NA
Butylbenzylphthalate	50,000	380 UJ	380 UJ	NA	NA	NA	11 J	10 J	18 J	NA	NA
Total Semi-VOCs	500,000	25	17	7300	32	38	11	10	18	NA	17

NOTES:

[1]Soil standards were specified in Table 3 of RFI Work Plan
J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified
U: detection below quantitation limit
UJ: detection below the approximated quantitation limit
*=SB-T-4 is a duplicate of SB-K-4
**SB-5/6-2-4 is a duplicate of SB-5/6-8-4

TABLE 12. SUMMARY OF ANALYTES DETECTED IN SOIL (RFI)

	SAMPLE DATE SAMPLED SDG ID	B-6-6 09/13/96 1889A	B-7-2 09/13/96 1889A	B-7-4 09/13/96 1889A	B-9-2 09/13/96 1860B	B-9-8 09/13/96 1889A	SB-5/6-2-4** 09/19/96 1889A	SB-5/6-8-4** 09/19/96 1889B	SB-5/6-2-6 09/21/96 1889B	SB-8A-2 09/18/96 1889A	SB-8A-6 09/18/96 1889A
ANALYTE		CONCENTRATION (ug/kg)									
VOLATILE ORGANIC COMPONENTS	**REC. SOIL CLEANUP OBJECTIVES[1]**										
Acetone	200	NA	170 J	50	70	21	210	380 J	31 U	29 J	14 U
Bromomethane	NS	NA	1 J	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
2-Butanone	300	NA	17 UJ	15 UJ	19 J	16 UJ	12 UJ	16 UJ	12 UJ	16 UJ	12 UJ
Chloroform	300	NA	10 J	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
Chloromethane	NS	NA	5 J	15 U	16 U	16 U	12 UJ	16 UJ	12 UJ	16 UJ	12 UJ
1,3-Dichlorobenzene	1,600	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
1,1-Dichloroethane	200	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
Ethylbenzene	5,500	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
Methylene Chloride	100	NA	17 U	15 U	2 J	1 J	12 U	16 U	12 U	16 U	2 J
Tetrachloroethene	1,400	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	2 J	12 U
Toluene	1,500	NA	1 J	15 U	1 J	16 U	2 J	2 J	12 U	5 J	2 J
Trichloroethene	700	NA	17 U	15 U	2 J	16 U	12 U	16 U	12 U	16 U	12 U
Xylene (Total)	1,200	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
Total VOCs	10,000	ND	187	50	94	22	212	382	ND	36	4
SEMI-VOLATILE ORGANIC COMPOUNDS	**REC. SOIL CLEANUP OBJECTIVES[1]**										
Acetophenone	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	2,000	390 U	390 U	390 U	360 U	410 U	NA	NA	33 J	400 U	390 U
Di-n-Butylphthalate	8,100	17 J	20 J	41 J	360 U	16 J	NA	NA	380 U	400 U	390 U
Benzo(a)Pyrene	61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50,000	NA	390 UJ	390 UJ	360 U	410 UJ	NA	NA	380 U	400 U	390 U
Total Semi-VOCs	500,000	17	20	41	ND	16	NA	NA	33	ND	ND

NOTES:

[1]Soil standards were specified in Table 3 of RFI Work Plan
J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified
U: detection below quantitation limit
UJ: detection below the approximated quantitation limit
*=SB-T-4 is a duplicate of SB-K-4
**SB-5/6-2-4 is a duplicate of SB-5/6-8-4

TABLE 12. SUMMARY OF ANALYTES DETECTED IN SOIL (RFI)

	SAMPLE	SB-A-6	SB-B-4	SB-D-4	SB-E-4	SB-G-6	SB-I-4	SB-J-6	SB-K-4*	SB-T-4*	SB-S3-1-3
	DATE SAMPLED	09/19/96	09/18/96	09/18/96	09/18/96	09/18/96	09/19/96	09/18/96	09/20/96	09/18/96	09/18/96
	SDG ID	1889B	1889A	1889A	1889A	1889A	1889B	1889A	1889B	1889A	1889A
ANALYTE		CONCENTRATION (ug/kg)									
VOLATILE ORGANIC COMPONENTS	**REC. SOIL CLEANUP OBJECTIVES[1]**										
Acetone	200	44 U	19 J	14 J	63 J	66 J	19 U	19 J	87	84 J	29 J
Bromomethane	NS	12 U	11 U	12 U	16 U	16 U	17 U	12 U	12 U	16 U	15 U
2-Butanone	300	12 UJ	11 UJ	12 UJ	16 UJ	16 UJ	17 UJ	12 UJ	15 J	16 UJ	15 UJ
Chloroform	300	12 U	11 U	5 J	16 U	16 U	17 U	4 J	12 U	16 U	15 U
Chloromethane	NS	12 UJ	11 UJ	12 UJ	16 UJ	16 UJ	17 UJ	12 UJ	12 UJ	16 UJ	15 UJ
1,3-Dichlorobenzene	1,600	12 U	11 U	12 U	16 U	16 U	100	12 U	12 U	16 U	15 U
1,1-Dichloroethane	200	12 U	11 U	12 U	16 U	16 U	17 U	12 U	12 U	16 U	15 U
Ethylbenzene	5,500	12 U	11 U	12 U	16 U	16 U	17 U	12 U	1 J	16 U	15 U
Methylene Chloride	100	12 U	11 U	12 U	16 U	16 U	17 U	12 U	6 J	16 U	15 U
Tetrachloroethene	1,400	12 U	2 J	2 J	16 U	2 J	17 U	2 J	12 U	1 J	2 J
Toluene	1,500	0.8 J	1 J	12 U	2 J	16 U	17 U	1 J	2 J	4 J	15 U
Trichloroethene	700	12 U	0.9 J	12 U	16 U	16 U	17 U	1 J	12 U	16 U	15 U
Xylene (Total)	1,200	12 U	11 U	12 U	16 U	16 U	17 U	12 U	3 J	16 U	15 U
Total VOCs	10,000	0.8	22.9	21	65	68	100	27	114	89	31
SEMI-VOLATILE ORGANIC COMPOUNDS	**REC. SOIL CLEANUP OBJECTIVES[1]**										
Acetophenone	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	2,000	400 U	41 J	390 U	390 U	390 U	380 U	400 U	63 J	41 J	390 U
Di-n-Butylphthalate	8,100	400 U	380 U	390 U	390 U	390 U	380 U	400 U	390 U	390 U	390 U
Benzo(a)Pyrene	61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50,000	400 U	380 U	390 U	390 U	390 U	380 U	400 U	390 U	390 U	390 U
Total Semi-VOCs	500,000	ND	41	ND	ND	ND	ND	ND	63	41	ND

NOTES:

[1]Soil standards were specified in Table 3 of RFI Work Plan
J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified
U: detection below quantitation limit
UJ: detection below the approximated quantitation limit
*=SB-T-4 is a duplicate of SB-K-4
**SB-5/6-2-4 is a duplicate of SB-5/6-8-4

TABLE 12. SUMMARY OF ANALYTES DETECTED IN SOIL (RFI)

	SAMPLE DATE SAMPLED SDG ID	SB-S3-2-6 09/18/96 1889A	SB-S3-3-6 09/18/96 1889A
ANALYTE		CONCENTRATION (ug/kg)	
VOLATILE ORGANIC COMPONENTS	**REC. SOIL CLEANUP OBJECTIVES[1]**		
Acetone	200	40 J	32 J
Bromomethane	NS	16 U	16 U
2-Butanone	300	16 UJ	16 UJ
Chloroform	300	16 U	16 U
Chloromethane	NS	16 UJ	16 UJ
1,3-Dichlorobenzene	1,600	16 U	1 J
1,1-Dichloroethane	200	16 U	5 J
Ethylbenzene	5,500	16 U	16 U
Methylene Chloride	100	16 U	16 U
Tetrachloroethene	1,400	2 J	16 U
Toluene	1,500	16 U	3 J
Trichloroethene	700	16 U	16 U
Xylene (Total)	1,200	16 U	16 U
Total VOCs	10,000	42	41
SEMI-VOLATILE ORGANIC COMPOUNDS	**REC. SOIL CLEANUP OBJECTIVES[1]**		
Acetophenone	50,000	NA	NA
Dimethylphthalate	2,000	390 U	380 U
Di-n-Butylphthalate	8,100	390 U	490
Benzo(a)Pyrene	61	NA	NA
Butylbenzylphthalate	50,000	390 U	190 J
Total Semi-VOCs	500,000	ND	680

NOTES:

[1]Soil standards were specified in Table 3 of RFI Work Plan
J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified
U: detection below quantitation limit

*=SB-T-4 is a duplicate of SB-K-4
**SB-5/6-2-4 is a duplicate of SB-5/6-8-4

Findings for specific portions of SWMU 3 are presented below.

MH-3 to MH-4 Pipe Run

This area was sampled via boring SB-F, which was hand augered (Figure 8). Two soil samples were generated, one from 0 to 2 feet BGS and a second from 2 to 4 feet BGS. The 2 to 4 foot interval sample was analyzed by the laboratory and no VOCs/SVOCs were detected. This is consistent with the possibility that soil gas was due to a gas line leak in the vicinity.

MH-9

SB-S3-3 was advanced at the soil gas hotspot location near former Manhole 9 (Figure 8). The boring log indicates soil gas was present at highest levels immediately above the water table. This interval was sampled and analyzed for SVOCs and VOCs by the laboratory. Acetone was the prevalent VOC and the only VOC detected above quantitation limits in soils, while two phthalates were detected at less than 1 mg/kg.

SWMU 16 to Building 2B Pipe Run

Borings B-1, B-2 and B-3 (Figure 8) were installed to address SWMU 16 concerns. Samples were not analyzed for VOCs; however, no SVOCs were detected from samples from these locations as is discussed later in this section.

MH-18 to Former Building 9 Pipe Run

Soil borings SB-S3-2 and SB-S3-1 were advanced along this lateral (Figure 9). The borings were installed in nearby locations, one of which exhibited significant NMOC soil gas readings, and one that did not. Both borings had negligible headspace soil gas, as indicated on the boring log. Analytical testing revealed only acetone present at low (less than 50 ug/kg) concentrations.

MH-18 to MH-17 Pipe Run

The soil borings SB-G, SB-J, SB-D and SB-E (Figure 9) were advanced at soil gas hotspot locations. The boring logs indicate SB-D and SB-E headspace soil gas was located in the vadose zone and not necessarily at the water table; SB-G and SB-J headspace soil gas data indicate contamination was detected at the water table. Samples were analyzed from each boring for VOCs and SVOCs, and no SVOCs were detected. The data indicate low concentrations of VOCs, primarily acetone, with the SB-G sample yielding the maximum acetone concentration of 66J ug/kg.

MH-17 to Building 23 Pipe Run

Soil boring SB-I was advanced at a location near the point where the trunk line carrying Akzo Nobel wastewater crosses the lateral to Building 23 (Figure 9). The boring log indicated the presence of ash, which suggests that this location is associated with SWMU 23, the burning

cage. The ash layer was sampled and analyzed for VOCs and SVOCs. The target phthalates were not detected. Only 1,3-dichlorobenzene was detected in soils, at 100 ug/kg. This is the only SWMU 3 sample location where there were quantifiable levels of VOCs other than acetone.

MH-16 to Bulk Tank Storage Pipe Run

This pipe run was investigated via boring SB-B (Figure 10), which was taken from a location proximate to where the trunk line carrying Akzo Nobel wastewater crosses this lateral, and also adjacent to the AST farm. The vertical profile of headspace soil gas indicated the capillary fringe had the highest soil gas. Samples analyzed from this zone and location indicated trace levels of acetone and dimethyl phthalates were present.

MH-12 to Building 22 Pipe Run

This area was subject to a large soil removal effort following TRC's soil sampling during the RFI. TRC advanced boring SB-K (Figure 10) by hand, and sent the deeper (2 to 4 foot BGS) of two samples for VOC and SVOC analysis. The results indicate acetone and dimethylphtalates were present.

The Influent Wells (East and West)

The influent well area, originally paved, was not subject to soil gas survey. However, two borings were advanced at the edge of the area excavated during the influent well removal project (Figures 8 and 9). TRC advanced SB-5/6-1 and SB-5/6-2 in native soils that remained in place just beyond the excavation. The borings were located in close proximity to each other but yielded markedly different headspace and analytical results. SB-5/6-1 did not evidence contamination in either the headspace or the analytical data. SB-5/6-2 did yield both significant headspace readings in the lower depth sample intervals, and also resulted in the most significant acetone readings in all soil samples analyzed along the Process Sewer Line, with duplicate results of 210/380 ug/kg acetone reported.

General Observations Regarding Soil Gas and Soil Sample Analytical Results

Soil gas, and subsequent soil boring headspace determinations allowed TRC to focus laboratory analysis on samples with the highest potential of yielding evidence of VOC contamination. The results of the investigation have indicated that none of the select SVOCs analyzed were found present at any significant concentrations or frequencies. The VOCs were dominated by acetone, with no other VOCs being present at any significant level in samples of native soils along the Process Sewer Line. The levels of acetone found present in soils were in all cases present at less than 0.5 mg/kg. No evidence of any significant secondary contaminant source, with the potential to release acetone to ground water over time, was found. The data collected suggest the presence of VOCs in soils is likely attributable in part to migration of VOCs from the water table, as well as from historical releases over time. No evidence of any large scale, secondary source of VOCs/SVOCs in site soils within the old sewer line vicinity was noted. Near the influent wells, residual contamination may remain, based on visual observations made during the influent well

removal project and the two borings (SB-5/6-1 and SB-5/6-2), advanced in the RFI. This area may contain a secondary source of contamination.

5.3 Ground Water Quality Investigations

Available site-specific ground water information was minimal for the Akzo Nobel Burt, N.Y. facility prior to conducting the RFI. Data was limited to observations of depth to ground water made during the RFA, and observations and samples of water encountered during the replacement work on the Old Process Sewer Line. Section 3 of this RFI Report provided information regarding ground water elevation and gradient, based on conditions encountered during the fall of 1996. Ground water quality is discussed in this section.

5.3.1 Soil Gas and Ground Water Headspace Screening

Soil gas results from immediately above the water table were used to identify locations potentially having ground water contamination. However, ground water was also sampled and screened at locations not based on soil gas results. Ground water samples were collected and screened from locations hydraulically downgradient of manholes, in addition to the hot spots identified on the soil gas concentration isopleths.

Planned Ground Water Headspace Screening

The objective of ground water screening along the sewer line was to identify areas with VOC contamination that should be further characterized using laboratory quality data and, to prepare a preliminary plume map of contamination, if evidence of contamination was found to be present. Ground water screening along the process sewer line was originally scoped to include the advancement of 14 Geoprobe/ Hydropunch well points. These sample locations were chosen to select areas downslope of manholes, in order to place ground water screening points in the location having the greatest potential for contamination, if present. Specific locations, related to soil contamination found during RFA work, were targeted. Two samples (GWS-1 and -2) were located downgradient of RFA-SV sample location SB-PS-11 (near Manhole 3). An additional ground water screening location (GWS-4) was established downgradient of SB-PS-25 (near Manhole 9).

Implemented Ground Water Headspace Screening

During the RFI, ground water samples were field screened via headspace-OVA in the survey mode for total VOCs. Ground water samples were also collected and field screened for total VOCs from hot spots identified during the soil gas survey along the process sewer lines and surrounding the manholes.

As discussed in detail in Section 4, the ground water field screening was initially conducted at the 14 locations called for in the RFI work plan. However, ground water headspace readings encountered triggered contingent screening, which resulted in screening over 200 additional locations across the facility. During the course of the contingent sampling, TRC refined the

approach to ground water screening location selection, to meet the objective of establishing a thorough delineation of ground water headspace, as a conservative indicator of potential ground water contamination. The sampling points were located first, to define the longitudinal extent of ground water headspace readings above the goal value of 5 ppmv, and second, to define the lateral extent, progressing from hotspot areas outward.

Ground Water Headspace Screening Data Quality Considerations

The results of the ground water headspace screening are presented in Appendix B and illustrated in Figure 11. The ground water headspace data was used to create isocontours illustrated in Figure 12. Ground water headspace data represent the response registered on the OVA FID from concentrations of VOCs present in the headspace of a ground water VOA vial. The ground water headspace technique did not differentiate methane from non-methane organic carbon, as did the soil gas survey. Qualitative experiments conducted in the field found evidence of some methane presence in ground water samples; however, due to headspace volume limitations, no reliable quantitative delineation of the presence of NMOC was possible for ground water headspace. Therefore, the ground water headspace field screening data is likely a conservative estimate of the extent of VOCs in ground water. Additionally, different VOCs elicit different responses from the OVA FID, relative to the calibration standards used. Furthermore, VOCs exhibit a range of vapor pressures, Henry's Law Constants, and other pertinent physical/chemical factors (discussed further in Section 6) that influence the degree to which a particular VOC is likely to yield a particular response from a FID analyzing ground water headspace vapor. Given these variables, ground water headspace screening is considered a field screening tool that is useful in focusing ground water studies.

Ground Water Headspace Screening Interpretation

The data in Figures 11, 12 and Appendix B indicate the ground water headspace data have defined a potential ground water VOC plume confined within the boundaries of the Akzo Nobel facility. The ground water elevation data presented in Figures 6 and 7 (Section 3) indicate the general direction of water table ground water flow at the time of the RFI. Figure 4 indicates the location of the old process sewer, and certain historic discharge lines. The information on these figures can be integrated, with consideration of RFI soils investigations at SWMUs/AOCs and historical investigation results, to interpret the findings of the investigation. These findings are described below, starting with the hydraulically upgradient portion of the facility and proceeding westward to the downgradient portions.

-East of the Pond

The east side of the facility (east of the pond) is hydraulically upgradient of the majority of the facility. Ground water headspace was defined to the 5 ppmv isocontour at the upgradient locations at the eastern edge of study. The ground water headspace isocontours identify two specific areas of concern, one localized at the northernmost AST farm, and one localized at the sourthernmost AST farm. Additionally, the longitudinal isocontour protrusion to the east may indicate the sewer line exiting the facility has had an influence on ground water VOC presence.

The ground water headspace plumes indicate headspace hotspots were generally co-located with soil gas hotspots (see Figure 13), with the exception of the area east of Building 22. This pattern suggests the soil gas hotspot east of Building 22 was likely associated with contaminated soils (which were removed by Akzo Nobel during the sewer line project in 1996), while the soil gas hotspots at the AST farms are likely associated with VOCs in ground water. This is consistent with soil sampling results previously discussed. The field screening data pattern suggests the AST farms, rather than the process sewer or AOC A (Dimethylphthalate Spill Area) are the likely sources for VOCs in this area.

The ground water headspace plume in the eastern portion of the facility appears to be constrained by a hydraulic depression that may be associated with ground water removal for fire protection water supply. The depression is evident southeast of the pond in Figures 6 and 7. Ground water headspace readings drop to 10 ppmv to the west of the pond.

-West of the Pond and East Of Building 24

This region of the facility is characterized by relatively flat ground water elevation contours, and there may be a localized influence on ground water along the storm drainage and deeper sewer line at the center of this area, as illustrated in Figure 6. The general direction of ground water flow is to the northwest. The ground water headspace data (see Figure 12) generally indicate the ground water at upgradient locations to the south are at 10 ppmv or less, as is the case to the eastern and northern section of this portion of the facility.

Ground water headspace isocontours indicate SWMU 23 and SWMU 24 are a probable source of VOCs in ground water headspace. The ground water headspace plume is very localized to the immediate area of these units, perhaps as a result of the relatively flat ground water table. There are no other significant ground water headspace hotspots in this portion of the facility. The soil gas hotspots along the former lateral to former Building 9 appear related to ground water headspace elevations, but the magnitude of the ground water headspace elevations are relatively low, suggesting a residual, historic impact in this area. The remaining soil gas hotspot areas (between and to the north of Buildings 8 and 10B) do not appear to be related to ground water VOCs, and may be related to the reported product spill (previously cleaned up) in this area, residual soil vapor from former fuel oil USTs (i.e. USTs 11 & 12) or may be related to historic releases from the process sewer line. Soils analytical data (SB-J) indicated no significant contamination was found in soils in these areas.

-West of Building 24 and East of Building 1

This region of the facility is characterized by relatively flat ground water elevation contours, and the general direction of ground water flow is to the northwest. The ground water headspace data generally indicate the ground water at upgradient locations to the south are at 10 ppmv or less, as is the case to the west of this portion of the facility. The ground water headspace data indicate ground water to the north and east of this area yield VOCs at 50 ppmv or less.

The presence of historic wastewater management structures in this portion of the facility may influence ground water headspace determinations. For example, the abandoned line that extends to the north is roughly overlain by a headspace VOC contour series ranging from 50 to 500 ppmv. This line formerly conveyed process wastewater. By contrast, the sanitary lines leading to a septic tank and leach field do not appear to have served as a source for ground water headspace.

Four ground water headspace hotspots in this region are evident in Figure 12. East of Building 3 there exists a very localized, co-located soil gas and ground water headspace hotspot, in an area that Akzo Nobel has previously removed contaminated soils. The hotspot indicates that this area is a continuing source of VOCs to ground water; however, the extent of the plume is limited to a small area. Soils data indicate that, while historical soil contamination was present here, RFI samples (SB-S-3) did not reveal any significant soil contamination remaining at this location. Similar to this condition, the ground water headspace hotspot at the south of Buildings 2A and 2B is localized. This area was not subject to the soil gas survey. However, the VOCs in headspace appear localized. The ground water headspace hotspot, approximately centered at SWMU 17, the former UST No. 2 area, indicates historic releases from the tank and likely residual contamination remaining. Another ground water headspace hotspot, approximately centered at Manhole 7 in the Old Process Sewer Line, may indicate historic releases from the process sewer and/or historic/continuing releases from the Former Building 2B Separator, SWMU 16. This headspace hotspot extends north and blends into the remaining headspace hotspot, which extends from the area of SWMUs 5 and 6, the former influent wells. This headspace hotspot covers the greatest area at the Akzo Nobel facility. The isocontours indicate the former influent wells and associated sewer structures were/remain likely sources for VOCs to the ground water in this area. The soil gas survey was not conducted in this area, but soil sampling of the influent well area indicate low concentrations of acetone remain. The ground water headspace plume extends to the northwest, where it is constrained by a 10 ppmv isocontour. The large soil gas hotspot located southwest of MH-4 was not found to exhibit elevated ground water headspace VOC levels. This suggests the soil gas readings in this area may be related to the natural gas line leak, rather than contaminant releases to soil or ground water.

-West of Building 1

The area west of Building 1 exhibited a relatively flat ground water elevation contour, and the ground water headspace readings were in general 5-10 ppmv, constraining the ground water headspace to the site on the south, west, and north and east of this site area. One slightly elevated location, roughly along the location of certain subgrade utilities that exit the site to the west, was noted.

General Observations for Ground Water Headspace Screening

The ground water headspace screening defined specific locations with elevated VOCs in ground water headspace within the study area. These headspace hotspots are likely the result of historic and/or ongoing releases from specific units at the Akzo Nobel facility. The AST Farms, the

Former Building 2B separator, the old landfill, the burning cage, and the influent well area, plus historic sewer line releases at Building 2A/2B and Building 3 are potential sources for the VOCs found. The plumes are localized and well constrained per the ground water headspace determinations, and are within the Akzo Nobel facility. Up gradient and down gradient ground water do not exhibit significant headspace VOC presence.

5.3.2 Ground Water Laboratory Analysis

Planned Ground Water Sample Collection and Analysis

For SWMU 3, a minimum of 14 ground water samples were to be collected for laboratory analysis; 7 samples from ground water headspace and soil gas "hot spots" and 7 from "judgmental" areas. The analyte list included the constituents listed in EPA Method 8260 VOCs and the target phthalates using EPA Method 8270. Two additional ground water samples were added for SWMU 5 and 6; six ground water samples were collected at SWMU 16, SWMU 17, SWMU 24 and SWMU 31.

Implemented Ground Water Sampling and Analysis

As discussed in detail in Section 4, TRC collected ground water samples for analysis at 14 locations for SWMU 3; seven samples were collected from ground water headspace hotspot locations. An additional seven samples were collected from judgmental locations, which were determined without specific reliance on soil gas or ground water headspace data. Two samples were collected from the SWMU 5 and 6 vicinity, and these samples were analyzed for VOCs by EPA Method 8260 and target phthalates by EPA Method 8270. The six remaining planned ground water samples for SWMU 16, SWMU 17, SWMU 24 and SWMU 31 were collected as planned. As discussed in the RFI Work Plan, the sampling technique was anticipated to generate representative samples, but may have resulted in samples biased toward higher concentrations. Sample locations are illustrated in Figures 12 through 15.

Discussion of Ground Water Sampling Results

A summary of analyte detections in ground water is presented in Table 13. Appendix G provides all ground water results including detection limits. The data are discussed in relation to the field screening information gathered during the RFI, and interpreted in greater detail below.

-Relationship of Ground Water Headspace VOC Results to Ground Water Lab VOC Data.

Figure 12 presents the sum of VOCs detected by Method 8260 in each sample, for each sampling location. The data are useful to evaluate the likelihood that the ground water headspace VOC determinations are good indicators of potential ground water VOC contamination. As previously discussed, there are many factors that limit the quantitative relationship of ground water headspace to concentrations of VOCs detected in ground water. Different VOCs partition at different rates between ground water and headspace, and register differing relative responses on a FID. In addition, the analyte list of EPA Method 8260 is a very small subset of the universe of

TABLE 13. SUMMARY OF ANALYTE DETECTION IN GROUND WATER

	SAMPLE	GWL-1	GWS-1N60	GWS-1W60N180	GWL-2	GWL-3	GWS-4	GWL-4*	GWL-49*	GWL-4W60
	DATE SAMPLED	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96
	SWMU/AOC	SWMU 16	SWMU 3	SWMU 3	SWMU 16	SWMU 17	SWMU 3	SWMU 24	SWMU 24	SWMU 24
	SDG ID	2129A	2129B	2129B	2129A	2129A	2129B	2129A	2129A	2129B
ANALYTES		CONCENTRATION (ug/L)								
VOLATILE ORGANIC COMPONENTS	Ground water Standards[1]									
Acetone	50	10 UJ	10 UJ	10 UJ	10 UJ	NA	10 UJ	58000 J	45000 J	170 J
Benzene	0.7	10 U	10 U	10 U	9 J	32 J	10 U	5,000 U	5,000 U	10 U
Bromodichloromethane	NS	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
2-Butanone	50	10 U	10 U	10 U	10 U	NA	10 UJ	5,000 UJ	5,000 UJ	10 U
Carbon Disulfide	50	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	2100 J	10 U
Chlorobenzene	5	10 U	10 U	10 U	7 J	NA	10 U	5,000 U	5,000 U	10 U
Chloroethane	50	10 UJ	10 UJ	10 UJ	10 UJ	NA	10 UJ	5,000 UJ	5,000 UJ	10 UJ
1,1-Dichloroethane	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
1,2-Dichloroethene(Total)	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
1,1-Dichloroethene	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
1,3-Dichlorobenzene	5	1 J	10 U	10 U	7 J	NA	10	5,000 U	5,000 U	10 U
1,4-Dichlorobenzene	5	1 J	10 U	10 U	6 J	NA	10 U	5,000 U	5,000 U	10 U
1,2-Dichlorobenzene	4.7	10 U	10 U	10 U	6 J	NA	10 U	5,000 U	5,000 U	10 U
Ethylbenzene	5	10 U	10 U	0.9 J	10 U	27 J	10 U	5,000 U	5,000 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
Toluene	5	10 U	10 U	10 U	10 U	1300	4 J	5,000 U	5,000 U	10 U
1,1,1-Trichloroethane	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
Xylenes(Total)	5	10 U	0.2 J	8 J	10 U	88 J	1 J	5,000 U	5,000 U	10 U
Total VOCs	NS	2	0.2	8.9	35	1447	15	58000	47100	170
SEMI-VOLATILE ORGANIC COMPOUNDS	Ground water Standards[1]									
Butylbenzylphthalate	50	10 U	10 U	10 U	10 U	NA	4 J	10 U	10 U	10 U
Dimethylphthalate	50	NA	10 U	10 U	NA	NA	1 J	10 U	10 U	10 U
Di-n-butylphthalate	50	10 U	10 U	10 U	10 U	NA	18	10 U	10 U	10 U
Naphthalene	10	NA	NA	NA	NA	3700	NA	NA	NA	NA
Total Semi-VOCs	NS	ND	ND	ND	ND	3700	23	ND	ND	ND
1,2,4-Trichlorobenzene	5									

NOTES:

J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified in TAGM 3038 or 6NYCRR 703.5
U: detection below quantitation limit
[1]Ground water standards were specified in Table 3 of RFI Work Plan
* GWL 49 is a duplicate of GWL-4
** GWS-69 is a duplicate of GWS-6W90

TABLE 13. SUMMARY OF ANALYTE DETECTION IN GROUND WATER

	SAMPLE	GWL-5	GWS-5W180	GWS-6W90**	GWS-69**	GWS-6W360	GWS-ASW60	GWL-7	GWL-8	GWS-11	GWS-13W-60
	DATE SAMPLED	10/07/96	10/09/96	10/09/96	10/09/96	10/09/96	10/08/96	10/10/96	10/08/96	10/08/96	10/08/96
	SWMU/AOC	SWMU 24	SWMU 3	SWMU 3	SWMU 3	SWMU 3	SWMU 3	SWMU 5/6	SWMU 5/6	SWMU 3	SWMU 3
	SDG ID	2129A	2129B	2129B	2129B	2129B	2129B	2129B	2129B	2129A	2129A
ANALYTES		**CONCENTRATION (ug/L)**									
VOLATILE ORGANIC COMPONENTS	**Ground water Standards[1]**										
Acetone	50	10 UJ	10 UJ	5 J	6 J	10 UJ	6 J	44 U	250 UJ	250 J	10 UJ
Benzene	0.7	10 U	0.6 J	12	13	10 U	10 U	3 J	18 J	10 U	10 U
Bromodichloromethane	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	8 J	10 U	10 U
2-Butanone	50	10 UJ	10 U	10 U	10 U	10 U	10 U	7 J	250 U	10 UJ	10 UJ
Carbon Disulfide	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	11	11	10 U	10 U	10 U	250 U	10 U	10 U
Chloroethane	50	10 UJ	10 UJ	3 J	4 J	10 UJ	10 UJ	10 UJ	250 UJ	10 UJ	10 UJ
1,1-Dichloroethane	5	10 U	10	1 J	1 J	1 J	10 U	10 U	250 U	10 U	10 U
1,2-Dichloroethene(Total)	5	10 U	2 J	10 U	10 U	10 U	10 U	10 U	250 U	0.6 J	10 U
1,1-Dichloroethene	5	10 U	0.7 J	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U
1,3-Dichlorobenzene	5	10 U	10 U	0.6 J	0.5 J	10 U	10 U	1 J	250 U	10 U	10 U
1,4-Dichlorobenzene	5	10 U	10 U	0.6 J	0.6 J	10 U	10 U	2 J	250 U	10 U	10 U
1,2-Dichlorobenzene	4.7	10 U	10 U	1 J	1 J	10 U	10 U	1 J	250 U	10 U	10 U
Ethylbenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9 J	10 U	10 U
Tetrachloroethene	5	10 U	0.6 J	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U
Toluene	5	10 U	10 U	0.8 J	0.9 J	10 U	1 J	10 U	42 J	10 U	10 U
1,1,1-Trichloroethane	5	10 U	6 J	10 U	10 U	11	10 U	10 U	250 U	10 U	10 U
Trichloroethene	5	10 U	2 J	10 U	10 U	1 J	10 U	10 U	250 U	10 U	10 U
Xylenes(Total)	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	7 J	10 U	10 U
Total VOCs	**NS**	ND	21.9	35	38	13	7	14	84	250.6	ND
SEMI-VOLATILE ORGANIC COMPOUNDS	**Ground water Standards[1]**										
Butylbenzylphthalate	50	0.2 J	10 U	10 U	10 U	10 U	10 U	0.4 J	ND	ND	0.2 J
Dimethylphthalate	50	ND	10 U	10 U	10 U	10 U	10 U	ND	1 J	0.7 J	0.2 J
Di-n-butylphthalate	50	ND	10 U	10 U	10 U	10 U	10 U	ND	ND	ND	ND
Naphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Semi-VOCs	**NS**	0.2	ND	ND	ND	ND	ND	0.4	1	0.7	0.4

NOTES:

J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified in TAGM 3038 or 6NYCRR 703.5
U: detection below quantitation limit
[1]Ground water standards were specified in Table 3 of RFI Work Plan
* GWL 49 is a duplicate of GWL-4
** GWS-69 is a duplicate of GWS-6W90

VOCs that potentially may be present in ground water. Based on these factors, ground water headspace, like soil gas survey data, are generally conservative indicators of ground water VOC contamination. In other words, the ground water headspace data are likely to yield false positives, rather than false negatives.

Regarding the potential for false negatives, all four ground water samples from locations with ground water headspace readings of 10 ppmv or less were found to be non-detect or have VOCs at less than the quantitation limit for 8260 analytes. Results are shown below. Thus false negatives were not evidenced in the RFI.

Location	Groundwater Headspace (ppmv)	Ground Water VOC Total by Method 8260 (ppb)
GWL-5	1	ND
GWS-12E	2	ND
GWS-1W60/180	4	8.9J
GWS-ASW60	5	7J

With regards to false positives, a number of high ground water headspace locations yielded lab samples with no detected VOCs (for example, GWS-13W60, GWS-10W). Thus the potential for false positives was realized. As noted previously, the headspace screening results are qualitative and subject to a wide range of physical and chemical variables which prohibit exact correlation of screening results with laboratory data.

The data illustrated in Figure 12 confirm the ground water headspace data are generally conservative. The ground water samples with the highest lab VOC totals are presented below:

Location	Ground Water Headspace (ppmv)	Ground Water VOC Total by Method 8260 (ppb)
GWL-4	8,000	58,000J
GWL-3	>10,000	1447J
GWS-11	1,100	251J
GWL-4W60	35	170J
GWL-8	>10,000	84J
GWS-6W90	>10,000	38J
GWL-2	5,000	35J

Generally, except at GWL-4W60, ground water headspace readings were over 1,000 ppmv for the lab samples with highest VOC concentrations. Overall, the ground water headspace screening was confirmed to be conservative.

In summary, the ground water headspace screening data appear to provide good qualitative field screening definition to the extent of the water table ground water VOC contamination at the Akzo Nobel facility.

-Discussion of Ground Water Sample Laboratory Results

The ground water laboratory data consist of analytical results for VOCs and select SVOCs for 22 ground water samples. A total of seven samples contained detectable concentrations of SVOCs, while a total of 15 of 22 samples contained detectable concentrations of VOCs. Three samples from SWMU 3 (GWS-10W, GWS-12E and GWS-J) and the sample from SWMU 31 (GWL-6) had no detectable concentrations of VOCs or SVOCs.

VOCs and SVOCs at SWMU 17, a former fuel oil UST, contained BTEX and naphthalene at levels typically encountered within the immediate vicinity of a fuel oil tank that has historically had localized releases. A product layer was encountered at this location during the RFI ground water sampling.

Of the remaining samples containing SVOCs, only one location contained SVOCs at concentrations exceeding 1 ppb. GWS-4, collected from east of Building 3, contained three phthalates with a total concentration of 23 ppb.

Regarding VOCs, it should be noted that certain samples, indicated on Figure 12 with asterisks, effervesced during sample preservation with acid. These locations were re-sampled and analyzed within 7 days, without field preservation. Akzo Nobel representatives indicated that the effervescence is likely due to the presence of MEK-peroxide and/or benzoyl peroxide in the samples. The VOC results indicate all VOC determinations over 100 ppb (excepting the previously discussed sample from SWMU 17) were limited to acetone. Acetone is present (GWL-4) at the Landfill Site No. 1 (SWMU 24), and also at the eastern ground water depression (GWS-11). GWL-8, a ground water sample collected from near the former influent wells (SWMU 5/6), exhibited benzene, bromodichloromethane, ethyl benzene, toluene and xylene contamination but also exhibited interferences that raised the reported quantitation limit. All other VOC determinations were below, at, or near (i.e. within 5 ppb) of the method quantitation limit. Trace concentrations of all remaining VOCs listed in Table 13 were detected, with the majority below the quantitation limit.

General Observations on Ground Water Laboratory Analysis

Ground water samples analyzed for VOCs and select SVOCs by the lab indicated ground water quality has been impacted at certain locations within the Akzo Nobel facility. SVOCs are generally absent, except for a fuel oil-related compound at SWMU 17. Free product (fuel oil) may exist at SWMU 17. VOCs are present at low concentrations with the exception of BTEX at

SWMU 17 and acetone at SWMU 24 and the eastern ground water depression. The area impacted has not been fully defined by ground water lab analysis; however, ground water headspace isocontours generally correlate with lab VOC data, and are a conservative indicator of potential ground water VOC contamination. Suspected localized sources were identified for each ground water headspace hotspot.

Sample Summary - SWMU 3 (Process Sewer)

SWMU/AOC ID	Sample Locations			Media	Depth	Total Samples	Analytical Parameters
SWMU 3 (Process Sewer), including SWMU 5, 6 (Influent Wells)	Surround manholes and every 15 feet along sewer line; extend grid above 10 ppmv total VOC. See appendix A and Figures 8, 9, and 10 for locations of soil gas readings.			Soil gas head space	1.5 to 3 feet BGS or immed. above water table; at 1 ft. BGS additional at 4 to 9 lateral	Approx. 470 dual readings per location	Total VOC screen using FID/FID with charcoal filter
	"Hotspot " borings at the following soil vapor hot spots. See Appendix A and Figures 8, 9 and 10.			Soil	Highest FID/ PID reading	13	EPA Method 8260 VOCs on all samples and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270, TOC, pH and grain size on select samples
	Figure No.	Soil Vapor "Hotspot" Points	Soil Boring				
	9	1	SB-G				
	9	28	SB-S3-2				
	8	56	SB-S3-3				
	9	106	SB-C-5				
	9	112	SB-I				
	10	146	SB-B				
	10	157	SB-K				
	9	371	SB-E				
	9	482	SB-J				
	9	485	SB-D				
	8	605	SB-F				
	10	644	SB-A				

SWMU/AOC ID	Sample Locations			Media	Depth	Total Samples	Analytical Parameters
	Figure No.	Soil Vapor "Not detected" Point	Soil Boring Point	Soil	1.5 to 3 feet BGS	1	EPA Method 8260 VOCs and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270, TOC, pH and grain size
	9	331	SB-S3-1				
	GWS-1 to -14 and soil gas hot spots; extend grid above 5 ppm above background. See Appendix B and Figure 11			Ground water screening	Water table	Approx. 247 location specific readings	Total VOC screen using headspace-OVA
	GWL-7, -8 from SWMU 5/6; and 7 each from headspace VOC hotspots and judgmental areas. See Figure 12 for locations.			Ground water	Water table	2 from SWMU 5/6, 7 from hotspots; 7 from judgmental areas	EPA Method 8260 VOCs and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270
	"Hotspot" Locations		Judgmental Locations				
	GWS-10W		GWS-12E				
	GWS-11		GWS-1W60N180				
	GWS-13W60		GWS-5				
	GWS-1N60		GWS-6W360				
	GWS-4		GWS-ASW60				
	GWS-5W180		GWS-J				
	GWS-6W90		GWL-4W60				

5.4 Results of Investigation of SWMUs 16, 17, 23, 24, 31 and AOC E

Building 2B Separator (SWMU 16)

Butylbenzylphthalate and di-n-butylphthalate were detected above NYSDEC Cleanup Objectives in SB-PS-20 at a depth of 6 to 8 feet BGS during the 1994 RFA-SV. Target phthalates were not detected in RFA-SV boring SB-PS-19, which was advanced 15 feet north of SB-PS-20. The Process Sewer line enters the separator near its base at 10 feet BGS. A seam in the separator, at approximately 2 feet BGS, is potentially the source of the phthalate release, but the mechanism for transport of contamination to the depth at which it was found is unclear due to the immobility of phthalates. The former Building 2B Separator was abandoned in place during the

sewer line replacement project (fall 1995); the replacement separator is now located across the road from its former location.

During the RFI, three borings (B-1, B-2, and B-3) were advanced to the saturated zone. As shown in Figure 13, these borings surrounded SB-PS-20. Subsurface samples from each boring were collected from each 2-foot interval to the water table starting with the 2 to 4 foot interval BGS and analyzed for the two phthalates previously detected in addition to TOC, pH, and grain size. Because phthalates are relatively immobile, it was anticipated that these three borings would be sufficient to delineate the extent of the phthalate contamination around the exceedance at SB-PS-20 and meet the requirements for RFI soil investigation. The summary of analytes detected, shown in Table 12, indicates that target analytes were detected in three samples (of the six samples submitted for analysis). Di-n-butyl phthalate was not detected in any of the samples submitted for analysis; butylbenzylphthalate was detected at trace concentrations below the quantitation limit in Boring B-2 (4 to 6 feet BGS) and Boring B-3 (2 to 4 feet and 6 to 7 feet BGS). None of the detections exceeded 18 ug/kg, which is three orders of magnitude lower than the NYSDEC Soil Cleanup Objective for this parameter. A complete tabulation of analytical results is provided in Appendix G.

Based on negative analytical results from Borings B-1, B-2 and B-3 from the RFI and from SB-PS-19 during the RFA-SV, Akzo Nobel concludes that the target phthalate contamination detected in soil in the RFA-SV was limited to the immediate area of SB-PS-20. Target phthalates were detected in that boring at 6 to 8 foot BGS (butylbenzylphthalate at 540,000 J ug/kg and di-n-butylphthalate at 580,000 J ug/kg).

Ground water was evaluated through the collection of two samples at the water table and analysis for butylbenzyl and di-n-butyl phthalates. Exact locations for ground water sampling were determined in the field as discussed in Section 4.1.1 of this report. As shown in Figure 13, the samples (GWL-1 and GWL-2) were collected close to the sewer line, one to either side of the line, and in the direction determined to be downgradient from the separator and downgradient of the locations of the exceedance of the soil cleanup objective (SB-PS-20). GWL 2 was located directly in the sewer line bedding to evaluate the potential for preferential migration pathways. Ground water was collected as discussed previously.

Table 13 presents a summary of analyte detections for GWL 1 and GWL-2. Target phthalates were not detected in either sample. The absence of ground water contamination with target phthalates demonstrates that phthalate contamination of ground water has not occurred as a result of present or historic operation of the Building 2B Separator. These results confirm the hypothesis that intermedia transfer of phthalates from soil to ground water was unlikely due to the immobility of phthalates. These results also indicate that the presence of a limited secondary source of phthalates at SB-PS-20 should be of minimal concern as will be discussed in subsequent sections of this report.

During the RFI sampling effort, elevated ground water headspace readings were noted at GWL-1 (700 ppm) and GWL-2 (5,000 ppm). Since the potential presence of phthalates would not account for such readings and the samples were located near Manhole 7(the approximate center

of a soil headspace hotspot), Akzo Nobel elected to analyze ground water at these locations for VOCs in addition to target phthalates. Results of analysis, shown in Table 13, indicate some detections of VOCs below the detection limit of 10 ug/L for these two samples. As noted previously with the SWMU 3 ground water discussion, the headspace hotspot near Manhole 7 may indicate historic releases from the Former Process Sewer Line and/or historic releases from the former separator.

Sample Summary - SWMU 16 - Building 2B Separator

Sample Locations	Media	Depth (feet BGS)	Total Samples	Analytical Parameters
B-1, -2, -3	Soil	2-4, 4-6, 6-7	9	Butylbenzyl and di-n-butylphthalates using EPA Method 8270, TOC, pH and grain size
GWL-1, -2	Ground water	Water table	2	EPA Method 8260 VOCs, Butylbenzyl and di-n-butylphthalates using EPA Method 8270

Former UST No. 2 Area (SWMU 17)

Naphthalene was detected above NYSDEC Cleanup Objectives in SB-17-2 at 8 to 10 feet BGS. Based on the RFA-SV results it appears that there has been some impact to soils from fuel oil contamination. However, only naphthalene contamination in SB-17-2 exceeds the NYSDEC cleanup objective. Samples from borings to the north (SB-17-1), south (SB-17-3) and southwest (SB-17-4) did not exceed the objectives for the parameters analyzed. Based on the RFA-SV data and the low migration potential of naphthalene, the extent of naphthalene contamination is anticipated to be limited.

During the RFI, two soil borings (B-4, B-5) were advanced to the saturated zone and a subsurface sample was collected for naphthalene analysis from the most contaminated interval based on visual, olfactory and field screening results. Field screening was conducted via headspace FID, which is useful as a qualitative screen of fuel-oil type components. The two soil borings advanced during the RFI, were located to define contamination to the east and to the west of SB-17-2. Sample locations are shown on Figure 13. Samples from these borings were analyzed for naphthalene (EPA Method 8270), EPA Method 8240 BTEX, TOC, pH, and grain size.

Table 12 summarizes the analytes detected in RFI soil samples. A complete tabulation of analytical results is provided in Appendix G. Results of analysis indicate the only VOC detected was ethylbenzene at a concentration below the detection limit and below NYSDEC Soil Cleanup Objectives in the soil sample from Boring B-4 at a depth of 4 to 6 feet BGS. The elevation sampled is immediately above the water table which also evidenced the highest FID reading (1200 ppm). A sample was collected from the 4 to 6 foot interval at Boring B-5. This interval

showed the highest reading of 3 ppm on the FID. No target analytes were detected in the sample from B-5.

Soil contamination above NYSDEC Soil Cleanup Objectives was not observed in the RFI borings. The RFA-SV boring, SB-17-2, which evidenced naphthalene contamination at 32,000 ug/kg, was sampled at 8 to 10 feet BGS. That sampling interval is deeper than the water table elevation (4 feet BGS) shown on the RFA-SV boring log. Based on the above data, it can be concluded that RFA-SV soils contamination is likely attributable to absorption of contaminants from ground water in the smear zone. Consequently, this contamination should be evaluated in ground water.

A ground water sample (GWL-3) was collected in close proximity to SB-17-1, which is near downgradient from the highest soil concentrations at SB-17-2. The exact location for ground water sampling was determined in the field as discussed in Section 4.1.1 of this report. A product layer was encountered at this location. The screening headspace reading for ground water at this location was greater than 10,000 ppm. The ground water sample, collected from this SWMU, was analyzed for naphthalene using EPA Method 8270 and for BTEX by EPA Method 8240 BTEX. Results of analysis of GWL-3 are shown in Table 13 and in Appendix G. VOC results show detection of benzene (32 J ug/L), ethylbenzene (27 J ug/L), toluene (1300 J ug/L), and total xylenes (88 J ug/L). SVOC data indicate naphthalene was present at 3700 ug/L. The detected concentrations of these analytes, which are typical of fuel contamination, exceed the action levels for ground water and are indicative of historic releases from the former tank and the likelihood of residual contamination. In addition, the concentrations found support the conclusion that what appeared to be soil contamination below the water table, in the RFA-SV, was attributable to ground water contamination at the smear zone.

The extent of fuel-related ground water contamination above action levels cannot be fully determined at this time; however two ground water samples collected less than 300 feet downgradient of SWMU 17, GWS-3 and GWS-3E, evidenced lower ground water headspace concentrations of 400 and 18 ppm, respectively. Thus the extent of ground water contamination appears to be constrained by the headspace contours shown on Figure 12. It can be concluded, however, that the contaminants and concentrations detected warrant further investigation.

Sample Summary - SWMU 17 (Former UST No. 2 Area)

Sample Locations	Media	Depth (feet BGS)	Total Samples	Analytical Parameters
B-4, -5	Soil	Highest FID	2	Naphthalene by EPA Method 8270, EPA Method 8240 BTEX, TOC, pH and grain size
GWL-3	Ground water	Water table	1	Naphthalene by EPA Method 8270 and EPA Method 8240 BTEX

Burning Cage (SWMU 23)

A sample collected during the RFA-SV from soil boring SB-23-2 slightly exceeded the NYSDEC Cleanup Objective for dimethyl phthalate in the saturated soil at a depth of 4-6 feet BGS. Samples collected 10 feet to the north and south were well below the cleanup objective. Since the sample from SB-24-5, collected for Landfill Site No.1, defines the maximum western extent of the dimethyl phthalate exceedances, the RFI included a single soil boring, B-6, located to the east of SB-23-2, sampled at the surface and the most contaminated interval (4 to 6 feet BGS) as determined by visual, olfactory and FID screening. This interval was also the deepest soil sample above the saturated zone. Figure 14 shows the sample location. The sample was analyzed for dimethyl phthalate, di-n-butylphthalate, TOC, pH, and grain size.

Results of analysis of samples from B-6 are presented in Table 12. Only di-n-butylphthalate was detected in both samples, at 17 J ug/kg, which is below the detection limit for the analysis and two orders of magnitude below the NYSDEC Soil Cleanup Objective.

As part of the Process Sewer Line investigation, the pipe run from Manhole 17 to Building 23 was subjected to soil gas screening. This pipe run remains in service, and was incorporated into the new process sewer line. The soil gas pattern indicated one location along this line is a concern. The specific location noted coincides with the location of the Akzo Nobel facility 15 inch diameter process and sanitary combined discharge line that exits the facility to the east. Soil gas readings up to 4993 ppmv NMOC by FID were recorded during the RFI at this location.

Soil boring SB-I was advanced at a location approximately at the point where the trunk line carrying Akzo Nobel wastewater crosses the lateral to Building 23. The boring log indicated the presence of ash at 2 to 4 feet BGS, which may indicate this location is associated with SWMU 23. The ash layer was sampled and analyzed for VOCs and SVOCs. The target phthalates were not detected. Only 1,3-dichlorobenzene was detected in soil, at 100 ug/kg. This the only SWMU 3 sample location where VOCs other than acetone were detected at quantifiable levels.

Based on sampling results from the RFA-SV and the RFI, it appears that contamination is limited to isolated, localized areas: dimethyl phthalate at SB-23-2 at 4 to 6 feet BGS; trace di-n-butylphthalate at the surface and 4 to 6 feet BGS at B-6; and 1,3-dichlobenzene at SB-I.

Impacts to ground water were evaluated as part of the investigation of the contiguous, downgradient SWMU 24.

Sample Summary - SWMU 23 (Burning Cage)

Sample Locations	Media	Depth (feet BGS)	Total Samples	Analytical Parameters
B-6 (Sample B-I, collected for SWMU 3, is proximal to SWMU 23)	Soil	0-2, Highest FID	2	Dimethyl and di-n-butyl phthalates by EPA Method 8270, TOC, pH and grain size

Landfill Site No. 1 (SWMU 24)

NYSDEC Soil Cleanup Objectives were exceeded for MEK, butylbenzylphthalate, di-n-butylphthalate, and dimethyl phthalate at several locations at SWMU 24 during the RFA-SV. The RFA-SV was focused on investigating contamination associated with major anomalies found in the EM survey, thus the highest levels of contamination have likely been characterized. RFI efforts were focused on confirming the limits of the landfill and assessing ground water quality. Four soil borings, one each to the south (B-8A), west (B-7), northwest (B-10) and north (B-9) of the previously sampled area were advanced to the water table during the RFI (Figure 14). Soil samples from each boring were screened using a FID and a sample was collected from the surface and the most contaminated interval for analysis of EPA Method 8260 VOCs, the target phthalates, TOC, pH, and grain size . Samples were screened using FID, visual and other sensorial observations. When screening did not indicate any difference among samples in Boring B-8A, the deepest soil sample above the saturated zone, was submitted for analysis.

Table 12 presents the results of analysis of the eight RFI soil samples submitted for VOC and SVOC analysis. Acetone was detected in seven of the samples at concentrations above the detection limit. The deeper sample (SB-5/6-2) at 2 to 4 feet BGS evidenced a higher FID screen reading than the surface sample (700 ppm versus 200 ppm); yet the deeper sample showed lower acetone concentrations. The observation of a higher FID reading in the deeper sample could be due to the presence of unidentified, non-target analytes. MEK was found above the detection limit only in the surface sample from B-9. The following analytes were detected sporadically at concentrations below the detection limit: methylene chloride, bromomethane, chloroform, chloromethane, tetrachloroethene, toluene, and di-n-butylphthalate.

Based on soil data from both the RFA-SV and the RFI, the highest concentrations of constituents (8,000 to 730,000 J ug/kg), primarily target phthalates, have been detected in the RFA-SV between 2 and 6 feet BGS in the center of the SWMU 24 area (SB-24-1A, -2,-3, -4, and -5). Phthalates were the only constituents in soil detected above NYSDEC Soil Cleanup Objectives. Acetone was frequently detected below action levels in the perimeter borings in the RFI.

Two ground water samples (GWL-4, and GWL-5) were collected downgradient of the most contaminated soil borings, and analyzed for EPA Method 8260 VOCs and target phthalates. As indicated in Table 13, acetone was detected at 58,000 J ug/L which is three orders of magnitude above the 6 NYCRR 703.5 action levels. Only a trace amount of butylbenzylphthalate and no acetone was detected in GWL-5. As shown in Figure 12, GWL-4 coincides with a ground water headspace hotspot which does not extend as far downgradient as GWL-5. An additional ground water sample (GWL-4W60) was collected as part of the Old Process Sewer Line investigation. This sample showed significant attenuation in acetone concentration (170 J ug/L) compared to GWL-4. Based on ground water headspace contours and rapid attenuation of acetone concentrations, it can be concluded that the acetone contamination in ground water is spacially limited to the proximity of SWMU 24; however additional data is necessary to confirm this hypothesis. The detection of significantly high concentrations of acetone in ground water with only minimal detections of acetone in soil suggest that the source of acetone is the ongoing degradation of landfill waste organic peroxides. Facility representatives indicate that acetone is a primary degradation product of MEK-peroxide which has been disposed of at the landfill.

Sample Summary - SWMU 24 (Landfill Site No. 1)

Sample Locations	Media	Depth (feet BGS)	Total Samples	Analytical Parameters
B-7, -8A, -9, -10	Soil	0-2, Highest FID	8	Butylbenzyl, dimethyl and di-n-butyl phthalates using EPA Method 8270, EPA Method 8260 VOCs, TOC, pH and grain size
GWL-4, -5 (GWL-4W60 is near downgradient to this SWMU)	Ground water	Water table	2	Butylbenzyl, dimethyl and di-n-butyl phthalates using EPA Method 8270, EPA Method 8260 VOCs

Building 16 Drum Storage Area (SWMU 31)

During the RFA-SV, detected concentrations of acetophenone exceeded NYSDEC Soil Cleanup Objectives for two soil borings drilled through the foundation of this area (SB-31-1, 0 to 2 feet BGS; SB-31-3, 4 to 6 feet BGS). Previous sampling did not go outside the foundation area. As shown in Figure 15, the RFI included advancement of two soil borings (B-12, B-13) immediately adjacent to the locations of former doors where the foundation is not built above floor level and runoff could have caused some migration of acetophenone. In addition, a boring was drilled outside the foundation to the south of the building (B-11) to assess whether material could have spilled outside of the foundation. Surface samples and a subsurface sample from the most contaminated interval, based on field screening and visual inspection, were analyzed for acetophenone. Field screening was conducted via headspace FID. While this technique is not ideally suited to detect less volatile components such as acetophenone, good correlation between RFA-SV samples selected based on PID readings above 20 ppm and olfactory evidence, and the presence of acetophenone above the NYSDEC Soil Cleanup Objective indicates the screening technique is at least qualitatively successful.

Table 12 presents the results of analysis for samples from B-12 and B-13. No analytes were detected in B-11 (see Appendix G). Samples from B-12 and B-13 contained 7300 and 32 J ug/kg of acetophenone, respectively. Field screening data corroborated the absence of significant contamination in these borings. The reported acetophenone concentrations are an order of magnitude lower than the NYSDEC Soil Cleanup Objective. Based on the RFA-SV and RFI data, it appears that contamination above action levels is limited to immediately beneath the foundation at RFA-SV borings SB-31-1 and SB-31-3.

A ground water sample, GWL-6A, was collected at the water table, downgradient of the highest concentrations of acetophenone in soil, as shown in Figure 15. A sample was originally planned to be collected adjacent to the former northern door; however, refusal was encountered during the advancement of the well point prior to achieving sufficient saturated thickness to collect a ground water sample. Acetophenone was not detected in sample GWL-6A (see Appendix G).

Thus, it can be concluded that the limited acetophenone contamination detected beneath the foundation is not a source of contamination to ground water.

Sample Summary - SWMU 31 (Building 16 Drum Storage Area)

Sample Locations	Media	Depth (feet BGS)	Total Samples	Analytical Parameters
B-11, -12, -13	Soil	0-2, Highest FID	6	Acetophenone, TOC, pH and grain size
GWL-6A	Ground water	Water table	1	Acetophenone

Former UST No. 20 Area (AOC E)

One of three RFA-SV soil borings evidenced benzo-a-pyrene contamination slightly above NYSDEC Soil Cleanup Objectives. The RFA-SV concluded that confirmatory soil sampling should be conducted. The sample submitted for laboratory analysis from SB-E-2 was believed to be collected from the tank fill and not representative of native soil. During the RFI, a single soil boring, B-14 was advanced immediately north of SB-E-2 (Figure 15) to sample native soils for benzo(a)pyrene (EPA Method 8270) and EPA Method 8260 BTEX. Based on field screening (FID), visual and olfactory screening results, a sample was submitted for laboratory analysis. The sample with the highest FID screening concentration (300 ppm), which was submitted for analysis, was collected immediately above the water table.

Results of analysis, presented in Table 12, indicate that traces of toluene and benzo(a)pyrene were detected below the analytical detection limit and below NYSDEC Soil Cleanup Objectives. While the somewhat elevated field screening value indicates that other fuel residuals may be present in the sample, the constituents of concern, BTEX and PAHs are well beneath action levels and are therefore not of concern.

