REPORT OF FINDINGS
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FORMER NORTHEAST ALLOY AND METALS SITE
UTICA, NEW YORK

Prepared for:

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CEC Project 94502

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1.0 INTRODUCTION

1.1 GENERAL

This Remedial Investigation/Feasibility Study (RI/FS) for the former Northeast Alloy and Metals (Northeast) Site located in Utica, New York was performed to collect data and perform evaluations to support selection of a remedial program for the Site that satisfies the requirements of the State of New York, Department of Environmental Conservation (NYSDEC). The RI/FS was performed to fulfill the requirements of Section III.D of the Consent Order (Order) which became effective January 28, 1997. The goals of the Order as outlined in Item 5 are to: (1) develop and implement an inactive hazardous waste disposal site remedial program ("Remedial Program") for the Site that shall include a RI/FS, design, and implementation of the selected alternative, and operation, maintenance, and monitoring of the selected remedial alternative; and (2) reimburse the State's administrative costs.

This RI/FS was performed in general accordance with the Remedial Investigation/Feasibility Study Work Plan dated October 3, 1996 included a Quality Assurance Project Plan (QAPP), Field Sampling Plan (FSP), and Health and Safety Plan (HASP). An additional phase (Phase II) of RI activities was performed at the request of NYSDEC to further evaluate potential environmental concerns identified during the initial RI. The scope of work for the Phase II RI was submitted to NYSDEC on July 29, 1997 and subsequently approved by NYSDEC on July 31, 1997. The RI activities that were identified in the October 3, 1996 Work Plan are referred to in this report as the Phase I RI. The additional investigations performed at the request of NYSDEC are referred to as the Phase II RI.

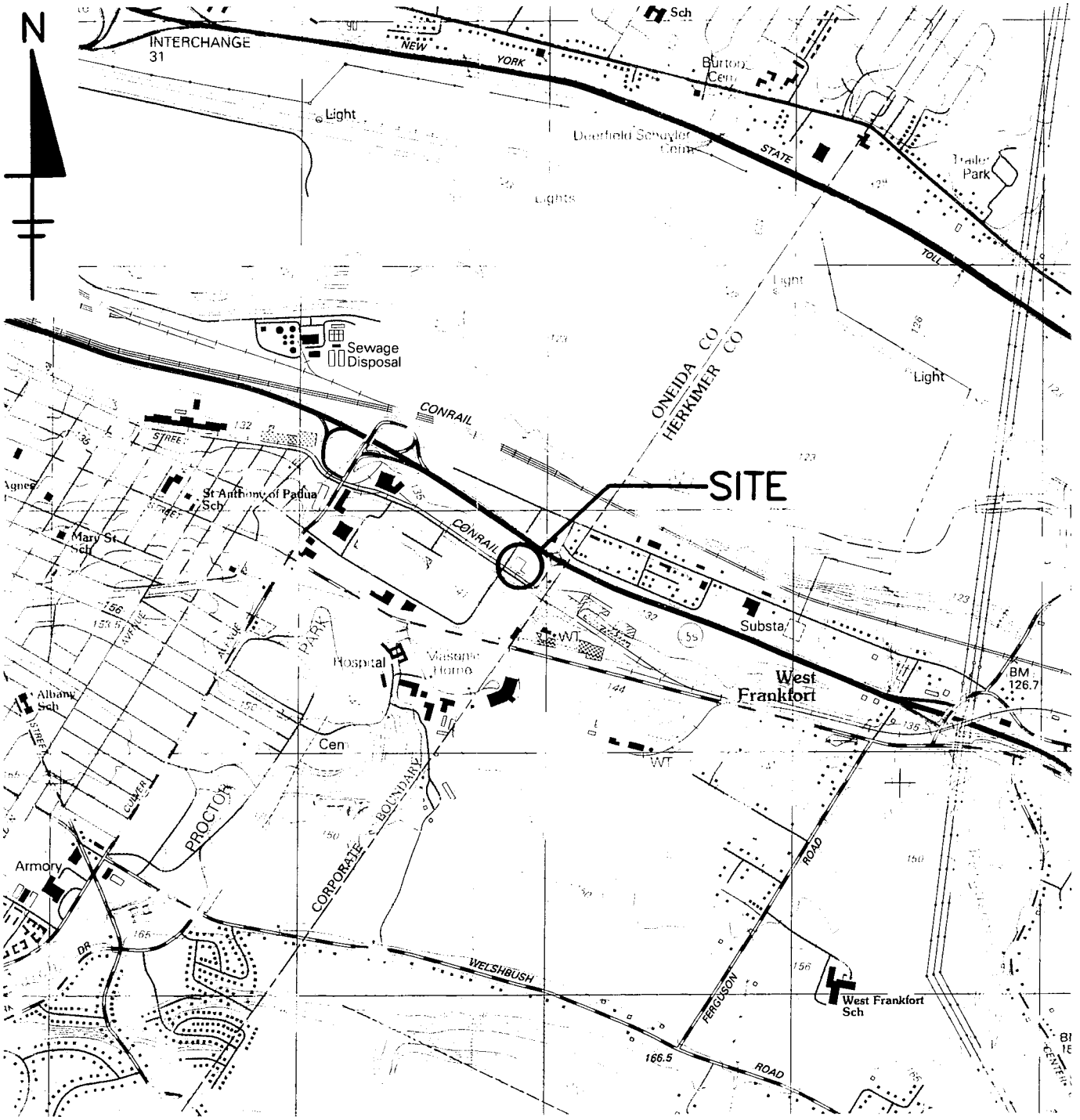
1.2 PURPOSE AND ORGANIZATION OF THIS RI/FS REPORT

The purpose of this report is to present the results of the RI/FS which was performed for the Site. This report includes the data collected from the Phase I and Phase II RIs and the results of the FS performed to evaluate remedial actions to achieve remediation goals. The report also includes a conceptual design for the proposed remedial action to address the VOC contamination near the building.

The remainder of Section 1.0 presents a description of the Site, its history, environmental setting, a summary of previous investigations, and objectives of the RI/FS. Section 2.0 presents a detailed discussion of the field investigation procedures performed to complete both phases of the RI. Section 3.0 presents results of the RI, including quality assurance sampling results, data generated, and interpretation of results, while Section 4.0 presents a discussion of the nature and extent of contamination, and contaminant fate and transport. Section 5.0 presents the FS, including an evaluation of actions for eliminating, to the maximum extent possible, human health and ecological hazardous associated with the Site. Section 6.0 presents a conceptual remedial design for the selected remedial action.

1.3 SITE DESCRIPTION AND BACKGROUND

1.3.1 Location and Layout: The Site is located between State Route 5S and Dwyer Street in Oneida County, Utica, New York (Figure 1-1). The property is located in a mixed industrial/commercial area just inside the city limit which forms the boundary between Oneida and Herkimer Counties.



REFERENCE:
U.S.G.S. 7.5' TOPOGRAPHIC MAP UTICA QUADRANGLE NEW YORK, DATED: 1983, SCALE: 1"=2000', CONTOURS AND ELEVATIONS IN METERS.

SCALE IN FEET
0 2000 4000

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SITE LOCATION
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502F11	SCALE: 1"=2000'	DATE: 4/1/97	94502	FIGURE 1-1
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The layout of the Site is shown on Figure 1-2. The facility occupies about 3.9 acres and consists of a plant building, asphalt parking area, and loading dock area which occupy the southwest portion of the property. The plant building, which has a footprint of approximately 21,000 square feet, is a one-story masonry block structure. A small, partially enclosed portion of the paved parking area, which contains the Former UST and Former Drum Storage Areas, is referred to in this report as the "Courtyard Area." Several catch basins are located in the Courtyard Area. No records are available on the layout of the subsurface drainage system or the interconnection of the catch basins, if any. Additionally, a sump that was installed in the former UST area in the Courtyard is also open and available to collect surface water runoff from the Courtyard. The remainder of the property is grass covered and undeveloped. The facility is inactive and the equipment has been removed from the building.

Two known or suspected underground storage tank (UST) areas have been identified at the Site. A fuel oil UST was previously located in the Courtyard Area and was reportedly removed in 1989. A second UST is reported to have once been located along the western wall of the building. The owner of the property reported having contracted for removal of this UST before Trading began leasing the property. However, no documentation of the UST closure is available. A solvent Drum Storage Area was reportedly located in the courtyard adjacent to the Former UST Area. No drums remain in the area. A Degreasing Area was reportedly located inside the northern portion of the building and has also been removed.

1.3.2 Ownership History: The site has a long history of industrial use. The property was reportedly used for manufacturing of electronic components in the 1950's, machine shops in the 1960's, and as a commercial laundry in the 1970's. Northeast Alloy & Metals purchased the facility in April 1986 and used the facility to recycle specialty

metals parts. In January 1989, Northeast Alloys & Metals leased the property to Trading to perform the metal recycling operations. Trading ceased operations at the facility in October 1991.

1.3.3 VOC Identification and Regulatory Response: Chlorinated solvents were initially discovered in groundwater on the property while conducting post closure release investigations following removal of the UST in the Courtyard Area. The details of these investigations are presented in Section 1.4 of this report.

During December 1994, the facility was placed on NYSDEC's list of Inactive Hazardous Waste Disposal sites, as defined in ECL 27-1301.2. The Site is listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Northeast Alloys and Metals Inc. as site number 633045. NYSDEC classified the Site as a Classification "2" site pursuant to ECL 27-1305.4.b.

In response to the listing, NYSDEC directed that an inactive hazardous waste disposal site remedial program be developed for the Site which minimizes, to the extent possible, the health and ecological risks posed by the Site. A work plan for conducting the RI/FS was submitted for NYSDEC approval on October 3, 1996, which was subsequently approved. The Order for performance of this RI/FS and subsequent remedial activities has an effective date of January 28, 1997.

1.3.4 Physiographic Setting and Topography: The Site is located in the Hudson Lowlands Physiographic province of New York State. The Site is located within the floodplain of the Mohawk River, which is located approximately 1,500 feet north of the Site at its nearest point. The Mohawk River flows to the east. The Site is generally flat-lying with an average surface elevation of 130 feet MSL. The property has a slight grade to the north which directs site drainage to the north.

1.3.5 Geology and Hydrogeology: The geology of the Mohawk River valley consists of unconsolidated sediments of glacio-fluvial and alluvial origin underlain by the Utica shale (Marshall, 1953; Fisher, et al., 1970). Boring logs from previous site investigations indicate that the Site was constructed on fill composed of brick, ash, and cinders. The thickness of fill is variable, ranging from 4 feet to 12 feet. The reports indicated that the fill is underlain by silty alluvium and/or glacial till.

Previous investigations encountered groundwater within the fill layer at shallow depths ranging from 3 to 9 feet beneath the ground surface. Water level maps developed by Empire Soils (October 1989) and Harress Pickel Consultants (January 1994) indicate that groundwater flows north or northeast across the Site at a relatively uniform gradient. Slug tests conducted at four monitoring wells screened across both the fill and natural soils estimated hydraulic conductivities ranging from 6.8×10^{-3} cm/sec at MW-1 to 2.1×10^{-4} cm/sec at MW-3 (Empire, October 1989).

1.4 SUMMARY OF PREVIOUS INVESTIGATIONS

Several previous investigations were performed to investigate contamination associated with the Former UST Area and the Courtyard Area. The results of groundwater sampling performed during the previous investigations are summarized in Table 1-1. The results of soil sampling conducted during previous investigations are summarized on Table 1-2. The soil and groundwater sampling locations from previous investigations are shown on Figures 1-3 and 1-4. Each of the investigations is summarized in the following items.

1.4.1 Hydrogeologic Investigation - Empire Soils Investigations, Inc.(Empire): In 1989, Empire conducted a post closure release assessment to evaluate potential groundwater

TABLE 1-1
SUMMARY OF GROUNDWATER SAMPLING RESULTS FROM PREVIOUS INVESTIGATIONS
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
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PARAMETER	MW1			MW2			MW3			MW4		
	8/89	1/93	12/93	8/89	1/93	12/93	8/89	1/93	12/93	8/89	1/93	12/93
1,1,1-Trichloroethane	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene	ND	ND	ND	ND	NA	ND	ND	4J	ND	ND	ND	ND
Chloroform	ND	1J	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	NA	ND	ND	13	ND	ND	ND	ND

ND - Not Detected
NA - Not Analyzed

References:

1. Empire Soil Investigations, Inc., October 1989, Hydrogeologic Investigation - Northeast Alloys & Metals

2. Empire Soil Investigations, Inc. (Huntington), Environmental Investigation, October 1992, Former Northeast Metals Site

3. ERM - Northeast, May 1993, Soil and Groundwater Investigation at the Former Northeast Alloys & Metals Site

4. Harress Pickel Consultants, December 1993, Soil Gas & Groundwater Investigation at the Former Northeast Alloys & Metal Site

TABLE 1-1 (continued)
SUMMARY OF GROUNDWATER SAMPLING RESULTS

PARAMETER	MW5			MW6			Sump			
	8/89	1/93	12/93	8/89	1/93	12/93	8/89	10/92	1/93	12/93
1,1,1-Trichloroethane	NA	1,700	55	NA	25,000	29,000	ND	57	NA	ND
1,1,2-Trichloroethane	NA	ND	ND	NA	19J	ND	ND	ND	NA	ND
1,1-Dichloroethane	NA	55	62	NA	4,400	10,000	ND	35	NA	ND
1,1-Dichloroethene	NA	17J	ND	NA	560	ND	ND	NA	NA	ND
1,2-Dichloroethane	NA	ND	ND	NA	405	ND	ND	ND	NA	ND
1,2-Dichloroethene	NA	290	340	NA	26,000	37,000	ND	780	NA	520
Chloroform	NA	ND	ND	NA	28J	ND	ND	ND	NA	ND
Trichloroethene	NA	160	830	NA	3,900	1,500J	71	51	NA	ND
Vinyl Chloride	NA	11J	ND	NA	ND	ND	ND	120	NA	ND

ND - Not Detected
NA - Not Analyzed

References:

1. Empire Soil Investigations, Inc., Hydrogeologic Investigation - Northeast Alloys & Metals, October 1989

2. Empire Soil Investigations, Inc. (Huntington), Environmental Investigation, Former Northeast Metals Site, October 1992

3. ERM - Northeast, Soil and Groundwater Investigation at the Former Northeast Alloys & Metals Site, May 1993

4. Harress Pickel Consultants, Soil Gas & Groundwater Investigation at the Former Northeast Alloys & Metal Site, December 1993

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TABLE 1-2
SUMMARY OF SOIL SAMPLING RESULTS FROM PREVIOUS INVESTIGATIONS
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

Parameter	NYSDEC Soil Cleanup Objective (1)	B-6 4-6' ERM 01/20/93	B-7 2-4' ERM 01/20/93	B-8 4-6' ERM 01/20/93	B-10 4-6' ERM 01/20/93	CB#2 Bottom ERM 01/20/93	Sump HUNT 10/20/92
1,1,1 Trichloroethane	0.8	ND	ND	0.007	0.2	0.02 J	0.066
1,1 Dichloroethane	0.2	ND	ND	0.001 J	0.077	ND	ND
1,1 Dichloroethene	0.4	ND	ND	ND	0.004 J	ND	0.001
1,2 Dichloroethane	0.1	ND	ND	ND	0.001 J	ND	0.006
1,2 Dichloroethene (Total)	0.3	ND	0.017	ND	0.51	0.65	0.3
2-Butanone	0.3	0.007 J	0.013	0.014	0.013	ND	ND
Acetone	0.2	0.021	0.052	0.068	0.037	0.045 J	ND
Carbon Disulfide	2.7	ND	ND	0.003 J	ND	ND	ND
Methylene Chloride	0.1	ND	ND	ND	0.004 J	ND	ND
Trichloroethene	0.7	0.003 J	0.002 J	0.007	0.016	0.84	0.085
Vintl Chloride	0.2	ND	ND	ND	0.007	0.019 J	0.005

Notes:

1. Recommended Soil Cleanup Standard from Division Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels, November 16, 1992.

Data Source:

ERM = ERM Northeast, Soil and Groundwater Investigation Report, May 1993.

HUNT = Huntington Consulting Engineers, Environmental Investigation Report, October 1992.

impacts from the assumed petroleum release from the Former UST in the Courtyard Area (Empire, October 1989). Four monitoring wells (MW-1 through MW-4) were installed at the locations shown on Figure 1-3 to assess the nature and extent of groundwater contamination. Groundwater samples were collected at the four wells and a sump that had been installed into the Former UST excavation. Analysis of the samples obtained from the monitoring wells indicated that groundwater in the Former UST Area had not been adversely affected by fuel storage activities. However, groundwater collected from the "Sump" was found to contain trichloroethene (TCE).

1.4.2 Environmental Investigation - Huntingdon Empire Soils Investigations Inc. (Huntingdon): In October 1992, Huntingdon conducted a follow-up investigation to evaluate whether soil or groundwater in the immediate vicinity of the Former UST Area had been impacted by solvents (Huntingdon, October 1992). Four soil borings (B-1 through B-4) were drilled at the locations shown on Figure 1-3 to collect groundwater samples. The borings were advanced to the water table (4.5 feet to 6.0 feet) and were allowed to remain open temporarily to collect groundwater samples. The borings were subsequently backfilled without installing permanent monitoring wells. Groundwater samples collected from the borings contained TCE, 1,1,1-trichloroethane (TCA), and several degradation products of these compounds at concentrations exceeding NYSDEC's water quality criteria. Additionally, water collected from the Sump contained total VOCs at a concentration of 1,055 μg/l, while the sediment from the base of the Sump had a total VOC concentration of 479μg/kg. The results of the sump sediment sampling are included on Table 1-2.

1.4.3 Soil and Groundwater Investigation - ERM Northeast (ERM): In January 1993, ERM conducted an investigation to further evaluate the extent of VOC contamination in soil and groundwater (ERM, May 1993). ERM drilled six soil borings (B-5 through B-10) at the locations shown on Figure 1-3 to further assess soil conditions in the

Courtyard Area. Two additional monitoring wells (MW-5 and MW-6) were installed just north of the Former Tank Area (Figure 1-3). Soil samples collected during borehole advancement contained low levels of VOCs but were for the most part below NYSDEC's Soil Cleanup Objectives. The results of the soils analyses are presented on Table 1-2. Elevated levels of chlorinated VOCs, including TCA, TCE, 1,1,2-trichloroethane, 1,1-dichloroethane, and 1,2-dichloroethene were detected in the groundwater at both of the newly installed monitoring wells. Additionally, vinyl chloride was detected at a concentration of 13 μg/l in well MW-3, and at an estimated concentration of 11 μg/l at well MW-5. VOCs were not detected, or were detected at only trace levels at wells MW-1, MW-3, and MW-4. MW-2 was not sampled.

1.4.4 Soil Gas and Groundwater Investigation - Harress Pickel Consultants (HPC): In January 1994, HPC conducted a soil gas and groundwater investigation to further evaluate the extent of VOCs in soil and groundwater. HPC collected soil gas samples at depths ranging from 1 to 4 feet at the 16 boring locations shown on Figure 1-4. Results of HPC's soil-gas survey are shown on Figure 1-4. Soil-gas analyses detected elevated levels of TCA in samples obtained near the Former Drum Area. Elevated levels of TCE and TCA were also detected in soil-gas samples obtained at the northern end of the building near the former location of the degreaser. The elevated levels of VOCs in soil gas samples collected near the Former Degreasing Area were interpreted to represent the potential presence of solvents in the soil and/or groundwater.

HPC also collected groundwater samples from the six existing monitoring wells (MW-1 through MW-6). The groundwater samples collected by HPC confirmed previous groundwater sampling results. Elevated levels of VOCs were detected in MW-5 and MW-6, while VOCs were below detection limits or present at only trace levels in the remaining monitoring wells.

1.5 RI/FS OBJECTIVES

The primary objective of the RI was to collect information to fill data gaps and support selection of a remedial action for the Site. During the preparation of the Work Plan, the data developed during the investigations summarized in Section 1.4 were assessed to determine whether they were valid and usable in the RI/FS process, and to develop a conceptual site model focused on the VOC contamination near the building. Although the data was determined to be incomplete, it was concluded the data were valid for use during the RI and for evaluation of potential remedial actions during the FS. The Work Plan identified the following data requirements to be addressed during the Phase I RI based on the conceptual site model and evaluations of the existing data:

- The depth of the groundwater contamination near the Former UST in the Courtyard Area.

- The presence of contaminants other than VOCs in site groundwater and soils.

- The magnitude and extent of soil and groundwater contamination present north of the Former Degreasing Area, if any.

- The potential for contamination to be migrating onto the Site from an offsite source.

- The presence of an UST along the western building wall.

- The presence of shallow soil contamination east of the building and the paved parking area.

During the Phase I RI, TCE was detected in a shallow soil sample collected near the East Gate of the facility. In addition, elevated levels of some metals were detected in monitoring well MW-2 which is located in the former scrap storage area west of the building. In order to address these potential concerns, Phase II RI activities were requested by NYSDEC to address the following data requirements.

- The extent of VOC contamination in soil and groundwater near the East Gate.

- The source of elevated metals in well MW-2 located in the former scrap storage area.

The objective of the FS was to screen remedial technologies, perform a detailed evaluation of applicable remedial alternatives, and select a remedial action that meets remedial objectives developed during the FS.

2.0 INVESTIGATION METHODS

2.1 GENERAL

The Phase I RI field activities were performed during the weeks of February 10 and February 17, 1997. Phase II RI field activities were performed during the week of August 3, 1997. All investigation activities were performed in general accordance with the Work Plan dated October 3, 1996 and Proposal for Additional RI/FS Activities dated July 29, 1997 under the direction of Civil & Environmental Consultants, Inc. (CEC), the consultant for Trading. Monitoring wells were installed by Maxim Technologies of Ballston Spa, New York. Laboratory analysis of soil and groundwater samples collected during the Phase I RI was performed by Galston Laboratories (Galston) of Syracuse, New York, which is a NYSDOH-approved laboratory. Laboratory analyses for the Phase II RI were performed by Columbia Analytical Services which is also a NYSDOH-approved laboratory. Elevations of well casings installed during Phase I of the RI were surveyed on February 21, 1997 by DeNigro Surveying, a licensed surveyor from Utica, New York. Elevations of two well casings installed during the Phase II RI were surveyed by CEC on August 9, 1997. Third party validation of all laboratory analyses and quality assurance sampling was conducted by Environmental Quality Associates Inc. (EQA) of Middletown, New York. A detailed discussion of the investigation tasks completed as part of this RI is presented in the following subsections.

2.2 SITE FENCE INSPECTION

On February 10, 1997, CEC performed an inspection of the perimeter fence. CEC's inspection confirmed the report by NYSDEC that approximately 50 to 75 feet of the fence was disconnected from the fence posts along the southern side of the Site. Fence

support posts had also been damaged by winds and were broken off at ground level. CEC was unable to repair the damaged section of the fence. In order to secure the Site, CEC installed a temporary fence. CEC has notified the property owner of the extensive damage so they can implement permanent repairs. The NYSDEC indicated that they would require the property owner to institute permanent repairs to the fence at a later date.

The inspection also found that the east gate to the property had been damaged and was locked in an open position. The gate was repaired and the gate was closed and locked. The remainder of the perimeter fence was in good condition.

2.3 UST INVESTIGATION

A limited investigation was performed to attempt to identify whether an UST is present along the western building wall. The owners reported that an UST had been removed from this area prior to 1984. During the Phase I RI, CEC conducted a reconnaissance of the ground surface and building, and performed an electromagnetic scan using a metal detector. Phase I activities were conducted in February and were impeded by snow cover. A follow up reconnaissance and electromagnetic survey were conducted on August 7, 1997 during the Phase II RI.

2.4 SHALLOW SOIL SAMPLING

The shallow soil sampling was conducted in two phases. During the Phase I RI, five shallow soil borings (S-1 through S-5) were drilled east of the building and the paved parking area at the locations shown on Figure 2-1. The soil samples from S-1, S-2, and S-3 were collected to represent background soil conditions for the Site. Soil samples from S-4 and S-5 were collected to evaluate shallow soil conditions on the eastern

portion of the property which was not previously investigated. The shallow soil borings were installed to depths of about 2 feet below the ground surface using a split-spoon sampler. A CEC geologist logged the materials encountered in the shallow borings and performed screening for VOCs using a photoionization detector (PID). The soil samples obtained from 0 to 2 feet at each boring location were submitted to Galston for laboratory analysis. The soil samples were analyzed for Target Compound List (TCL) VOCs and semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) metals, PCBs, and pesticides. Category B deliverables were developed for the laboratory testing.

During the Phase II RI, seven additional soil borings (S-6 through S-12) were installed to further investigate soil conditions near the East Gate where elevated levels of TCE were detected during the Phase I RI. The shallow soil borings were installed to depths of 10 feet below the ground surface with split spoon samples collected continuously.

Initially, a boring was installed approximately at the same location as S-4 where TCE was detected during the Phase I RI. This boring was converted to Monitoring Well MW-9. Four additional soil borings (S-6 through S-9) were installed around boring S-4 and well MW-9. The borings were located approximately 20 feet from existing boring S-4. The shallow soil borings were installed to depths of 10 feet below the ground surface with split spoon samples collected continuously.

Soil samples from MW-9 and the four perimeter borings were screened for the presence of VOCs using a PID. The sample from each boring which exhibited the highest PID reading was split with one of the splits from each boring stored on ice. The split sample from each boring was submitted to the analytical laboratory for analysis for halogenated VOCs using EPA Method 8240 with a 24-hour turn around to obtain screening level data on the extent of soil contamination in the area and to assess the

need for additional borings. No quality assurance samples were collected in conjunction with the screening level soil sampling program.

Following review of the screening level sampling results, three additional soil borings (S-10 through S-12) were installed to further delineate the extent of VOC contamination in the soils. The retained split samples from the first four borings, and selected soil samples from the second set of borings, were analyzed for TCL-VOCs in accordance with analytical methods specified in the QAPP. Boring logs are included in Appendix A.

2.5 MONITORING WELL INSTALLATION

2.5.1 Location and Purpose of Wells: As part of the Phase I RI activities, four monitoring wells (MW-7, MW-8, RW-1, and RW-2) were installed at the locations shown on Figure 2-1. Two of the wells, RW-1 and RW-2, were installed to evaluate groundwater contamination in the Courtyard Area and Former Degreasing Area, respectively, and for possible conversion to extraction wells for use in groundwater and soil remedial actions. RW-1 was installed in the vicinity of MW-6 where previous investigations had confirmed the presence of VOCs in groundwater. RW-2 was installed just north of the Former Degreasing Area where the previous soil-gas survey identified the potential for soil and groundwater contamination. Wells MW-7 and MW-8 were installed along the southern property boundary to evaluate whether groundwater contamination is flowing onto the property from the south.

During the Phase II RI, two additional wells (MW-9 and MW-10) were installed to evaluate groundwater conditions near the East Gate area where TCE was detected in soil during the Phase I RI.

2.5.2 RW-1 and RW-2 Installation: The borings for RW-1 and RW-2 were advanced using 6-1/4 inch hollow-stem augers to obtain 8-inch diameter boreholes. During borehole advancement, split-spoon samples were collected continuously to allow geologic characterization at depth. A CEC geologist visually described the materials encountered and scanned the soil samples for the presence of VOCs using a PID. Logs of the materials encountered and the PID readings are included in Appendix A. Split-spoon samples were retained by CEC for the performance of chemical analyses, as described in Section 2.7.

The boring for RW-1 encountered compacted till at a depth of 10 feet, and auger refusal at the top of bedrock at 28 feet. The boring for RW-2 encountered compacted till at a depth of 15.5 feet and auger refusal at 28 feet. The auger refusal at RW-2 was concluded to be very near the top of bedrock, but further advancement of the boring through the till was not feasible using auger methods. Based on field observations, the compacted till was considered to be a potential confining layer. Rather than install a well across a potential confining layer to top of rock, CEC elected to backfill the existing borings and install shallower wells screened to the top of the compacted till. The borings for RW-1 and RW-2 were backfilled with bentonite slurry. New borings were drilled to the top of the till using auger methods without soil sampling and were subsequently converted to monitoring wells. Approval of the well installation depth and screen intervals for RW-1 and RW-2 was obtained from NYSDEC prior to installing the wells.

The new borings for RW-1 and RW-2 were converted to monitoring wells by installing 4-inch diameter 0.010-inch slotted screen and riser. The borehole annuli were filled with Morie 00 silica well gravel to 2 feet above the top of the screen. A 2-foot hydrated bentonite seal was installed above the gravel pack at both wells. The bentonite was hydrated and cement grout tremied into the remaining annulus. RW-1 was fitted with

an adapter and 5 feet of 6-inch riser to allow extra room at the wellhead for installation of pumps and lines for downhole groundwater extraction equipment, if needed. Minor collapse of the borehole from 4 to 6 feet at RW-2 precluded installation of a 6-inch equipment housing casing at that well. Wellhead modifications will be necessary if RW-2 is to be used as an extraction well. RW-1 and RW-2 were completed by installing temporary 8-inch vaults to allow the wellheads to be readily modified at a later date to support groundwater extraction. Well construction data for RW-1 and RW-2 are included on Table 2-1, and well completion logs are included in Appendix B.

2.5.3 MW-7 and MW-8 Installation: MW-7 and MW-8 were advanced to bottom depths of 14 feet using auger methods without soil sampling to obtain a saturated water column of approximately 7 feet. Wells MW-7 and MW-8 were completed as 2-inch monitoring wells with 10 feet of wellscreen. The annulus between the well casings and the sides of the boreholes were filled in the same manner identified for RW-1 and RW-2. The wellheads were completed by installing standard flush-mount, 8-inch curb boxes slightly elevated to divert surface runoff. Well construction data for wells MW-7 and MW-8 are summarized on Table 2-1, and well completion logs are included on the boring logs in Appendix A.

2.5.4 MW-9 and MW-10 Installation: Monitoring wells MW-9 and MW-10 were installed to evaluate groundwater conditions near the East Gate where TCE was detected in shallow soil. Wells MW-9 and MW-10 were advanced to bottom depths of 17 and 20 feet, respectively, which was the depth to the top of the till layer. The wells were completed as 2-inch monitoring wells with 10 feet of wellscreen. Wells were constructed in the same manner as wells MW-7 and MW-8. Well construction data are summarized on Table 2-1 and well completion logs are included on the boring logs in Appendix A.

TABLE 2-1
SUMMARY OF WELL CONSTRUCTION DATA
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

WELL BORING	DATE INSTALLED	INSTALLER	CASING ELEV. (1) (FT)	GROUND ELEV. (1) (FT)	DEPTH			ELEVATION (1)		
					TOTAL (FT)	TOP OF SCREEN (FT)	TOP OF IN TAKE (FT)	BOTTOM (FT)	TOP OF SCREEN (FT)	TOP OF INTAKE (FT)
MW-1	22-Aug-89	ESI	137.53	135.50	19.0	4.0	3.0	116.50	131.50	132.50
MW-2	22-Aug-89	ESI	132.16	132.16	18.0	3.0	2.0	114.16	129.16	130.16
MW-3	22-Aug-89	ESI	133.01	130.50	18.0	3.0	2.0	112.50	127.50	128.50
MW-4	23-Aug-89	ESI	131.29	131.50	18.0	3.0	2.0	113.50	128.50	129.50
MW-5	19-Jan-93	ERM	131.95	132.79	21.0	4.0	3.0	111.79	128.79	129.79
MW-6	19-Jan-93	ERM	132.34	132.79	24.0	3.5	3.5	108.79	129.29	129.29
MW-7	12-Feb-97	CEC	137.52	137.70	14.0	4.0	2.0	123.70	133.70	135.70
MW-8	12-Feb-97	CEC	136.65	136.97	14.0	4.0	2.0	122.97	132.97	134.97
MW-9	07-Aug-97	CEC	133.1	133.40	17.0	7.0	5.0	116.40	126.40	128.40
MW-10	09-Aug-97	CEC	131.16	131.50	20.0	5.0	3.0	111.50	126.50	128.50
RW-1	14-Feb-97	CEC	132.51	132.51	10.0	5.0	3.0	122.51	127.51	129.51
RW-2	15-Feb-97	CEC	130.43	130.43	16.0	6.0	3.0	114.43	124.43	127.43

Note: (1) Vertical Datum taken from Utica Urban Renewal Agency East Arterial Industrial Project September, 1973.

2.5.5 Well Development and Investigation-Derived Waste: Following installation, each of the new wells were developed by bailing. Development water was discharged to the ground near MW-6 where contaminated groundwater is within a few feet of the ground surface. Drill cuttings were contained in bulk form on a plastic lined and bermed containment area for subsequent waste characterization analysis.

2.6 GROUNDWATER SAMPLING

On February 13, 14, and 15, 1997, CEC collected groundwater samples from the four wells installed during the Phase I RI (RW-1, RW-2, MW-7, and MW-8) and six existing monitoring wells installed during prior investigations (MW-1 through MW-6). These samples were analyzed for TCL-VOCs and SVOCs, TAL metals, PCBs, and pesticides. On August 8, 1997, groundwater samples were collected from wells MW-9 and MW-10 which were installed in conjunction with the Phase II RI. The samples from these wells were analyzed for TCL-VOCs only. In addition, as part of the Phase II RI activities, well MW-2 was redeveloped and resampled to evaluate whether detections of elevated metals levels during the Phase I RI were related to the turbidity of the water samples.

Prior to purging and sampling, the groundwater level in each well was measured. Field parameters, including pH, conductivity, and temperature, were measured and recorded during purging at each sampling location. Purging data were maintained for each well sampled. Purge water was discharged to the ground surface in the vicinity of MW-6. Groundwater samples were not filtered. Groundwater sampling was performed in accordance with NYSDEC procedures.

2.7 DEEP SOIL SAMPLING

Nine soil samples collected from various depths from borings RW-1 and RW-2 were analyzed to evaluate contaminant migration with depth. Soil samples were selected for laboratory analysis to obtain an estimate of how contaminant levels vary with depth. Soil samples were analyzed by Galston for TCL VOCs and SVOCs, TAL metals, PCBs, and pesticides. The soil samples were also analyzed for total organic carbon (TOC), which is a primary control on the rate of contaminant migration and effectiveness of remedial methods, as well as establishing remedial objectives for soil.

2.8 QUALITY ASSURANCE SAMPLING AND DATA VALIDATION

Quality assurance samples were collected and analyzed in accordance with the approved QAPP to evaluate field investigation practices. Quality assurance samples were collected at the following intervals:

- One trip blank for each of the two RI sampling events
- One duplicate groundwater sample for each of the two RI sampling events
- One rinsate blank using the sample bailer for each of the two RI sampling events
- One rinsate blank using the split-spoon assembly for each of the two RI sampling events
- One duplicate soil sample for the Phase II RI sampling event

EQA evaluated the QA samples in addition to performing data validation to assess whether the laboratory data met the NYSDEC Category B deliverable requirements.

2.9 AQUIFER TESTS

Slug tests were conducted at RW-1 and RW-2 to collect information on aquifer permeability. Slug tests were performed by removing a slug of water from the well and measuring well response using a pressure transducer connected to a computer processor. Data were subsequently downloaded for computer-assisted permeability calculations.

2.10 SURVEYING

Well casing elevations four wells installed during the Phase I RI were surveyed on February 21, 1997 by DeNigro Surveying. Casing elevations at the wells were tied into USGS datum using benchmarks established during a recent site survey. The elevations of the well casings for wells MW-9 and MW-10 were surveyed by CEC personnel and tied to existing datum.

3.0 FINDINGS OF RI

3.1 SUMMARY OF DATA VALIDATION RESULTS

The results of third party validation are presented in Appendix B. In general, the majority of the data met QA-specified objectives or requirements for Category B deliverables under NYSDEC Analytical Services Protocols (1991). Although many of the results are classified as "estimated" values, they are suitable for the evaluation of the type, concentration, and extent of contamination at the site. Approximately 5% of soil data and 2% of groundwater data were rejected, which is within the 90% completeness objective as established in the QAPP. Mercury data were rejected for all soil samples and TCE data rejected for three soil samples. Lead and manganese data for groundwater samples collected during the Phase I RI were also rejected. The data rejections do not restrict the performance of the RI evaluations and FS. Some of the VOC and metal data collected during the Phase I RI was considered potentially qualified due to improper documentation of sample preservation procedures at the laboratory. Since the samples were preserved by CEC personnel, and the samples were hand delivered to the laboratory by CEC personnel, CEC concludes that there is minimal potential for sample bias as a result of deviations from preservation requirements. None of the sampling data collected during the Phase II RI was rejected.

3.2 RESULTS OF UST INVESTIGATION

A reconnaissance of the area west of the plant building was initially performed on February 13, 1997 in conjunction with the Phase I RI activities. During the initial reconnaissance, approximately seven inches of snow covered on the ground surface. A metal detector scan of the suspected UST area proved to be inconclusive. The area

in which the UST was supposedly located was apparently also used to store scrap metal, which precluded obtaining meaningful readings for determining whether a tank remains in the area. However, the reconnaissance identified "Fueling Area" and "No Smoking" signs which are indicators of likely historical UST operations in that area. No fueling inlets, vent pipes or other evidence of an UST were observed.

On August 7, 1997 a follow up reconnaissance was performed in the area suspected to contain the underground storage tank. The follow up reconnaissance identified a 10 foot x 20 foot area in which asphalt had been removed and not repaved which is believed to be a former UST location. The area had not been repaved and was overgrown. No evidence of vent or fill pipes was observed. The electromagnetic scan did not encounter readings indicative of a buried storage tank.

3.3 SHALLOW SOIL CONDITIONS

3.3.1 General: Shallow soil sampling results from the Phase I and Phase II RI soil boring programs are presented in Appendix C and are summarized on Table 3-1. The table also includes Recommended Soil Cleanup Standards from NYSDEC's Division Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Standards (NYSDEC, January, 1994) and background soil sampling (S-1, S-2, and S-3) results for comparison. The potential for soil impacts from VOCs and SVOCs was evaluated by comparing site concentrations to established NYSDEC Cleanup Standards. At the request of NYSDEC, potential for impacts from metals was evaluated by comparing site concentrations to established NYSDEC Cleanup standards, site background concentrations, or eastern United States background levels from published sources. Because only three background samples

TABLE 3-1
SOIL SAMPLING RESULTS FROM SHALLOW SOIL BORINGS (4,5)
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

	SAMPLES FROM POTENTIALLY CONTAMINATED AREAS												SITE BACKGROUND AREAS			NYSDEC SOIL CLEANUP OBJECTIVE (1)	
	PHASE 1		PHASE 2														
	S - 4	S - 5	S - 6SL	S - 7SL	S - 8	S - 8 DUP	S - 8SL	S - 9SL	S - 10	S - 11	S - 12	MW-10	S - 1	S - 2	S - 3	CLEANUP	EASTERN US
	0.0-2.0	0.0-2.0	0.0-2.0	6.0 - 8.0	6.0 - 8.0	6.0 - 8.0	6.0 - 8.0	2.0 - 4.0	2.0 - 4.0	2.0 - 4.0	4.0 - 6.0	2.0 - 4.0	0.0-2.0	0.0-2.0	0.0-2.0	OBJECTIVE	BACKGROUND
VOLATILE ORGANIC COMPOUNDS (ug/kg)																	
Acetone	***1700 J***	150 J	<100	<22	<110 J	<110 J	<100	<110	<22 J	<23 J	<23 J	<21 J	***200 J***	80	***220 J***	200	NA
Benzene	<740 J	<6 J	<26	<5.6	<29	<28 J	<26	<27	2.7 J	<5.8 J	2.3 J	<5.3 J	2 J	<6	<6 J	60	NA
Chlorobenzene	<740 J	<6 J	<26	<5.6	<29	<28 J	<26	<27	<5.4 J	<5.8 J	<5.8 J	<5.3 J	4 J	<6	<6 J	1700	NA
Ethylbenzene	<740 J	<6 J	<26	<5.6	<29	<28 J	<26	<27	2.3 J	<5.8 J	1.6 J	<5.3 J	2 J	<6	<6 J	5500	NA
Methylene Chloride	***1000 J***	***220 J***	<26	<5.6	<29	<28 J	<26	<27	<5.4 J	<5.8 J	<5.8 J	<5.3 J	***140 J***	29	***120 J***	100	NA
Toluene	<740 J	11 J	<26	<5.6	<29	7.3 J	<26	<27	9.2 J	<5.8 J	8.1 J	<5.3 J	10 J	<6	13 J	1500	NA
Trichloroethene	***8200 J***	1 J	290	<5.6	***790***	***780 J***	160	420	250 J	5.8 J	6.4 J	53 J	<5 J	<6	<6 J	700	NA
Xylene(total)	<740 J	<6 J	<26	<5.6	<29	6.3 J	<26	<27	9.3 J	<5.8 J	7.1 J	<5.3 J	4 J	<6	3 J	1200	NA
Tetrachloroethene	<740 J	<6 J	<26	<5.6	<29	<28 J	<26	<27	1.3 J	<5.8 J	<5.8 J	<5.3 J	<5 J	<6	<6 J	1400	NA
Cis 1, 2 Dichloroethene	<740 J	<6 J	<26	<5.6	<29	12 J	<26	<27	<5.4 J	<5.8 J	<5.8 J	<5.3 J	<5 J	<6	<6 J	NA	NA
SEMI-VOLATILE ORGANIC COMPOUNDS (ug/kg)																	
Anthracene	<390	230 J											95 J	140 J	<380	50000	NA
Benzo (a) anthracene	130 J	***570***											***350 J***	***350 J***	<380	224 or MDL	NA
Benzo (a) pyrene	160 JN	***570***											***370***	***270 J***	<380	61 or MDL	NA
Benzo (b) fluoranthene	170 JN	520 N											340 JN	230 JN	<380	1100	NA
Benzo (g,h,i) perylene	120 JN	270 JN											210 JN	110 JN	<380	50000	NA
Benzo (k) fluoranthene	150 JN	470 N											300 JN	230 JN	<380	1100	NA
Chrysene	190 J	***630***											***430***	390	<380	400	NA
Di-n-butylphthalate	<390	<360											96 J	<360	<380	8100	NA
Fluoranthene	250 J	1200											620	860	<380	50000	NA
Indeno(1,2,3-cd) pyrene	<390	280 J											210 J	<360	<380	3200	NA
Phenanthrene	210 J	1100											490	780	<380	50000	NA
Pyrene	200 J	1100											580	730	<380	50000	NA
TOTAL METALS (mg/kg)																	
Aluminum	3500	4980											***11100***	1630	2460	5063 (2)	33000
Antimony	<1.0 J	<0.91 J											<1.5 J	<0.89 J	<0.92 J	1.1 (2)	N/A
Arsenic	2.6 J	***9 J***											***8.4 J***	2.6 J	1.5 J	7.5	3-12
Barium	25.6	99.7											124	<20.7	<12.8	300	15-600
Beryllium	<0.26	<0.44											0.66	***1.1***	<0.21	0.66 (2)	0-1.75
Cadmium	<0.26	0.95											0.77	<0.32	<0.14	1	0.1-1
Calcium	15200	9680											41600	***144000***	79700	88433 (2)	130-35000
Chromium	19.2 J	19.6 J											***54.9 J***	***32.7 J***	4.8 J	30.8 (2)	1.5-40
Cobalt	<4.1	<3.5											5.5	***33***	<2.1	30.0	2.5-60
Copper	***59.4***	***149***											***112***	13.5	6.6	44 (2)	1-50
Iron	15500	20100											***47000***	8950	6870	20940 (2)	2000-550000
Lead	65.8	93.6											65.6	15.8	5.5	350 (3)	200-500
Magnesium	1020	1060											2110	***2970***	2380	2550 (3)	100-5000
Manganese	246	662											1970	246	207	2525 (3)	50-5000
Mercury	<0.10 R	***0.22 R***											***0.14 R***	<0.06 R	<0.06 R	0.1	0.001-0.2
Nickel	14.1	9.4											17.9	***210***	6.9	78.27 (2)	0.5-25
Potassium	<478 J	<509 J											1120 J	<357	<370	25750 (3)	8500-43000
Selenium	<0.38 J	0.95 J											0.9 J	<0.33 J	<0.55 J	2	0.1-3.9
Silver	<0.24	<0.23											<0.22	<0.22	<0.23	0.22 (2)	N/A
Sodium	<147	<168											<211	<136	<157	7000 (3)	6000-8000
Thallium	<1.4	<0.68											<1.3	<0.67	<0.69	0.89 (2)	N/A
Vanadium	9	14.9											35.2	6.3	<5.5	150	1-300
Zinc	***95.5***	***87***											***59.7***	29.3	30.3	40	9-50
PESTICIDES (ug/kg)	ND	ND											ND	ND	ND	NA	NA
PCB's (ug/kg)	ND	ND											ND	ND	ND	NA	NA

Notes:

1. Recommended Soil Cleanup Standard from Division Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels, HWR-94-4046, Revised January 24, 1994. See Notes 2 and 3 for method used to estimate background concentrations for metals.
2. Site background is based on average from soil samples S-1, S-2 and S-3.
3. Background based on average value of range of concentrations encountered in the eastern United States.
4. Results of VOC and metals analyses for samples collected during Phase I of the RI are considered to be qualified because the laboratory failed to record sample temperature upon receipt.
5. Results of VOC analyses for S-4 are qualified because of inappropriate laboratory calibration technique.

Sample Result Modifiers and Denotations

J - Indicates an estimated value
N - Identifies parameters which are presumptively present at estimated concentrations.
R - Data was rejected.
NA - Not applicable
ND - None Detected
SL - Screening level sampling, no quality assurrance samples collected
BLANK - Denotes not sampled
DUP - Duplicate sample
MDL - Method Detection Limit
Italicized values exceed the soil cleanup objective

were collected, a rigorous statistical analysis could not be performed to estimate site background levels for metals. At the request of NYSDEC, site background concentrations were established based on the average concentration at background sampling locations S-1, S-2, and S-3.

3.3.2 Results of Phase I RI Soil Sampling: Shallow soil samples collected during the Phase I RI detected TCE at a concentration of 8,200 μg/kg in the soil sample collected at a depth of 0 to 2 feet at soil boring S-4, which was installed near the East Gate. The initial detection of TCE at soil boring S-4 was an estimated value due to improper calibration techniques but was considered to be an indication that a relatively high concentration of TCE is present in that area. The TCE level at S-4 exceeded the NYSDEC Soil Cleanup Objective of 700 μg/kg. The area appeared to be distinct and unrelated to the contamination at the Courtyard Area.

Acetone and methylene chloride were detected at concentrations exceeding NYSDEC standards in four of the shallow borings, including one of the background borings. Both acetone and methylene chloride are typical laboratory contaminants whose detections are not explainable by facility history. As a result, both compounds are concluded to be laboratory contaminants and will not be considered during further evaluations.

Boring S-5 was found to contain benzo (a) anthracene (570 μg/kg), benzo (a) pyrene (570 μg/kg), and chrysene (630 μg/kg) at levels exceeding the method detection limit (MDL), which represents the cleanup objective for these parameters. These parameters were also detected in site background samples at similar concentrations and, as a result, are not considered to represent degradation from site activities. Numerous other SVOCs were also detected in S-4 and S-5, and in background borings

S-1, S-2, and S-3, which indicates the presence of those SVOCs are also not related to site activities.

Arsenic, copper, and zinc exceeded NYSDEC cleanup objectives at shallow soil sample S-5, while one or more background samples contained elevated levels of aluminum, chromium, and nickel. The levels of these metals only slightly exceeded the range of site background levels detected at S-1, S-2, and S-3.

3.3.3 Results of Phase II RI Soil Sampling: Soil sampling conducted during the Phase II RI are presented on Table 3-1. Phase II soil sampling confirmed the presence of TCE in soil at several borings installed near the East Gate. One soil sample collected from a depth of 6 to 8 feet at boring S-8 was found to contain 790 μ/kg which slightly exceeded the soil cleanup objective of 700 μg/kg. This sample was collected from just above the water table horizon and probably is more indicative of contamination migration in groundwater. Soil samples from the remaining borings were not found to contain TCE at levels exceeding soil cleanup objectives.

3.3.4 Summary of Soil Sampling: In summary, the sample from 1 to 2 feet at S-4 was the only shallow soil sample that contained TCE at levels exceeding the soil cleanup objective. The TCE detected in the deeper soil sample from S-8 that slightly exceeded the remedial objective is concluded to be representative of groundwater contamination. The presence of TCE in the shallow soil at S-4 indicates that the contamination likely originated as a result of a surface spill over a limited area. The maximum area of VOC impacts is shown on Figure 3-1. Based on the sampling grid spacing of 20 feet, a groundwater depth of 8 feet, and a linear extrapolation of TCE levels at S-4 and the four nearby borings, the maximum quantity of soil containing VOCs above cleanup objectives is approximately 200 cubic yards.

TCE and several metals, including aluminum, arsenic, chromium, copper, nickel, and zinc, were detected in shallow soil at levels exceeding NYSDEC remedial objectives. The concentrations of these parameters were compared to EPA Risk Based Concentrations (RBCs) to assess whether the levels detected in soil present a direct contact human health risk. RBCs are risk-based concentrations established by EPA Region III to screen soil for potential risk to human health in both residential and industrial exposure settings (EPA Region III, October 1997).

None of the metals or VOCs that were detected in shallow soil samples at the site exceeded their respective RBCs for incidental ingestion at industrial sites. RBCs for the various parameters detected in shallow soils are as follows:

Aluminum	1,000,000 mg/kg
Arsenic	610,000 mg/kg
Chromium	10,000 mg/kg
Nickel	41,000 mg/kg
Zinc	600,000 mg/kg

No RBC has been established for copper.

3.4 GEOLOGICAL AND HYDROGEOLOGICAL INFORMATION

The borings for wells RW-1, RW-2, MW-7 and MW-8, and the previous drilling at the site, provided information on the geology at the Site which consists of predominantly

silty fill underlain by variable thicknesses of alluvium. Compact glacial till underlies the fill and, where present, the alluvium. Bedrock was encountered below the compacted fill at a depth of about 28 feet at RW-1 and is not much deeper at RW-2. Geologic sections depicting site stratigraphy are presented in Figures 3-2 and 3-3. The boring logs from this RI, and from the previous investigations, are included in Appendix A.

Geologic sections indicate that the stratigraphy of the Site is rather consistent in an east-west direction (Section A-A'). Fill and alluvium extend to a depth of 10 to 12 feet. No alluvium was observed at M-5 and RW-1, which are located in the courtyard. Section B-B' shows that the depth to the compacted till increases to the north across the Site. Fill and/or alluvium were encountered through a depth of 7 feet at well MW-1, but were found to extend through progressively greater depths at wells RW-1(9 feet), RW-2 (16 feet), and MW-3 (17 feet), which extend to the north. Bedrock was encountered at a depth of 28 feet at RW-1 and is believed to be at a similar depth at RW-2. None of the borings that were installed during previous investigations were advanced to sufficient depth to penetrate bedrock.

A description of the primary geologic units encountered at the Site is provided in the following items.

3.4.1 Fill: The fill can be divided into two distinct layers. The upper 2 to 3 feet of the fill consists of sand, gravel, ash, cinders, and brick. Below depths of 2 to 3 feet, the fill consists primarily of silt with varying amounts of sand, rock fragments, cinder and brick fragments.

3.4.2 Alluvium: Alluvium consists of gray to brown silt and clay containing trace amounts of sand, gravel, and organic debris.

3.4.3 Glacial Till: Till consists of gray to black silt with some sand and traces of clay and rock fragments. The till is compact and was identified based on a sudden increase in blow counts needed to penetrate the material. The density of the fill was found to increase with depth. Little or no evidence of saturation was evident within the till, which is common in densely compacted silty tills.

3.4.4 Bedrock: The bedrock encountered in RW-1 consisted of gray to black shale which CEC concludes is the Utica Shale.

3.5 DEEP SOIL CONDITIONS AT RW-1 AND RW-2

Soil sampling results for samples obtained form various depths at RW-1 and RW-2 are presented on Table 3-2. Laboratory test results are included in Appendix D. The soil samples from RW-1 and RW-2 were collected to:

- assess whether a source of VOCs exists in the Courtyard Area (RW-1) and Former Degreasing Area (RW-2);
- evaluate whether contaminants have migrated to depth; and
- obtain information on the percentage of organic carbon in the various flow zones where contaminants may be migrating.

TABLE 3-2
SOIL SAMPLING RESULTS FROM RW-1 AND RW-2 (4)
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

	RECOVERY WELL RW-1					RECOVERY WELL RW-2				BACKGROUND SOIL			NYSDEC SOIL CLEANUP OBJECTIVE (1)	
	RW-1	RW-1	RW-1	RW-1	RW-1	RW-2	RW-2	RW-2	RW-2	S-1	S-2	S - 3	CLEANUP	EASTERN US
	2.0-4.0	8.0-10.0	14.0-16.0	18.0-20.0	24.0-26.9	8.0-10.0	14.0-16.0	22.0-24.0	26.0-27.3	0-2.0	0-2.0	0.0-2.0	OBJECTIVE	BACKGROUND
VOLATILE ORGANIC COMPOUNDS (ug/kg)														
Acetone	130	<19	<11 J	<25 J	<11 J	<14 J	<12 J	<11 J	<11 J	200 J	80	***220 J***	200	NA
1,1-Dichloroethane	12	<6	<5 J	<5 J	<6 J	<6 J	<6 J	<5 J	<6 J	<5 J	<6	<6 J	200	NA
1,2-Dichloroethene (Total)	***190***	<6	<5 J	<5 J	<6 J	3 J	2 J	38 J	34 J	<5 J	<6	<6 J	100	NA
Methylene Chloride	<10	<15	<11 J	27 J	29 J	<11 J	<12 J	<13 J	<11 J	***140 J***	29	***120 J***	100	NA
Trichloroethene	49	<6	<5 J	<5 RJ	<6 J	27 J	<6 J	62 RJ	64 RJ	<5 J	<6	<6 J	700	NA
Vinyl Chloride	<15	<12	<11 J	<11 J	<11 J	<11 J	<12 J	<11 J	<11 J	<11 J	<11	<11 J	200	NA
SEMI-VOLATILE ORGANIC COMPOUNDS (ug/kg)														
Bis (2-ethylhexyl) phthalate	220 J	1200	640	350 J	180 J	270 J	340 J	<360	650	<360	<360	<360	50000	NA
Chrysene	<500	63 J	<370	<370	<370	<380	<390	<360	<370	***430***	390	<380	400	NA
Fluoranthene	<500	130 J	<370	<370	<370	<380	<390	<360	<370	620	860	<380	50000	NA
Phenanthrene	<500	120 J	<370	<370	<370	<380	<390	<360	<370	490	780	<380	50000	NA
Pyrene	<500	110 J	<370	<370	<370	<380	<390	<360	<370	580	730	<380	50000	NA
TOTAL METALS (mg/kg)														
Aluminum	***11400***	***7430***	***8040***	***6100***	***6000***	***6660***	***5130***	***7140***	***8800***	***11100***	1630	2460	5063 (2)	33000
Antimony	<1.3 J	<1.0 J	<1.2 J	<1.1 J	<1.4 J	<1.2 J	<1.1 J	<1.5 J	<1.7 J	<1.5 J	<0.89 J	<0.92 J	1.1 (2)	N/A
Arsenic	5 J	5.8 J	***10.2 J***	***8.5 J***	6.5 J	***8.4 J***	7.1 J	***7.9 J***	***7.7 J***	***8.4 J***	2.6 J	1.5 J	7.5	3-12
Barium	86.1	83	81.9	70.5	66.3	117	47.7	50.9	76.2	124	<20.7	<12.8	300	15-600
Beryllium	***0.8***	<0.46	0.64	<0.52	<0.53	<0.55	<0.46	0.56	***0.73***	0.66	1.1	<0.21	0.66 (2)	0-1.75
Cadmium	<0.33	<0.27	0.63	<0.48	<0.48	<0.54	<0.47	0.61	0.62	0.77	<0.32	<0.14	1	0.1-1
Calcium	4690	77900	46300	58800	60800	44600	67700	46900	37300	41600	***144000***	79700	88433 (2)	130-35000
Chromium	15.9 J	9.8 J	12.8 J	9.9 J	9.7 J	10.5 J	8.5 J	11.7 J	14 J	***54.9 J***	***32.7 J***	4.8 J	30.8 (2)	1.5-40
Cobalt	7.9	9	13.2	10	10.1	10.8	9.1	12	14.1	5.5	33	<2.1	30.0	2.5-60
Copper	23.5	28.6	35.7	30	29	36.7	28.6	34.1	41.8	***112***	13.5	6.6	44 (2)	1-50
Iron	16300	***23100***	***30500***	***24200***	***22200***	***24500***	***21000***	***28100***	33300	***47000***	8950	6870	20940 (2)	2000-550000
Lead	32.1	8.4	15	11.1	10.3	30.9	23.3	13.2	15.1	65.6	15.8	5.5	350 (3)	200-500
Magnesium	***2900***	***13000***	***9760***	***10500***	***11300***	***7140***	***11500***	***8880***	***8370***	2110	***2970***	2380	2550 (3)	100-5000
Manganese	532	1100	481	464	438	767	504	440	506	1970	246	207	2525 (3)	50-5000
Mercury	<0.16 R	<0.10 R	<0.07 R	<0.10 R	<0.11 R	0.12 R	<0.11 R	<0.06 R	<0.07 R	0.14 R	<0.06 R	<0.06 R	0.1	0.001-0.2
Nickel	14	23.4	39	26.8	28.3	28.6	24.8	30.8	37.7	17.9	***210***	6.9	78.27 (2)	0.5-25
Potassium	786 J	1010 J	2180 J	1530 J	1590 J	1680 J	1390 J	1910 J	***2590 J***	1120 J	<357	<370	25750 (3)	8500-43000
Selenium	1.5 J	0.66 J	<0.51 J	<0.33 J	0.58 J	<0.34 J	0.63 J	<0.33 J	0.76 J	0.9J	<0.33 J	<0.55 J	2	0.1-3.9
Silver	<0.30	<0.23	<0.22	<0.22	<0.22	<0.23	<0.23	<0.22	<0.22	<0.22	<0.22	<0.23	0.22 (2)	N/A
Sodium	<155	<129	<182	<172	<176	<141	<168	<173	<198	<211	<136	<157	7000 (3)	6000-8000
Thallium	<0.89	<0.70	<0.65	<0.65	<0.67	<0.68	<0.70	<0.67	<0.67	<1.3	<0.67	<0.69	0.89 (2)	N/A
Vanadium	21.5	11.8	18.5	15.6	14.6	17.1	14.5	16.3	21.1	35.2	6.3	<5.5	150	1-300
Zinc	***72.1***	***43.3***	***68.6***	***56.7***	***57***	***61.2***	***51.2***	***70.9***	***73.3***	***59.7***	29.3	30.3	40	9-50
PESTICIDES (ug/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
PCB's (ug/kg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
TOC (mg/kg)	NA	NA	26300	NA	NA	21900	17200	29100	19800	NA	NA	NA	NA	NA

Notes:
1. Recommended Soil Cleanup Standard from Division Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels, HWR-94-4046, Revised January 24, 1994. See Notes 2 and 3 for method used to estimate background concentrations for metals.
2. Site background is based on average from soil samples S-1, S-2 and S-3.
3. Background based on average value of range of concentrations encountered in the eastern United States.
4. Results of VOC and inorganics analyses are considered to be qualified because the laboratory failed to record sample temperature upon receipt for the following samples: RW-1 (2.0-4.0), RW-1 (8.0-10.0), RW-1 (18.0-20.0), RW-1 (24.0-26.9), S-1 (0.0-2.0) and S-2 (0.0-2.0).