Sample Summary -AOC E (Former UST No. 20 Area)

Sample Locations	Media	Depth (feet BGS)	Total Samples	Analytical Parameters
B-14	Soil	Highest FID/ PID	1	Benzo(a)pyrene, BTEX, TOC, pH and grain size

SECTION 6

FATE AND TRANSPORT/INTERMEDIA TRANSFER

6.1 Introduction

This section discusses the expected fate and transport of constituents detected at the Akzo Nobel facility. In general, constituents released to the environment undergo chemical alterations and transport in response to the specific physical site conditions as well as the chemical specific properties of each constituent. An evaluation of the environmental fate and transport of constituents detected in site media has been conducted based upon the laboratory analytical data collected to date, and available historic records and includes:

- an assessment of the mobility, volatility, and persistence of each constituent detected in site media;
- identification and characterization of existing and potential migration pathways of constituents at and from the site including soil, ground water, and air.

A general discussion of the factors affecting environmental fate and persistence mechanisms is provided in Section 6.2. An overview of the environmental fate and transport processes specific to constituents detected in facility soil and ground water is provided in Section 6.3. A discussion of existing and potential contaminant migration pathways for detected constituents is included in Section 6.4.

6.2 Factors Affecting Constituent Environmental Fate and Persistence

6.2.1 Properties of Constituents

6.2.1.1 Vapor Pressure

The volatility of a constituent is dependent on the vapor pressure and water solubility. The vapor pressure represents a constituent's tendency to evaporate as measured by the amount of volatilization that can potentially occur. Constituents with a vapor pressure of greater than 0.5 mm Hg are typically considered volatile (EPA, 1995). The greater the vapor pressure, the more volatile the constituents.

6.2.1.2 Henry's Law Constant (H)

The Henry's Law Constant (H) is the air/water partition coefficient and is used in conjunction with Vapor Pressure to evaluate a constituents tendency to volatilize. High H values may indicate volatilization from the aqueous phase as an important transport process. A nondimensional H relates the constituent concentration in the gas phase to its concentration in the water phase. The dimensional H can be determined by dividing the vapor pressure in atm by the water solubility in mole/m^3 to give H in atm/m^3/mole (Schwarzenbach, et. al., 1993).

6.2.1.3 *Water Solubility*

Aqueous solubility refers to the mass of a constituent which will dissolve in water under specific conditions of temperature and pressure. The degree to which a compound can dissolve directly affects the concentration which can be transported by the ground water or surface water in contact with the constituent (Howard, 1989). Highly soluble constituents have a tendency to remain dissolved in the water column and not partition to soil or sediment or bioconcentrate and are generally more likely to biodegrade. Low solubility constituents are just the opposite.

6.2.1.4 *Octonal-Water Partition Coefficient*

The octonal-water partition coefficient (K_{ow}) is a measure of how hydrophobic a constituent is. The K_{ow} is the ratio of the concentration of a constituent in octonol to the concentration of a constituent in water. Values are often presented as log K_{ow}. The effect of sorption or partitioning, is to retard the transport of the contaminant in ground water by removing the constituents from the mobile ground water media and binding them onto the organic solid phase particle of the soil or rock matrix (Fetter, 1993).

Measured K_{ow} values for organic constituents range from 10^{-3} to 10^{7} (Log K_{ow} ranges from -3 to 7). Constituents with low K_{ow} values (i.e., <10), are considered hydrophilic and tend to have higher solubility. High K_{ow} values (i.e., > 10^{4}), are representative of very hydrophobic (low solubility) constituents. The K_{ow} can result in the retardation and attenuation of the solute phase constituents in a moving ground water plume. Compounds with high K_{ow} values (i.e., phthalates and PAHs) are likely to sorb onto solid media and their mobility is reduced. The K_{ow} has been shown to correlate well with bioconcentration factors in aquatic organisms and adsorption to soil or sediment (Fetter, 1993).

6.2.1.5 *Organic Carbon Partition Coefficient*

From the variety of soil components that can influence adsorption, organic carbon content of soil has been shown to be a primary factor governing the adsorption of neutral organic chemicals (Drugan, 1988). The organic carbon partition coefficient, K_{oc} , is used to estimate a constituent's tendency to partition between ground water and soil based on the organic carbon content of the soil and is calculated as follows:

K_{oc} = (μg Chemical/gram organic carbon)/(μg chemical/gram water)

The degree that a neutral organic chemical partitions between soil and water is primarily related to the hydrophobic nature of the molecule; the greater the hydrophobic nature, the greater the magnitude of K_{oc}. The preference exists because the hydrocarbon regions of a molecule have greater solubility in liquid hydrocarbons than in water. Values for K_{oc} are often presented as Log K_{oc}.

6.2.1.6 Specific Gravity

Specific gravity is the ratio of a constituent's density to the density of some standard substance, usually water. Density is the mass per unit volume of a constituent. If the constituent is denser than the transport fluid, the fraction which remains undissolved will fall via gravity flow. If the density of the constituent is less than the transport material, it will remain on the surface of the media. In the case of ground water transport, the non-dissolved phase of a constituent will remain at the upper interface of the transport media when lighter than the media (LNAPL) or at the lower interface of the media if denser (DNAPL).

6.2.2 Properties of Environmental Media

The most significant site-specific factors affecting fate and transport of constituents detected in facility media include total organic carbon, hydraulic conductivity, ground water velocity, and microbial population. Each are discussed below.

Total Organic Carbon

Total organic carbon refers to the carbon content of the soil or rock media in which ground water flow is occurring. Dissolved organic matter is the fraction of organic material dissolved in the ground water or surface water. The fraction of organic carbon present in the soil matrix, f_{oc}, affects the sorption and subsequently the attenuation of the constituent plume. For non-ionic compounds, an increase in f_{oc} in the soil increases the amount of attenuation that can occur (Fetter, 1993). The total organic carbon content of site soils was generally 1 percent or less.

Hydraulic Conductivity

Hydraulic conductivity is the measure of the permeability of a fluid moving through a porous media. Hydraulic conductivity is a function of the size and shape of the voids between the particle that make up the porous media and the viscosity of the transporting fluid (Fetter, 1993). The mobility of constituent is directly proportional to the hydraulic conductivity of the transport medium.

Ground Water Velocity

The transport velocity of the media in which the constituent moves determines the residence time of the mass of the constituent within the media. For dissolved constituent transport, low velocities correspond to increased residence time and an increased opportunity for attenuation, including volatilization, sorption, biological decay and chemical breakdown; and therefore lower transport rates in ground water. For colloidal transport, lower flow rates generally correspond to sedimentation and deposition in surface waters and to filtering of larger colloids during ground water flow through porous media (Schwarzenbach, 1993).

Microbial Population

The presence, activity and type of microbial populations within the environmental media result in the biological breakdown of certain constituents. Biodegradation rates are a function of the ability of the microbial populations present in the media to metabolize the constituent, as well as the aerobic/anaerobic conditions, requirements of the microorganisms, temperature, pH, and nutrient availability (Baker, et. al., 1994).

6.2.3 Contaminant Attenuation Mechanisms

Major contaminant attenuation mechanisms include biodegradation, abiotic degradation, sorption, and dissolution. Each are discussed below.

6.2.3.1 Biodegradation

Biological degradation depends on the availability of oxygen or other electron acceptors and the types and populations of microorganisms present in the media. The mineralization of organic compounds by microbial organisms takes place in those environments where the constituent can provide an energy source for the microbial biofilm inhabiting the solid matrix of the media. Biodegradation can be predicted based on the K_{ow} of a constituent. The persistence of a constituent in the environment is described by its environmental half-life (Baker, et. al., 1994). The environmental half life, $t_{1/2}$, is an empirical parameter used to quantify the mass lost as a function of biodegradation, abiotic degradation, and volatilization. The environmental half life of a constituent may be expressed in terms of a decay constant, L where:

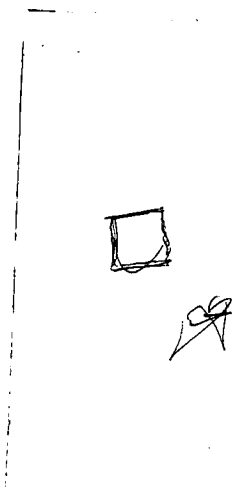
$$L = \ln (2)/t_{1/2}$$

6.2.3.2 Abiotic Degradation

Abiotic degradation occurs where chemically active co-contaminants are active in the media. Co-metabolism can be either a detoxifying mechanism or one in which a more toxic daughter compound is produced (National Research Council, 1993). Abiotic processes include hydrolysis and photolysis.

6.2.3.3 Sorption

Sorption is the bonding of a dissolved constituent to a solid phase material. This process is a function of the constituent concentration, the quantity of solid material present, and the K_{ow}. The degree of sorption is an attenuation mechanism that limits migration of a constituent by removing mass from the mobile dissolved phase. The attenuation due to sorption is represented by Rd, the retardation coefficient, and is defined by the following relationship (Freeze, et. al., 1979):



$$R_d = 1 + p_b K_d / n_e$$

where: p_b = bulk density of the Soil
K_d = the soil-water partition coefficient (distribution coefficient)
n_e = effective porosity of the soil

The distribution coefficient, K_d, is defined as the concentration of the constituent sorbed to the solid phase divided by that constituent concentration dissolved in the pore water. For non-ionic constituents such as VOCs, K_d can be determined as follows:

$$K_d = f_{oc} K_{oc}$$

where: f_{oc} = ratio of organic carbon to dry soil
K_{oc} = organic carbon sorption coefficient

6.2.3.4 Dissolution and Precipitation

The dissolution and precipitation of solids are important components of constituent transport in ground water. Metals species are especially susceptible to mineral precipitation when the concentration in ground water exceeds saturation conditions. Dissolution of dissolved constituents in ground water is dependent upon the ground water chemistry and pH, and the solubility of the constituent.

6.3 Behavior of Site Constituents in Soil and Ground Water

An overview of the environmental fate and transport evaluations completed for the constituents detected at the facility is provided in the following subsections. The overview includes an analysis of constituent mobility and persistence once introduced into site soil and ground water.

Constituents from two groups were detected in one or more SWMUs/AOCs at the facility including:

1) volatile organic compounds (VOCs), and
2) semi-volatile organic compounds (SVOCs).

Chemical property data are presented in Table 14; transport properties are summarized in Table 15, and chemical degradation information are summarized in Table 16. These data were evaluated to discern the potential for mobility and persistence of constituents in soil and ground water. Chemical property data which are used primarily in determining the potential mobility/volatility of chemicals in ground water and soils include vapor pressure, Henry's Law constant, water solubility, partition coefficients K_{oc} and K_{ow} and molecular weight. A discussion of how these chemical properties affect the fate and transport of constituents detected at the Akzo Nobel facility is presented in the following sections.

TABLE 14. PHYSICAL AND CHEMICAL PROPERTIES FOR CONSTITUENTS DETECTED DURING RFI

VOLATILE ORGANIC COMPONENTS	VAPOR PRESSURE (mm/Hg)	Henry's Law Constant (atm-cu.meter/mole)	Water Solubility (mg/L)	Log Kow (see notes)	Log Koc (see notes)	Molecular Weight (g/g mol)	Specific Gravity @ 20 degress C	Water Solubility Description
Acetone	2.31E+02 @ 25 C	3.67E-05	Miscible	-0.24	0.32	58.1	0.79	hydrophilic
Benzene	9.50E+01 @ 25 C	5.43E-03	1.79E+03 @ 25 C	2.13	2.02	78.1	0.88	mod. hydrophobic
Bromodichloromethane	5.00E+01 @ 20 C	1.60E-03	4.70E+03 @ 22 C	2.1	2.00	163.8	1.971 @ 25/25 C	mod. hydrophobic
Bromomethane	1.42E+03 @ 20 C	6.78E-03	9.00E+02 @ 20 C	1.41	1.51	95.0	1.73 @ 0/0 C	mod. hydrophobic
Butanone, 2-	9.06E+01 @ 25 C	1.05E-05	2.39E+04 --	0.29	0.70	72.1	0.85	hydrophilic
Carbon Disulfide	2.97E+02 @ 20 C	1.40E-02	2.10E+03 @ 20 C	1.84-2.16	1.81-2.05	76.1	1.26	mod. hydrophobic
Chlorobenzene	1.19E+01 @ 25 C	3.45E-03	4.72E+02 @ 25 C	2.84	2.53	112.6	1.113 @ 15.5 C	mod. hydrophobic
Chloroethane	1.00E+03 @ 20 C	8.48E-03	5.74E+03 @ 20 C	1.43	1.52	64.5	0.92 @ 0 C	mod. hydrophobic
Chloroform	2.46E+02 @ 25 C	4.35E-03	7.95E+03 --	1.97	1.91	119.4	1.49 @ 15 C	mod. hydrophobic
Chloromethane	4.31E+03 --	4.40E-02	6.50E+03 --	0.95	35	50.5	0.991 @ -25 C	mod. hydrophobic
Dichloroethane, 1,1-	2.27E+02 @ 25 C	5.87E-03	5.06E+03 @ 25 C	1.79	1.78	99.0	1.174	mod. hydrophobic
Dichloroethene, 1,1-	5.00E+02 @ 20 C	3.40E-02	2.25E+03 --	1.84	1.81	97.0	1.218 @ 20/4 C	mod. hydrophobic
Dichloroethene, 1,2- (cis)	2.00E+02 @ 25 C	3.37E-03	8.00E+02 @ 20 C	1.86	1.83	97.0	1.28	mod. hydrophobic
Dichloroethene, 1,2- (trans)	3.40E+02 @ 25 C	6.72E-03	6.00E+02 @ 20 C	2.09	1.99	97.0	1.26	mod. hydrophobic
Dichlorobenzene, 1,2-	1.47E+00 @ 25 C	1.20E-03	1.56E+02 @ 25 C	3.38	2.92	147.0	1.305	mod. hydrophobic
Dichlorobenzene, 1,3-	2.30E+00 @ 25 C	1.80E-03	1.11E+02 @ 20 C	3.6	3.08	147.0	1.288	mod. hydrophobic
Dichlorobenzene, 1,4-	1.76E+00 @ 25 C	1.50E-03	8.70E+01 @ 25 C	3.52	3.02	147.0	1.4581 @ 20.5 C	mod. hydrophobic
Ethylbenzene	9.53E+00 @ 25 C	8.44E-03	1.61E+02 @ 25 C	3.15	2.76	106.2	0.8669 @ 29 C	mod. hydrophobic
Methylene Chloride	4.35E+02 @ 25 C	2.68E-03	1.30E+04 @ 20 C	1.25	1.39	84.9	1.3255 @ 20 C	mod. hydrophobic
Tetrachloroethene	1.85E+01 @ 25 C	1.49E-02	1.50E+02 @ 25 C	3.4	2.94	165.8	1.62	mod. hydrophobic
Toluene	2.84E+01 @ 25 C	5.94E-03	5.35E+02 @ 25 C	2.73	2.46	92.1	0.87	mod. hydrophobic
Trichloroethene	6.90E+01 @ 25 C	1.03E-02	1.11E+03 @ 25 C	2.42	2.23	131.4	1.46	mod. hydrophobic
Trichloroethane, 1,1,1-	1.24E+02 @ 25 C	8.00E-03	1.50E+03 @ 25 C	2.49	2.26	133.4	1.35	mod. hydrophobic
m & p-Xylene	8.28-8.74 @ 25 C	7.60E-03	1.46E+02 --	3.15-3.20	2.76-2.8	106.2	0.86	mod. hydrophobic
o-Xylene (Total)	6.60E+00 @ 25 C	5.10E-03	1.75E+02 @ 25 C	3.12	2.23	106.2	0.86	mod. hydrophobic
SEMI-VOLATILE ORGANIC COMPOUNDS								
Acetophenone	3.97E-01 @ 25 C	1.07E-05	6.13E+03 --	1.58	1.63	120.1	1.03	mod. hydrophobic
Benzo(a)Pyrene	5.00E-09 --	5.53E-05	3.00E-03 --	6.04	4.84	252.3	NA	strongly hydrophobic
Butylbenzylphthalate	8.60E-06 @ 20 C	1.30E-06	2.69E+00 @ 25 C	4.91	4.03	312.4	1.116 @ 25 C	strongly hydrophobic
Dimethylphthalate	1.65E-03 --	1.10E-07	4.00E+03 --	1.56	2.1	194.2	1.120 @ 25 C	mod. hydrophobic
Di-n-Butylphthalate	1.40E-05 @ 25 C	4.60E-07	1.12E+01 @ 25 C	4.72	3.89	278.3	1.0465	hydrophobic
Naphthalene	8.20E-02 @ 25 C	4.83E-04	3.17E+01 @ 25 C	3.3	2.87	128.2	1.162	mod. hydrophobic

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NOTES:

For some compounds the Henry's Law Constant was calculated from available vapor pressure and water solubility data.
Log Koc based on the linear regression relationship established by Schwertzenback Westall, 1981 log Koc = 0.49 +0.72 log Kow
Log Kow = logarithm (base 10) of the octanol/water partition coefficient
Log Koc = logarithm (base 10) of the organic carbon/water partition coefficient
NA=not available

TABLE 15
POTENTIAL DEGRADATION MODES AND DEGRADATION PRODUCTS

	Description	
Chemical Group/Chemical	**Abiotic**	**Biodegradation**
Volatile Organics		
Acetone	Photodegradation is not a significant degradation process.	Readily biodegrades aerobically and anaerobically.
Benzene	Hydrolysis is not a significant degradation process.	Subject to biodegradation under aerobic conditions, but not likely under anaerobic conditions.
Bromodichloromethane	Hydrolysis, oxidation, photolysis are not significant degradation processes.	Susceptible to aerobic and anaerobic degradation.
Bromomethane	No information.	No information.
2-Butanone	No information.	Susceptible to aerobic and anaerobic degradation.
Carbon disulfide	Photolysis is not a significant degradation process. Photooxidizes to carbon monoxide, carbonyl sulfide,	Difficult to degrade.
Chlorobenzene	Resistant to photolysis, hydrolysis or oxidation.	Susceptible to aerobic and anaerobic degradation. Aerobic conditions favored. Degradation products include 2-chlorophenol, 4-chlorophenol.

TABLE 15
POTENTIAL DEGRADATION MODES AND DEGRADATION PRODUCTS

	Description	
Chemical Group/Chemical	**Abiotic**	**Biodegradation**
Chloroethane	No information.	Biodegradation may occur, but at slow rates.
1,1-Dichloroethane	No information.	Biodegradation may occur, but at slow rates.
Dichloroethenes	No information.	Biodegradation may occur, but at slow rates.
Chloroform	Negligible rate of hydrolysis. Photodegradation does not appear to be a significant loss process.	Conflicting data on biodegradation of chloroform. Slow but substantial biodegradation reported under suitable conditions.
Chloromethane	No information.	Biodegradation may occur, but at slow rates.
Dichlorobenzenes	Degradation through hydrolysis, photolysis and oxidation considered insignificant.	Susceptible to slow aerobic degradation.
Ethylbenzene	Resistant to hydrolysis. Photolysis considered insignificant but may be photooxidized.	Biodegrades aerobically and anaerobically. Aerobic conditions favored.
Methylene chloride	No information.	Biodegradation may occur, but at slow rates.

TABLE 15
POTENTIAL DEGRADATION MODES AND DEGRADATION PRODUCTS

	Description	
Chemical Group/Chemical	**Abiotic**	**Biodegradation**
Tetrachloroethene	Hydrolysis is not a significant degradation process.	Biodegradation may be an important process in aerobic soils. Slow biodegradation may occur in ground water and soil.
Toluene	Subject to photo oxidation; will not significantly hydrolyze or directly photolyze.	Biodegrades aerobically and anaerobically. Aerobic conditions favored.
Trichloroethene	Hydrolysis and photo oxidation are not significant degradation processes.	Biodegradation may occur in ground water and soil, but at slow rates.
Xylenes	Not significant source of degradation in soils and ground water.	Biodegrades aerobically and anaerobically. Aerobic conditions favored.

TABLE 15
POTENTIAL DEGRADATION MODES AND DEGRADATION PRODUCTS

	Description	
Chemical Group/Chemical	**Abiotic**	**Biodegradation**
Semi-Volatile Organics		
Acetophenone	Ketones, in general, are resistant to hydrolysis.	Biodegradation is a major degradation process.
Benzo(a)pyrene	Not susceptible to hydrolysis. Susceptible to photolysis.	Susceptible to biodegradation.
Benzoyl peroxide	No information.	May be subject to biodegradation in soil and ground water. Breakdown products include benzene, biphenyls, triphenyls, and benzoic acid.
Methyl Ethyl Ketone Peroxide	No information.	May be subject to degradation in soil and ground water. Breakdown products include methyl ethyl ketone, acetone, ethanol, acetic acid, and ethyl acetate.
Naphthalene	No information.	Susceptible to biodegradation.
Phthalates	Hydrolysis, photolysis, photo oxidation considered slow.	Susceptible to biodegradation.

TABLE 16
TRANSPORT PROPERTIES

Chemical Group/Chemical	Mobility (K_{oc} and Water Solubility)	Volatility (Vapor Pressure Henry's Law)	Areas Detected
Volatile Organics			
Acetone	Very high to high mobility in soil; therefore, may readily leach to ground water.	Should readily volatilize from soil surface and ground water.	SWMU 3 soil and ground water, SWMU 24 soil and ground water, and SWMU 5/6 soil
Benzene	Very high to high mobility in soil; therefore may readily leach to ground water.	Volatilization from surface soil and ground water expected to be rapid.	SWMU 3 and SWMU 17 ground water
Bromodichloromethane	Moderate to high mobility in soil; can therefore may leach to ground water.	Volatilization from surface soil and ground water expected to be rapid.	SWMU 3 ground water
Bromomethane	Moderate to high mobility in soil; can therefore, may leach to ground water.	Volatilization from surface soil and ground water expected to be rapid.	SWMU 24 soil
2-Butanone	Moderate mobility in soil; therefore may readily leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 soil
Carbon disulfide	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to volatilize from soil and ground water.	SWMU 24 ground water
Chlorobenzene	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to exhibit moderate volatility from ground water and soil.	SWMU 3 ground water

TABLE 16
TRANSPORT PROPERTIES

Chemical Group/Chemical	Mobility (K_{oc} and Water Solubility)	Volatility (Vapor Pressure Henry's Law)	Areas Detected
Chloroethane	Moderate mobility in soil; can leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 ground water
1,1-Dichloroethane	Moderate mobility in soil; can leach to ground water.	High vapor pressure and low adsorption to soil; would therefore volatilize rapidly from soil. Fate in ground water unknown. Volatilization is principle removal mechanism.	SWMU 3 ground water
Dichloroethenes	Moderate mobility in soil; can leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 ground water
Chloroform	Moderate to high mobility in soil; can leach to ground water.	Expected to volatilize rapidly in surface soils and ground water.	SWMU 24 and SWMU 3 soil
Chloromethane	Moderate to high mobility in soil; can leach to ground water.	Expected to volatilize rapidly in surface soils and ground water.	SWMU 24 soil
Dichlorobenzenes	Moderate mobility in soil, some tendency to adsorb to soil is likely.	Expected to volatilize from ground water and soil.	SWMU 3 soil and ground water SMWU 16 ground water
Ethylbenzene	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to volatilize from soil and ground water.	SWMU 3 soil and ground water SWMU 16 ground water

TABLE 16
TRANSPORT PROPERTIES

Chemical Group/Chemical	Mobility (K_{oc} and Water Solubility)	Volatility (Vapor Pressure Henry's Law)	Areas Detected
Methylene chloride	High mobility in soil; may readily leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 and SWMU 24 soil
Tetrachloroethene	High mobility in soil; can readily leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 ground water and soil, and SWMU 24 soil
Toluene	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to volatilize from soil and ground water.	SWMU 3 ground water and soil SWMU 17 ground water SWMU 5/6 soil SWMU 24 soil
Trichloroethene	High mobility in soil, may readily leach to ground water.	Expected to volatilize from unsaturated soil. Remains relatively stable in ground water.	SWMU 3 ground water and soil, and SWMU 24 soil
Xylenes	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to volatilize from soil and ground water.	SWMU 3 ground water and soil SWMU 17 ground water AOC E soil

TABLE 16
TRANSPORT PROPERTIES

Chemical Group/Chemical	Mobility (K_{oc} and Water Solubility)	Volatility (Vapor Pressure Henry's Law)	Areas Detected
Semi-Volatile Organics			
Acetophenone	Moderate to high mobility in soil, some tendency to adsorb to soils/sediments likely.	Expected to volatilize from soil and ground water.	SWMU 31 soil
Benzo(a)pyrene	Limited to extremely limited mobility in soil due to hydrophobic to strong hydrophobic nature.	Expected to exhibit low volatility from soil and ground water.	AOC E soil
Naphthalene	Moderate mobility in soil, some tendency to adsorb to soil/sediment.	Expected to exhibit moderate volatility from soil and ground water.	SWMU 17 ground water
Phthalates	Extremely limited mobility in soil due to strong hydrophobic nature, strong tendency to adsorb to soil/sediment.	Expected to exhibit low to no volatility from soil and ground water.	SWMU 24 ground water and soil SWMU 3 ground water and soil SWMU 16 and 17 soil SWMU 5/6 soil

6.3.1 Volatile Organic Compounds

Twenty-three VOCs were reported in site soil and ground water, including:

- halogenated hydrocarbons and aromatics (e.g., dichloroethanes, dichlorobenzene)
- nonhalogenated aromatics (e.g., benzene)
- ketones (e.g., acetone)
- other (e.g., carbon disulfide)

Acetone, toluene, xylenes, benzene, 1,3-dichlorobenzene, tetrachlorethene were the most frequently detected VOCs in site soil and ground water. All of these tend to be highly to moderately mobile in soil since they are not expected to adsorb strongly to soils based on K_{oc} values. Additionally, these compounds are expected to volatilize appreciably from soils based on vapor pressure values. If leached to ground water, these VOCs are expected to be somewhat mobile based on their moderate hydrophobicity. Acetone is hydrophilic. Henry's Law constants and vapor pressures indicate that the loss of these compounds through volatilization may be significant in shallow ground water and surface soil. The majority of the remaining less frequently detected VOCs are expected to behave similarly.

The non-chlorinated VOCs are readily susceptible to biodegradation with aerobic conditions favoring degradation. Chlorinated hydrocarbons, such as 1,3-dichlorobenzene and tetrachlorethene, biodegrade at much slower rates and are relatively stable in ground water. Loss of these compounds through photolysis, hydrolysis, and oxidation is considered insignificant.

Carbon disulfide will not readily biodegrade; however, it has the potential for degrading via photo-oxidation. Carbon disulfide can also form as a result of bacterial metabolism under reducing conditions. Carbon disulfide is highly volatile and oxidizes to carbonic acid and sulfate under oxidizing conditions in ground water.

6.3.2 Semi-Volatile Organic Compounds

Six SVOCs were reported in site soil and ground water. The SVOCs detected included: acetophenone, benzo(a)pyrene, butylbenzylphthalate, dimethylphthalate, di-n-butylphthalate, naphthalene. The SVOCs were present at ppb levels in soil and ground water in RFI samples.

Phthalates and benz(a)pyrene have limited to extremely limited mobility in soils due to their strong tendencies to be adsorbed. In general, both groups of compounds would be expected to exhibit low volatility from soils. Phthalates and benzo(a)pyrene have limited to extremely limited mobility in ground water based on their hydrophobicity and strong tendency to sorb to soil. In most cases, the Henry's Law constants indicate that phthalates and benzo(a)pyrene are not susceptible to loss from ground water via volatilization. Both phthalates and benzo(a)pyrene are susceptible to aerobic biodegradation and have limited potential for degradation through hydrolysis, photolysis, or oxidation.

Two SVOCs detected in site soil which are moderately mobile are acetophenone and naphthalene. Naphthalene exhibits moderate mobility in ground water, with some tendency to adsorb to soils. Acetophenone has a high water solubility and therefore would tend to be mobile in ground water. In general, both constituents are potentially susceptible to aerobic degradation.

6.4 Routes of Migration

Potential constituent migration pathways for constituents detected at the facility were identified and characterized for the following media:

- soil
- ground water
- air

The potential migration pathways for each constituent reported at the site were characterized according to the following designations: "None" or "Not Applicable"; "Potential Pathway" and "Existing Pathway." Details regarding the potential migration pathways for each media evaluated are provided in the following subsections.

6.4.1 Soil

Migration of constituents in soil (vadose zone and saturated zone) may occur through both fluid flow and vapor phase transfer to ground water and air.

Constituent migration depends on the physical and chemical characteristics of the constituent, including the water solubility and vapor pressure, and the physical and chemical conditions of the soil, including moisture content, organic carbon content, temperature, and geotechnical characteristics. The complexities of transport in the vadose zone are based on pore pressure fluctuations within the soil media resulting from wetting and drying zones (Howard, 1989). Changes in soil moisture content, which ultimately result in fluctuations in the water table elevations and the thickness of the vadose zone, affect the mobility of the constituent in soil.

Constituent transport in the vadose zone is generally vertical. Vapors may move upward from the water table or liquids and vapors may migrate downward from the ground surface or a subsurface source located above the water table. Extensive lateral migration within the vadose zone, except under restrictive conditions such a permeability heterogeneities, is limited to the transportation of contaminants in the vapor phase.

Limited VOCs and SVOCs have been detected in soil at SWMUs 3, 5, 6, 16, 23, 24 and 31, and AOC E. Constituents within the subsurface soils will generally be mobilized only during transport of fluids through the soil media via infiltration of precipitation. Some of the SVOCs detected (benzo(a)pyrene and phthalates) have an affinity to sorb onto soil media as opposed to partitioning into the liquid phase. The generally more soluble VOCs and SVOCs, however, are subject to flushing and leaching from soil. Soil transport has been identified and characterized

as an existing migration pathway for VOCs and SVOCs detected in soil at SWMUs 3, 5, 6, 16, 23, 24 and 31, **and** AOC E.

6.4.2 Ground Water

Dissolved, liquid, or solid phase constituents may undergo ground water transport provided ground water flow gradients are adequate to mobilize the solutes, liquids, or solids present in the ground water (Howard, 1989). Migration via ground water can be significant in transporting contaminants away from a source area. The most significant migration mechanisms include advection, dispersion and diffusion as discussed below.

Advection

Advection is the most significant mechanism of constituent transport in ground water (Fetter, 1993). Advection is the process of contaminant mass being transported away from a source by the bulk mass of ground water flow. Because advection occurs in conjunction with bulk fluid flow, the direction and velocity of the resulting transport are approximately equal to the general direction and average linear velocity. For ground water, the average linear velocity is a function of the unit ground water discharge and the porosity of the soil media. Average linear velocity at the facility has not been determined at this time but it is expected to be low due to the presence of finely grained silt material in the subsurface soils.

Dispersion

Dispersion is a secondary transport mechanism of constituents in ground water. Dispersion is the result of three processes affecting the velocity of the fluid with which the constituent is transported. The three processes responsible for dispersion are tortuosity, differences in pore sizes and roughness, and drag within the pore channel resulting in changes in fluid velocities (Freeze et. al., 1979). These three processes result in attenuation of the advective transport plume, decreasing the peak constituent concentration but extending the lateral extent of the constituent plume. Dispersion has a significant effect on ground water transport of constituent.

Diffusion

Diffusion is the mass spreading of the constituent plume due to concentration gradients (Schwartzenbach, 1993). Transport concentration gradients in ground water result from variations on flow directions and velocities due to heterogeneities in the permeability of the soil or fractured bedrock media. Diffusion is a second order attenuation mechanism in most ground water systems.

Constituents including VOCs and SVOCs have been reported in facility ground water near SWMUs 3, 24, 16 and 17. Constituent migration in ground water is dominated by bulk fluid flow mechanisms and generally follows the direction of the shallow ground water flow (Fetter, 1993). Therefore, ground water transport has been identified as an existing migration pathway for VOCs and SVOCs detected in SWMUs 3, 24, 16, and 17. Data available to date indicate that

ground water impacts are limited to localized sources with a limited lateral extent within the boundaries of the Akzo Nobel facility.

6.4.3 Air

Generally, the migration pathway of air exists for all constituents detected in soil and for volatile constituents found in ground water. The migration pathways of constituents in air include one or more of the following:

- airborne migration of dusts containing solid phase constituents;
- volatilization of constituents from soil and ground water.

Potential overland airborne migration of constituents (SVOCs) in dusts is limited as a migration pathway at the Akzo Nobel facility due to flat topography and the presence of extensive vegetation.

Volatilization of constituents from soil and ground water represents a potential or existing migration pathway for constituents detected at the facility. Therefore, air transport has been identified as an existing migration pathway for VOCs detected in soil and ground water at SWMUs 3, 5, 6, 16, 17, 23, and 24 and AOC E.

SECTION 7

HEALTH AND ENVIRONMENTAL ASSESSMENT

7.1 Introduction

The following section presents a health and environmental assessment of potential exposures which may be associated with impacted soils and ground water at the Akzo Nobel facility in Burt, New York. The objective of this assessment is to evaluate the potential adverse health effects to receptor populations potentially exposed to chemical residues at the facility. This section presents an evaluation of contaminants of concern, toxicity assessment, hazard identification and exposure assessment.

7.2 Identification of Contaminants of Concern

Table 17, presents the threshold action levels for soil and ground water to which detected sample concentrations are compared. Action levels for soil and ground water are derived from TAGM 3038 and 6NYCRR 703.5 Standards. Contaminants for which an exceedance was noted during the RFI, are highlighted with bold font.

TABLE 17. ACTION LEVELS FOR SOIL AND GROUND WATER

		Threshold ([a]) Action Level	
Contaminant	**Media w/Exceedance**	**Soil ([b]) (mg/kg)**	**Ground Water ([b]) (ug/L)**
Acetone	Soil, GW	0.2	50
Benzene	GW	0.06	0.7
Bromodichloromethane		N/A	N/A
Bromoform		N/A	N/A
Bromomethane		N/A	N/A
2-Butanone		0.3	50
Carbon Disulfide		2.7	50
Carbon Tetrachloride		0.6	5
Chlorobenzene	GW	1.7	5
Chloroethane		1.9	50
2-Chloroethyl **vinyl** ether		N/A	N/A

TABLE 17. ACTION LEVELS FOR SOIL AND GROUND WATER			
		Threshold ([a]) Action Level	
Contaminant	Media w/Exceedance	Soil ([b]) (mg/kg)	Ground Water ([b]) (ug/L)
Chloroform		0.3	7
Chloromethane		N/A	N/A
Dibromochloromethane		N/A	50
1,2-Dichlorobenzene		7.9	4.7
1,3-Dichlorobenzene	GW	1.6	5
1,4-Dichlorobenzene		8.5	5
1,1-Dichloroethane	GW	0.2	5
1,2-Dichloroethane		0.1	0.8*
1,1-Dichloroethene		0.4	5
1,2-Dichloroethene (cis)		0.25	5
1,2-Dichloroethene (trans)		0.3	5
Dichloromethane		0.1	5
1,2-Dichloropropane		N/A	N/A
cis-1,3-Dichloropropene		N/A	N/A
trans-1,3-Dichloropropene		N/A	N/A
Ethylbenzene	GW	5.5	5
2-Hexanone		N/A	N/A
4-Methyl-2-pentanone		1	50
Styrene		N/A	N/A
1,1,2,2-Tetrachloroethane		0.6	5
Tetrachloroethene		1.4	5
Toluene	GW	1.5	5
1,1,1-Trichloroethane	GW	0.8	5

TABLE 17. ACTION LEVELS FOR SOIL AND GROUND WATER			
		Threshold ([a]) Action Level	
Contaminant	Media w/Exceedance	Soil ([b]) (mg/kg)	Ground Water ([b]) (ug/L)
1,1,2-Trichloroethane		N/A	0.6*
Trichloroethene		0.7	5
Vinyl acetate		N/A	N/A
Vinyl chloride		0.2	2
Xylenes (Total)	GW	1.2	5
Pyridine		N/A	N/A
Butylbenzylphthalate	Soil (RFA)	50	50
Di-n-butylphthalate	Soil (RFA)	8.1	50
Naphthalene	GW	13	10
Dimethylphth**alate**		2	50
Acetophenone		N/A	N/A
Benzo(a)pyrene		0.061 or MDL	0.002 (ND)
TOC		N/A	N/A

([a])The threshold action level is the concentration below which no further action will be taken. Concentrations detected above the threshold may require additional investigation and/or remediation.
([b])Value derived from TAGM 3038, except as noted with an asterisk.
*Value derived from 6 NYCRR 703.5 Standards.
N/A = Not Available
MDL = Method Detection Limit

Integrated results of the RFA-SV and RFI field investigations were compared to the action levels for soil and ground water presented in Table 17 to identify contaminants of concern and the media and SWMUs/AOCs with which exceedances are associated. Results of that comparison are presented below. Contaminants of concern are those constituents which were detected above the action levels listed in Table 17.

Contaminant of Concern	Medium	SWMU/AOC Where Detected Above Action Level
Acetone	Soil	SWMU 5/6
Acetone	Ground Water	SWMU 3 (Eastern ground water depression)
		SWMU 24 and downgradient area
Benzene	Ground Water	SWMU 5/6 hotspot between Bldgs. 18 and 19
	Ground Water	SWMU 17
Chlorobenzene	Ground Water	SWMU 5/6 hotspot between Bldgs. 18 and 19
1,1-Dichloroethane	Ground Water	Western end of SWMU 5/6 hotspot
1,3-Dichlorobenzene	Ground Water	East of Building 3
Ethylbenzene	Ground Water	SWMU 17
Toluene	Ground Water	SWMU 17
1,1,1-Trichloroethane	Ground Water	Downgradient of SWMU 5/6
Xylenes	Ground Water	SWMU 17
Naphthalene	Ground Water	SWMU 17
Butylbenzylphthalate	Soil	SWMU 24
Di-n-butylphthalate	Soil	SWMU 24

7.3 Exposure Assessment

Potential receptors at the Akzo Nobel facility include industrial workers, construction workers and visitors. The industrial worker population is defined as adults who access the facility on a daily basis to perform their respective duties toward the operation of the facility. Visitors and construction workers are those adults who access the facility on an irregular basis. Offsite residents are considered limited receptors since Akzo Nobel will always maintain an industrial land use for this facility and will limit future land use with deed restrictions.

Exposure to surface soil is considered an exposure route for industrial workers, construction workers and visitors. Exposure to sub-surface soil is a likely exposure route for construction workers only. Exposure to on-site ground water is not a significant pathway since facility

ground water is used only for filling the fire pond. Construction workers may be exposed to shallow on-site ground water. Off-site migration of ground water is unlikely based on currently available data; therefore this pathway is incomplete. Exposure to volatilized site constituents in air is a complete pathway for industrial workers, construction workers, visitors and off-site residents; however, the effects of aerial dispersion would result in significant dilution of constituents in air beyond the immediate source area.

7.4 Toxicity Assessment

A dose response assessment for site related compounds is not appropriate at this time since site data are limited. TRC qualitatively evaluated contaminants detected for frequency of detection above reference action levels in both soil and ground water, and for magnitude of such noted exceedances. The data indicate acetone is the primary contaminant of concern at the facility, in both soil and ground water. In ground water, benzene, relative to the 0.7 ppb reference action level, is a contaminant of concern as well. Presented below are toxicity profiles for these two detected contaminants.

Acetone

Noncarcinogenic Effects

Systemic Effects

Animal Studies

Limited information regarding oral exposure to acetone was located in the available literature. In a ninety-day gavage study in albino rats conducted by EPA (1986), increased liver weight and tubular degeneration of the kidneys were observed in the 2500 mg/kg group. There were no observed effects at 100 mg/kg/day. Sollman (1921) exposed rats to acetone in drinking water and, upon termination of the experiment, the test animals were found to be in normal health. In oral exposure studies, laboratory animals exhibited signs of narcosis but no biochemical or histological changes were seen.

Human Studies

In two studies, Parmeggiani and Sassi (1954) and Raleigh and McGee (1972) performed case studies on workers who were chronically exposed to 19-220 ppm and >750 ppm acetone, respectively. Both groups of workers complained of irritation of the mucosal membranes, including conjunctivitis, pharyngitis, bronchitis, and gastroduodenitis. In a more detailed experiment, Oglesby et al. (1949) regularly examined 800 men occupationally exposed to <2150 ppm acetone for 8 hours/day. No differences were noted between the workers and 800 control subjects.

Teratogenic and Other Developmental Effects

Acetone is known to cross the placental barrier, but, due to its low toxicity it would not be expected to cause any fetotoxic effects (EPA, 1984). No additional data regarding the teratogenicity of acetone were located in the available literature.

Mutagenic Effects

In seven studies reviewed by the U.S. EPA, only one indicated that acetone causes mutagenic effects. Kawachi, et al. (1980) reported that acetone caused chromosomal aberrations in unspecified cells. Acetone tested negatively for sister-chromatid-exchange, point mutations and cell binding in mouse lymphoma cells (EPA, 1984).

Carcinogenic Effects

U.S. EPA has considered the evidence regarding the carcinogenic effects of acetone to be inadequate. One experiment involving the effects of acetone painted on an unspecified laboratory animal gave negative carcinogenic results (EPA, 1984). No further data regarding the carcinogenicity of acetone were found in the available literature.

Benzene

Noncarcinogenic Effects

Systemic Effects

Human Studies

Target organs of benzene include bone marrow, central nervous tissues, and the respiratory system (NIOSH, 1987).

In a work environment, benzene can be acutely fatal to humans in extremely high concentrations (20,000 ppm) and can cause short-term effects such as dizziness and vomiting in humans exposed to lower levels (Sittig, 1991).

In elevated concentrations, benzene can be fatal within minutes (EPA, 1985). Initially benzene causes central nervous system depression, followed by acute arrythmia and cardiovascular collapse. If benzene in a liquid state is aspirated into the lung, immediately pulmonary edema and hemorrhaging can occur (Sittig, 1991). Benzene is known to cause aplastic anemia, leukopenia, and thrombocytopenia in humans as a result of chronic exposure. The latency period can be as long as 10 years (Sittig, 1991).

Both gavage and inhalation exposure of rodents to benzene have resulted in the development of neoplasia. The incidence of tumors, carcinomas, leukemias, and lymphomas have been shown to be directly proportional to the dosage administered (EPA, 1985).

Teratogenic, Mutagenic and Other Developmental Effects

Benzene is known to be a potent inhibitor of growth *in utero*. It has also been shown to cause chromosomal aberrations in the bone marrow cells of workers as a result of chronic exposure (EPA, 1985).

Pregnant mice were given gavage doses of benzene at levels between 0.3 and 1.0 mg/kg daily on days 6-15 of gestation. Increased mortality among the dams and resorption of embryos occurred for all levels (EPA, 1984). No teratogenic effects were noted in rabbits, rats, or fruit flies exposed to less than 550 ppm in the air.

Signs of mutagenicity amongst rabbits, mice, rats, and fruit flies were not seen when they were exposed to benzene levels of 550 ppm in the air.

Carcinogenic Effects

Benzene is classified as a Class A human carcinogen. Aksoy, et al. reported effects of benzene exposure among 28,500 Turkish employed in the shoe industry. The peak exposure was reported to be 210-650 ppm over a period of 10 years. An incidence of 13/100,000 leukemia cases was reported for the workers, compared to 6/100,000 for the general public (IRIS).

In a second study, the effects of benzene exposure on 748 white males employed in a rubber manufacturing industry were examined. A statistically significant increase in the mortality rate due to leukemia was noted for the population. There was no evidence of exposure to solvents other than benzene (IRIS).

Rinsky, et al. (1981) noted a statistically significant increase in the number of leukemia deaths in workers occupationally exposed to benzene. Exposure was estimated to be between 10 and 100 ppm, 8-hour TWA. Ott, et al. (1978) noted an increase in leukemia deaths in workers exposed to between 2 to 25 ppm, 8-hour TWA. The increase, however, was determined by EPA to be insignificant (IRIS, 1990). Wong et al. (1983) noted statistically significant increases in leukemias, lymphatic, and hematopoietic cancers in chemical plant workers exposed to benzene for at least 6 months. No statistical details were reported (IRIS).

Benzene was administered by gavage at doses of 50 and 250 mg/kg bw for 4 to 5 days/week for 52 weeks. Twenty five percent developed Zymbal gland tumors, 6.2 percent had skin carcinomas, and 12.1 percent had leukemias at the end of the 52 weeks (IRIS). Dogs exposed to 600 to 1000 ppm benzene for 12-15 days also developed leukemia (EPA, 1985).

7.5 Hazard Identification

Information from the exposure assessment and toxicity assessment are integrated in the risk characterization/hazard identification in order to determine the presence of human health risk or hazard. Statistical evaluation of the data collected to date is not practicable due to the limited numbers of samples collected from certain areas of concentrations elevated above the Table 15 action levels. Thus, a quantitative risk assessment is not being performed in this report. The

hazard identification is limited to those constituents and media in which exceedance of Table 15 action levels was noted in Section 7.2.

SECTION 8

NEED FOR INTERIM REMEDIAL MEASURES

Akzo Nobel has taken a number of interim remedial actions that have eliminated a number of potential contaminant source continuing release mechanisms. This is evidenced by the facility's extensive replacement of the Old Process Sewer Line, the Former Building 2B Separator and the Former Influent Wells. The western reach of the Old Process Sewer has been completely replaced with the exception of a small segment exiting Building 1; the eastern reach has been replaced with the exception of four pipe runs identified in Table 3. The facility has pro-actively removed 3,853.5 tons of stained and/or visually contaminated soil and appropriately disposed of it off site.

Based on the RFI data, as integrated with the RFA-SV data collected previously for these SWMUs, the following locations contain contamination above action levels:

- acetone in soil at SMWU 5/6;
- benzene, 1,1-dichloroethane, chlorobenzene, and 1,1,1-trichloroethane in ground water downgradient of SWMU 5/6;
- BTEX and naphthalene in ground water at SWMU 17;
- acetone in ground water at SWMU 24 and the eastern ground water depression;
- 1,3-dichlorobenzene in ground water east of Building 3;
- butylbenzylphthalate and di-n-butlyphthalate in soil at SWMU 16; and
- butylbenzylphthalate, dimethylphthalate and di-n-butylphthalate in soil at SWMU 24.

None of the locations cited above are an immediate threat to human health or the environment. Sewer line replacement and soil removal activities have reduced the potential for ongoing sources at SWMUs 3, 5, 6 and 16. Contamination of ground water with acetone at SWMU 24 appears to be limited to the isocontours presented in Section 5. Phthalate contamination in soil at SWMUs 16 and 24 is well defined and very limited and has not been a source to ground water. The presence of fuel product in ground water is likely at SWMU 17, the hotspot does not appear sufficiently extensive to warrant extensive interim measures.

The concentrations and distribution of contaminants, plus the qualitative screening data indicate the contamination present is limited in extent and within the main, developed portion of the Akzo Nobel Burt, NY property. Within the localized contaminated areas, concentrations of contaminants encountered were generally not surficial and were not indicative of significant secondary sources. The data are consistent with conditions encountered as a result of historic releases, and when coupled with actions taken by Akzo Nobel to remove primary release mechanisms and secondary sources (i.e., contaminated soils), no further interim measures are warranted at this time.

SECTION 9

CONCLUSIONS AND RECOMMENDATIONS

9.1 Introduction

Extensive investigation has been conducted at the Akzo Nobel facility. This RFI Report provides the recently generated data relevant to: (1) further characterization of soil and ground water at certain SWMUs/AOC identified during the RCRA Facility Assessment- Sampling Visit (RFA-SV); and (2) support of the implementation of corrective measures, if necessary. The RFA-SV, which was conducted by Groundwater Technologies, Inc. for Akzo Nobel, provided a large volume of data relative to site soil chemical characterization. Each SWMU/AOC in the soil boring program was investigated with a minimum of 4 soil borings and the Process Sewer (SWMU 3) was subjected to an extensive program of 22 borings. The RFA-SV investigations were more intensive than those usually performed at this stage of the corrective action process; yet, soil contamination was found to be limited to a few areas and localized within those areas. Consequently, the RFI was focused to primarily confirm RFA-SV soil results at most SWMUs/AOC, with limited ground water investigation at all SWMUs.

9.2 Summary of Work Performed

The focus of this RCRA Facility Investigation was to characterize the extent of contamination from releases at SWMUs 3, 5, 6, 16, 17, 23, 24, 31 and AOC E. Both soil and ground water contamination were investigated at the eight SWMUs, and soil contamination was evaluated at AOC E. Analytes included those detected during the RFA-SV above NYSDEC Soil Cleanup Objectives in addition to the VOCs cited in Table 5-1 of the Quality Assurance Project Plan (QAPP) submitted as Appendix C to the RFI Work Plan.

The RFI generated hydrologic data from numerous piezometers established throughout the Akzo Nobel Burt, NY facility. The piezometer-derived ground water elevation data served to determine the overall ground water flow direction and gradient at the facility.

A comprehensive soil gas survey was conducted by TRC along the Old Process Sewer. Akzo Nobel marked the locations of former manholes and locations where soil excavations associated with the sewer line replacement was conducted. The soil gas survey was conducted at the locations of former manholes for those manholes which have been replaced. Results of the survey indicated that for the West Sewer, the areas of elevated soil gas are restricted to areas in the vicinity of manholes MH-3 to MH-5, MH-7 to Building 2B, and MH-9. For the East Sewer Line, the areas of elevated soil gas were restricted to the MH-18 to Former Building 9 pipe run, one location along the MH-18 to MH-17 run and two areas south of the run, the MH-17 to Building 23 run, the MH-16 to Bulk Tank Storage run and the MH-12 to Building 22 run.

During the RFI, TRC advanced borings and collected soil samples from locations identified during the soil gas survey as having the greatest likelihood of yielding evidence of contamination. Soil borings were advanced at each of the major soil gas hotspots previously identified. The ground

water field screening was initially conducted at the 14 locations called for in the RFI work plan; however, ground water headspace readings encountered triggered contingent screening, which was subsequently conducted at over 200 additional locations across the facility. Ground water headspace screening was used to fully define the ground water headspace plumes present. Ground water samples were collected and screened from locations hydraulically downgradient of manholes, in addition to the hot spots identified on the soil gas concentration isopleths.

9.3 Summary of Observations Made During RFI Activities

Facility Wide Ground Water Investigations

Ground water investigations were expanded dramatically over the level of investigation scoped in the RFI work plan. An in-depth, field screening characterization was conducted, in response to initial positive ground water headspace determinations. This placement of approximately 247 temporary ground water monitoring points provided extensive hydrologic and screening level chemical data for the entire developed portion of the subject property. The ground water headspace chemical screening data were compared to actual laboratory analytical results, and found to be conservative indicators of the presence of VOCs of interest in ground water. The data indicate no false negatives were encountered at any location with ground water headspace readings 10 ppmv or less. The breadth of coverage and conservative nature of the field screening data, coupled with the laboratory-generated high quality, validated ground water VOC data, provide substantial data/information regarding ground water elevations and chemical quality at the facility.

Ground water samples analyzed for VOCs and select SVOCs by the lab indicated ground water quality has been impacted at certain locations within the Akzo facility. SVOCs are generally absent, except for a fuel oil-related compound at SWMU 17. SWMU 17, a former fuel oil UST, contained BTEX and naphthalene at levels typically encountered within the immediate vicinity of a fuel oil tank that has historically had localized releases. A product layer was encountered at this location during the RFI. Free product (fuel oil) may exist at SWMU 17. VOCs are present at low concentrations with the exception of BTEX at SWMU 17 and acetone at SWMU 24 and the Eastern ground water depression. The area impacted has not been fully defined by ground water lab analysis; however, ground water headspace isocontours are consistent with lab VOC data, and are a conservative indicator of potential ground water VOC contamination. The RFI data indicate the existence of localized ground water VOC exceedances, which are likely limited to within the Akzo Nobel Burt, N.Y. facility property. Additional limited and focused ground water characterization, in locations of concern as delineated by the headspace screening and lab sample analytical effort, may be warranted to confirm RFI findings, conclude ground water investigations, and support corrective action decisionmaking.

SWMU 3/5/6

- Soils Investigations

Akzo Nobel conducted sewer improvement-related soils removals along the old process sewer line during 1995 and 1996. This soils removal program was largely complete by August 1996, with the exception of the area located east of Building 22. The area east of Building 22 was subject to the TRC RFI soil gas survey, and soils in this area were subsequently excavated and disposed off site during the course of pipe replacement actions. A total of 3,853.5 tons of soil were removed and appropriately disposed off site by Akzo Nobel. Soils removed were stained and or visually determined to be potentially contaminated. Limited sampling to support the removal action was conducted by Akzo Nobel.

Samples were collected from two borings at the edge of the area excavated during the influent well removal project (SB-5/6-1 and SB-5/6-2). SB-5/6-1 did not evidence contamination in either the headspace or the analytical data. SB-5/6-2 did yield both significant headspace readings in the lower depth sample intervals, and also resulted in the most significant acetone readings in all soil samples analyzed along the Process Sewer Line, with duplicate results of 210/380 ug/kg acetone reported. These results are marginally above the NYSDEC Soil Cleanup Objective (200ug/kg). Near the influent wells, residual contamination may remain, based on visual observations made during the influent well removal project and the two borings advanced in the RFI. This localized area may contain a secondary source of limited soil contamination. No further soil investigation is recommended, since the contamination present is limited to acetone marginally above the NYSDEC cleanup objective.

The results of the soils investigation along the Old Process Sewer Line indicated that none of the select SVOCs analyzed were found present at any significant concentrations or frequencies. The VOCs were dominated by acetone, with no other VOCs being present at any significant level. The levels of acetone found present in soils were in all cases less than 0.5 mg/kg. No evidence of any significant secondary contaminant source, with the potential to release acetone to ground water over time, was found. The data collected suggest the presence of VOCs in soils is likely attributable to migration of VOCs from the water table, as well as from historical releases over time. No evidence of any large scale, secondary source of VOCs/SVOCs in site soils within the Old Process Sewer Line vicinity was noted. No further soil investigation is warranted.

- Ground Water Investigations

The ground water headspace screening defined specific locations with elevated VOCs in ground water headspace within the Old Process Sewer Line study area which essentially encompasses the entire Akzo Nobel Burt, N.Y. facility. These headspace hotspots are likely the result of historic and/or ongoing releases from specific units at the Akzo facility. The AST Farms, the Former Building 2B Separator, the old landfill (SWMU 24), the burning cage (SWMU 23), and the influent well area (SWMU 5/6), plus historic sewer line releases at Building 2A/2B (SWMU 16) and Building 3 are potential sources for the VOCs found. The plumes appear localized and well constrained based on the ground water headspace determinations, and are within the Akzo Nobel

facility. Additional limited and focused ground water characterization at SWMU 3,5,6 may be warranted to confirm RFI ground water characterization, conclude ground water investigations, and support corrective action decisionmaking.

SWMU 16

- Soils Investigations

Based on negative analytical results from soil borings from the RFI and from SB-PS-19 during the RFA-SV, it can be concluded that the target phthalate contamination detected in soil in the RFA-SV was limited to the immediate area of SB-PS-20. No further soil characterization is warranted.

- Ground Water Investigations

During the RFI sampling effort, elevated readings of ground water headspace were noted at GWL-1 (700 ppm) and GWL-2 (5,000 ppm). Results of analysis indicate some low detections of VOCs below the detection limit of 10 ug/L for these two samples. As noted previously with the SWMU 3 ground water discussion, the headspace hotspot near Manhole 7 may indicate historic releases from the Former Process Sewer Line and/or historic releases from the former separator. The absence of ground water contamination with target phthalates demonstrates that a phthalate contamination of ground water has not occurred as a result of present or historic operation of the Building 2B Separator. These results confirm the hypothesis that intermedia transfer of phthalates from soil to ground water was unlikely due to the immobility of phthalates. These results also indicate that the presence of a limited secondary source of phthalates at SB-PS-20 should be of minimal concern. No further investigation of this SMWU for phthalate contamination is warranted. No further SWMU 16 ground water characterization is warranted.

SWMU 17

- Soils Investigations

Soil contamination above NYSDEC Soil Cleanup Objectives was not observed in the RFI borings. However, during ground water investigations, a product layer, presumed to be Fuel Oil, was encountered. Thus it is probable that localized capillary fringe soil contamination is present at the SWMU. It may be concluded that, at the ground water elevations encountered during the RFI, this zone may have been submerged. Since the contamination observed during the RFA-SV was also below the water table, investigation of the ground water table for fuel residuals is more appropriate than continued soils investigation.

- Ground Water Investigations

The ground water sample data show detection of BTEX and naphthalene was present at concentrations which are typical of fuel contamination and exceed the action levels for ground water. The screening headspace reading for ground water at this location was greater than 10,000 ppm. A product layer was noted present. The extent of the product layer and fuel-

related ground water contamination above action levels cannot be fully determined at this time but is not expected to be extensive based on results of samples collected downgradient of SWMU 17. Additional limited and focused ground water investigation for fuel contamination is warranted.

SWMU23

- Soils Investigations

Results of analysis of samples from B-6 indicate that only di-n-butylphthalate was detected in both samples, at 17 J ug/kg, which is below the detection limit for the analysis and far below the NYSDEC Soil Cleanup Objectives.

Soil gas readings were elevated along the pipe run from manhole 17 to Building 23; soil boring SB-I indicated the presence of ash at 2 to 4 feet BGS, which may indicate this location is associated with SWMU 23. The ash layer was sampled and analyzed for VOCs and SVOCs. The target phthalates were not detected. Only 1,3-dichlorobenzene was detected in soil, at 100 ug/kg.

Based on sampling results from the RFA-SV and RFI, it appears that contamination is limited to isolated, localized areas: dimethyl phthalate at SB-23-2 at 4 to 6 feet BGS; trace di-n-butylphthalate at the surface and 4 to 6 feet BGS at B-6; and, 1,3-dichlobenzene at SB-I. The extent of soil contamination has been well defined. No further soil investigation is necessary.

SWMU 24

- Soils Investigations

Samples collected in the RFI did not exceed soil cleanup objectives; however the soil data from the RFA-SV indicate the highest concentrations of constituents (8,000 to 730,000 J ug/kg), primarily target phthalates, between 2 and 6 feet BGS in the center of the SWMU 24 area. Phthalates were the only constituents in soil detected above 6NYCRR 703.5 action levels. Acetone was frequently detected below action levels in the perimeter borings in the RFI. The nature and extent of soils contamination has been established; no further investigation is necessary.