Sample Result Modifiers and Denotations:
J - Indicates an estimated value less than the detection limit.
R - Data was rejected.
ND - None Detected
SB - Site Background
NA - Not applicable.
Italicized values exceed the soil cleanup objective.

In order to evaluate whether contaminant sources are present, the soil sampling results from RW-1 and RW-2 were compared to NYSDEC Soil Cleanup Objectives, site background concentrations (from S-1, S-2, and S-3), and eastern United States Background Levels for published sources. The sampling results were subsequently evaluated to identify vertical contamination profile trends, if present. A discussion of soil sampling results within the context of these objectives is presented below.

3.5.1 Contaminant Source: The soil sample from a depth of 2 to 4 feet at RW-1 contained 1,2-dichloroethene at a concentration of 190 μg/kg, which exceeds the NYSDEC Soil Cleanup Objective of 100 μg/kg. No VOCs or SVOCs were detected in any of the other soil samples from RW-1 or RW-2 at concentrations exceeding cleanup objectives.

Several samples from RW-1 and RW-2 contained aluminum, arsenic, beryllium, calcium, iron, magnesium, and zinc at concentrations exceeding the Soil Cleanup Objectives for the Site. The differences in metals compositional between the background samples from S-1, S-2, and S-3 which were collected form a depth of 0 to 2 feet, and samples from greater depth at RW-1 and RW-2 can probably be attributed to differences in soil character. Samples S-1, S-2, and S-3 were collected from shallow depths where soil is fill and is comprised of cinder, brick, ash and coal. The samples from RW-1 and RW-2 were from fill comprised predominantly of silt and clay, alluvium and till. The concentrations of aluminum, arsenic, beryllium, and iron in soil samples from RW-1 and RW-2 are within the normal ranges of soil in the eastern United States. Calcium and zinc levels appear to be elevated relative to normal ranges for natural soil. The elevated levels of calcium and zinc in all samples collected from both the fill and naturally occurring till suggests that the calcium and zinc is naturally occurring.

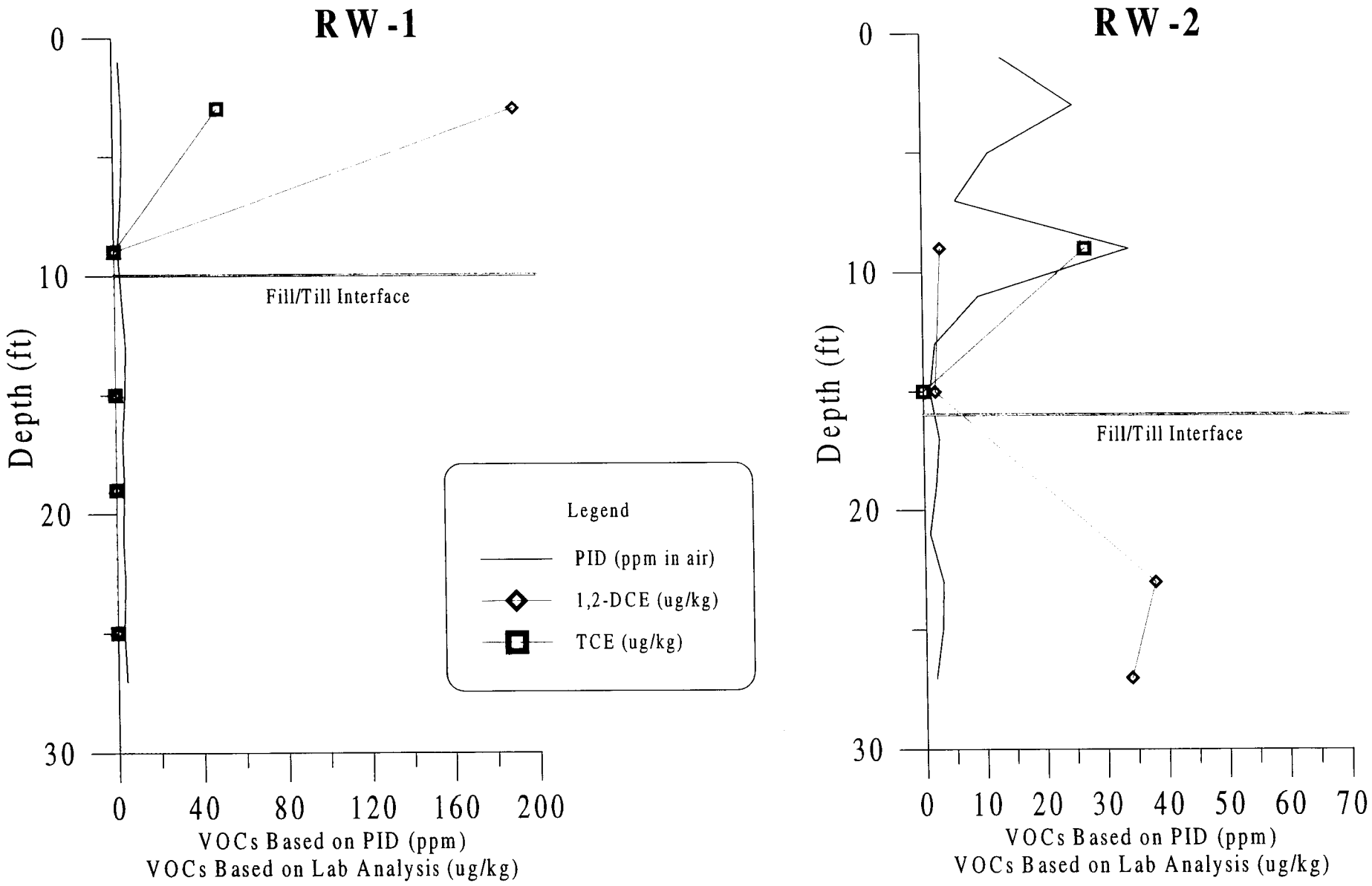
3.5.2 Vertical Migration: A trend of decreasing VOC levels with depth was apparent at RW-1. TCE (49 μg/kg), 1,1-dichloroethane (12 μg/kg), and 1,2-dichloroethene (190 μg/kg) were detected above MDLs in the sample from 2 to 4 feet in RW-1. VOCs were virtually absent from soil samples beginning at a depth of 10 feet and extending to the bottom of the boring at RW-1. PID readings were just above the detection limit of 1.0 ppm throughout the depth of the borehole.

At RW-2, a trend of decreasing VOC levels with depth was observed based on PID readings as shown on Figure 3-4. However, the laboratory test results did not confirm the PID trend. The laboratory results show an increase in 1,2-DCE levels with depth beginning at a depth of 22 feet at RW-2. Geologic logs indicate that the depth of 22 feet corresponds to a marked density increase within the till. Based on the till conditions observed during the drilling program, the highly compacted till below a depth of 22 feet at RW-2 appears to be relatively impermeable and would be an impediment to groundwater flow and vertical contaminant migration.

CEC concludes that the VOC levels detected in samples from the lower portion of the borehole at RW-2 are likely the result of cross contamination from the water column. Beginning at a depth of 22 feet, the till was exceptionally dense and resulted in auger refusal and poor sample recovery. An exceptionally large number of hammer blows was necessary to drive the spoon sampler to collect these soil samples. The presence of VOCs in these samples is likely the result of migration of contaminated water along the spoon assembly during sample acquisition.

3.5.3 Total Organic Carbon: Total organic carbon (TOC) levels ranged from 0.017% to 0.029% in soil samples collected from the fill, with an average of 0.023%. TOC values in this range generally are high for subsurface soils and would tend to retard the migration of organics in groundwater. The effect of high TOC concentration in the

Figure 3-4
Depth Profile of Sampling Results and PID Readings at RW-1 and RW-2
Remedial Investigation/Feasibility Study
Northeast Alloys and Metals
Utica, New York



aquifer material tends to slow remediation, because contaminants adsorb into the available TOC.

3.6 GROUNDWATER CONDITIONS

3.6.1 Groundwater Sampling Results: Groundwater sampling results for both the Phase I and Phase II RIs are presented in Appendix E and are summarized on Table 3-3. Table 3-3 also includes applicable groundwater quality standards. Potential groundwater impacts from volatile and semivolatile organics were evaluated by comparing sampling results to Groundwater Standards Established in NYC Title 6, Article 2, Part 703, Surface Water and Groundwater Quality Standards and Groundwater Effluent Standards. Standards for Class GA "Fresh Groundwater" were used. NYSDEC has not established Cleanup Standards for several metals. For compounds which have no standard, potential for impacts was evaluated by comparing Site concentrations to background concentrations at Wells MW-1, MW-7 and MW-8. Since only three background samples were collected, a rigorous statistical analysis could not be performed to estimate background metals concentrations. As an alternative, the actual range of background concentrations detected in the three wells was used to represent site background.

3.6.2 Background Water Quality: Water quality at upgradient wells MW-1, MW-7 and MW-8 met state groundwater standards for VOCs and semivolatile organics. Iron and sodium levels exceeded NYSDEC groundwater standards, but were considered background water quality for the Site. The sample results indicated groundwater contamination is not entering the property from the south.

TABLE 3-3
GROUNDWATER SAMPLING RESULTS (4)
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

	DOWNGRADIENT WELLS												BACKGROUND WELLS			REMEDIAL OBJECTIVE (1)	
	SCRAP STORAGE AREA			COURTYARD AREA					EAST GATE AREA			DEGREASER AREA						
	MW-2	MW-2AD	MW-2ADDUP	MW-4	MW-5	MW-6	MW-6DUP	RW-1	MW-9	MW-9DUP	MW-10	MW-3	RW-2	MW-1	MW-7	MW-8	NYSDEC (2)	SITE BG (3)
VOLATILE ORGANIC COMPOUNDS (ug/L)																		
Acetone	<10 J			<10 J	<10	<1000 J	<1000 J	6 J	<20	<20	<20	<10	<100 J	<10 J	<10 J	<10 J	50	NA
Chloromethane	2 J			<10	<10	<1000	<1000	2 J	<5	<5	<5	<10	***14 J***	2 J	<10	<10	5	NA
Carbon Disulfide	<5			<5	2 J	<500	<500	<5	<10	<10	<10	<5	<50 J	<5	<5	<5	50	NA
1,1-Dichloroethene	<5			<5	<5	***460 J***	***500***	***33***	2 J	2 J	<5	<5	***18 J***	<5	<5	<5	5	NA
1,1-Dichloroethane	<5			<5	<5	***7800***	***6800***	***450***	<5	<5	<5	<5	<50 J	<5	<5	<5	5	NA
Hexane (TIC)	ND			6 R	ND	720 R	640 R	ND				ND	ND	8 J	6 R	5 R	--	NA
1,2-Dichloroethene (Total)	<5			<5	<5	***36000***	***41000***	***2900***	***199***	***176***	<5	<5	***3200***	<5	<5	<5	5	NA
Methylene Chloride	<12 J			<5	<5 J	<540	<500	<9 J	<5	<5	<5	<5	***<50 J***	<5 J	<5 J	<5 J	5	NA
1,1,1-Trichloroethane	<5			<5	<5	***15000***	***15000***	***300***	<5	<5	<5	<5	<50 J	<5	<5	<5	5	NA
1,1,2-Trichloroethane	<5 J			<5	<5	<500	<500	2 J	<5	<5	<5	<5	<50 J	<5 J	<5	<5	--	NA
Toluene	<5			<5	<5	<500	<500	<5	<5	<5	<5	<5	<50 J	<5	<5	<5	5	NA
Trichloroethene	<5			<5	<5	***190 J***	***280 J***	***2100 J***	***47***	***41***	<5	<5	***2400 J***	<5	<5	<5	5	NA
Vinyl Chloride	<10			<10	<10	<1000	***280 J***	***160***	2 J	2 J	<5	***5 J***	***57 J***	<10	<10	<10	2	NA
SEMI-VOLATILE ORGANIC COMPOUNDS (ug/L)																		
Bis (2-ethylhexyl) phthalate	<10 J			5 J	7 J	***80 J***	4 J	12 J				<10 J	<10	<10	7 J	30 J	50	NA
Benzo(a)anthracene	<10			<10	<10	<10	<10	<10				<10	***2 J***	<10	<10	<10	0.002	NA
Chrysene	<10			<10	<10	<10	<10	<10				<10	***2 J***	<10	<10	<10	0.002	NA
4-Methylphenol	<10			<10	<10	6 J	5 JN	<10				<10	<10	<10	<10	<10	50	NA
Fluoranthene	<10			<10	<10	<10	<10	<10				<10	4 J	<10	<10	<10	50	NA
Phenanthrene	<10			<10	<10	<10	<10	<10				<10	2 J	<10	<10	<10	50	NA
Pyrene	<10			<10	<10	<10	<10	<10				<10	4 J	<10	<10	<10	50	NA
TOTAL METALS (ug/L)																		
Aluminum	***66300 J***	***30000***	***37500***	11100 J	1510 J	6300 J	6210 J	11700 J				4650 J	15300 J	10800 J	17900 J	12400 J	--	10800 - 17900
Antimony	***12.4 J***	<6.0 J	<6.0 J	<8.0	<8.0	<8.0	<8.0	<8.0				<8.0	***17.8 J***	<8.0	<8.0	<8.0	--	<8.0
Arsenic	***61.4***	***25.7 J***	***27.2 J***	***70.4***	8.9 J	8.4 J	8.0 J	12.1				11.7	24	12.5	17	12.2	25	12.2 - 17
Barium	713	426	474	279	97.1 J	271	275	362				300	318	165 J	337	197 J	1000	165 - 337
Beryllium	***4.5 J***	*5.25*	***5.73***	<1.0	<1.0	<1.0	<1.0	<1.0				<1.0	***1.1 J***	<1.0	1.0 J	<1.0	--	<1.0 - 1.0
Cadmium	7.3	6.95 J	7.48 J	1.6 J	<1.0	<1.0	<1.0	2.9 J				3.7 J	2.4 J	1.4 J	<1.0	2.6 J	10	<1.0 - 2.6
Calcium	***614000***	***220000***	***231000***	155000	182000	136000	132000	155000				143000	153000	130000	149000	183000	--	130000 - 183000
Chromium	***202 J***	***88.3 J***	***117 J***	24.1 J	<3.0 J	10.8 J	10.1 J	23.8 J				9.7 J	38 J	33 J	33.8 J	18.5 J	50	18.5 - 33.8
Cobalt	***121***	***73.9***	***78.6***	15.3 J	3.8 J	9.1 J	7.4 J	15.3 J				5.6 J	15.2 J	17.1 J	24.2 J	12.8 J	--	12.8 - 24.2
Copper	***269 J***	90.3	98.7	36.8 J	7.7 J	18.8 J	17.1 J	31 J				71.5 J	***703 J***	44 J	64.1 J	35.6 J	200	35.6 - 64.1
Iron	***230000***	***62600***	***67400***	***76800***	9540	30900	29000	27600				22200	44400	31500	44600	30400	300	30400 - 44600
Lead	***109 R***	34.6 J	31.2 J	18.8 R	7.6 R	7.6 R	6 R	13 R				***148 R***	***1740 R***	14.9 R	34.8 R	14.1 R	25	14.1 - 34.8
Magnesium	***91500 J***	***40100***	***42000***	28000 J	13700 J	22900 J	22800 J	***48500 J***				25900 J	***37200 J***	20700 J	24200 J	28100 J	--	20700 - 28100
Manganese	***9180 R***	***4290***	***4460***	2200 R	2360 R	2600 R	2460 R	642 R				925 R	1320 R	1590 R	3150 R	790 R	300	790 - 3150
Mercury	0.53	<0.3	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1				0.8	***3.9***	<0.1	<0.1	<0.1	2	<1.0
Nickel	***251***	***140***	***163***	30.4 J	7.4 J	26.1 J	23.8 J	26.2 J				17.6 J	***66.6***	37.8 J	50	29.8 J	--	29.8 - 50
Potassium	***15700***	***12600***	***15300***	4800 J	11400	5950	6150	9560				5520	6290	4540 J	12400	6360	--	4540 - 12400
Selenium	9	<5.0 J	<5.0 J	5.2	<3.0	<3.0	3.1 J	<3.0				<3.0	<3.0	5.8	6.5	<3.0	10	<3.0 - 6.5
Silver	<2.0	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0				<2.0	<2.0	<2.0	<2.0	<2.0	50	<2.0
Sodium	18100	19900	20000	38200	16900	14900	15400	***201000***				12500	17900	46400	35300	28500	20000	28500 - 46400
Thallium	<6.0	<10	<10	<6.0	<6.0	<6.0	<6.0	<6.0				<6.0	<6.0	<6.0	<6.0	<6.0	--	<6.0
Vanadium	***166***	***<50***	***60.6***	21.3 J	<3.0	12.9 J	12.4 J	24.2 J				9.6 J	***34.5 J***	22.4 J	32.6 J	28.4 J	--	22.4 - 32.6
Zinc	***510 J***	243 J	268 J	88.8 J	36.2 J	40.2 J	36.4 J	74.1 J				***306 J***	***571 J***	90.1 J	143 J	100 J	300	90.1 - 143
PESTICIDES (ug/L)	ND			ND	ND	ND	ND	ND				ND	ND	ND	ND	ND	NA	NA
PCBs (ug/L)	ND			ND	ND	ND	ND	ND				ND	ND	ND	ND	ND	NA	NA

Notes:
1. Remedial Objectives as either Groundwater Quality Standard or range of background levels.
2. Groundwater Cleanup Standard from Title 6, Article 2, Part 703 Surface Water and Groundwater Quality Standards Groundwater Effluent Standards.
   "--" denotes no standard established.
3. Range of background levels based on water quality at MW-1, MW-7 and MW-8.
4. Results of VOC and inorganics analyses for samples collected during the Phase I RI are considered to be qualified because the laboratory failed to record sample temperature and or pH upon receipt of samples.

Sample, Designations, Result Modifiers, and Denotations
AD - Denotes sample collected following redevelopment of the well.
DUP - Denotes duplicate sample.
J - Indicates an estimated value.
N - Identifies parameters which are presumptively present at estimated concentrations.
R - Data was rejected.
TIC - Tentatively identified compound
ND - None Detected
NA - Not Applicable
Italicized values exceed the Groundwater Quality Standard or the range of site background, whichever is higher.

3.6.3 Water Quality in the Courtyard Area: Existing well MW-6 was found to contain VOCs at historical levels, which exceed groundwater standards. MW-6 was also found to contain bis (2-ethylhexyl) phthalate at an estimated concentration of 80 μg/l, which would exceed the Groundwater Standard of 50 μg/l. Bis (2-ethylhexyl) phthalate was detected in the background well at an estimated concentration of 30 μg/l and is probably not related to site activities. No pesticides or PCBs were detected in either well. Metals were not elevated in either well.

The new well RW-1, which was installed within the area of known groundwater contamination near MW-6, was found to also contain VOCs and sodium at levels exceeding NYSDEC groundwater standards. The sodium is believed to have originated from salt which was placed in the vicinity of MW-5 during the drilling program to melt a sheet of ice which had formed over the well. Runoff from snow removal likely entered the borehole, resulting in the high sodium levels. RW-1 also contained magnesium at levels that were slightly elevated relative to site background.

VOC levels in existing well MW-6 were found to be considerably higher than in RW-1. The higher VOC levels at MW-6 are not considered to represent increasing levels of groundwater contamination with depth. Rather, the higher VOC levels at MW-6 are likely a function of well construction or location relative to the source. MW-6 is screened across the fill and into the less permeable till. Since the chlorinated VOCs have a higher density than water, they tend to sink through relatively permeable fill and collect in depressions at the base of the aquifer. In the case of the northeast site, the chlorinated VOCs would tend to sink and collect in the bottom of boreholes for MW-6, which penetrates into the less permeable till. Alternatively, the higher concentrations of VOCs at MW-6 may simply be a function of the distance to the source area.

No VOCs, SVOCs, PCBs or pesticides were detected at MW-4 which is located approximately 90 feet northeast and downgradient of the Courtyard Area. Well MW-4 was found to contain arsenic at a concentration of 70.4 μg/l, which slightly exceeds the NYSDEC groundwater standard of 50 μg/l. The well also contained iron levels exceeding NYSDEC groundwater standards.

3.6.4 Water Quality Near the Former Degreasing Area: VOC concentrations in excess of NYSDEC groundwater standards were detected in RW-2, which was installed near the Former Degreasing Area. The levels of VOCs encountered at RW-2 are similar to the levels detected at RW-1. RW-2 was also found to contain copper, mercury, and zinc at concentrations exceeding NYSDEC groundwater standards, and antimony, magnesium, and vanadium at levels that appeared to be slightly elevated relative to background. Lead levels at RW-2 also exceeded the NYSDEC groundwater standard, but results were rejected due to matrix effects. Several semivolatile organics were detected at RW-2, but the concentrations were below the MDLs. Semivolatiles are therefore not considered to be a concern at RW-2. No pesticides or PCBs were detected at RW-2.

Monitoring Well 3 which is located approximately 60 feet downgradient of RW-2 was found to contain vinyl chloride at a concentration of 5 μg/l, which exceeds the NYSDEC groundwater standard of 2 μg/l. The concentration of vinyl chloride at well MW-3 was an estimated value below the MDL. Zinc was detected at MW-3 (306 μg/l) at levels slightly exceeding the NYSDEC groundwater standard of 300 μg/l. Lead was detected at MW-3 at a concentration of 148 μg/l, which exceeds the cleanup standard of 50 μg/l. However, the lead result was rejected due to matrix effects. No pesticides or PCBs were detected at RW-2 or MW-3.

3.6.5 Water Quality in the Former Scrap Storage Area: No VOCs, SVOCs, PCBs or pesticides were detected at MW-2. The sample collected from MW-2 during the Phase I RI contained elevated levels of several metals including aluminum, antimony, arsenic, calcium, chromium, cobalt, iron, magnesium, nickel, potassium, vanadium and zinc. Elevated levels of lead and manganese were also detected at MW-2, but the analytical results were rejected due to elevated matrix spike recoveries.

Sampling performed during the Phase II RI after redeveloping the well generally detected lower concentrations of metals. Following redevelopment of the well, arsenic, chromium, and iron levels remained above NYSDEC Groundwater Quality Standards. Aluminum, antimony, calcium, cobalt, magnesium, and vanadium levels were elevated relative to site background.

3.6.6 Water Quality Near the East Gate: Monitoring well MW-9 was found to contain TCE at a concentration of 47 μg/l and also 1,2 DCE at a concentration of 199 μg/l. The concentrations exceed NYSDEC groundwater standards. No VOCs were detected at well MW-10 which is located 60 feet downgradient of well MW-9.

3.6.7 Spatial Distribution of Groundwater Contamination: The VOCs that were detected in groundwater at the Site consist of 1,2-dichloroethene, TCA, TCE, and 1,1-dichloroethane, 1,1 DCE and vinyl chloride. A map showing the distribution of these compounds in groundwater at the site is presented on Figure 3-5.

Arsenic, chromium, copper, mercury, iron, and zinc were detected at one or more of the monitoring wells at concentrations exceeding NYSDEC groundwater standards.

Several other metals, primarily at MW-2, appeared to be slightly elevated relative to site background. The presence of elevated levels of metals would be expected considering that various areas of the site were used to store scrap metal. Based on the sharp reduction in metal levels in MW-2 following redevelopment of the well, the majority of the metals detected are considered to be in the form of suspended solids, are relatively immobile, and are not considered a threat to groundwater quality.

Furthermore, additional well development would likely reduce metal concentrations to acceptable levels.

3.7 RESULTS OF SLUG TESTS

The results from slug tests performed on RW-1 and RW-2 are summarized on Table 3-4. Slug test calculations for RW-1 and RW-2 are included in Appendix F. Both RW-1 and RW-2 were preferentially screened in the fill/alluvium material above the till. Permeabilities at RW-1 and RW-2 were estimated at $3x10^{-4}$ cm/sec and $7x10^{-4}$ cm/sec, respectively.

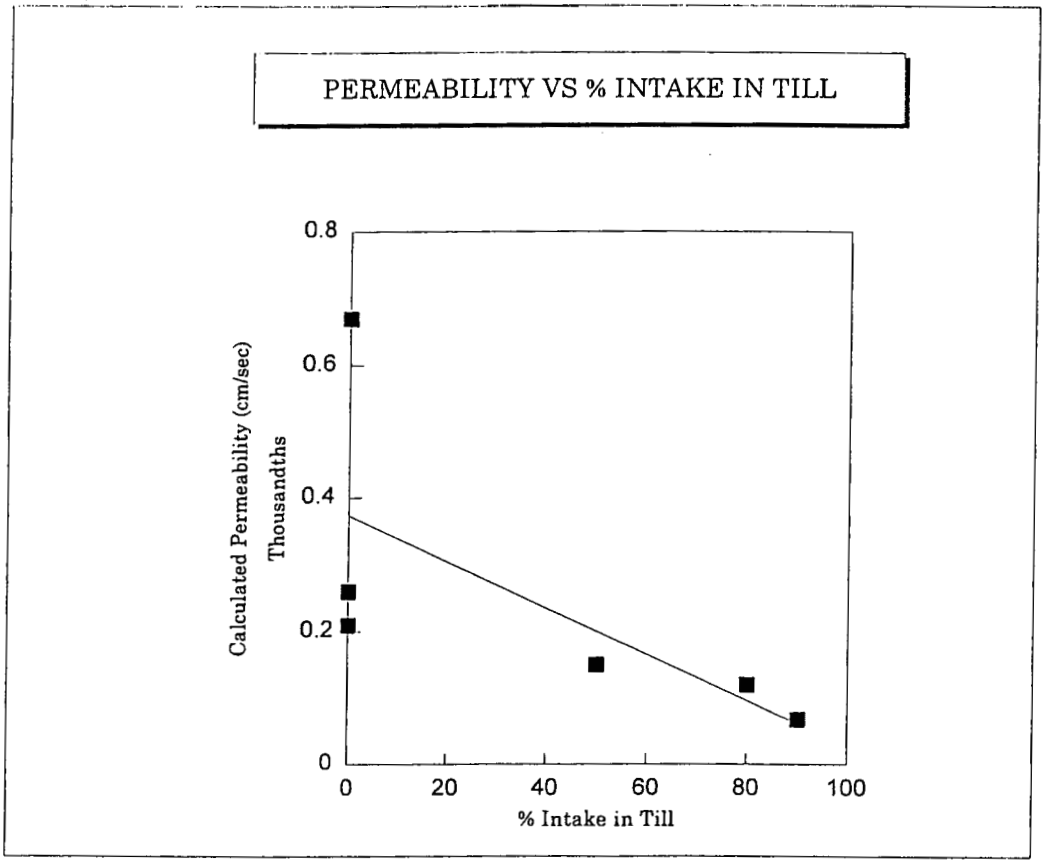
Permeability values for slug tests conducted at MW-1 through MW-4 during previous investigations are also included in Table 3-4. Notably, several of the wells MW-1, MW-2 and MW-4 are screened across the fill/alluvium and into the underlying compacted till. Previous investigators calculated permeability at these wells based on the assumption that water was entering the borehole over the entire saturated water column. Based on the contrasting character of the fill/alluvium and underlying till, hydraulic character of the fill/alluvium differs significantly from the underlying till.

A graph comparing the calculated permeability to the percent of saturated intake in the till for each well is shown on Figure 3-6. The graph shows a trend of decreasing

TABLE 3-4
SUMMARY OF PERMEABILITY DATA
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

MONITORING WELL	SCREENED INTERVAL	FIELD MEASUREMENTS (cm/s)	ADJUSTED VALUES (2) (cm/s)
MW - 1 (1)	4.0 - 19.0	6.8E-05	2.1E-04
MW - 2 (1)	3.0 - 18.0	1.2E-04	3.5E-04
MW - 3 (1)	3.0 - 18.0	2.1E-04	
MW - 4 (1)	3.0 - 18.0	1.5E-04	2.5E-04
RW - 1	5.0 - 10.0	2.6E-04	
RW - 2	6.0 - 16.0	6.7E-04	

Note:
(1) From Empire Soils Investigations Inc. October 1989, Report.
(2) Values adjusted to represent permeability of fill layer only.



—— = Best Fit Regression Line

G:\PROJECTS\94502\DWG\FIG3-5.DWG (S. METZ) - JAN 29, 1998 - 10:28:32

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TREND PLOT OF PERMEABILITY VS. % INTAKE IN THE TILL
RI/RS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: B.M.H.	ACAD FILE:	SCALE:	DATE:	PROJECT NO.	
CHKD. BY: BV		N.T.S.	4/10/97	94502	FIGURE 3-6

permeability as the percent of well intake in the till increases. The lowest permeability value was estimated at well MW-1 where approximately 90% of the saturated water column is within the till. The relationship indicates the permeability of the till is less than that of the overlying fill/alluvium, which would be expected based on geologic character of these materials. The permeability estimate at MW-1($7x10^{-5}$) is probably more representative of the till character, although it is likely overestimated because the top two feet of the saturated column at MW-1 is in the fill/alluvium which would readily yield water.

Based on the above trend, the permeabilities calculated from previous investigations at wells MW-1, MW-2 and MW-4 were corrected to provide a permeability value more representative of the fill/alluvium, which is considered the primary pathway for contaminant migration. Corrected permeabilities for wells MW-1, MW-2 and MW-4 are included on Table 3-4. Corrections assumed that all of the water entered the well from the saturated portion of the fill material.

Using the corrected data, the permeabilities at all wells in the fill/alluvium were found to be in the 10^{-4} cm/sec range. The mean permeability of the fill/alluvium was estimated at $3x10^{-4}$ cm/sec. No wells are entirely screened within the underlying till, but based on the permeability at well MW-1, the maximum possible permeability of the till is estimated to be $7x10^{-5}$ cm/sec., and is probably considerably less than this value. Calculations performed to correct the permeability estimates at wells MW-1, MW-2 and MW-4 are presented in Appendix F.

3.8 GROUNDWATER FLOW AND VELOCITY

Water level contours based on water levels measured in February, 1997 and again in August, 1997 are depicted in Figure 3-7. Water level data are summarized on Table

3-5. The contours from both dates indicate that groundwater flows northward across the Site at a relatively uniform gradient estimated to be about 0.025 ft/ft. There appears to be minor mounding of groundwater in the Courtyard Area near wells MW-5 and MW-6. The mound may be the result of water collecting in more permeable backfill in the Former UST Area.

Groundwater flow velocity calculations are presented in Appendix G. Using the mean permeability of $3x10^{-4}$ cm/sec for the fill/alluvium, an average gradient of 0.025, and an assumed effective porosity of 20%, the groundwater flow velocity through the fill/alluvium was estimated at 0.1 feet/day or 40 feet/year.

Based on the conditions observed during drilling and the permeability relationships discussed above, groundwater flow within the glacial till is concluded to be negligible.

TABLE 3-5
SUMMARY OF WATER LEVEL DATA
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

Well Number	Top of Casing Elevation*	Depth to Water 02/21/97	Water Elevation 02/21/97	Depth to Water 08/08/97	Water Elevation 08/08/97
MW - 1	137.53	8.17	129.36	8.59	128.94
MW - 2	132.16	5.23	126.93	5.67	126.49
MW - 3	133.01	7.22	125.79	8.22	124.79
MW - 4	131.29	4.04	127.25	4.85	126.44
MW - 5	131.95	3.05	128.90	3.3	128.65
MW - 6	132.34	3.60	128.74	3.85	128.49
MW - 7	137.52	7.40	130.12	8.22	129.3
MW - 8	136.65	7.80	128.85	8.47	128.18
MW - 9	133.1	DNA	DNA	8.23	124.87
MW - 10	129.87	DNA	DNA	DNA	DNA
RW - 1	132.51	DNA	DNA	DNA	DNA
RW - 2	130.43	DNA	DNA	DNA	DNA

Notes: * Vertical Datum taken from Utica Urban Renewal Agency East Arterial Industrial Project September 1973.

DNA = Data Not available

4.0 REMEDIAL INVESTIGATION SUMMARY

4.1 NATURE AND EXTENT OF VOCS IN SOIL AND GROUNDWATER

The sampling conducted during this RI and the previous investigations identified three areas of the Site which show evidence of impacts from historic use of VOCs at the facility. The RI identified elevated levels of VOCs in shallow soil and in groundwater near the east gate. The RI also identified elevated levels of various VOCs in the groundwater in both the Courtyard Area and the Former Degreasing Area. A summary of VOCs and media in which they were detected for each of the three areas is presented in Table 4-1. Conditions encountered in each of these areas are described in the following item.

4.1.1 East Gate Area: An isolated area of soil and groundwater near the East Gate is contaminated with VOCs, primarily TCE. One shallow soil sample from a depth of 0 to 2 feet in Boring S-4 was found to contain TCE at levels exceeding the NYSDEC Soil Cleanup Objective. One deeper sample, collected from just above the water table at B-8, which is located 20 feet north of S-4, also contained TCE at levels slightly exceeding the cleanup objective. The remaining three borings installed within 20 feet of S-4 detected only low levels of TCE below cleanup objectives. Soil samples collected from nearby borings indicated that TCE levels decrease sharply in all directions from boring S-4 where the highest TCE levels were detected at or just below the ground surface. Groundwater samples from well MW-9, which was installed a few feet north of S-4 where the highest levels of TCE were detected, was found to contain 1,2-DCE (199 μg/l) and TCE (47 μg/l) at levels exceeding the NYSDEC Cleanup Objectives of 5 μg/l. The extent of VOC contamination in the groundwater appears to be limited based on the absence of VOCs in downgradient well MW-10.

TABLE 4-1
SUMMARY OF ORGANIC CHEMICALS OF CONCERN
AND THEIR OCCURRENCE
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

Area of Concern	Chemicals of Concern in Soil	Chemicals of Concern in Groundwater
East Gate	TCE	1,2 dichloroethene TCE
Courtyard Area	1,2-dichloroethene	1,1-dichloroethene 1,2-dichloroethene 1,1-dichloroethane TCA TCE Vinyl Chloride
Former Degreaser Area		1,2-dichloroethene 1,1-dichloroethene TCE Vinyl Chloride

NOTES:

(1) Benzo(a)anthracene, benzo(a)pyrene and chrysene were not included in the list of COCs because they were detected in method blanks or background samples, and are not considered to be site-related.

CEC concludes that the limited area of groundwater and soil contamination near the East Gate was likely due to a small surface spill of solvents. The data collected indicated that the extent of soil contamination is very limited. Groundwater sampling results indicate the presence of low levels of VOCs in groundwater at well MW-9, which is slightly downgradient of the area of highest near-surface soil concentration of TCE. Although the levels of TCE and 1,2-DCE slightly exceed NYSDEC groundwater standards, the impacts are limited based on the absence of VOCs at well MW-10, which is located 60 feet directly downgradient of MW-9. Since VOCs in the soil near the East Gate are having only slight impacts on groundwater quality, and they do not represent a direct contact health risk, active remediation of soil and groundwater near the East Gate is concluded to be unwarranted.

4.1.2 Courtyard Area: Groundwater in the Courtyard Area was found to be impacted by chlorinated VOCs, consisting primarily of 1,1-DCE, 1,2-DCE, TCA, 1,1-DCA, TCE, and vinyl chloride, as indicated by groundwater sampling results from wells MW-6 and RW-1. The VOCs were encountered in the groundwater in the fill/alluvium which extends to a depth of approximately 10 feet. A dense, compacted till beneath the fill/alluvium prevents downward migration of contaminants to greater depth. The areal extent of the VOC contamination appears to be also limited based on the absence of VOCs in nearby wells MW-5 and MW-4. No source of VOCs appears to remain in the area based on soil sampling conducted at RW-1 and during previous investigations.

4.1.3 Former Degreaser Area: Groundwater in the Former Degreaser Area has been impacted by VOCs consisting of 1,2-DCE, 1,1-DCE, TCE, and vinyl chloride, as indicated by the sampling results from well RW-2. As in the Courtyard Area, the VOCs occur within the fill/alluvium and there is little potential for vertical migration into underlying units due to the low permeability of the underlying till. MW-3, which is located 60 feet downgradient of the Former Degreaser Area, was found to be

generally free of VOCs, with the exception of low estimated levels of vinyl chloride (5J μg/l). Based on the absence of impacts at MW-3, the extent of VOCs in the Former Degreaser Area appears to be limited.

The absence of TCA and its breakdown products at RW-2 suggests that the VOC contamination in the former Degreaser Area is from a separate source than VOCs encountered in the Courtyard Area. If the groundwater contamination in both areas was from the same source, TCA would be expected in samples from RW-2.

4.2 NATURE AND EXTENT OF INORGANICS IN SOIL AND GROUNDWATER

Shallow soil samples S-4 and S-5 were found to contain arsenic, copper, and zinc at levels slightly exceeding NYSDEC Cleanup Objectives. The metals levels detected at these locations were within the ranges for site background based on results from borings S-1, S-2, and S-3, and are not considered to represent a significant environmental concern at the site. No metals were detected at levels exceeding EPA Region III's RBCs for direct contact at industrial sites.

Groundwater samples from MW-2 in the Former Scrap Storage Area were found to contain elevated levels of various metals, including aluminum, arsenic, calcium, cobalt, chromium, iron, magnesium, manganese, nickel, potassium, and vanadium. The elevated metals levels are consistent with the historic use of this portion of the site as a scrap yard. Arsenic, chromium, iron, and manganese are the only parameters that exceeded NYSDEC groundwater standards. Arsenic and chromium were slight exceedances. Iron and manganese are not Primary Drinking Water Standards and are typically not considered a substantial threat to groundwater.

Arsenic, copper, sodium, and zinc slightly exceeded NYSDEC groundwater standards at one or more wells in the Courtyard and Former Degreaser Area. The slight exceedances were sparse among the wells and are not considered to represent substantial degradation of groundwater quality at the site. The levels of metals detected at the site are consistent with its historic use as a scrap dealer, and are not associated with processes involving generation, treatment, or processing of hazardous wastes. Metals are not considered a chemical of concern for this site.

4.3 FATE AND TRANSPORT OF VOCS

The fate and transport of chlorinated solvents in groundwater is controlled in large part by hydrogeologic conditions of the site (i.e., hydraulic barriers, permeability, porosity, and hydraulic gradient). Results of slug tests have indicated that the permeability of the fill/alluvium is considerably greater than the underlying till and that the till likely represents a significant impediment to downward migration of groundwater and VOCs (Section 3.4). Based on the hydrogeologic conditions of the Site, the primary transport mechanism for VOCs in groundwater is concluded to be the flow of groundwater through the fill/alluvium. The groundwater flow velocity in the fill/alluvium has been estimated at 40 feet/year, as indicated in Section 3.8 of this report.

The fate and transport of organic chemicals in groundwater is also affected by numerous chemical process including adsorption, volatilization, and biological degradation. Of these processes, adsorption, the process by which organic compounds in aqueous media are adsorbed onto organic matter in the saturated soil matrix, has the greatest influence on fate and transport of VOCs. Adsorption slows or retards the rate of migration of organic compounds relative to groundwater flow.

The degree to which VOC can be adsorbed by organic carbons is described by its organic carbon partition Koc, which is a chemical-specific property. The amount of adsorption that can occur in an aquifer is described by the soil/water distribution coefficient Kd, which is the product of Koc and fraction organic carbon in the aquifer matrix. Retardation increases as the Koc and or fraction organic carbon increases.

The effects of retardation on the migration of specific VOCs encountered at the Site are summarized on Table 4-2. Calculations are included in Appendix G. Considering the effects of retardation, vinyl chloride would be the most mobile of the VOCs encountered at the Site and would migrate at a rate of approximately 9 feet per year. Migration rates for the remaining VOCs were estimated to range from 2 to 6 feet per year.

Dilution from direct infiltration of precipitation may significantly influence the concentration of VOCs with no change in overall contaminant mass. Effects of dilution are more pronounced as the ratio of infiltration to groundwater velocity increases and the aquifer thickness decreases. A dilution factor was approximated for contaminants migrating to the property boundary. Using an average infiltration rate of 4.5 inches/year and a groundwater velocity of 40 ft/year, a formation porosity of 20% and an aquifer thickness of 10 feet, a dilution factor of 36% would be achieved at a distance of 120 feet from the source area, which is the property line. Dilution calculations are presented in Appendix G.

Biodegradation may also play a role in the fate of chlorinated solvents. Studies have shown that chlorinated solvents can be biodegraded in an anaerobic environment by dehydrohalogenation and reductive dehalogenation, resulting in the formation of other halogenated species, which in some cases may be more toxic than the parent material.

TABLE 4-2
EFFECTS OF RETARDATION ON MOBILIITY OF VOCS IN GROUNDWATER
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

Chemical of Concern (COC)	Koc (1) (ml/g)	Kd (2) (ml/g)	Rf (3)	V' (4) (ft/day)	V' (ft/year)
1,1-Dichloroethene	65	1.30	11.1	0.01	3
1,1-Dichloroethane	53.4	1.07	9.3	0.01	4
1,2-Dichloroethene (Total)	35.5	0.71	6.5	0.02	6
1,1,1-Trichloroethane	135	2.70	21.9	0.00	2
Trichloroethene	94.3	1.89	15.6	0.01	2
Vinyl Chloride	18.6	0.37	3.9	0.03	9

Notes:

1. Koc values from Soil Screening Guidance: Technical Background Document, USEPA, May 1996.
2. Distribution Coefficient Kd is calcualted as Koc * fraction organic carbon (FOC). Average FOC from sampling results was 0.02.
3. Retardation Factor calculated based on Rf=1+(Kd *p/n) where p = soil density (assumed 1.55 g/cc) and n=porosity (assumed 20%).
4. Migration velocity in groundwater (V') = V/Rf. V is groundwater flow velocity estimated from site data (0.1 ft/day).

The process of dehalogenation is reported to occur when oxidation/reduction potential is less than 0.35 volts.

An anaerobic breakdown sequence for chlorinated ethenes and ethanes is presented in Table 4-3. The presence of both parental compounds (TCA and TCE) and their respective breakdown products are present in the Courtyard Area, while TCE and its breakdown products are present near the former Degreaser Area. The ratio of TCE to its breakdown products indicates the release of TCE occurred sometime in the past in the range of at least seven years ago. No meaningful conclusions on the timing of the TCA release can be drawn from the limited TCA and breakdown product data because the ratio of TCA to 1,1-dichloroethane has remained relatively constant.

4.4 CONTAMINANT TRANSPORT MODELING

Screening level contaminant transport modeling was performed to evaluate overall migration potential of VOCs in the Court Yard and former degreasing areas using methods developed by Domenico & Robbins (1985). Modeling input and results are presented in Appendix H and are summarized on Table 4-4. Results of screening level modeling indicate that the potential for migration of VOCs in groundwater at the site is limited. The model predicted that the property line concentrations of the majority of the VOCs will remain below groundwater standards for 20 or more years. Vinyl chloride and 1,2-dichloroethene, which are the most mobile of the VOCs encountered at the site, could exceed groundwater cleanup standards at the property within a 20 year timeframe.

Although the potential vinyl chloride and 1,2-dichloroethene levels at the property line could raise concerns, the modeling was conservative because it did not evaluate the effects of dilution. Considering the slow rate of contaminant migration, it is likely that

TABLE 4-3
ANAEROBIC BREAKDOWN SEQUENCE FOR ETHENES AND ETHANES
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

CHLORINATED ETHENES

Tetrachloroethene (1)

Trichlorethene (1)

cis-1,2-Dichloroethene (2)
trans-1,2-Dichloroethene (2)
1,1-Dichloroethene (1)

Vinyl Chloride (2)

CHLORINATED ETHANES

1,1,1-Trichloroethane (2)

1,1-Dichloroethane (1)

Chloroethane (2)

Notes: (1) Substantial degradation
(2) Slow degradation

TABLE 4-4
SUMMARY OF CONTAMINANT TRANSPORT MODELING RESULTS
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

	Assumed Concentration of Source Area (1)	Groundwater Standard (ug/l) (2)	Concentration at Property Boundary (ug/l) 1 Year	20 Years	200 Years
Trichloroethene	2500	5	0.0	3.5	9.9
1,1-Dichloroethene	33	5	0.0	1.1	1.1
1,1,1-Trichloroethane	300	5	0.0	0.6	1.8
1,1-Dichloroethane	450	5	0.0	3.0	8.0
1,2-Dichloroethene	3200	5	0.0	17.0	47.0
Vinyl Chloride	160	2	0.0	17.0	17.0

Notes: 1. Source area concentration based on highest concentration at RW-1 and RW-2.
2. Groundwater standard from NYSDEC.

dilution effects would further diminish the levels of VOCs that could reach the property line by approximately 36%.

Assumptions for the contaminant transport modeling included the following. The contaminant source was assumed to be 20-feet wide and 10-feet deep. The source concentration was taken as the highest concentration encountered at wells RW-1 and RW-2. Modeling conservatively assumed that no dilution or biodegradation are occurring. The effects of retardation were considered. Longitudinal dispersivity was assumed to be 12 feet, which is one tenth the distance that contaminants would need to travel to reach the property line. Using a D_L of one-tenth the length of the plume in the primary flow direction has been shown to be valid for distances less than 1,000 feet (Walton, 1985). Transverse dispersivity D_T was conservatively estimated at one tenth the D_L.

5.0 FEASIBILITY STUDY

5.1 OVERVIEW OF FEASIBILITY STUDY

This FS was performed in accordance with NYSDEC's TAGM for the Selection Of Remedial Actions At Inactive Hazardous Waste Sites (HWR-90-4030) and the Guidance For Conducting Remedial Investigations and Feasibility Studies Under CERCLA prepared by USEPA. This FS was developed to address the VOC-contaminated groundwater near the Courtyard Area and the Former Degreasing Areas. The groundwater and soil contamination near the East Gate was not addressed by this FS because active remediation was concluded to not be appropriate in that area as discussed in Section 4.1.1 of this report.

The FS process used the following steps:

- Identification of Standards, Criteria, and Guidelines
- Development of Remedial Action Objectives
- Technology Screening and Alternative Development
- Detailed Analysis of Alternatives
- Comparative Analysis of Alternatives
- Identification of a Recommended Alternative (pending discussions with NYSDEC)

The FS was streamlined by eliminating the alternative screening step. This was done because there were limited options to address the concerns identified during the RI and because the groundwater contamination is not a complex problem and is limited in extent.

5.2 IDENTIFICATION OF STANDARDS, CRITERIA, AND GUIDELINES AND REMEDIAL ACTION OBJECTIVES

5.2.1 Standards, Criteria, and Guidelines (SCGs): SCGs are used to determine the appropriate extent of site cleanup, to scope and formulate remedial action alternatives, and to govern the implementation and operation of selected actions. SCGs are similar to the Applicable or Relevant and Appropriate Requirements (ARARs) used for CERCLA sites and identified in EPA's guidance document. A SCG may be either "applicable" or "relevant and appropriate" to a site-specific remedial action. "Applicable" SCGs refer to those state and federal requirements that would be legally applicable. "Relevant and appropriate" SCGs are state and federal standards, criteria, or limitations that are not legally applicable to the site, yet they address problems sufficiently similar to those found on site. During the FS process, relevant and appropriate requirements are intended to have the same weight and consideration as applicable requirements.

5.2.2 Types of SCGs: There are three types of SCGs that are considered during an FS. They include: chemical-specific; location-specific; and action-specific SCGs. Those SCGs for the Site are described in the following items.

Chemical-Specific: Chemical-specific requirements set health or risk-based concentration limits or ranges in various environmental media for specific substances. These requirements provide protective site cleanup levels or a basis for calculating cleanup levels for the COCs in the designated media. Chemical-specific SCGs are also used to indicate an acceptable level of discharge to determine treatment and disposal requirements that may occur in a remedial activity, and to assess the effectiveness of the remedial alternative. If a chemical has more than one such requirement, compliance with the more stringent SCG

should be performed. Chemical-specific SCGs for this Site include: New York State Article 2 Classification and Standards of Quality and Purity; The Safe Drinking Water Act; Maximum Contaminant Level Goals; and EPA Health Advisories.

Location-Specific: Location-specific requirements set restrictions on the types of remedial activities that can be performed based on site-specific characteristics or location. Alternative remedial actions may be restricted or precluded based on proximity to wetlands or floodplains, or to manmade features such as existing landfills, disposal areas, and local historic buildings. These SCGs provide a basis for assessing restrictions during the formulation and evaluation of potential site-specific remedies. The only location-specific SCGs for this Site would be the possible interference with remedial activities by the building.

Action-Specific: Action-specific requirements are triggered by the particular remedial activities that are selected to accomplish the cleanup. After remedial alternatives are developed, action-specific SCGs that specify performance levels, actions, or technologies, as well as specific levels for managing and treating residual chemicals, will provide a basis for assessing the feasibility and effectiveness of the remedies. These action-specific SCGs may include, for example, hazardous waste transportation and handling requirements, air emission and water discharge standards, and the Resource Conservation and Recovery Act (RCRA) and Toxic Substance Control Act (TSCA) landfilling and treatment requirements. Action-specific SCGs for the Site include: City of Utica POTW Pretreatment Limits; Clean Water Act; New York Air Pollution Control Regulations; and The Clean Air Act.

5.2.3 Remedial Action Objectives: The requirements for remedial action objectives (RAOs) are established in the NCP and in the guidance published by EPA and indicate RAOs are goals for protecting human health and the environment. The NCP (40 CFR 300.430(e)(2)(i) requires that EPA *"establish remedial action objectives specifying contaminants and media of concern, potential exposure pathways, and remediation goals."* This section also states *"final remediation goals will be determined when the remedy is selected. Remediation goals shall establish acceptable exposure levels that are protective of human health and the environment..."* NYSDEC has identified the following specific remedial action objectives for the site:

1. Restore groundwater quality conditions to pre-release conditions.
2. Prevent contaminated groundwater from migrating offsite.
3. Restore the site to unrestricted use.
4. Eliminate the potential for direct human or animal contact with contaminated soils on the site.
5. Prevent, to the extent possible, migration of contaminants in site soil to groundwater.

The RAO presented herein is based on aquifer specific goals for protecting human health and the environment from VOCs in the onsite soil and groundwater in the Courtyard Area and Former Degreaser Area. In accordance with 40 CFR 300.430, the following items present the required RAO information.

- Contaminants of Concern (COCs): The COCs for the onsite groundwater identified by the RI include 1,1-dichloroethene, 1,2-dichloroethene, 1,1-dichloroethane, TCA, TCE, and vinyl chloride.

- Exposure Pathway: The exposure pathway of concern for the COCs present in the onsite groundwater is ingestion, inhalation or dermal contact resulting from future use of the groundwater. Currently, there are no users of the contaminated groundwater.

- Objective: The RAO for the onsite groundwater is to prevent exposure to the COCs above their NYSDEC Groundwater Standards.

5.3 TECHNOLOGY SCREENING AND ALTERNATIVE DEVELOPMENT

5.3.1 Overview of Technology Screening and Alternative Development: The objective of the technology screening is to identify potentially applicable remedial technologies for addressing contamination in the groundwater at the Site. Each potentially applicable remedial technology identified is screened based on its effectiveness in meeting RAOs and its ability to be implemented at the site. The remedial technologies that remain following this screening will be used to assemble remedial action alternatives.

5.3.2 Response Actions: This section identifies groups of technologies (Response Actions) that may potentially apply to the remediation of contaminated groundwater at the Site. The response actions for groundwater can be grouped into one of the five general categories that follow:

- No-Action/Natural Attenuation with Monitoring: The no-action response for groundwater contains no engineered remedial technologies. Responses as part of No Action can be either administrative or institutional and include actions such as deed restrictions on future groundwater use and groundwater monitoring. There are no current human health risks associated with the

groundwater since the contaminated zone is not currently being used as a drinking water supply. However, potential future risks to human health do exist if the contaminated groundwater is used as a drinking water source.

- Containment: Subsurface containment barriers constructed of low permeability material have been used on many sites to control groundwater movement. Vertical barriers isolate groundwater by restricting movement across the barrier, and to aid in attaining site response objectives.

- Removal of Contaminated Materials: Saturated and unsaturated soil and fill could be excavated for treatment and/or disposal. Contaminated groundwater present within the soil and fill materials would be addressed concurrently with the excavation of those materials. Solid and water from removal would need to be addressed further by treatment and/or disposal response actions.

- Collection/Extraction: Extraction wells and trench drains may be used to control groundwater movement or intercept contaminated groundwater at the site for collection and treatment. Recharge trenches and wells may be used to reintroduce treated water into the groundwater system for disposal or to control migration of contaminated groundwater during the extraction process.

- Treatment: Groundwater at the site is contaminated with VOCs. A number of *ex-situ* technologies can be used to remove VOCs from groundwater, including air stripping, carbon adsorption, biological treatment, ultraviolet (UV)/oxidation, and wet air oxidation. *In-situ* treatment such as air sparging and biological treatment may also be performed to remove VOCs from groundwater. Additionally, VOCs in the fill or soil may be removed in place by soil vapor

extraction or *ex-situ* by methods such as thermal desorption, soil vapor extraction, or incineration.

- Disposal: Several disposal options are potentially applicable to discharges resulting from site remediation actions. Untreated groundwater could be transported to a permitted commercial facility for treatment. If the treatment facility were relatively close to the Site, the untreated water could be pumped; otherwise, the water could be hauled in tanker trucks. Treated water could be discharged to the sanitary sewer system servicing the property.

5.3.3 Remedial Technologies Screening Criteria: Technologies were screened by evaluating their effectiveness, implementability, and cost, as specified in EPA's guidance document. This process evaluates major effects of the technologies and its purpose is to identify less effective or less reliable technologies and eliminate them from further consideration in assembling the remedial alternatives identified in Section 5.3.5.

Effectiveness screening criteria that were used included the reliability in meeting chemical-specific SCGs required to achieve the RAO, the degree of permanent reduction in toxicity, mobility or volume (TMV) achieved by the treatment and long-term risks associated with treatment residuals or containment systems. Finally, the risks to the public, workers, or the environment during implementation was considered.

Implementability screening criteria that were used included the site characteristics limiting the construction or effective functioning of the technology, and the waste or media characteristics that limit the use or effective functioning of the technology. Additionally, the availability of equipment needed to implement the technology and

the capacity of offsite treatment or disposal facilities needed to remediate the site were considered.

Cost evaluation screening criteria used was the relative magnitude of capital and operation and maintenance (O&M) costs when comparing process options within a technology type.