- Ground Water Investigations (with SWMU 23)

Acetone was detected at 58,000 J ug/L which is three orders of magnitude above the 6NYCRR 703.5 action level. Based on ground water headspace contours and rapid attenuation of acetone concentrations, it can be inferred that the acetone contamination in ground water is spacially limited to the proximity of SWMU 24; however additional data is necessary to confirm this hypothesis. The detection of significantly high concentrations of acetone in ground water with only minimal detections of acetone in soil suggest that the source of acetone is the ongoing degradation of landfill waste organic peroxides. Additional limited and focused ground water characterization may be warranted to confirm the localized, stable nature of the limited ground

water contamination documented in the RFI findings, conclude ground water investigations, and support corrective action decisionmaking.

SWMU 31

- Soils Investigations

Samples collected during the RFI reported acetophenone concentrations which are less than the NYSDEC Soil Cleanup Objective. Thus, contamination above action levels is limited to immediately beneath the foundation. No further investigation is necessary.

- Ground Water Investigations

A ground water sample, collected at the water table downgradient of the highest concentrations of acetophenone in soil, indicated that acetophenone was not present. No further investigation is necessary.

AOC E

- Soils Investigations

Soil sample analysis, indicates that the constituents of concern, BTEX and PAHs are well beneath action levels and are therefore not of concern. No further investigation is necessary.

SECTION 10

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TABLES

TABLE 1. REGULATORY STATUS OF SWMUs AND AOCs		
SWMU/ AOC	Description	Akzo Nobel Determination[a]
1	Hazardous Waste Container Storage Pad -Area 1	No Action -VSI
2	Hazardous Waste Container Storage Pad -Area 2	No Action -VSI
3[b]	Process Sewer	RFI
4	Destruction Tank	No Action -VSI
5[b]	East Influent Well	RFI[c]
6[b]	West Influent Well	RFI[c]
7	Holding Tank	No Action -VSI
8[b]	Equalization Basin	Deferred until scheduling permits
9	Settling Channel	No Action -VSI
10	Filter Carts	No Action -VSI
11	Primary Clarifier	No Action -VSI
12	East Sludge Tank	No Action -VSI
13	West Sludge Tank	No Action -VSI
14	Process Reactor	No Action -VSI
15[b]	Building 2 Sump	Deferred until scheduling permits
16[b]	Building 2B Separator	RFI
17[b]	Former UST No. 2 Area	RFI
18[b]	Former UST No. 9 Area	No Action Proposed - RFA-SV Addendum
19[b]	Sewer Pre-treatment Pit	One soil boring proposed for VOC analysis (RFA-SV Addendum)
20	Inside Building 2B Accumulation Area	No Action -VSI
21	Outside Building 2B Accumulation Area	No Action -VSI
22	QC Laboratory Accumulation Area	No Action -VSI
23[b]	Burning Cage	RFI
24[b]	Landfill Site No. 1	RFI
25[b]	Landfill Site No. 2	No Action - RFA-SV

TABLE 1. REGULATORY STATUS OF SWMUs AND AOCs		
SWMU/ AOC	Description	Akzo Nobel Determination[a]
26[b]	Landfill Site No. 3	No Action - RFA-SV
27[b]	Former Clay Pad Storage Area	No. Action - RFA-SV
28[b]	Dimethyl Phthalate Meter Leak	No Action - RFA-SV
29	Venturi Scrubber	No Action -VSI
30	Fume Scrubber	No Action -VSI
31[b]	Building 16 Drum Storage Area	RFI
32[b]	Debris Pile	No Action - RFA-SV
33[b]	Former Waste Sulfuric Acid Tank Area	No Action Proposed - RFA-SV Addendum
34	Empty Drum Storage Area No. 1	No Action -VSI
35[b]	Empty Drum Storage Area No. 2	No Action - RFA-SV
36[b]	Empty Drum Storage Area No. 3	No Action - RFA-SV
37	Truck Trailer Storage Area	No Action -VSI
A[b]	Dimethyl Phthalate Spill Area	No Action - RFA-SV
B[b]	Building 32 Fuel Line Leak	No Action Proposed - RFA-SV Addendum
C[b]	Former Underground Storage Tank No. 11 Area	No Action Proposed - RFA-SV Addendum
D[b]	Former Underground Storage Tank No. 12 Area	No Action Proposed - RFA-SV Addendum
E[b]	Former Underground Storage Tank No. 20 Area	RFI

([a])Determination based on Akzo Nobel's July 10, 1995 responses to NYSDEC comments from Thaddeus Moskal, P.E. dated June 13, 1995.
([b])Evaluated during RFA-SV.
([C])Added to RFI scope voluntarily by Akzo Nobel in July 1996 following preliminary RFA work.

Table 2. Old Process Sewer Line Status - West Sewer	
Sewer Line Appurtenance	**Old Sewer Line Status**
MH-1	Has been removed
MH-1 to MH-2 pipe run	Abandoned in place
MH-2	Abandoned in place
MH-2 to MH-3 pipe run	Abandoned in place
MH-3	Abandoned in place
MH-3 to MH-4 pipe run	Abandoned in place
MH-4	Removed/Replaced with new manhole in vicinity of former manhole location
MH-4 to MH-5 pipe run	Abandoned in place
MH-5	Removed/Replaced with new manhole in vicinity of former manhole location
MH-5 to MH-6 pipe run	Abandoned in place
MH-6	Removed/Replaced with new manhole in vicinity of former manhole location
MH-4 to MH-7 pipe run	Abandoned in place
MH-7	Abandoned in place
MH-7 to SWMU 16 pipe run	Abandoned in place
SWMU 16 to Bldg. 2B pipe run	Abandoned in place
MH-8	Removed/Replaced with new manhole in vicinity of former manhole location
MH-8 to MH-9 pipe run	Abandoned in place; approximately 20 ft. Removed during upgrade
MH-9	Removed with part of pipe run; replaced with new manhole located within Bldg. 3
MH-7 to MH-10	Abandoned in place
MH-10	Removed/Replaced with new manhole in vicinity of former manhole location
MH-10 to MH-11 pipe run	Abandoned in place
MH-11	Removed/Replaced with new manhole in vicinity of former manhole location

Table 2. Old Process Sewer Line Status - West Sewer	
Sewer Line Appurtenance	**Old Sewer Line Status**
MH-11 pipe run North (Abandoned Line)	Abandoned in place
MH-11 pipe run to Waste Water Bldg.	Abandoned in place

Table 3 Old Process Sewer Line Status - East Sewer	
Sewer Line Appurtenance	**Old Sewer Line Status**
MH-18 pipe run to Waste Water Bldg.	Abandoned in place; approximately 20 ft. Removed during upgrade
MH-18	Abandoned in place
MH-18 to Former Bldg. 9 pipe run	Abandoned in place
MH-18 to MH-17 pipe run	Abandoned in place
MH-17	Abandoned in place
MH-17 to MH-16 pipe run	Abandoned in place
MH-17 to Bldg. 23	**Currently In service**
MH-16	Abandoned in place
MH-16 to MH-15 pipe run	Abandoned in place
MH-15	Abandoned in place
MH-15 to Bldg. 20	Abandoned in place
MH-16 to Bulk Tank Storage pipe run	Abandoned in place
MH-16 to MH-13 pipe run	Abandoned in place
MH-14 to Bldg. 20 pipe run	**Currently In service**
MH-14	**Currently In service**
MH-14 to MH-13 pipe run	**Currently In service**
MH-13	Removed/Replaced with new manhole in vicinity of former manhole location
MH-13 to MH-12 pipe run	Abandoned in place
MH-12	Removed/Replaced with new manhole in vicinity of former manhole location
MH-12 to Bldg. 22 pipe run	Old pipe removed/replaced
Bldg. 22 to Former Bldg. 32 pipe run	Abandoned in place

Table 4. SWMU/AOC HYDROLOGY DETERMINATIONS COMPLETED		
SWMU/AOC	**Determinations**	**No. GW Elevation Determinations Made**
Process Sewer Line SWMU 3	Perched water determinations, local down gradient locations	15 adjacent to process sewer line
Building 2B Separator SWMU 16	Down gradient location	4 (GWL-1, GWL-2, GWL-2S90, GWS-5)
Former UST No. 2 Area SWMU 17	Down gradient location	3 (GWL-3, P-17, GWS-4)
Burning Cage SWMU 23	Combined with SWMU 24	Combined with SWMU 24
Landfill Site No. 1 SWMU 24	Down gradient location	4 (GWL-4, GWL-5, GWS-10W, GWS-J)
Building 16 Drum Storage Area SWMU 31	Down gradient location	6 (GWL-6, GWL-6A, B-12W60, B-12S30, GWL6AN60, B-12N60)
Former UST No. 20 Area AOC E	None (Ground water not sampled.)	None (Ground water not sampled.)

TABLE 5. Field Samples Collected During the RFI

SWMU/AOC ID	Sample Locations			Media	Depth	Total Samples	Analytical Parameters
SWMU 3 (Process Sewer), including SWMU 5, 6 (Influent Wells)	Surround manholes and every 15 feet along sewer line; extend grid above 10 ppmv total VOC. See Appendix A and Figures 8, 9 and 10 for locations of soil gas readings.			Soil gas head space	1.5 to 3 feet BGS or immed. above water table; at 1 ft. BGS additional at 4 to 9 lateral	Approx. 470 dual readings per location	Total VOC screen using FID/FID with charcoal filter
	"Hotspot " borings at the following soil vapor hot spots. See Appendix A and Figures 8, 9 and 10.			Soil	Highest FID/ PID reading	13	EPA Method 8260 VOCs on all samples and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270, TOC, pH and grain size on select samples
	Figure No.	Soil Vapor "Hotspot" Points	Soil Boring				
	9	1	SB-G				
	9	28	SB-S3-2				
	8	56	SB-S3-3				
	9	106	SB-C-5				
	9	112	SB-I				
	10	146	SB-B				
	10	157	SB-K				
	9	371	SB-E				
	9	482	SB-J				
	9	485	SB-D				
	8	605	SB-F				
	10	644	SB-A				
	Figure No.	Soil Vapor "Not detected" Point	Soil Boring Point	Soil	1.5 to 3 feet BGS	1	EPA Method 8260 VOCs and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270, TOC, pH and grain size
	9	331	SB-S3-1				

TABLE 5. Field Samples Collected During the RFI

SWMU/AOC ID	Sample Locations		Media	Depth	Total Samples	Analytical Parameters
	GWS-1 to -14 and soil gas hot spots; extend grid above 5 ppm above background. See Appendix B and Figure 11		Ground water screening	Water table	Approx. 247 location specific readings	Total VOC screen using headspace-OVA
	GWL-7, -8 from SWMU 5/6; and 7 each from headspace VOC hotspots and judgmental areas. See Figure 12 for locations.		Ground water	Water table	2 from SWMU 5/6, 7 from hotspots; 7 from judgmental areas	EPA Method 8260 VOCs and butylbenzyl, dimethyl and di-n-butyl phthalates by Method 8270
	"Hotspot" Locations	Judgmental Locations				
	GWS-10W	GWS-12E				
	GWS-11	GWS-1W60N180				
	GWS-13W60	GWS-5				
	GWS-1N60	GWS-6W360				
	GWS-4	GWS-ASW60				
	GWS-5W180	GWS-J				
	GWS-6W90	GWL-4W60				
SWMU 16 - Building 2B Separator	B-1, B-2, B-3		Soil	2-4, 4-6, 6-7	9	Butylbenzyl and di-n-butylphthalates using EPA Method 8270, TOC, pH and grain size
	GWL-1, -2		Ground water	Water table	2	EPA Method 8260 VOCs, Butylbenzyl and di-n-butylphthalates using EPA Method 8270

TABLE 5. Field Samples Collected During the RFI					
SWMU/AOC ID	**Sample Locations**	**Media**	**Depth**	**Total Samples**	**Analytical Parameters**
SWMU 17 (Former UST No. 2 Area)	B-4, B-5	Soil	Highest FID/PID reading	2	Naphthalene by EPA Method 8270, EPA Method 8260 BTEX, TOC, pH and grain size
	GWL-3	Ground water	Water table	1	Naphthalene by EPA Method 8270, EPA Method 8260 BTEX
SWMU 23 (Burning Cage)	B-6	Soil	0-2, Highest FID/ PID reading	2	Dimethyl and di-n-butyl phthalates by EPA Method 8270, TOC, pH and grain size
SWMU 24 (Landfill Site No. 1)	B-7, -8, -9, -10	Soil	0-2, Highest FID/ PID reading	8	Butylbenzyl, dimethyl and di-n-butylphthalates using EPA Method 8270, EPA Method 8260 VOCs, TOC, pH and grain size
	GWL-4, -5	Ground water	Water table	2	Butylbenzyl, dimethyl and di-n-butylphthalates using EPA Method 8270, EPA Method 8260 VOCs
SWMU 31 (Building 16 Drum Storage Area)	B-11, -12, -13	Soil	0-2, Highest FID/ PID reading	6	EPA Method 8260 VOCs, Acetophenone, TOC, pH and grain size
	GWL-6A (GWL-6 dry)	Ground water	Water table	1	Acetophenone
AOC E (Former UST No. 20 Area	B-14	Soil	Highest FID/PID reading	1	Benzo(a)pyrene, BTEX, TOC, pH and grain size

TABLE 6. PRECISION OF SOIL DUPLICATE SAMPLES

SAMPLE	SB-K-4	SB-Y-4	RPD*	SB-5/6-2-4	SB-5/6-8-4	RPD*	SB-F-4	SB-R-4	RPD*
DATE SAMPLED	09/20/96	09/18/96	(%)	09/19/96	09/19/96	(%)	09/19/96	09/19/96	(%)
SDG ID	1889B	1889A		1889A	1889B		1889A	1889B	
ANALYTE	CONCENTRATION (ug/kg)								
VOLATILE ORGANIC COMPONENTS									
Acetone	87	84	4	210	380 J	58	ND	ND	NC
Benzene	ND	ND	NC	ND	ND	NC	ND	ND	NC
Bromoform	ND	ND	NC	ND	ND	NC	ND	ND	NC
Bromomethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
2-Butanone	15 J	< 16	NC	ND	ND	NC	ND	ND	NC
Carbon Disulfide	ND	ND	NC	ND	ND	NC	ND	ND	NC
Chloroform	ND	ND	NC	ND	ND	NC	ND	ND	NC
Chloromethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,4-Dichlorobenzene	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,2-Dichlorobenzene	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,3-Dichlorobenzene	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,1-Dichloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,2-Dichloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
Ethylbenzene	1 J	< 16	NC	ND	ND	NC	ND	ND	NC
Methylene Chloride	6 J	< 16	NC	ND	ND	NC	ND	ND	NC
Styrene	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,1,2,2-Tetrachloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
Tetrachloroethene	< 12	1 J	NC	ND	ND	NC	ND	ND	NC
Toluene	2 J	4 J	NC	2 J	2 J	NC	ND	ND	NC
1,1,1-Trichloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
1,1,2-Trichloroethane	ND	ND	NC	ND	ND	NC	ND	ND	NC
Trichloroethene	ND	ND	NC	ND	ND	NC	ND	ND	NC
Xylene (Total)	3 J	< 16	NC	ND	ND	NC	ND	ND	NC
SEMI-VOLATILE ORGANIC COMPOUNDS									
Acetophenone	NA	NA	NC	NA	NA	NC	NA	NA	NC
Bis(2-Ethylhexyl)phthalate	NA	NA	NC	NA	NA	NC	NA	NA	NC
2-Methylnaphthalene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Dimethylphthalate	63 J	41 J	NC	NA	NA	NC	ND	ND	NC
Di-n-Butylphthalate	ND	ND	NC	NA	NA	NC	ND	ND	NC
Di-n-Octylphthalate	NA	NA	NC	NA	NA	NC	NA	NA	NC
Flourene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Phenanthrene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Anthracene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Flouranthene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Pyrene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Benzo(a)Pyrene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Benzo(a)anthracene	NA	NA	NC	NA	NA	NC	NA	NA	NC
Butylbenzylphthalate	ND	ND	NC	NA	NA	NC	NA	NA	NC
Chrysene	NA	NA	NC	NA	NA	NC	ND	ND	NC
							NA	NA	NC

NOTES:

This table presents a comparison of detections for duplicate samples.

*RPD objective for soil duplicates equals 100% (QAPP Table 5-2).

J: estimated detection

NA: not applicable for component. NA indicates a non-detect for one or more of the samples.

NC: not calculated

ND: not detected

TABLE 7. PRECISION OF GROUND WATER DUPLICATE SAMPLES

SAMPLE DATE SAMPLED SDG ID	GWL-4 10/08/96 2129A	GWL-49 10/08/96 2129A	RPD* (%)	GWS-6W90 10/09/96 2129B	GWS-69 10/09/96 2129B	RPD* (%)
ANALYTES	CONCENTRATION (ug/L)					
VOLATILE ORGANIC COMPONENTS						
Acetone	58,000 J	45,000 J	25	5 J	6 J	NC
Benzene	ND	ND	NC	12	13	8
Bromodichloromethane	ND	ND	NC	ND	ND	NC
2-Butanone	ND	ND	NC	ND	ND	NC
Carbon Disulfide	< 5,000	2,100 J	NC	ND	ND	NC
Chlorobenzene	ND	ND	NC	11	11	0
Chloroethane	ND	ND	NC	3 J	4 J	NC
1,1-Dichloroethane	ND	ND	NC	1 J	1 J	NC
1,2-Dichloroethene(Total)	ND	ND	NC	ND	ND	NC
1,1-Dichloroethene	ND	ND	NC	ND	ND	NC
1,3-Dichlorobenzene	ND	ND	NC	0.6 J	0.5 J	NC
1,4-Dichlorobenzene	ND	ND	NC	0.6 J	0.6 J	NC
1,2-Dichlorobenzene	ND	ND	NC	1 J	1 J	NC
Ethylbenzene	ND	ND	NC	ND	ND	NC
Tetrachloroethene	ND	ND	NC	ND	ND	NC
Toluene	ND	ND	NC	0.8 J	0.9 J	NC
1,1,1-Trichloroethane	ND	ND	NC	ND	ND	NC
Trichloroethene	ND	ND	NC	ND	ND	NC
Xylenes(Total)	ND	ND	NC	ND	ND	NC
SEMI-VOLATILE ORGANIC COMPOUNDS						
Butylbenzenephthalate	ND	ND	NC	ND	ND	NC
Dimethylphthalate	ND	ND	NC	ND	ND	NC
Di-n-butylphthalate	ND	ND	NC	ND	ND	NC
Naphthalene	NA	NA	NC	NA	NA	NC

NOTES:

This table presents a comparison of detections for duplicate samples.

*RPD objective for ground water duplicates equals 30% (QAPP Table 5-2).

J: estimated detection

NA: not applicable for component. NA indicates a non-detect for one or more of the samples.

NC: not calculated

TABLE 8. CONSTITUENTS USED AT QC LABORATORY AND MAINTENANCE SHOPS	
Acetonitrile	1,1,1,2-Tetrachlorethane
Carbon Tetrachloride	1,1,2,2-Tetrachlorethane
Chlorobenzene	Tetrachloroethylene
Chloroform	Toluene
1,1-Dichloroethylene	1,1,2-Trichloroethane
Methyl Chloride	Trichloroethylene
Methylene Chloride	1,1,1-Trichloroethane
Pyridine	1,1-Dichloroethane

Table 9. Old Process Sewer Line Summary of Soil Gas Conditions - West Sewer		
Sewer Line	**Old Sewer Line**	**Soil Gas Conditions**
MH-1	Has been removed	Previously found < 5 ppmv by PID in RFA
MH-1 to MH-2 pipe run	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-2	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-2 to MH-3 pipe run	Abandoned in place	Under Asphalt; closest readings 10 ppmv or less NMOC by FID in RFI
MH-3	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-3 to MH-4 pipe run	Abandoned in place	>10,000 ppmv total VOCs, plus >8,000 NMOC in vicinity. May be related to a gas line leak in this area in RFI
MH-4	Removed/Replaced with new manhole in vicinity of former manhole location	West side has >10,000 ppmv total VOCs, plus 5,000 NMOC in vicinity; East side has 10 ppmv or less NMOC by FID in RFI
MH-4 to MH-5 pipe run	Abandoned in place	Under concrete slab and a compressor/inaccessible
MH-5	Removed/Replaced with new manhole in vicinity of former manhole location	West side has >10,000 ppmv total VOCs in vicinity; up to 25 ppmv NMOC around manhole
MH-5 to MH-6 pipe run	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-6	Removed/Replaced with new manhole in vicinity of former manhole location	10 ppmv or less NMOC by FID in RFI
MH-4 to MH-7 pipe run	Abandoned in place	Previously found < 5 ppmv by PID in RFA, plus 10 ppmv or less NMOC by FID in RFI
MH-7	Abandoned in place	597 ppmv NMOC by FID in RFI
MH-7 to SWMU 16 pipe run	Abandoned in place	597 ppmv NMOC by FID in RFI
SWMU 16 to Bldg. 2B pipe run	Abandoned in place	1119 ppmv NMOC by FID in RFI

Table 9. Old Process Sewer Line Summary of Soil Gas Conditions - West Sewer		
Sewer Line	**Old Sewer Line**	**Soil Gas Conditions**
MH-8	Removed/Replaced with new manhole in vicinity of former manhole location	Under pavement, not surveyed
MH-8 to MH-9 pipe run	Abandoned in place; approximately 20 ft. Removed during upgrade	Partially under pavement, surveyed portion 10 ppmv or less NMOC by FID in RFI
MH-9	Removed with part of pipe run; replaced with new manhole located within Bldg. 3	993 ppmv NMOC by FID in RFI at one survey location
MH-7 to MH-10	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-10	Removed/Replaced with new manhole in vicinity of former manhole location	10 ppmv or less NMOC by FID in RFI
MH-10 to MH-11 pipe run	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-11	Removed/Replaced with new manhole in vicinity of former manhole location	10 ppmv or less NMOC by FID in RFI
MH-11 pipe run North (Abandoned Line)	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-11 pipe run to Waste Water Bldg.	Abandoned in place	10 ppmv or less NMOC by FID in RFI

Table 10: Old Process Sewer Line Summary of Soil Gas Conditions - East Sewer		
Sewer Line Appurtenance	**Old Sewer Line Status**	**Soil Gas Conditions**
MH-18 pipe run to Waste Water Bldg.	Abandoned in place; approximately 20 ft. Removed during upgrade	10 ppmv or less NMOC by FID in RFI
MH-18	Abandoned in place	590 ppmv NMOC by FID in RFI
MH-18 to Former Bldg. 9 pipe run	Abandoned in place	1590 ppmv NMOC by FID in RFI
MH-18 to MH-17 pipe run	Abandoned in place	Proximate to line 1648 ppmv NMOC by FID in RFI; parallel but south of line >10,000 ppmv total VOCs; midway between Bldg. 8 and 10B >10,000 ppmv total VOCs
MH-17	Abandoned in place	698 ppmv NMOC by FID in RFI
MH-17 to MH-16 pipe run	Abandoned in place	Generally 10 ppmv or less NMOC by FID in RFI; higher close proximity to MH-16
MH-17 to Bldg. 23	Currently In service	4993 ppmv NMOC by FID in RFI
MH-16	Abandoned in place	48 ppmv NMOC by FID in RFI
MH-16 to MH-15 pipe run	Abandoned in place	18 ppmv NMOC by FID in RFI
MH-15	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-15 to Bldg. 20	Abandoned in place	10 ppmv or less NMOC by FID in RFI
MH-16 to Bulk Tank Storage pipe run	Abandoned in place	>8,500 ppmv NMOC by FID in RFI
MH-16 to MH-13 pipe run	Abandoned in place	23 ppmv NMOC by FID in RFI
MH-14 to Bldg. 20 pipe run	Currently In service	10 ppmv or less NMOC by FID in RFI
MH-14	Currently In service	65 ppmv NMOC by FID in RFI
MH-14 to MH-13 pipe run	Currently In service	10 ppmv or less NMOC by FID in RFI

Table 10 - Old Process Sewer Line Summary of Soil Gas Conditions - East Sewer		
Sewer Line Appurtenance	**Old Sewer Line Status**	**Soil Gas Conditions**
MH-13	Removed/Replaced with new manhole in vicinity of former manhole location	43 ppmv NMOC by FID in RFI
MH-13 to MH-12 pipe run	Abandoned in place	76 ppmv NMOC by FID in RFI
MH-12	Removed/Replaced with new manhole in vicinity of former manhole location	32 ppmv NMOC by FID in RFI
MH-12 to Bldg. 22 pipe run	Removed/Replaced with new pipe run	898 ppmv NMOC by FID in RFI
Bldg. 22 to Former Bldg. 32 pipe run	Abandoned in place	43 ppmv NMOC by FID in RFI

Table 11
Detected Contaminants in Soil During Sewer Line Replacement Activities

Constituent	Concentration in Soil, ug/kg	Location
Acetone	2,097	QC Lab MH 1
	31,355	East Well Soil
	54.4	MH 11
	98.1	Building 2 Sump
	266.9	Building 2 Loading Dock MH
	307	Building 2A Manhole
Benzene	3.1	Building 2 Sump
2-Butanone	20,000	East Well Soil
	4,602	West of West Wall
	53.1	MH 11
Chlorobenzene	6.0	Building 2 Sump
	120	Northwest of West Well
Ethylbenzene	119	Building 2A Manhole
1,1-Dichloroethane	378	East of Building 3
4-Methyl-2-pentanone	11,000	East Well Soil
Tetrachloroethene	6,140	East of Building 3
1,1,1-Trichloroethane	3,132	East of Building 3
Toluene	981	East of Building 3
Styrene	4.7	S-1, Building 22
	3.9	Building 2 Sump
	63	Building 2A Manhole
m,p-Xylene	365	East Well Soil
Dimethyl phthalate	1,867	QC Lab MH 1
	68,000	East Well
	771,841	West of West Well
Di-n-butyl phthalate	657,961	East of Building 3
	23,294	Building 2 Loading dock MH
Butylbenzylphthalate	621,264	East of Building 3
	38,218	Building 2 Loading dock MH

Table 11 Detected Contaminants in Soil **During Sewer Line Replacement Activities**		
Di-n-octylphthalate	**4,276**	Building 2 Loading dock MH
Bis (2-ethylhexyl) phthalate	**5,675**	East Well Soil
	409	Building 2A Manhole

TABLE 12. SUMMARY OF ANALYTES DETECTED IN SOIL (RFI)

ANALYTE	SAMPLE DATE SAMPLED SDG ID	B-10-2 09/13/96 1889A	B-10-6 09/13/96 1889A	B-12-2 09/11/96 1860B	B-13-8 09/11/96 1860B	B-14-8 09/10/96 1860B	B-2-6 09/10/96 1860B	B-3-4 09/10/96 1860B	B-3-8 09/10/96 1860B	B-4-6 09/10/96 1860B	B-6-2 09/13/96 1889A
		CONCENTRATION (ug/kg)									
VOLATILE ORGANIC COMPONENTS	**REC. SOIL CLEANUP OBJECTIVES[1]**										
Acetone	200	14	31	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NS	14 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	300	14 UJ	15 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	300	7 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NS	14 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1,600	14 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	200	7 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5,500	7 UJ	15 U	NA	NA	8 U	NA	NA	NA	7	NA
Methylene Chloride	100	2 J	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1,400	7 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1,500	7 U	15 U	NA	NA	8 U	NA	NA	NA	7 U	NA
Trichloroethene	700	7 U	15 U	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (Total)	1,200	7 U	15 U	NA	NA	1 J	NA	NA	NA	7 U	NA
Total VOCs	10,000	16	31	ND	ND	1	ND	ND	ND	7	ND
SEMI-VOLATILE ORGANIC COMPOUNDS	**REC. SOIL CLEANUP OBJECTIVES[1]**										
Acetophenone	50,000	NA	NA	7300	32 J	NA	NA	NA	NA	NA	NA
Dimethylphthalate	2,000	380 U	380 U	NA	NA	NA	NA	NA	NA	NA	390 U
Di-n-Butylphthalate	8,100	25 J	17 J	NA	NA	NA	360 U	380 U	370 U	NA	17 J
Benzo(a)Pyrene	61	NA	NA	NA	NA	38 J	NA	NA	NA	NA	NA
Butylbenzylphthalate	50,000	380 UJ	380 UJ	NA	NA	NA	11 J	10 J	18 J	NA	NA
Total Semi-VOCs	500,000	25	17	7300	32	38	11	10	18	NA	17

NOTES:

[1]Soil standards were specified in Table 3 of RFI Work Plan
J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified
U: detection below quantitation limit
UJ: detection below the approximated quantitation limit
*=SB-T-4 is a duplicate of SB-K-4
**SB-5/6-2-4 is a duplicate of SB-5/6-8-4

TABLE 12. SUMMARY OF ANALYTES DETECTED IN SOIL (RFI)

	SAMPLE	B-6-6	B-7-2	B-7-4	B-9-2	B-9-8	SB-5/6-2-4**	SB-5/6-8-4**	SB-5/6-2-6	SB-8A-2	SB-8A-6
	DATE SAMPLED	09/13/96	09/13/96	09/13/96	09/13/96	09/13/96	09/19/96	09/19/96	09/21/96	09/18/96	09/18/96
	SDG ID	1889A	1889A	1889A	1860B	1889A	1889A	1889B	1889B	1889A	1889A
ANALYTE		CONCENTRATION (ug/kg)									
VOLATILE ORGANIC COMPONENTS	REC. SOIL CLEANUP OBJECTIVES[1]										
Acetone	200	NA	170 J	50	70	21	210	380 J	31 U	29 J	14 U
Bromomethane	NS	NA	1 J	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
2-Butanone	300	NA	17 UJ	15 UJ	19 J	16 UJ	12 UJ	16 UJ	12 UJ	16 UJ	12 UJ
Chloroform	300	NA	10 J	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
Chloromethane	NS	NA	6 J	15 U	16 U	16 U	12 UJ	16 UJ	12 UJ	16 UJ	12 UJ
1,3-Dichlorobenzene	1,600	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
1,1-Dichloroethane	200	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
Ethylbenzene	5,500	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
Methylene Chloride	100	NA	17 U	15 U	2 J	1 J	12 U	16 U	12 U	16 U	2 J
Tetrachloroethene	1,400	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	2 J	12 U
Toluene	1,500	NA	1 J	15 U	1 J	16 U	2 J	2 J	12 U	5 J	2 J
Trichloroethene	700	NA	17 U	15 U	2 J	16 U	12 U	16 U	12 U	16 U	12 U
Xylene (Total)	1,200	NA	17 U	15 U	16 U	16 U	12 U	16 U	12 U	16 U	12 U
Total VOCs	10,000	ND	187	50	94	22	212	382	ND	36	4
SEMI-VOLATILE ORGANIC COMPOUNDS	REC. SOIL CLEANUP OBJECTIVES[1]										
Acetophenone	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	2,000	390 U	390 U	390 U	360 U	410 U	NA	NA	33 J	400 U	390 U
Di-n-Butylphthalate	8,100	17 J	20 J	41 J	360 U	16 J	NA	NA	380 U	400 U	390 U
Benzo(a)Pyrene	61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50,000	NA	390 UJ	390 UJ	360 U	410 UJ	NA	NA	380 U	400 U	390 U
Total Semi-VOCs	500,000	17	20	41	ND	16	NA	NA	33	ND	ND

NOTES:

[1]Soil standards were specified in Table 3 of RFI Work Plan
J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified
U: detection below quantitation limit
UJ: detection below the approximated quantitation limit
*=SB-T-4 is a duplicate of SB-K-4
**SB-5/6-2-4 is a duplicate of SB-5/6-8-4

TABLE 12. SUMMARY OF ANALYTES DETECTED IN SOIL (RFI)

	SAMPLE	SB-A-6	SB-B-4	SB-D-4	SB-E-4	SB-G-6	SB-I-4	SB-J-6	SB-K-4*	SB-T-4*	SB-S3-1-3
	DATE SAMPLED	09/19/96	09/18/96	09/18/96	09/18/96	09/18/96	09/19/96	09/18/96	09/20/96	09/18/96	09/18/96
	SDG ID	1889B	1889A	1889A	1889A	1889A	1889B	1889A	1889B	1889A	1889A
ANALYTE		CONCENTRATION (ug/kg)									
VOLATILE ORGANIC COMPONENTS	REC. SOIL CLEANUP OBJECTIVES[1]										
Acetone	200	44 U	19 J	14 J	63 J	66 J	19 U	19 J	87	84 J	29 J
Bromomethane	NS	12 U	11 U	12 U	16 U	16 U	17 U	12 U	12 U	16 U	15 U
2-Butanone	300	12 UJ	11 UJ	12 UJ	16 UJ	16 UJ	17 UJ	12 UJ	15 J	16 UJ	15 UJ
Chloroform	300	12 U	11 U	5 J	16 U	16 U	17 U	4 J	12 U	16 U	15 U
Chloromethane	NS	12 UJ	11 UJ	12 UJ	16 UJ	16 UJ	17 UJ	12 UJ	12 UJ	16 UJ	15 UJ
1,3-Dichlorobenzene	1,600	12 U	11 U	12 U	16 U	16 U	100	12 U	12 U	16 U	15 U
1,1-Dichloroethane	200	12 U	11 U	12 U	16 U	16 U	17 U	12 U	12 U	16 U	15 U
Ethylbenzene	5,500	12 U	11 U	12 U	16 U	16 U	17 U	12 U	1 J	16 U	15 U
Methylene Chloride	100	12 U	11 U	12 U	16 U	16 U	17 U	12 U	6 J	16 U	15 U
Tetrachloroethene	1,400	12 U	2 J	2 J	16 U	2 J	17 U	2 J	12 U	1 J	2 J
Toluene	1,500	0.8 J	1 J	12 U	2 J	16 U	17 U	1 J	2 J	4 J	15 U
Trichloroethene	700	12 U	0.9 J	12 U	16 U	16 U	17 U	1 J	12 U	16 U	15 U
Xylene (Total)	1,200	12 U	11 U	12 U	16 U	16 U	17 U	12 U	3 J	16 U	15 U
Total VOCs	10,000	0.8	22.9	21	65	68	100	27	114	89	31
SEMI-VOLATILE ORGANIC COMPOUNDS	REC. SOIL CLEANUP OBJECTIVES[1]										
Acetophenone	50,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	2,000	400 U	41 J	390 U	390 U	390 U	380 U	400 U	63 J	41 J	390 U
Di-n-Butylphthalate	8,100	400 U	380 U	390 U	390 U	390 U	380 U	400 U	390 U	390 U	390 U
Benzo(a)Pyrene	61	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50,000	400 U	380 U	390 U	390 U	390 U	380 U	400 U	390 U	390 U	390 U
Total Semi-VOCs	500,000	ND	41	ND	ND	ND	ND	ND	63	41	ND

NOTES:

[1]Soil standards were specified in Table 3 of RFI Work Plan
J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified
U: detection below quantitation limit
UJ: detection below the approximated quantitation limit
*=SB-T-4 is a duplicate of SB-K-4
**SB-5/6-2-4 is a duplicate of SB-5/6-8-4

TABLE 12. SUMMARY OF ANALYTES DETECTED IN SOIL (RFI)

	SAMPLE DATE SAMPLED SDG ID	SB-S3-2-6 09/18/96 1889A	SB-S3-3-6 09/18/96 1889A
ANALYTE		CONCENTRATION (ug/kg)	
VOLATILE ORGANIC COMPONENTS	**REC. SOIL CLEANUP OBJECTIVES[1]**		
Acetone	200	40 J	32 J
Bromomethane	NS	16 U	16 U
2-Butanone	300	16 UJ	16 UJ
Chloroform	300	16 U	16 U
Chloromethane	NS	16 UJ	16 UJ
1,3-Dichlorobenzene	1,600	16 U	1 J
1,1-Dichloroethane	200	16 U	5 J
Ethylbenzene	5,500	16 U	16 U
Methylene Chloride	100	16 U	16 U
Tetrachloroethene	1,400	2 J	16 U
Toluene	1,500	16 U	3 J
Trichloroethene	700	16 U	16 U
Xylene (Total)	1,200	16 U	16 U
Total VOCs	10,000	42	41
SEMI-VOLATILE ORGANIC COMPOUNDS	**REC. SOIL CLEANUP OBJECTIVES[1]**		
Acetophenone	50,000	NA	NA
Dimethylphthalate	2,000	390 U	380 U
Di-n-Butylphthalate	8,100	390 U	490
Benzo(a)Pyrene	61	NA	NA
Butylbenzylphthalate	50,000	390 U	190 J
Total Semi-VOCs	500,000	ND	680

NOTES:

[1]Soil standards were specified in Table 3 of RFI Work Plan
J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified
U: detection below quantitation limit

*=SB-T-4 is a duplicate of SB-K-4
**SB-5/6-2-4 is a duplicate of SB-5/6-8-4

TABLE 13. SUMMARY OF ANALYTE DETECTION IN GROUND WATER

	SAMPLE	GWL-1	GWS-1N60	GWS-1W60N180	GWL-2	GWL-3	GWS-4	GWL-4*	GWL-49*	GWL-4W60
	DATE SAMPLED	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96
	SWMU/AOC	SWMU 16	SWMU 3	SWMU 3	SWMU 16	SWMU 17	SWMU 3	SWMU 24	SWMU 24	SWMU 24
	SDG ID	2129A	2129B	2129B	2129A	2129A	2129B	2129A	2129A	2129B
ANALYTES		CONCENTRATION (ug/L)								
VOLATILE ORGANIC COMPONENTS	Ground water Standards[1]									
Acetone	50	10 UJ	10 UJ	10 UJ	10 UJ	NA	10 UJ	58000 J	45000 J	170 J
Benzene	0.7	10 U	10 U	10 U	9 J	32 J	10 U	5,000 U	5,000 U	10 U
Bromodichloromethane	NS	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
2-Butanone	50	10 U	10 U	10 U	10 U	NA	10 UJ	5,000 UJ	5,000 UJ	10 U
Carbon Disulfide	50	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	2100 J	10 U
Chlorobenzene	5	10 U	10 U	10 U	7 J	NA	10 U	5,000 U	5,000 U	10 U
Chloroethane	50	10 UJ	10 UJ	10 UJ	10 UJ	NA	10 UJ	5,000 UJ	5,000 UJ	10 UJ
1,1-Dichloroethane	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
1,2-Dichloroethene(Total)	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
1,1-Dichloroethene	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
1,3-Dichlorobenzene	6	1 J	10 U	10 U	7 J	NA	10	5,000 U	5,000 U	10 U
1,4-Dichlorobenzene	5	1 J	10 U	10 U	6 J	NA	10 U	5,000 U	5,000 U	10 U
1,2-Dichlorobenzene	4.7	10 U	10 U	10 U	6 J	NA	10 U	5,000 U	5,000 U	10 U
Ethylbenzene	5	10 U	10 U	0.9 J	10 U	27 J	10 U	5,000 U	5,000 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
Toluene	5	10 U	10 U	10 U	10 U	1300	4 J	5,000 U	5,000 U	10 U
1,1,1-Trichloroethane	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	NA	10 U	5,000 U	5,000 U	10 U
Xylenes(Total)	5	10 U	0.2 J	8 J	10 U	88 J	1 J	5,000 U	5,000 U	10 U
Total VOCs	NS	2	0.2	8.9	35	1447	15	58000	47100	170
SEMI-VOLATILE ORGANIC COMPOUNDS	Ground water Standards[1]									
Butylbenzylphthalate	50	10 U	10 U	10 U	10 U	NA	4 J	10 U	10 U	10 U
Dimethylphthalate	50	NA	10 U	10 U	NA	NA	1 J	10 U	10 U	10 U
Di-n-butylphthalate	50	10 U	10 U	10 U	10 U	NA	18	10 U	10 U	10 U
Naphthalene	10	NA	NA	NA	NA	3700	NA	NA	NA	NA
Total Semi-VOCs	NS	ND	ND	ND	ND	3700	23	ND	ND	ND

NOTES:

J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified in TAGM 3038 or 6NYCRR 703.5
U: detection below quantitation limit
[1]Ground water standards were specified in Table 3 of RFI Work Plan
* GWL 49 is a duplicate of GWL-4
** GWS-69 is a duplicate of GWS-6W90

TABLE 13. SUMMARY OF ANALYTE DETECTION IN GROUND WATER

	SAMPLE	GWL-5	GWS-5W180	GWS-6W90**	GWS-69**	GWS-6W360	GWS-A5W60	GWL-7	GWL-8	GWS-11	GWS-13W-60
	DATE SAMPLED	10/07/96	10/09/96	10/09/96	10/09/96	10/09/96	10/08/96	10/10/96	10/08/96	10/08/96	10/08/96
	SWMU/AOC	SWMU 24	SWMU 3	SWMU 3	SWMU 3	SWMU 3	SWMU 3	SWMU 5/6	SWMU 5/6	SWMU 3	SWMU 3
	SDG ID	2129A	2129B	2129B	2129B	2129B	2129B	2129B	2129B	2129A	2129A
ANALYTES		CONCENTRATION (ug/L)									
VOLATILE ORGANIC COMPONENTS	Ground water Standards[1]										
Acetone	50	10 UJ	10 UJ	5 J	6 J	10 UJ	6 J	44 U	250 UJ	250 J	10 UJ
Benzene	0.7	10 U	0.6 J	12	13	10 U	10 U	3 J	18 J	10 U	10 U
Bromodichloromethane	NS	10 U	10 U	10 U	10 U	10 U	10 U	10 U	8 J	10 U	10 U
2-Butanone	50	10 UJ	10 U	10 U	10 U	10 U	10 U	7 J	250 U	10 UJ	10 UJ
Carbon Disulfide	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	11	11	10 U	10 U	10 U	250 U	10 U	10 U
Chloroethane	50	10 UJ	10 UJ	3 J	4 J	10 UJ	10 UJ	10 UJ	250 UJ	10 UJ	10 UJ
1,1-Dichloroethane	5	10 U	10	1 J	1 J	1 J	10 U	10 U	250 U	10 U	10 U
1,2-Dichloroethene(Total)	5	10 U	2 J	10 U	10 U	10 U	10 U	10 U	250 U	0.6 J	10 U
1,1-Dichloroethene	5	10 U	0.7 J	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U
1,3-Dichlorobenzene	5	10 U	10 U	0.6 J	0.5 J	10 U	10 U	1 J	250 U	10 U	10 U
1,4-Dichlorobenzene	5	10 U	10 U	0.6 J	0.6 J	10 U	10 U	2 J	250 U	10 U	10 U
1,2-Dichlorobenzene	4.7	10 U	10 U	1 J	1 J	10 U	10 U	1 J	250 U	10 U	10 U
Ethylbenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9 J	10 U	10 U
Tetrachloroethene	5	10 U	0.6 J	10 U	10 U	10 U	10 U	10 U	250 U	10 U	10 U
Toluene	5	10 U	10 U	0.8 J	0.9 J	10 U	1 J	10 U	42 J	10 U	10 U
1,1,1-Trichloroethane	5	10 U	6 J	10 U	10 U	11	10 U	10 U	250 U	10 U	10 U
Trichloroethene	5	10 U	2 J	10 U	10 U	1 J	10 U	10 U	250 U	10 U	10 U
Xylenes(Total)	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	7 J	10 U	10 U
Total VOCs	NS	ND	21.9	35	38	13	7	14	84	250.6	ND
SEMI-VOLATILE ORGANIC COMPOUNDS	Ground water Standards[1]										
Butylbenzylphthalate	50	0.2 J	10 U	10 U	10 U	10 U	10 U	0.4 J	ND	ND	0.2 J
Dimethylphthalate	50	ND	10 U	10 U	10 U	10 U	10 U	ND	1 J	0.7 J	0.2 J
Di-n-butylphthalate	50	ND	10 U	10 U	10 U	10 U	10 U	ND	ND	ND	ND
Naphthalene	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Semi-VOCs	NS	0.2	ND	ND	ND	ND	ND	0.4	1	0.7	0.4
1,2-Dichlorobenzene											

NOTES:

J: estimated detection
NA: constituent not analyzed
ND: not detected
NS: not specified in TAGM 3038 or 6NYCRR 703.5
U: detection below quantitation limit
[1]Ground water standards were specified in Table 3 of RFI Work Plan
* GWL 49 is a duplicate of GWL-4
** GWS-69 is a duplicate of GWS-6W90

TABLE 14. PHYSICAL AND CHEMICAL PROPERTIES FOR CONSTITUENTS DETECTED DURING RFI

VOLATILE ORGANIC COMPONENTS	VAPOR PRESSURE (mm/Hg)	Henry's Law Constant (atm-cu.meter/mole)	Water Solubility (mg/L)	Log Kow (see notes)	Log Koc (see notes)	Molecular Weight (g/g mol)	Specific Gravity @ 20 degrees C	Water Solubility Description
Acetone	231 @ 25 C	3.67E-05	Miscible	-0.24	0.32	58.1	0.79	hydrophilic
Benzene	95 @ 25 C	5.43E-03	1,791 @ 25 C	2.13	2.02	78.1	0.88	mod. hydrophobic
Bromodichloromethane	50 @ 20 C	1.60E-03	4,700 @ 22 C	2.1	2.00	163.8	1.971 @ 25/25 C	mod. hydrophobic
Bromomethane	1,420 @ 20 C	6.78E-03	900 @ 20 C	1.41	1.51	95.0	1.73 @ 0/0 C	mod. hydrophobic
Butanone, 2-	90.6 @ 25 C	1.05E-05	239,000	0.29	0.70	72.1	0.85	hydrophilic
Carbon Disulfide	297 @ 20 C	1.40E-02	2,100 @ 20 C	1.84-2.16	1.81-2.05	76.1	1.26	mod. hydrophobic
Chlorobenzene	11.9 @ 25 C	3.45E-03	471.7 @ 25 C	2.84	2.53	112.6	1.113 @ 15.5 C	mod. hydrophobic
Chloroethane	1,000 @ 20 C	8.48E-03	5,740 @ 20 C	1.43	1.52	64.5	0.92 @ 0 C	mod. hydrophobic
Chloroform	246 @ 25 C	4.35E-03	7,950	1.97	1.91	119.4	1.49 @ 15 C	mod. hydrophobic
Chloromethane	4.31E+03	4.40E-02	6,500	0.95	35	50.5	0.991 @ -25 C	mod. hydrophobic
Dichloroethane, 1,1-	227 @ 25 C	5.87E-03	5,060 @ 25 C	1.79	1.78	99.0	1.174	mod. hydrophobic
Dichloroethene, 1,1-	500 @ 20 C	3.40E-02	2,250	1.84	1.81	97.0	1.218 @ 20/4 C	mod. hydrophobic
Dichloroethene, 1,2- (cis)	200 @ 25 C	3.37E-03	800 @ 20 C	1.86	1.83	97.0	1.28	mod. hydrophobic
Dichloroethene, 1,2- (trans)	340 @ 25 C	6.72E-03	600 @ 20 C	2.09	1.99	97.0	1.26	mod. hydrophobic
Dichlorobenzene, 1,2-	1.47 @ 25 c	1.20E-03	156 @ 25 C	3.38	2.92	147.0	1.305	mod. hydrophobic
Dichlorobenzene, 1,3-	2.3 @ 25 C	1.80E-03	111 @ 20 C	3.6	3.08	147.0	1.288	mod. hydrophobic
Dichlorobenzene, 1,4-	1.76 @ 25 C	1.50E-03	87 @ 25 C	3.52	3.02	147.0	1.4581 @ 20.5 C	mod. hydrophobic
Ethylbenzene	9.53 @ 25 C	8.44E-03	161 @ 25 C	3.15	2.76	106.2	0.8669 @ 29 C	mod. hydrophobic
Methylene Chloride	435 @ 25 C	2.68E-03	13,000 @ 20 C	1.25	1.39	84.9	1.3255 @ 20 C	mod. hydrophobic
Tetrachloroethene	18.49 @ 25 C	1.49E-02	150.3 @ 25 C	3.4	2.94	165.8	1.62	mod. hydrophobic
Toluene	28.4 @ 25 C	5.94E-03	535 @ 25 C	2.73	2.46	92.1	0.87	mod. hydrophobic
Trichloroethene	69 @ 25 C	1.03E-02	1,110 @ 25 C	2.42	2.23	131.4	1.46	mod. hydrophobic
Trichloroethane, 1,1,1-	123.7 @ 25 C	8.00E-03	1,495 @ 25 C	2.49	2.28	133.4	1.35	mod. hydrophobic
m & p-Xylene	8.28-8.74 @ 25 C	7.60E-03	146	3.15-3.20	2.76-2.8	106.2	0.86	mod. hydrophobic
o-Xylene (Total)	6.6 @ 25 C	5.10E-03	175 @ 25 C	3.12	2.23	106.2	0.86	mod. hydrophobic
SEMI-VOLATILE ORGANIC COMPOUNDS								
Acetophenone	0.397 @ 25 C	1.07E-05	6130	1.58	1.63	120.1	1.03	mod. hydrophobic
Benzo(a)Pyrene	5E-09	5.53E-05	3E-03	6.04	4.84	252.3	NA	strongly hydrophobic
Butylbenzylphthalate	8.6E-6 @ 20 C	1.30E-06	2.69 @ 25 C	4.91	4.03	312.4	1.116 @ 25 C	strongly hydrophobic
Dimethylphthalate	1.7E-03	1.10E-07	4,000	1.56	2.1	194.2	1.120 @ 25 C	mod. hydrophobic
Di-n-Butylphthalate	1.4E-5 @ 25 C	4.60E-07	11.2 @ 25 C	4.72	3.89	278.3	1.0465	hydrophobic
Naphthalene	0.082 @ 25 C	4.83E-04	31.7 @ 25 C	3.3	2.87	128.2	1.162	mod. hydrophobic

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NOTES:

For some compounds the Henry's Law Constant was calculated from available vapor pressure and water solubility data.
Log Koc based on the linear regression relationship established by Schwertzenback: Westall, 1981 log Koc = 0.49 +0.72 log Kow
Log Kow = logarithm (base 10) of the octanol/water partition coefficient
Log Koc = logarithm (base 10) of the organic carbon/water partition coefficient
NA=not available

TABLE 15
POTENTIAL DEGRADATION MODES AND DEGRADATION PRODUCTS

	Description	
Chemical Group/Chemical	**Abiotic**	**Biodegradation**
Volatile Organics		
Acetone	Photodegradation is not a significant degradation process.	Readily biodegrades aerobically and anaerobically.
Benzene	Hydrolysis is not a significant degradation process.	Subject to biodegradation under aerobic conditions, but not likely under anaerobic conditions.
Bromodichloromethane	Hydrolysis, oxidation, photolysis are not significant degradation processes.	Susceptible to aerobic and anaerobic degradation.
Bromomethane	No information.	No information.
2-Butanone	No information.	Susceptible to aerobic and anaerobic degradation.
Carbon disulfide	Photolysis is not a significant degradation process. Photooxidizes to carbon monoxide, carbonyl sulfide,	Difficult to degrade.
Chlorobenzene	Resistant to photolysis, hydrolysis or oxidation.	Susceptible to aerobic and anaerobic degradation. Aerobic conditions favored. Degradation products include 2-chlorophenol, 4-chlorophenol.

TABLE 15
POTENTIAL DEGRADATION MODES AND DEGRADATION PRODUCTS

	Description	
Chemical Group/Chemical	**Abiotic**	**Biodegradation**
Chloroethane	No information.	Biodegradation may occur, but at slow rates.
1,1-Dichloroethane	No information.	Biodegradation may occur, but at slow rates.
Dichloroethenes	No information.	Biodegradation may occur, but at slow rates.
Chloroform	Negligible rate of hydrolysis. Photodegradation does not appear to be a significant loss process.	Conflicting data on biodegradation of chloroform. Slow but substantial biodegradation reported under suitable conditions.
Chloromethane	No information.	Biodegradation may occur, but at slow rates.
Dichlorobenzenes	Degradation through hydrolysis, photolysis and oxidation considered insignificant.	Susceptible to slow aerobic degradation.
Ethylbenzene	Resistant to hydrolysis. Photolysis considered insignificant but may be photooxidized.	Biodegrades aerobically and anaerobically. Aerobic conditions favored.
Methylene chloride	No information.	Biodegradation may occur, but at slow rates.

TABLE 15
POTENTIAL DEGRADATION MODES AND DEGRADATION PRODUCTS

	Description	
Chemical Group/Chemical	**Abiotic**	**Biodegradation**
Tetrachloroethene	Hydrolysis is not a significant degradation process.	Biodegradation may be an important process in aerobic soils. Slow biodegradation may occur in ground water and soil.
Toluene	Subject to photo oxidation; will not significantly hydrolyze or directly photolyze.	Biodegrades aerobically and anaerobically. Aerobic conditions favored.
Trichloroethene	Hydrolysis and photo oxidation are not significant degradation processes.	Biodegradation may occur in ground water and soil, but at slow rates.
Xylenes	Not significant source of degradation in soils and ground water.	Biodegrades aerobically and anaerobically. Aerobic conditions favored.

TABLE 15
POTENTIAL DEGRADATION MODES AND DEGRADATION PRODUCTS

	Description	
Chemical Group/Chemical	**Abiotic**	**Biodegradation**
Semi-Volatile Organics		
Acetophenone	Ketones, in general, are resistant to hydrolysis.	Biodegradation is a major degradation process.
Benzo(a)pyrene	Not susceptible to hydrolysis. Susceptible to photolysis.	Susceptible to biodegradation.
Benzoyl peroxide	No information.	May be subject to biodegradation in soil and ground water. Breakdown products include benzene, biphenyls, triphenyls, and benzoic acid.
Methyl Ethyl Ketone Peroxide	No information.	May be subject to degradation in soil and ground water. Breakdown products include methyl ethyl ketone, acetone, ethanol, acetic acid, and ethyl acetate.
Naphthalene	No information.	Susceptible to biodegradation.
Phthalates	Hydrolysis, photolysis, photo oxidation considered slow.	Susceptible to biodegradation.