5.3.4 Results of Screening of Technologies: Through the screening process described above, the remediation technologies identified in Table 5-1 were evaluated based on effectiveness, implementability, and cost. Table 5-2 presents the results of the screening process including effectiveness, implementability, and cost evaluations. The process options selected for use in developing alternatives are presented on Table 5-3. Some process options were retained only as support technologies.

5.3.5 Development of Remedial Action Alternatives: Remedial alternatives were developed using the remedial technologies that passed the technology screening. The following alternatives were assembled to address contamination in the onsite groundwater and present a range of actions that could be implemented. The alternatives are described in more detail in Section 5.4.

- Alternative 1 - No Action with Monitoring and Deed Restriction: Contaminants in the onsite groundwater would be allowed to naturally attenuate with monitoring to ensure that contaminants are not migrating beyond the property boundary. Additionally, a deed restriction would be placed to prevent installation of onsite wells and the use of onsite groundwater. The NCP requires this alternative for comparison to other alternatives.

TABLE 5-1
IDENTIFICATION OF POTENTIAL GROUNDWATER REMEDIATION TECHNOLOGIES
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS & METALS SITE
UTICA, NEW YORK

General Response Actions	Remedial Technology Types	Process Options
No Action	Minimal/No Action Options	Deed Restrictions, Groundwater Monitoring
Containment	Vertical Barriers	Slurry Walls, Sheet Piles
Removal of Contaminated Materials	Excavation (Solids)	Excavation Equipment
Collection/Extraction	Groundwater Extraction	Extraction Wells, Trench Drains
Treatment	Physical Treatment (Water)	*Ex-Situ* Carbon Adsorption *Ex-Situ* Air Stripping *In-Situ* Air Sparging/Soil Vapor Extraction
	Biological Treatment (Water)	*In-Situ* Biological Degradation
	Chemical Treatment (Water)	*Ex-Situ* UV/Oxidation
	Physical Treatment (Solids)	*In-Situ* or *Ex-Situ* Soil Vapor Extraction
	Thermal Treatment (Water)	*Ex-Situ* Wet Air Oxidation
	Thermal Treatment (Solids)	Desorption or Incineration
Disposal	Offsite Discharge (Water)	Discharge to POTW, Haul to Treatment Facility
	Onsite Discharge (Water)	Discharge to Surface Water, Injection Wells
	Offsite Disposal (Solids)	Haul to Landfill

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TABLE 5-2
INITIAL SCREENING OF POTENTIAL GROUNDWATER REMEDIATION TECHNOLOGIES
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS & METALS SITE
UTICA, NEW YORK

Response Action or Technology Type: Process Option(s)	Description	Effectiveness	Implementability	Cost	Status/Screening Comments
NO ACTION	Groundwater is not remediated. Exposure routes and potential health and environmental risks not addressed by remedial activity.	- Potential risk of future ingestion	--	None	Maintained for further consideration, as required by National Contingency Plan (NCP), as amended.
MINIMAL/NO ACTION Deed Restrictions	Deeds for property within contaminated areas would include permanent restrictions on the use of groundwater and well drilling.	- Does not reduce contamination - Protective by reducing likelihood of ingestion of contaminated groundwater. - Reliability is dependent upon implementation and enforcement in the future.	- Easily implemented because only one property is involved	Low Cost	Maintained for further consideration
MINIMAL/NO ACTION Groundwater Monitoring	Perform water quality analysis to monitor natural attenuation of groundwater.	- Very effective for assessing attenuation of groundwater contamination. - Mandated by regulation to monitor effectiveness of other actions.	- Groundwater monitoring wells are easily sampled. Wells are presently existing onsite.	Low Capital, Low O&M	Maintained for further consideration.
CONTAINMENT Vertical Barriers: Slurry Wall, Sheet Piling	Technology consists of construction of a barrier of low permeability to minimize groundwater migration above a pre-existing confining layer. A capping system may be needed to control infiltration.	- Reduces mobility but does not affect volume or toxicity of wastes. - Effectiveness in retaining or diverting groundwater around contaminated zones must be evaluated by monitoring. - Bottom of barrier should intersect a natural zone of low permeability to be most effective.	- Would need to be constructed through buildings (demolition) or around entire building	Very High Capital, Low O&M	Eliminated due to large area that would need to be addressed by containment and difficulty with construction due to existing building

Table 5-2 (continued)
Page 2

Response Action or Technology Type: Process Option(s)	Description	Effectiveness	Implementability	Cost	Status/Screening Comments
REMOVAL OF CONTAMINATED MATERIALS	- Removal of saturated and unsaturated contaminated materials - Contaminated water addressed during removal - Requires disposal or treatment of solids and water	- Effective in eliminating contaminated media	- Easily implemented for unsaturated materials - Difficult to implement in saturated materials	Low Cost	Eliminated since contaminated materials likely extend under buildings and source areas not identified
COLLECTION/ EXTRACTION Wells, Trench Drains	Operates by installing one or more connected wells or trench drains directly in the contaminated groundwater. Collects contaminated groundwater and directs it to a discharge point or modifies gradients to change flow directions. It is not a treatment technology, but rather a collection method that is a prerequisite for many groundwater treatment methods.	- Extraction well systems and trench drains are highly reliable for collecting groundwater.	- This technology uses readily available equipment and is mechanically simple. - Requires ongoing operational and maintenance expenditures. - Construction to required depths at site is feasible.	Moderate Capital, Moderate O&M	Maintained for further evaluation for groundwater collection.
TREATMENT Physical Treatment: *Ex-Situ* Carbon Adsorption (Water)	Removes organics and some metals from water using activated carbon. Used in support of groundwater extraction systems.	- Highly effective and reliable for removal of dissolved organics and some metals from groundwater. - Reduces mobility and volume of contamination. - Not efficient for removal of vinyl chloride.	- Easily implemented and available technology. - Spent carbon adsorbent must be treated/recycled or disposed.	Moderate Capital, Moderate O&M	Other technologies such as air stripping are more effective removing VOCs and more than order of magnitude less costly. Maintained as support technology.
TREATMENT Physical Treatment: *Ex-Situ* Air Stripping (Water)	VOCs stripped from water by the use of air or steam. Used in support of groundwater extraction systems.	- Effective for the removal of VOCs from water. - Off-gas may require further treatment.	- Easily implemented and available technology. - Monitoring and treatment of off-gases may be necessary.	Low Capital, Low O&M	Air stripping maintained for further consideration.

Table 5-2 (continued)
Page 3

Response Action or Technology Type: Process Option(s)	Description	Effectiveness	Implementability	Cost	Status/Screening Comments
TREATMENT Physical Treatment: *In-Situ* Air Sparging/Vapor Extraction (Water)	Air injected into groundwater. Vapor extraction system installed in the unsaturated zone to remove VOC vapors.	- Effective for removal of VOCs from water. - Reduces volume of contamination. - Off-gas may require further treatment.	- Would require pilot study. - Difficult to implement because of low permeability soils.	Moderate Capital, Moderate O&M	Eliminated due to low permeability soils.
TREATMENT *In-Situ* or *Ex-Situ* Soil Vapor Extraction (Solids)	Soil vapor extraction is used to remove VOCs from contaminated soils. Can also be used in conjunction with groundwater extraction to enhance VOC removal.	- Effective in removing VOCs from soils.	- *In-Situ* most easily implemented. - *Ex-Situ* requires area to construct treatment cell.	Moderate Capital, Low O&M	*In-Situ* soil vapor extraction maintained as possible support technology for groundwater extraction.
TREATMENT Chemical Treatment: *Ex-Situ* Ultraviolet (UV) Oxidation	The treatment technology uses a combination of UV light and ozone to chemically oxidize organic compounds in water. Used in support of groundwater extraction systems.	- Effective for destruction of many organic compounds. - Decreases the toxicity of the water by reducing contaminants to non-specific byproducts.	- Several full-scale treatment systems are operating.	Moderate Capital, Moderate O&M	Eliminated as a potential treatment technology. Other technologies, such as air stripping, are available that provide the same level of protection and are more than order of magnitude less costly.
TREATMENT Biotreatment: *In-Situ* Biological Treatment	Nutrients and oxygen-enriched water injected into aquifer to promote degradation of VOCs.	- May be effective in reducing volume and toxicity of VOCs.	- Requires ongoing operational and maintenance expenditures. - A pilot study would be required.	Moderate Capital, Moderate O&M	Eliminated as a potential treatment technology. Other technologies, such as air stripping, are available that provide the same level of protection and are more than order of magnitude less costly.

Table 5-2 (continued)
Page 4

Response Action or Technology Type: Process Option(s)	Description	Effectiveness	Implementability	Cost	Status/Screening Comments
TREATMENT Thermal Treatment: *Ex-Situ* Wet Air Oxidation	Wet air oxidation (WAO) involves the aqueous phase oxidation of VOCs at elevated temperatures and pressures. Used in support of groundwater extraction systems.	- Effective in treating VOCs. - Contaminants in off-gas require further treatment. - Water to be treated does not contain a fuel source required for operation. - Supplemental fuel would have to be supplied at additional cost.	- A limited number of mobile units are available from vendors. - A pilot study would be required.	High Capital, High O&M	Eliminated due to extremely high costs. WAO is at least an order of magnitude more costly than other equally effective organic treatment processes.
DISPOSAL Discharge to Local POTW	Collected groundwater is pre-treated, if necessary, and discharged to the local POTW. Used in support of groundwater extraction systems.	- Effective for disposal of VOC treated water and lead.	- POTW can accept water from site once treated to reduce VOC levels.	Low Capital, High O&M	Maintained for further consideration.
DISPOSAL Offsite Transport to Treatment Facility	Collected groundwater is hauled by tank truck for disposal at a licensed treatment facility. Used in support of groundwater extraction systems.	- Effective for removal of VOCs and lead from aqueous waste streams.	- Implementability dependent on locating suitable treatment facility a reasonable distance from the site. - Requires excessively large number of trucks to transport.	Low Capital, High O&M	Eliminated due to volume of water to be treated and lower cost of discharge to POTW.
DISPOSAL Discharge to Surface Water	Collected groundwater is discharged to the adjacent surface waters after treatment. Used in support of groundwater extraction systems.	- Treated water must meet NPDES discharge requirements. - Discharge volume will be equal to extracted groundwater volume.	- Difficult to obtain administrative approval. - No suitable receiving stream at site.	Low Capital, Low O&M	Eliminated from further consideration due to lack of suitable receiving stream.
DISPOSAL Offsite Landfill	Excavated solids are disposed offsite at approved landfills. Used in support of removal of contaminated materials.	- Effectively removes contaminated materials from the site.	- Easily implemented.	High Capital	Eliminated since no solids will be generated by removal activities.

TABLE 5-3
SUMMARY OF RETAINED GROUNDWATER REMEDIATION TECHNOLOGIES
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS & METALS SITE
UTICA, NEW YORK

Response Action	Technology Type	Process Option Retained	Screening Comments
No Action	No Action	No Action/Groundwater Monitoring/Deed Restriction	None
Collection	Groundwater Extraction	Extraction Wells/Trench Drains	Wells will be used at site
Treatment	Physical Treatment (Water)	*Ex-Situ* Air Stripping Carbon Adsorption	Support technologies for groundwater extraction
	Physical Treatment (Solids)	*In-Situ* Soil Vapor Extraction	Support technology for groundwater extraction
Disposal	Discharge to POTW	Discharge to POTW	None

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- Alternative 2 - Groundwater Extraction and Treatment: For this alternative, groundwater would be extracted from wells RW-1 and RW-2 and treated prior to discharge to the POTW to reduce COC levels below Groundwater Standards.

- Alternative 3 - Groundwater Extraction and Treatment with Vapor Extraction: In addition to the groundwater and treatment as described for Alternative 2, vapor extraction would also be performed from the RW-1 and RW-2 casings to enhance remediation of the groundwater.

As indicated previously, the alternative screening process specified in HWR-90-4030 and EPA's guidance was not used because only a limited number of alternatives were assembled due to the limited extent of the groundwater contamination at the Site.

5.4 DETAILED ANALYSIS OF REMEDIAL ACTION ALTERNATIVES

This section presents the detailed analysis of the remedial action alternatives for the Site. A description of each alternative is first presented, followed by its evaluation. Each remedial alternative is evaluated with respect to criteria described in the following subsection. The final subsection is a comparison of the statutory factors and criteria for each alternative to assist in the remedy selection process.

5.4.1 Evaluation Criteria and Process: The remedial alternatives were evaluated in this section with respect to the criteria stipulated in HWR-90-4030. Those criteria include:

- Compliance with SCGs
- Overall protection of human health and the environment
- Short-term impacts and effectiveness

- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume
- Implementability
- Cost

The factors to be evaluated for each of these criteria are described in detail in HWR-90-4030. The scores for the evaluation of each of these criteria for each alternative are presented at the end of the narrative evaluations in Subsections 5.4.2 through 5.4.4.

5.4.2 Alternative 1 - Detailed Analysis of No Action Alternative

1. Description: Under this alternative, the groundwater contamination will not be actively remediated. As proposed, this alternative also includes periodic groundwater monitoring and implementation of a deed restriction to preclude use of onsite groundwater.

2. Compliance with SCGs: Because there are no current users of contaminated groundwater, this alternative is in compliance with SCGs for current conditions. In the event that residential wells are installed in the area of concern in the future and VOC concentrations have not decreased to below Groundwater Standards, this alternative will not meet the requirements for drinking water standards. (Score: 6 of 10)

3. Overall Protection of the Public Health and Environment: There are no current risks associated with the groundwater, so under existing conditions, a no-action alternative is protective of public health. However, this alternative would not likely be protective of the public health in the event that residential wells are

installed within the contaminated zone in the future unless the wells were equipped with treatment systems. (Score: 6 of 20)

4. Short-Term Impacts and Effectiveness: There are no short-term impacts (those associated with implementation of the remedy) associated with this alternative since no remedial action is being taken. (Score: 8 of 10)

5. Long-Term Effectiveness and Permanence: This alternative's long-term effectiveness as measured by residual risk should be good as long as VOC concentrations decline and contaminants do not migrate offsite. The potential for offsite migration is low, but reduction of VOC levels by natural attenuation will be a slow process. This alternative would only provide long-term protection if the deed restriction is implemented and followed. Otherwise, risks associated with future groundwater usage will continue. (Score: 6 of 15)

6. Reduction of Toxicity, Mobility, or Volume: Because no action would be done to actively remediate the groundwater contamination, this alternative does not reduce the toxicity, mobility, or volume of onsite contamination by treatment. (Score: 2 of 15)

7. Implementability: This alternative is easily implemented since it involves no remedial activities. (Score: 13 of 15)

8. Costs: The estimated capital cost to implement the deed restriction for this remedy is about $10,000. The annual monitoring and reporting costs were estimated to be $8,400. This results in a 30-year present worth cost of about $138,000.

5.4.3 Alternative 2 - Groundwater Extraction and Treatment

1. Description: Up to two wells (currently wells RW-1 and RW-2) will be converted to groundwater extraction wells by the installation of pumps and controllers. A capture zone analysis evaluating the effectiveness of extracting from RW-1 and RW-2 is presented in Section 6.0, Conceptual Design. The results of the capture zone analysis indicated that extraction from wells RW-1 and RW-2 should effectively capture the known extent of the VOC contaminant plume. Extracted groundwater will be conveyed by pipe to an air stripper located within the building for treatment. Initial evaluations indicate treatment of off-gas should not be needed. Effluent from the air stripper will be discharged to the onsite sanitary sewer for treatment at the local POTW. Pre-treatment levels for the POTW are such that treatment to reduce metals concentrations should be unnecessary. Effluent and groundwater monitoring will be needed for the duration of system operation. CEC estimates the system will need to operate about ten years to achieve Groundwater Standards.

2. Compliance with SCGs: This alternative will comply with all SCGs when groundwater contaminant levels reach Groundwater Standards. Initial evaluations indicate that, following air stripping, the extracted groundwater will meet POTW pretreatment limits and can be discharged to the POTW. Additionally, evaluations indicate that VOC emissions will be below levels where off-gas treatment is needed. (Score: 10 of 10)

3. Overall Protection of the Public Health and the Environment: This alternative is protective of the public health in both the short-term and long-term. In the short-term, there are no identified users of contaminated groundwater, so there is no current risk. However, this alternative would not be protective for an

estimated ten years if wells are installed for residential use within the plume of contamination and the water is used without pre-treatment. In the long-term, this alternative is protective since it would actively reduce VOC concentrations in the groundwater to levels below the Groundwater Standards. (Score: 20 of 20)

4. Short-Term Impacts and Effectiveness: No impacts on workers, the community, or the environment are anticipated from implementing this alternative. (Score: 8 of 10)

5. Long-Term Effectiveness and Permanence: This alternative would be effective in that it would prevent further migration of the plume and remove the VOCs that could lead to health risks in the future. There are currently no known users of groundwater within the area of contamination. Future use of the groundwater within the contaminant zone would result in excessive health risks due to the level of VOCs if they are not reduced by active remediation. The method is permanent since once Groundwater Standards are achieved, the levels should remain below standards. Air stripping is a widely used proven technology for reducing VOCs in water. (Score: 13 of 15)

6. Reduction of Toxicity, Mobility, or Volume: There is no treatment that destroys contaminants associated with this alternative; therefore, there will be no reduction in toxicity, mobility, or volume of VOCs through treatment. However, the mobility of the contaminants will be controlled by the extraction system until they are reduced to Groundwater Standards. (Score: 7 of 15)

7. Implementability: All the technologies proposed in this alternative are proven technologies. Wells and pumps are capable of withdrawing the contaminated

groundwater. The proposed treatment technology, air stripping of VOCs, is a proven treatment technology for the organic chemicals in the groundwater. Effectiveness of this alternative would be easily evaluated using monitoring wells and effluent monitoring. (Score: 14 of 15)

8. Costs: The estim[illegible] this alternative is about $44,000. The annual O&M [illegible] timated to be $24,000. Assuming a ten yea[illegible] nt worth cost of this alternative is [illegible]

5.4.4 Alt[illegible] Treatment with Soil Vapor Extraction

1. Descriptio[illegible] as Alternative 2, except that vapor extraction w[illegible] W-1 and RW-2 to enhance the remediation. CEC cannot ev[illegible] uch the use of vapor extraction will reduce time to achieve Ground[illegible]r Standards. However, our experience on sites having geologic character similar to that of this site has found that mass transfer from vapor extraction is considerably more efficient than mass transfer by groundwater extraction. Maintaining a vacuum on extraction wells creates a negative pressure head within the well casing and allows a higher rate of groundwater extraction. CEC assumed the time to achieve the Groundwater Standard to be six years.

2. Compliance with SCGs: This alternative complies with all SCGs when groundwater contaminant levels reach Groundwater Standards. (Score: 10 of 10)

3. Overall Protection of the Public Health and the Environment: This alternative is protective of the public health in both the short-term and long-term. In the short-term, there are no identified users of contaminated groundwater, so there is no current risk. However, this alternative would not be protective for an estimated eight years if wells are installed for residential use within the plume of contamination and the water is used without pre-treatment. In the long-term, this alternative is protective since it would actively reduce VOCs concentrations in the groundwater to levels below the Groundwater Standards. (Score: 20 of 20)

4. Short-Term Impacts and Effectiveness: No impacts on workers, the community, or the environment are anticipated from implementing this alternative. (Score: 8 of 10)

5. Long-Term Effectiveness and Permanence: This alternative would be effective in that it would prevent further migration of the plume and remove the VOCs that could lead to health risks in the future. There are currently no known users of groundwater within the area of contamination. Future use of the groundwater within the contaminant zone would result in excessive health risks due to the level of VOCs if they are not reduced by active remediation or natural attenuation. The action is permanent since once Groundwater Standards are achieved the levels should remain below standards. Air stripping is a widely used and proven technology for reducing VOCs in water. (Score: 12 of 15)

6. Reduction of Toxicity, Mobility, or Volume: There is no treatment that destroys contaminants associated with this alternative; therefore, there will be no reduction in toxicity, mobility, or volume of VOCs through treatment. However,

the mobility of the contaminants will be controlled by the extraction system until they are reduced to Groundwater Standards. (Score: 7 of 15)

7. Implementability: All the technologies proposed in this alternative are proven technologies. Wells and pumps are capable of withdrawing the contaminated groundwater. The proposed treatment technology, air stripping of VOCs, is a proven treatment technology for the organic chemicals in the groundwater. Effectiveness of this alternative would be easily evaluated using monitoring wells and effluent monitoring. (Score: 14 of 15).

8. Costs: The estimated cost of this alternative is about $57,000. The annual O&M and monitoring costs are estimated to be $27,000. Assuming a six year operating period, the six year present worth cost of this alternative is $194,000.

5.5 COMPARATIVE ANALYSIS

This section compares the relative expected performance of each alternative with respect to the same evaluation criteria presented in Section 5.4.1.

5.5.1 Compliance with SCGs: All of the alternatives comply with SCGs for current conditions. However, Alternatives 2 and 3 will comply with SCGs in the future without the need for property restrictions and, as a result, are considered more favorable.

5.5.2 Overall Protection of Human Health and the Environment: All of the alternatives are equally protective in the short-term because there are no users of contaminated groundwater, and no actions are needed to control unacceptable current risks. In the long-term, Alternatives 2 and 3 will be more protective than Alternative 1 since they will actively remediate VOCs in the groundwater.

5.5.3 Short-Term Impacts and Effectiveness: All of the alternatives will have minimal short-term impacts. Alternative 1 will not be effective in reducing contaminants, while Alternative 3 will be somewhat more effective than Alternative 2 since it will likely reduce the time needed to achieve Groundwater Standards.

5.5.4 Long-Term Effectiveness and Permanence: Both Alternatives 2 and 3 will be effective and permanent in the long-term. Alternative 1 will not be effective in the long-term since it involves no actions to reduce contaminant concentrations onsite.

5.5.5 Reduction of Toxicity, Mobility, and Volume: None of the alternatives will reduce toxicity, mobility, or volume of contaminants by treatment.

5.5.6 Implementability: All of the alternatives can be easily implemented using standard and proven technologies.

5.5.7 Summary Comparison of Scoring: Table 5-4 summarizes and compares the HRW-90-4030 scorings for the alternatives. As shown on the table, Alternatives 2 and 3 have similar scores, while Alternative 1 scores significantly lower.

5.5.8 Cost: The capital cost, annual and present worth of each alternative is summarized below:

Alternative	Capital Cost	Yearly Annual Cost (1997 Dollars)	Est. Years of Operation	Present Worth
1	$10,000	$8,000	30	$138,000
2	$44,000	$24,000	10	$231,000
3	$57,000	$27,000		$194,000

TABLE 5-4
SUMMARY OF REMEDIAL ALTERNATIVE SCORINGS
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

Criteria	Maximum Score	Alternative 1	Alternative 2	Alternative 3
Compliance with SCGs	10	6	10	10
Overall Protection of Human Health and the Environment	20	6	20	20
Short-Term Impacts and Effectiveness	10	8	8	8
Long-Term Effectiveness and Permanence	15	6	13	12
Reduction of Toxicity, Mobility, or Volume	15	2	7	7
Implementability	15	13	14	14
Cost	15	15	9	9
TOTAL SCORE:	100	56	82	81

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5.6 RECOMMENDED ALTERNATIVE

Alternatives 2 and 3 are both effective in protecting human health and the environment over the long term. Alternative 3 is preferable over Alternative 2 because it will reduce the time necessary to reduce contaminant concentrations to acceptable levels and will ultimately cost less to accomplish the remedial objectives. Alternative 3 is the preferred alternative for remediating the site.

6.0 CONCEPTUAL DESIGN

6.1 GENERAL OVERVIEW OF REMEDIATION PROCESS

The preferred remediation alternative consists of a combination groundwater extraction (GE) soil vapor extraction system (SVES). For this alternative, groundwater would be extracted from hot spots of VOC contamination using wells RW-1 and RW-2. Preliminary calculations have estimated that a pumping rate of 0.1 to 0.2 gpm can be achieved at well RW-1 and a rate between 0.4 and 0.6 gpm can be achieved at RW-2. Capture zone analysis using these pumping rates indicated that extraction from these two wells should effectively capture the known extent of VOC contamination in the aquifer. Calculations of sustainable pumping rates and results of capture zone analysis are presented in Appendix G.

Groundwater would be treated using an air stripper and discharged to the sanitary sewer. An SVES operated in conjunction with the GE system soil vapor would be used to extract VOCs from the shallow soil zone at wells RW-1 and RW-2 while the water table is depressed. Maintaining a vacuum in the well casings also creates a negative pressure head within the well casing and allows for a greater rate of groundwater extraction. A conceptual design for the various components of the remediation system follows.

6.2 WATER PUMPS AND FLOW CONTROLS

Groundwater will be pumped from RW-1 and RW-2 using QED SOLO Pneumatic Displacement pump(s) or equivalent. The solo pump is an air operated positive displacement pump with internal level control. The operational flow range for a SOLO pump is 4.5 gpm, which exceeds the anticipated combined yield for wells RW-1 and

RW-2. The pump(s) will be placed at the desired water table elevation. Groundwater will be conveyed to a treatment area where it will pass through parallel check and gate valves, a flow meter, into the treatment system.

Compressed air for the pump will be provided by an air compressor which will be fitted with an aftercooler or desiccant dryer to remove excess condensation from the supply line(s). Air will be delivered from the compressor to the pumps through a 3/4 inch air hose within a 1-inch diameter PVC pipe. A 3-way solenoid valve will be placed in the air supply line and interfaced with the stripper control panel. In operating mode, the solenoid valve will supply air to the pump(s). If the stripper malfunctions, the air supply to the pump(s) will be shut off and air line(s) vented to the atmosphere.

6.3 WATER TREATMENT SYSTEM AND EQUIPMENT AREA

The treatment system will consist of a model 1331 or 1341 Shallow Tray low-profile aeration system. Shallow Tray systems are of modular design so that trays can be added to increase the percent removal of contaminants if necessary. The design is also resistant to fouling and is readily accessible if for cleaning if fouling occurs. Water will enter the system through a clog-resistant coarse mist spray nozzle and will pass over a series of aeration trays. Simultaneously, a forced air draft will be passed through the baffled aeration trays to remove VOCs from the water. The stripper will be equipped with a high water shut off to prevent water from filling up the sump and flowing back through the blower. In addition, a positive pressure switch will be installed on the blower and interfaced with the solenoid valve to cut off air to the pump if the blower pressure becomes insufficient for maintaining target removal efficiencies.

Sampling ports will be installed on the influent and effluent lines of the air stripper for monitoring purposes.

6.4 SOIL VAPOR EXTRACTION SYSTEM (SVES)

The SVES system will consist of a 3-horsepower explosion proof blower rated for class 1, Division 1 Hazardous Locations manifolded to airtight well casing at RW-1 and RW-2. The SVES system will be equipped with a moisture line filters and a separation vessel with high level cut off. Off gas from the separation drum will be tested to determine whether treatment is required. Activated carbon will be used to treat off gas from the SVES, if necessary.

6.5 EQUIPMENT AREA

The equipment will be housed within the building, with the air stripper and SVES exhausts vented to the atmosphere outside of the building.

Power for the remediation system will be decided based on the availability within the facility. The stripper and SVES blowers and air compressors can be equipped to run on either 110v or 230v circuits. Several 110 V receptacles may need to be installed for general purposes, lighting etc.

6.6 PIPING AND PERIPHERAL EQUIPMENT

Water and soil vapor will be conveyed from the extraction point(s) to the treatment area by an underground piping network. Water discharge, soil vapor, and air supply lines will be placed in the same trenches at a depth of four feet to prevent freezing. The discharge pipe from the air stripper will be tied into the sanitary sewer system servicing the facility.

6.7 O&M AND MONITORING

Once the system is operational, operation and maintenance, and monitoring functions will be performed. This will include:

- Quarterly monitoring of water quality discharging to the POTW
- Quarterly groundwater monitoring for effectiveness of cleanup
- Quarterly off gas sampling for the SVES system
- Quarterly monitoring summary reports and/or annual monitoring reports
- Equipment inspection and maintenance

7.0 CERTIFICATION

I hereby certify, to the best of my understanding, that the Remedial Investigation and Feasibility Study were performed in general accordance with the RI/FS Work Plan dated October 3, 1996 and the work plan for an additional phase of RI activities dated July 29, 1997, and the Consent Order for the site dated January 28, 1997.