TABLE 16
TRANSPORT PROPERTIES

Chemical Group/Chemical	Mobility (K_{oc} and Water Solubility)	Volatility (Vapor Pressure Henry's Law)	Areas Detected
Volatile Organics			
Acetone	Very high to high mobility in soil; therefore, may readily leach to ground water.	Should readily volatilize from soil surface and ground water.	SWMU 3 soil and ground water, SWMU 24 soil and ground water, and SWMU 5/6 soil
Benzene	Very high to high mobility in soil; therefore may readily leach to ground water.	Volatilization from surface soil and ground water expected to be rapid.	SWMU 3 and SWMU 17 ground water
Bromodichloromethane	Moderate to high mobility in soil; can therefore may leach to ground water.	Volatilization from surface soil and ground water expected to be rapid.	SWMU 3 ground water
Bromomethane	Moderate to high mobility in soil; can therefore, may leach to ground water.	Volatilization from surface soil and ground water expected to be rapid.	SWMU 24 soil
2-Butanone	Moderate mobility in soil; therefore may readily leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 soil
Carbon disulfide	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to volatilize from soil and ground water.	SWMU 24 ground water
Chlorobenzene	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to exhibit moderate volatility from ground water and soil.	SWMU 3 ground water

TABLE 16
TRANSPORT PROPERTIES

Chemical Group/Chemical	Mobility (K_{oc} and Water Solubility)	Volatility (Vapor Pressure Henry's Law)	Areas Detected
Chloroethane	Moderate mobility in soil; can leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 ground water
1,1-Dichloroethane	Moderate mobility in soil; can leach to ground water.	High vapor pressure and low adsorption to soil; would therefore volatilize rapidly from soil. Fate in ground water unknown. Volatilization is principle removal mechanism.	SWMU 3 ground water
Dichloroethenes	Moderate mobility in soil; can leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 ground water
Chloroform	Moderate to high mobility in soil; can leach to ground water.	Expected to volatilize rapidly in surface soils and ground water.	SWMU 24 and SWMU 3 soil
Chloromethane	Moderate to high mobility in soil; can leach to ground water.	Expected to volatilize rapidly in surface soils and ground water.	SWMU 24 soil
Dichlorobenzenes	Moderate mobility in soil, some tendency to adsorb to soil is likely.	Expected to volatilize from ground water and soil.	SWMU 3 soil and ground water SMWU 16 ground water
Ethylbenzene	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to volatilize from soil and ground water.	SWMU 3 soil and ground water SWMU 16 ground water

TABLE 16
TRANSPORT PROPERTIES

Chemical Group/Chemical	Mobility (K_{oc} and Water Solubility)	Volatility (Vapor Pressure Henry's Law)	Areas Detected
Methylene chloride	High mobility in soil; may readily leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 and SWMU 24 soil
Tetrachloroethene	High mobility in soil; can readily leach to ground water.	Expected to volatilize from soil and ground water.	SWMU 3 ground water and soil, and SWMU 24 soil
Toluene	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to volatilize from soil and ground water.	SWMU 3 ground water and soil SWMU 17 ground water SWMU 5/6 soil SWMU 24 soil
Trichloroethene	High mobility in soil, may readily leach to ground water.	Expected to volatilize from unsaturated soil. Remains relatively stable in ground water.	SWMU 3 ground water and soil, and SWMU 24 soil
Xylenes	Moderate mobility in soil, some tendency to adsorb to soil/sediment is likely.	Expected to volatilize from soil and ground water.	SWMU 3 ground water and soil SWMU 17 ground water AOC E soil

TABLE 16
TRANSPORT PROPERTIES

Chemical Group/Chemical	Mobility (K_{oc} and Water Solubility)	Volatility (Vapor Pressure Henry's Law)	Areas Detected
Semi-Volatile Organics			
Acetophenone	Moderate to high mobility in soil, some tendency to adsorb to soils/sediments likely.	Expected to volatilize from soil and ground water.	SWMU 31 soil
Benzo(a)pyrene	Limited to extremely limited mobility in soil due to hydrophobic to strong hydrophobic nature.	Expected to exhibit low volatility from soil and ground water.	AOC E soil
Naphthalene	Moderate mobility in soil, some tendency to adsorb to soil/sediment.	Expected to exhibit moderate volatility from soil and ground water.	SWMU 17 ground water
Phthalates	Extremely limited mobility in soil due to strong hydrophobic nature, strong tendency to adsorb to soil/sediment.	Expected to exhibit low to no volatility from soil and ground water.	SWMU 24 ground water and soil SWMU 3 ground water and soil SWMU 16 and 17 soil SWMU 5/6 soil

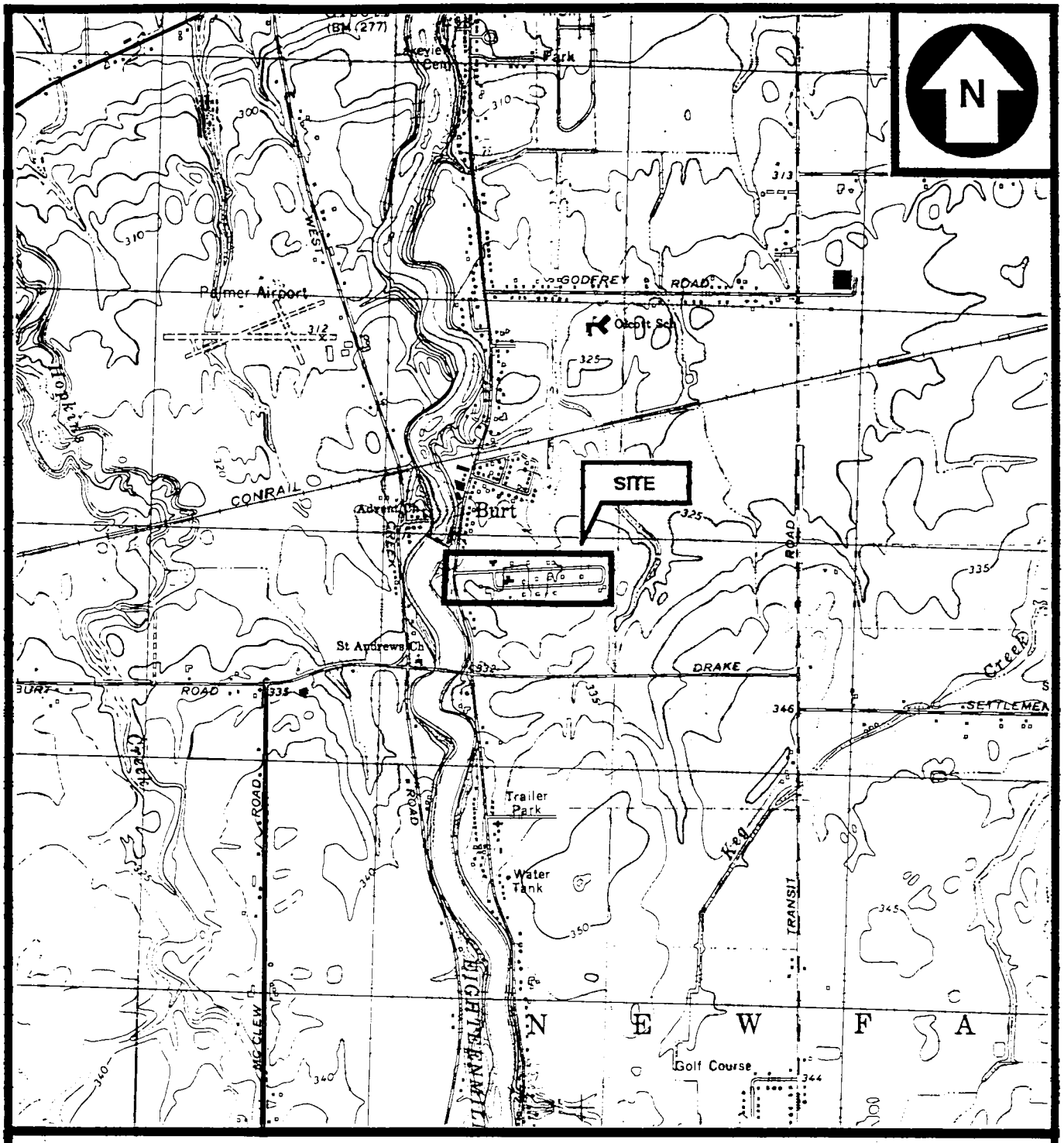
TABLE 17. ACTION LEVELS FOR SOIL AND GROUND WATER			
		Threshold ([a]) Action Level	
Contaminant	Media w/Exceedance	Soil ([b]) (mg/kg)	Ground Water ([b]) (ug/L)
Acetone	Soil, GW	0.2	50
Benzene	GW	0.06	0.7
Bromodichloromethane		N/A	N/A
Bromoform		N/A	N/A
Bromomethane		N/A	N/A
2-Butanone		0.3	50
Carbon Disulfide		2.7	50
Carbon Tetrachloride		0.6	5
Chlorobenzene	GW	1.7	5
Chloroethane		1.9	50
2-Chloroethyl vinyl ether		N/A	N/A
Chloroform		0.3	7
Chloromethane		N/A	N/A
Dibromochloromethane		N/A	50
1,2-Dichlorobenzene		7.9	4.7
1,3-Dichlorobenzene	GW	1.6	5
1,4-Dichlorobenzene		8.5	5
1,1-Dichloroethane	GW	0.2	5
1,2-Dichloroethane		0.1	0.8*
1,1-Dichloroethene		0.4	5
1,2-Dichloroethene (cis)		0.25	5
1,2-Dichloroethene (trans)		0.3	5
Dichloromethane		0.1	5

TABLE 17. ACTION LEVELS FOR SOIL AND GROUND WATER			
		Threshold ([a]) Action Level	
Contaminant	Media w/Exceedance	Soil ([b]) (mg/kg)	Ground Water ([b]) (ug/L)
1,2-Dichloropropane		N/A	N/A
cis-1,3-Dichloropropene		N/A	N/A
trans-1,3-Dichloropropene		N/A	N/A
Ethylbenzene	GW	5.5	5
2-Hexanone		N/A	N/A
4-Methyl-2-pentanone		1	50
Styrene		N/A	N/A
1,1,2,2-Tetrachloroethane		0.6	5
Tetrachloroethene		1.4	5
Toluene	GW	1.5	5
1,1,1-Trichloroethane	GW	0.8	5
1,1,2-Trichloroethane		N/A	0.6*
Trichloroethene		0.7	5
Vinyl acetate		N/A	N/A
Vinyl chloride		0.2	2
Xylenes (Total)	GW	1.2	5
Pyridine		N/A	N/A
Butylbenzylphthalate	Soil (RFA)	50	50
Di-n-butylphthalate	Soil (RFA)	8.1	50
Naphthalene	GW	13	10
Dimethylphthalate		2	50
Acetophenone		N/A	N/A

TABLE 17. ACTION LEVELS FOR SOIL AND GROUND WATER			
		Threshold ([a]) Action Level	
Contaminant	Media w/Exceedance	Soil ([b]) (mg/kg)	Ground Water ([b]) (ug/L)
Benzo(a)pyrene		0.061 or MDL	0.002 (ND)
TOC		N/A	N/A

([a])The threshold action level is the concentration below which no further action will be taken. Concentrations detected above the threshold may require additional investigation and/or remediation.
([b])Value derived from TAGM 3038, except as noted with an asterisk.
*Value derived from 6 NYCRR 703.5 Standards.
N/A = Not Available
MDL = Method Detection Limit

FIGURES



BASE MAP IS A PORTION OF THE FOLLOWING 7.5' USGS QUADRANGLE:
NEWFANE, NY 1978

0 1000 2000 3000 feet

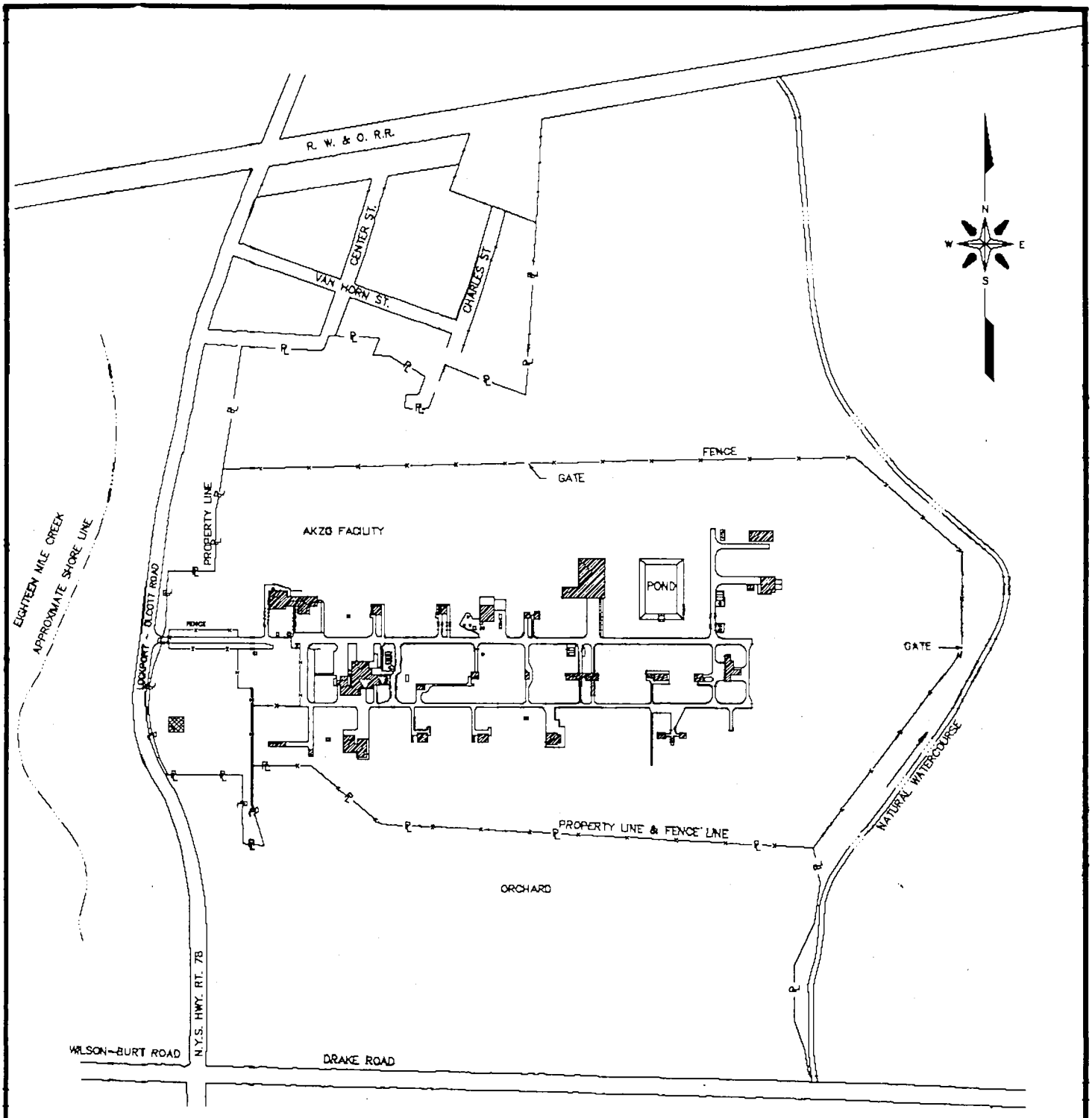
QUADRANGLE LOCATION

SITE LOCATION MAP

AKZO CHEMICALS INC.
BURT, NEW YORK

TRC Environmental Corporation

Figure 1.



NOTES:

1. AVERAGE GRADE LEVEL ≈ 325' ABOVE SEA LEVEL
2. REF. U.S. GEOLOGICAL SURVEY (NEWFANE N-4315 W-7837/75)

ASSUMED BENCH - HYDRANT WEST RIM BOLT - 325.00 (APPROXIMATES USC & GS DATUM)

GRAPHIC SCALE

500 0 500 1000

(IN FEET)

1 inch = 500 ft.

\19045\FIG-2

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Boott Mills South
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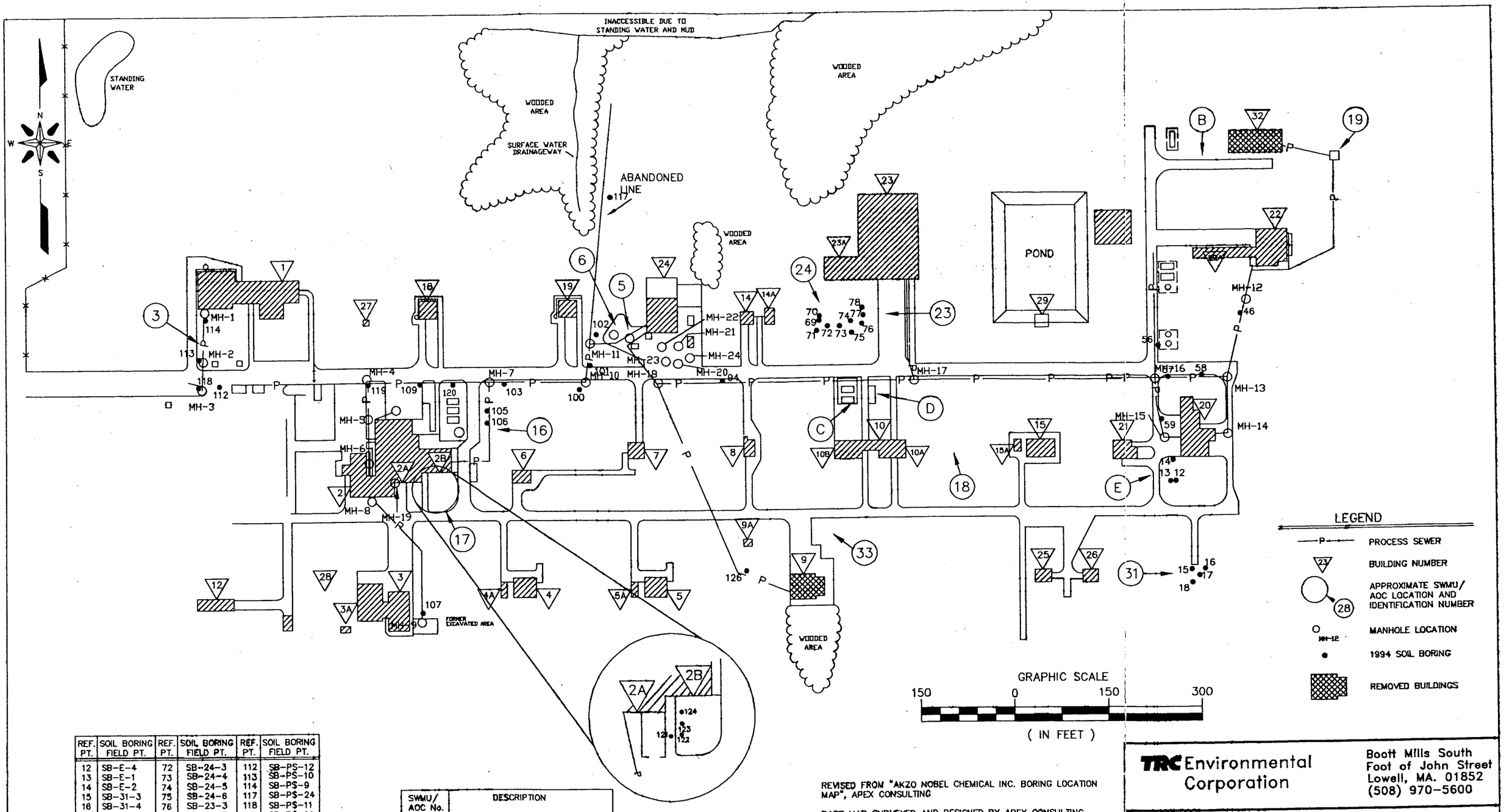
Lowell, MA 01852
(508) 970-5600

AKZO NOBEL CHEMICAL, INC.
BURT, NEW YORK

FIGURE 2
Facility Location Map

Date: 03/97

Project No. 19045-0010-00000



REF. PT.	SOIL BORING FIELD PT.	REF. PT.	SOIL BORING FIELD PT.	REF. PT.	SOIL BORING FIELD PT.
12	SB-E-4	72	SB-24-3	112	SB-PS-12
13	SB-E-1	73	SB-24-4	113	SB-PS-10
14	SB-E-2	74	SB-24-5	114	SB-PS-9
15	SB-31-3	75	SB-24-6	117	SB-PS-24
16	SB-31-4	76	SB-23-3	118	SB-PS-11
17	SB-31-2	77	SB-23-2	119	SB-PS-14
18	SB-31-1	78	SB-23-1	120	SB-PS-16
45	SB-PS-2	94	SB-PS-8	121	SB-17-4
46	SB-PS-1	100	SB-PS-18	122	SB-17-3
56	SB-PS-7	101	SB-PS-21	123	SB-17-2
57	SB-PS-4	102	SB-PS-22	124	SB-17-1
58	SB-PS-3	103	SB-PS-17	126	SB-PS-23
59	SB-PS-5	105	SB-PS-19		
69	SB-24-1A	106	SB-PS-20		
70	SB-24-1	107	SB-PS-25		
71	SB-24-2	109	SB-PS-15		

SWMU/ AOC No.	DESCRIPTION
3	PROCESS SEWER
5	EAST INNFLUENT WELL
6	WEST INFLUENT WELL
16	BUILDING 2B SEPARATOR
17	FORMER UST No. 2 AREA
23	BURNING CAGE
24	LANDFILL SITE No. 1
31	BUILDING 16 DRUM STORAGE AREA
E	FORMER UST No. 20 AREA

ALL SWMC/AOC BOUNDARY LOCATIONS ARE APPROXIMATE.

LEGEND

- P — PROCESS SEWER
- 23 — BUILDING NUMBER
- 28 — APPROXIMATE SWMU/ AOC LOCATION AND IDENTIFICATION NUMBER
- MH-12 — MANHOLE LOCATION
- 1994 SOIL BORING
- REMOVED BUILDINGS

REVISED FROM "AKZO NOBEL CHEMICAL INC. BORING LOCATION MAP", APEX CONSULTING

BASE MAP SURVEYED AND DESIGNED BY APEX CONSULTING SURVEY & ENGINEERING SERVICES.

THIS MAP WAS PREPARED FOR THE LOCATION OF SOIL BORINGS AND ELECTROMAGNETIC SURVEY POINTS AS REFERENCED BY THE DEPICTED NUMBER POINTS, THIS MAP WHICH INCLUDES THE LOCATION OF AKZO NOBEL CHEMICAL INC., BURT N.Y. PLANT BUILDINGS WAS PROVIDED FOR OUR USE. THE BASE MAP INFORMATION WAS PROVIDED BY P.C. INDUSTRIAL DESIGN INC., DRAWING NO. ACI-531B. TRC ENVIRONMENTAL CORP. EXPRESSES NO WARRANTY TO THE HORIZONTAL LOCATION ACCURACY OF THE BUILDING AND PROPERTY BOUNDARY LOCATIONS.

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AKZO NOBEL CHEMICAL, INC.
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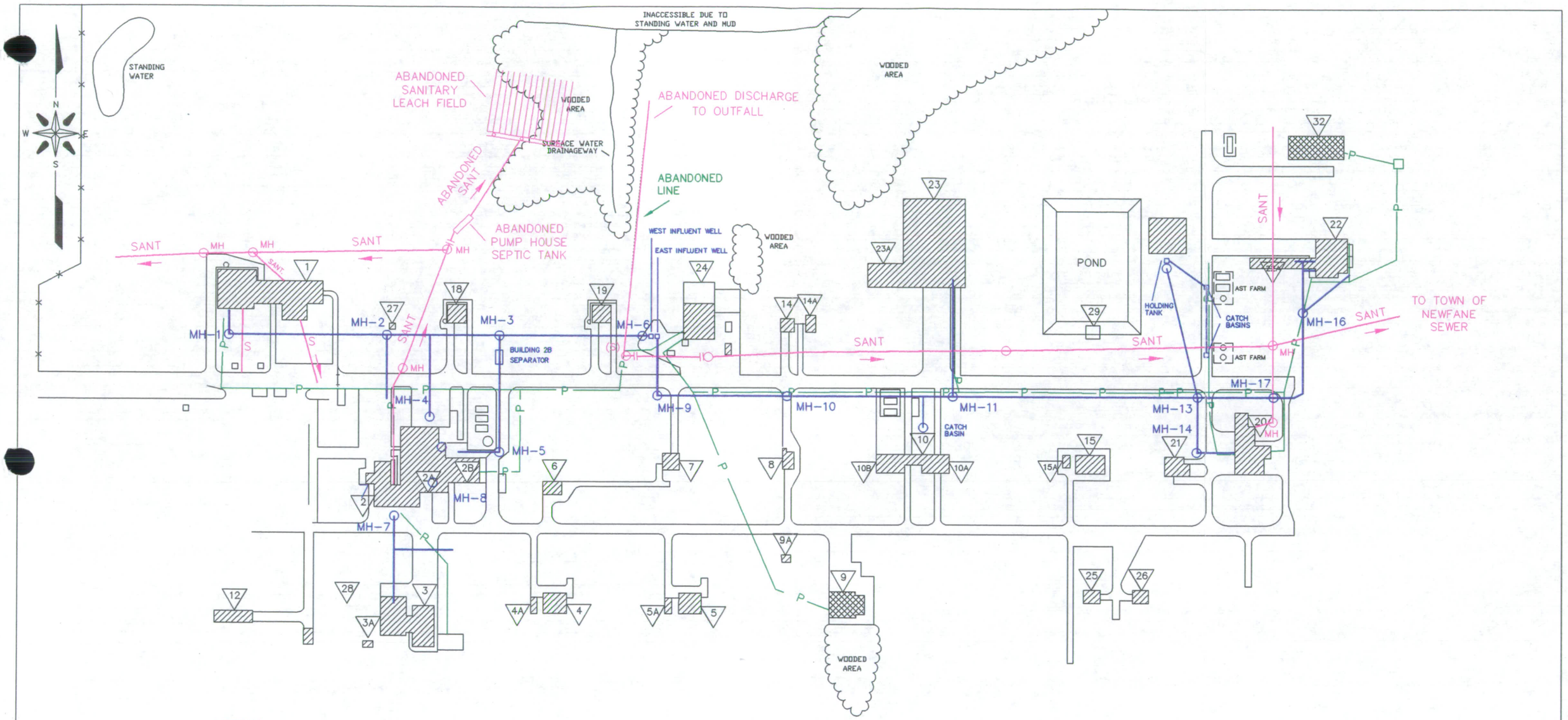
FIGURE 3
RFA-SV SAMPLING LOCATIONS SWMUs 3, 5, 6, 17, 23, 24, 31 AND AOC E

Date: 3/97 | Project No. 19045-0020-00000

\19045\RFI\A



LEGEND

SANT — SANITARY SEWER

S — STORM SEWER

O MH — MANHOLE

NEW PROCESS SEWER LINE

— P — OLD PROCESS SEWER LINE

GRAPHIC SCALE

150 0 150 300

(IN FEET)

\19045\RFI\H

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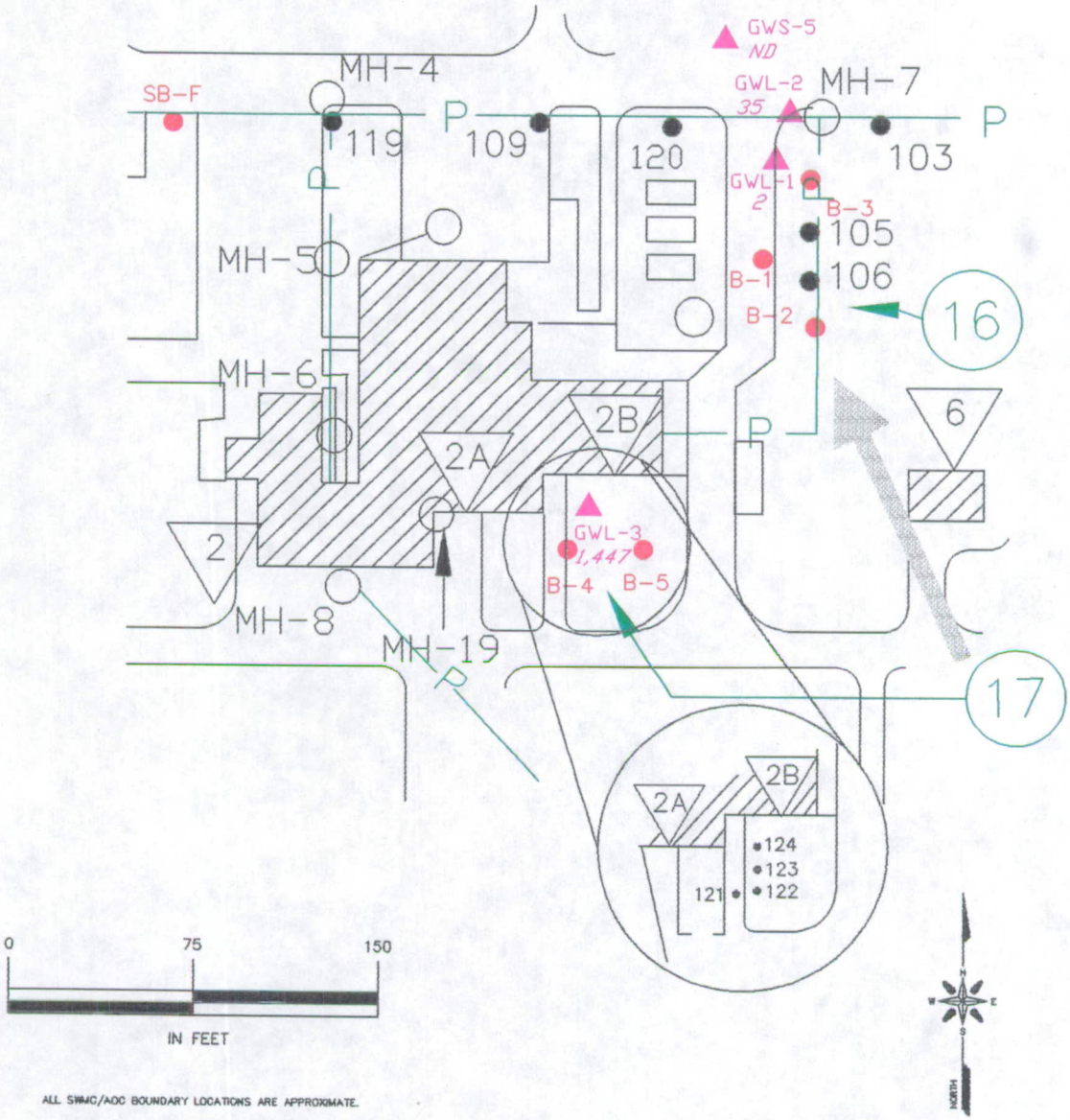
BURT, NEW YORK

FIGURE 4
HISTORIC AND CURRENT SANITARY AND PROCESS SEWER SUBGRADE LAYOUT

Date: 3/97

Project No. 19045-0020-00000



ALL SWMC/AOC BOUNDARY LOCATIONS ARE APPROXIMATE.

LEGEND

- PROCESS SEWER
- BUILDING NUMBER
- APPROXIMATE SWMU/ AOC LOCATION AND IDENTIFICATION NUMBER
- 1996 SOIL BORING
- 1994 SOIL BORING
- GROUND WATER LAB SAMPLE
- MANHOLE LOCATION
- GROUND WATER FLOW DIRECTION

REF. PT.	SOIL BORING FIELD PT.
103	SB-PS-17
105	SB-PS-19
106	SB-PS-20
109	SB-PS-15
119	SB-PS-14
120	SB-PS-16
121	SB-17-4
122	SB-17-3
123	SB-17-2
124	SB-17-1

REVISED FROM "AKZO NOBEL CHEMICAL INC. BORING LOCATION MAP", APEX CONSULTING

BASE MAP SURVEYED AND DESIGNED BY APEX CONSULTING SURVEY & ENGINEERING SERVICES.

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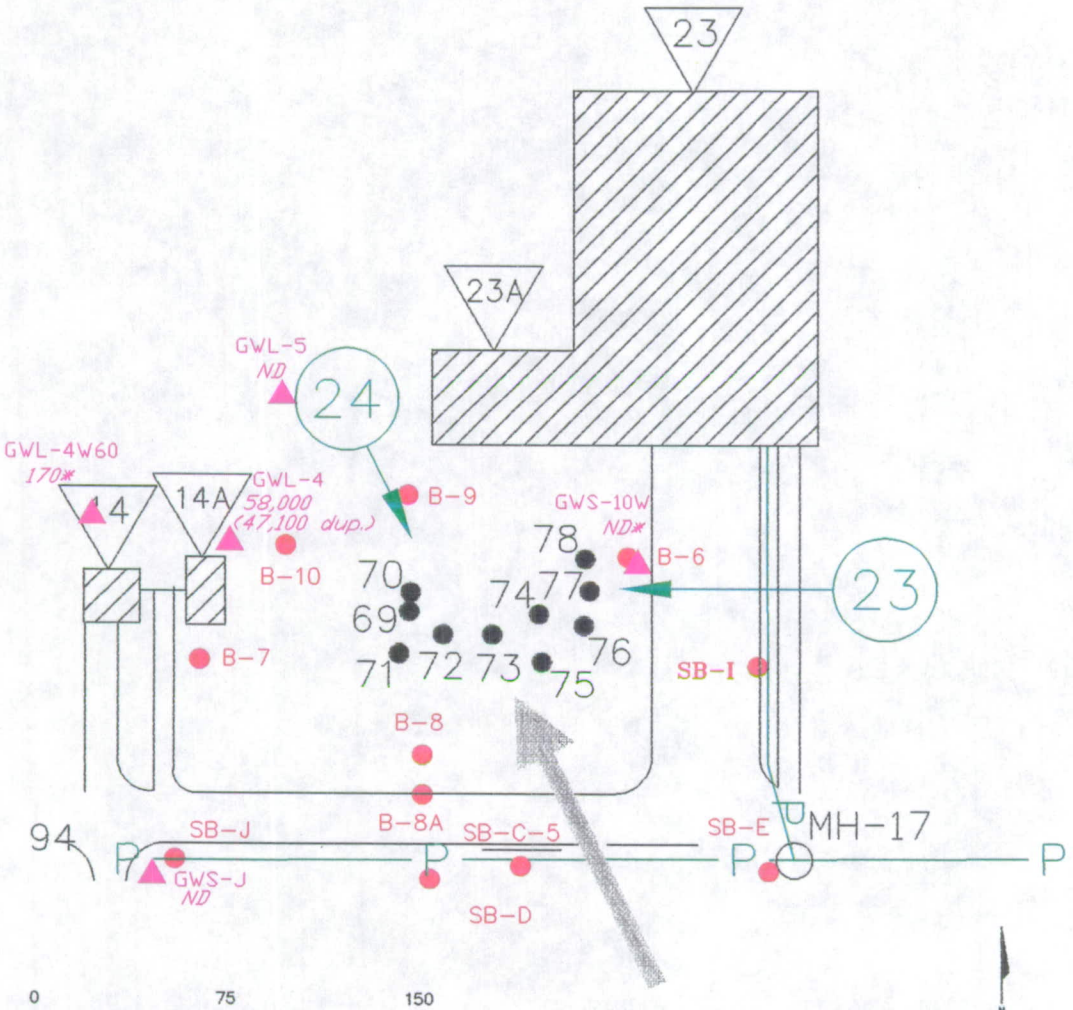
AKZO NOBEL CHEMICAL, INC.
BURT, NEW YORK

FIGURE 13
RFI SAMPLING LOCATIONS FOR
SWMUs 16 AND 17

Date: 3/97 | Project No. 19045-0020-00000

19045\RFI\F



LEGEND

- PROCESS SEWER
- BUILDING NUMBER
- APPROXIMATE SWMU/AOC LOCATION AND IDENTIFICATION NUMBER
- 1996 SOIL BORING
- 1994 SOIL BORING
- GROUND WATER LAB SAMPLE
- MANHOLE LOCATION
- GROUND WATER FLOW DIRECTION

REF. PT.	SOIL BORING FIELD PT.
69	SB-24-1A
70	SB-24-1
71	SB-24-2
72	SB-24-3
73	SB-24-4
74	SB-24-5
75	SB-24-6
76	SB-23-3
77	SB-23-2
78	SB-23-1

REVISED FROM "AKZO NOBEL CHEMICAL INC. BORING LOCATION MAP", APEX CONSULTING

BASE MAP SURVEYED AND DESIGNED BY APEX CONSULTING SURVEY & ENGINEERING SERVICES.

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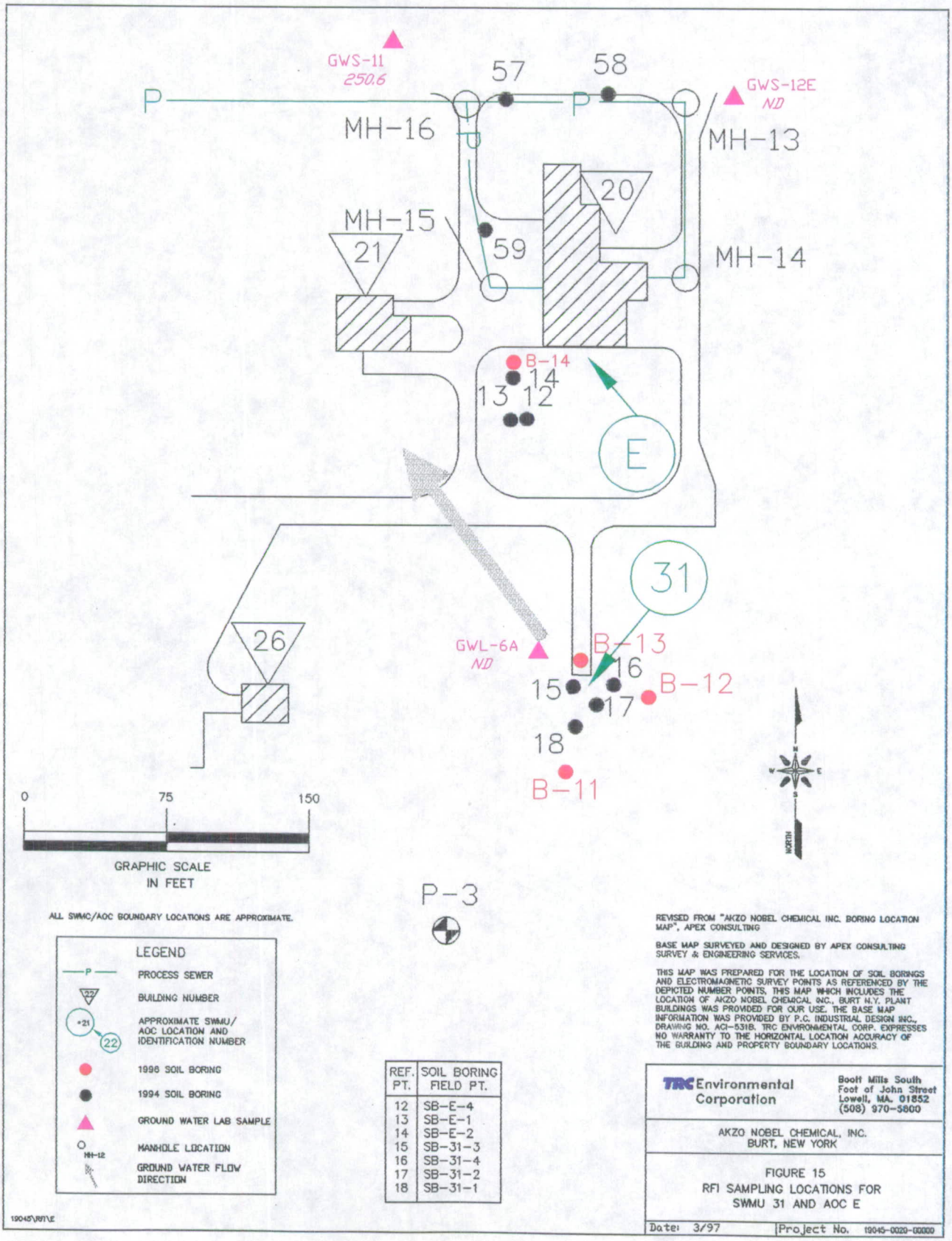
AKZO NOBEL CHEMICAL, INC.
BURT, NEW YORK

FIGURE 14
RFI SAMPLING LOCATIONS FOR
SWMUs 23 AND 24

Date: 3/97 | Project No. 19045-0020-00000

19045\RFI\G



REF. PT.	SOIL BORING FIELD PT.
12	SB-E-4
13	SB-E-1
14	SB-E-2
15	SB-31-3
16	SB-31-4
17	SB-31-2
18	SB-31-1

REVISED FROM "AKZO NOBEL CHEMICAL INC. BORING LOCATION MAP", APEX CONSULTING

BASE MAP SURVEYED AND DESIGNED BY APEX CONSULTING SURVEY & ENGINEERING SERVICES.

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AKZO NOBEL CHEMICAL, INC.
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FIGURE 15
RFI SAMPLING LOCATIONS FOR
SWMU 31 AND AOC E

Date: 3/97 | Project No. 19045-0020-00000

19045\RFI\E

APPENDIX A

SOIL GAS SURVEY DATA SUMMARY TABLE

SOIL GAS SURVEY DAT[redacted]MMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	Non Methane VOCs(ppmv)
BKG-1	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
BKG-2	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-1	08/14/96	1.5-2.0	Grass	1100	6	1094	2	1	1	1093
-2	08/14/96	1.5-2.0	Grass	600	9	591	2	1	1	590
-3	08/14/96	1.5-2.0	Grass	195	7	188	2	2	0	188
-4	08/14/96	1.5-2.0	Grass	17	7	10	2	2	0	10
-5	08/14/96	1.5-2.0	Grass	36	9	27	2	2	0	27
-6	08/14/96	1.5-2.0	Grass	200	8	192	2	2	0	192
-7	08/14/96	1.5-2.0	Grass	19	8	11	2	2	0	11
-8	08/14/96	1.5-2.0	Grass	102	8	94	2	2	0	94
-9	08/14/96	1.5-2.0	Grass	90	8	82	2	2	0	82
-10	08/14/96	1.5-2.0	Grass	16	8	8	2	2	0	8
-11	08/14/96	1.5-2.0	Grass	800	8	792	2.5	2	0.5	791.5
-12	08/14/96	1.5-2.0	Grass	14	8	6	2	2	0	6
-13	08/14/96	1.5-2.0	Grass	900	8	892	2	2	0	892
-14	08/14/96	1.5-2.0	Grass	1050	8	1042	2	2	0	1042
-15	08/14/96	1.5-2.0	Grass	290	10	280	2	2	0	280
-16	08/14/96	1.5-2.0	Grass	100	6	94	15	1	14	80
-17	08/14/96	1.5-2.0	Grass	37	7	30	1	1	0	30
-18	08/14/96	1.5-2.0	Grass	310	8	302	1	1	0	302
-19	08/14/96	1.5-2.0	Grass	160	8	152	1	1	0	152
-20	08/14/96	1.5-2.0	Grass	260	6	254	1	1	0	254
-21	08/14/96	1.5-2.0	Grass	180	8	172	1	1	0	172
-22	08/14/96	1.5-2.0	Grass	700	9	691	1	1	0	691
-23	08/14/96	1.5-2.0	Grass	195	10	185	2	1	1	184
-24	08/14/96	1.5-2.0	Grass	220	7	213	2	1	1	212
-25	08/14/96	1.5-2.0	Grass	90	9	81	1	1	0	81
-26	08/14/96	1.5-2.0	Grass	160	8	152	1	1	0	152
-27	08/14/96	1.5-2.0	Grass	500	8	492	1	1	0	492
-28	08/14/96	1.5-2.0	Grass	1600	10	1590	1	1	0	1590
-29	08/14/96	1.5-2.0	Grass	120	11	109	1	1	0	109
-30	08/14/96	1.5-2.0	Grass	19	10	9	1	1	0	9
-31	08/14/96	1.5-2.0	Grass	190	10	180	1	1	0	180
-32	08/14/96	1.5-2.0	Grass	700	9.5	690.5	1	1	0	690.5
-33	08/14/96	1.5-2.0	Grass	95	10	85	1	1	0	85
-34	08/14/96	1.5-2.0	Grass	52	10	42	1	1	0	42
-35	08/14/96	1.5-2.0	Grass	47	9	38	1	1	0	38
-36	08/14/96	1.5-2.0	Grass	3	2	1	1	1	0	1

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

P:\PROJECTS\CCR\L97.092E.WK4

SOIL GAS SURVEY DAT[redacted]MMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	Non Methane VOCs(ppmv)
-37	08/14/96	1.5-2.0	Grass	3000	2	2998	1800	1	1799	1199
-38	08/14/96	1.5-2.0	Grass	5	2	3	1	1	0	3
-39	08/14/96	1.5-2.0	Grass	3	2	1	1	1	0	1
-40	08/14/96	1.5-2.0	Grass	3	2	1	1	1	0	1
-41	08/14/96	1.5-2.0	Grass/Gravel	5	3	2	1	1	0	2
-42	08/14/96	1.5-2.0	Grass/Gravel	60	3	57	1	1	0	57
-43	08/14/96	1.5-2.0	Grass/Gravel	600	3	597	1	1	0	597
-44	08/14/96	1.5-2.0	Grass/Gravel	6	4	2	1	1	0	2
-45	08/14/96	1.5-2.0	Grass/Gravel	6	4	2	1	1	0	2
-46	08/14/96	1.5-2.0	Grass/Gravel	7	4	3	1	1	0	3
-47	08/14/96	1.5-2.0	Grass/Gravel	4	4	0	1	1	0	Bkgd
-48	08/14/96	1.5-2.0	Grass/Gravel	4	4	0	1	1	0	Bkgd
-49	08/14/96	1.5-2.0	Grass	7	3	4	1	1	0	4
-50	08/14/96	1.5-2.0	Grass	9	3	6	1	1	0	6
-51	08/14/96	1.5-2.0	Grass	8	3	5	1	1	0	5
-52	08/14/96	1.5-2.0	Grass	7	3	4	1	1	0	4
-53	08/14/96	1.5-2.0	Grass	10	3	7	1	1	0	7
-54	08/14/96	1.5-2.0	Grass	8	3	5	1	1	0	5
-55	08/14/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-56	08/14/96	1.5-2.0	Grass	4	3	1	4	1	3	Bkgd
-57	08/14/96	1.5-2.0	Grass	6	3	3	1	1	0	3
-58	08/14/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-59	08/14/96	1.5-2.0	Grass	3	2	1	1	1	0	1
-60	08/14/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-61	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-62	08/14/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-63	08/14/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-64	08/14/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-65	08/14/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-66	08/14/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-67	08/14/96	1.5-2.0	Grass	8	3	5	1	1	0	5
-68	08/14/96	1.5-2.0	Grass	7	3	4	1	1	0	4
-69	08/14/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-70	08/14/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-71	08/14/96	1.5-2.0	Grass	13	3	10	1	1	0	10
-72	08/14/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-73	08/14/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-74	08/14/96	1.5-2.0	Grass	9	3	6	1	1	0	6

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

P:\PROJECTS\CCR\L97.092E.WK4

SOIL GAS SURVEY DATA SUMMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	Non Methane VOCs(ppmv)
-75	08/14/96	1.5-2.0	Gravel	9	3	6	1	1	0	6
-76	08/15/96	1.5-2.0	Grass	4	4	0	1.5	1.5	0	Bkgd
-77	08/15/96	1.5-2.0	Grass	4	4	0	1.5	1.5	0	Bkgd
-78	08/15/96	1.5-2.0	Grass	6	4	2	1	1	0	2
-79	08/15/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-80	08/15/96	1.5-2.0	Grass	8	4	4	1.5	1	0.5	3.5
-81	08/15/96	1.5-2.0	Grass	8	4	4	2	1	1	3
-82	08/15/96	1.5-2.0	Grass	9	4	5	1	1	0	5
-83	08/15/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-84	08/15/96	1.5-2.0	Grass	9	4	5	1	1	0	5
-85	08/27/96	1.5-2.0	Grass	500	3	497	200	1	199	298
-86	08/15/96	1.5-2.0	Grass	9	4	5	2.5	1	1.5	3.5
-87	08/15/96	1.5-2.0	Grass	3.5	3.5	0	1	1	0	Bkgd
-88	08/15/96	1.5-2.0	Crushed Rock	13	4	9	3	1	2	7
-89	08/15/96	1.5-2.0	Crushed Rock	45	3	42	18	1	17	25
-90	08/15/96	1.5-2.0	Asphalt	10000	2	9998	5000	1	4999	4999
-91	08/15/96	1.5-2.0	Asphalt	20	2	18	20	1	19	Bkgd
-92	08/15/96	1.5-2.0	Asphalt	50	2	48	50	1	49	Bkgd
-93	08/15/96	1.5-2.0	Grass	1700	3	1697	700	1	699	998
-94	08/15/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-95	08/15/96	1.5-2.0	Grass	7	3	4	1	1	0	4
-96	08/15/96	1.5-2.0	Grass	>950 (2)	2	>950 (2)	>700 (2)	1	>700 (2)	NOD (1)
-97	08/15/96	1.5-2.0	Grass	9	3	6	5	1	4	2
-98	08/15/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-99	08/15/96	1.5-2.0	Grass	8	3	5	3	1	2	3
-100	08/15/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-101	08/15/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-102	08/15/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-103	08/15/96	1.5-2.0	Grass	6	3	3	1	1	0	3
-104	08/16/96	1.5-2.0	Grass	5	4	1	1	1	0	1
-105	08/16/96	1.5-2.0	Grass	1100	3	1097	800	1	799	298
-106	08/16/96	1.5-2.0	Grass	2000	3	1997	350	1	349	1648
-107	08/16/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-108	08/16/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-109	08/16/96	1.5-2.0	Grass	30	3	27	7	1	6	21
-110	08/16/96	1.5-2.0	Grass	1000	3	997	300	1	299	698
-111	08/16/96	1.5-2.0	Grass	>10000	3	>10000	>10000	1	>10000	NOD (1)
-112	08/19/96	1.5-2.0	Grass	5000	3	4997	5	1	4	4993

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

P:\PROJECTS\CCR\L97.092E.WK4

SOIL GAS SURVEY DAT[illegible]MMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	Non Methane VOCs(ppmv)
-113	08/19/96	1.5-2.0	Grass	16	4	12	1	1	0	12
-114	08/16/96	1.5-2.0	Grass	45	3	42	30	1	29	13
-115	08/16/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-116	08/16/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-117	08/16/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-118	08/16/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-119	08/16/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-120	08/16/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-121	08/16/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-122	08/16/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-123	08/16/96	1.5-2.0	Grass	5	2	3	1	1	0	3
-124	08/16/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-125	08/16/96	1.5-2.0	Grass	6	2	4	1	1	0	4
-126	08/16/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-127	08/16/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-128	08/16/96	1.5-2.0	Grass	10	2	8	4	1	3	5
-129	08/16/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-130	08/16/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-131	08/16/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-132	08/16/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-133	08/16/96	1.5-2.0	Grass	50	2	48	1	1	0	48
-134	08/16/96	1.5-2.0	Grass	12	2	10	2	1	1	9
-135	08/16/96	1.5-2.0	Grass	14	2	12	1	1	0	12
-136	08/16/96	1.5-2.0	Grass	25	2	23	1	1	0	23
-137	08/16/96	1.5-2.0	Grass	20	2	18	1	1	0	18
-138	08/16/96	1.5-2.0	Grass	25	2	23	1	1	0	23
-139	08/16/96	1.5-2.0	Grass	45	2	43	1	1	0	43
-140	08/19/96	1.5-2.0	Asphalt	5	3	2	1	1	0	2
-141	08/19/96	1.5-2.0	Asphalt	7	3	4	1	1	0	4
-142	08/19/96	1.5-2.0	Asphalt	70	3	67	3	1	2	65
-143	08/16/96	1.5-2.0	Grass	30	2	28	1	1	0	28
-144	08/16/96	1.5-2.0	Grass	50	2	48	1	1	0	48
-145	08/16/96	1.5-2.0	Grass	10000	2	9998	3000	1	2999	6999
-146	08/16/96	1.5-2.0	Grass	>10000	2	>10000	1500	1	1499	> 8500
-147	08/16/96	1.5-2.0	Grass	20	2	18	1	1	0	18
-148	08/16/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-149	08/16/96	1.5-2.0	Grass	12	2	10	3	1	2	8
-150	08/16/96	1.5-2.0	Grass	25	3	22	1	1	0	22

(1) NOD=Cannot Quantify due to Instrument response

(2) Flame out during peak rise

P:\PROJECTS\CCR\L97.092E.WK4

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable Non Methane VOCs(ppmv)
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	
-151	08/16/96	1.5-2.0	Grass	45	2	43	1	1	0	43
-152	08/16/96	1.5-2.0	Grass	6	3	3	1	1	0	3
-153	08/16/96	1.5-2.0	Grass	50	3	47	1	1	0	47
-154	08/16/96	1.5-2.0	Grass	35	3	32	1	1	0	32
-155	08/16/96	1.5-2.0	Grass	35	3	32	1	1	0	32
-156	08/16/96	1.5-2.0	Grass	8	3	5	1	1	0	5
-157	08/16/96	1.5-2.0	Grass	1800	3	1797	900	1	899	898
-158	08/16/96	1.5-2.0	Grass	16	3	13	1	1	0	13
-159	08/16/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-160	08/16/96	1.5-2.0	Grass	160	3	157	40	1	39	118
-161	08/16/96	1.5-2.0	Grass	>10000	3	>10000	>10000	1	>10000	NOD (1)
-162	08/16/96	1.5-2.0	Grass	17	3	14	3	2	1	13
-163	08/16/96	1.5-2.0	Grass	16	2	14	1	1	0	14
-164	08/16/96	1.5-2.0	Grass	7	2	5	1	1	0	5
-165	08/16/96	1.5-2.0	Grass	5	2	3	1	1	0	3
-166	08/16/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-167	08/16/96	1.5-2.0	Grass	27	2	25	1	1	0	25
-168	08/16/96	1.5-2.0	Grass	6	2	4	1	1	0	4
-169	08/16/96	1.5-2.0	Grass	26	2	24	1	1	0	24
-170	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-171	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-172	08/19/96	1.5-2.0	Grass	6	3	3	2	1	1	2
-173	08/19/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-174	08/19/96	1.5-2.0	Grass	25	3	22	5	1	4	18
-175	08/19/96	1.5-2.0	Grass	50	3	47	5	1	4	43
-176	08/19/96	1.5-2.0	Grass	10	4	6	2	1	1	5
-177	08/19/96	1.5-2.0	Grass	12	3	9	1	1	0	9
-178	08/19/96	1.5-2.0	Grass	9000	3	8997	1700	1	1699	7298
-300	08/16/96	1.5-2.0	Grass	60	2	58	1	1	0	58
-301	08/16/96	1.5-2.0	Grass	25	2	23	1	1	0	23
-302	08/16/96	1.5-2.0	Grass	>10000	2	>10000	>10000	1	>10000	NOD (1)
-303	08/16/96	1.5-2.0	Grass	50	4	46	1	1	0	46
-304	08/16/96	1.5-2.0	Grass	5000	2	4998	2200	1	2199	2799
-305	08/16/96	1.5-2.0	Grass	100	5	95	1	1	0	95
-306	08/16/96	1.5-2.0	Grass	9000	5	8995	4000	1	3999	4996
-307	08/16/96	1.5-2.0	Grass	70	6	64	1	1	0	64
-308	08/19/96	1.5-2.0	Grass	10000	2	9998	6000	1	5999	3999
-309	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

P:\PROJECTS\CCR\L97.092E.WK4

SOIL GAS SURVEY DATA SUMMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable Non Methane VOCs(ppmv)
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	
-310	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-311	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-312	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-313	08/19/96	1.5-2.0	Grass	>10000	2	>10000	>10000	1	>10000	NOD (1)
-314	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-315	08/19/96	1.5-2.0	Grass	7000	2	6998	4000	1	3999	2999
-316	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-317	08/19/96	1.5-2.0	Grass	28	2	26	1	1	0	26
-318	08/19/96	1.5-2.0	Grass	22	2	20	3	1	2	18
-319	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-320	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-321	08/19/96	1.5-2.0	Grass	4	2	2	1	1	0	2
-322	08/19/96	1.5-2.0	Grass	6	2	4	1	1	0	4
-323	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-324	08/19/96	1.5-2.0	Grass	18	2	16	1	1	0	16
-325	08/19/96	1.5-2.0	Grass	3	2	1	1	1	0	1
-326	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-327	08/19/96	1.5-2.0	Grass	11	2	9	4	1	3	6
-328	08/19/96	1.5-2.0	Grass	3	2	1	1	1	0	1
-329	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-330	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-331	08/19/96	1.5-2.0	Grass	2	2	0	1	1	0	Bkgd
-332	08/19/96	1.5-2.0	Grass	30	2	28	1	1	0	28
-333	08/19/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-334	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-335	08/19/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-336	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-337	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-338	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-339	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-340	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-341	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-342	08/19/96	1.5-2.0	Grass	9	3	6	1	1	0	6
-343	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-344	08/19/96	1.5-2.0	Grass	100	3	97	1	1	0	97
-345	08/19/96	1.5-2.0	Grass	14	3	11	1	1	0	11
-346	08/19/96	1.5-2.0	Grass	12	4	8	1	1	0	8
-347	08/19/96	1.5-2.0	Grass	60	4	56	1	1	0	56

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

P:\PROJECTS\CCR\L97.092E.WK4

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	Non Methane VOCs(ppmv)
-348	08/19/96	1.5-2.0	Grass	55	4	51	1	1	0	51
-349	08/19/96	1.5-2.0	Grass	20	5	15	1	1	0	15
-350	08/19/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-351	08/19/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-352	08/19/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-353	08/19/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-354	08/19/96	1.5-2.0	Grass	20	4	16	1	1	0	16
-355	08/19/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-356	08/19/96	1.5-2.0	Grass	12	4	8	1	1	0	8
-357	08/19/96	1.5-2.0	Grass	22	3	19	2	1	1	18
-358	08/19/96	1.5-2.0	Grass	25	3	22	1	1	0	22
-359	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-360	08/19/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-361	08/19/96	1.5-2.0	Grass	5	4	1	1	1	0	1
-362	08/19/96	1.5-2.0	Grass	30	4	26	1	1	0	26
-363	08/19/96	1.5-2.0	Grass	12	4	8	2	1	1	7
-364	08/19/96	1.5-2.0	Grass	60	4	56	1	1	0	56
-365	08/19/96	1.5-2.0	Grass	>10000	4	>10000	>10000	1	>10000	NOD (1)
-366	08/19/96	1.5-2.0	Grass	9	4	5	1	1	0	5
-367	08/19/96	1.5-2.0	Grass	12	3	9	1	1	0	9
-368	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-369	08/19/96	1.5-2.0	Grass	27	3	24	1	1	0	24
-370	08/19/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-371	08/19/96	1.5-2.0	Grass	>10000	3	>10000	>10000	1	>10000	NOD (1)
-372	08/19/96	1.5-2.0	Grass	4000	3	3997	2000	1	1999	1998
-373	08/19/96	1.5-2.0	Grass	>10000	3	>10000	>10000	1	>10000	NOD (1)
-374	08/19/96	1.5-2.0	Grass	45	3	42	1	1	0	42
-375	08/19/96	1.5-2.0	Grass	20	3	17	3	1	2	15
-376	08/19/96	1.5-2.0	Grass	7	3	4	1	1	0	4
-400	08/22/96	1.5-2.0	Grass	16	5	11	2	1	1	10
-401	08/22/96	1.5-2.0	Grass	50	3	47	6	1	5	42
-402	08/22/96	1.5-2.0	Grass	100	3	97	12	1	11	86
-403	08/22/96	1.5-2.0	Grass	30	3	27	2	1	1	26
-404	08/22/96	1.5-2.0	Grass	10	5	5	1	1	0	5
-405	08/22/96	1.5-2.0	Grass	14	7	7	1	1	0	7
-406	08/22/96	1.5-2.0	Grass	12	5	7	1	1	0	7
-407	08/22/96	1.5-2.0	Grass	14	4	10	2	1	1	9
-408	08/22/96	1.5-2.0	Grass	14	9	5	1	1	0	5

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable Non Methane VOCs(ppmv)
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	
-409	08/22/96	1.5-2.0	Grass	50	3	47	1	1	0	47
-410	08/22/96	1.5-2.0	Grass	8	3	5	1	1	0	5
-411	08/22/96	1.5-2.0	Grass	11	7	4	1	1	0	4
-412	08/22/96	1.5-2.0	Grass	7	5	2	1	1	0	2
-413	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-414	08/22/96	1.5-2.0	Grass	10	5	5	1	1	0	5
-415	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-416	08/22/96	1.5-2.0	Grass	Too wet	Too wet	Too wet	Too wet	Too wet	Too wet	Too wet
-417	08/24/96	1.5-2.5	Grass	4	3	1	1	1	0	1
-418	08/22/96	1.5-2.0	Grass	12	3	9	1	1	0	9
-419	08/22/96	1.5-2.0	Grass	10	4	6	1	1	0	6
-420	08/22/96	1.5-2.0	Grass	13.5	4	9.5	1	1	0	9.5
-421	08/22/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-422	08/22/96	1.5-2.0	Grass	11	4	7	1	1	0	7
-423	08/22/96	1.5-2.0	Grass	80	4	76	1	1	0	76
-424	08/22/96	1.5-2.0	Grass	40	4	36	1	1	0	36
-425	08/22/96	1.5-2.0	Grass	9	4	5	1	1	0	5
-426	08/22/96	1.5-2.0	Grass	100	4	96	25	1	24	72
-427	08/22/96	1.5-2.0	Grass	4000	4	3996	1000	1	999	2997
-428	08/22/96	1.5-2.0	Grass	7	3	4	1	1	0	4
-429	08/22/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-430	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-431	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-432	08/22/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-433	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-434	08/22/96	1.5-2.0	Grass	12	3	9	1	1	0	9
-435	08/22/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-436	08/22/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-437	08/22/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-438	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-439	08/24/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-440	08/22/96	1.5-2.0	Grass	10	3	7	1	1	0	7
-441	08/22/96	1.5-2.0	Grass	4	3	1	1	1	0	1
-442	08/22/96	1.5-2.0	Grass	9	3	6	1	1	0	6
-443	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-444	08/23/96	1.5-2.0	Grass	16	5	11	2	1	1	10
-445	08/23/96	1.5-2.0	Grass	8	3	5	1	1	0	5
-446	08/23/96	1.5-2.0	Grass	5	3	2	1	1	0	2