James M. Roberts, New York P.E. #061065-1

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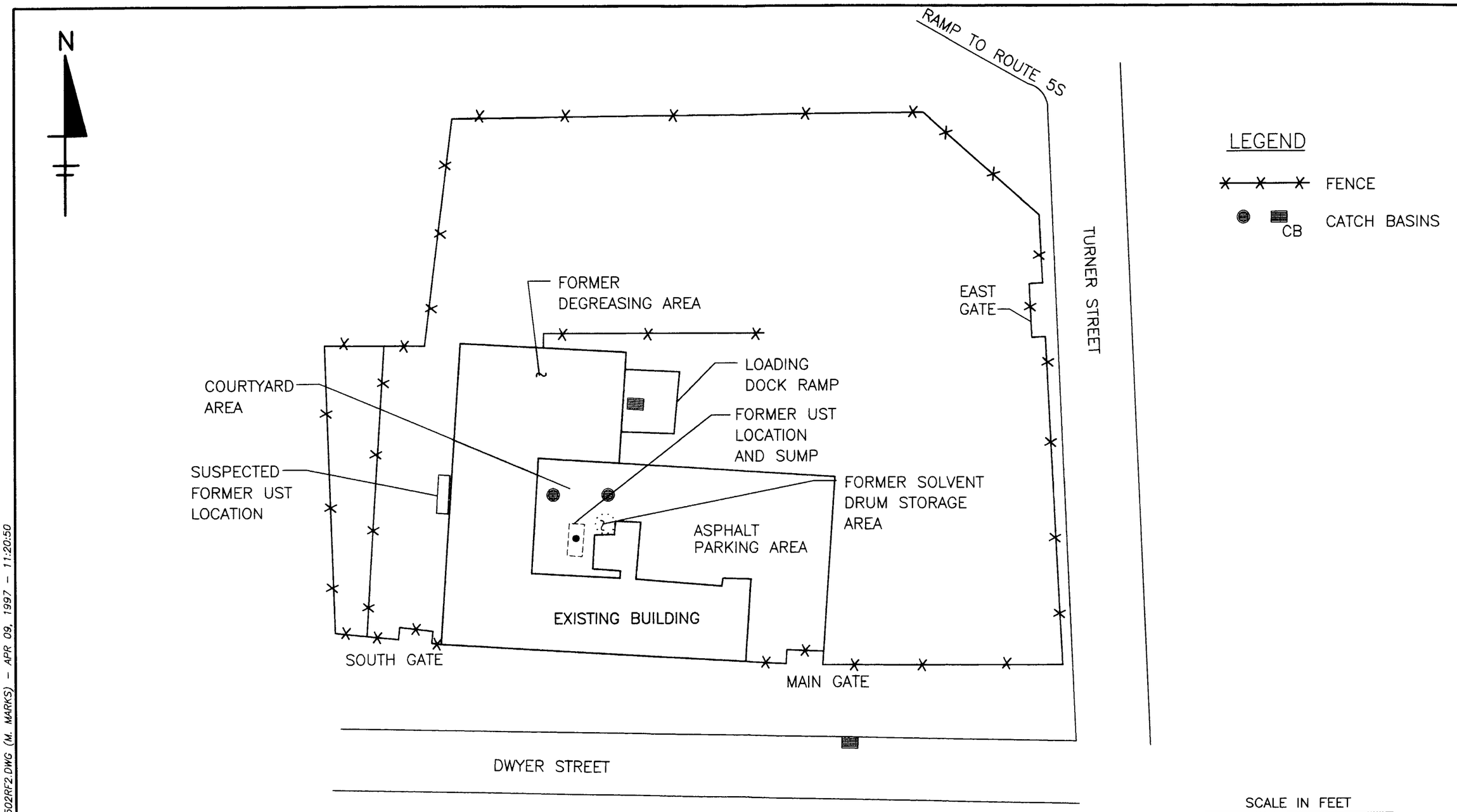

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SITE LAYOUT
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502RF2	SCALE: 1"=60'	DATE: 4/1/97	94502	FIGURE 1-2
CHKD. BY:					

N

MW-3

MW-2

CB-2

MW-4

B-3

MW-5

MW-6

B-8

B-9

B-10

SUMP

B-6

B-2

B-4

B-7

B-5

B-1

ASPHALT
PARKING AREA

EXISTING BUILDING

SOUTH GATE

MAIN GATE

MW-1

LEGEND

- MONITORING WELL (EMPIRE 10/89)
- TEST BORING (HUNTINGDON 10/92)
- TEST BORING OR MONITORING WELL (ERM NORTHEAST 5/93)
- FORMER UST AREA
- FORMER DRUM STORAGE AREA
- CATCH BASINS

SCALE IN FEET
0 30 60

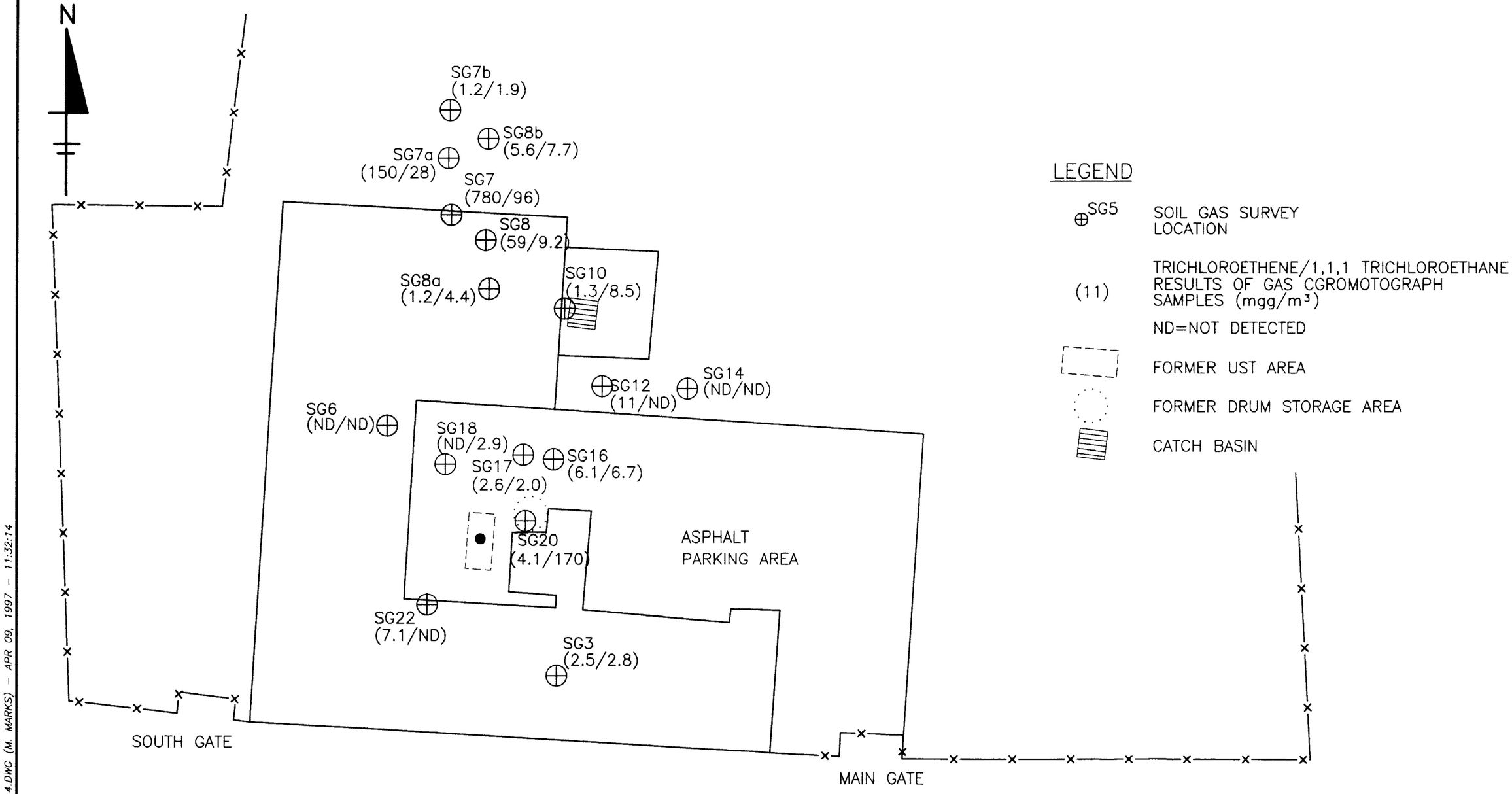
REFERENCE:
BASE MAP FROM HUNTINGDON EMPIRE SOILS INVESTIGATIONS, INC. ENVIRONMENTAL INVESTIGATION, FORMER NORTHEAST METALS SITE, OCTOBER 1992.

Civil & Environmental Consultants, Inc.
Pittsburgh, PA (412) 921-3402 • (800) 365-2324
Cincinnati, OH (513) 985-0226 • (800) 759-5614

BORING AND MONITORING WELL LOCATIONS
FROM PREVIOUS INVESTIGATIONS
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502F13	SCALE: 1"=30'	DATE: 4/1/97	94502	FIGURE 1-3
CHKD. BY: BV					

G:\PROJECTS\94502\DWG\94502F13.DWG (S. METZ) - JAN 29, 1998 - 15:45:32

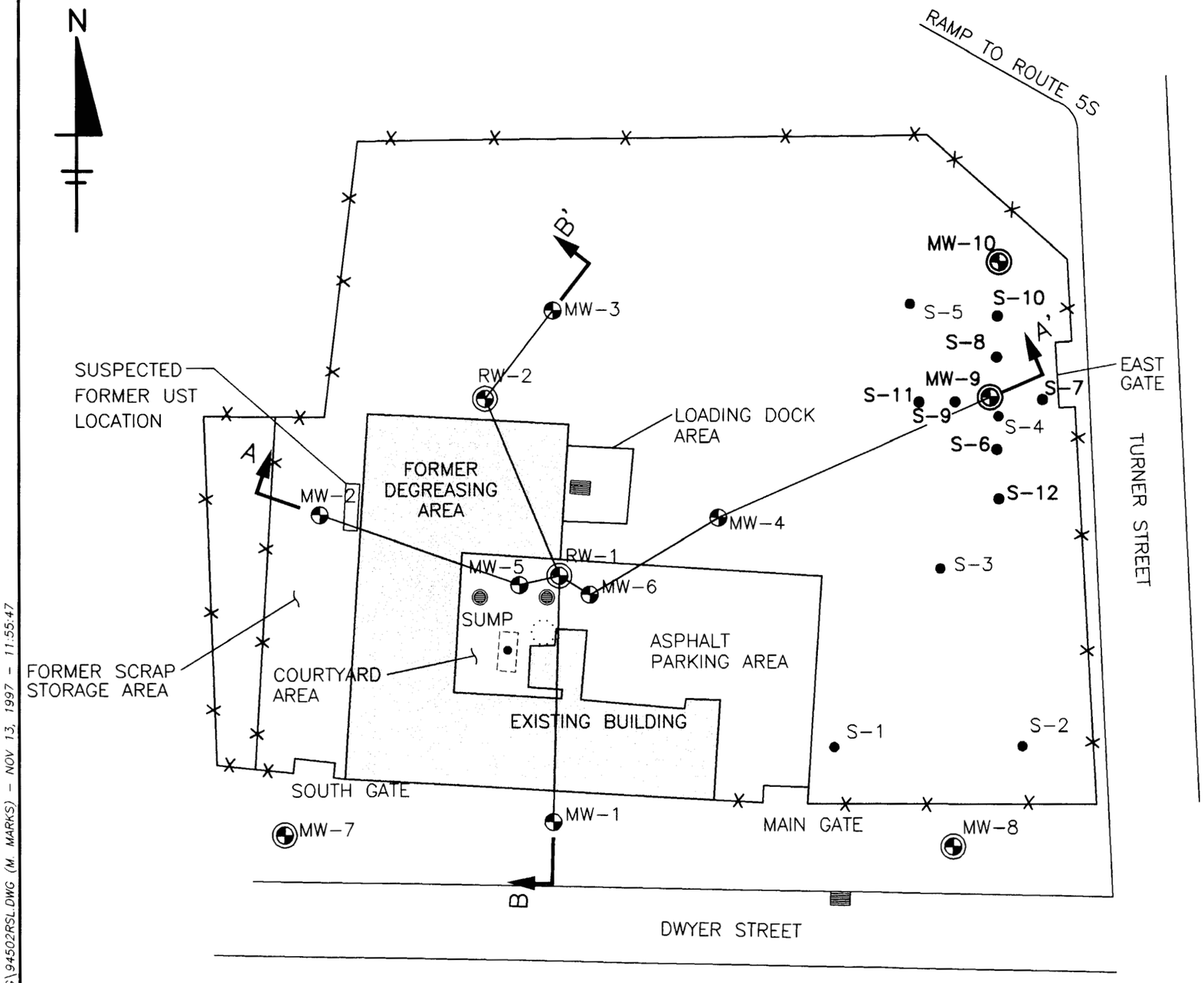


REFERENCE:
HARRESS PICKEL CONSULTANTS, SOIL GAS & GROUNDWATER INVESTIGATION AT THE FORMER NORTHEAST ALLOYS & METALS SITE, DECEMBER 1993.

Civil & Environmental Consultants, Inc.
Pittsburgh, PA (412) 921-3402 • (800) 365-2324
Cincinnati, OH (513) 985-0226 • (800) 759-5614

RESULTS OF HPC SOIL GAS SURVEY
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502F14	SCALE: 1"=40'	DATE: 4/3/97	94502	FIGURE 1-4
CHKD. BY:					



LEGEND

- MW-1 — EXISTING MONITORING WELLS
- RW-2 — MONITORING WELL (MW) OR RECOVERY WELL (RW) INSTALLED – 2/97
- S-1 — SHALLOW SOIL BORING INSTALLED – 2/97
- MW-9 — MONITORING WELL INSTALLED – 8/97
- S-6 — SOIL BORING INSTALLED – 8/97
- FORMER UST AREA AND SUMP
- FORMER DRUM STORAGE AREA
- CATCH BASINS
- SECTION LOCATION

SCALE IN FEET

0 60 120

REFERENCE:

BASE MAP FROM ERM – NORTHEAST, SOIL AND GROUNDWATER INVESTIGATION AT THE FORMER NORTHEAST ALLOYS & METALS SITE, MAY 1993.

Civil & Environmental Consultants, Inc.
Pittsburgh, PA (412) 921-3402 • (800) 365-2324
Cincinnati, OH (513) 985-0226 • (800) 759-5614

SOIL BORING AND WELL INSTALLATION PLAN
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502RSL	SCALE: 1"=60'	DATE: 10/21/97	94502	FIGURE 2-1
CHKD. BY: BC					

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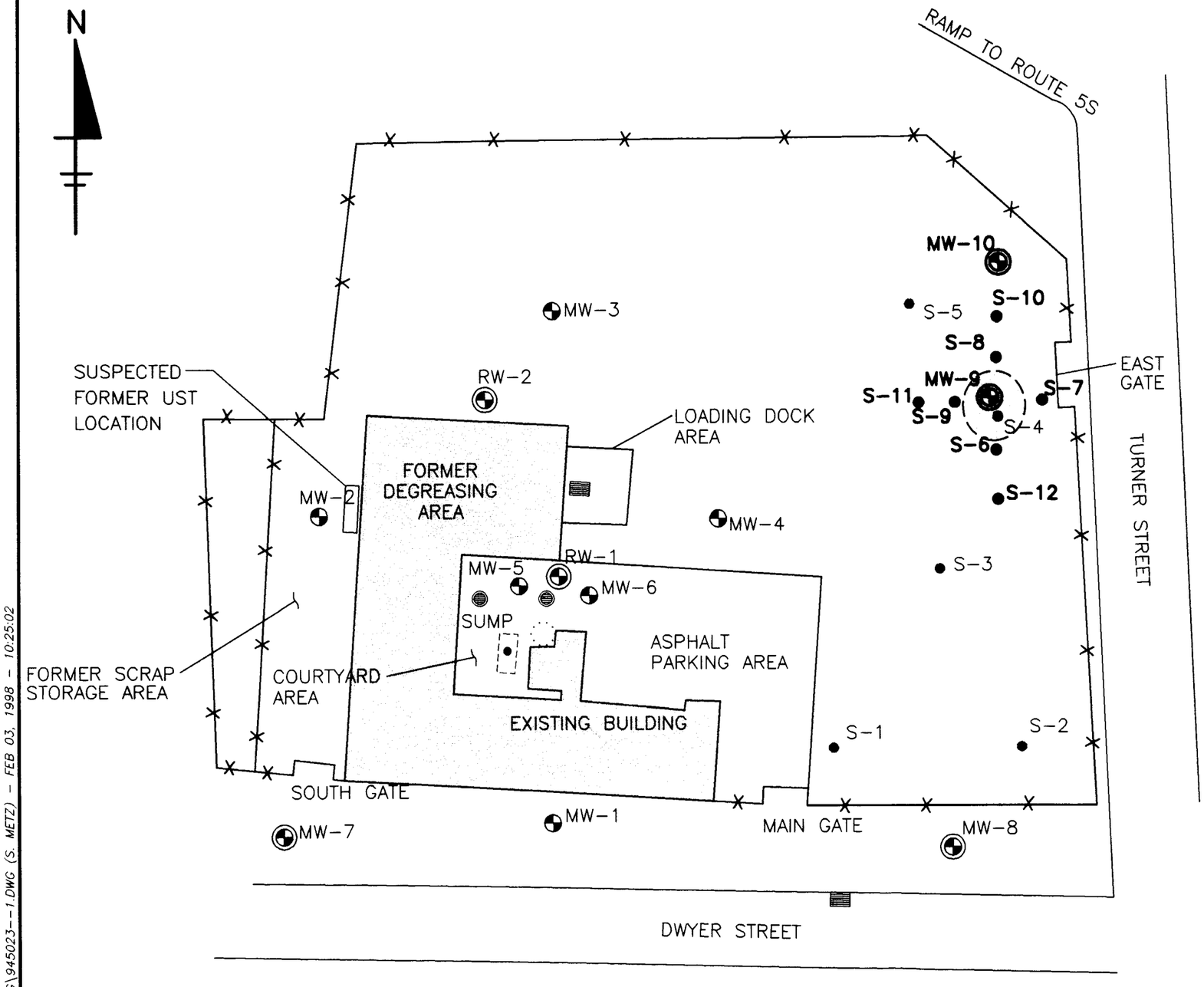

LEGEND

- MW-1 — EXISTING MONITORING WELLS
- RW-2 — MONITORING WELL (MW) OR RECOVERY WELL (RW) INSTALLED – 2/97
- S-1 — SHALLOW SOIL BORING INSTALLED – 2/97
- MW-9 — MONITORING WELL INSTALLED – 8/97
- S-6 — SOIL BORING INSTALLED – 8/97
- FORMER UST AREA AND SUMP
- FORMER DRUM STORAGE AREA
- CATCH BASINS
- MAXIMUM EXTENT OF SOIL IMPACTED BY VOCS (LIMITS DASHED WHERE INFERRED)

SCALE IN FEET

0 60 120

REFERENCE:

BASE MAP FROM ERM – NORTHEAST, SOIL AND GROUNDWATER INVESTIGATION AT THE FORMER NORTHEAST ALLOYS & METALS SITE, MAY 1993.

Civil & Environmental Consultants, Inc.
Pittsburgh, PA (412) 921-3402 • (800) 365-2324
Cincinnati, OH (513) 985-0226 • (800) 759-5614

EXTENT OF SOIL IMPACTED BY VOCS
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 945023-1	SCALE: 1"=60'	DATE: 10/21/97	94502	FIGURE 3-1
CHKD. BY:					

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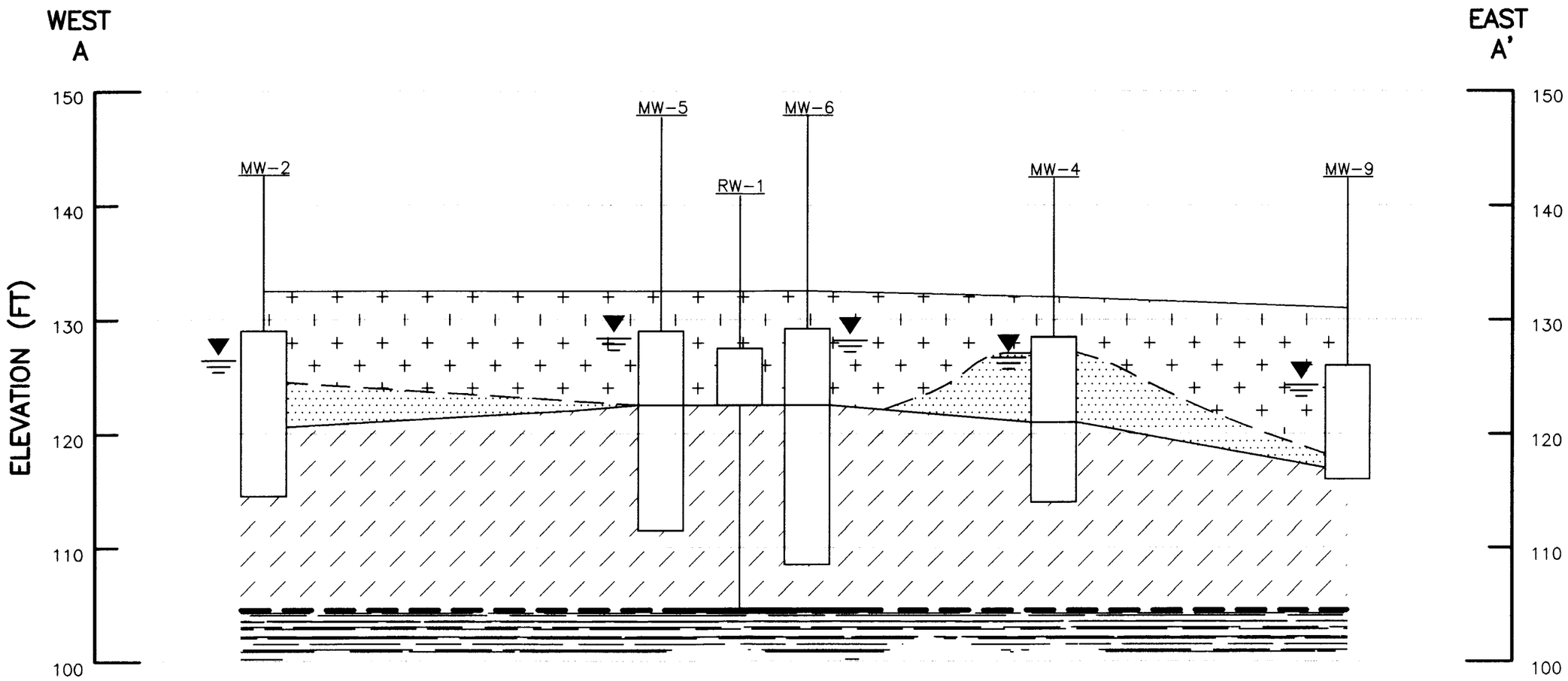

LEGEND

- FILL BROWN, BLACK, GRAY SILTY AND FIRM SAND SOME CLAY TRACE ROCK FRAGMENTS, BRICK AND WOOD
- ALLUVIUM, BROWN GREY SILT AND CLAY WITH TRACE SAND AND GRAVEL
- TILL BLACK, DARK GRAY, BROWN SILT SOME FINE SAND AND CLAY TRACE ROUND TO ANGULAR ROCK FRAGMENTS
- SHALE BLACK (UTICA SHALE) (CONTACTS DASHED WHERE INFERRED)
- MONITORING WELL AND SCREEN INTERVAL
- WATER LEVEL ELEVATION

GEOLOGIC CONDITIONS

THE BORING LOGS AND RELATED INFORMATION PRESENTED IN THIS REPORT DEPICT SUBSURFACE CONDITIONS AT THE TEST BORING LOCATIONS AND AT THE TIME OF DRILLING. SOIL CONDITIONS AT OTHER LOCATIONS MAY DIFFER.

GEOLOGIC CORRELATIONS SHOWN BETWEEN TEST BORINGS GENERALLY ARE BASED ON STRAIGHT-LINE INTERPOLATION. ACTUAL CONDITIONS BETWEEN TEST BORINGS MAY DIFFER.

VERTICAL SCALE IN FEET
0 10 20

HORIZONTAL SCALE IN FEET
0 60 120

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Cincinnati, OH (513) 985-0226 • (800) 759-5614

CROSS SECTION A-A'
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502AA	SCALE: AS NOTED	DATE: 10/21/97	94502	FIGURE 3-2
CHKD. BY: PV					

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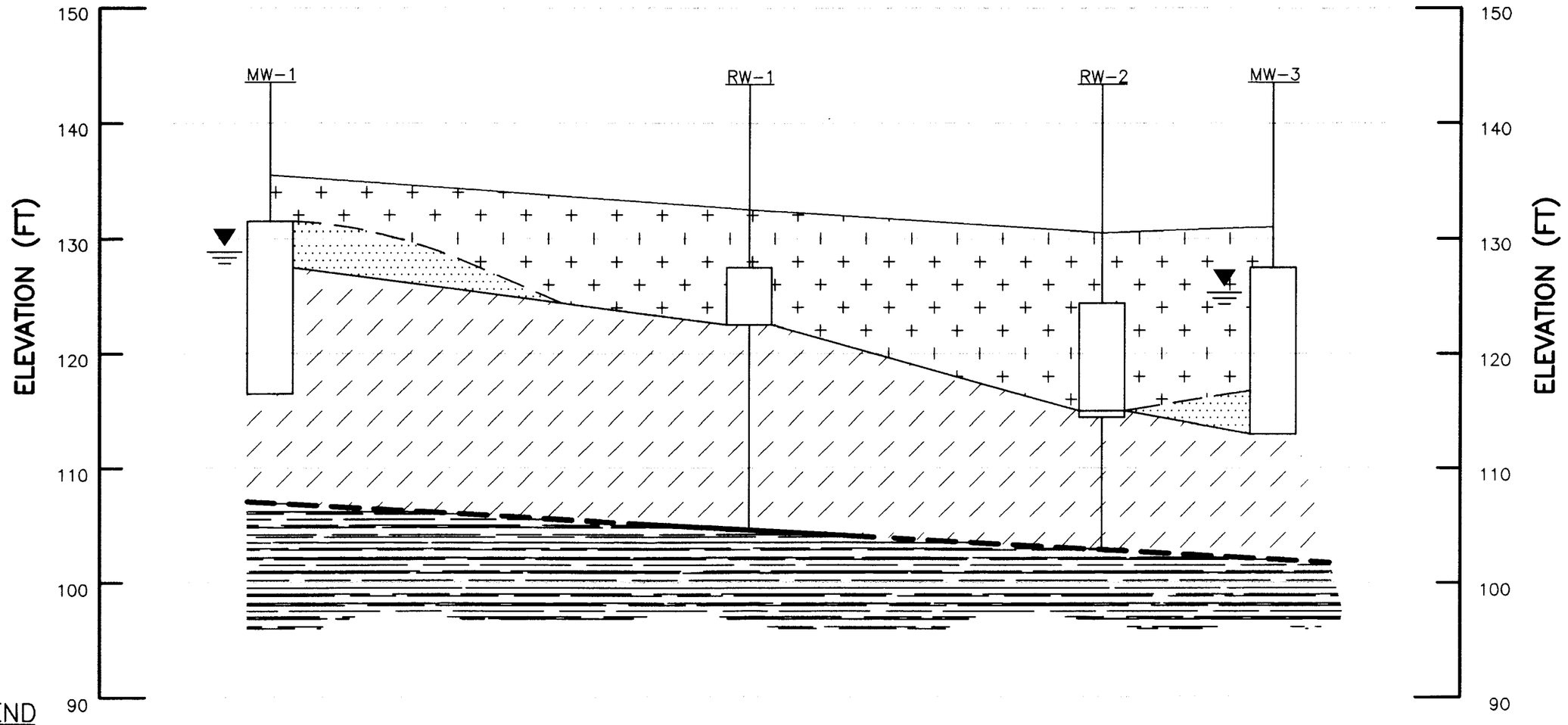
SOUTH
B

NORTH
B'



LEGEND

- FILL BROWN, BLACK, GRAY SILTY AND FIRM SAND SOME CLAY TRACE ROCK FRAGMENTS, BRICK AND WOOD
- ALLUVIUM, BROWN GREY SILT AND CLAY WITH TRACE SAND AND GRAVEL
- TILL BLACK, DARK GRAY, BROWN SILT SOME FINE SAND AND CLAY TRACE ROUND TO ANGULAR ROCK FRAGMENTS
- SHALE BLACK (UTICA SHALE) (CONTACTS DASHED WHERE INFERRED)
- MONITORING WELL AND SCREEN INTERVAL
- WATER LEVEL ELEVATION

GEOLOGIC CONDITIONS

THE BORING LOGS AND RELATED INFORMATION PRESENTED IN THIS REPORT DEPICT SUBSURFACE CONDITIONS AT THE TEST BORING LOCATIONS AND AT THE TIME OF DRILLING. SOIL CONDITIONS AT OTHER LOCATIONS MAY DIFFER.

GEOLOGIC CORRELATIONS SHOWN BETWEEN TEST BORINGS GENERALLY ARE BASED ON STRAIGHT-LINE INTERPOLATION. ACTUAL CONDITIONS BETWEEN TEST BORINGS MAY DIFFER.

VERTICAL SCALE IN FEET
0 10 20

HORIZONTAL SCALE IN FEET
0 60 120

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Cincinnati, OH (513) 985-0226 • (800) 759-5614

CROSS SECTION B-B'
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502BB	SCALE: AS NOTED	DATE: 4/2/97	94502	FIGURE 3-3
CHKD. BY: KV					

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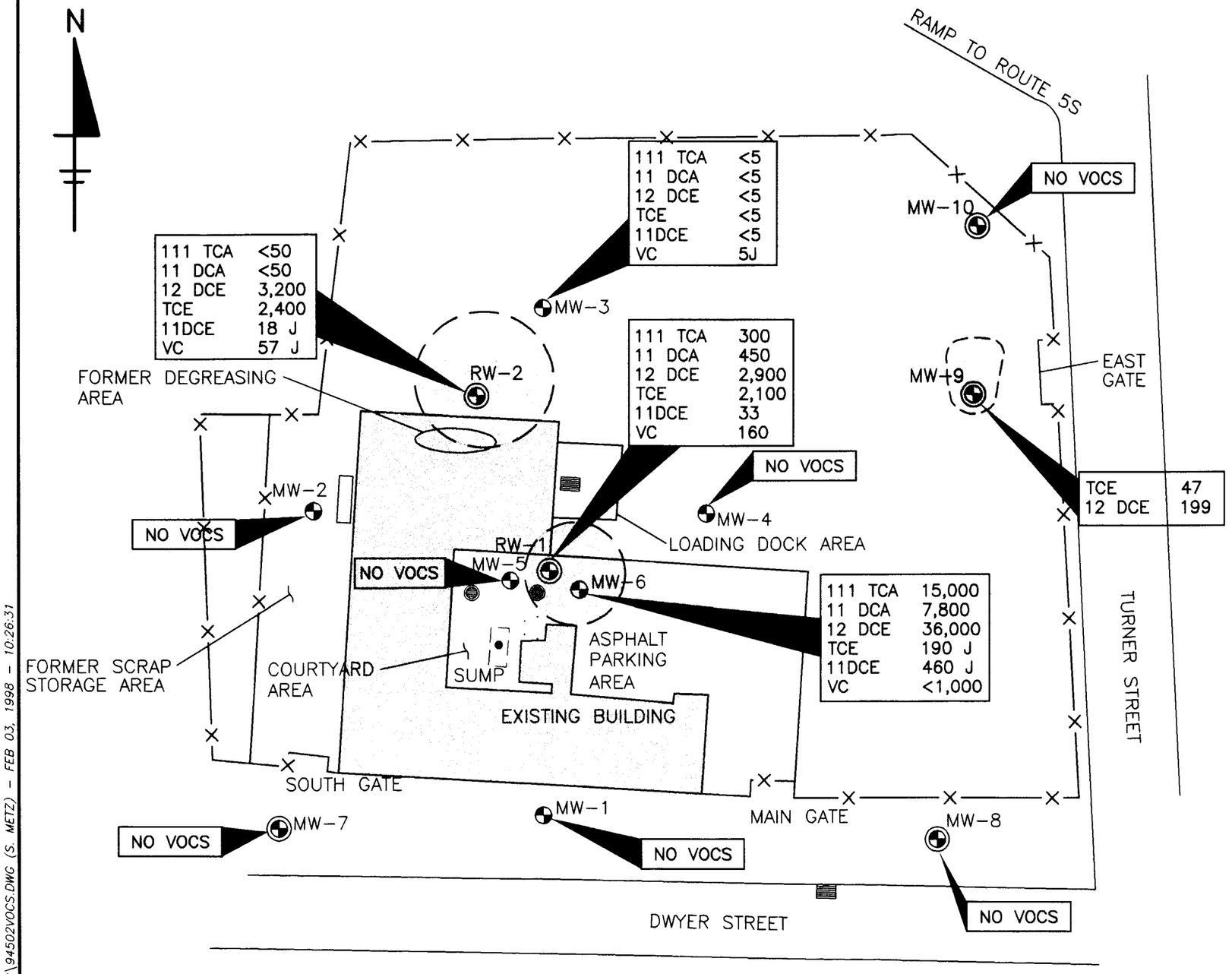


CHEMICAL CONDITIONS LIMITATIONS

MW-1 EXISTING MONITORING WELLS

RW-2 MONITORING WELL (MW) OR RECOVERY WELL (RW) INSTALLED BY CEC – 2/97

CATCH BASINS

GROUNDWATER SAMPLING RESULTS

111 TCA = 1,1,1 – TRICHLOROETHYLENE
11 DCA = 1,1 – DICHLOROETHANE
12 DCA = 1,2 – DICHLOROETHENE
TCE = TRICHLOROETHENE
11DCE = 1,1 – DICHLOROETHENE
VC = VINYL CHLORIDE
J = ESTIMATED VALUE LESS THAN DETECTED LIMIT

RESULTS IN ug/l

AREA IMPACTED BY VOCS ABOVE REMEDIAL OBJECTIVES (LIMITS DASHED WHERE INFERRED)

NOTES:
WELLS WERE SAMPLED IN 2/97 EXCEPT FOR WELLS MW-9 AND MW-10 WHICH WERE SAMPLED IN 8/97.

SCALE IN FEET
0 60 120

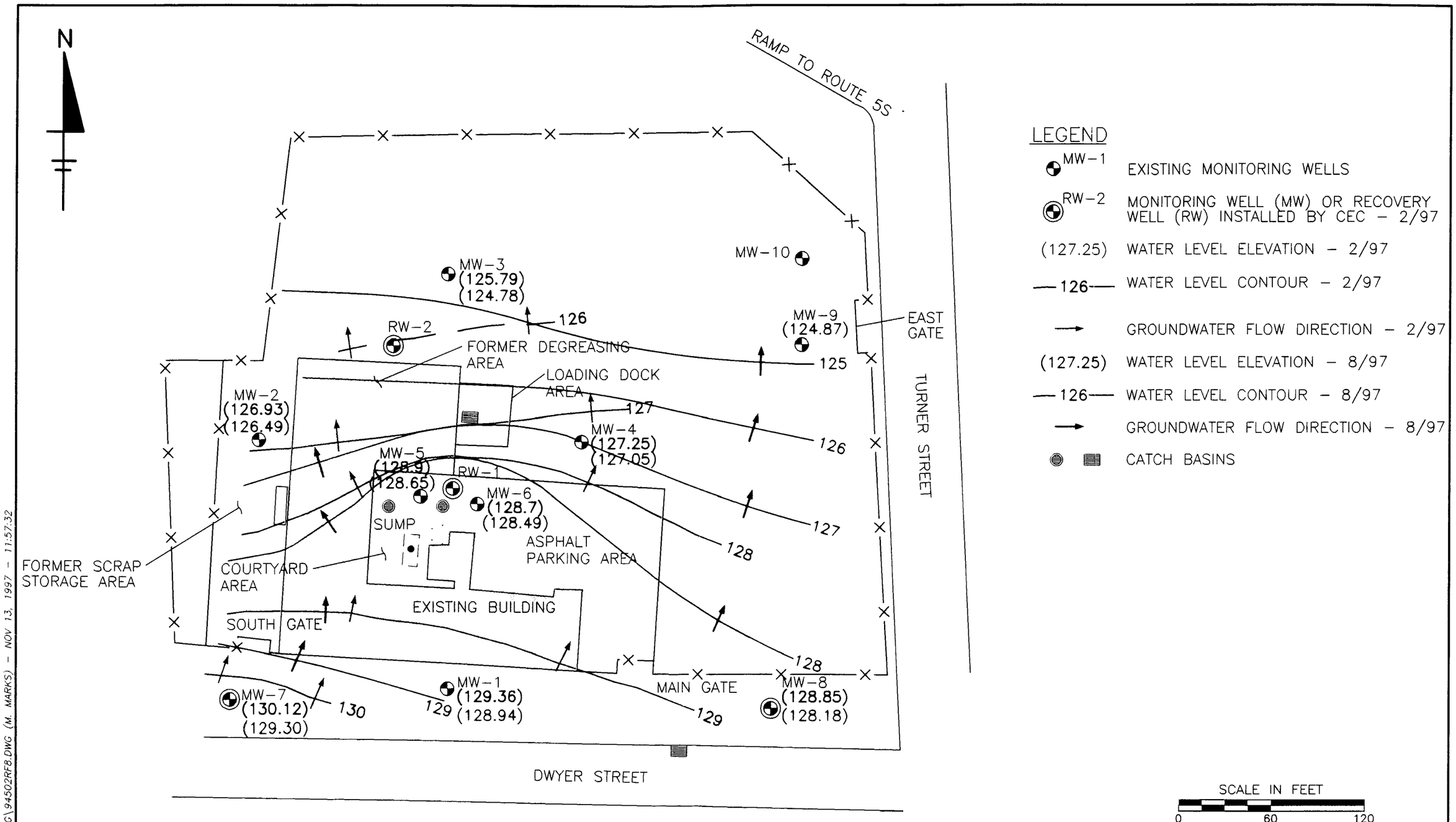
REFERENCE:
ERM – NORTHEAST, SOIL AND GROUNDWATER INVESTIGATION AT THE FORMER NORTHEAST ALLOYS & METALS SITE, MAY 1993.

Civil & Environmental Consultants, Inc.
Pittsburgh, PA (412) 921-3402 • (800) 365-2324
Cincinnati, OH (513) 985-0226 • (800) 759-5814

EXTENT OF VOCS IN GROUNDWATER
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: R.E.P.	ACAD FILE: 94502VOCS	SCALE: 1"=60'	DATE: 10/20/97	94502	FIGURE 3-5
CHKD. BY: TGL					

G:\PROJECTS\94502\DWG\94502VOCS.DWG (S. METZ) – FEB 03, 1998 – 10:26:31



LEGEND

- MW-1 — EXISTING MONITORING WELLS
- RW-2 — MONITORING WELL (MW) OR RECOVERY WELL (RW) INSTALLED BY CEC – 2/97
- (127.25) — WATER LEVEL ELEVATION – 2/97
- —126— — WATER LEVEL CONTOUR – 2/97
- → — GROUNDWATER FLOW DIRECTION – 2/97
- (127.25) — WATER LEVEL ELEVATION – 8/97
- —126— — WATER LEVEL CONTOUR – 8/97
- → — GROUNDWATER FLOW DIRECTION – 8/97
- CATCH BASINS

SCALE IN FEET

0 60 120

REFERENCE:

ERM – NORTHEAST, SOIL AND GROUNDWATER INVESTIGATION AT THE FORMER NORTHEAST ALLOYS & METALS SITE, MAY 1993.

CEC
Civil & Environmental Consultants, Inc.
Pittsburgh, PA (412) 921-3402 • (800) 365-2324
Cincinnati, OH (513) 985-0226 • (800) 759-5614

GROUNDWATER CONTOUR MAP
WATER LEVELS MEASURED 2/97 AND 8/97
RI/RS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502RF8	SCALE: 1"=60'	DATE: 10/21/97	94502	FIGURE 3-7
CHKD. BY: TJU					

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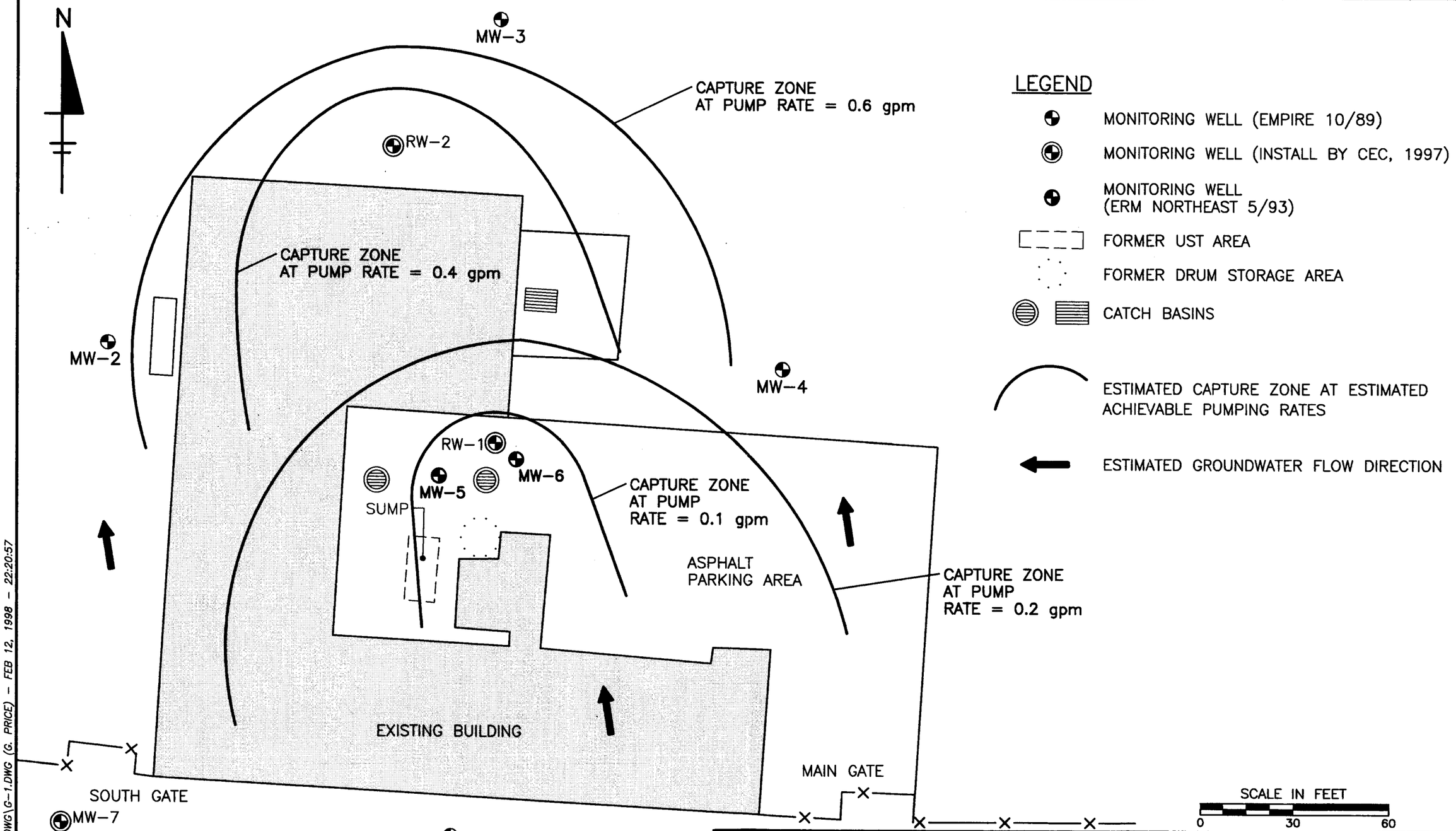

REFERENCE:
BASE MAP FROM HUNTINGDON EMPIRE SOILS INVESTIGATIONS, INC. ENVIRONMENTAL INVESTIGATION, FORMER NORTHEAST METALS SITE, OCTOBER 1992.

Civil & Environmental Consultants, Inc.
Pittsburgh, PA (412) 921-3402 • (800) 365-2324
Cincinnati, OH (513) 985-0226 • (800) 759-5614

ANTICIPATED PUMP RATE AND CAPTURE ZONE
GROUNDWATER EXTRACTION ALTERNATIVE
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: S.M.M.	ACAD FILE: G-1	SCALE: 1"=30'	DATE: 1/30/98	94502	FIGURE G-1
CHKD. BY:

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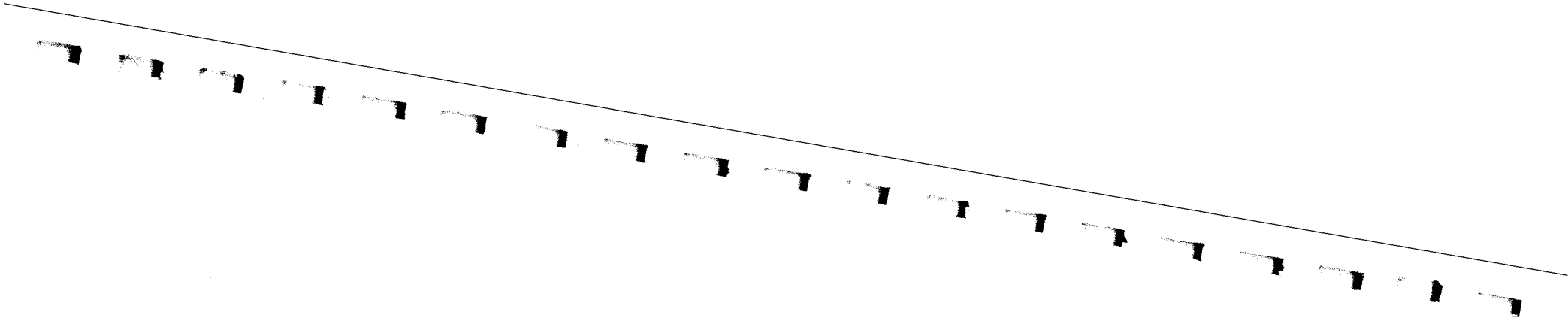
APPENDIX A

BORING LOGS

A.1 BORING LOGS FROM PREVIOUS INVESTIGATION
A.2 BORING LOGS FROM RI/FS

A.1 BORING LOGS FROM PREVIOUS INVESTIGATION



DATE
STARTED 8-22-89
FINISHED 8-22-89
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC

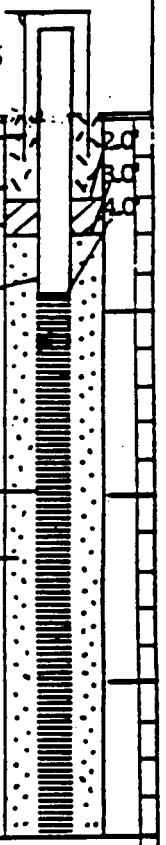
SUBSURFACE LOG

HOLE NO. MW-1
SURF. ELEV. 101.27
G. W. DEPTH See Notes

PROJECT North East Alloy & Metals
LOCATION Utica, New York

DEPTH FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION
0		1	2	4				TOPSOIL 0.1
				8	5	12		Fill: Black SILT & fine-coarse SAND, Some fine-coarse Gravel, Cinders, Brick (Damp-Firm)
		2	5	8				
				7	8	15		
5		3	7	5				Brown SILT, Some fine-coarse Sand & Gravel (Moist-Loose)
				4	4	9		
		4	4	4				Grades to SILT & fine-coarse SAND, Some fine Gravel (Wet-Loose)
				6	10	10		
		5	24	24				Brown/Red SILT, Some fine-medium Sand, trace fine gravel (Wet-Compact)
10				36	52	60		
		6	25	35				
				34	68	69		
		7	65	45				becomes (Wet-Very Compact)
				42	38	87		
15		8	18	32				
				34	36	66		
		9	48	32				
				66	75	98		
20								Boring Terminated @ 19.0'
25								
30								
35								

NOTES



Water first encountered @ 6.1'

Reference elevation is the top of the PVC Well Pipe (103.43)

No blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 " per blow.

No blows to drive ____ " casing ____ " with ____ lb. weight falling ____ " per blow

CLASSIFICATION Visual by Geologist

METHOD OF INVESTIGATION 4¼" I.D. Hollow Stem Augers

DATE
STARTED 8-21-89
FINISHED 8-22-89
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC — SUBSURFACE LOG

HOLE NO. MW-2
SURF. ELEV. 98.08
G. W. DEPTH See Notes

PROJECT North East Alloy & Metals
LOCATION Utica, New York

DEPTH	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	5	7	6	13		CONCRETE .5'	Curb Box with Locking Cap
								Fill: Black fine-medium SAND, Some Silt, Wood, Brick, Cinders (Damp-Firm)	Grout
		2	4	6					Bentonite Seal
				6	6	12		Brown SILT, Some fine-medium Sand (Moist-Firm)	2" Schedule 40 PVC Riser Pipe
5		3	2	3					0.01" Slotted Well Screen
				4	5	7		Grey/Brown SILT & CLAY, trace fine-medium sand, brick (Moist-Loose)	
		4	4	6					8.0'
				9	14	15			
		5	5	10				Brown SILT & CLAY, little fine-medium sand (Wet-Firm)	
				10	12	20			4Q Sand
10		6	5	12					
				21	24	33			
		7	24	100/.5'				Grades with little coarse gravel (Wet-Compact)	
		8	14	16					
15				22	46	38			
		9	37	32					
				35	43	67		becomes (Wet-Very Compact)	
								Boring Terminated @ 18.0'	Water first encountered @ 7.5'
20									Reference elevation is the top of the PVC Well Pipe (97.88).
25									
30									
35									

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive _____ " casing _____ " with _____ lb. weight falling _____ "per blow.

CLASSIFICATION Visual by Geologist

4¼" I.D. Hollow Stem Augers

DATE
STARTED 8-22-89
FINISHED 8-22-89
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC

SUBSURFACE LOG

HOLE NO. MW-3
SURF. ELEV. 96.63
G. W. DEPTH See Notes

PROJECT North East Alloy & Metals
LOCATION Utica, New York

DEPTH FEET	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0								TOPSOIL .1	
		1	5	4				Fill: Black SILT & fine-coarse SAND & GRAVEL, ASH, CINDER, BRICK (Damp-Firm)	Locking Guard Pipe
				10	10	14			Grout
		2	5	3					Bentonite Seal
				4	5	7			2" Schedule 40 PVC Riser Pipe
5		3	2	2				Brown SILT, Some fine-coarse Sand (Moist-Loose)	
				2	2	4			
		4	2	2				Black/Grey SILT, little fine-coarse sand, organic matter (Wet-Loose)	0.01" Slotted Well Screen
				2	3	4			
		5	2	2					
10				2	3	4			
		6	2	1					
				2	2	3		-similar with glass fragments	
		7	3	2					12.0'
				3	2	5		Black/Grey SILT, little fine-medium sand, organic matter (Wet-Firm)	4Q Sand
15		8	7	7					
				8	8	15			
		9	8	18					
				22	30	40		becomes (Wet-Compact)	
								Boring Terminated @ 18.0'	Water first encountered @ 9.0'
20									Reference elevation is the top of the PVC Well Pipe (98.93)
25									
30									
35									

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 " per blow.
C = No. blows to drive _____ " casing _____ " with _____ lb. weight falling _____ " per blow.

CLASSIFICATION Visual by Geologist

DATE
STARTED 8-23-89
FINISHED 8-23-89
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS INC.

SUBSURFACE LOG

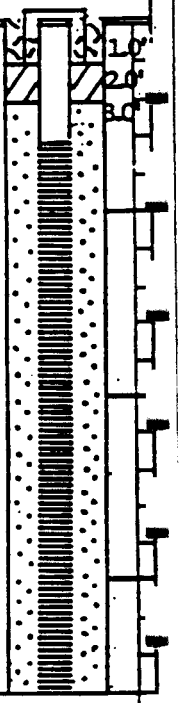
HOLE NO. MW-4
SURF. ELEV. 97.35
G. W. DEPTH See Notes

PROJECT North East Alloy & Metals
LOCATION Utica, New York

DEPTH FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION
0		1	24	30				Fill: Grey fine-coarse SAND & SILT, Some fine Gravel (Damp-Compact)
				20	20	50		
		2	15	12				
				10	4	22		4.0'
5		3	3	4				Grey Brown SILT & CLAY, little fine-medium sand (Wet-Loose)
				5	5	9		
		4	5	4				
				4	3	8		
		5	4	7				
				10	15	17		
10		6	10	13				11.0'
				23	25	36		Brown SILT, Some fine-coarse Sand, trace fine gravel
		7	25	30				
				40	42	70		
		8	11	15				
15				15	18	30		
		9	20	23				
				32	41	55		
								Boring Terminated @ 18.0'
20								
25								
30								
35								

NOTES

Curb Box with Locking Cap
Grout
Bentonite Seal
2" Schedule 40 PVC Riser Pipe
0.01" Slotted Well Screen
4Q Sand



Water first encountered @ 8.2'

Reference elevation is the top of the PVC Well Pipe (97.12)

N = No blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive ____ " casing ____ " with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 4¼" I.D. Hollow Stem Augers

CLASSIFICATION Visual by Geologist

ERM-Northeast

175 Froehlich Farm Blvd., Woodbury, New York 11797

LOG OF MONITORING WELL: MW-5

Project Name & Location	Project Number	Water Level(s) (DBC)			Site Elevation Datum
FORMER NORTHEAST ALLOYS & METALS, UTICA, NY	694-001	Date	Time	Levels	Ground Elevation 98.58'
Drilling Company	Driller				Top of Steel Cap Elevation
AQUIFER DRILLING AND TESTING, INC.	JOE MIRANDA				
Method	Date Started / Date Completed				Top of Riser Elevation 97.90'
4-1/4" HOLLOW STEM AUGER	1/19/93 / 1/19/93				
Completion Depth:	ERM-Northeast Geologist/Engineer:				
21'	W. MAHONEY				

WELL CONSTR. (NTS)	DEPTH (ft below grade)	SAMPLES No.	Recovery (inches)	Blow per 6 in.	Time	HNU/ OVA (ppm)	SOIL DESCRIPTION
	0						0-8" Concrete Slab
	1	S-1	12"	15			Fill material, Black, Brown Coal material, dry-loose
	2			6			
	3						
	4						
	5	S-2	12"	RW RW			Brown with green f SAND and SILT, some Clay, damp, tight, sheen on upper part of recovery ~ 4". Outside of spoon has a sheen, slight odor.
	6			2 1			
	7						
	8						
	9						
	10	S-3	12"	6 7			Red CLAY with some Sand. Firm, small SHALE and rounded pebbles. Spoon was wet.
	11			15 20			
	12						
	13						
	14						
	15	S-4	16"	23 26			Brown/black CLAY with shards of Shale-like pebbles, angular, one large cobble rounded, wet firm.
	16			30 32			
	17						Dark brown SILT, wet, from cuttings.
	18						Firm surface, from cuttings. Wet SILT, from cuttings, soupy.
	19						
	20	S-5	12"	15 21			Brown/black CLAY, dry, firm, has small pieces of shale and pebbles.
	21			19 20			
	22						
	23						
	24						
	25						

LEGEND:

- Cement
- Bentonite /cement
- Bentonite Seal
- Gravel pack
- Screen
- End/Top cap

WELL CONSTRUCTION:

0'-0.5'	Protective Flush-mount manhole.
0.5'-1'	Bentonite-Cement Grout
1'-3'	Bentonite Seal
4'-19'	2" Diameter Sch. 40 0.01 Slot PVC Screen
3'-20'	#0 Morie Sand

NTS - Not to scale

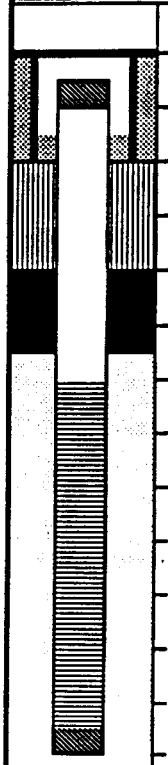
DBC - Depth below PVC casing

ERM-Northeast

175 Froehlich Farm Blvd., Woodbury, New York 11797

LOG OF MONITORING WELL: MW-6

Project Name & Location	Project Number	Water Level(s) (DBC)			Site Elevation Datum
FORMER NORTHEAST ALLOYS & METALS, UTICA, NY	694-001	Date	Time	Levels	Ground Elevation 98.69'
Drilling Company: AQUIFER DRILLING AND TESTING, INC.	Driller: JOE. MIRANDA				Top of Steel Cap Elevation
Method: HOLLOW STEM AUGERS	Date Started: 1/19/93 — Date Completed: 1/19/93				Top of Riser Elevation 98.08'
Completion Depth: 24'	ERM-Northeast Geologist/Engineer: W. MAHONEY				



LEGEND:
- Cement
- Bentonite /cement
- Bentonite Seal
- Gravel pack
- Screen
- End/Top cap