(1) NQD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

SOIL GAS SURVEY DAT[illegible]MMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	Non Methane VOCs(ppmv)
-447	08/22/96	1.5-2.0	Grass	2500	3	2497	1100	2	1098	1399
-448	08/22/96	1.5-2.0	Grass	150	3	147	35	2	33	114
-449	08/22/96	1.5-2.0	Grass	7	4	3	1	1	0	3
-450	08/22/96	1.5-2.0	Grass	100	4	96	55	1	54	42
-451	08/22/96	1.5-2.0	Grass	3	3	0	3	3	0	Bkgd
-452	08/22/96	1.5-2.0	Grass	25	3	22	1	1	0	22
-453	08/22/96	1.5-2.0	Grass	14	4	10	3	1	2	8
-454	08/22/96	1.5-2.0	Grass	140	4	136	3	1	2	134
-455	08/22/96	1.5-2.0	Grass	15	4	11	1	1	0	11
-456	08/22/96	1.5-2.0	Grass	1500	4	1496	250	1	249	1247
-457	08/22/96	1.5-2.0	Grass	4000	4	3996	700	1	699	3297
-458	08/22/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-459	08/22/96	1.5-2.0	Grass	200	4	196	70	1	69	127
-460	08/22/96	1.5-2.0	Grass	500	4	496	100	1	99	397
-461	08/22/96	1.5-2.0	Grass	12	4	8	2	1	1	7
-462	08/22/96	1.5-2.0	Grass	60	4	56	45	1	44	12
-463	08/22/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-464	08/22/96	1.5-2.0	Grass	8	4	4	1	1	0	4
-465	08/22/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-466	08/22/96	1.5-2.0	Grass	6	3	3	1	1	0	3
-467	08/22/96	1.5-2.0	Grass	5	3	2	1	1	0	2
-468	08/22/96	1.5-2.0	Grass	7	4	3	2	1	1	2
-469	08/22/96	1.5-2.0	Grass	12	4	8	1	1	0	8
-470	08/22/96	1.5-2.0	Grass	35	4	31	1	1	0	31
-471	08/22/96	1.5-2.0	Grass	9	4	5	1	1	0	5
-472	08/22/96	1.5-2.0	Grass	8	4	4	1	1	0	4
-473	08/22/96	1.5-2.0	Grass	7	4	3	2	2	0	3
-474	08/22/96	1.5-2.0	Grass	3	3	0	2	2	0	Bkgd
-475	08/22/96	1.5-2.0	Grass	3	3	0	2	2	0	Bkgd
-476	08/22/96	1.5-2.0	Grass	6	4	2	2	2	0	2
-477	08/22/96	1.5-2.0	Grass	32	3	29	1	1	0	29
-478	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-479	08/22/96	1.5-2.0	Grass	5	3	2	3	2	1	1
-480	08/22/96	1.5-2.0	Grass	7	3	4	2	2	0	4
-481	08/22/96	1.5-2.0	Grass	5	3	2	2	2	0	2
-482	08/22/96	1.5-2.0	Grass	>10000	3	>10000	>10000	2	>10000	NOD (1)
-483	08/22/96	1.5-2.0	Grass	>10000	3	>10000	>10000	2	>10000	NOD (1)
-484	08/22/96	1.5-2.0	Grass	3	3	0	2	2	0	Bkgd

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

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SOIL GAS SURVEY DATA SUMMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable Non Methane VOCs(ppmv)
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	
-485	08/22/96	1.5-2.0	Grass	>10000	3	>10000	>10000	2	>10000	NOD (1)
-486	08/22/96	1.5-2.0	Grass	3	3	0	2	2	0	Bkgd
-487	08/22/96	1.5-2.0	Grass	2000	3	1997	1000	2	998	999
-488	08/22/96	1.5-2.0	Grass	54	3	51	5	2	3	48
-489	08/22/96	1.5-2.0	Grass	>120 (2)	4	>120 (2)	>120 (2)	2	>120 (2)	NOD (1)
-490	08/22/96	1.5-2.0	Grass	>10000	4	>10000	>10000	2	>10000	NOD (1)
-491	08/22/96	1.5-2.0	Grass	4	4	0	2	2	0	Bkgd
-492	08/22/96	1.5-2.0	Grass	>1000 (2)	4	>1000 (2)	>1000 (2)	2	>1000 (2)	NOD (1)
-493	08/22/96	1.5-2.0	Grass	30	4	26	3	2	1	25
-494	08/22/96	1.5-2.0	Grass	4	4	0	2	2	0	Bkgd
-495	08/22/96	1.5-2.0	Grass	7	4	3	1	1	0	3
-496	08/22/96	1.5-2.0	Grass	220	4	216	3	1	2	214
-497	08/22/96	1.5-2.0	Grass	180	4	176	2	1	1	175
-498	08/22/96	1.5-2.0	Grass	12	4	8	2	2	0	8
-499	08/22/96	1.5-2.0	Grass	18	3	15	1	1	0	15
-500	08/22/96	1.5-2.0	Grass	14	3	11	2	1	1	10
-501	08/22/96	1.5-2.0	Grass	4	4	0	1	1	0	Bkgd
-502	08/22/96	1.5-2.0	Grass	5	4	1	1	1	0	1
-503	08/22/96	1.5-2.0	Grass	3	3	0	1	1	0	Bkgd
-504	08/22/96	1.5-2.0	Grass	>10000	4	>10000	>10000	1	>10000	NOD (1)
-505	08/22/96	1.5-2.0	Grass	25	4	21	1	1	0	21
-506	08/22/96	1.5-2.0	Grass	4	4	0	1	1	0	0
-507	08/22/96	1.5-2.0	Asphalt	>10000	4	>10000	>10000	1	>10000	NOD (1)
-508	08/22/96	1.5-2.0	Asphalt	>10000	5	>10000	>10000	5	>10000	NOD (1)
-601	08/24/96	1.5-2.5	Asphalt	>10000	3	>10000	>10000	2	>10000	NOD (1)
-602	08/24/96	1.5-2.5	Asphalt	>10000	3	>10000	>10000	2	>10000	NOD (1)
-603	08/24/96	1.5-2.5	Asphalt	>10000	3	>10000	>10000	2	>10000	NOD (1)
-604	08/24/96	1.5-2.5	Grass	>10000	3	>10000	>10000	2	>10000	NOD (1)
-605	08/24/96	1.5-2.5	Grass	>10000	3	>10000	>10000	2	>10000	NOD (1)
-606	08/24/96	1.5-2.5	Grass	3	3	0	2	2	0	Bkgd
-607	08/24/96	1.5-2.5	Grass	5	3	2	3	1	2	Bkgd
-608	08/24/96	1.5-2.5	Grass	3	3	0	2	2	0	Bkgd
-609	08/24/96	1.5-2.5	Grass	4	4	0	1	1	0	Bkgd
-610	08/24/96	1.5-2.5	Grass	4	3	1	1	1	0	1
-611	08/24/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-612	08/24/96	1.5-2.5	Grass	4	3	1	1	1	0	1
-613	08/24/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-614	08/24/96	1.5-2.5	Grass	4	3	1	1	1	0	1

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

P:\PROJECTS\CCR\L97.092E.WK4

SOIL GAS SURVEY DATA SUMMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable Non Methane VOCs(ppmv)
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	
-615	08/24/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-616	08/24/96	1.5-2.5	Grass	5	3	2	1	1	0	2
-617	08/24/96	1.5-2.5	Grass	4	4	0	1	1	0	Bkgd
-618	08/24/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-619	08/24/96	1.5-2.5	Grass	11	3	8	1	1	0	8
-620	08/24/96	1.5-2.5	Grass	32	3	29	2	2	0	29
-621	08/24/96	1.5-2.5	Grass	500	4	496	10	1	9	487
-622	08/24/96	1.5-2.5	Grass	3	3	0	2	2	0	Bkgd
-623	08/24/96	1.5-2.5	Grass	4	3	1	1	1	0	1
-624	08/24/96	1.5-2.5	Grass	4	3	1	1	1	0	1
-625	08/24/96	1.5-2.5	Grass	100	3	97	20	2	18	79
-626	08/24/96	1.5-2.5	Grass	11	3	8	2	2	0	8
-627	08/24/96	1.5-2.5	Grass	5	3	2	2	2	0	2
-628	08/24/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-629	08/24/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-630	08/24/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-631	08/24/96	1.5-2.5	Grass	4	4	0	1	1	0	Bkgd
-632	08/24/96	1.5-2.5	Grass	30	3	27	20	1	19	8
-633	08/24/96	1.5-2.5	Grass	100	3	97	20	1	19	78
-634	08/24/96	1.5-2.5	Grass	70	3	67	5	1	4	63
-635	08/24/96	1.5-2.5	Grass	5	3	2	2	1	1	1
-636	08/24/96	1.5-2.5	Grass	16	3	13	7	1	6	7
-637	08/24/96	1.5-2.5	Asphalt	5	3	2	1	1	0	2
-638	08/24/96	1.5-2.5	Asphalt	3	3	0	2	2	0	Bkgd
-639	08/24/96	1.5-2.5	Asphalt	4	4	0	1	1	0	Bkgd
-640	08/24/96	1.5-2.5	Asphalt	4	3	1	1	1	0	1
-641	08/24/96	1.5-2.5	Grass	6	3	3	2	2	0	3
-642	08/24/96	1.5-2.5	Grass	7	3	4	2	2	0	4
-643	08/24/96	1.5-2.5	Grass	6	3	3	2	2	0	3
-644	08/24/96	1.5-2.5	Grass	>10000	3	>10000	>10000	1	>10000	NOD (1)
-645	08/24/96	1.5-2.5	Grass	100	3	97	30	1	29	68
-646	08/24/96	1.5-2.5	Grass	10	3	7	1	1	0	7
-647	08/24/96	1.5-2.5	Grass	7	3	4	1	1	0	4
-648	08/24/96	1.5-2.5	Grass	56	3	53	50	1	49	4
-649	08/24/96	1.5-2.5	Grass	11	3	8	2	1	1	7
-650	08/26/96	1.5-2.5	Grass	4000	3	3997	150	2	148	3849
-651	08/26/96	1.5-2.5	Grass	3	3	0	2	2	0	Bkgd
-652	08/26/96	1.5-2.5	Grass	14	3	11	4	2	2	9

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

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SOIL GAS SURVEY DATA SUMMARY SHEET 09/27/96

Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	Non Methane VOCs(ppmv)
-653	08/26/96	1.5-2.5	Grass	12	3	9	2	2	0	9
-654	08/26/96	1.5-2.5	Grass	5	3	2	2	2	0	2
-655	08/26/96	1.5-2.5	Grass	5000	3	4997	1200	1	1199	3798
-656	08/26/96	1.5-2.5	Grass	>10000 (2)	3	>10000 (2)	2000	1	1999	>8000
-657	08/26/96	1.5-2.5	Grass	20	3	17	6	1	5	12
-658	08/26/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-659	08/26/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-660	08/26/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-661	08/26/96	1.5-2.5	Grass	50	3	47	12	1	11	36
-662	08/26/96	1.5-2.5	Grass	16	3	13	3	1	2	11
-663	08/26/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-664	08/27/96	1.5-2.5	Grass	5	4	1	1	1	0	1
-665	08/27/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-666	08/27/96	1.5-2.5	Grass	50	3	47	11	1	10	37
-667	08/27/96	1.5-2.5	Grass	4	4	0	1	1	0	Bkgd
-668	08/27/96	1.5-2.5	Grass	4	4	0	1	1	0	Bkgd
-669	08/27/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-670	08/27/96	1.5-2.5	Grass	16	4	12	6	1	5	7
-671	08/27/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-672	08/27/96	1.5-2.5	Grass	40	4	36	3	1	2	34
-673	08/27/96	1.5-2.5	Grass	7	3	4	1	1	0	4
-674	08/27/96	1.5-2.5	Grass	5	3	2	1	1	0	2
-675	08/27/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-676	08/27/96	1.5-2.5	Asphalt	>10000	3	>10000	>10000	1	>10000	NOD (1)
-677	08/27/96	1.5-2.5	Asphalt	3	3	0	1	1	0	Bkgd
-678	08/27/96	1.5-2.5	Asphalt	20	4	16	10	1	9	7
-679	08/27/96	1.5-2.5	Asphalt	7	3	4	4	4	0	4
-680	08/27/96	1.5-2.5	Asphalt	10	4	6	4	4	0	6
-681	08/27/96	1.5-2.5	Asphalt	12	3	9	2	2	0	9
-682	08/27/96	1.5-2.5	Asphalt	3	3	0	2	2	0	Bkgd
-683	08/27/96	1.5-2.5	Asphalt	3	3	0	2	2	0	Bkgd
-684	08/27/96	1.5-2.5	Asphalt	1000	3	997	300	2	298	699
-685	08/27/96	1.5-2.5	Asphalt	>10000	4	>10000	>10000	1	>10000	NOD (1)
-686	08/27/96	1.5-2.5	Grass	3	3	0	1	1	0	Bkgd
-700	09/11/96	1.5-2	Grass	3	3	0	1	1	0	Bkgd
-701	09/11/96	1.5-2	Grass	4	2	2	1	1	0	2
-702	09/11/96	1.5-2	Grass	12	4	8	1	1	0	8
-703	09/11/96	1.5-2	Grass	7	3	4	1	1	0	4

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

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Location, Date, Depth Interval, Cover Present				Instrument #1 without Charcoal Filter [ppmv]			Instrument #2 with Charcoal Filter [ppmv]			Probable
Location ID	Date	Depth	Soil Cover	Peak	Local Background	Total VOCs	Peak	Local Background	Probable Methane	Non Methane VOCs(ppmv)
-704	09/11/96	1.5-2	Grass	3	3	0	1	1	0	Bkgd
-705	09/11/96	1.5-2	Asphalt	50	3	47	12	1	11	36
-706	09/11/96	1.5-2	Grass	3	3	0	1	1	0	Bkgd
-707	09/11/96	1.5-2	Grass	3	3	0	1	1	0	Bkgd
-708	09/11/96	1.5-2	Grass	3	3	0	1	1	0	Bkgd
-709	09/11/96	1.5-2	Grass	3	3	0	1	1	0	Bkgd
-710	09/11/96	1.5-2	Asphalt	3	3	0	1	1	0	Bkgd
-711	09/11/96	1.5-2	Grass	5	3	2	1	1	0	2
-712	09/11/96	1.5-2	Grass	30	3	27	2	1	1	26
-713	09/11/96	1.5-2	Grass	3	3	0	1	1	0	Bkgd
-714	09/26/96	1.5-2.5	Grass	8	2	6	1	1	0	6
-715	09/26/96	1.5-2.5	Asphalt	3	2	1	1	1	0	1
-716	09/26/96	1.5-2.5	Grass	3	2	1	1	1	0	1
-717	09/20/96	1.5-2.5	Grass	2	2	0	1	1	0	Bkgd
-718	09/20/96	1.5-2.5	Grass	2	2	0	1	1	0	Bkgd
-719	09/20/96	1.5-2.5	Asphalt	10	2	8	2	1	1	7
-94S	09/20/96	1	Grass	2	2	0	1	1	0	Bkgd
-95S	09/20/96	1	Grass	2	2	0	1	1	0	Bkgd
-96S	09/20/96	1	Grass	2	2	0	1	1	0	Bkgd
-97S	09/20/96	1	Grass	4	2	2	1	1	0	2
-98S	09/20/96	1	Grass	3	2	1	1	1	0	1
-99S	09/20/96	1	Grass	2	2	0	1	1	0	Bkgd
-100S	09/20/96	1	Grass	9	2	7	1	1	0	7
-101S	09/20/96	1	Grass	2	2	0	1	1	0	Bkgd
-102S	09/20/96	1	Grass	2	2	0	1	1	0	Bkgd
-103S	09/20/96	1	Grass	4	2	2	1	1	0	2

(1) NOD=Cannot Quantify due to instrument response

(2) Flame out during peak rise

APPENDIX B

GROUND WATER HEADSPACE DATA TABLE

TABLE 1. SUMMARY OF GROUND WATER HEADSPACE MEASUREMENTS

Ground Water Screening Location	Date	Total VOCs, ppmv
7N360E60	10/02/96	140
B12	09/20/96	10
B-12E30A	10/01/96	18
B-12N60	10/01/96	12
B-12S30	10/01/96	1
B-12W120	09/27/96	30
B-12W150	10/01/96	5
BKG-1 (Deionized Blank)	09/16/96	BKG
GWL-1	09/23/96	700
GWL-2	09/23/96	5,000
GWL-2E120	09/26/96	6
GWL-2E60	09/25/96	6,500
GWL-2E60N120	09/30/95	6,000
GWL-2E60N60	09/26/96	240
GWL-2E60S60	09/26/96	15
GWL-2S90	09/25/96	9
GWL-3	09/23/96	>10,000
GWL-4	09/20/96	8,000
GWL-4N60	09/24/96	1
GWL-4S60	10/04/96	2,000
GWL4W120	09/26/96	17
GWL-4W120N210	10/03/96	30
GWL-4W120N300	10/04/96	21
GWL-4W120N300E60	10/04/96	23
GWL-4W120N360	10/04/96	35
GWL-4W120N360E60	10/04/96	35
GWL4W120N90	10/02/96	27
GWL-4W60	09/24/96	35
GWL-5	09/20/96	1
GWL-6	09/20/96	BKG
GWL-6A	09/24/96	50
GWL-6AN30	09/27/96	25
GWL-6AN30W30	10/01/96	26
GWL-6AN30W60N60	10/03/96	27
GWL-6AW60	09/27/96	6
GWL-7	09/23/96	160
GWL-7A	09/25/96	475
GWL-8	09/23/96	>10,000
GWS-1	09/16/96	42
GWS-10	09/23/96	8
GWS-10E	09/25/96	60
GWS-10E150	10/03/96	20
GWS-10E60	09/26/96	16
GWS-10E90	09/30/95	25
GWS-10E90S60	10/03/96	4
GWS-10W	09/19/96	>10,000
GWS-10W150	09/20/96	15
GWS-10W150E30	10/03/96	13
GWS-10W150E60N90	10/04/96	18
GWS-10W150N60	10/03/96	20
GWS-10WE120	09/27/96	BKG
GWS-11	09/16/96	1,100

TABLE 1. SUMMARY OF GROUND WATER HEADSPACE MEASUREMENTS

Ground Water Screening Location	Date	Total VOCs, ppmv
GWS-11E	09/23/96	300
GWS-11E120	09/23/96	1,200
GWS-11E120S120	09/26/96	4
GWS-11E120S60	09/25/96	195
GWS-11E180	09/25/96	8
GWS-11E180S120	09/26/96	3
GWS-11S	09/27/96	7
GWS-11W	09/19/96	600
GWS-11W30**	09/20/96	12
GWS11W30D**	09/23/96	20
GWS-12	09/16/96	25
GWS-12E	09/23/96	2
GWS-12W	09/19/96	2,800
GWS-12W60	09/26/96	60
GWS-12WN60	09/26/96	50
GWS-13	09/16/96	100
GWS-13E	09/23/96	5
GWS-13S60	09/26/96	1,000
GWS-13S60E30	09/30/95	18
GWS-13S60E30S60E60	10/02/96	23
GWS-13S60E30S30E30	10/01/96	12
GWS-13S60E30S30	09/30/95	40
GWS-13S60E30S30E180	10/04/96	45
GWS-13S60E30S30E360	10/04/96	4
GWS-13S60E60	10/01/96	7
GWS-13S60E60S60	10/01/96	23
GWS-13W	09/19/96	4,800
GWS-13W60	09/23/96	9,000
GWS-13WS60	09/26/96	25
GWS-14	09/16/96	1
GWS-1N300	09/26/96	13
GWS-1N420W30	10/02/96	7
GWS-1N60	09/24/96	98
GWS-1W	09/18/96	120
GWS-1W240	09/27/96	3
GWS-1W60	09/24/96	48
GWS-1W60N180	09/26/96	4
GWS-1W60N240W30	09/30/95	35
GWS-1W60N60	09/26/96	25
GWS-1W60N60W90	09/27/96	35
GWS-2	09/16/96	70
GWS-21	09/20/96	REFUSAL
GWS-2E	09/20/96	4
GWS-2W150	09/27/96	4
GWS-3	09/16/96	400
GWS-3E	09/20/96	18
GWS-3W	09/18/96	35
GWS-3W180	09/24/96	1
GWS-3WN150	09/24/96	1
GWS-4	09/16/96	2,000
GWS-4E30	09/25/96	60
GWS-4E30N60	09/26/96	25

TABLE 1. SUMMARY OF GROUND WATER HEADSPACE MEASUREMENTS

Ground Water Screening Location	Date	Total VOCs, ppmv
GWS-4E60	09/26/96	11
GWS4E60S30	10/02/96	DRY
GWS-4E60S30E90	10/04/96	3
GWS-4E60S30E90S90	10/04/96	40
GWS-4E90N60	10/02/96	9
GWS-4S	09/20/96	8
GWS-4SE30	09/25/96	DRY
GWS-4W150	09/25/96	12
GWS-4W150N30	10/02/96	6
GWS-4W150N30E30	10/03/96	24
GWS-4W150N90	10/03/96	10
GWS4W150S60	10/02/96	22
GWS-4W180	10/02/96	3
GWS-5	09/16/96	11
GWS-5W	09/18/96	300
GWS-5W180	09/24/96	> 10,000
GWS-5W300	09/26/96	9
GWS-5W90	09/20/96	30
GWS-6	09/16/96	45
GWS-6E	09/19/96	2
GWS-6W	09/18/96	1,000
GWS-6W180	09/24/96	35
GWS-6W360	09/26/96	12
GWS-6W90	09/20/96	> 10,000
GWS-7	09/16/96	140
GWS-7E60	09/24/96	45
GWS-7E60N90	09/27/96	3
GWS-7N	09/18/96	80
GWS-7N120	09/26/96	80
GWS-7N180	09/26/96	550
GWS-7N300	09/27/96	60
GWS-7N360	10/02/96	50
GWS-7N360E60	10/02/96	140
GWS-7N60	09/24/96	100
GWS-7W	09/18/96	3,000
GWS-7W150	09/24/96	1,100
GWS-7W300	09/26/96	90
GWS-7W390	09/30/95	10
GWS-7W390E60	10/02/96	9
GWS-7W450	10/02/96	11
GWS-7W570E60	10/03/96	9
GWS-7W90	09/20/96	100
GWS-8	09/16/96	3,000
GWS-8E	09/18/96	60
GWS-8W	09/18/96	1,900
GWS-8W150	09/26/96	95
GWS-8W330	09/27/96	50
GWS-8W450	10/02/96	35
GWS-8W510	10/02/96	23
GWS-8W510E60	10/03/96	45
GWS-8W90	09/20/96	18
GWS-9	09/16/96	110

TABLE 1. SUMMARY OF GROUND WATER HEADSPACE MEASUREMENTS

Ground Water Screening Location	Date	Total VOCs, ppmv
GWS-9E	09/20/96	7
GWS-9E60	09/26/96	32
GWS-9E60S30	09/30/95	3
GWS-9E90	09/30/95	45
GWS-9S120	09/27/96	45
GWS9S120E30	10/02/96	32
GWS-9S120E60S60	10/03/96	DRY
GWS9S120W30	10/02/96	6
GWS9S150	10/02/96	50
GWS-9S150W60	10/03/96	6
GWS-9S210	10/03/96	30
GWS-9S350	10/04/96	3
GWS-9S60	09/25/96	70
GWS-9S60E30	09/27/96	30
GWS-9S60E60	10/01/96	70
GWS-9S60W120	10/02/96	2
GWS-9S60W60	09/27/96	45
GWS-9W30	09/25/96	85
GWS-9W90	09/27/96	5
GWS-F	09/19/96	10
GWS-PA	09/19/96	BKG
GWS-PB	09/19/96	55
GWS-4SE	09/20/96	250
P-1	10/02/96	16
P-2	09/20/96	6
P-3	09/20/96	1
PAS	09/19/96	2,000
PASW60 (GWS-ASW60)	09/20/96	5
P-BS	09/19/96	12
PBSW30	09/20/96	5
P-C	09/20/96	22
PCN60	09/25/96	260
P-CW150	10/02/96	9
PCW30	09/25/96	20
PCW90	09/27/96	50
P-CW90N30	10/02/96	45
P-D	09/16/96	1
P-E	09/16/96	20
PEE120	09/26/96	17
PEE120S30	09/30/95	10
PEE60	09/25/96	70
PES	09/20/96	30
PES60	09/25/96	3
PEW60	09/25/96	35
PEW90	09/26/96	6
P-G	09/23/96	30
PGE30	09/26/96	45
PGS60	09/26/96	20
PGS60E30	09/30/95	10
PGS60N30	09/30/95	10
PGS60W30	09/30/95	10
PGS90	09/30/95	5

TABLE 1. SUMMARY OF GROUND WATER HEADSPACE MEASUREMENTS

Ground Water Screening Location	Date	Total VOCs, ppmv
P-H	09/16/96	42
PHN30	09/27/96	18
PHS120	09/25/96	190
PHS120E120	09/27/96	6
PHS120E60	09/26/96	65
PHS120W60	09/26/96	125
PHS240	09/27/96	18
P-HS240E90	10/03/96	4
PHS-300	10/01/96	50
P-HS300E90	10/03/96	4
P-HS390	10/03/96	45
P-HS510	10/04/96	7
P-HS510E90	10/04/96	DRY
PHS60	09/20/96	40
P-I	09/23/96	1,800
PIE60	09/27/96	1
P-J (GWS-J)	09/16/96	22
P-JN	09/19/96	18
PJN150	09/24/96	19
P-JN210	09/26/96	3
P-JN90	09/20/96	100
PJS30	09/25/96	85
P-JS30W60	09/27/96	6
P-JS90	09/27/96	20
PK	09/19/96	25
PKN	09/23/96	6
PKW	09/23/96	90
P-KW120	09/25/96	4
P-KW60	09/25/96	55
P-KW60N120	09/27/96	4
P-KW60N60	09/26/96	225
P-KW60N60E30	09/27/96	160
P-KW60N60E60	10/01/96	130
P-KW60N60W30	09/30/95	6
P-KW60S30	09/26/96	750
P-KW60S30W60	09/27/96	1
P-L	09/16/96	57
PLS60	09/25/96	5

NOTES:

ppmv = parts per milli

* = headspace may have been taken on water that is surface runoff

**GWS-11W30D is a duplicate of GWS-11W30

APPENDIX C

SOIL BORING LOGS

TRC

Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-18-5	Sheet: 1 of 1
		Well No.:	
Location Description: Burt, New York		TRC Geologist: Charles Foster	
Drilling Contractor/Foreman: Parratt Wolff Inc./Doug Richmond	Drill Rig Make/Model: CME 55 Modified	Auger/Drive Casing Size/Type: N/A	
Sampler Description: 2" Split Spoon	Drilling Method: Direct Push	Coordinates: X = 0 Y = 0	
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A	
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A	
Screen Length/Type: N/A	Water Table Depth: 7 ft	Surface Elevation:	
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/17/96	Date Finish: 9/17/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Topsoil.		BKG		
1				Brown, fine SAND, some silt.				
2	S-2	N/A	24/20	Brown, fine SAND and SILT.		1 ppm		
3								
4	S-3	N/A	24/0	No recovery.		—		
5								
6	S-4	N/A	24/20	10" Brown, fine SAND, some silt.		260 ppm		
7				10" Same as above, gray stained, odorous.				▼
8	S-5	N/A	24/18	10" Brown, fine SAND, some silt.		250 ppm		
9				8" Same as above, black stained, fuel oil odor.				
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #18

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-18-6	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/17/96 Date Finish: 9/17/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Topsoil.		BKG		
1				Brown, fine SAND, some silt.				
2	S-2	N/A	24/18	Brown, fine SAND and SILT, trace clay.		1 ppm		
3								
4	S-3	N/A	24/20	Brown, fine SAND and SILT, trace clay, mild gray coloration, wet.		1 ppm		
5								
6	S-4	N/A	24/24	Brown, fine SAND and SILT, trace clay, wet.		5 ppm		
7								
8	S-5	N/A	24/18	14" Brown, fine SAND, some silt.		10 ppm		
9								
				4" Brown, f-c SAND, trace fine gravel (fill for tank bedding?).				
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #18

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-18-7	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.5 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/17/96 Date Finish: 9/17/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/24	Topsoil.		BKG		
1				Brown, fine SAND, some silt.				
2	S-2	N/A	24/18	Same as above.		BKG		
3								
4	S-3	N/A	24/0	No recovery, spoon moist.		---		
5								
6	S-4	N/A	24/20	12" Brown, fine SAND, some silt.		70 ppm		
7				8" Gray, CLAY and SILT, petroleum odor, wet.				
8	S-5	N/A	24/18	12" Brown, fine SAND, some silt.		40 ppm		
9				6" Same as above, with gray discoloration and petroleum odor.				
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #18

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-33-3	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/17/96 Date Finish: 9/17/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	N/A	24/10	Brown, f-c SAND, some fine gravel, some whitish, fill, 3" black, peastone and angular gravel throughout, fill.		1650 ppm		
2	S-2	N/A	24/20	Black, fine SAND, some silt, trace clay, stained, odorous.		450 ppm		
3								
4	S-3	N/A	24/18	Same as above, wet.		1200 ppm		
5								
6	S-4	N/A	24/20	Same as above with trace fine gravel, wet.		700 ppm		
7								
8	S-5	N/A	24/6	Brownish-black, f-c SAND, trace f-m gravel, wet.		110 ppm		
9								
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.6-2.0 mm
f. gravel	19-4.6 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #33

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-33-4	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/17/96 Date Finish: 9/17/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	N/A	24/8	Angular, f-m GRAVEL, some fine sand, trace silt, trace clay, fill.		10 ppm		
2	S-2	N/A	24/22	Brown, fine SAND and SILT, some fine gravel at top.		400 ppm		
4	S-3	N/A	24/20	Brown, fine SAND and SILT.		3500 ppm		
6	S-4	N/A	24/14	Brown, f-c SAND, some silt, trace black staining.		1200 ppm		
8	S-5	N/A	24/6	Brown, f-m SAND, trace fine gravel, trace clay.		140 ppm		
10				End of exploration 10 ft below ground surface.				

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #33

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	AOCB B-1	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	N/A	24/24	Brown, fine SAND, some silt, some f-m gravel, dense, fill.		BKG		
2	S-2	N/A	24/12	Brown, f-m SAND, trace silt, trace fine gravel.		BKG		
4	S-3	N/A	24/24	Brown, f-m SAND, some silt.		1 ppm		
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU AOC B

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: AOCB B-2	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/24	Reddish-brown, f-m SAND, some silt, trace clay.		0.5 ppm		
1								
2	S-2	N/A	24/24	Brown, f-m SAND, some silt, trace fine gravel.		BKG		
3								
4	S-3	N/A	24/24	Brown, fine SAND, some clay, trace silt, moist, gray discoloration at 6 ft.		45 ppm		
5								
6	S-4	N/A	24/10	Brown, fine SAND and SILT, some fine gravel and black gravel near nose, wet.		20 ppm		
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU AOC B

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-C-5	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 4.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/24	Brown, fine SAND and SILT, some fine gravel, some asphalt at 2 ft, fill.		3 ppm		
1								
2	S-2	N/A	24/22	Brown, fine SAND and SILT, moist.		3 ppm		
3								
4	S-3	N/A	24/24	Brown, fine SAND and SILT, wet.		90 ppm		▼
5								
6	S-4	N/A	24/24	Brown, fine SAND and SILT, trace clay, wet.		250 ppm		
7								
8	S-5	N/A	24/24	Brown, fine SAND and SILT, some clay, wet.		80 ppm		
9								
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU AOC C
4.0 ft water table depth; interperted to be perched

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-C-6	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 4.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	N/A	24/24	Brown, fine SAND and f-m GRAVEL, fill.		1 ppm		
2	S-2	N/A	24/0	No recovery, pushed a cobble.		---		
4	S-3	N/A	24/20	Brown-black, fine SAND and SILT, some f-m gravel, wet.		1000 ppm		
6	S-4	N/A	24/14	Brown-black, fine SAND and SILT, wet.		250 ppm		
8	S-5	N/A	24/16	Brownish gray, fine SAND and SILT, trace fine gravel, wet.		240 ppm		
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU AOC C

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-D-5	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 4.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/24	Topsoil.		1 ppm		
1				Brown, fine SAND, some fine sand, trace silt, fill.				
2	S-2	N/A	24/24	Tannish-brown, fine SAND and SILT.		BKG		
3								
4	S-3	N/A	24/24	Brown, fine SAND and SILT, wet.		1 ppm		▼
5								
6	S-4	N/A	24/24	Same as above.		7 ppm		
7								
8	S-5	N/A	24/24	Brown-gray fine SAND, some soft 3" clay lense, trace silt.		5 ppm		
9								
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU AOC D

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-D-6	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description: 2" Split Spoon	Drilling Method: Direct Push	Coordinates: X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 4.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/11/98 Date Finish: 9/11/98

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Brown, fine SAND and SILT, some f-m gravel, fill.		110 ppm		
1								
2	S-2	N/A	24/18	Brown, fine SAND, some silt, trace clay, trace fine gravel at bottom, fill.		BKG		
3								
4	S-3	N/A	24/0	No recovery, wet angular gravel in tip.		—		
5								
6	S-4	N/A	24/18	Brown, fine SAND and silt, trace fine gravel on top.		6 ppm		
7								
8	S-5	N/A	24/20	Brown-gray, fine SAND and SILT, wet.		8 ppm		
9								
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU AOC D

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-D-7	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 4.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	4" F-m GRAVEL.		60 ppm		
1				16" Brown, fine SAND, some silt, trace gravel, fill.				
2	S-2	N/A	24/0	No recovery.		—		
3								
4	S-3	N/A	24/10	Brown-gray, f-c SAND, some silt, some fine gravel, wet.		40 ppm		
5								
6	S-4	N/A	24/20	Brown, fine SAND and SILT, trace clay, trace fine gravel, wet.		70 ppm		
7								
8	S-5	N/A	24/10	Brown, fine SAND and SILT, wet.		15 ppm		
9								
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.6-2.0 mm
f. gravel	19-4.6 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU AOC D

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-19E	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Mark Eaves	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/10/98 Date Finish: 9/10/98

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Topsoil.		4 ppm		
1				Brown, SAND and SILT, some grass.				
2	S-2	N/A	24/18	Brown, fine SAND and SILT, some black material bottom 2".		4 ppm		
3								
4	S-3	N/A	24/20	Brown-black fine SAND and SILT, trace clay, black material at bottom 2", moist.		650 ppm		
5								
6	S-4	N/A	24/24	Black, GRAVEL and fine SAND, wet, odorous.		2050 ppm		▼
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #19

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-19N	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/10/96 Date Finish: 9/10/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Brown, fine SAND, some silt.		BKG		
1								
2	S-2	N/A	24/18	Brown, fine SAND and SILT, trace fine gravel.		6 ppm		
3								
4	S-3	N/A	24/10	2" brown, fine SAND and SILT.		345 ppm		
				8" Black, f-m gravel, wet, odorous.				
5								
6	S-4	N/A	24/24	Black, GRAVEL and fine SAND, (black coated), wet.		400 ppm		
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #19

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-19S	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Mark Eaves	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/10/96 Date Finish: 9/10/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/24	Topsoil.		BKG		
1				Brown, fine SAND and SILT.				
2	S-2	N/A	24/24	Reddish-brown, fine SAND and SILT.		2 ppm		
3								
4	S-3	N/A	24/24	Reddish-brown, f-m SAND and SILT.		2 ppm		
5								
6	S-4	N/A	24/24	Reddish-brown, fine SAND, some silt, wet.		4 ppm		
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #19

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-19W	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/10/96 Date Finish: 9/10/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/14	8" Reddish-brown, clay and grass.		---		
1				6" Gray gravelly fill.				
2	S-2	N/A	24/16	Reddish-brown, SAND and SILT, some trace gravel.		9 ppm		
3								
4	S-3	N/A	24/1	Reddish-brown SAND and SILT, some fine gravel, 3" layer of gravel.		5 ppm		
5								
6	S-4	N/A	24/14	Reddish-brown, fine SAND, some SILT, wet.		15 ppm		
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFA-SWMU #19

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-A	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6 ft	Surface Elevation: N/A
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/19/96 Date Finish: 9/19/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	---			---		
1								
2	S-2	N/A	24/20	Brown-black, fine SAND, some silt, stained.		30 ppm		
3								
4	S-3	N/A	24/24	Black-gray, fine SAND, some silt, wet at 5 ft.		300 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.6-2.0 mm
f. gravel	19-4.6 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-B	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/18/96 Date Finish: 9/18/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/15	5" Brown-orange TOPSOIL and f-c GRAVEL, fill.		200 ppm		
1				10" Gray-black, fine SAND and silt.				
2	S-2	N/A	24/24	Gray-black, fine SAND, some silt, stained, moist at 4 ft.		260 ppm		
3								
4	S-3	N/A	24/24	Black-gray, fine SAND, some silt, stained, wet.		75 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-D	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/18/96 Date Finish: 9/18/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Brown, fine SAND, trace silt.		160 ppm		
1								
2	S-2	N/A	24/22	Brown, fine SAND, some silt, bottom 4" moist.		300 ppm		
3								
4	S-3	N/A	24/20	Brown, fine SAND, some silt, trace clay, wet.		20 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-E	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 5 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/18/96 Date Finish: 9/18/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/10	Brown, fine SAND and SILT.		5 ppm		
1								
2	S-2	N/A	24/24	Brown, fine SAND, trace silt, 3" m-c sand.		300 ppm		
3								
4	S-3	N/A	24/24	2" Gray, medium SAND. Brown, fine SAND, some silt, trace clay, wet.		180 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-G	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 5 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/18/96 Date Finish: 9/18/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/14	Dark brown, organic soil, trace silt.		2 ppm		
1				Dark brown, f-c SAND, trace fine gravel, fill.				
2	S-2	N/A	24/24	Brown, fine SAND, some silt, trace fine gravel, trace black staining.		9 ppm		
3								
4	S-3	N/A	24/16	Brown, fine SAND and SILT, black staining throughout, wet.		95 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-1	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 5 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/19/96 Date Finish: 9/19/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	---	Topsoil.		---		
1								
2	S-2	N/A	24/24	Gray, ASH and f-c SAND, some fine gravel, fill, moist.		50 ppm		
3								
4	S-3	N/A	24/18	Gray, ASH and f-c SAND, some silt, trace clay, wet.		100 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: SB-J	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 5 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/18/96 Date Finish: 9/18/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/24	Topsoil.		2 ppm		
1				Brown, fine SAND, some silt.				
2	S-2	N/A	24/20	Brown, fine SAND, trace silt, moist.		5 ppm		
3								
4	S-3	N/A	24/18	Brown, fine SAND, some silt, trace clay, wet.		14 ppm		▼
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-1	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Mark Eaves	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/10/96 Date Finish: 9/10/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	4" Crushed stone.		N/A		
1				16" Brown, f-m SAND, some silt, trace fine gravel, fill.				
2	S-2	N/A	24/8	Brown, fine SAND, some silt, trace fine gravel, fill.		N/A		
3								
4	S-3	N/A	24/14	Brown, f-c SAND, some silt, trace fine gravel, fill.		N/A		
5								
6	S-4	N/A	24/12	Same as above, wet last 6".		N/A		
7								▼
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.06 mm
f. sand	0.43-0.06 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

RFI-SWMU #16

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-2	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	
Drilling Contractor/Foreman: Parratt Wolff Inc./Mark Eaves	Drill Rig Make/Model: CME 55 Modified	Auger/Drive Casing Size/Type: N/A	
Sampler Description: 2" Split Spoon	Drilling Method: Direct Push	Coordinates: X = 0 Y = 0	
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A	
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A	
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:	
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/10/96	Date Finish: 9/10/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Topsoil.		N/A		
1				Brown, fine SAND and SILT, trace fine gravel, fill.				
2	S-2	N/A	24/22	Reddish-brown, fine SAND and SILT, trace grey mottled clay, fill.		N/A		
3								
4	S-3	N/A	24/24	Reddish-brown, f-m SAND and SILT, trace fine gravel, fill.		N/A		
5								
6	S-4	N/A	24/18	Reddish-brown, f-c SAND and SILT, trace fine gravel, trace clay, wet, fill.		N/A		
7								▼
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

RFI-SWMU #16

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-3	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	
Drilling Contractor/Foreman: Parratt Wolff Inc./Mark Eaves	Drill Rig Make/Model: CME 55 Modified	Auger/Drive Casing Size/Type: N/A	
Sampler Description: 2" Split Spoon	Drilling Method: Direct Push	Coordinates: X= 0 Y= 0	
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A	
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A	
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:	
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/10/96	Date Finish: 9/10/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/24	Gravel.		N/A		
1				Reddish-brown, f-c SAND, f-m gravel, fill.				
2	S-2	N/A	24/24	F-c GRAVEL, some f-c sand, trace silt, loose, fill.		N/A		
3								
4	S-3	N/A	24/22	Brown, f-c SAND and fine GRAVEL, some grey silt, fill.		N/A		
5								
6	S-4	N/A	24/20	Brown, f-c GRAVEL and f-c SAND and SILT, wet at bottom, fill.		N/A		
7								▼
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

RFI-SWMU #16

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: B-4	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Mark Eaves	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/10/96 Date Finish: 9/10/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/22	Brownish-gray, f-c SAND and fine GRAVEL, some silt, fill.		2 ppm		
1								
2	S-2	N/A	24/18	Brown, f-c SAND, some fine gravel, trace silt, some black sediments, fill.		80 ppm		
3								
4	S-3	N/A	24/20	4" Brown, fine SAND and SILT. 16" Black, SAND, saturated with oil, fill.		1200 ppm		
5								
6	S-4	N/A	24/22	Black, fine SAND, trace silt, saturated with oil, fill.		500 ppm		
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #17

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-5	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Mark Eaves	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/10/96 Date Finish: 9/10/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	N/A	24/24	Reddish-brown, fine SAND and SILT.		2 ppm		
2	S-2	N/A	24/20	Reddish-brown, f-m SAND and SILT.		2 ppm		
3								
4	S-3	N/A	24/18	Same as above, wet.		3 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #17

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: B-6	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/13/96 Date Finish: 9/13/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Dark brown to gray, f-c SAND and fine GRAVEL, concrete in nose of spoon.		BKG		
1								
2	S-2	N/A	24/18	Dark brown, f-c SAND, some fine gravel, and white, f-c SAND (ash).		60 ppm		
3								
4	S-3	N/A	24/18	Brown, f-c SAND and SILT, trace greenish-gray clay, moist.		200 ppm		
5								
6	S-4	N/A	24/20	Brown, fine SAND and SILT, wet.		40 ppm		▼
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.6-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #23

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-7	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 5.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/13/96 Date Finish: 9/13/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Brown, fine SAND, some silt.		200 ppm		
1								
2	S-2	N/A	24/22	Brown, fine SAND, some silt, trace clay.		700 ppm		
3								
4	S-3	N/A	24/18	Brown, fine SAND, some silt, trace clay, wet.		300 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #24

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: B-8	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/13/98 Date Finish: 9/13/98

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/20	Brown, fine SAND and some ash materials, fill.		1 ppm		
1								
2	S-2	N/A	24/18	Brown, f-c SAND and some silt, trace ash materials, fill.		125 ppm		
3								
4	S-3	N/A	24/20	Brownish-gray, f-c SAND, trace silt, trace clay, trace ash, fill.		90 ppm		
5								
6	S-4	N/A	24/22	Brown, f-m SAND, some silt, trace clay.		15 ppm		
7								▼
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #24
No samples were collected due to being within landfill materials.

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: B-8A	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 5.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/18/96 Date Finish: 9/18/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/10	Brown, fine SAND and ASH, some f-c sand, trace fine gravel on top of spoon, fill.		2 ppm		
1								
2	S-2	N/A	24/24	12" Gray, fine SAND and ASH at top, fill.		1 ppm		
3				12" Brown, fine SAND and SILT.				
4	S-3	N/A	24/24	Brown, fine SAND and SILT, wet.		BKG		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #24

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-9	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/13/96 Date Finish: 9/13/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	N/A	24/20	Reddish-brown, fine SAND, trace silt, some oil discoloration.		BKG		
2	S-2	N/A	24/20	Reddish-brown, fine SAND, some silt, trace black staining.		BKG		
3								
4	S-3	N/A	24/18	Same as above, moist.		5 ppm		
5								
6	S-4	N/A	24/14	Reddish-brown, fine SAND, wet.		10 ppm		
7								
8				End of Exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #24

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-10	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Dough Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/13/96 Date Finish: 9/13/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	N/A	24/20	Brown, f-c SAND and f-m GRAVEL, some concrete fragments, fill.		1 ppm		
2	S-2	N/A	24/20	Brown, fine SAND, trace silt, some 2" grayish staining.		1 ppm		
4	S-3	N/A	24/22	Brown, fine SAND, trace silt, moist.		7 ppm		
6	S-4	N/A	24/22	Brown, fine SAND, some silt, trace clay.		3 ppm		
8				End of exploration 8 ft below ground surface.				

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #24

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: B-11	Sheet: 1 of 1
			Well No.	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 5.5 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/14	Topsoil.		BKG		
1				Brown, fine SAND, some silt.				
2	S-2	N/A	24/24	Reddish-brown, fine SAND, some silt.		BKG		
3								
4	S-3	N/A	24/24	Reddish-brown, fine SAND, some silt, moist to wet.		1 ppm		
5								
6				End of exploration 6 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #31

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-12	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/16	Surficial organics.		BKG		
1				Reddish-brown, fine SAND and SILT.				
2	S-2	N/A	24/18	Brown, fine SAND, some silt.		1 ppm		
3								
4	S-3	N/A	24/24	Same as above.		10 ppm		
5								
6	S-4	N/A	24/24	Same as above, wet.		10 ppm		
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #31

TRC	Project/Client: AKZO Nobel Chemicals, Inc.	Project No.: 19045-0020-00000	Boring No.: B-13	Sheet: 1 of 1
			Well No.:	
	Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 7.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/18	8" Asphalt.		1 ppm		
1				Reddish-brown, fine SAND and SILT.				
2	S-2	N/A	24/24	Brown, f-c SAND, trace fine gravel, trace silt.		1 ppm		
3								
4	S-3	N/A	24/20	Brown, fine SAND, some silt, moist.		10 ppm		
5								
6	S-4	N/A	24/24	Brown, fine SAND, some silt, wet.		15 ppm		
7								▼
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #31

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	B-14	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 8.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 10.0 feet	Date Start: 9/11/96 Date Finish: 9/11/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/12	F-c GRAVEL, fill.		—		
1								
2	S-2	N/A	12/0	No recovery, pushed cobble.		—		
3								
4	S-3	N/A	24/20	21" Brown SAND, some silt.		250 ppm		
5								
6				3" Organic peat and roots.				
	S-4	N/A	24/18	Brown, fine SAND, some silt, moist.		300 ppm		
7								
8	S-5	N/A	24/20	Dark brown, fine SAND and SILT, some peat, wet.		180 ppm		
9								
10				End of exploration 10 ft below ground surface.				
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	76-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU AOC E

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-S3-1	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 4 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/18/98 Date Finish: 9/18/98

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/24	Brown SAND, some silt.		BKG		
1								
2	S-2	N/A	24/20	Brown, fine SAND and SILT, bottom 6" wet.		1 ppm		
3								
4	S-3	N/A	24/18	Brown, fine SAND and SILT, wet.		5 ppm		▼
5								
6				End of exploration 8 ft below ground surface.				
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-S3-2	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X= 0 Y= 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 6.0 feet	Date Start: 9/18/96 Date Finish: 9/18/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/18	Topsoil.		BKG		
1				Brown, fine SAND, some silt. (Relocated 2' west of location due to ceramic pipe obstruction)				
2	S-2	N/A	24/10	Brown, fine SAND, some silt, bottom 5" stained black, moist.		---		
3								
4	S-3	N/A	24/20	Brown, fine SAND, some silt, stained black, wet.		4 ppm		
5								
6	S-4	N/A	24/22	End of exploration 6 ft below ground surface.		8 ppm		
7								
8								
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-S3-3	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/18/96 Date Finish: 9/18/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/12	Topsoil		1 ppm		
1				Brown, fine SAND, trace gravel.				
2	S-2	N/A	24/20	Brown, fine SAND, some silt, bottom 6" black stained.		35 ppm		
3								
4	S-3	N/A	24/24	Black-brown-gray, fine SAND, trace silt, stained, wet perched layer in middle.		70 ppm		
5								
6	S-4	N/A	24/18	Brown, fine SAND and SILT, wet.		30 ppm		
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #3

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-5/6-1	1 of 1
		Well No.	
Location Description: Burt, New York		TRC Geologist: Charles Foster	

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6.0 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/19/96 Date Finish: 9/19/96

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	N/A	24/10	Dark brown, f-c SAND, trace organics, trace fine gravel.		BKG		
2	S-2	N/A	24/20	Brown, fine SAND and SILT, some fine gravel.		BKG		
3								
4	S-3	N/A	24/22	Brown, fine SAND, trace silt, trace black staining, moist.		BKG		
5								
6	S-4	N/A	24/22	Brown, fine SAND, trace silt, fine gravel in tip, wet.		5 ppm		
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #5/6

TRC

Project/Client	Project No.	Boring No.	Sheet
AKZO Nobel Chemicals, Inc.	19045-0020-00000	SB-5/6-2	1 of 1
		Well No.	

Location Description	TRC Geologist
Burt, New York	Charles Foster

Drilling Contractor/Foreman	Drill Rig Make/Model	Auger/Drive Casing Size/Type
Parratt Wolff Inc./Doug Richmond	CME 55 Modified	N/A

Sampler Description	Drilling Method	Coordinates
2" Split Spoon	Direct Push	X = 0 Y = 0
Filter Seal Amount/Type: N/A	Drill Bit/Auger Diameter: N/A	Ref. El.: N/A
Sand Pack Amount/Type: N/A	Hammer Weight/Fall: N/A	Riser Stick Up: N/A
Screen Length/Type: N/A	Water Table Depth: 6 ft	Surface Elevation:
Riser Length/Type: N/A	Total Depth: 8.0 feet	Date Start: 9/19/98 Date Finish: 9/19/98

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
	S-1	N/A	24/0	Pushed cobble.		—		
1								
2	S-2	N/A	24/20	Brown, fine SAND, some silt, petroleum odor present.		510 ppm		
3								
4	S-3	N/A	24/24	Same as above, moist.		1300 ppm		
5								
6	S-4	N/A	24/20	Brown, fine SAND, some silt, trace black staining, wet.		600 ppm		▼
7								
8				End of exploration 8 ft below ground surface.				
9								
10								
11								
12								
13								

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

trace 0-10% some 20-35%
little 10-20% and 35-50%

Cohesive Soils

Blows/ft	Density
<2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.05 mm
f. sand	0.43-0.05 mm
m. sand	2.0-0.43 mm
c. sand	4.5-2.0 mm
f. gravel	19-4.5 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	> 300 mm

Notes

Headspace readings were conducted with an organic vapor analyzer flame ionization dectector (OVA FID Model 108).
RFI-SWMU #5/6

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **Background**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. ____ Total Hole Depth *4 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/22/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

Sample Name: Background

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover.
	.4	SA-1	2,2,, 4,4 75%		SM	Silty SAND, brown, damp, loose.
2						
	.7	SA-2	4,6, 7,17 75%		ML	Same, grading to sand SILT, moist. Bottom 3": Hard, red, silty CLAY, dry, stiff, brittle.
4						
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-17-1

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ — Total Hole Depth 16 ft. — Diameter 4.5 in.

Top of Casing ____ — Water Level Initial 6 ft. — Static ____

Screen: Dia ____ — Length ____ — Type/Size ____

Casing: Dia ____ — Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller Brian Lambert — Log By Mark Colmerauer — Date 8/17/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 17-1 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" fill cap
	N/A	SA-1	6,7, 8,9 0%			Stone in shoe, no recovery.
2						
	765	SA-2	2,2 2,2 75%			Dark, grey clayey SILT, moist with petro. odor.
4					ML	
	607	SA-3	3,2 2,2 10%			Grey silty CLAY with some gravel, perto. odor.
6						
	1728	SA-4	3,4, 7,7 75%			Same as SA-2, wet. 1" of green gravel at bottom of sample.
8						
	820	SA-5	7,7, 9,3 50%			Grey, sandy, rounded GRAVEL, with silt and sand, wet with sheen and strong petro. odor.
10						
	771	SA-6	12,12, 6,6 75%			Same as SA-5, heavy sheen. Bottom 2": Brown, silty GRAVEL.
12					GM	
	352	SA-7	22,12, 12,7 50%			Brown, wet, rounded GRAVEL. Sheen and odor on water, no odor on soil.
14						
	64.8	SA-8	5,3, 3,6 25%			Same as SA-7.
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-17-2

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 16 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 4 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller Brian Lambert — Log By Mark Colmerauer — Date 8/18/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 17-2 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" grass and gravel cap.
2	17.7	SA-1	6,6, 6,6 10%		ML	poor recovery, rock in shoe: rock and dry brown clayey GRAVEL.
4	31.2	SA-2	2,3 3,2 20%			Brown, dry, clayey SILT, some sand. Bottom 2": same, grey with petro. odor.
6	1,443	SA-3	1,1 1,2 75%		SM	Wet, grey, silty fine SAND, soft, strong petro. odor.
8	1,159	SA-4	1,1, 1,2 75%			Same as SA-3, grey and brown in color.
10	1,778	SA-5	1,1, 6,12 100%		ML	Same grading to clayey SILT with strong petro. odor. Wet sand and gravel in shoe of spoon.
12	853	SA-6	4,5, 3,5 25%		GM	Wet, brown, rounded GRAVEL, with sand and silt. petro. odor.
14	161	SA-7	5,5, 7,7 10%		GW	Wet, grey/ brown, fine, well sorted GRAVEL with little silt. Petro odor present, with sheen on water.
16	341	SA-8	8,4, 4,5 25%		GM	Same as SA-7, sheen on water.
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-17-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 16 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 6 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/18/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 17-3 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" grass cap.
2	0	SA-1	3,3, 3,3 75%		SM	Brown, damp silty fine SAND.
4	0	SA-2	3,5, 6,6 50%			Same as SA-1, grading to more clay (20%), moderately stiff at bottom.
6	0	SA-3	3,3 5,5 10%		SC	Same, damp, poor recovery on spoon.
8	8.2	SA-4	4,4, 5,5 100%			Same, wet. Bottom 2" : same, grey and wet.
10	583	SA-5	4,4, 7,5 15%			Wet, grey, rounded GRAVEL and sand, some silt, petro. odor.
12	283	SA-6	6,4, 6,5 25%		GM	Same as SA-5, bottom 2": same, brown.
14	58.4	SA-7	7,7, 6,8 75%			Brown, wet, rounded GRAVEL, trace clay and silt, no petro. odor.
16	162	SA-8	5,8, 7,6 25%			Same as SA-7.
18						
20						
22						
24						

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Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-17-4**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. ____ Total Hole Depth *16 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial *4 ft.* Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/18/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 17-4 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" grass cap.
2	24.6	SA-1	2,4, 5,4 50%		SM	Dry, brown, silty fine SAND, loose with some stone float.
4	18.7	SA-2	3,4, 5,6 100%		ML	Same as SA-1, grading to light brown, damp clayey SILT, moderately stiff.
6	175	SA-3	4,5 5,5 100%			Same, wet. Bottom 2": grey, slight petro. odor.
8	652	SA-4	5,5, 11,7 75%		SM	Same grading to silty SAND grading back to mod. stiff grey/ brown clayey SILT, slight petro. odor.
10	75.3	SA-5	5,7, 7,6 25%		ML	Brown clayey SILT with sand. Bottom 3": coarse GRAVEL, with sand, grey with slight petro. odor.
12	279	SA-6	8,7, 10,10 75%		GM	Wet, brown coarse GRAVEL and sand, some silt, sheen on water with petro. odor.
14	172	SA-7	1,5, 5,7 75%			Wet, brown and grey rounded GRAVEL with silt and sand, little clay. petro. odor present.
16	168	SA-8	1,5, 5,7 75%			Same as SA-7, sheen on water.
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-18-1**

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ — Total Hole Depth 10 ft. — Diameter 4.5 in.

Top of Casing ____ — Water Level Initial 4 ft. — Static ____

Screen: Dia ____ — Length ____ — Type/Size ____

Casing: Dia ____ — Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller John Slachchiak — Log By Mark Colmerauer — Date 8/15/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-18-1 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass cover and humus
2	0	SA-1	3,4, 5,3 100%			Brown fine SAND and SILT, trace clay.
4	14	SA-2	7,6, 5,8 100%			Wet- same as SA-1. Moist, grey petro. staining with odor on bottom 3" of spoon sample.
6	28	SA-3	2,3, 6,10 100%		SM	Same as SA-1. Wet, grey petro. staining and strong odor.
8	42	SA-4	11,13, 17,20 100%			Same as SA-3 for top 4" of sample. Below: Wet, brown fine SAND and SILT, no odor.
10	2.2	SA-5	4,7, 9,9 100%			Wet, brown SAND and SILT, no odor.
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-18-2

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 10 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 3 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller John Slachchiak — Log By Mark Colmerauer — Date 8/15/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 18-2 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass cover and humus
2	.4	SA-1	2,3, 2,2 75%			Brown moist SILT, some sand, trace clay.
4	.5	SA-2	3,4, 5,4 75%			Same as SA-1 grading to SILT with some some clay, trace fine sand. Wet bottom 3" of spoon sample.
6	1.3	SA-3	1,2, 5,7 100%		ML	Same as SA-2. Wet, no sand.
8	1.4	SA-4	7,9, 6,7 100%			Wet brown SILT and fine sand, trace clay. Slight petro. odor.
10	1.2	SA-5	12,15, 13,20 75%			Same as SA-4.
12						
14						
16						
18						
20						
22						
24						

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Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-18-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 10 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 4 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller John Slachchiak Log By Mark Colmerauer Date 8/16/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SANPLE NAME: SB 18-3 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass cover and humus
2	0	SA-1	2,1, 3,5 75%			Brown damp, soft, loose SILT and fine SAND, trace clay.
	.5	SA-2	5,5, 7,8 50%			Same as SA-1 grading from damp to moist, soft.
4						
	3.6	SA-3	2,3, 3,7 75%		ML	Brown, wet, SILT, some clay. Slightly stiff, slight petro. odor.
6						
	7.6	SA-4	11,12 17,19 75%			Same as SA-3 no petro odor.
8						
	3.4	SA-5	7,8, 11,10 50%		GC	Brown, wet SILT, some clay. Bottom 2" of spoon sample: Wet, red, coarse rounded gravel, some silt, little clay. No odor.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-18-4

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 10 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 4 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller John Slachchiak — Log By Mark Colmerauer — Date 8/16/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 18-4 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass cover and humus
2	10.5	SA-1	3,2, 7,5 75%			Brown damp, soft, loose SILT, some fine sand, trace clay.
4	10.1	SA-2	3,5, 5,6 75%			Damp, brown moderately stiff SILT, some clay.
6	6.4	SA-3	3,4, 5,8 75%		ML	Wet, brown, mod. stiff SILT, some clay grading to mod. stiff SILT and sand.
8	7.2	SA-4	13,14 10,12 75%			Wet, brown, mod. stiff SILT and fine sand.
10	6.4	SA-5	20,13, 12,10 75%		GC	Wet, brown, Mod. stiff SILT, some clay. Bottom 2" of spoon: Wet, red, coarse rounded gravel, some silt, little clay. No odor.
12						
14						
16						
18						
20						
22						
24						

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Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-23-1

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. — Diameter 4.5 in.

Top of Casing ____ Water Level Initial 5 ft. — Static ____

Screen: Dia ____ Length ____ — Type/Size ____

Casing: Dia ____ Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller Brian Lambert — Log By Mark Colmerauer — Date 8/18/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 23-1 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass cover.
						Brown, silty fine SAND, damp to dry.
2	0	SA-1	3,3, 8,22 50%		SP	
	6.8	SA-2	55,8, 8,8 **75%**		ML	Top 12": Hard, dry, grey/ white silty SAND (Crumbles under thumb pressure), slight chemical odor. Bottom 12": Brown, grey mottled, clayey silt, slight petro. odor, dry.
4						
	2.4	SA-3	4,6, 7,7 100%		SM	Top 4" same as bottom of SA-2. Below: moist to wet grey/ white sandy SILT fill. Strong chemical odor.
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						

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Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-23-2

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 5.75 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/18/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 23-2 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					ML	4" Grass cover.
	0	SA-1	4,3, 3,8 75%		SM	Top 2": dark brown top soil (silt). Below: white and tan SILT / ASH. Bottom 2": Stiff, dark brown clayey SILT.
2						
	1.2	SA-2	38,20 14,14 75%		ML	Hard, stiff brown SILT, some fine sand, slight chemical odor, some dark brown mottles.
4						
	3.8	SA-3	17,28, 13,9 100%		SM	Same as SA-2 with strong chemical odor. Bottom 3": Wet, SILT and fine sand, grey and soft.
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-23-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/18/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 23-2 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass cover.
2	0	SA-1	5,6, 28,28 50%		ML	Hard, stiff clayey SILT, brown, no odor.
4	0	SA-2	7,9, 12,30 75%			Stiff, dry, brown, grey mottled SILT with some clay. Slight chemical odor.
6	3.1	SA-3	14,24, 10,10 100%			Same as SA-2 , increasing in clay content (30%), no odor.
8						
10						
12						
14						
16						
18						
20						
22						
24						

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Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-24-1**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. ____ Total Hole Depth *6 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/18/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

NOT SAMPLED

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover
2	3.3	SA-1	3,6, 6,12 75%		SM	Dark brown, silty SAND, some clay, little pebbles (imbedded).
4	52.1	SA-2	9,4 4,5 25%		ML	Moist, dark brown SILT, some clay, pungent chemical odor.
6						Void space and refusal at 6'
8						Skid rig and re-drill as SB-24-1A.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-24-1A

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ — Total Hole Depth 10 ft. — Diameter 4.5 in.

Top of Casing ____ — Water Level Initial 5 ft. — Static ____

Screen: Dia ____ — Length ____ — Type/Size ____

Casing: Dia ____ — Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller Brian Lambert — Log By Mark Colmerauer — Date 8/18/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-24-1A 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover
2	6.8	SA-1	7,7, 8,6 75%			Brown & grey silty fine SAND, dry, little clay.
4	28	SA-2	11,11 **6,5** **10%**		SM	Rock slag in spoon: Grey/ black and brown SILT and sand.
6	97	SA-3	3,3, 11,8 75%			Black, grey & white ash, silt and sand FILL, pungent chemical odor.
8	29.7	SA-4	2,2, 7,5 75%			White/ grey wet silty, sandy SLUDGE with pungent chemical odor.
10	24.2	SA-5	11,25 21,24 100%		ML	Moderately stiff brown clayey SILT, dry, odor present.
12						
14						
16						
18						
20						
22						
24						

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Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-24-2

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 10 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 7.5 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller Brian Lambert — Log By Mark Colmerauer — Date 8/18/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 24-2 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover
	0	SA-1	5,6, 3,3 30%			Brown, dry SILT and fine sand, damp near bottom.
2	67.3	SA-2	6,3, 4,6 10%		SM	Silty, ashy, dry to moist, white/ grey FILL material, pungent chemical odor.
4	20.1	SA-3	4,12, 14,16 50%			Same as SA-2, wet at bottom.
6	7.1	SA-4	16,20, 16,24 100%			Top 1': same as SA-4. Bottom 1': Stiff, brown clayey SILT, dry with chemical odor.
8	3.5	SA-5	13,21, 23,28 100%		ML	Hard, dry, moderately stiff to stiff clayey SILT, brown, with slight chemical odor.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-24-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 10 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/18/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 24-3 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover
2	0	SA-1	6,4, 10,9 50%			Dark brown, dry to damp sandy SILT (top soil).
4	73.4	SA-2	4,4, 10,58 100%		MH	Top 3": Dark brown, moist SILT, little clay. Bottom 21": White/ grey silty, ashy FIL with chemical odor, dry and compact.
6	0	SA-3	100/3" 10%			Same as bottom of SA-2. Spoon refusal, augered through.
8	1.5	SA-4	7,18, 22,33 100%			Same as SA-3
10	0	SA-5	18,12, 14,22 100%		ML	Top 1": Same as SA-4. Bottom 12": Brown, dry, compact, silty fine SAND, no odor.
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-24-4

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 14 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 12 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/18/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 24-4 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover
2	81.4	SA-1	2,5, 7,9 10%		ML	Plastic (poly-sheeting) with peroxide PASTE FILL. 2" of top soil above (silty sandy clay).
4	100	SA-2	5,6, 4,14 50%			Same as above for top 3". Below: grey/ white silty ASH with hard, compact, white paste. Strong pungent chemical odor.
6	89.4	SA-3	10,14, 14,14 75%			Same as bottom of SA-2. Some brown silt intermittent with fill.
8	29.4	SA-4	6,19, 32,35 100%		SM	Same as above for top 8". Below: Dry, hard fine SAND, some silt, compact, grey interbedding, chemical odor.
10	43.9	SA-5	4,3, 6,10 100%			Top 4": dry, hard fine SAND. Bottom 20": grey, very moist to wet SAND with clay lenses, slight chemical odor.
12	34.0	SA-6	11,31, 20,18 100%			Top 4": Wet, silty fine SAND, brown/ grey, strong odor, slag to 21". Bottom 3": red/ brown clayey GRAVEL and sand, some silt.
14	3.0	SA-7	12,14, 13,11 10%		GC	Same as bottom of SA-6: no odor, wet.
16						
18						
20						
22						
24						

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Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-24-5**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. ____ Total Hole Depth *12 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial *8.5 ft.* Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/18/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 24-5 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					ML	Grass cover
2	0	SA-1	5,6, 7,12 100%			Top 1': Brown, silty SAND, dry. Bottom 1': Grey, white silty sandy FILL.
4	309	SA-2	5,2, **2,5** **10%**			Polyplastic and grey/ white FILL (dry sludge), chemical odor, compact
	118	SA-3	5,2, 2,4 50%			Same as SA-2, no plastic, chemical odor present.
6					SM	
	60	SA-4	4,10, 2,7 75%			Very damp to wet, same as SA-3. Bottom 2" in shoe: brown, dry clayey SILT, no odor.
8						
	24.2	SA-5	10,11, 10,14 74%			Grey, wet silty fine SAND with chemical odor, moderately stiff.
10						
	0	SA-6	47, 100/2" 75%			Same as above until bottom 3". Bottom: Red clayey, silty GRAVEL, dry. (green residue present top 2" before gravel interface).
12					GC	
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-24-6

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 12 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 4.5 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller Brian Lambert — Log By Mark Colmerauer — Date 8/18/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-24-6 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover
2	8.4	SA-1	5,8, 11,11 50%			Top 4": Dark brown, silty clayey SAND, dry. Bottom: Brown/ grey, silty sandy ash FILL.
4	540	SA-2	4,4, 5,5 75%			Same as bottom SA-1, with white peroxide paste, strong chemical odor.
6	340	SA-3	1,1, 1,1 100%		SM	Grey silty fine SAND, wet with strong chemical odor.
8	280	SA-4	24,32, 24,36 100%			Wet, SA as SA-3. At 7' depth: Hard, dry, compact. grey SILT and sand. Strong chemical odor.
10	18.8	SA-5	13,17, 21,21 75%			Same as bottom SA-4, damp.
12	31.4	SA-6	12,12, 50/4" 100%		ML	Same as SA-5. Bottom 4": Dry, clayey SILT, red/ brown.
14						
16						
18						
20						
22						
24						

12/06/1994 lithlog-dec.,83

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-25-1

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. — Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ — Static ____

Screen: Dia ____ Length ____ — Type/Size ____

Casing: Dia ____ Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller John Slachchiak — Log By Mark Colmerauer — Date 8/19/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-25-1 0-2

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Vegitation
	21.2	SA-1	4,3, 3,3 100%		ML	Top 3": Dark brown, silty clayey SAND, (top soil), grading to moderately stiff clayey SILT, some sand, damp, brown.
2					SM	Loose, damp, silty fine SAND, brown, grading to stiff clayey SILT.
	14.0	SA-2	5,4, 4,6 **100%**			
4					ML	Brown, mod. stiff silty CLAY.
	8.2	SA-3	6,5, 5,6 100%			
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-25-2

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 4 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller John Slachchiak Log By Mark Colmerauer Date 8/19/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-25-2 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Vegitation
2	5.0	SA-1	3,3, 3,8 100%		ML	Humus top soil grading to stiff brown clayey SILT. No odor.
4	12.0	SA-2	3,8, 6,6 100%		SM	Light brown silty fine SAND, brown, loose grading to stiff moist silty CLAY.
6	11.1	SA-3	4,4, 5,5 100%		ML	Same, wet, grading to soft silty fine SAND, brown, little clay.
8					SM	
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-25-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller John Slachchiak Log By Mark Colmerauer Date 8/19/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 25-3 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Vegitation
2	15.0	SA-1	3,3, 3,3 100%		ML	Brown SILT, some clay, little fine sand, moderately stiff, crumbles under thumb pressure, moist.
4	13.8	SA-2	2,2, 2,2 75%		SM	Loose sandy SILT, trace clay, brown, damp.
6	13.1	SA-3	2,1, 2,5 100%		ML	Same as SA-2 grading to very moist clayey SILT, soft.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-25-4

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Tony Miller Log By Mark Colmerauer Date 8/19/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 25-4 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Vegitation
2	0.0	SA-1	4,4, 4,4 100%			Brown loose sandy SILT, damp, trace clay.
4	0.0	SA-2	5,4, 5,4 75%		SM	Same as SA-1.
6	.3	SA-3	2,3, 3,2 74%			Very moist, dark brown silty SAND, some clay, slight chemical odor.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-25-5

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ — Total Hole Depth 6 ft. — Diameter 4.5 in.

Top of Casing ____ — Water Level Initial ____ — Static ____

Screen: Dia ____ — Length ____ — Type/Size ____

Casing: Dia ____ — Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller Tony Miller — Log By Mark Colmerauer — Date 8/19/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAMES: SB 25-5 0-2; SB 25-5 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Vegitation
	34.8	SA-1	3,6, 9,5 100%			Brown moderately stiff silty CLAY, crumbles with thumb pressure, damp.
2						
	72.8	SA-2	3,2, 2,2 75%		ML	Same, grading to moist, black in color, more clay content (20%), petroluem odor.
4						
	19.2	SA-3	1,1, 2,4 25%			Very moist, dark brown clayey SILT, some fine sand, slight petroleum odor.
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-25-6

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Tony Miller Log By Mark Colmerauer Date 8/19/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 25-6 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Vegitation
2	25.2	SA-1	3,2, 2,2 50%		ML	Dark brown clayey SILT, clear glass in bottom of split spoon.
4	40.2	SA-2	2,3, 8,3 10%			Poor recovery: timber in spoon shoe, petro odor. Some clayey SILT, dark brown and damp.
6	29.3	SA-3	2,3, 2,5 10%		CL	Dark brown silty CLAY, with oil odor. Timber in shoe: poor recovery.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-26-1

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 8 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 4 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Tony Miller Log By Mark Colmerauer Date 8/19/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-26-1 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Vegitation
2	16.9	SA-1	2,2, 3,8 100%		SM	Brown, cohesive silty SAND, some clay, damp.
4	9.0	SA-2	8,7, **6,8** **75%**		SM	Same as SA-1, damp.
6	19.7	SA-3	4,4, 4,10 100%		ML	Same, wet, grading to silty fine SAND, grading to stiff clayey SILT (very moist to damp).
8	5.1	SA-4	20,16, 16,18 100%		CL	Same grading to hard, brown, stiff silty CLAY.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-26-2

Project *Akzo* Owner *Akzo Nobel*
Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*
Surface Elev. ____ Total Hole Depth *8 ft.* Diameter *4.5 in.*
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core *CME 55*
Drill Co. *MSTD ADI* Method *Hollow Stem Auger*
Driller *Tony Miller* Log By *Mark Colmerauer* Date *8/19/94* Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-26-2 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Heavy vegetation and humus.
2	6.2	SA-1	2,3, 4,8 100%		ML	4" inches of top soil and humus underlain by brown to dark brown sandy SILT, with some clay, no odor.
4	1.0	SA-2	10,20, 25,27 100%		SM	Brown silty SAND grading into moderately stiff clayey SILT.
6	3.6	SA-3	18,21, 24,27 100%		ML	Same as SA-2, grading to silty CLAY, stiff and brown, damp to moist.
8	0.0	SA-4	9,21, 33,30 100%		CL	Compact, silty fine SAND, damp to dry, crumbles easily under thumb.
10					SM	
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-26-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 8 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Tony Miller Log By Mark Colmerauer Date 8/19/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-26-3 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					SM	Heavy vegetation and humus.
2	13.5	SA-1	6,6, 6,8 75%		ML	Loose silty SAND, brown, grading to stiff SILT with clay, brown and damp.
4	7.1	SA-2	8,8, 11,15 100%		SM	Same grading to somewhat loose silty SAND, trace clay, dry.
					CL	
6	0.0	SA-3	11,17, 21,24 100%		ML	Compact, silty brown CLAY grading to brown, moderately stiff to loose clayey SILT, moist.
8	0.0	SA-4	17,24, 31,34 100%			Compact moist to very moist clayey SILT grading to very moist, clayey, silty fine SAND.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-26-4

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 8 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 4 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Tony Miller Log By Mark Colmerauer Date 8/19/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 26-4 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Heavy vegetation and humus.
	5.8	SA-1	3,4, 4,5 75%			Brown, loose, fine SAND, damp, some silt.
2						
	.6	SA-2	11,8, 10,6 100%			Same as SA-1 grading to very moist.
4					SM	
	14.0	SA-3	11,18, 22,30 100%			Same: silty brown, fine SAND, compact but crumbles easily under thumb, very moist to wet.
6						
	3.7	SA-4	21,29, 31,32 100%			Same as above.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-26-5

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 8 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 6 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller Tony Miller — Log By Mark Colmerauer — Date 8/19/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-26-5 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Heavy vegetation and humus.
2	6.5	SA-1	3,3, 3,3 100%		SM	Brown, loose, fine SAND, damp, some silt.
4	4.0	SA-2	6,9, **9,7** **100%**		ML	Same as SA-1 grading to moderately stiff clayey SILT, damp to very moist.
6	5.5	SA-3	7,8, 9,11 100%		SM / ML	Same grading to wet silty SAND grading back to moist, stiff clayey silt.
8	6.0	SA-4	18,21, 29,31 100%		SM	Wet, brown, silty fine SAND grading to moderately stiff clayey SILT, soft at bottom of sample.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-26-6

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ — Total Hole Depth 8 ft. — Diameter 4.5 in.

Top of Casing ____ — Water Level Initial ____ — Static ____

Screen: Dia ____ — Length ____ — Type/Size ____

Casing: Dia ____ — Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller Tony Miller — Log By Mark Colmerauer — Date 8/19/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 26-6 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover and humus.
	16.6	SA-1	2,2, 2,5 100%		SM	Brown, loose, fine silty SAND, damp.
2						
	11.8	SA-2	5,6, 11,10 100%			Same as SA-1.
4						
	7.3	SA-3	4,6, 6,8 75%		ML	Same grading to moist brown clayey SILT, trace sand.
6						
	0.0	SA-4	16,31, 31,26 100%		SW	Same, wet, grading to brown, wet fine SAND.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-27-1**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. ____ Total Hole Depth *6 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Tony Miller* Log By *Mark Colmerauer* Date *8/19/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 27-1 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Heavy vegetation and humus.
2	8.0	SA-1	5,7, 5,8 50%		CL	Dark brown CLAY, some silt, damp and stiff.
4	8.4	SA-2	8,8, 10,10 75%		SM	Top 3" same as SA-1 Bottom: Dark brown, loose, damp, silty SAND.
6	8.0	SA-3	6,8, 8,8 100%		ML	Same grading to damp moderately stiff, clayey SILT.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-27-2

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. _____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing _____ Water Level Initial _____ Static _____

Screen: Dia _____ Length _____ Type/Size _____

Casing: Dia _____ Length _____ Type _____

Fill Material _____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Tony Miller Log By Mark Colmerauer Date 8/19/94 Permit # _____

Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS: .

SAMPLE NAME: SB 27-2 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Heavy vegetation and humus.
	10.3	SA-1	11,8, 11,18 100%		CL	Dark brown CLAY, some silt, damp and stiff. Shoe of split spoon: brown SILT, with fine sand.
2						
	8.2	SA-2	10,9, 7,12 100%		ML	Brown SILT, some fine sand, grading to brown SILT with some clay (30%), damp.
4						
	8.1	SA-3	5,5, 9,9 100%			Same as bottom of SA-2.
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-27-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 6 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Tony Miller Log By Mark Colmerauer Date 8/19/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-27-3 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Heavy vegetation and humus.
2	10.3	SA-1	5,9, 10,12 100%		CL	Dark brown silty CLAY, damp and stiff.
4	6.0	SA-2	11,10, 18,26 100%		ML	Top 2" same, grading to clayey SILT, brown & damp, grading to SILT with some clay, little sand, soft & damp.
6	10.0	SA-3	9,7, 12,23 100%		SM / ML	Same as bottom of SA-2, grading to very moist, silty SAND, loose, grading into silt with some clay (30%), trace sand, wet at 6' depth.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-27-4

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 4 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Tony Miller Log By Mark Colmerauer Date 8/19/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 27-4 0-2

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Heavy vegetation and humus.
2	7.9	SA-1	5,6, 8,7 100%		CL	Dark brown silty CLAY, damp and stiff. Bottom 2": brown sandy SILT, dry, loose.
4	6.5	SA-2	5,5, 5,7 100%		SM	Brown SAND and silt, damp, loose. Bottom 2": Clayey SILT, brown, soft and wet.
6	5.5	SA-3	7,5, 9,10 100%		ML	Wet, clayey SILT, moderately stiff grading to soft brown, wet, SILT and SAND.
8					SM	
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-28-1

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. — Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ — Static ____

Screen: Dia ____ Length ____ — Type/Size ____

Casing: Dia ____ Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller Brian Lambert — Log By Mark Colmerauer — Date 8/22/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-28-1 4-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					ML	Grass cover with top soil.
2	.2	SA-1	3,5, 5,7 75%		SM	Dark brown clayey SILT, dry, grading to light brown, sandy SILT, dry to damp.
4	.6	SA-2	5,5, 7,7 75%		ML	Light brown, moist sandy SILT, grading to brown moist, clayey SILT with little fine sand, stiff.
6	.7	SA-3	8,5, 7,13 75%		SM	Stiff brown silty CLAY (some dark brown patches), damp. Bottom 3": Dark brown, stiff SAND, trace clay.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-28-2

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. _____ Total Hole Depth *6 ft.* Diameter *4.5 in.*

Top of Casing _____ Water Level Initial *2 ft.* Static _____

Screen: Dia _____ Length _____ Type/Size _____

Casing: Dia _____ Length _____ Type _____

Fill Material _____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/22/94* Permit # _____

Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 28-2 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover with top soil.
2	.5	SA-1	5,5, 7,7 75%		SM	Dry, stiff, brown silty SAND, grading to soft, moist silty SAND.
4	.2	SA-2	5,7, 8,5 100%		ML	Soft, wet, silty SAND, trace clay, grading to moderately stiff clayey SILT, some sand.
6	.5	SA-3	2,2, 5,6 100%		CL	Dark brown and grey, wet, soft clayey SILT, grading to damp, stiff, silty CLAY, dark brown.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-28-3

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 6 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 3 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller Brian Lambert — Log By Mark Colmerauer — Date 8/22/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 28-3 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover with top soil.
2	.5	SA-1	2,4, 5,5 50%		SM	Light brown/ tan with dark brown spots, dry loose silty SAND.
4	6.5	SA-2	4,4, 4,4 75%		SM / ML	Damp to wet brown silty SAND, some clay. Bottom 2": dark brown, clayey SILT, some sand.
6	8.0	SA-3	4,6, 9,8 100%		SM	Top 1": same as bottom of SA-2. Bottom 1": Brown, silty SAND, wet to moist.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-28-4

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 5.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB-28-4 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover with top soil.
2	.4	SA-1	3,3, 4,5 75%		SM	Dark brown grading to brown, dry, loose silty SAND, clay present in shoe of spoon.
4	.4	SA-2	4,7, 7,7 75%		ML	Brown, clayey, SILT, moist to damp, grading from soft to stiff with increasing depth.
6	.6	SA-3	5,8, 8,12 100%			Damp to wet, brown, stiff to soft, brown, clayey SILT.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-31-1**

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 328.43 ft. Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 4 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAMES: SB 31-1D 0-2; SB 31-1 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0	49.0	SA-1	20,5, 5,5 10%			4" concrete cap. Poor recovery: broken concrete, 3" loose, damp, brown, SAND.
2					SM	
4	5.0	SA-2	5,5, 8,6 50%			Soft, very moist, brown, fine SAND and silt.
6	5.1	SA-3	2,5, 11,21 100%		ML	Same as SA-2 top 1', wet, black staining at 5' depth. Below: moderately stiff SILT with some clay, trace sand, brown.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-31-2

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. _____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing _____ Water Level Initial 3 ft. Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material _____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # _____
Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 31-2 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" concrete cap with stone fill.
2	.5	SA-1	5,6, 7,5 25%		SM	Top 3": stone fill, Below: Moist brown SAND, some silt, soft.
4	.5	SA-2	4,3, 5,4 75%			Same grading to wet. Bottom 2": very moist, calyey SILT, some sand.
6	.4	SA-3	5,6, 12,20 100%		ML	soft clayey SILT, wet, some sand, brown. Grading to dry, stiff SILT, with some clay, trace sand.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-31-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 328.51 ft. Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTO ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 31-3 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" concrete cap with stone fill.
2	25.0	SA-1	7,11, 12,5 10%		SM	Poor recovery, concrete fill in spoon. Bottom 2": brown, moist, soft, fine SAND, chemical odor present.
4	9.4	SA-2	4,8, 8,8 5%		SC	Poor recovery, rock in spoon. 2" of brown, soft SAND, with some clay, some silt, no odor.
6	22.0	SA-3	3,4, 4,18 100%		ML	Same as above grading to hard, stiff, clayey SILT, dry, no odor. (NOTE: black staining at 5' depth with chemical odor.)
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-31-4

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 31-4 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" concrete cap with stone fill.
2	1.0	SA-1	5,11, 7,12 25%		SM	Concrete fill in spoon. Bottom: grey, white, black and brown moist silty SAND, some gravel.
4	1.2	SA-2	3,3, 5,5 75%		ML	Brown, SAND and silt, damp grading to moderately stiff clayey SILT, brown, damp.
6	1.2	SA-3	5,11, 18,20 100%		SM	Same as above moist, grading to compact moderately stiff, fine, brown, SAND, damp, some silt.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-32-1**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. *324.59 ft.* Total Hole Depth *6 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial *5 ft.* Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *John Slachchiak* Log By *Mark Colmerauer* Date *8/16/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 32-1 0-2

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Heavy vegetation and humus
2	8.9	SA-1	3,3, 5,5 100%		ML	Dark brown, dry SILT. Bottom 4" of spoon: tan silt, loose.
4	8.4	SA-2	5,6, 8,8 75%		CL	Tan, loose, silt with brown and red mottles. Bottom 3" of spoon: brown/red moderately stiff silty CLAY.
6	7.1	SA-3	4,5, 5,6 50%		ML	Top 6" of spoon sample: Same as SA-2. Bottom 6" of spoon sample: wet sandy silt.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-32-2

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. 324.50 ft. Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 3.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller John Slachchiak Log By Mark Colmerauer Date 8/16/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 32-2 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Heavy vegetation and humus
2	6.5	SA-1	2,5, 6,4 50%		ML	Red, loose, fine SAND, dry.
4	9.3	SA-2	5,6, 7,7 75%		CL	Top 4" of spoon: Same as SA-1. Below: 2" brown/ red clay with silt. Bottom: Same as SA-1, grading to moderately stiff SILT, some clay.
6	6.1	SA-3	3,4, 4,6 75%		GC	Same as bottom of SA-2 grading to damp silty CLAY. Bottom 2" : wet rounded gravel with red silt.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-32-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 324.59 ft. Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 4 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller John Siachchiak Log By Mark Colmerauer Date 8/16/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 32-3 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Heavy vegetation and humus
2	6.9	SA-1	2,6, 6,6 50%			Brown, red, dry to damp, loose, fine SAND and SILT.
4	7.7	SA-2	3,4, **6,6** **75%**		ML	Same as SA-1, damp to moist grading to red/ brown moderately stiff SILT, some clay.
6	10.8	SA-3	3,4, 13,10 100%		GC	Same as SA-2, wet grading to clayey SILT. Bottom 2" of spoon: wet rounded gravel with red silt.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-33-1

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 10 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 4 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/18/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 33-1 0-2

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Crusher run cap
2	223	SA-1	5,10, 10,10 50%		SM	Grey GRAVEL and tan silty sand.
4	41.2	SA-2	30, 10/100 0%			Conrete in spoon, poor recovery.
6	74.0	SA-3	1,5, 11,36 50%		ML	Dark brown, wet, moderately stiff SILT, some fine sand.
8	110	SA-4	71,40, 20,20 100%		GM / ML	Top 1': Wet, brown, coarse GRAVEL and silt, black staining present. Bottom 1': Dry red, clayey SILT with imbedded gravel
10	34.4	SA-5	8,5, 3,3 10%		GM	Wet brown coarse GRAVEL, sand and silt.
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-33-2

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 10 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 6 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/18/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 33-2 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Crusher run and grass cap
2	>2,000	SA-1	5,5, 7,5 100%			Brown and black, moderately stiff, clayey SILT, damp with chemical odor.
4	>2,000	SA-2	6,9, 3,3 100%		ML	Black, some brown, moist to wet, clayey SILT, with strong odor.
6	>2,000	SA-3	1,5, 7,8 75%			Top 2": same. Bottom: Damp, stiff, clayey SILT, brown with faint odor.
8	>2,000	SA-4	13,12, 7,9 100%			Same as SA-2. Bottom 2": Brown, silty fine SAND.
10	>2,000	SA-5	10,13, 10,9 10%		GM	Wet, black, GRAVEL and sand
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-35-1

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 3.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller John Slachchiak Log By Mark Colmerauer Date 8/16/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 35-1 0-2

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						6" Concrete and fill.
2	7.2	SA-1	2,3, 5,3 75%		ML	Brown/black SILT, some clay, little fine sand. Slight solvent odor.
4	9.8	SA-2	2,2, 2,2 0%			No recovery, rock in spoon. Took grab sample for PID, solvent odor.
6	9.6	SA-3	5,7, 11,13 100%		CL	Wet SILT, trace sand in top 3" of spoon. Bottom: Stiff brown clayey silt, no odor.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-35-2

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 6 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 3.5 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller John Slachchiak — Log By Mark Colmerauer — Date 8/16/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 35-2 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						6" Concrete and fill.
2	6.7	SA-1	3,3, 4,4 75%		ML	Dry dark brown SILT,some fine sand. Slight solvent odor.
4	6.7	SA-2	4,4, 3,4 75%		CL	Moist to wet, dark brown stiff clayey SILT, slight solvent odor.
6	6.7	SA-3	4,1, 2,7 75%		ML	Same as SA-2 grading to brown SILT grading to loose wet fine SAND and silt, no odor.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-35-3

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller John Slachchiak Log By Mark Colmerauer Date 8/16/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 35-3 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						6" Concrete and fill.
2	5.3	SA-1	2,2, 1,4 10%			Brown/grey clayey SILT. Rock in spoon. Slight solvent odor.
4	16.0	SA-2	2,2, 4,5 10%		ML	Same as SA-1. Concrete in spoon. Slight solvent odor.
6	7.9	SA-3	2,6, 7,8 75%			6" Wet brown sandy SILT grading into brown clayey SILT . No odor. Medium stiffness.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-36-1

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. _____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing _____ Water Level Initial 4 ft. Static _____

Screen: Dia _____ Length _____ Type/Size _____

Casing: Dia _____ Length _____ Type _____

Fill Material _____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller John Slachchiak Log By Mark Colmerauer Date 8/17/94 Permit # _____

Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 36-1 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Fill and vegitation.
2	6.4	SA-1	4,3, 2,2 50%			Top 5": grey stone fill. Bottom 7": Brown, moist, SILT, some clay, little sand, somewhat loose.
4	42.3	SA-2	2,1 1,2 50%		ML	Top 6": Brown, moist SILT, some clay, no odor. Bottom 6": Dark grey, very moist SILT, some clay, soft.
6	6.5	SA-3	3,5, 5,13 75%			Brown, moderately stiff SILT and some clay, very moist to wet.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-36-2

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. _____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing _____ Water Level Initial 4 ft. Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material _____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller John Slachchiak Log By Mark Colmerauer Date 8/17/94 Permit # _____
Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SB 26-2 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Fill and vegitation.
2	5.2	SA-1	8,3, 4,3 50%			Top 6": grey stone fill. Bottom 7": Brown, damp, SILT, some clay, little sand, moderately stiff.
4	10.0	SA-2	7,6 5,5 75%		ML	Same, slight discoloration on top 2" of sample. Moist to wet.
6	10.6	SA-3	2,5, 7,9 75%			Top 2": same as SA-2. Bottom: stiff, brown clayey SILT with grey mottles.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-A-1

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBA-1 4-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover with top soil.
2	.5	SA-1	3,3, 3,4 75%		SM	Compact, dry, brown, silty SAND.
4	.4	SA-2	6,8, 7,7 75%			Same, grading from dry to damp.
6	.4	SA-3	5,8, 18,23 100%		ML	Damp compact stiff, clayey SILT, little sand.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-A-2

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 327.03 ft. Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBA-2 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover with top soil.
2	0.0	SA-1	4,6, 6,8 75%		SM	Dark brown to brown, compact, silty SAND.
4	.2	SA-2	5,8, 7,8 50%		ML	Same grading to moist, stiff, clayey SILT (soft @ bottom 2").
6	.2	SA-3	5,5, 19,13 75%		CL	Top 2": soft clayey SILT. Below: stiff silty CLAY, brown, damp at bottom.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-A-3

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 325.51 ft. Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 5 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBA-3 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover with top soil.
2	.3	SA-1	N/A 75%		SM	Dry, brown to dark brown, compact, silty SAND, crumbles easily under thumb.
4	.3	SA-2	N/A 50%		ML	Same as above grading from damp to moist. Bottom 4": clayey SILT, brown.
6	.3	SA-3	N/A 75%		SM	Same for top 4". Below: wet, silty SAND, loose.
8						Note: Spoons pushed in with hydraulics due to low over head room with rig mast.
10						
12						
14						
16						
18						
20						
22						
24						

analysis

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-A-4

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 4 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBA-4 2-4

Depth (ft.)	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0					Grass cover with top soil.
2				SM	Hand augered to 4', no split spoon sampling due to overhead lines.
4					Silty SAND, brown, damp, some clay present.
6					
8					
10					
12					
14					
16					
18					
20					
22					
24					

Analysis

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-B-1

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 5 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller John Slachchiak Log By Mark Colmerauer Date 8/16/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBB-1 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass cover.
2	14.0	SA-1	4,6, 5,8 50%			Brown and black clayey SILT, stiff with grey stone float.
4	17.2	SA-2	20,16 4,7 **50%**		CL	Same as SA-1.
6	14.0	SA-3	3,4, 4,5 100%			▽ Damp to wet, same as SA-1. Soft at bottom of spoon sample, no rock float.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-B-2

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 5.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller John Slachchiak Log By Mark Colmerauer Date 8/16/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBB-2 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass cover.
2	12.3	SA-1	3,5, 5,9 50%			Loose, brown, SILT, little clay, little fine sand.
4	14.0	SA-2	7,9 6,8 75%		ML	Same as SA-1. Dark brown and grey stained, increase in stiffness, petro oil odor present.
6	9.4	SA-3	3,3, 5,5 100%			Damp to wet, brown, moderately stiff clayey silt, no petro odor.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-C-1

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 324.80 ft. Total Hole Depth 10 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 3.75 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller John Slachchiak Log By Mark Colmerauer Date 8/17/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAMES: SBC-1 2-4; SBC-1 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass cover.
	143	SA-1	12,7 6,6 15%			Poor recovery: Stone and silty CLAY fill.
2						
	216	SA-2	8,7 **5,5** **25%**		ML	Brown, damp to wet, moderately stiff, clayey SILT, little sand, slight petro oil odor present.
4						
	9.8	SA-3	11,12 16,20 50%			Same as SA-2, slight petro. odor.
6						
	9.2	SA-4	10,12 16,20 75%			Same as SA-2, no odor.
8						
	6.4	SA-5	8,9 12,15 75%		SM	Wet, grey, fine SAND, some silt. Compact, crumbles easily.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-C-2

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. 324.82 ft. Total Hole Depth 10 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 5.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller John Slachchiak Log By Mark Colmerauer Date 8/17/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBC-2 0-2

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Asphalt top and crusher run fill.
2	20.8	SA-1	6,8 7,5 25%		ML	Fill on top and black/ brown clayey SILT. Dry, crumbles easily under thumb pressure.
4	19.6	SA-2	6,6 7,9 100%			Brown, moist SILT with some clay, little sand.
6	19.9	SA-3	10,15 19,22 50%		SM	Brown, damp, fine SAND and silt, graidng moist SILT, little sand.
8	16.8	SA-4	17,14 12,15 75%			Same as SA-4, wet, grading to soft sandy silt, grading back to moderately stiff SILT, little sand.
10	12.4	SA-5	10,11 12,12 50%			Same grading to wet, grey, SILT and fine sand. Some clay present in bottom 2" of spoon sample.
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-C-3

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. 324.73 ft. — Total Hole Depth 10 ft. — Diameter 4.5 in.

Top of Casing ____ — Water Level Initial 4 ft. — Static ____

Screen: Dia ____ — Length ____ — Type/Size ____

Casing: Dia ____ — Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller John Slachchiak — Log By Mark Colmerauer — Date 8/17/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAMES: SBC-3 2-4; SBC-3 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass top.
2	263	SA-1	3,4 5,5 25%		ML	Brown with grey staining, moderately stiff clayey SILT. Slight petro. odor.
4	136	SA-2	3,4 **5,7** **75%**			Same as SA-1, no staining, no petro. odor, very moist at bottom.
6	17.3	SA-3	3,4 7,8 50%		SM	Dark grey and brown, wet, silty SAND, some clay, slight petro. odor.
8	12.3	SA-4	6,5 5,3 75%			Wet, brown with grey silty fine SAND.
10	9.8	SA-5	7,9 13,17 100%			Same grading to wet, grey, fine SAND and silt. Bottom 2": Brown sand, silt and rounded gravel.
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-C-4

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. 324.79 ft. — Total Hole Depth 10 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 4 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller Brian Lambert — Log By Mark Colmerauer — Date 8/17/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBC-4 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass top and crusher run fill.
2	12.3	SA-1	4,3, 5,5 30%		ML	Top 2":stone fill. Bottom: Brown, moist, moderately stiff clayey SILT.
4	13.8	SA-2	5,5, 7,8 75%			Same as bottom SA-1.
6	16.7	SA-3	2,6 12,14 75%			Same as SA-2 grading to wet, brown, silty fine SAND.
8	13.9	SA-4	21,14 14,15 100%		SM	Wet, silty fine SAND grading to same with more clay content.
10	9.6	SA-5	6,7 10,11 50%			Same as SA-4 grading to grey/ brown silty fine SAND.
12						
14						
16						
18						
20						
22						
24						

12/06/1994 lithlog-dec.,93

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-D-1

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. 325.02 ft. — Total Hole Depth 10 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 4 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller John Slachchiak — Log By Mark Colmerauer — Date 8/17/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAMES: SBD-1 0-2

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass cover and crusher run fill.
2	61.2	SA-1	12,4, 3,3 75%		SM	Top 2": grey silty fine SAND. Below: Dry, brown silty fine SAND.
	23.3	SA-2	5,3, **3,6** **75%**		ML	Brown, damp to wet clayey SILT, little fine sand.
4					SM	Wet, brown SAND with silt grading to wet clayey SILT, moderately stiff.
	16.7	SA-3	3,4, 12,15 100%		ML	
6						Wet, mod. stiff, clayey SILT grading to wet, brown, loose silty fine SAND.
	8.2	SA-4	12,15, 20,20 100%		SM	
8						Moist brown silty fine SAND, slight grey coloring present.
	9.4	SA-5	15,16, 12,10 100%			
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-D-2

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 324.93 ft. Total Hole Depth 10 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 4.5 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller John Slachchiak Log By Mark Colmerauer Date 8/17/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBD-2 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass cover and crusher run fill.
2	8.4	SA-1	5,2, 2,3 75%		SM	Black, grey SILT, some fine sand, slight petro odor. Bottom 4": Brown SILT, some fine sand, damp.
4	11.0	SA-2	5,7, 7,8 100%		ML	Brown, moderately stiff SILT grading to clayey SILT, damp, no odor.
6	8.2	SA-3	15,17, 22,26 100%		SM	Brown, wet SILT. Bottom 4": damp SILT, grading to SILT with some fine sand.
8	10.7	SA-4	10,15, 17,17 100%			Same as bottom SA-3, with slight grey color. Damp to moist.
10	7.0	SA-5	10,12, 12,13 50%			Wet, brown/ grey, silty fine SAND, somewhat cohesive.
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-D-3

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. 325.05 ft. — Total Hole Depth 10 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 4 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller John Slachchiak — Log By Mark Commerauer — Date 8/17/84 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBD-3 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass cover and crusher run fill.
2	9.3	SA-1	3,2, 2,3 100%		ML	Top 6": Dark brown, moist clayey SILT. Bottom: Red/ brown and tan mottled clayey SILT, damp., some sand present.
4	11.4	SA-2	6,7, **6,7** **50%**			Brown, moist clayey SILT, crumbles easily under thumb but has slight plasticity.
6	10.0	SA-3	3,3, 9,4 75%		SM	Brown, wet fine sandy SILT, little clay grading to moist SILT, little fine sand.
8	9.7	SA-4	22,15, 20,17 75%		ML	Same as bottom SA-3, moderately stiff.
10	10.0	SA-5	10,13, 17,19 75%		SM	Light grey silty fine SAND, wet.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-D-4**

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. 325.17 ft. — Total Hole Depth 10 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 4 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller John Slachchiak — Log By Mark Colmerauer — Date 8/17/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBD-4 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						4" Grass cover and crusher run fill.
0						Top 4": crusher run gravel. Below: dark brown, grey sandy SILT, dry to damp, crumbles easily under thumb pressure.
2	5.3	SA-1	10,8, 6,5 75%		ML	
4	5.6	SA-2	9,6, 7,8 75%		SM	Brown, moist clayey SILT, moderately stiff grading to moist, brown silty, fine SAND, soft.
6	7.0	SA-3	3,4, 5,4 75%			Same as bottom SA-2, wet, grading to brown, mod. stiff SILT, little fine sand.
8	5.8	SA-4	13,20, 22,17 50%		ML	Same as bottom SA-3, grading to moist, compact, crumbles easily under tumb pressure.
10	4.7	SA-5	9,11, 11,10 75%			Same as SA-4 grading to wet, compact, grey sandy SILT.
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-E1**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. *326.85 ft.* Total Hole Depth *16 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial *2.5 ft.* Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *John Slachchiak* Log By *Mark Colmerauer* Date *8/15/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBE-1 14-16

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass cover and humus
2	0	SA-1	5,3, 3,2 50%		SM	Red-brown fine SAND and SILT, trace clay and rounded gravel.
4	0	SA-2	4,4, **3,3** **75%**		SM	Wet- same as SA-1.
6	0	SA-3	7,9, 12,15 50%		ML	4'-5' Same as SA-1.
8	0	SA-4	13,12, 23,14 75%		GM	5'-6' Stiff, compact, dry SILT, some clay, little fine sand.
10	0	SA-5	5,11, 23,25 75%		ML	6'-7' Stiff, compact, dry SILT, some clay, little fine sand.
12	0	SA-6	9,19, 22,11 50%		GC	7'-8' Moist, brown SILT.
14	0	SA-7	12,16, 11,10 25%		GC	8'-9' Moist to wet, brown SILT.
16	0	SA-8	9,12, 17,20 50%		ML	9'-10' Stiff, dry, compact brown SILT, some clay.
18						Wet, brown, sandy GRAVEL (angular & rounded), some silt, little grey mottled brown clay.
20						Wet GRAVEL (angular & rounded), some stone, some brown sand and silt.
22						14'-15.75' Same as SA-7.
24						15.75'-16' Stiff, damp, brown SILT.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-E2

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. ____ — Total Hole Depth 13 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 2 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller John Slachchiak — Log By Mark Colmerauer — Date 8/15/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBE-2 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass cover and humus
2	0	SA-1	4,3, 2,2 25%			Brown moist fine SAND with silt, little clay and rounded gravel.
4	.4	SA-2	WOH 50%			Wet fine SAND with silt, little clay. Dark brown-black staining, slight oil odor.
6	.4	SA-3	WOH 25%			Same as above grading to brown wet SAND, some silt, no petro. odor.
8	.6	SA-4	WOH 20%		SW	Wet, brown SAND, little silt. Slight petro. odor.
10	0	SA-5	WOR 25%			Wet, brown, silty fine SAND, slight odor. Very saturated, "running sands".
12	N/A	SA-6	WOR 0%			Void space: running sands.
14						Refusal at 13', possible bottom of abandoned UST.
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-E3

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 3 ft. Diameter ____
Top of Casing ____ Water Level Initial 2 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller John Slachchiak Log By Mark Colmerauer Date 8/15/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

NOT SAMPLED

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						4" Grass cover and humus
2	0	SA-1	25,9 7,7 10%		SW	Brown moist fine SAND with silt, little clay and rounded gravel.
4	NA	SA-2	1,2 -			Boring abandoned as 6" water line was encountered.
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-E4

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. 326.95 ft. — Total Hole Depth 16 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 8 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller John Slachchiak — Log By Mark Colmerauer — Date 8/15/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBE-4 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						4" Grass cover and humus
2	0	SA-1	4,7, 7,7 25%			Brown, dry to damp, silty fine sand, little clay.
4	0	SA-2	5,8, 7,6 25%		SM	Same as SA-1.
6	0	SA-3	60,32 16,10 50%			Same as SA-1, stone float in spoon.
8	0	SA-4	18,15, 19,22 75%			Same as SA-1. Last 2" of sample: Red, damp, clayey silty gravel (rounded).
10	0	SA-5	15,18 19,20 100%		GM	Red, wet, rounded coarse and fine gravel. Some sand and silt.
12	0	SA-6	13,17 28,21 100%		SW	Well graded coarse sand graing to rounded gravel, some sand, little silt, wet.
14	.4	SA-7	15,20, 18,11 75%		GC	Same as SA-6, some caly present.
16	0	SA-8	15,18 18,16 75%			Wet, well graded coarse sand grading to coarse gravel, sand and clay.
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-PS-1**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. ____ Total Hole Depth *6 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/22/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-1 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover
2	.5	SA-1	N/A 100%		SM	Brown, dry, sandy SILT, crumbles easily.
4	.4	SA-2	N/A 75%		ML	Same as above for 4". Below: brown, dry to moist, clayey SILT, moderately stiff.
6	.6	SA-3	N/A 75%			Same as above.
8						NOTE: due to overhead wores, split spoon was pushed woth out raising drill rig mast.
10						
12						
14						
16						
18						
20						
22						
24						

GROUNDWATER TECHNOLOGY

Drilling Log

Soil Boring SB-PS-2

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. 327.39 ft. Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/22/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-2 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover
2	.5	SA-1	3,4, 4,4 100%		SM	Brown, damp to moist silty SAND, some clay, crumbles easily with thumb pressure.
4	.6	SA-2	9,5, 5,10 100%		ML	Same as above grading to clayey SILT, cohesive, soft, moist.
6	.6	SA-3	5,8, 11,17 100%			Stiff, damp, brown, clayey SILT.

12/06/1994 lithlog-dec.,83

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-3

Project Akzo — Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583
Surface Elev. 327.13 ft. — Total Hole Depth 8 ft. — Diameter 4.5 in.
Top of Casing ____ — Water Level Initial 6 ft. — Static ____
Screen: Dia ____ — Length ____ — Type/Size ____
Casing: Dia ____ — Length ____ — Type ____
Fill Material ____ — Rig/Core CME 55
Drill Co. MSTD ADI — Method Hollow Stem Auger
Driller Brian Lambert — Log By Mark Colmerauer — Date 8/22/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-3 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Asphalt top with gravel fill below.
2	0.0	SA-1	2,2, 7,4 50%		SM	Brown, well graded fine SAND, moist.
4	.2	SA-2	5,4, **3,5** **50%**		ML	Same as above top 6", very moist. Bottom 6": brown, moderately stiff, damp, clayey SILT, some sand.
6	0.0	SA-3	2,2, 3,3 100%			Same as bottom of SA-2, very moist.
8	0.0	SA-4	3,8, 7,8 50%		GM	Wet, same as above for top 6". Below: wet, red SILT with sand and gravel or varying sizes.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-4

Project *Akzo* Owner *Akzo Nobel*
Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*
Surface Elev. *327.36 ft.* Total Hole Depth *8 ft.* Diameter *4.5 in.*
Top of Casing ____ Water Level Initial *6 ft.* Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core *CME 55*
Drill Co. *MSTD ADI* Method *Hollow Stem Auger*
Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/23/94* Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-4 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt top with gravel fill below.
2	1.8	SA-1	12,6, 7,7 50%		SM	Brown, well graded fine SAND, some silt, dry, cohesive.
4	.8	SA-2	10,7, 8,7 75%		ML	Damp, same as above, grading to moderately stiff, moist, clayey SILT, trace sand, brown.
6	1.8	SA-3	3,3, 4,4 75%			Stiff, moist, to very moist and moderately stiff, brown clayey SILT.
8	1.4	SA-4	4,6, 18,16 50%		GC	Top 6": wet clayey SILT, stiff, brown. Bottom 6": Damp to dry red silty CLAY, with coarse angular gravel.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-5

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 327.23 ft. Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/23/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-5 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt top with gravel fill below.
2	3.4	SA-1	12,6, 7,7 50%		SM	Black, fine SAND grading to brown fine sAND, trace silt, stagnant water odor.
4	13.2	SA-2	10,7, 8,7 75%		ML	Brown, moist, moderately stiff to mod. soft clayey SILT.
6	7.4	SA-3	3,3, 4,4 75%			Same as SA-2, moist to very moist.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-7

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. 326.94 ft. Total Hole Depth 8 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/23/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-7 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt top with gravel fill below.
	32.0	SA-1	5,6, 5,4 50%			Brown, moderately stiff, silty SAND, dry to damp.
2						
	42.0	SA-2	9,8, 7,2 75%			Same as SA-1, damp.
4					SM	
	36.0	SA-3	10,10, 12,12 100%			Same, damp and cohesive.
6						
	25.0	SA-4	11,11, 12,11 75%			Same, dry to damp. Bottom 3": soft, brown, damp SAND.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-8

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 324.23 ft. Total Hole Depth 8 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial 6 ft. Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/23/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-8 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover.
	1.8	SA-1	6,8, 8,4 50%		ML	Dark, brown, moist, clayey SILT.
2						
	3.6	SA-2	6,5, 5,4 100%		SM	Brown, damp, silty SAND, some clay.
4						
	N/A	SA-3	5,8, 9,10 0%			No recovery.
6						
	1.4	SA-4	16,22, 24,22 50%		SM	Wet, brown, SAND, black patches. Bottom 4": red CLAY with silt and coarse gravel.
8					GC	
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-9

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 4 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/24/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-9 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover.
	.3	SA-1	3,2, 1,4 50%			Dark, brown, damp, silty SAND, loose.
2					SM	
	1.5	SA-2	3,6, 16,12 50%			Top 2" same. Below: Brown, silty SAND, loose, dry to damp, grey rock float 2" from bottom of spoon.
4						
	.8	SA-3	3,6, 5,7 75%			Brown, wet, SAND, some silt, string of fine gravel at 5.5 feet depth.
6					GW/SM	
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-10

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 323.21 ft. Total Hole Depth 4 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core slam bar and hammer head

Drill Co. MSTD ADI Method manually driven

Driller Brian Lambert, Tony Wing Log By Mark Colmerauer Date 8/24/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-10 2-4

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover.
2	.2	SA-1	N/A, 50%		SM	Brown, moist, sandy SILT, no odor.
4	1.5	SA-2	N/A 75%			Wet, black, silty SAND, stagnant/ chemical odor.
6						Overhead wires prevented drill rig access, boring installed with hand driven hammer.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-11

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. 323.87 ft. Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 4.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/24/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-11 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt and fill base.
2	.3	SA-1	4,3, 2,4 50%		SW	Brown, fine SAND, little silt, damp. loose.
4	.3	SA-2	2,3, 2,2 75%		ML	Brown/ black, SAND grading to moderately stiff, dark grey, clayey SILT, little sand, very moist.
6	22	SA-3	4,4, 9,29 75%		SM / ML	Black, wet SAND and silt, pungent chemical odor. Bottom 3": red, clayey SILT with coarse gravel, moist, no odor.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-12

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 324.14 ft. Total Hole Depth 6 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/24/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAMES: SBPS-12 2-4; SBPS-12 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt and fill base.
2	.5	SA-1	6,5, 3,2 75%		SM	Dry, compact, dark grey, SAND with silt, slight chemical odor, crumbles easily under thumb.
4	.3	SA-2	7,5, 5,4 100%		SM	Same, moist, black stains with slight chemical odor.
6	.4	SA-3	8,10, 11,12 100%		ML	Same grading to stiff clayey SILT, little sand, dark brown and moist.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-14

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. 324.65 ft. Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/24/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-14 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt and fill base.
2	.3	SA-1	5,5, 4,3 50%			Dark brown and grey clayey SILT, damp, stiff to moderately stiff.
4	.3	SA-2	5,4, 2,2 75%		ML	Same grading to moist, clayey SILT with black mottles and chemical odor, moderately stiff to soft.
6	.4	SA-3	1,1, 1,0"/30 50%			Same, wet, soft, black mottles with chemical odor.
8						NOTE: hole stopped at 5.5': hard surface encountered, possible process sewer pipe.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-PS-15**

Project *Akzo* Owner *Akzo Nobel*
Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*
Surface Elev. *324.55 ft.* Total Hole Depth *8 ft.* Diameter *4.5 in.*
Top of Casing ____ Water Level Initial *3.8 ft.* Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core *CME 55*
Drill Co. *MSTD ADI* Method *Hollow Stem Auger*
Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/24/94* Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-15 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt cover with gravel fill base.
2	.4	SA-1	5,5, 5,5 75%		SM	Top 3": Black sandy SILT, damp and soft. Below: same, brown.
4	3.0	SA-2	5,6, 5,7 100%		ML	Brown, moist SILT grading to clayey SILT, moist. Bottom 3": wet, black, clayey SILT.
6	2.4	SA-3	2,3, 3,5 75%		SM	Black wet, fine SAND and silt, slight chemical odor. Bottom 2": grey, wet, clayey, silty SAND, moderately stiff with slight chemical odor.
8	2.8	SA-4	18,14, 14,15 100%		SC ML GC	Top: wet, silty, SAND, some clay, black with chemical odor. At 7'4" depth: grey, dry SILT. At 7'8" depth: red and black clayey SILT with coarse gravel, wet.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-16

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. 324.41 ft. Total Hole Depth 6 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 4 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/24/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-16 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Gravel and grass cover.
2	1.6	SA-1	3,3, 3,2 5%		SM	Poor recovery: Crusher run GRAVEL and sand, moist to wet.
4	1.6	SA-2	5,4, 4,5 25%		ML	Top 2":Wet, gravel, brown with grey mottles. Below: red, damp, clayey SILT little fine sand and gravel.
6	1.7	SA-3	5,8, 8,9 25%			Same: red, damp, clayey SILT, little sand and gravel.
8						
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-17

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. 324.55 ft. Total Hole Depth 8 ft. Diameter 4.5 in.

Top of Casing ____ Water Level Initial ____ Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/23/94 Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-17 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover and crusher run gravel.
2	.4	SA-1	10,10 4,6 25%		SM	Brown SILT with some sand, dry.
4	.5	SA-2	3,3, **7,9** **25%**		ML	Brown, damp sandy SILT, little clay.
6	1.2	SA-3	4,4, 8,8 50%		GC	Top 2": same as above. Below: Red, silty CLAY with coarse angular gravel, damp.
8	.6	SA-4	7,11, 15,12 50%			Same as above, grey mottles present in clay, damp to very moist grading to less gravel with depth.
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-18

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. 324.23 ft. Total Hole Depth 10 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 5.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/23/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-18 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover.
2	.4	SA-1	6,12 11,5 10%		GM	Brown silty, sandy, GRAVEL, dry.
4	4.4	SA-2	4,3, 3,4 5%			Large gravel in shoe with silty SAND, poor recovery.
6	2.7	SA-3	3,2, 8,8 10%		SC	Black, wet, silty, clayey SAND, chemical odor present.
8	2.8	SA-4	9,21, 28,12 25%		GC	Top 3": Wet, brown, silty, clayey, SAND. Bottom 3": Damp, red, silty CLAY with coarse gravel.
10	N/A	SA-5	5,9, 11,9 0%			
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-19

Project Akzo Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583

Surface Elev. _____ Total Hole Depth 8 ft. Diameter 4.5 in.

Top of Casing _____ Water Level Initial _____ Static _____

Screen: Dia _____ Length _____ Type/Size _____

Casing: Dia _____ Length _____ Type _____

Fill Material _____ Rig/Core CME 55

Drill Co. MSTD ADI Method Hollow Stem Auger

Driller Brian Lambert Log By Mark Colmerauer Date 8/23/94 Permit # _____

Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-19 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Soil and gravel cover.
2	.3	SA-1	10,7, 6,6 50%		SM	Dark brown, damp, cohesive, silty SAND.
4	.4	SA-2	7,5, 7,7 50%		ML	Same, grading to red brown clayey SILT, little sand, moist.
6	.4	SA-3	6,5, 5,7 75%		GC	Red, clayey SILT, gravel, little sand, moist.
8	28	SA-4	11,12, 10,10 75%			Same, black discoloration band of 2" at 7' depth. Strong petroleum odor. Grey/ green mottles at about 8' depth (with no odor).
10						
12						
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-PS-20**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. _____ Total Hole Depth *8 ft.* Diameter *4.5 in.*

Top of Casing _____ Water Level Initial *6 ft.* Static _____

Screen: Dia _____ Length _____ Type/Size _____

Casing: Dia _____ Length _____ Type _____

Fill Material _____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/23/94* Permit # _____

Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-20 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Soil and gravel cover.
2	.2	SA-1	4,7, 4,4 75%		SM	Brown, damp, cohesive, silty SAND, trace clay.
4	.4	SA-2	6,4, 4,5 75%		SC	Top 2": same. Below: brown/ red silty clayey SAND, little imbedded gravel, damp to moist.
6	.8	SA-3	5,4, 5,4 10%		GW	Poor recovery: same as above (coarse, well graded grey gravel in spoon).
8	55.0	SA-4	9,11, 5,10 25%		GC	Top 2": wet well graded gravel, slight petroleum odor. Below: Red, silty CLAY and fine gravel.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **SB-PS-21**

Project *Akzo* Owner *Akzo Nobel*

Location *Lockport-Olcott Road, Burt, New York* Proj. No. *04100-0583*

Surface Elev. *323.89 ft.* Total Hole Depth *12 ft.* Diameter *4.5 in.*

Top of Casing ____ Water Level Initial *5.5 ft.* Static ____

Screen: Dia ____ Length ____ Type/Size ____

Casing: Dia ____ Length ____ Type ____

Fill Material ____ Rig/Core *CME 55*

Drill Co. *MSTD ADI* Method *Hollow Stem Auger*

Driller *Brian Lambert* Log By *Mark Colmerauer* Date *8/23/94* Permit # ____

Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAMES: SBPS-21 4-6; SBPS-21 6-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover.
2	.4	SA-1	6,6, 5,5 50%		ML	Brown, stiff clayey SILT, some sand, damp.
4	.4	SA-2	5,5, 7,5 **75%**			Same grading to soft, grey, moist, clayey SILT.
6	1.3	SA-3	3,2, 5,5 100%		CL	Same grading to moist to wet silty CLAY. Bottom 4": Black wet silty SAND, stagnant water odor.
	.6	SA-4	5,10, 14,10 100%		SM	Top: wet brown and black SAND. Bottom 5": Wet, black GRAVEL with silty CLAY, some red mottles, stagnant water odor.
8					GC	
10	.8	SA-5	4,7, 8,10 20%		SM	Top: Wet, silty SAND, brown with black silt. Bottom 2": red clayey SILT with coarse gravel.
12	.8	SA-6	6,11, 12,12 25%		GC	Damp, silty red CLAY with coarse gravel.
14						
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-22

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 14 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 5.5 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/23/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-22 8-10

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Grass cover.
2	.6	SA-1	2,6, 4,6 25%		GM	Brown, loose, sandy SILT, drye, large angular gravel.
4	.8	SA-2	4,4, 8,6 25%		ML	Large gravel and stone at top. Below: 6" stiff, damp, silty CLAY, trace fine sand
6	.7	SA-3	3,5, 8,8 75%		SM	Top 2/3 of spoon: Same as above. Bottom 1/3 of spoon: wet, dark brown SILT and sand, stagnant water odor.
8	1.0	SA-4	7,8, 12,14 100%		ML / SM	Top 4": Wet, dark brown silty SAND. Below: 10" of damp, stiff, brown clayey SILT, trace sand. Bottom of spoon: 4" of wet, dark brown, SAND with some silt.
10	.8	SA-5	5,5, 13,8 75%		SM	Top: Dark brown, wet SILT, some sand, trace clay, black staining noticed. Bottom 3": Red, silty CLAY with coarse gravel, damp.
12	.6	SA-6	5,7, 4,4 10%		GC	Poor recovery, rock in shoe: 3" red, silty CLAY with gravel.
14	.7	SA-7	7,21, 24,15 50%		GC	Wet, grey SILT (possible slough from uphole) covering red, with grey mottles, silty CLAY and coarse gravel.
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-23

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ — Total Hole Depth 6 ft. — Diameter 4.5 in.

Top of Casing ____ — Water Level Initial 5.5 ft. — Static ____

Screen: Dia ____ — Length ____ — Type/Size ____

Casing: Dia ____ — Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller Brian Lambert — Log By Mark Colmerauer — Date 8/24/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-23 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover
2	1.2	SA-1	3,3, 4,3 75%		SM	Brown, dry, somewhat loose, fine SAND, some silt.
4	1.0	SA-2	7,7, 7,7 75%			Same grading to dry to damp SILT, some clay, little sand.
6	2.0	SA-3	3,10, 16,21 75%		ML	Black/ grey SILT, little sand, trace clay at bottom of spoon sample, moist to wet, black staining with stagnant water odor.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-24

Project Akzo Owner Akzo Nobel
Location Lockport-Olcott Road, Burt, New York Proj. No. 04100-0583
Surface Elev. ____ Total Hole Depth 8 ft. Diameter 4.5 in.
Top of Casing ____ Water Level Initial 6 ft. Static ____
Screen: Dia ____ Length ____ Type/Size ____
Casing: Dia ____ Length ____ Type ____
Fill Material ____ Rig/Core CME 55
Drill Co. MSTD ADI Method Hollow Stem Auger
Driller Brian Lambert Log By Mark Colmerauer Date 8/23/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-24 8-8

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Heavy vegitation
2	.6	SA-1	2,3, 4,4 75%		ML	Dark brown, damp, SILT with sand grading to brown SILT, some clay, moderately stiff, crumbles under finger pressure.
4	.5	SA-2	5,6, 6,6 100%		CL	Brown, damp SILT with some clay, mod. stiff, grading to brown, CLAY and silt, mod. stiff.
6	.6	SA-3	3,6, 9,15 75%		SM / CL	Same grading to very moist SAND, grading back to very moist, mod. stiff CLAY and silt.
8	.4	SA-4	21,10, 7,9 50%		SM / GM	Wet, brown SAND top 3". Below: Red, sandy SILT, grey medium sized, rounded gravel.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring SB-PS-25

Project Akzo — Owner Akzo Nobel

Location Lockport-Olcott Road, Burt, New York — Proj. No. 04100-0583

Surface Elev. ____ Total Hole Depth 6 ft. — Diameter 4.5 in.

Top of Casing ____ Water Level Initial 5 ft. — Static ____

Screen: Dia ____ Length ____ — Type/Size ____

Casing: Dia ____ Length ____ — Type ____

Fill Material ____ — Rig/Core CME 55

Drill Co. MSTD ADI — Method Hollow Stem Auger

Driller Brian Lambert — Log By Mark Colmerauer — Date 8/23/94 — Permit # ____

Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

SAMPLE NAME: SBPS-25 4-6

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Grass cover
2	.4	SA-1	3,3, 2,2 75%		SM	Brown, damp silty SAND, loose.
4	10.3	SA-2	6,4, 4,6 100%		ML	Same grading to moist, brown, moderately stiff clayey SILT.
6	150.0	SA-3	3,3, 7,15 100%		SM / CL	Brown, moderately stiff clayey SILT grading to wet, silty SAND, brown with strong petroluem odor and slight sheen on groundwater. Below at 5.5' depth: stiff, brown, silty CLAY, slight petroleum odor present, damp.

APPENDIX D

SUMMARY OF GROUND WATER ELEVATIONS

SUMMARY OF WATER ELEVATIONS
AKZO NOBEL CHEMICALS INC.
BURT, NEW YORK

WELL I.D.	ELEVATION TOP OF PVC 9/16/96 (feet above MSL)	ELEVATION TOP OF PVC 9/27/96 (feet above MSL)	ELEVATION TOP OF PVC 9/30/96 (feet above MSL)	ELEVATION TOP OF PVC 10/7/96 (feet above MSL)	ELEVATION TOP OF PVC 10/11/96 (feet above MSL)	FINAL ELEVATION OF TOP OF PVC (feet above MSL)	DEPTH TO WATER 9/16/96 (feet)
SWMU3							
GWS-1	323.94					323.94	
GWS-1WN180					322.27	322.27	
GWS-1WN420W30					321.11	321.11	
GWS-2E	324.13					324.13	
SWMU 17							
GWS-3	324.46					324.46	5.23
GWS-3W					324.56	324.56	
GWS-4	326.70				326.67	326.67	6.11
P-17	329.52 (326.81 top of ground)					329.52 (326.81 top of ground)	10.40
SWMU 16							
GWL-1	324.71					324.71	5.13
GWL-2	324.15					324.15	4.70
SWMU 5/6							
GWS-7	323.76					323.76	
GWS-7N	322.67					322.67	3.56
GWS-7W	322.56					322.56	3.48
GWS-8	323.38					323.38	
GWS-8E	323.64					323.64	4.23
GWS-8W	323.08					323.08	4.06
SWMU 24							
GWL-5						*	
SWMU 23							
GWS-10W	323.76					323.76	4.38
SWMU 31							
B-12	330.28		330.28		328.92	328.92	7.10
B-12W60			328.78		328.69	328.69	
B-12W120					326.38	326.38	
B-12N60					328.22	328.22	
GWL-6	328.76		328.76			328.76	9.61
GWL-6A			327.04		327.17	327.04	
GWL6AN30				328.22	326.80	328.22	
GWL6AN30W30				328.22	327.39	327.39	
GWL6AN30W60N30					327.25	327.25	
GWL-6AW60			326.96		326.89	326.89	
AOCE							
Process Sewer							
GWL-4						324.75	
GWL-4W120N380					322.58	322.58	
GWS-5	324.45					324.45	5.28
GWS-5W	324.68					324.68	5.53
GWS5W300					324.31	324.31	

NOTES:
Where multiple elevations are listed, the PVC elevation chosen to calculate the water elevation was based upon field observations.
*=PVC destroyed by lawn mower.

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SUMMARY OF WATER ELEVATIONS
AKZO NOBEL CHEMICALS INC.
BURT, NEW YORK

WELL I.D.	ELEVATION TOP OF PVC 9/16/96 (feet above MSL)	ELEVATION TOP OF PVC 9/27/96 (feet above MSL)	ELEVATION TOP OF PVC 9/30/96 (feet above MSL)	ELEVATION TOP OF PVC 10/7/96 (feet above MSL)	ELEVATION TOP OF PVC 10/11/96 (feet above MSL)	FINAL ELEVATION OF TOP OF PVC (feet above MSL)	DEPTH TO WATER 9/16/96 (feet)
GWS-6	323.59					323.59	4.72
GWS-6E	324.07					324.07	4.69
GWS-6W	323.28					323.28	4.39
GWS-9	325.01					325.01	5.23
GWS-10		325.24				325.24	
GWS-10E	325.26					325.26	6.63
GWS-10E150					325.88	325.88	
GWS10W120E					326.36	326.36	
GWS-11				327.16		327.16	
GWS-11E	327.00			326.89	326.93	326.93	8.24
GWS-11E120					328.50	328.50	
GWS-11E120S60					327.38	327.38	
GWS-11W	325.85	326.97		327.08		327.08	9.23
GWS-11W30		326.77				326.77	
GWS-11W60				326.85		326.85	
GWS-11S				326.76		326.76	
GWS-12				326.87	326.92	326.92	
GWS-12E	327.21				326.30	326.30	6.15
GWS-12W	327.57	278.4?				327.57	8.74
GWS-12W60				326.52		326.52	
GWS-13		326.50				326.50	3.58
GWS-13E	280.16X					328.22	5.78
GWS-13S60E30S30E30					328.23	328.23	
GWS-13S60E30S30E180					329.44	329.44	
GWS-13W		326.24				326.24	
GWS-13W60		326.12				326.12	
GWS-PA (PA)	324.19					324.19	5.00
P-AS	326.33	326.25		326.33		326.33	6.71
GWS-ASW60 (P-ASW60)		326.35		326.49		326.49	
GWS-PB (P-B)	325.71					325.71	5.27
P-BS	326.49	326.45		326.48		326.48	5.92
PBSW		326.79		326.89		326.89	
P-C	324.1					324.10	4.43
P-D	324.51			324.65		324.65	5.27
P-E	324.93					324.93	5.49
P-EE120S30					326.16	326.16	
P-G	323.63					323.63	4.48
P-H	324.79			324.80		324.80	5.62
PHS120				324.97		324.97	
PHS120E120					326.63	326.63	
PHS240					325.65	325.65	
PHN30				325.57		325.57	
P-I		323.94				323.94	
GWS (P-J)	323.79			323.81	323.70	323.70	5.04
P-JN				325.58		325.58	
P-K	326.13					326.13	2.07
P-KW		325.12		325.12		325.12	
P-KN		325.81		325.81		325.81	
P-L	324.59			324.72		324.72	5.15
P-1	322.77					322.77	3.81
P-2	329.52					329.52	10.28
P-3	330.17					330.17	10.63

NOTES:
Where multiple elevations are listed, the PVC elevation chosen to calculate the water elevation was based upon field observations.
*=PVC destroyed by lawn mower.

P:\PROJECTS\CCR\L97.092F.XLS

SUMMARY OF WATER ELEVATIONS
AKZO NOBEL CHEMICALS INC.
BURT, NEW YORK

WELL I.D.	WATER ELEVATION 9/16/96 feet above MSL	DEPTH TO WATER 9/30/96 (feet)	WATER ELEVATION 9/30/96 feet above MSL	DEPTH TO WATER 10/6/96 (feet)	WATER ELEVATION 10/6/96 feet above MSL	DEPTH TO WATER 10/11/96 (feet)	WATER ELEVATION 10/11/96 feet above MSL
SWMU3							
GWS-1				5.04	318.90		
GWS-1WN180						4.00	318.27
GWS-1WN420W30						2.47	318.64
GWS-2E				4.66	319.47		
SWMU 17							
GWS-3	319.23						
GWS-3W				5.54	319.02	5.35	319.21
GWS-4	320.59			4.58	322.12		
P-17	319.12			7.65	319.16		
SWMU 16							
GWL-1	319.58			5.43	319.28		
GWL-2	319.45			4.84	319.31		
SWMU 5/6							
GWS-7							
GWS-7N	319.11			3.64	319.03	3.03	319.64
GWS-7W	319.08						
GWS-8				4.3	319.08		
GWS-8E	319.41						
GWS-8W	319.02						
SWMU 24							
GWL-5				*	*		
SWMU 23							
GWS-10W	319.38						
SWMU 31							
B-12	321.82	5.63	324.65	6.65	322.27	4.75	324.17
B-12W60		7.35	321.43	7.52	321.26	7.78	320.91
B-12W120				4.63	321.75	4.74	321.64
B-12N60				6.26	321.96	6.90	321.32
GWL-6	319.15	9.48	319.28				
GWL-6A		7.48	319.56			6.46	320.58
GWL6AN30				7.02	321.20	7.62	320.60
GWL6AN30W30				4.47	323.75	3.87	323.52
GWL6AN30W60N30				3.84	323.41	2.40	324.85
GWL-6AW60		6.23	320.73	7.02	319.94	6.46	320.43
AOCE							
Process Sewer							
GWL-4				4.91	319.84		
GWL-4W120N380						2.25	320.33
GWS-5	319.17			5.3	319.15		
GWS-5W	319.15						
GWS5W300				5.43	318.88	5.15	319.16

NOTES:
Where multiple elevations are listed, the PVC elevation chosen to calculate the water elevation was based upon field observations.
*=PVC destroyed by lawn mower.

P:\PROJECTS\CCR\L97.092F.XLS

SUMMARY OF WATER ELEVATIONS
AKZO NOBEL CHEMICALS INC.
BURT, NEW YORK

WELL I.D.	WATER ELEVATION 9/16/96 feet above MSL	DEPTH TO WATER 9/30/96 (feet)	WATER ELEVATION 9/30/96 feet above MSL	DEPTH TO WATER 10/6/96 (feet)	WATER ELEVATION 10/6/96 feet above MSL	DEPTH TO WATER 10/11/96 (feet)	WATER ELEVATION 10/11/96 feet above MSL
GWS-6	318.87			4.57	319.02		
GWS-6E	319.38			4.69	319.38		
GWS-6W	318.89						
GWS-9	319.78			5.01	320.00		
GWS-10							
GWS-10E	318.63						
GWS-10E150				6.82	319.06		
GWS10W120E	326.36			7.13	319.23		
GWS-11				8.52	318.64		
GWS-11E	318.65			8.27	318.62	8.26	318.67
GWS-11E120						6.62	321.88
GWS-11E120S60						8.41	318.97
GWS-11W	316.62			9.36	317.72		
GWS-11W30				5.11	321.66		
GWS-11W60							
GWS-11S							
GWS-12				8.28	318.59	8.22	318.70
GWS-12E	321.06			6.29	320.92	6.00	320.30
GWS-12W	318.83						
GWS-12W60				3.81	322.71		
GWS-13	322.92						
GWS-13E	322.44						
GWS-13S60E30S30E30						6.65	321.58
GWS-13S60E30S30E180						8.49	320.95
GWS-13W				3.01	323.23		
GWS-13W60							
GWS-PA (PA)	319.19			5.01	319.18		
P-AS	319.62			6.96	319.37		
GWS-ASW60 (P-ASW60)				7.71	318.78		
GWS-PB (P-B)	320.44			6.12	319.59		
P-BS	320.56			4.82	321.66		
PBSW							
P-C	319.67			4.41	319.69		
P-D	319.38						
P-E	319.44			5.61	319.32		
P-EE120S30				5.13	321.03		
P-G	319.15			4.41	319.22		
P-H	319.18			5.42	319.38		
PHS120							
PHS120E120				7.42	319.21		
PHS240				6.27	319.38		
PHN30				6.27	319.30		
P-I				4.28	319.66		
GWS (P-J)	318.75			4.53	319.28	4.07	319.63
P-JN							
P-K	324.06			2.11	324.02		
P-KW							
P-KN							
P-L	319.44			5.27	319.45		
P-1	318.96			3.96	318.81		
P-2	319.24			10.42	319.10		
P-3	319.54			10.78	319.39	10.94	319.23

NOTES:
Where multiple elevations are listed, the PVC elevation chosen to calculate the water elevation was based upon field observations.
*=PVC destroyed by lawn mower.

P:\PROJECTS\CCR\L97.092F.XLS

APPENDIX E

SAMPLE CHAINS OF CUSTODY

CHAIN OF CUSTODY RECORD

Project Name: AKZO NOBEL
Project No.: 19045-002
Sampling Date(s): 9/10/96
Laboratory: IEA - CT
Laboratory P.O. #:
Shipping Airbill No.: 393248 5756
Shipping Date(s): 9/11/96
Shipper's Name: CHARLES FOSTER

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other: Soil	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	8270	8260	TOC	GRAIN SIZE	Comments
SB-19S-2	9/10/96	1-8oz. 1-2oz	G					X		SB-19S-2; 1350											1	1			8oz-8270, 2oz-8260
SB-19S-8			G					X		SB-19S-8; 1415											1	1			
SB-19N-2			G					X		SB-19N-2; ~~1430~~ 1500											1	1			
SB-19N-8			G					X		SB-19N-8; ~~1500~~ 1520											1	1			
SB-19E-2			G					X		SB-19E-2; 1525											1	1			
SB-19E-8			G					X		SB-19E-8; 1545											1	1			
SB-19W-2			G					X		SB-19W-2; 1430											1	1			
SB-19W-8			G					X		SB-19W-8; 1450											1	1			
SB-91-8			G					X		SB-91-8; 1600											1	1			
B-1-4		1,802	G							B-1-4, 0840											1		1		TOC/8270, Grain Size
B-1-6		2,802	G							B-1-6, 0950											1		1	1	
B-1-8		1,802	G							B-1-8, 1000											1		1	1	
B-2-4		2,802	G							B-2-4, 1020											1		1	1	
B-2-6		2,802	G							B-2-6, 1030											1		1	1	
B-2-8		1,202 1,802	G							B-2-8, 1040											1		1	1	
B-3-4		1,202 1,802	G							B-3-4, 1050											1		1	1	
B-3-6		1,202 1,802	G							B-3-6, 1100											1		1	1	
B-3-8		1,202 1,802	G							B-3-8, 1110											1		1	1	

Relinquished by: [signature] Date/Time: 1800 9/11/96
Received by: Fed 393248 5756 Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time:
REMARKS (*):

09181

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC
TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: AK20 - NOBEL
Project No.: 19045 - 002
Sampling Date(s): 9/10/96
Laboratory: IEA - CT
Laboratory P.O. #:
Shipping Airbill No.: 393 248 5756
Shipping Date(s): 9/11/96
Shipper's Name: CHARLES FOSTER

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	5035	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	8260	8270	TPC	Grain Size	Comments
B-4-6	9/10/96	1-8oz 1-2oz	G						X	B-4-6; 1150										1	1	1	1	
B-5-6	9/10/96	↓	G						X	B-5-6; 1135										1	1	1	1	

Relinquished by: [signature] Date/Time: 1800 9/11/96
Received by: FedEx 393 248 5756 Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time:
REMARKS (*):

09318

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: AKZO NOBEL
Project No.: 19045-002
Sampling Date(s): 9/11/96
Laboratory: IEA
Laboratory P.O. #: T67270-AKZO
Shipping Airbill No.: 393248573 4
Shipping Date(s): 9/12/96
Shipper's Name: TODD MAJER

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	8270	Grain Size	TOC	8260	Comments
B-11-2	9/11/96	2-8oz	G			X				B-11-2; 0800											1	1	1		SWMU # 31
B-11-6	9/11/96	2-8oz	G			X				B-11-6; 0810											1	1	1		SWMU # 31
B-12-2	9/11/96	2-8oz	G			X				B-12-2; 0815											1	1	1		SWMU # 31
B-12-8	9/11/96	2-8oz	G			X				B-12-8; 0840											1	1	1		SWMU # 31 / MS/MSD ON 8270
B-13-2	9/11/96	2-8oz	G			X				B-13-2; 0915											1	1	1		SWMU # 31
B-13-8	9/11/96	2-8oz	G			X				B-13-8; 0935											1	1	1		SWMU # 31
B-14-8	9/11/96	2-8oz 1-3oz	G			X				B-14-8; 1100											1	1	1	1	AOC E
SB-B1-6	9/11/96	2-2oz. 1-8oz.	G			X				SB-B1-6; 1200											1		1	1	AOC B
SB-B2-6	9/11/96	2-2oz. 1-8oz	G			X				SB-B2-6; 1310											1		1	1	AOC B
SB-C5-8	9/11/96	2-2oz	G			X				SB-C5-8; 1350													1	1	AOC C
SB-C6-6	9/11/96	2-2oz.	G			X				SB-C6-6; 1415													1	1	AOC C
SB-D5-8	9/11/96	2-2oz	G			X				SB-D5-8; 1515													1	1	AOC D
SB-D6-2	9/11/96	2-2oz.	G			X				SB-D6-2; 1530													1	1	AOC D
SB-D7-8	9/11/96	2-2oz.	G			X				SB-D7-8; 1605													1	1	AOC D
RB-01	9/11/96	2-1L Amb 2-40ml	G	X		X				RB-01; 1300											1			1	RINSATE BLANK

Relinquished by: Todd D. Majer — Date/Time: 9/12/96 1200
Received by: Fed Exp. 393248573 4 — Date/Time: 9/12/96 1200
Relinquished by: — Date/Time:
Received by: — Date/Time:

REMARKS (*): * MS/MSD JUST ON THE ANALYSIS 8270

09316

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC

CHAIN OF CUSTODY RECORD

Project Name: AKZO NOBEL RFI
Project No.: 19045002000000
Sampling Date(s): 09/13/96 (1) 09/16/96
Laboratory: IEA INC. CT.
Laboratory P.O. #: I67270-AKZO
Shipping Airbill No.: 701693 6430
Shipping Date(s): 09/13/96
Shipper's Name: Charles Foster

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	8270 - SVOC	8260 - VOC	TOC	Grain Size	Comments
B-6-2	9/13	2,802	G			X				B-6-2, 0-2, 0815										1		1	1	SWMU-23
B-6-6	9/13	2,802	G			X				B-6-6, 4-6, 0840										1		1	1	SWMU-23
B-7-2	9/13	2,802 1,202	G			X				B-7-2, 0-2, 1120										1	1	1	1	SWMU-24
B-7-4	9/13	2,802 1,202	G			X				B-7-4, 2-4, 1130										1	1	1	1	SWMU-24
B-9-2	9/13	2,802 1,202	G			X				B-9-2, 0-2, 0900										1	1	1	1	SWMU-24 MS/MSD TOC
B-9-8	9/13	2,802 1,202	G			X				B-9-8, 6-8, 0920										1	1	1	1	SWMU-24 MS/MSD 8260
B-10-2	9/13	2,802 1,202	G			X				B-10-2, 0-2, 1000										1	1	1	1	SWMU-24
B-10-6	9/13	2,802 1,202	G			X				B-10-6, 4-6, 1020										1	1	1	1	SWMU-24
RFA SB-19E-8	9/10	1,807	G			X				SB-19E-8, 6-8, 1545												1		SWMU-24 CF 19

Relinquished by:	Date/Time:	Relinquished by:	Date/Time:
Charles N.C. Foster	09/13/96 1900		
Received by: FedEx 701693 6430	Date/Time: 09/13/96 1900	Received by:	Date/Time:

REMARKS (* (1) Sample B-9-8 = MS/MSD VOA 8260 (2) SB-19E-8 Resubmitted for TOC only
(3) Sample B-9-2 MS/MSD for TOC (USE B-9-2 XTRA VOLUME IF Needed) → from 8270 JAR

09314

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC
TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: AK20 RFA/RFI CF
Project No.: 190405002
Sampling Date(s): 09/17 → 09/18/96
Laboratory: IEA CT
Laboratory P.O. #: T67270-AK20 RFI
Shipping Airbill No.:
Shipping Date(s): 09/18/96
Shipper's Name: Charles Foster

RFA/RFI Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	TOC Grain Size	Comments
SB-18-7-8	9/17	2,20z 1,80z	G			X				SB-18-7-8, 1310 (1)								1		1		SWMU 18
SB-18-6-10	9/17	1,20z 1,80z	G			X				SB-18-6-10, 1350								1		1		SWMU 18
SB-18-5-8	9/17	1,20z 1,80z	G			X				SB-18-5-8, 1425								1	1	1		SWMU 18
SB-33-4-6	9/17	1,20z 1,80z	G			X				SB-33-4-6, 1540 (2)								1	1	1		SWMU 33
SB-33-3-2	9/18	1,20z 2,40z	G			X				SB-33-3-2, 0730								1	1	1		SWMU 33
SB-33-8-2	9/18	1,20z	G			X				SB-33-8-2, 0740								1				SWMU 33
~~RB~~ RB-RFA-01	9/18	2,40ml 3,180ml	VG	X						RB-RFA-01, 0720 (3)								1	1	1		TOC PH<2 H_2SO_4, VOA PH<2 HCl

Relinquished by:	Date/Time:	Relinquished by:	Date/Time:
Received by:	Date/Time:	Received by:	Date/Time:

REMARKS (*): (1) SB-18-7-8 MS/MSD 8260 FOR RFA
(2) SB-33-4-6 MS/MSD FOR 8270 AND TOC FOR RFA
(3) The Rinsate Blank Contains Aliquots For TOC Analysis For BOTH The RFA AND RFI (PH IS <2 BY H_2SO_4)

09311

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC

CHAIN OF CUSTODY RECORD

Project Name: AK20 RFI 1 of 2
Project No.: 19045 002 (3)
Sampling Date(s): 09/18/96 → 09/20/96
Laboratory: IEA CT
Laboratory P.O. #: T67270-AK20 RFI
Shipping Airbill No.:
Shipping Date(s): 09/20/96 SAT Delivery
Shipper's Name: Charles Foster

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics 8270	Volatile Organics 8260	Physical Parameters* TOC	CF Grain Size	Comments
SB-B-4	9/18	3 2oz 2 8oz	G			X				SB-B-4, 1540 (1)								1 3	1	1	1	SWMU-3
SB-D-4	9/18	1 2oz 2 8oz	G			X				SB-D-4, 1145								1 1	1	1	1	SWMU-3
SB-J-6	9/18	1 2oz 2 8oz	G			X				SB-J-6, 1320								1 1	1	1	1	SWMU-3
SB-E-4	9/18	1 2oz 2 8oz	G			X				SB-E-4, 1505								1 1	1			SWMU-3
SB-G-6	9/18	1 2oz 2 8oz	G			X				SB-G-6, 1440								1 1	1	1	1	SWMU-33 ~~24~~
SB-8A-2	9/18	1 2oz 2 8oz	G			X				SB-8A-2, 1030								1 1	1	1	1	SWMU-24
SB-8A-6	9/18	1 2oz 2 8oz	G			X				SB-8A-6, 1050								1 1	1	1	1	SWMU-24
SB-S3-1-3	9/18	1 2oz	G			X				SB-S3-1-3, 0740								1				SWMU-3
SB-S3-2-6	9/18	1 2oz 2 8oz	G			X				SB-S3-2-6, 0840								1 1	1	1	1	SWMU-3
SB-S3-3-6	9/18	1 2oz 2 8oz	G			X				SB-S3-3-6, 0940								1 1	1	1	1	SWMU-3
SB-33-8-2	9/18	2 8oz	G			X				SB-33-8-2, 0740								1	1			SWMU 33
RB-02-	9/19	2 40ml 2 1Lit	G	X						RB-02, 0800								1 1				Rinsate Blank
* SB-5/6-2-4	9/19	1 2oz	G			X				SB-5/6-2-4, 1315								1				SWMU 5/6* ODORS
SB-5/6-2-6	9/19	1 2oz 2 8oz	G			X				SB-5/6-2-6, 1320								1 1	1	1	1	SWMU 5/6
SB-5/6-1-6	9/19	1 2oz 2 8oz	G			X				SB-5/6-1-6, 1240								1 1	1	1	1	SWMU 5/6
* SB-5/6-8-4	9/19	1 2oz	G			X				SB-5/6-8-4, 1340								1				SWMU 5/6
SB-A-6	9/19	1 2oz 2 8oz	G			X				SB-A-6, 1420 (2)								1 1	1	1	1	SWMU 3
SB-I-4	9/19	1 2oz 2 8oz	G			X				SB-I-4, 1510								1 1	1	1	1	SWMU 3

Relinquished by: Chas M.C. Foster	Date/Time: 1130 09/20/96	Relinquished by:	Date/Time:
Received by: FedEx 809280 8835	Date/Time: 1130 09/20/96	Received by:	Date/Time:

REMARKS (*): (1) MS/MSD VOA's (2) MS/MSD 8270 AND TOC (3) See Next Page (202)

09306

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: AK20 RFI 2 of 2
Project No.: 19045 002
Sampling Date(s): 09/18 → 09/20/96
Laboratory: TEA CT
Laboratory P.O. #: T67270-AK20 RFI
Shipping Airbill No.: 089-280-8835
Shipping Date(s): 09/20/96 SAT
Shipper's Name: Charles Foster

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	TOC	Grain Size	Comments
SB-F-4	09/20	1 202 2 802				X				SB-F-4, 0830						1	1		1		1		Sworn 3
* SB-R-4	9/20	1 202 2 802				X				SB-R-4, 0850						1	1		1		1		Sworn 3
SB-K-4	9/20	1 202 2 802				X				SB-K-4, 1000						1	1		1		1		Sworn 3
* SB-T-4	9/20	1 202 2 802				X				SB-T-4, 1020						1	1		1		1		Sworn 3

Relinquished by: Charles Foster	Date/Time: 1130 09/19/96	Relinquished by:	Date/Time:
Received by: Fed Ex	Date/Time: 1130 09/19/96	Received by:	Date/Time:

REMARKS (*):

09305

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: AKZO NOBEL
Project No.: 19045
Sampling Date(s): 10/7/96 ; 10/8/96
Laboratory: IEA - CT.
Laboratory P.O. #: T67290-AKZO RFT
Shipping Airbill No.: 701693640 4
Shipping Date(s): 10/8/96
Shipper's Name: TODD MAIER

Sample Code	Sampled Date	Container Size	Container G/P	Matrix: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Analysis: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	8260 & 8270	Comments
TB-01	10/7/96	2-40ml	G	X						TB-01; 0800									2		
GWL-1		6-40ml 6-950s	G	X						GWL-1; 1240*									6	6	SWMU #16 / MS/MSD
GWL-2		2-40ml 2-950's	G	X						GWL-2; 1250									2	2	SWMU # 16 High Headspace
GWL-4			G	X						GWL-4; 1440									2	2	SWMU # 24 High Headspace
GWL-5			G	X						GWL-5; 1520									2	2	SWMU # 24
GWL-49			G	X						GWL-49; 1500									2	2	SWMU # 24 High Headspace
GWL-6A	10/8/96	2, 40ml 2, 1liter	G	X						GWL-6A, 0800									2	2	SWMU # 31
GWL-3		2, 40ml 2, 950ml	G	X						GWL-3, 0930									2	2	SWMU # 17 FUEL OIL
GWL-7		2, 40ml 2, 950s	G	X						GWL-7, 0900									2	2	SWMU #5/6 High Headspace
GWS13W-60		2-40ml 2-950s	G	X						GWS13W-60; 1000									2	2	SWMU # 3 High Headspace

Relinquished by: Clark MCSmith	Date/Time: 10/08/96 1130	Relinquished by:	Date/Time:
Received by: FedEx 701693640 4	Date/Time: 10/08/96 1130	Received by:	Date/Time:

REMARKS (*): * ALL 8270 SAMPLES HAVE HIGH SOLIDS DO NOT SHAKE, DECANT OR Extract THE GROUNDWATER
* GWL-1 is the MS/MSD FOR 8270 AND 8260 * ALL VOC's Are Preserved to PH<2 w/HCL

09310

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: AK20 NOBEL RFI
Project No.: 19045-002
Sampling Date(s): 10/08/96 ⇒ 10/09/96
Laboratory: TEA CT
Laboratory P.O. #: T67270-AK20 RFI
Shipping Airbill No.: 7016936290
Shipping Date(s): 10/09/96
Shipper's Name: Charles Foster

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	8260**	8270**	Comments
* GWL-1	10/8	6, 40ml	G	X						GWL-1, 1300									6			Swmu 16 Analyzed VOA's High Headspace
* GWL-2	10/8	2 40ml	G	X						GWL-2, 1320									2			Swmu 16 High Headspace
* GWL-3	10/8		G	X						GWL-3, 1330									2			Swmu 17 FUEL OIL
* GWL-4	10/8		G	X						GWL-4, 1340									2			Swmu 24 High Headspace
* GWL-5	10/8		G	X						GWL-5, 1350									2			Swmu 24
* GWL-6A	10/8		G	X						GWL-6A, 1420									2			Swmu 31
* GWL-7	10/8		G	X						GWL-7, 1440									2			Swmu 5/6
* GWS43W60	10/8		G	X						GWS43W60, 1450									2			Swmu 3 High Headspace
* GWL-49	10/8		G	X						GWL-49, 1500									2			Swmu 24 High Headspace
TB-02	10/8	2, 40ml	G	X						TB-02, 0700									2			Trip Blank
GWS-11	10/8	3, 40ml 2, 950ml	G	X						GWS-11, 1430									2	2		Swmu 3 High Headspace
GWS-10W ***	10/8	3, 40ml 2, 950ml	G	X						GWS-10W, 1500									2	2		Swmu 3 High Headspace
GWS-4	10/8	3, 40ml 2, 950ml	G	X						GWS-4, 1630									2	2		Swmu 3 High Headspace
GWS-12E	10/8	3, 40ml 2, 950ml	G	X						GWS-12E, 1730									2	2		Swmu 3
GWS-6W90 ***	10/9	3, 40ml 2, 950ml	G	X						GWS-6W90, 0730									2	2		Swmu 3 High Headspace
GWS-69 ***	10/9	3, 40ml 2, 950ml	G	X						GWS-69, 0800									2	2		Swmu 3 High Headspace
GWS-5W180 ***	10/9	3, 40ml 2, 950ml	G	X						GWS-5W180, 0830									2	2		Swmu 3 High Headspace
GWS-ASW60	10/9	3, 40ml 2, 950	G	X						GWS-ASW60, 0940									2	2		Swmu 3

Relinquished by: Charles Foster	Date/Time: 10/09/96 1200	Relinquished by:	Date/Time:
Received by: Fx 7016936290	Date/Time: 10/09/96 1200	Received by:	Date/Time:

REMARKS (*): * THESE ARE PRESERVED W/HCL TO PH<2 AND WERE RESAMPLED DUE TO INADEQUATE PRESERVATION INITIALLY
** ALL 8270 SAMPLE HAVE HIGH SOLIDS AND MUST BE DECANTED IN THE LAB. DO NOT SHAKE, EXTRACT THE WATER
*** THESE VOA 8260 SAMPLES ~~ARE~~ ARE NOT PRESERVED DUE TO EFFERVESCENCE DURING COLLECTION.

09308

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: AK20 RFI
Project No.: 19045-002
Sampling Date(s): 10/10/96
Laboratory: TEA CT
Laboratory P.O. #: T67270-AK20 RFI
Shipping Airbill No.: 701693630
Shipping Date(s): 10/10/96
Shipper's Name: Charles Foster

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	8260**	8270**	Comments
GWL-07	10/10	40 ml	C	X						GWL-07, 1540									6			SWMU 5/6 MS/MSD
GWS-ASW60	10/10	2,9	G	X						GWS-ASW60, 1500									2			SWMU 3
GWS-11	10/10	1,9	G	X						GWS-11, 1530									1			SWMU 3 High Headspace
GWL-49	10/10	1,40 ml	G	X						GWL-49, 1600									1			SWMU 24 High Headspace

Relinquished by: Charles Foster	Date/Time: 10/10/96 1700	Relinquished by:	Date/Time:
Received by: FedEx 701693630 1	Date/Time: 10/10/96 1709	Received by:	Date/Time:

REMARKS (*): ** 8270 SAMPLES HAVE HIGH SOLID CONTENT, DECANT LIQUID DO NOT SHAKE
* THIS MS/MSD VOC SAMPLE IS PROVIDED TO REPLACE GWL-01 DUE TO BREAKAGE IN INITIAL SHIPMENT

No. 09297

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: AK20-NOBEL RFI
Project No.: 19045-002
Sampling Date(s): 10/09/96 - 10/10/96
Laboratory: IEA, CT
Laboratory P.O. #: T67270-AK20 RFI
Shipping Airbill No.: 701693630 1
Shipping Date(s): 10/10/96
Shipper's Name: Charles Foster

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash	Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	8260 **	8270 *	TPC	GRAIN SIZE	Comments
TB-03	10/10/96	2,40ml	G	X							10/10/96, TB-03,											2				Trip Blank
GWL-8 **	10/10/96	3,40ml 2,950	G	X							GWL-8, 0830											2	2			SVOAs 5/6 OPEN DV OD HOOD Highlevels
GWS-1N60	10/09	3,40ml 2,950	G	X							GWS-1N60, 1330											2	2			SVOAs-3
GWS-5 **	10/10	2,40ml	G	X							GWS-5, 0700											2				SVOAs-3
GWS-5	10/09	2,950	G	X							GWS-5, 1530												2			SVOAs-3
GWS-1W60N180	10/10	2,40ml 2,950	G	X							GWS-1W60N180, 1030											2	2			SVOAs-3
GWL-4W60 **	10/10	2,40ml 2,950	G	X							GWL-4W60, 0930											2	2			SVOAs-24
RB-03	10/09	2,40ml 2,950	G	X							RB-03, 1730											2	2			Rinsate Blank
GWS-5	10/10	2,40ml 2,950	G	X							GWS-5, 0730											2	2			SVOAs-3
GWS-6W360	10/09	6,40ml 6,950ml	G	X							GWS-6W360, 1400											6	6			SVOAs 3
SB-S3-1-3	10/10	2,8oz	G			X					SB-S3-1-3, 1100												1	1	1	SVOAs-3

Relinquished by: Charles M. Foster	Date/Time: 10/10/96 1700	Relinquished by:	Date/Time:
Received by: FedEx 701693630 1	Date/Time: 10/10/96 1700	Received by:	Date/Time:

REMARKS (*): * 8270 SAMPLES MUST BE DECANTED DUE TO HIGH SOLIDS, DO NOT SHAKE
** 8260 SAMPLES WHICH ARE NOT PRESERVED DUE TO EFFERVESCANCE. ALL OTHERS PH<2 WHCL

No. 09307

WHITE — LABORATORY YELLOW — OFFICE COPY PINK — FIELD COPY

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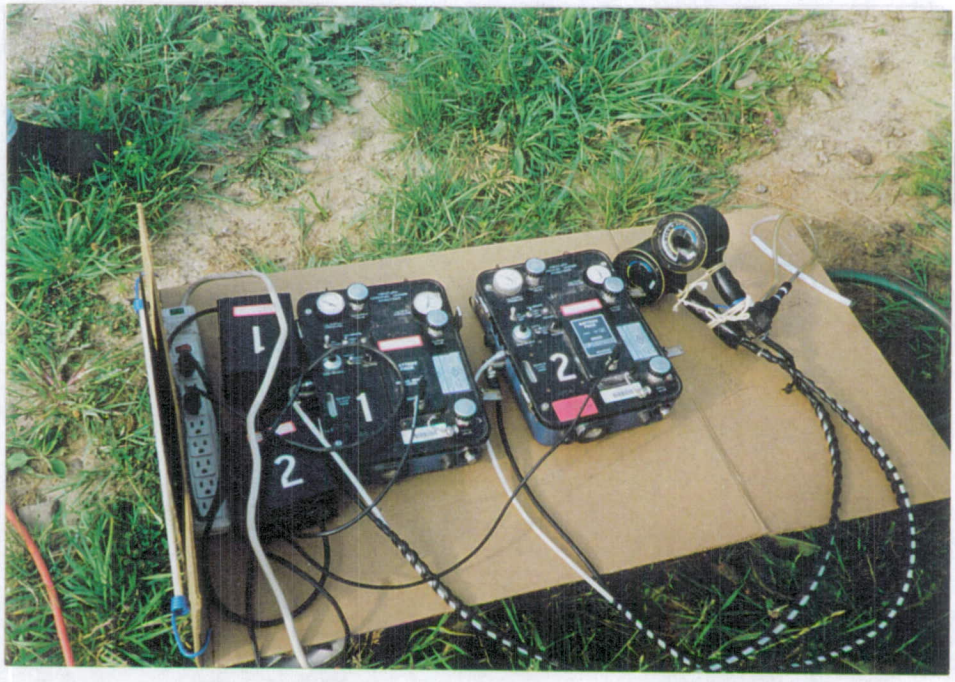
APPENDIX F

PHOTOGRAPHIC DOCUMENTATION

Akzo Nobel Chemicals Inc.
Burt, New York

1. Direct readings of soil vapor.



2. Dual OVA set-up with direct power. One with charcoal one without.

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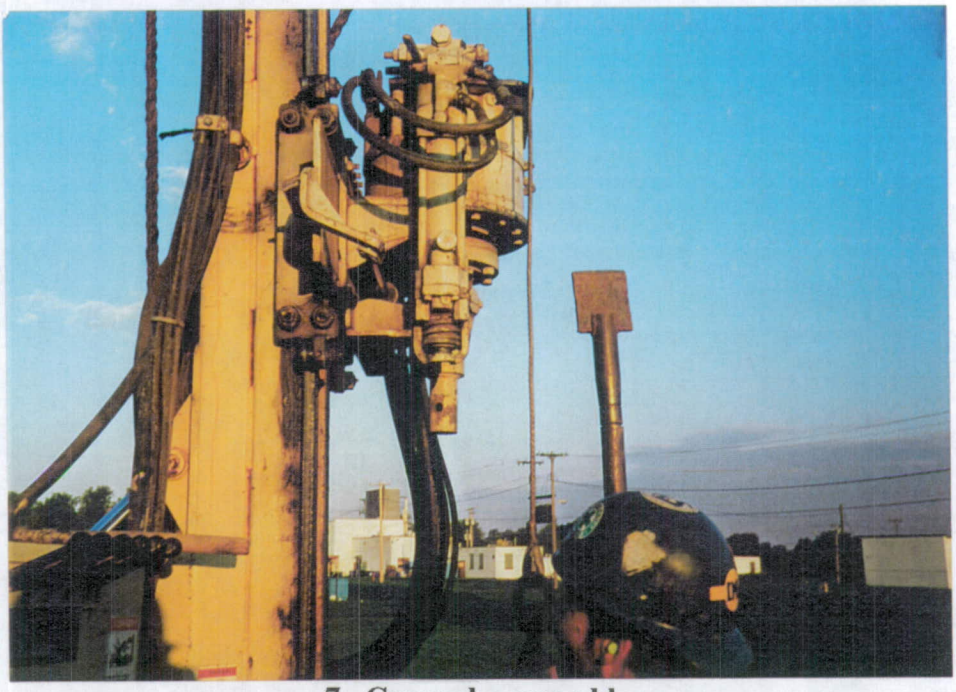
3. Soil vapor probes 10' from MH-10 looking west along the process sewer line.

4. Temporary well at GWL-8 behind SWMU 5/6.

5. Saturated inaccessible ground at northern end of surface drainage at north fence line behind woods.

6. GWS screening installation (probe withdrawal) at southern end of GWS-H line.



7. Geoprobe assembly.

8. Geoprobe direct push apparatus mounted on standard derrick at location GWS-12.

Akzo Nobel Chemicals Inc.
Burt, New York

9. Rod withdrawal at GWS-12.

10. Process sewer line excavation rear of Building 22.
Note: Stained soils are removed and clean fill is being replaced.

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11. Material excavation rear of Building 22.

12. Encountered non-stained native materials at rear of Building 22.

Akzo Nobel Chemicals Inc.
Burt, New York

13. View to west. View of west wall of excavation around former east influent well. 6/20/96

14. View to north. View of removal of former east well. 6/20/96

Akzo Nobel Chemicals Inc.
Burt, New York

15. View to south. View of former clay process sewer line surrounded by pea gravel. 6/21/96

16. View from south. View of lower level of former western influent well. 6/20/96

Akzo Nobel Chemicals Inc.
Burt, New York

17. View to west. Overhead view of excavations completed around former influent wells. 6/21/96

18. View to southwest. View of bottom of former west well being removed. 6/21/96

APPENDIX G

ANALYTICAL DATA TABLES

Sample	SB-5/6-2-6		SB-5/6-1-6		SB-5/6-8-4		SB-A-6		SB-1-4		SB-F-4		SB-R-4		SB-K-4		VBLKBI	
Date Sampled	09/19/96		09/19/96		09/19/96		09/19/96		09/19/96		09/20/96		09/20/96		09/20/96			
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Volatiles Organics																		
Acetone	31	U	15	U	380	J	44	U	19	U	19	U	25	U	87		6	J
Benzene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Bromodichloromethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Bromoform	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Bromomethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
2-Butanone	12	UJ	15	UJ	16	UJ	12	UJ	17	UJ	12	UJ	14	UJ	15	J	10	U
Carbon Disulfide	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Carbon Tetrachloride	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Chlorobenzene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Chloroethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
2-Chloroethylvinylether	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Chloroform	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Chloromethane	12	UJ	15	UJ	16	UJ	12	UJ	17	UJ	12	UJ	14	UJ	12	UJ	10	U
Dibromochloromethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
1,1-Dichloroethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
1,2-Dichloroethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
1,1-Dichloroethene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
1,2-Dichloroethene (total)	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Methylene Chloride	12	U	15	U	16	U	12	U	17	U	12	U	14	U	6	J	10	U
1,2-Dichloropropane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
cis-1,3-Dichloropropene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
trans-1,3-Dichloropropene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Ethylbenzene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	1	J	10	U
2-Hexanone	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
4-Methyl-2-Pentanone	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Styrene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
1,1,2,2-Tetrachloroethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Tetrachloroethene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Toluene	12	U	15	U	2	J	.8	J	17	U	12	U	14	U	2	J	10	U
1,1,1-Trichloroethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
1,1,2-Trichloroethane	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Trichloroethene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Vinyl Acetate	12	UJ	15	UJ	16	UJ	12	UJ	17	UJ	12	UJ	14	UJ	12	UJ	10	U
Vinyl Chloride	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U	10	U
Xylene (total)	12	U	15	U	16	U	12	U	17	U	12	U	14	U	3	J	10	U
1,3-Dichlorobenzene	12	U	15	U	16	U	12	U	100		12	U	14	U	12	U		
1,4-Dichlorobenzene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U		
1,2-Dichlorobenzene	12	U	15	U	16	U	12	U	17	U	12	U	14	U	12	U		

Sample	SB-5/6-2-6		SB-5/6-1-6		SB-A-6		SB-I-4		SB-F-4		SB-R-4		SB-K-4	
Date Sampled	09/21/96		09/21/96		09/21/96		09/21/96		09/21/96		09/21/96		09/21/96	
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Semi-Volatiles Organics														
Dimethylphthalate	33	J	400	U	400	U	380	U	390	U	400	U	63	J
Di-n-butylphthalate	380	U	400	U	400	U	380	U	390	U	400	U	390	U
Butylbenzylphthalate	380	U	400	U	400	U	380	U	390	U	400	U	390	U
Pyridine	380	U	400	U	400	U	380	U	390	U	400	U	390	U

Sample	SB-5/6-2-6	SB-5/6-1-6	SB-A-6	SB-A-6	SB-A-6	SB-I-4	SB-F-4	SB-R-4	SB-K-4
Date Sampled	09/19/96	09/19/96	09/19/96	09/19/96	09/19/96	09/19/96	09/20/96	09/20/96	09/20/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Wet-Chemisty									
Total Organic Carbo	10800.	1670.	797.	795.	7570.	2070.	4930.	8350.	4980.

Sample	SB-33-4-6		SB-33-3-2		SB-33-8-2		RB-RFA-01		VBLKBG		VBLKEA	
Date Sampled	09/17/96		09/18/96		09/18/96		09/18/96					
Units	ug/Kg		ug/Kg		ug/Kg		ug/L		ug/Kg		ug/L	
Volatiles Organics												
Acetone	130	J	240	UJ	260	UJ	31	J	10	U	10	U
Benzene	14	U	15	U	15	U	10	U	10	U	10	U
Bromodichloromethane	14	U	15	U	15	U	10	U	10	U	10	U
Bromoform	14	U	15	U	15	U	10	U	10	U	10	U
Bromomethane	14	U	15	U	15	U	10	UJ	10	U	10	U
2-Butanone	14	UJ	12	J	12	J	10	UJ	10	U	10	U
Carbon Disulfide	14	U	1	J	15	U	10	U	10	U	10	U
Carbon Tetrachloride	14	U	15	U	15	U	10	U	10	U	10	U
Chlorobenzene	14	U	15	U	15	U	10	U	10	U	10	U
Chloroethane	14	UJ	15	UJ	15	UJ	10	UJ	10	U	10	U
2-Chloroethylvinylether	14	U	15	U	15	U	10	U	10	U	10	U
Chloroform	5	J	15	U	15	U	10	U	10	U	10	U
Chloromethane	14	UJ	15	UJ	15	UJ	10	U	10	U	10	U
Dibromochloromethane	14	U	15	U	15	U	10	U	10	U	10	U
1,1-Dichloroethane	14	U	15	U	15	U	10	U	10	U	10	U
1,2-Dichloroethane	14	U	15	U	15	U	10	U	10	U	10	U
1,1-Dichloroethene	14	U	15	U	15	U	10	U	10	U	10	U
1,2-Dichloroethene (total)	14	U	15	U	15	U	10	U	10	U	10	U
Methylene Chloride	14	U	15	U	15	U	0.7	J	10	U	10	U
1,2-Dichloropropane	14	U	15	U	15	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	14	U	15	U	15	U	10	U	10	U	10	U
trans-1,3-Dichloropropene	14	U	15	U	15	U	10	U	10	U	10	U
Ethylbenzene	14	U	210		130		10	U	10	U	10	U
2-Hexanone	14	U	15	U	15	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	14	U	15	U	15	U	10	U	10	U	10	U
Styrene	14	U	15	U	15	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	14	U	15	U	15	U	10	U	10	U	10	U
Tetrachloroethene	1	J	15	U	2	J	10	U	10	U	10	U
Toluene	14	U	6	J	2	J	10	U	10	U	10	U
1,1,1-Trichloroethane	14	U	2	J	15	U	10	U	10	U	10	U
1,1,2-Trichloroethane	14	U	15	U	15	U	10	U	10	U	10	U
Trichloroethene	3	J	15	U	15	U	10	U	10	U	10	U
Vinyl Acetate	14	U	15	U	15	U	10	U	10	U	10	U
Vinyl Chloride	14	U	15	U	15	U	10	U	10	U	10	U
Xylene (total)	14	U	15	U	15	U	10	U	10	U	10	U
1,3-Dichlorobenzene	14	U	15	U	15	U	10	U				
1,4-Dichlorobenzene	14	U	4	J	15	U	10	U				
1,2-Dichlorobenzene	14	U	4	J	4	J	10	U				

Sample	SB-33-4-6		SB-33-4-6MS		SB-33-4-6MSD		SB-33-3-2		RB-RFA-01		SB-33-8-2		SBLKCJ		SBLKGJ		SBLKSJ	
Date Sampled	09/17/96		09/17/96		09/17/96		09/18/96		09/18/96		09/19/96							
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/L		ug/Kg		ug/Kg		ug/L		ug/Kg	
Semi-Volatiles Organics																		
Dimethylphthalate	380	U	380	U	380	U	380	U	10	U	780	U	330	U	10	U	330	U
Di-n-butylphthalate	380	U	12	JB	11	JB	380	U	.3	JB	780	U	7	J	.3	J	12	J
Bis(2-Ethylhexyl)Phthalate	160	J	140	JB	130	JB	120	J	2	JB	780	U	7	J	.9	J	26	J
Di-n-octylphthalate	380	UJ	380	U	380	U	2	J	10	UJ	780	U	330	U	10	U	330	U
Pyridine	380	U					380	U	10	U	780	U						

Sample	SB-33-4-6	SB-33-4-6	SB-33-4-6	SB-33-3-2	RB-RFA-01		SB-33-8-2
Date Sampled	09/17/96	09/17/96	09/17/96	09/18/96	09/18/96		09/19/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/L		mg/Kg
Wet-Chemistry							
Total Organic Carbon	5520.	5480.	19600.	5340.	1.000	U	6140.

Sample	GWS-4	GWS-12E	GWS-6W90	GWS-69	GWS-5W180	GWS-ASW60	TB-03
Date Sampled	10/08/96	10/08/96	10/09/96	10/09/96	10/09/96	10/09/96	10/10/96
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatiles Organics							
Acetone	10 UJ	10 UJ	5 J	6 J	10 UJ	6 J	2 JB
Benzene	10 U	10 U	12	13	.6 J	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ
2-Butanone	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	11	11	10 U	10 U	10 U
Chloroethane	10 UJ	10 UJ	3 J	4 J	10 UJ	10 UJ	10 UJ
2-Chloroethylvinylether	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U	4 J
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U	1 J
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	1 J	1 J	10	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	.7 J	10 U	10 U
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	2 J	10 U	10 U
Methylene Chloride	10 U	10 U	10 U	10 U	10 U	10 U	1 J
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	.6 J	10 U	10 U
Toluene	4 J	10 U	.8 J	.9 J	10 U	1 J	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	6 J	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	2 J	10 U	10 U
Vinyl Acetate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	1 J	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10	10 U	.6 J	.5 J	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	.6 J	.6 J	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	1 J	1 J	10 U	10 U	10 U

Sample	GWL-8		GWS-1N60		GWS-5		GWS-1W60N180		GWL-4W60		RB-03	
Date Sampled	10/10/96		10/09/96		10/10/96		10/10/96		10/10/96		10/09/96	
Units	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Volatiles Organics												
Acetone	250	UJ	10	UJ	10	UJ	10	UJ	170	J	10	UJ
Benzene	18	J	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane	8	J	10	U	10	U	10	U	10	U	.5	J
Bromoform	250	U	10	U	10	U	10	U	10	U	10	U
Bromomethane	250	U	10	U	10	U	10	U	10	U	10	U
2-Butanone	250	U	10	U	10	U	10	U	10	U	10	U
Carbon Disulfide	250	U	10	U	10	U	10	U	10	U	10	U
Carbon Tetrachloride	250	U	10	U	10	U	10	U	10	U	10	U
Chlorobenzene	250	U	10	U	10	U	10	U	10	U	10	U
Chloroethane	250	UJ	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ
2-Chloroethylvinylether	250	U	10	U	10	U	10	U	10	U	10	U
Chloroform	250	U	10	U	10	U	10	U	10	U	5	J
Chloromethane	250	U	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	250	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethane	250	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethane	250	U	10	U	10	U	10	U	10	U	10	U
1,1-Dichloroethene	250	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichloroethene (total)	250	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	250	U	10	U	10	U	10	U	10	U	.5	J
1,2-Dichloropropane	250	U	10	U	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	250	U	10	U	10	U	10	U	10	U	10	U
trans-1,3-Dichloropropene	250	U	10	U	10	U	10	U	10	U	10	U
Ethylbenzene	9	J	10	U	10	U	.9	J	10	U	10	U
2-Hexanone	250	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	250	U	10	U	10	U	10	U	10	U	10	U
Styrene	250	U	10	U	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	250	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene	250	U	10	U	10	U	10	U	10	U	10	U
Toluene	42	J	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane	250	U	10	U	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane	250	U	10	U	10	U	10	U	10	U	10	U
Trichloroethene	250	U	10	U	10	U	10	U	10	U	10	U
Vinyl Acetate	250	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride	250	U	10	U	10	U	10	U	10	U	10	U
Xylene (total)	7	J	.2	J	10	U	8	J	10	U	10	U
1,3-Dichlorobenzene	250	U	10	U	10	U	10	U	10	U	10	U
1,4-Dichlorobenzene	250	U	10	U	10	U	10	U	10	U	10	U
1,2-Dichlorobenzene	250	U	10	U	10	U	10	U	10	U	10	U

Sample	GWS-J	GWS-6W360	GWS-6W360MS	GWS-6W360MSD	GWL-07	GWL-07MS
Date Sampled	10/10/96	10/09/96	10/09/96	10/09/96	10/10/96	10/10/96
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatiles Organics						
Acetone	10 UJ	10 UJ	10 U	4 JB	44 U	46 B
Benzene	10 U	10 U	50 X	51 X	3 J	56 X
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 UJ	10 U
2-Butanone	10 U	10 U	10 U	10 U	7 J	11
Carbon Disulfide	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	45 X	47 X	10 U	52 X
Chloroethane	10 UJ	10 UJ	10 U	10 U	10 UJ	10 U
2-Chloroethylvinylether	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	10 U	10 U	.9 J	1 J	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	1 J	.8 J	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	46 X	46 X	10 U	47 X
1,2-Dichloroethene (total)	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	1 J	.5 J	10 U	4 J
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	44 X	47 X	10 U	48 X
1,1,1-Trichloroethane	10 U	11	8 J	8 J	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	1 J	46 X	48 X	10 U	48 X
Vinyl Acetate	10 U	10 U	.9 J	1 J	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	.5 J	.7 J	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	.3 J	10 U	1 J	2 J
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	2 J	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	1 J	10 U

Sample	GWL-07MSD		VBLKEE		VBLKEF		VBLKG9	
Date Sampled	10/10/96							
Units	ug/L		ug/L		ug/L		ug/L	
Volatiles Organics								
Acetone	37	B	6	J	10	U	8	J
Benzene	54	X	10	U	10	U	10	U
Bromodichloromethane	10	U	10	U	10	U	10	U
Bromoform	10	U	10	U	10	U	10	U
Bromomethane	10	U	10	U	10	U	10	U
2-Butanone	7	J	10	U	10	U	10	U
Carbon Disulfide	10	U	10	U	10	U	10	U
Carbon Tetrachloride	10	U	10	U	10	U	10	U
Chlorobenzene	51	X	10	U	10	U	10	U
Chloroethane	10	U	10	U	10	U	10	U
2-Chloroethylvinylether	10	U	10	U	10	U	10	U
Chloroform	10	U	10	U	10	U	10	U
Chloromethane	10	U	10	U	10	U	10	U
Dibromochloromethane	10	U	10	U	10	U	10	U
1,1-Dichloroethane	10	U	10	U	10	U	10	U
1,2-Dichloroethane	10	U	10	U	10	U	10	U
1,1-Dichloroethene	49	X	10	U	10	U	10	U
1,2-Dichloroethene (total)	10	U	10	U	10	U	10	U
Methylene Chloride	6	J	10	U	10	U	10	U
1,2-Dichloropropane	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	10	U	10	U	10	U	10	U
trans-1,3-Dichloropropene	10	U	10	U	10	U	10	U
Ethylbenzene	10	U	10	U	10	U	10	U
2-Hexanone	10	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	10	U	10	U	10	U	10	U
Styrene	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	10	U	10	U	10	U	10	U
Tetrachloroethene	10	U	10	U	10	U	10	U
Toluene	48	X	10	U	10	U	10	U
1,1,1-Trichloroethane	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane	10	U	10	U	10	U	10	U
Trichloroethene	48	X	10	U	10	U	10	U
Vinyl Acetate	10	U	10	U	10	U	10	U
Vinyl Chloride	10	U	10	U	10	U	10	U
Xylene (total)	10	U	10	U	10	U	10	U
1,3-Dichlorobenzene	2	J	10	U	10	U	10	U
1,4-Dichlorobenzene	2	J	10	U	10	U	10	U
1,2-Dichlorobenzene	10	U	10	U	10	U	10	U

Sample	GWS-4	GWS-12E	GWS-6W90	GWS-69	GWS-5W180	GWL-8	GWS-1N60
Date Sampled	10/08/96	10/08/96	10/09/96	10/09/96	10/09/96	10/10/96	10/09/96
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Semi-Volatiles Organics							
Dimethylphthalate	1 J	10 U	10 U	10 U	10 U	1 J	10 U
Di-n-butylphthalate	18	10 U	10 U	10 U	10 U	50 U	10 U
Butylbenzylphthalate	4 J	10 U	10 U	10 U	10 U	50 U	10 U
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
1,2-Dichlorobenzene							
Naphthalene							
Benzo(a)pyrene							
Pyridine							

Sample	GWS-4	GWS-12E	GWS-6W90	GWS-69	GWS-5W180	GWL-8	GWS-1N60
Date Sampled	10/08/96	10/08/96	10/09/96	10/09/96	10/09/96	10/10/96	10/09/96
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Semi-Volatiles Organics							
Pyridine	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	50 U	10 UJ

Sample	GWS-5	GWS-1W60N180	GWL-4W60	RB-03	GWS-J	GWS-6W360
Date Sampled	10/09/96	10/10/96	10/10/96	10/09/96	10/10/96	10/09/96
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Semi-Volatiles Organics						
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	.2 JB	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene						
1,4-Dichlorobenzene						
1,2-Dichlorobenzene						
Naphthalene						
Benzo(a)pyrene						
Pyridine						

Sample	GWS-5	GWS-1W60N180	GWL-4W60	RB-03	GWS-J	GWS-6W360
Date Sampled	10/09/96	10/10/96	10/10/96	10/09/96	10/10/96	10/09/96
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Semi-Volatiles Organics						
Pyridine	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U

Sample	GWS-6W360MS		GWS-6W360MSD		SB-S3-1-3		GWS-ASW60		SBLKAI		SBLKKI	
Date Sampled	10/09/96		10/09/96		10/10/96		10/10/96					
Units	ug/L		ug/L		ug/Kg		ug/L		ug/L		ug/Kg	
Semi-Volatiles Organics												
Dimethylphthalate	10	U	10	U	390	U	10	U	10	U	330	U
Di-n-butylphthalate	.2	JB	.2	JB	390	U	10	U	.3	J	7	J
Butylbenzylphthalate	10	U	10	U	390	U	10	U	10	U	330	U
1,3-Dichlorobenzene									10	U	330	U
1,4-Dichlorobenzene									10	U	330	U
1,2-Dichlorobenzene									10	U	330	U
Naphthalene									.4	J	330	U
Benzo(a)pyrene									10	U	330	U
Pyridine									10	U	330	U

Sample	GWS-6W360MS		GWS-6W360MSD		SB-S3-1-3		GWS-ASW60		SBLKAI		SBLKKI	
Date Sampled	10/09/96		10/09/96		10/10/96		10/10/96					
Units	ug/L		ug/L		ug/Kg		ug/L		ug/L		ug/Kg	
Semi-Volatiles Organics												
Pyridine	10	U	10	U	390	UJ	10	U	IND		330	U

Sample	SB-S3-1-3
Date Sampled	10/10/96
Units	mg/Kg
Wet-Chemisty	
Total Organic Carbon	7730.

Sample	GWL-1	GWL-2	GWL-3	GWL-4	GWL-5	GWL-6A	GWS-13W60	GWL-49	TB-02
Date Sampled	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96	10/08/96
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatiles Organics									
Acetone	10 UJ	10 UJ		58000 J	10 UJ	10 UJ	10 UJ	45000 J	10 UJ
Benzene	10 U	9 J	32 J	5000 U	10 U	10 U	10 U	5000 U	10 U
Bromodichloromethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Bromoform	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Bromomethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
2-Butanone	10 U	10 U		5000 UJ	10 UJ	10 U	10 UJ	5000 UJ	10 U
Carbon Disulfide	10 U	10 U		5000 U	10 U	10 U	10 U	2100 J	10 U
Carbon Tetrachloride	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Chlorobenzene	10 U	7 J		5000 U	10 U	10 U	10 U	5000 U	10 U
Chloroethane	10 UJ	10 UJ		5000 UJ	10 UJ	10 UJ	10 UJ	5000 UJ	10 UJ
2-Chloroethylvinylether	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Chloroform	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	4 J
Chloromethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Dibromochloromethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
1,1-Dichloroethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
1,2-Dichloroethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
1,1-Dichloroethene	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
1,2-Dichloroethene (total)	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Methylene Chloride	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	1 J
1,2-Dichloropropane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
cis-1,3-Dichloropropene	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
trans-1,3-Dichloropropene	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Ethylbenzene	10 U	10 U	27 J	5000 U	10 U	10 U	10 U	5000 U	10 U
2-Hexanone	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
4-Methyl-2-Pentanone	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Styrene	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Tetrachloroethene	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Toluene	10 U	10 U	1300	5000 U	10 U	10 U	10 U	5000 U	10 U
1,1,1-Trichloroethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
1,1,2-Trichloroethane	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Trichloroethene	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Vinyl Acetate	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Vinyl Chloride	10 U	10 U		5000 U	10 U	10 U	10 U	5000 U	10 U
Xylene (total)	10 U	10 U	88 J	5000 U	10 U	10 U	10 U	5000 U	10 U
1,3-Dichlorobenzene	1 J	7 J		5000 U	10 U	10 U	10 U	5000 U	10 U
1,4-Dichlorobenzene	1 J	6 J		5000 U	10 U	10 U	10 U	5000 U	10 U
1,2-Dichlorobenzene	10 U	6 J		5000 U	10 U	10 U	10 U	5000 U	10 U

Sample	GWS-11		GWS-10W		VBLKEB		VBLKEE	
Date Sampled	10/08/96		10/08/96					
Units	ug/L		ug/L		ug/L		ug/L	
Volatiles Organics								
Acetone	250	J	10	UJ	10	U	6	J
Benzene	10	U	10	U	10	U	10	U
Bromodichloromethane	10	U	10	U	10	U	10	U
Bromoform	10	U	10	U	10	U	10	U
Bromomethane	10	U	10	U	10	U	10	U
2-Butanone	10	UJ	10	UJ	10	U	10	U
Carbon Disulfide	10	U	10	U	10	U	10	U
Carbon Tetrachloride	10	U	10	U	10	U	10	U
Chlorobenzene	10	U	10	U	10	U	10	U
Chloroethane	10	UJ	10	UJ	10	U	10	U
2-Chloroethylvinylether	10	U	10	U	10	U	10	U
Chloroform	10	U	10	U	10	U	10	U
Chloromethane	10	U	10	U	10	U	10	U
Dibromochloromethane	10	U	10	U	10	U	10	U
1,1-Dichloroethane	10	U	10	U	10	U	10	U
1,2-Dichloroethane	10	U	10	U	10	U	10	U
1,1-Dichloroethene	10	U	10	U	10	U	10	U
1,2-Dichloroethene (total)	.6	J	10	U	10	U	10	U
Methylene Chloride	10	U	10	U	10	U	10	U
1,2-Dichloropropane	10	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	10	U	10	U	10	U	10	U
trans-1,3-Dichloropropene	10	U	10	U	10	U	10	U
Ethylbenzene	10	U	10	U	10	U	10	U
2-Hexanone	10	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	10	U	10	U	10	U	10	U
Styrene	10	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	10	U	10	U	10	U	10	U
Tetrachloroethene	10	U	10	U	10	U	10	U
Toluene	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane	10	U	10	U	10	U	10	U
1,1,2-Trichloroethane	10	U	10	U	10	U	10	U
Trichloroethene	10	U	10	U	10	U	10	U
Vinyl Acetate	10	U	10	U	10	U	10	U
Vinyl Chloride	10	U	10	U	10	U	10	U
Xylene (total)	10	U	10	U	10	U	10	U
1,3-Dichlorobenzene	10	U	10	U	10	U	10	U
1,4-Dichlorobenzene	10	U	10	U	10	U	10	U
1,2-Dichlorobenzene	10	U	10	U	10	U	10	U

Sample	GWL-3		VBLKEE	
Date Sampled	10/08/96			
Units	ug/L		ug/L	
Volatiles Organics				
Benzene	32	J	5.0	U
Toluene	1300		5.0	U
Ethylbenzene	27	J	5.0	U
Xylene (total)	88	J	5.0	U

Sample	GWL-1		GWL-1MS		GWL-1MSD		GWL-2		SBLKQI	
Date Sampled	10/07/96		10/07/96		10/07/96		10/07/96			
Units	ug/L		ug/L		ug/L		ug/L		ug/L	
Semi-Volatiles Organics										
Butylbenzylphthalate	10	U	10	U	10	U	10	U	10	U
Di-n-butylphthalate	10	U	0.3	U	.3	JB	10	U	.2	J
Benzo(a)pyrene									10	U
Pyridine									10	U

Sample	GWL-6A		SBLKQI	
Date Sampled	10/08/96			
Units	ug/L		ug/L	
Semi-Volatiles Organics				
Acetophenone	10	UJ	10	U

Sample	GWL-3		SBLKQI	
Date Sampled	10/08/96			
Units	ug/L		ug/L	
Semi-Volatiles Organics				
Naphthalene	3700		10	U

Sample	GWL-4		GWL-5		GWL-49		GWL-7		GWS13W-60		GWS-11		GWS-10W		SBLKAI		SBLKQI	
Date Sampled	10/07/96		10/07/96		10/07/96		10/08/96		10/08/96		10/08/96		10/08/96					
Units	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Semi-Volatiles Organics																		
Dimethylphthalate	10	U	10	U	10	U	10	U	.2	J	.7	J	10	U	10	U	10	U
Di-n-butylphthalate	10	U	10	U	10	U	10	U	10	U	10	U	10	U	.3	J	.2	J
Butylbenzylphthalate	10	U	.2	J	10	U	.4	J	.2	J	10	U	10	U	10	U	10	U

Sample	GWL-49		SBLKQI	
Date Sampled	10/07/96			
Units	ug/L		ug/L	
Semi-Volatiles Organics				
Pyridine	10	UJ	IND	

Sample	B-6-2	B-6-6	B-7-2	B-7-4	B-9-8	B-10-2	B-10-6	SB-B-4	SB-D-4	SB-J-6	SB-G-6	SB-8A-2
Depth												
Date Sampled	09/13/96	09/13/96	09/13/96	09/13/96	09/13/96	09/13/96	09/13/96	09/18/96	09/18/96	09/18/96	09/18/96	09/18/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Wet-Chemistry												
Total Organic Carbon	6580.	2940.	14000.	3310.	5640.	11600.	19400.	1890.	1400.	518.	3340.	17600.

Sample	SB-8A-6	SB-S3-2-6	SB-S3-3-6	SB-T-4	SB-D-4
Depth					
Date Sampled	09/18/96	09/18/96	09/18/96	09/20/96	09/18/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Wet-Chemisty					
Total Organic Carbon	3040.	6300.	2440.	10100.	6140.

Sample	B-7-2		B-7-4		B-9-8		B-9-8MSB		B-9-8MSD		B-10-2	
Date Sampled	09/13/96		09/13/96		09/13/96		09/13/96		09/13/96		09/13/96	
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Volatiles Organics												
Acetone	170	J	50		21		10	U	12	J	14	
Benzene	17	U	15	U	16	U	81		84	X	7	U
Bromodichloromethane	17	U	15	U	16	U	10	U	10	U	7	U
Bromoform	17	U	15	U	16	U	10	U	10	U	7	U
Bromomethane	1	J	15	U	16	U	10	U	10	U	14	U
2-Butanone	17	UJ	15	UJ	16	UJ	10	U	10	U	14	UJ
Carbon Disulfide	17	U	15	U	16	U	10	U	10	U	7	U
Carbon Tetrachloride	17	U	15	U	16	U	10	U	10	U	7	U
Chlorobenzene	17	U	15	U	16	U	78		76	X	7	U
Chloroethane	17	U	15	U	16	U	10	U	1	J	14	U
2-Chloroethylvinylether	17	U	15	U	16	U	10	U	10	U		
Chloroform	10	J	15	U	16	U	10	U	10	U	7	U
Chloromethane	5	J	15	U	16	U	10	U	10	U	14	U
Dibromochloromethane	17	U	15	U	16	U	10	U	10	U	7	U
1,1-Dichloroethane	17	U	15	U	16	U	10	U	10	U	7	U
1,2-Dichloroethane	17	U	15	U	16	U	10	U	10	U	7	U
1,1-Dichloroethene	17	U	15	U	16	U	83		84	X	7	U
1,2-Dichloroethene (total)	17	U	15	U	16	U	10	U	10	U	7	U
Methylene Chloride	17	U	15	U	1	J	10	U	1	J	2	J
1,2-Dichloropropane	17	U	15	U	16	U	10	U	10	U	7	U
cis-1,3-Dichloropropene	17	U	15	U	16	U	10	U	10	U	7	U
trans-1,3-Dichloropropene	17	U	15	U	16	U	10	U	10	U	7	U
Ethylbenzene	17	U	15	U	16	U	10	U	10	U	7	UJ
2-Hexanone	17	U	15	U	16	U	10	U	10	U	14	U
4-Methyl-2-Pentanone	17	U	15	U	16	U	10	U	10	U	14	U
Styrene	17	U	15	U	16	U	10	U	10	U	7	U
1,1,2,2-Tetrachloroethane	17	U	15	U	16	U	10	U	10	U	7	U
Tetrachloroethene	17	U	15	U	16	U	10	U	10	U	7	U
Toluene	1	J	15	U	16	U	81		82	X	7	U
1,1,1-Trichloroethane	17	U	15	U	16	U	10	U	10	U	7	U
1,1,2-Trichloroethane	17	U	15	U	16	U	10	U	10	U	7	U
Trichloroethene	17	U	15	U	16	U	80		81	X	7	U
Vinyl Acetate	17	UJ	15	UJ	16	UJ	10	U	10	U	14	U
Vinyl Chloride	17	U	15	U	16	U	10	U	10	U	14	U
Xylene (total)	17	U	15	U	16	U	10	U	10	U	7	U
1,3-Dichlorobenzene	17	U	15	U	16	U					14	U
1,4-Dichlorobenzene	17	U	15	U	16	U					14	U
1,2-Dichlorobenzene	17	U	15	U	16	U					14	U

Sample	B-10-6		SB-B-4		SB-B-4MS		SB-B-4MSD		SB-D-4		SB-J-6		SB-E-4	
Date Sampled	09/13/96		09/18/96		09/18/96		09/18/96		09/18/96		09/18/96		09/18/96	
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Volatiles Organics														
Acetone	31		19	J	23	B	29	B	14	J	19	J	63	J
Benzene	15	U	11	U	58		49	X	12	U	12	U	16	U
Bromodichloromethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Bromoform	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Bromomethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
2-Butanone	15	UJ	11	UJ	10	U	10	U	12	UJ	12	UJ	16	UJ
Carbon Disulfide	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Carbon Tetrachloride	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Chlorobenzene	15	U	11	U	56		47	X	12	U	12	U	16	U
Chloroethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
2-Chloroethylvinylether	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Chloroform	15	U	11	U	10	U	10	U	5	J	4	J	16	U
Chloromethane	15	U	11	UJ	10	U	10	U	12	UJ	12	UJ	16	UJ
Dibromochloromethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
1,1-Dichloroethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
1,2-Dichloroethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
1,1-Dichloroethene	15	U	11	U	62		53	X	12	U	12	U	16	U
1,2-Dichloroethene (total)	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Methylene Chloride	15	U	11	U	1	J	10	U	12	U	12	U	16	U
1,2-Dichloropropane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
cis-1,3-Dichloropropene	15	U	11	U	10	U	10	U	12	U	12	U	16	U
trans-1,3-Dichloropropene	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Ethylbenzene	15	U	11	U	10	U	10	U	12	U	12	U	16	U
2-Hexanone	15	U	11	U	10	U	10	U	12	U	12	U	16	U
4-Methyl-2-Pentanone	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Styrene	15	U	11	U	10	U	10	U	12	U	12	U	16	U
1,1,2,2-Tetrachloroethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Tetrachloroethene	15	U	2	J	10	U	10	U	2	J	2	J	16	U
Toluene	15	U	1	J	58		49	X	12	U	1	J	2	J
1,1,1-Trichloroethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
1,1,2-Trichloroethane	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Trichloroethene	15	U	.9	J	59		46	X	12	U	1	J	16	U
Vinyl Acetate	15	UJ	11	UJ	10	U	10	U	12	UJ	12	UJ	16	UJ
Vinyl Chloride	15	U	11	U	10	U	10	U	12	U	12	U	16	U
Xylene (total)	15	U	11	U	10	U	10	U	12	U	12	U	16	U
1,3-Dichlorobenzene	15	U	11	U					12	U	12	U	16	U
1,4-Dichlorobenzene	15	U	11	U					12	U	12	U	16	U
1,2-Dichlorobenzene	15	U	11	U					12	U	12	U	16	U

Sample	SB-G-6		SB-8A-2		SB-8A-6		SB-S3-1-3		SB-S3-2-6		SB-S3-3-6		SB-T-4	
Date Sampled	09/18/96		09/18/96		09/18/96		09/18/96		09/18/96		09/18/96		09/20/96	
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Volatiles Organics														
Acetone	66	J	29	J	14	U	29	J	40	J	32	J	84	J
Benzene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Bromodichloromethane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Bromoform	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Bromomethane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
2-Butanone	16	UJ	16	UJ	12	UJ	15	UJ	16	UJ	16	UJ	16	UJ
Carbon Disulfide	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Carbon Tetrachloride	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Chlorobenzene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Chloroethane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
2-Chloroethylvinylether	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Chloroform	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Chloromethane	16	UJ	16	UJ	12	UJ	15	UJ	16	UJ	16	UJ	16	UJ
Dibromochloromethane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
1,1-Dichloroethane	16	U	16	U	12	U	15	U	16	U	5	J	16	U
1,2-Dichloroethane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
1,1-Dichloroethene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
1,2-Dichloroethene (total)	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Methylene Chloride	16	U	16	U	2	J	15	U	16	U	16	U	16	U
1,2-Dichloropropane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
cis-1,3-Dichloropropene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
trans-1,3-Dichloropropene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Ethylbenzene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
2-Hexanone	16	U	16	U	12	U	15	U	16	U	16	U	16	U
4-Methyl-2-Pentanone	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Styrene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
1,1,2,2-Tetrachloroethane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Tetrachloroethene	2	J	2	J	12	U	2	J	2	J	16	U	1	J
Toluene	16	U	5	J	2	J	15	U	16	U	3	J	4	J
1,1,1-Trichloroethane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
1,1,2-Trichloroethane	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Trichloroethene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Vinyl Acetate	16	UJ	16	UJ	12	UJ	15	UJ	16	UJ	16	UJ	16	UJ
Vinyl Chloride	16	U	16	U	12	U	15	U	16	U	16	U	16	U
Xylene (total)	16	U	16	U	12	U	15	U	16	U	16	U	16	U
1,3-Dichlorobenzene	16	U	16	U	12	U	15	U	16	U	1	J	16	U
1,4-Dichlorobenzene	16	U	16	U	12	U	15	U	16	U	16	U	16	U
1,2-Dichlorobenzene	16	U	16	U	12	U	15	U	16	U	16	U	16	U

Sample	RB-02		SB-5/6-2-4		VBLKBC		VBLKBD		VBLKBH		VBLKBI		VBLKEA	
Date Sampled	09/19/96		09/19/96											
Units	ug/L		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/L	
Volatiles Organics														
Acetone	14	J	210		10	U	10	U	10	U	6	J	10	U
Benzene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Bromodichloromethane	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Bromoform	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Bromomethane	10	UJ	12	U	10	U	10	U	10	U	10	U	10	U
2-Butanone	10	UJ	12	UJ	10	U	10	U	10	U	10	U	10	U
Carbon Disulfide	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Carbon Tetrachloride	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Chlorobenzene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Chloroethane	10	U	12	U	10	U	10	U	10	U	10	U	10	U
2-Chloroethylvinylether	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Chloroform	10	U	12	U	5	U	10	U	.8	J	10	U	10	U
Chloromethane	10	UJ	12	UJ	10	U	10	U	10	U	10	U	10	U
Dibromochloromethane	10	U	12	U	5	U	10	U	5	U	10	U	10	U
1,1-Dichloroethane	10	U	12	U	5	U	10	U	5	U	10	U	10	U
1,2-Dichloroethane	10	U	12	U	5	U	10	U	5	U	10	U	10	U
1,1-Dichloroethene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
1,2-Dichloroethene (total)	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Methylene Chloride	0.3	J	12	U	5	U	10	U	1	J	10	U	10	U
1,2-Dichloropropane	10	U	12	U	5	U	10	U	5	U	10	U	10	U
cis-1,3-Dichloropropene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
trans-1,3-Dichloropropene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Ethylbenzene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
2-Hexanone	10	U	12	U	10	U	10	U	10	U	10	U	10	U
4-Methyl-2-Pentanone	10	U	12	U	10	U	10	U	10	U	10	U	10	U
Styrene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
1,1,2,2-Tetrachloroethane	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Tetrachloroethene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Toluene	10	U	2	J	5	U	10	U	5	U	10	U	10	U
1,1,1-Trichloroethane	10	U	12	U	5	U	10	U	5	U	10	U	10	U
1,1,2-Trichloroethane	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Trichloroethene	10	U	12	U	5	U	10	U	5	U	10	U	10	U
Vinyl Acetate	10	U	12	UJ	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride	10	U	12	U	10	U	10	U	10	U	10	U	10	U
Xylene (total)	10	U	12	U	5	U	10	U	5	U	10	U	10	U
1,3-Dichlorobenzene	10	U	12	U							10			
1,4-Dichlorobenzene	10	U	12	U										
1,2-Dichlorobenzene	10	U	12	U										

Sample	B-6-2		B-6-6		B-7-2		B-7-4		B-9-8		B-10-2		B-10-6		SB-B-4		SB-D-4	
Date Sampled	09/13/96		09/13/96		09/13/96		09/13/96		09/13/96		09/13/96		09/13/96		09/18/96		09/18/96	
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Semi-Volatiles Organics																		
Dimethylphthalate	390	U	390	U	390	U	390	U	410	U	380	U	380	U	41	J	390	U
Di-n-butylphthalate	17	J	17	J	20	J	41	J	16	J	25	J	17	J	380	U	390	U
Butylbenzylphthalate					390	UJ	390	UJ	410	UJ	380	UJ	380	UJ	380	U	390	U
Pyridine					390	U	390	U	410	U	380	U	380	U	380	U	390	U

Sample	SB-J-6		SB-E-4		SB-G-6		SB-8A-2		SB-8A-6		SB-S3-2-6		SB-S3-3-6		SB-T-4		RB-02	
Date Sampled	09/18/96		09/18/96		09/18/96		09/18/96		09/18/96		09/18/96		09/18/96		09/20/96		09/19/96	
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/L	
Semi-Volatiles Organics																		
Diethylphthalate	400	U	390	U	390	U	400	U	390	U	390	U	380	U	41	J	.3	J
Di-n-butylphthalate	400	U	390	U	390	U	400	U	390	U	390	U	490		390	U	.2	JB
Butylbenzylphthalate	400	U	390	U	390	U	400	U	390	U	390	U	190	J	390	U	10	U
Pyridine	400	U	390	U	390	U	400	U	390	U	390	U	380	U	390	U	10	U

Sample	SBLKIJ		SBLKKJ		SBLKOH	
Date Sampled						
Units	ug/L		ug/Kg		ug/Kg	
Semi-Volatiles Organics						
Dimethylphthalate	10	U	330	U	330	U
Di-n-butylphthalate	.6	J	20	J	330	U
Butylbenzylphthalate	10	U	330	U	330	U
Pyridine						

Sample	SB-19S-2		SB-19S-8		SB-19N-2		SB-19N-8		SB-19E-2		SB-19E-8		SB-19W-2		SB-19W-8	
Depth																
Date Sampled	09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96	
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Volatiles Organics																
Acetone	15	U	19	U	21	U	1400	U	310		33000		15	U	82	
Benzene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	1	J
Bromodichloromethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Bromoform	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	.7	J
Bromomethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
2-Butanone	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	7	J
Carbon Disulfide	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	.6	J
Carbon Tetrachloride	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Chlorobenzene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Chloroethane	15	U	16	U	15	U	1400	UJ	15	U	6800	UJ	15	U	15	U
2-Chloroethylvinylether	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Chloroform	15	U	16	U	15	U	140	J	10	J	2900	J	7	J	7	J
Chloromethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Dibromochloromethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
1,1-Dichloroethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	1	J
1,2-Dichloroethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	1	J
1,1-Dichloroethene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
1,2-Dichloroethene (total)	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Methylene Chloride	15	U	2	J	15	U	1400	U	15	U	6800	U	15	U	2	J
1,2-Dichloropropane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
cis-1,3-Dichloropropene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
trans-1,3-Dichloropropene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Ethylbenzene	15	U	.8	J	15	U	1400	U	15	U	6800	U	15	U	2	J
2-Hexanone	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
4-Methyl-2-Pentanone	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Styrene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	.9	J
1,1,2,2-Tetrachloroethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	1	J
Tetrachloroethene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Toluene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	1	J
1,1,1-Trichloroethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
1,1,2-Trichloroethane	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	1	J
Trichloroethene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	.8	J
Vinyl Acetate	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Vinyl Chloride	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
Xylene (total)	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	3	J
1,3-Dichlorobenzene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
1,4-Dichlorobenzene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U
1,2-Dichlorobenzene	15	U	16	U	15	U	1400	U	15	U	6800	U	15	U	15	U

Sample	SB-91-8		VBLKB8		VBLKGH	
Depth						
Date Sampled	09/10/96					
Units	ug/Kg		ug/Kg		ug/Kg	
Volatiles Organics						
Acetone	110		3	J	360	J
Benzene	15	U	10	U	1200	U
Bromodichloromethane	15	U	10	U	1200	U
Bromoform	15	U	10	U	1200	U
Bromomethane	15	U	10	U	1200	U
2-Butanone	4	J	10	U	1200	U
Carbon Disulfide	15	U	10	U	1200	U
Carbon Tetrachloride	15	U	10	U	1200	U
Chlorobenzene	15	U	10	U	44	J
Chloroethane	15	U	10	U	1200	U
2-Chloroethylvinylether	15	U	10	U	1200	U
Chloroform	15	U	10	U	1200	U
Chloromethane	15	U	10	U	1200	U
Dibromochloromethane	15	U	10	U	1200	U
1,1-Dichloroethane	15	U	10	U	1200	U
1,2-Dichloroethane	15	U	10	U	1200	U
1,1-Dichloroethene	15	U	10	U	1200	U
1,2-Dichloroethene (total)	15	U	10	U	1200	U
Methylene Chloride	15	U	10	U	1200	U
1,2-Dichloropropane	15	U	10	U	1200	U
cis-1,3-Dichloropropene	15	U	10	U	1200	U
trans-1,3-Dichloropropene	15	U	10	U	1200	U
Ethylbenzene	3	J	10	U	1200	U
2-Hexanone	15	U	10	U	1200	U
4-Methyl-2-Pentanone	15	U	10	U	1200	U
Styrene	15	U	10	U	25	J
1,1,2,2-Tetrachloroethane	15	U	10	U	1200	U
Tetrachloroethene	15	U	10	U	62	J
Toluene	15	U	10	U	1200	U
1,1,1-Trichloroethane	15	U	10	U	1200	U
1,1,2-Trichloroethane	15	U	10	U	1200	U
Trichloroethene	15	U	10	U	1200	U
Vinyl Acetate	15	U	10	U	1200	U
Vinyl Chloride	15	U	10	U	1200	U
Xylene (total)	15	U	10	U	97	J
1,3-Dichlorobenzene	15	U	10	U	1200	U
1,4-Dichlorobenzene	15	U	10	U	1200	U
1,2-Dichlorobenzene	15	U	10	U	1200	U

Sample	SB-B1-6	SB-C5-8	SB-C6-6	SB-D5-8	SB-D6-2	SB-D7-8	SB-18-7-8	SB-18-7-8MS
Depth								
Date Sampled	09/11/96	09/11/96	09/11/96	09/11/96	09/11/96	09/11/96	09/17/96	09/17/96
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatiles Organics								
Benzene	7 U	7 U	6 U	6 U	6 U	6 U	8 U	84 X
Toluene	1 J	1 J	2 J	1 J	6 U	.8 J	8 U	82 X
Ethylbenzene	7 U	7 U	4 J	6 U	6 U	6 U	5 J	3 J
Xylene (total)	7 U	7 U	16	1 J	6 U	6 U	8 U	8 U

Sample	SB-18-7-8MSD		SB-18-6-10		SB-18-5-8		SB-B2-6		VBLKB8		VBLKBA		VBLKBD		VBLKBG	
Depth																
Date Sampled	09/17/96		09/17/96		09/17/96		09/11/96									
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Volatiles Organics																
Benzene	82	X	8	U	7	U	8	U	5.0	U	5.0	U	5.0	U	5.0	U
Toluene	89	X	.6	J	7	U	8	U	5.0	U	5.0	U	5.0	U	5.0	U
Ethylbenzene	8		8	U	92	J	8	U	5.0	U	5.0	U	5.0	U	5.0	U
Xylene (total)	2	J	8	U	190	J	8	U	5.0	U	5.0	U	5.0	U	5.0	U

Sample	VBLKBH
Depth	
Date Sampled	
Units	ug/Kg
Volatiles Organics	
Benzene	5.0 U
Toluene	5.0 U
Ethylbenzene	5.0 U
Xylene (total)	5.0 U

Sample	SB-19S-2		SB-19S-8		SB-19N-2		SB-19N-8		SB-19E-2		SB-19W-2		SB-19W-8		SB-91-8		SBLKGH	
Depth																		
Date Sampled	09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96			
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Semi-Volatiles Organics																		
Dimethylphthalate	400	U	390	U	370	U	400	U	380	U	360	U	390	U	400	U	330	U
Pyridine	400	U	390	U	370	U	400	U	380	U	360	U	390	U	400	U	330	U

Sample	SB-B1-6		SB-B2-6		SB-18-5-8		SBLKCH		SBLKOH	
Depth										
Date Sampled	09/11/96		09/11/96		09/17/96					
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Semi-Volatiles Organics										
Naphthalene	380	U	380	U	400	U	330	U	330	U
2-Methylnaphthalene	380	UJ	380	UJ	89	J	330	U	330	U
Acenaphthylene	380	U	380	U	400	U	330	U	330	U
Acenaphthene	380	U	380	U	400	U	330	U	330	U
Fluorene	380	U	380	U	36	J	330	U	330	U
Phenanthrene	380	U	100	J	130	J	330	U	330	U
Anthracene	380	U	99	J	400	U	330	U	330	U
Fluoranthene	380	UJ	380	U	18	J	330	U	330	U
Pyrene	380	UJ	17	J	22	UJ	330	U	330	U
Benzo(a)anthracene	380	UJ	380	UJ	6	UJ	330	U	330	U
Chrysene	380	U	380	UJ	10	UJ	330	U	330	U
Benzo(b)fluoranthene	380	U	380	U	400	U	330	U	330	U
Benzo(k)fluoranthene	380	U	380	U	400	U	330	U	330	U
Benzo(a)pyrene	380	U	380	U	400	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	380	UJ	380	UJ	400	U	330	U	330	U
Dibenzo(a,h)anthracene	380	UJ	380	UJ	400	U	330	U	330	U
Benzo(g,h,i)perylene	380	UJ	380	UJ	400	UJ	330	U	330	U

Sample	SB-19S-2	SB-19S-8	SB-19N-2	SB-19N-8	SB-19E-2	SB-19W-2	SB-19W-8	SB-91-8
Depth								
Date Sampled	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Wet-Chemisty								
Total Organic Carbon	2160.	9370.	2320.	28300.	4780.	5160.	2600.	16800.

Sample	SB-B1-6	SB-B2-6	SB-C5-8	SB-C6-6	SB-D5-8	SB-D6-2	SB-D7-8
Depth							
Date Sampled	09/11/96	09/11/96	09/11/96	09/11/96	09/11/96	09/11/96	09/11/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Wet-Chemisty							
Total Organic Carbon	4980.	4460.	9630.	7050.	9430.	5960.	14700.

Sample	SB-19E-8	SB-18-7-8	SB-18-6-10	SB-18-5-8
Depth				
Date Sampled	09/10/96	09/17/96	09/17/96	09/17/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Wet-Chemisty				
Total Organic Carbon	13200.	5490.	6540.	1310.

Sample	B-1-4	B-1-6	B-1-8	B-2-4	B-2-6	B-2-8	B-3-4	B-3-6	B-3-8	B-4-6	B-5-6
Date Sampled	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96	09/10/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Wet-Chemisty											
Total Organic Carbon	2380.	1210.	1050.	1940.	810.	956.	788.	19000.	1140.	4920.	827.

Sample	B-11-2	B-11-6	B-12-2	B-12-8	B-13-2	B-13-8	B-14-8	B-9-2
Date Sampled	09/11/96	09/11/96	09/11/96	09/11/96	09/11/96	09/11/96	09/11/96	09/13/96
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Wet-Chemistry								
Total Organic Carbon	12500.	2180.	13700.	2080.	8200.	990.	14500.	12900.

Sample	B-1-4		B-1-6		B-1-8		B-2-4		B-2-6		B-2-8		B-3-4		B-3-6		B-3-8		SBLKGI	
Date Sampled	09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96		09/10/96			
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Semi-Volatiles Organics																				
[redacted]lbenzylphthalate	390	U	370	U	350	U	380	U	11	J	380	U	10	J	360	U	18	J	330	U
[redacted]n-butylphthalate	390	U	370	U	350	U	380	U	360	U	380	U	380	U	360	U	370	U	10	J

Sample	B-4-6		B-4-6DL		B-5-6		SBLKOI	
Date Sampled	09/10/96		09/10/96		09/10/96			
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Semi-Volatiles Organics								
Naphthalene	390	R	1600	UJ	410	U	330	U

Sample	B-11-2		B-11-6		B-12-2		B-12-8		B-12-8MS		B-12-8MSD		B-13-2		B-13-8		SBLKOI	
Date Sampled	09/11/96		09/11/96		09/11/96		09/11/96		09/11/96		09/11/96		09/11/96		09/11/96			
Units	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Semi-Volatiles Organics																		
Acetophenone	390	U	410	U	7300		390	U	390	U	390	U	390	U	32	J	330	U

Sample	B-14-8		SBLKOI	
Date Sampled	09/11/96			
Units	ug/Kg		ug/Kg	
Semi-Volatiles Organics				
Benzo(a)pyrene	38	J	330	U

Sample	B-9-2		SBLKOI	
Date Sampled	09/13/96			
Units	ug/Kg		ug/Kg	
Semi-Volatiles Organics				
Dimethylphthalate	360	U	330	U
[redacted]-butylphthalate	360	U	7	J
[redacted]ylbenzylphthalate	360	U	330	U
Pyridine	360	U		

Sample	B-9-2		VBLKBD	
Depth				
Date Sampled	09/13/96			
Units	ug/Kg		ug/Kg	
Volatiles Organics				
Acetone	70		10	U
Benzene	16	U	10	U
Bromodichloromethane	16	U	10	U
Bromoform	16	U	10	U
Bromomethane	16	U	10	U
2-Butanone	19	J	10	U
Carbon Disulfide	16	U	10	U
Carbon Tetrachloride	16	U	10	U
Chlorobenzene	16	U	10	U
Chloroethane	16	U	10	U
2-Chloroethylvinylether	16	U	10	U
Chloroform	16	U	10	U
Chloromethane	16	U	10	U
Dibromochloromethane	16	U	10	U
1,1-Dichloroethane	16	U	10	U
1,2-Dichloroethane	16	U	10	U
1,1-Dichloroethene	16	U	10	U
1,2-Dichloroethene (total)	16	U	10	U
Methylene Chloride	2	J	10	U
1,2-Dichloropropane	16	UJ	10	U
cis-1,3-Dichloropropene	16	U	10	U
trans-1,3-Dichloropropene	16	U	10	U
Ethylbenzene	16	U	10	U
2-Hexanone	16	U	10	U
4-Methyl-2-Pentanone	16	U	10	U
Styrene	16	U	10	U
1,1,2,2-Tetrachloroethane	16	U	10	U
Tetrachloroethene	16	U	10	U
Toluene	1	J	10	U
1,1,1-Trichloroethane	16	U	10	U
1,1,2-Trichloroethane	16	U	10	U
Trichloroethene	2	J	10	U
Vinyl Acetate	16	UJ	10	U
Vinyl Chloride	16	U	10	U
Xylene (total)	16	U	10	U
1,2-Dichlorobenzene	16	U		
1,3-Dichlorobenzene	16	U		
1,4-Dichlorobenzene	16	U		

Sample	B-4-6		B-5-6		B-14-8		RB-01		VBLKB8		VBLKBC		VBLKD3	
Depth														
Date Sampled	09/10/96		09/10/96		09/11/96		09/11/96							
Units	ug/Kg		ug/Kg		ug/Kg		ug/L		ug/Kg		ug/Kg		ug/L	
Volatiles Organics														
Benzene	7	U	6	U	8	U	5	U	5.0	U	5.0	U	5.0	U
Toluene	7	U	6	U	8	U	5	U	5.0	U	5.0	U	5.0	U
Ethylbenzene	7		6	U	8	U	5	U	5.0	U	5.0	U	5.0	U
Xylene (total)	7	U	6	U	1	J	5	U	5.0	U	5.0	U	5.0	U
1,2-Dichlorobenzene							5	U						
1,3-Dichlorobenzene							5	U						
1,4-Dichlorobenzene							5	U						

TABLE CC-2.0
7096-1889B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-5/6-2-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	---	---
Solids Sieved Between #4 and Sieve #10	1.13	4.08
Solids Sieved Between #10 and Sieve #40	3.17	11.46
Solids Sieved Between #40 and Sieve #80	9.29	33.59
Solids Sieved Between #80 and Sieve #200	12.60	45.55
Solids Smaller than Sieve #200	1.47	5.31
Total	27.66	99.99

18896

TABLE CC-2.1
7096-1889B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: **SB-5/6-1-6**

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.21	0.71
Solids Sieved Between #4 and Sieve #10	4.93	16.70
Solids Sieved Between #10 and Sieve #40	17.76	60.16
Solids Sieved Between #40 and Sieve #80	3.46	11.72
Solids Sieved Between #80 and Sieve #200	2.96	10.03
Solids Smaller than Sieve #200	0.20	0.68
Total	29.52	100.00

TABLE CC-2.2
7096-1889B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-A-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	---	---
Solids Sieved Between #4 and Sieve #10	1.42	5.25
Solids Sieved Between #10 and Sieve #40	8.03	29.71
Solids Sieved Between #40 and Sieve #80	4.71	17.42
Solids Sieved Between #80 and Sieve #200	11.97	44.28
Solids Smaller than Sieve #200	0.90	3.32
Total	27.03	99.98

TABLE CC-2.3
7096-1889B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-I-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.87	3.27
Solids Sieved Between #4 and Sieve #10	2.46	9.25
Solids Sieved Between #10 and Sieve #40	7.74	29.11
Solids Sieved Between #40 and Sieve #80	9.89	37.19
Solids Sieved Between #80 and Sieve #200	5.22	19.63
Solids Smaller than Sieve #200	0.41	1.54
Total	26.59	99.99

TABLE CC-2.4
7096-1889B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-F-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	---	---
Solids Sieved Between #4 and Sieve #10	1.13	4.08
Solids Sieved Between #10 and Sieve #40	3.17	11.46
Solids Sieved Between #40 and Sieve #80	9.29	33.59
Solids Sieved Between #80 and Sieve #200	12.60	45.55
Solids Smaller than Sieve #200	1.47	5.31
Total	27.66	99.99

TABLE CC-2.5
7096-1889B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-R-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.17	0.58
Solids Sieved Between #4 and Sieve #10	1.52	5.15
Solids Sieved Between #10 and Sieve #40	16.09	54.54
Solids Sieved Between #40 and Sieve #80	7.65	25.93
Solids Sieved Between #80 and Sieve #200	3.75	12.72
Solids Smaller than Sieve #200	0.32	1.08
Total	29.50	100.00

TABLE CC-2.6
7096-1889B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-K-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	3.32	9.83
Solids Sieved Between 1" and Sieve #4	3.48	10.30
Solids Sieved Between #4 and Sieve #10	2.83	8.38
Solids Sieved Between #10 and Sieve #40	11.05	32.72
Solids Sieved Between #40 and Sieve #80	8.94	26.47
Solids Sieved Between #80 and Sieve #200	3.84	11.37
Solids Smaller than Sieve #200	0.31	0.92
Total	33.77	99.99

TABLE CC-2.0
7096-1927A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-33-8-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.11	0.38
Solids Sieved Between #4 and Sieve #10	4.48	15.55
Solids Sieved Between #10 and Sieve #40	6.33	21.97
Solids Sieved Between #40 and Sieve #80	7.01	24.33
Solids Sieved Between #80 and Sieve #200	8.88	30.82
Solids Smaller than Sieve #200	2.00	6.94
Total	28.81	99.99

1927A

TABLE CC-2.0
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-1-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	7.79	28.81
Solids Sieved Between #5 and Sieve #10	6.40	23.68
Solids Sieved Between #10 and Sieve #40	7.49	27.71
Solids Sieved Between #40 and Sieve #80	2.95	10.91
Solids Sieved Between #80 and Sieve #200	2.17	8.03
Solids Smaller than Sieve #200	0.23	0.85
Total	27.03	99.99

1860B

TABLE CC-2.1
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-1-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	11.56	37.94
Solids Sieved Between #5 and Sieve #10	6.05	19.85
Solids Sieved Between #10 and Sieve #40	7.08	23.23
Solids Sieved Between #40 and Sieve #80	2.58	8.47
Solids Sieved Between #80 and Sieve #200	2.82	9.25
Solids Smaller than Sieve #200	0.38	1.25
Total	30.47	99.99

TABLE CC-2.2
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-1-8

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	16.14	16.12
Solids Sieved Between 1" and Sieve #5	29.37	29.33
Solids Sieved Between #5 and Sieve #10	12.94	12.92
Solids Sieved Between #10 and Sieve #40	15.84	15.82
Solids Sieved Between #40 and Sieve #80	8.46	8.45
Solids Sieved Between #80 and Sieve #200	14.99	14.97
Solids Smaller than Sieve #200	2.38	2.38
Total	100.12	99.99

TABLE CC-2.3
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-2-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	3.66	11.95
Solids Sieved Between 1" and Sieve #5	12.28	40.12
Solids Sieved Between #5 and Sieve #10	5.57	18.20
Solids Sieved Between #10 and Sieve #40	4.79	15.65
Solids Sieved Between #40 and Sieve #80	1.67	5.45
Solids Sieved Between #80 and Sieve #200	2.35	7.68
Solids Smaller than Sieve #200	0.29	0.95
Total	30.61	100.00

TABLE CC-2.4
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-2-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	5.69	17.58
Solids Sieved Between 1" and Sieve #5	10.26	31.70
Solids Sieved Between #5 and Sieve #10	5.91	18.26
Solids Sieved Between #10 and Sieve #40	5.08	15.70
Solids Sieved Between #40 and Sieve #80	2.27	7.01
Solids Sieved Between #80 and Sieve #200	2.37	7.32
Solids Smaller than Sieve #200	0.78	2.41
Total	32.36	99.98

TABLE CC-2.5
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-2-8

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	4.30	19.53
Solids Sieved Between 1" and Sieve #5	10.27	46.66
Solids Sieved Between #5 and Sieve #10	2.75	12.49
Solids Sieved Between #10 and Sieve #40	2.57	11.67
Solids Sieved Between #40 and Sieve #80	0.71	3.23
Solids Sieved Between #80 and Sieve #200	1.22	5.54
Solids Smaller than Sieve #200	0.19	0.86
Total	22.01	99.98

TABLE CC-2.6
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-3-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	16.71	46.71
Solids Sieved Between #5 and Sieve #10	8.96	25.04
Solids Sieved Between #10 and Sieve #40	5.69	15.91
Solids Sieved Between #40 and Sieve #80	1.82	5.08
Solids Sieved Between #80 and Sieve #200	1.50	4.19
Solids Smaller than Sieve #200	1.09	3.04
Total	35.77	99.97

TABLE CC-2.7
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-3-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	14.46	30.98
Solids Sieved Between #5 and Sieve #10	5.28	11.31
Solids Sieved Between #10 and Sieve #40	7.92	16.97
Solids Sieved Between #40 and Sieve #80	3.45	7.39
Solids Sieved Between #80 and Sieve #200	12.52	26.83
Solids Smaller than Sieve #200	3.04	6.51
Total	46.67	99.99

TABLE CC-2.8
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-3-8

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	4.49	15.08
Solids Sieved Between 1" and Sieve #5	9.80	32.91
Solids Sieved Between #5 and Sieve #10	4.89	16.42
Solids Sieved Between #10 and Sieve #40	4.52	15.18
Solids Sieved Between #40 and Sieve #80	1.77	5.94
Solids Sieved Between #80 and Sieve #200	3.61	12.12
Solids Smaller than Sieve #200	0.70	2.35
Total	29.78	100.00

TABLE CC-2.9
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-4-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	0.67	2.34
Solids Sieved Between #5 and Sieve #10	4.24	14.72
Solids Sieved Between #10 and Sieve #40	11.05	38.37
Solids Sieved Between #40 and Sieve #80	6.34	22.01
Solids Sieved Between #80 and Sieve #200	6.21	21.56
Solids Smaller than Sieve #200	0.29	1.01
Total	28.80	100.01

TABLE CC-2.10
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-5-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	---	---
Solids Sieved Between #5 and Sieve #10	4.26	14.88
Solids Sieved Between #10 and Sieve #40	13.11	45.79
Solids Sieved Between #40 and Sieve #80	7.95	27.77
Solids Sieved Between #80 and Sieve #200	3.14	10.97
Solids Smaller than Sieve #200	0.17	0.59
Total	28.63	100.00

TABLE CC-2.11
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-11-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	3.45	12.7
Solids Sieved Between #5 and Sieve #10	5.36	19.73
Solids Sieved Between #10 and Sieve #40	7.82	28.79
Solids Sieved Between #40 and Sieve #80	4.00	14.73
Solids Sieved Between #80 and Sieve #200	5.46	20.10
Solids Smaller than Sieve #200	1.07	3.94
Total	27.16	99.99

TABLE CC-2.12
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-11-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	0.11	0.39
Solids Sieved Between #5 and Sieve #10	0.48	1.72
Solids Sieved Between #10 and Sieve #40	1.82	6.54
Solids Sieved Between #40 and Sieve #80	1.98	7.11
Solids Sieved Between #80 and Sieve #200	19.65	70.58
Solids Smaller than Sieve #200	3.80	13.65
Total	27.84	99.99

TABLE CC-2.13
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-12-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	0.12	.40
Solids Sieved Between #5 and Sieve #10	4.45	14.78
Solids Sieved Between #10 and Sieve #40	8.41	27.94
Solids Sieved Between #40 and Sieve #80	9.54	31.70
Solids Sieved Between #80 and Sieve #200	6.51	21.63
Solids Smaller than Sieve #200	1.07	3.55
Total	30.10	100.00

TABLE CC-2.14
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-12-8

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	0.94	3.21
Solids Sieved Between #5 and Sieve #10	5.63	19.25
Solids Sieved Between #10 and Sieve #40	14.23	48.65
Solids Sieved Between #40 and Sieve #80	5.94	20.31
Solids Sieved Between #80 and Sieve #200	2.30	7.86
Solids Smaller than Sieve #200	0.21	0.72
Total	29.25	100.00

TABLE CC-2.15
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-13-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	0.91	4.35
Solids Sieved Between #5 and Sieve #10	3.30	15.77
Solids Sieved Between #10 and Sieve #40	6.02	28.77
Solids Sieved Between #40 and Sieve #80	5.96	28.48
Solids Sieved Between #80 and Sieve #200	4.17	19.93
Solids Smaller than Sieve #200	0.56	2.68
Total	20.92	99.98

TABLE CC-2.16
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-13-8

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	2.28	7.61
Solids Sieved Between #5 and Sieve #10	6.95	23.2
Solids Sieved Between #10 and Sieve #40	11.61	38.7
Solids Sieved Between #40 and Sieve #80	7.05	23.5
Solids Sieved Between #80 and Sieve #200	1.98	6.61
Solids Smaller than Sieve #200	0.09	0.30
Total	29.96	99.92

TABLE CC-2.17
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-14-8

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	2.26	6.91
Solids Sieved Between #5 and Sieve #10	3.78	11.56
Solids Sieved Between #10 and Sieve #40	8.38	25.62
Solids Sieved Between #40 and Sieve #80	12.35	37.76
Solids Sieved Between #80 and Sieve #200	5.57	17.03
Solids Smaller than Sieve #200	0.37	1.13
Total	32.71	100.01

TABLE CC-2.18
7096-1860B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-9-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #5	4.19	15.26
Solids Sieved Between #5 and Sieve #10	3.80	13.84
Solids Sieved Between #10 and Sieve #40	6.91	25.16
Solids Sieved Between #40 and Sieve #80	6.35	23.12
Solids Sieved Between #80 and Sieve #200	5.46	19.88
Solids Smaller than Sieve #200	0.75	2.73
Total	27.46	99.99

TABLE CC-2.0
7096-2129B
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-S3-1-3

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between #4 and Sieve #5	18.36	28.89
Solids Sieved Between #5 and #10	12.90	20.29
Solids Sieved Between #10 and Sieve #40	12.92	20.33
Solids Sieved Between #40 and Sieve #80	4.69	7.38
Solids Sieved Between #80 and Sieve #170	11.60	18.25
Solids Sieved Between #170 and #200	2.58	4.06
Solids Sieved Between #200 and #230	0.51	0.80
Solids Sieved Between #230 and #325	---	---
Solids Smaller than Sieve #325	---	---
Total	63.56	100.00

TABLE CC-2.0
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-6-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	4.43	18.46
Solids Sieved Between #4 and Sieve #10	3.68	15.53
Solids Sieved Between #10 and Sieve #40	5.66	23.58
Solids Sieved Between #40 and Sieve #80	3.22	13.42
Solids Sieved Between #80 and Sieve #200	5.81	24.21
Solids Smaller than Sieve #200	1.20	5.00
Total	24.00	100.00

1889A

TABLE CC-2.1
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-6-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.48	1.92
Solids Sieved Between #4 and Sieve #10	4.81	19.29
Solids Sieved Between #10 and Sieve #40	8.44	33.84
Solids Sieved Between #40 and Sieve #80	7.40	29.67
Solids Sieved Between #80 and Sieve #200	3.29	13.19
Solids Smaller than Sieve #200	0.52	2.08
Total	24.94	99.99

TABLE CC-2.2
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-7-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.56	2.55
Solids Sieved Between #4 and Sieve #10	2.66	12.14
Solids Sieved Between #10 and Sieve #40	4.99	22.77
Solids Sieved Between #40 and Sieve #80	4.98	22.73
Solids Sieved Between #80 and Sieve #200	7.95	36.28
Solids Smaller than Sieve #200	0.77	3.51
Total	21.91	99.98

TABLE CC-2.3
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-7-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	7.11	25.05
Solids Sieved Between #4 and Sieve #10	4.60	16.21
Solids Sieved Between #10 and Sieve #40	6.46	22.76
Solids Sieved Between #40 and Sieve #80	3.01	10.61
Solids Sieved Between #80 and Sieve #200	6.68	23.54
Solids Smaller than Sieve #200	0.52	1.83
Total	28.38	100.00

TABLE CC-2.4
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: **SB-B-4**

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.71	3.89
Solids Sieved Between #4 and Sieve #10	4.06	22.22
Solids Sieved Between #10 and Sieve #40	2.48	13.57
Solids Sieved Between #40 and Sieve #80	3.00	16.42
Solids Sieved Between #80 and Sieve #200	7.09	38.81
Solids Smaller than Sieve #200	0.93	5.09
Total	18.27	100.00

TABLE CC-2.5
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-9-8

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	1.46	5.80
Solids Sieved Between #4 and Sieve #10	4.10	16.30
Solids Sieved Between #10 and Sieve #40	9.89	38.53
Solids Sieved Between #40 and Sieve #80	7.24	28.79
Solids Sieved Between #80 and Sieve #200	2.35	9.34
Solids Smaller than Sieve #200	0.31	1.23
Total	25.15	99.99

TABLE CC-2.6
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-10-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.11	0.45
Solids Sieved Between #4 and Sieve #10	1.33	5.45
Solids Sieved Between #10 and Sieve #40	6.67	27.31
Solids Sieved Between #40 and Sieve #80	2.04	8.35
Solids Sieved Between #80 and Sieve #200	10.63	43.53
Solids Smaller than Sieve #200	3.64	14.91
Total	24.42	100.00

TABLE CC-2.7
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: B-10-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	2.66	10.66
Solids Sieved Between #4 and Sieve #10	3.91	15.67
Solids Sieved Between #10 and Sieve #40	6.28	25.17
Solids Sieved Between #40 and Sieve #80	5.50	22.04
Solids Sieved Between #80 and Sieve #200	5.65	22.64
Solids Smaller than Sieve #200	0.95	3.81
Total	24.95	99.99

TABLE CC-2.8
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-D-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.68	3.29
Solids Sieved Between #4 and Sieve #10	4.09	20.15
Solids Sieved Between #10 and Sieve #40	6.98	34.38
Solids Sieved Between #40 and Sieve #80	4.50	22.17
Solids Sieved Between #80 and Sieve #200	3.71	18.28
Solids Smaller than Sieve #200	0.34	1.67
Total	20.30	99.94

TABLE CC-2.9
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-J-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.52	2.26
Solids Sieved Between #4 and Sieve #10	1.46	6.34
Solids Sieved Between #10 and Sieve #40	3.50	15.20
Solids Sieved Between #40 and Sieve #80	2.86	12.42
Solids Sieved Between #80 and Sieve #200	12.70	55.16
Solids Smaller than Sieve #200	1.98	8.60
Total	23.02	99.98

TABLE CC-2.10
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-G-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	8.02	34.33
Solids Sieved Between #4 and Sieve #10	5.25	22.47
Solids Sieved Between #10 and Sieve #40	5.25	32.47
Solids Sieved Between #40 and Sieve #80	2.53	10.74
Solids Sieved Between #80 and Sieve #200	2.06	8.82
Solids Smaller than Sieve #200	0.25	1.07
Total	23.36	99.99

TABLE CC-2.11
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-8A-2

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	3.51	17.74
Solids Sieved Between #4 and Sieve #10	3.14	15.87
Solids Sieved Between #10 and Sieve #40	5.86	29.62
Solids Sieved Between #40 and Sieve #80	1.62	8.19
Solids Sieved Between #80 and Sieve #200	4.48	22.65
Solids Smaller than Sieve #200	1.17	5.91
Total	19.78	99.98

TABLE CC-2.12
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-8A-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	1.61	8.46
Solids Sieved Between #4 and Sieve #10	2.89	15.19
Solids Sieved Between #10 and Sieve #40	6.40	33.65
Solids Sieved Between #40 and Sieve #80	2.53	13.30
Solids Sieved Between #80 and Sieve #200	5.41	28.44
Solids Smaller than Sieve #200	0.18	0.94
Total	19.02	99.98

TABLE CC-2.13
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-S3-2-6

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.42	2.1
Solids Sieved Between #4 and Sieve #10	2.16	10.81
Solids Sieved Between #10 and Sieve #40	4.72	23.62
Solids Sieved Between #40 and Sieve #80	0.88	4.40
Solids Sieved Between #80 and Sieve #200	9.95	49.80
Solids Smaller than Sieve #200	1.85	9.26
Total	19.98	99.99

TABLE CC-2.14
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: **SB-S3-3-6**

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	1.61	7.93
Solids Sieved Between #4 and Sieve #10	1.12	5.51
Solids Sieved Between #10 and Sieve #40	6.49	31.99
Solids Sieved Between #40 and Sieve #80	1.41	6.94
Solids Sieved Between #80 and Sieve #200	7.24	35.68
Solids Smaller than Sieve #200	2.42	11.93
Total	20.29	99.98

TABLE CC-2.15
7096-1889A
TRC ENVIRONMENTAL CONSULTANTS
GRAIN SIZE

Sample Identification: SB-T-4

Sieve Size	Mass (in grams)	% of Total Mass
Solids Greater than 1" in Diameter	---	---
Solids Sieved Between 1" and Sieve #4	0.16	0.58
Solids Sieved Between #4 and Sieve #10	0.59	2.16
Solids Sieved Between #10 and Sieve #40	1.99	7.27
Solids Sieved Between #40 and Sieve #80	1.89	6.91
Solids Sieved Between #80 and Sieve #200	18.72	68.42
Solids Smaller than Sieve #200	4.01	14.65
Total	27.36	99.99

APPENDIX H

LAB DATA DELIVERABLES

(To be provided)