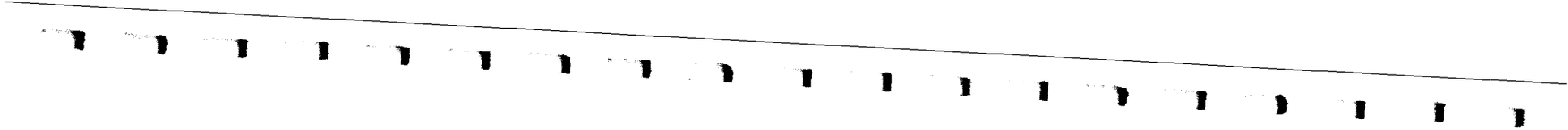
WELL CONSTR. (NTS)	DEPTH (ft below grade)	SAMPLES No.	Recovery (inches)	Blow per 6 in.	Time	HNU/ OVA (ppm)	SOIL DESCRIPTION
	0						0-8" Concrete Slab
	1	S-1	2"	12			GRAVEL, dry, loose.
	2			7			
	3						Black/brown material.
	4						
	5	S-2	16"	1 2			Brown medium SAND, SILT, little gravel, damp, tight.
	6			1 2			
	7						Dark brown fine SAND
	8						
	9						
	10	S-3	16"	14 20			Red brown CLAY with gravel (angular shards), firm, dry.
	11			21 21			
	12						Brown CLAY, rolled into balls, from cuttings.
	13						
	14						
	15	S-4	10"	31 27			Reddish brown CLAY with some Gravel (rounded pebbles), firm, dry.
	16			21 22			
	17						
	18						
	19						
	20	S-5		21 24			Dark brown CLAY, firm, damp, with some small Gravel pieces.
	21			27 22			
	22	S-6		26 37			CLAY with Gravel (angular pieces), damp, rolled into little balls. Silt detected at 23'.
	23						
	24						
	25						

WELL CONSTRUCTION:
0.5'-1' Bentonite-Cement Grout
3.5'-23.5' 2" Dia. 0.01 Slot Screen
0'-0.5' Protective Manhole
1'-3.5' Bentonite Seal
3.5'-23.5' Morie Sand Pack

NTS - Not to scale

DBC - Depth below PVC casing

A.2 BORING LOGS FROM RI/FS



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Pittsburgh, PA (412) 921–3402 • (800) 365–2324

PROJECT ID: N.E. ALLOY AND METAL
BORING/WELL #: MW-7
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 2/12/97 COMPLETED: 2/12/97
DRILLING COMPANY: MAXIM
DRILLER: John/MARK
GEO REPRESENTATIVE: K. MEURER
DRILLING METHOD: 6¼ H.S.A.
BORE HOLE Ø: 10" CORE SIZE:
BACKFILL
AIR MONITORING INSTRUMENT: PID 43
CASING ELEVATION:
GROUND ELEVATION
KEY #: 493
COMMENTS/PROBLEMS:

WELL INSTALLED: ☒ YES ☐ NO
WELL HEAD STICKUP: FT. ☐ ABOVE ☒ BELOW
OUTER CASING: FLUSH MOUNT W/Locking Cap
DEVELOPMENT METHOD: Bailed
RESULTS:
YIELD:
SURFACE PROTECTION: CONCRETE
WATER LEVELS:
TOC=TOP OF INNER CASING
GS=GROUND SURFACE
OPEN BORE HOLE ⌀ COMPLETION:
OPEN BORE HOLE ⌀: _____ HRS:
WELL ⌀ COMPLETION:
WELL ON / / :
WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS RQD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)
S-1	75 (54 47 5)	1.0	5.1	1	GRAY/BLK SLAG AND Cinder HARD MOIST FILL		
S-2	14 (7 5 4)	1.0	4.2	3	As Above STIFF		
S-3	6 (4 3 3)	1.0	4.9	5	As Above M. STIFF		
S-4	1 (1 1 2)	0.3	5.3		As Above Soft Wet @ 8'		
S-5	3 (3 10 22)	1.2	17.0	10	As Above SLT ODOR(?)		
S-6	17 (15 16 24)	1.6	0.2		BLK/Purple SILT AND CLAY SOME C-SAND TRACE GRAVEL V. STIFF - HARD ALLUVIUM		
S-7	15 (11 15 24)	1.5	2.0	15	As Above		
					B.O.B. 14.0		
				20			

WELL DIAGRAM: Bentonite; 16/20 SIZED SAND; 2" SCH 40 PVC SLOTTED 0.010

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: MW-7
PROJECT #: 94502

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PROJECT ID: N.E. ALLOY AND METALS

BORING/WELL #: MW-8

PROJECT #: 94502

PAGE 1 OF 1

DATE STARTED: 2/12/97 COMPLETED: 2/12/97

DRILLING COMPANY: MAXIM

DRILLER: John / MARK

CEC REPRESENTATIVE: K. NIEMEIER

DRILLING METHOD: 6¼ H.S.A.

BORE HOLE Ø: 10" CORE SIZE:

BACKFILL:

AIR MONITORING INSTRUMENT: PID # 3

CASING ELEVATION:

GROUND ELEVATION

KEY #: 493

COMMENTS/PROBLEMS:

WELL INSTALLED: ☒ YES ☐ NO

WELL HEAD STICKUP: FT. ☐ ABOVE - ☒ BELOW

OUTER CASING: FLUSH MOUNT W/Locking Cap

DEVELOPMENT METHOD: Bailed

RESULTS:

YIELD:

SURFACE PROTECTION: Concrete

WATER LEVELS:

TOC=TOP OF INNER CASING
GS=GROUND SURFACE

OPEN BORE HOLE @ COMPLETION: DRY

OPEN BORE HOLE @: _____ HRS:

WELL @ COMPLETION:

WELL ON / / :

WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):
Cuttings on PLASTIC

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS PER 6"	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)
S-1	1.0	49 47 11/2	1.0	1	GRAY BLK CINDER, SLAG, BRICK HARD MOIST FILL		
S-2	1.3	4 4 6 6	2.2	2 3 4	GRAY SILTY CLAY TRACE CINDER M. STIFF MOIST FILL		
S-3	1.5	3 4 4 6	1.0	5	GRAY/GREEN/RED SILTY CLAY MOIST M. STIFF ALLUVIUM		
S-4	1.6	2 3 5 6	0.4		As Above		
S-5	1.6	3 4 7 10	0.5		GRAY/PURPLE SILTY CLAY M. STIFF WET @ 8' ALLUVIUM		
S-6	0.7	10 8 9 12	1.2	10	GRAY/PURPLE SILTY CLAY SOME SAND AND GRAVEL STIFF WET		
S-7	1.6	48 7 14	0.2		GRAY/BLACK SILTY CLAY TRACE Rock Frag 13.8 - SOME M-C SAND Wet ALLUVIUM		
				15		BOB 14.0'	
				20			

WELL DIAGRAM: Concrete; 10/20 SILICA SAND; 2" SCH 40 PVC SLOTTED 0.010

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: MW-8
PROJECT #: 94502

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PROJECT ID: NORTHEAST ALLOY AND METALS | BORING/WELL #: RW-1 | PROJECT #: 94502 | PAGE 1 OF

DATE STARTED: 2/13/97 COMPLETED: 2/14/97 | WELL INSTALLED: ☒ YES ☐ NO
DRILLING COMPANY: MAXIM | WELL HEAD STICKUP: FT. ☐ ABOVE ☒ BELOW
DRILLER: JOHN MACK | OUTER CASING: FLUSH MOUNT W/Locking Cap
CEC REPRESENTATIVE: K. MEURER | DEVELOPMENT METHOD: Bailed
DRILLING METHOD: 6¼ HSA | RESULTS:
BORE HOLE Ø: 10" CORE SIZE: | YIELD:
BACKFILL | SURFACE PROTECTION: CONCRETE
AIR MONITORING INSTRUMENT: PID # 3 | WATER LEVELS:
CASING ELEVATION: | TOC=TOP OF INNER CASING | OPEN BORE HOLE @ COMPLETION:
GROUND ELEVATION | OPEN BORE HOLE @: _____ HRS:
KEY #: | GS=GROUND SURFACE | WELL @ COMPLETION:
WELL ON / / :

COMMENTS/PROBLEMS:
Well offset 5ft East of Boring.
Boring Back Filled w/BENTONITE to 0.5
S-6 Sample From WELL b/c No Recovery in Sample From boring

WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):
Soil on Plastic

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS N@D	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.4	24 26 10	3.0	1	0.5 CONCRETE - BLK SLAG, CINDER MOIST STIFF FILL			6" RISER; BENTONITE
S-2	1.6	5 3 5 4	4.2	2 3 4	As ABOVE to 3.0. 3.0 - GRAY/BLK SILT AND CLAY STIFF MOIST FILL			
S-3	1.2	1 3 6 8	4.2	5	GRAY SILTY CLAY TRACE Rock Frag ~~AND~~ WOOD ~~Wet~~ STIFF WET @ 5.0 FILL			
S-4	1.4	3 4 8 10	3.4		BRN SILTY CLAY TRACE WOOD AND ROCK FRAG M. STIFF WET FILL			#0/20 SAND; 4" SCH 40 PVC SLOTTED; 0.010
S-5	1.5	9 21 23 24	1.8		As ABOVE			
S-6	0.5	37 47 65	3.3	10	GRAY/BLACK SILT SOME F SAND, CLAY AND Rock FRAG DRY ~~FILL~~ TILL			B.O.B. 10.0
S-7	1.0	21 48 30 42	4.9		GRAY/PURPLE SILT SOME CLAY, F. SAND AND TRACE ROCK FRAG. ~~HARD~~ DRY TILL			
S-8	0.8	21 35 37 42	4.5	15	As ABOVE			
S-9	1.0	12 21 23 35	3.1		BLK As ABOVE			
S-10	1.6	21 26 26 30	3.8		As ABOVE			
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: RW-1
PROJECT #: 94502

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Civil & Environmental Consultants, Inc. PROJECT #: 94502 | BORING/WELL #: RW-1 | PAGE 2 OF 2

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS RQD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-11	1.2	21 26 34 27	3.1	22	As Above			
S-12	1.3	WD 31 44 47	3.8	23 24	As Above			
S-13	1.2	32 57 65 72	3.1	25	GRAY/BLK SLST SOME F Sand, CLAY, Rock Frag. AND GRAVEL MOIST TILL			
S-14	0.7	62 100/0.4	4.1		As Above			
S-15	0.1	100/0	0.0	30	Auger Refusal @ 28.0 - BLK Shale in Shoe of Spoon.	B.O.B. 28.0		

NOTES:

BORING/WELL #: RW-1
PROJECT #: 94502

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Pittsburgh, PA (412) 921-3402 • (800) 365-2324

PROJECT ID: Northeast Alloy + Metal	BORING/WELL #: RW-2
	PROJECT #: 94502

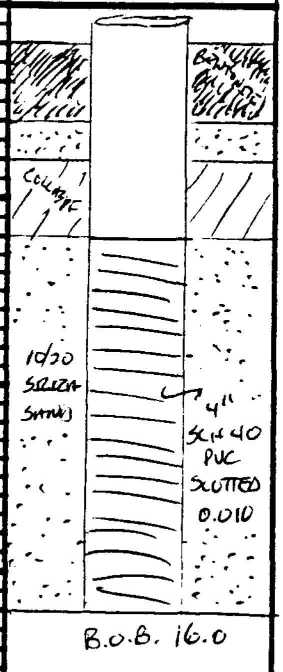
DATE STARTED: 2/14/97 COMPLETED: 2/15/97	WELL INSTALLED: ☒ YES ☐ NO
DRILLING COMPANY: MAXIM	WELL HEAD STICKUP: FT. ☐ ABOVE ☒ BELOW
DRILLER: JOHN/MARK	OUTER CASING:
CEC REPRESENTATIVE: K. MEURER	DEVELOPMENT METHOD: Bailed
DRILLING METHOD: 6¼ HSA	RESULTS:
BORE HOLE ⌀: 11" CORE SIZE: —	YIELD:
BACKFILL: —	SURFACE PROTECTION:
AIR MONITORING INSTRUMENT: PID #3	WATER LEVELS:
CASING ELEVATION:	TOC=TOP OF INNER CASING — OPEN BORE HOLE @ COMPLETION:
GROUND ELEVATION	OPEN BORE HOLE @: ____ HRS:
KEY #:	GS=GROUND SURFACE — WELL @ COMPLETION:
	WELL ON / / :

COMMENTS/PROBLEMS:
RW-2 Well offset 5' North of Boring
Boring Backfilled w/ Bentonite
S-4 Sampled during well boring b/c of no recovery during boring

WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS RQD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)
S-1	1.3	33, 13, 10, 7	13.3	1–2	BLK/BRN SLAG AND CINDER MOIST M. STIFF FILL	+ +	
S-2	1.8	55, 5, 3, 4	25.2	3–4	As Above	+ +	
S-3	1.3	2, 2, 3, 3	11.1	5	As Above with trace coal	+ +	
S-4	0.4	1, 1, 1, 1	5.6		As Above	+ +	
S-5	1.2	6, 4, 5, 5	34.2		BLK/BRN SILT AND CLAY TRACE Rock Frag, Wood AND Coal Wet @ 8 STIFF FILL	+ +	
S-6	1.0	3, 2, 2, 3	9.3	10	As Above w/ some F-M sand	+ +	
S-7	0.7	2, 13, 13, 10	2.0		As Above	+ +	
S-8	0.8	10, 5, 15, 14	1.1	15	As Above to 15.5 15.5 - BLK SILT some F. sand, CLAY ROCK FRAG DRY V. STIFF TILL	+ +	
S-9	0.8	10, 5, 6, 12	2.6		BLK SILT some F-sand, CLAY AND Rock Frag. Dry STIFF TILL		
S-10	1.2	58, 16, 55	2.0	20	As Above		

WELL DIAGRAM



CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ^^^^^ ESTIMATED ....

BORING/WELL #: RW-2
PROJECT #: 94502

Civil & Environmental Consultants, Inc. PROJECT #: 94502 | BORING/WELL #: RW-2 | PAGE 2 OF 7

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS RQD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-11	1.3	34/99/88/76	0.9	21	As Above			
				22				
S-12	0.9	100 10"/4	3.0	23	As Above some rock frags			
				24				
S-13	1.0	67/57/49/10"/3	2.8	25	As Above			
S-14	1.0	87/72/10"/3	1.7		As Above			
				30				

NOTES:

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BORING/WELL #: RW-2
PROJECT #: 94502

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PROJECT ID: NF ALLOYS + METALS

BORING/WELL #: S-1
PROJECT #: 9502
PAGE 1 OF 1

DATE STARTED: 2/11/97 COMPLETED: 2/11/97	WELL INSTALLED: ☐ YES ☒ NO
DRILLING COMPANY: MARKON	WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW
DRILLER: MARK / JOHN	OUTER CASING:
CEC REPRESENTATIVE: J. MINICK	DEVELOPMENT METHOD:
DRILLING METHOD: S.S.	RESULTS:
BORE HOLE ø: 2" CORE SIZE:	YIELD:
BACKFILL: Cuttings	SURFACE PROTECTION:
AIR MONITORING INSTRUMENT: PID #3	WATER LEVELS:
CASING ELEVATION:	TOC=TOP OF INNER CASING / GS=GROUND SURFACE: OPEN BORE HOLE ⊙ COMPLETION:
GROUND ELEVATION	OPEN BORE HOLE ⊙: ____ HRS:
KEY #:	WELL ⊙ COMPLETION:
COMMENTS/PROBLEMS:	WELL ON / / :
	WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS ROD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.8	4 14 11 12	2.0	1 2 3 4 5 10 15 20	BLK SLAG AND CINDER MOIST STIFF FILL	B.O.B 2.6		

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: S-1
PROJECT #: 9502

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PROJECT ID: _____
NE. ALLOYS + METALS

BORING/WELL #: S-2
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 2/11/97 COMPLETED: 2/11/97	WELL INSTALLED: ☐ YES ☒ NO
DRILLING COMPANY: MARTIN	WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW
DRILLER: Mark/John	OUTER CASING:
CEC REPRESENTATIVE: K. MEURER	DEVELOPMENT METHOD:
DRILLING METHOD: SS.	RESULTS:
BORE HOLE ø: 2" CORE SIZE:	YIELD:
BACKFILL: Cuttings	SURFACE PROTECTION:
AIR MONITORING INSTRUMENT: PID #3	WATER LEVELS:
CASING ELEVATION:	TOC=TOP OF INNER CASING / GS=GROUND SURFACE: OPEN BORE HOLE ⊙ COMPLETION:
GROUND ELEVATION	OPEN BORE HOLE ⊙: _____ HRS:
KEY #:	WELL ⊙ COMPLETION:
COMMENTS/PROBLEMS:	WELL ON / / :
	WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS ROD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-2	1.3	85 87 M 7	1.8	1	BLK CINDER + SLAG MOIST V. STIFF FILL	+ + + +		
				2		B.O.B 2.6		
				3				
				4				
				5				
				10				
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: S-2
PROJECT #: 94502

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PROJECT ID: NE. ALLOYS & METALS
BORING/WELL #: S-3
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 2/11/97 COMPLETED: 2/11/97	WELL INSTALLED: ☐ YES ☑ NO
DRILLING COMPANY: MAXIM	WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW
DRILLER: MARK / JOHN	OUTER CASING:
CEC REPRESENTATIVE: K. MOURER	DEVELOPMENT METHOD:
DRILLING METHOD: 5¾.	RESULTS:
BORE HOLE ø: 7" CORE SIZE:	YIELD:
BACKFILL: Cuttings	SURFACE PROTECTION:
AIR MONITORING INSTRUMENT: PID #3	WATER LEVELS:
CASING ELEVATION:	TOC=TOP OF INNER CASING; GS=GROUND SURFACE: OPEN BORE HOLE ⊜ COMPLETION:
GROUND ELEVATION	OPEN BORE HOLE ⊜: ____ HRS:
KEY #:	WELL ⊜ COMPLETION:
COMMENTS/PROBLEMS:	WELL ON / / :
	WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS R/D	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-3	1.4		0.2	1	BLK CINDER + SLAG MOIST V. STIFF FILL	+ + + +		
				2		B.O.B. 2.0		
				3				
				4				
				5				
				10				
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: S-3
PROJECT #: 94502

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PROJECT ID: NE ALLOYS & METALS

BORING/WELL #: S-4

PROJECT #: 94502

PAGE 1 OF 1

DATE STARTED: 2/1/97 COMPLETED: 2/1/97

DRILLING COMPANY: MAKIN

DRILLER: MARK/John

CEC REPRESENTATIVE: L. MEURER

DRILLING METHOD: S.S.

BORE HOLE ø: 2" CORE SIZE:

BACKFILL: Cuttings

AIR MONITORING INSTRUMENT: PID #3

CASING ELEVATION:

GROUND ELEVATION

KEY #:

COMMENTS/PROBLEMS:

WELL INSTALLED: ☐ YES ☒ NO

WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW

OUTER CASING:

DEVELOPMENT METHOD:

RESULTS:

YIELD:

SURFACE PROTECTION:

WATER LEVELS:

TOC=TOP OF INNER CASING

GS=GROUND SURFACE

OPEN BORE HOLE ⊙ COMPLETION:

OPEN BORE HOLE ⊙: _____ HRS:

WELL ⊙ COMPLETION:

WELL ON / / :

WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY x RECOVERY	IN OWS COINIS ROD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-4	1.3		2.1	1	BLK CINDER + SLAG MOIST V. STIFF FILL			
				2				
				3				
				4				
				5				
				10				
				15				
				20				

B.03
2.0

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: S-4
PROJECT #: 94502

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CEC

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Pittsburgh, PA (412) 921-3402 • (800) 365-2324

PROJECT ID: N.E. ALLOYS + METALS

BORING/WELL #: S-5

PROJECT #: 94502

PAGE 1 OF 1

DATE STARTED: 2/11/97 COMPLETED: 2/11/97	WELL INSTALLED: ☐ YES ☒ NO
DRILLING COMPANY: MAXIN	WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW
DRILLER: Mark/John	OUTER CASING:
CEC REPRESENTATIVE: K. Mewton	DEVELOPMENT METHOD:
DRILLING METHOD: S.S.	RESULTS:
BORE HOLE ø: 2" CORE SIZE:	YIELD:
BACKFILL: Cuttings	SURFACE PROTECTION:
AIR MONITORING INSTRUMENT: PID #3	WATER LEVELS:
CASING ELEVATION:	TOC=TOP OF INNER CASING — OPEN BORE HOLE @ COMPLETION:
GROUND ELEVATION	OPEN BORE HOLE @: ____ HRS:
KEY #:	GS=GROUND SURFACE — WELL @ COMPLETION:
COMMENTS/PROBLEMS:	WELL ON / / :
	WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS RQD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-5	1.4		0.5	1	BLK CINDER + SLAG MOIST V. STIFF FILL	+ + + + +		
				2		B.O.B. 2.0		
				3				
				4				
				5				
				10				
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — — IRREGULAR OR ANGULAR ^^^^ ESTIMATED ....

BORING/WELL #: S-5

PROJECT #: 94502

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PROJECT ID: N E A. M.

BORING/WELL #: B-101

PROJECT #: 94502

PAGE 1 OF 1

DATE STARTED: 8/6/97 COMPLETED: 8/6/97

DRILLING COMPANY: MAXIM

DRILLER: BILL / RICK

CEC REPRESENTATIVE: K. TM

DRILLING METHOD: 4¼ HSA

BORE HOLE ø: 8 CORE SIZE:

BACKFILL: Cuttings

AIR MONITORING INSTRUMENT: PID #4

CASING ELEVATION:

GROUND ELEVATION

KEY #:

COMMENTS/PROBLEMS:

WELL INSTALLED: ☐ YES ☒ NO

WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW

OUTER CASING:

DEVELOPMENT METHOD:

RESULTS:

YIELD:

SURFACE PROTECTION:

WATER LEVELS:

TOC=TOP OF INNER CASING

GS=GROUND SURFACE

OPEN BORE HOLE ⊖ COMPLETION: 9.65

OPEN BORE HOLE ⊖: _____ HRS:

WELL ⊖ COMPLETION:

WELL ON / / :

WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS ROD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.0	4 3 3	31.9	1	BRN/BLACK SLAG AND CINDER TRACE Coal Moist LOOSE FILL			
S-2	1.5	5 3 5	15.6	3 4	As Above			
S-3	1.5	5 7 9	16.3	5	BRN/BLK SLAG AND CINDER SOME SILT TRACE CLAY MOIST M. DENSE FILL			
S-4	1.5	3 5 4	7.2		BRN F. SAND AND SILT TRACE CLAY CINDER MOIST FILL			
S-5	0.3	4 2 3	6.0	10	As Above Well @ 9.5			
				15		10.0 B.O.B.		
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: B-101
PROJECT #: 94502

S-6

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PROJECT ID: NEAM
BORING/WELL #: B-102
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 9/16/97 COMPLETED: 9/16/97	WELL INSTALLED: ☐ YES ☒ NO
DRILLING COMPANY: MAXIM	WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW
DRILLER: BILL / RICH	OUTER CASING:
CEC REPRESENTATIVE: KJM	DEVELOPMENT METHOD:
DRILLING METHOD: 4¼ HSA	RESULTS:
BORE HOLE ø: 8 CORE SIZE:	YIELD:
BACKFILL: Cuttings	SURFACE PROTECTION:
AIR MONITORING INSTRUMENT: PID #4	WATER LEVELS:
CASING ELEVATION:	TOC=TOP OF INNER CASING: OPEN BORE HOLE ⊙ COMPLETION:
GROUND ELEVATION	OPEN BORE HOLE ⊙: _____ HRS:
KEY #:	GS=GROUND SURFACE: WELL ⊙ COMPLETION:
COMMENTS/PROBLEMS:	WELL ON / / :
	WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS RQD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.2	2 4 3 3	19.5	1 2	BRN/BLK SLAG + CINDER TRACE COAL + BRICK LOOSE DRY FILL			
S-2	1.0	3 4 2 2	15.1	3 4	AS ABOVE			
S-3	1.7	1 2 2 3	13.2	5	AS ABOVE			
S-4	1.3	4 3 2 2	23.6		AS ABOVE to 7.5 7.5 - BRN SILT SOME CLAY AND ROCKFRAG., SLAG MOIST + FILL			
S-5	1.1	3 2 2 4	21.2	10	AS ABOVE WET @ 9.5			
						10.0 BOB		
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: B-102
PROJECT #: 94502

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PROJECT ID: NEAM
BORING/WELL #: B-103
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 8/16/97 COMPLETED: 8/16/97
DRILLING COMPANY: MARTIN
DRILLER: RICH/BRAC
CEC REPRESENTATIVE: KJM
DRILLING METHOD: 4¼ HSA
BORE HOLE ø: 8 CORE SIZE:
BACKFILL: Cuttings
AIR MONITORING INSTRUMENT: PID #4
CASING ELEVATION:
GROUND ELEVATION
KEY #:
COMMENTS/PROBLEMS:

WELL INSTALLED: ☐ YES ☑ NO
WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW
OUTER CASING:
DEVELOPMENT METHOD:
RESULTS:
YIELD:
SURFACE PROTECTION:
WATER LEVELS:
TOC=TOP OF INNER CASING
GS=GROUND SURFACE
OPEN BORE HOLE ⊙ COMPLETION:
OPEN BORE HOLE ⊙: ____ HRS:
WELL ⊙ COMPLETION:
WELL ON / / :
WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS ROD	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.4	5 4 4 3	40.7	1 2	BRN/BLK SLAG, CINDER, SAND DRY LOOSE FILL			
S-2	1.3	3 3 3 2	55.8	3 4	AS ABOVE TRACE COAL			
S-3	0.5	2 2 3 2	63.7	5	AS ABOVE Moist			
S-4	1.1	2 2 2 2	171		AS ABOVE Wet @ 7.5			
S-5				10		BOB @ 10		
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: B-103 S-8
PROJECT #: 94502

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PROJECT ID: NEAM
BORING/WELL #: B-104
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 8/6/97 COMPLETED: 8/6/97
DRILLING COMPANY: MAXIM
DRILLER: RICH / BILL
CEC REPRESENTATIVE: KJM
DRILLING METHOD: 4¼ HSA
BORE HOLE ø: 8 CORE SIZE:
BACKFILL: Cuttings
AIR MONITORING INSTRUMENT: PID #4
CASING ELEVATION:
GROUND ELEVATION
KEY #:
COMMENTS/PROBLEMS:

WELL INSTALLED: ☐ YES ☒ NO
WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW
OUTER CASING:
DEVELOPMENT METHOD:
RESULTS:
YIELD:
SURFACE PROTECTION:
WATER LEVELS:
TOC=TOP OF INNER CASING
GS=GROUND SURFACE
OPEN BORE HOLE @ COMPLETION:
OPEN BORE HOLE @: HRS:
WELL @ COMPLETION:
WELL ON / / :
WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	IN OWS COUNTS RUN	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.2	3 8 14 8	34.2	1 2	BLK/BRN SLAG, CINDER, SAND DRY LOOSE FILL			
S-2	1.3	4 4 2 4	50.7	3 4	BLK F. SAND AND CINDER MOIST LOOSE FILL			
S-3	0.7	6 4 2 2	46.4	5	AS ABOVE			
S-4	0.7	1 1 1 1	51.6		AS ABOVE			
S-5	0.4	4 6 2 2	29.2		AS ABOVE WET @ 9.8			
				10		10.0 B.O.B		
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: B-104
PROJECT #: 94502

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PROJECT ID: NEAM

BORING/WELL #: B-105

PROJECT #: 94502

PAGE 1 OF 1

DATE STARTED: 8/8/97 COMPLETED: 8/8/97

DRILLING COMPANY: MAXIM

DRILLER: CHRIS / ROB H

CEC REPRESENTATIVE: KJM

DRILLING METHOD: S.S.

BORE HOLE ø: 2" CORE SIZE:

BACKFILL: Cuttings

AIR MONITORING INSTRUMENT: PENTEX

CASING ELEVATION:

GROUND ELEVATION

KEY #:

COMMENTS/PROBLEMS:

WELL INSTALLED: ☐ YES ☒ NO

WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW

OUTER CASING:

DEVELOPMENT METHOD:

RESULTS:

YIELD:

SURFACE PROTECTION:

WATER LEVELS:

TOC=TOP OF INNER CASING

GS=GROUND SURFACE

OPEN BORE HOLE ø COMPLETION: 8.05

OPEN BORE HOLE ø: ____ HRS:

WELL ø COMPLETION:

WELL ON / / :

WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS R/U	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.3	4 4 / 2 2	30.2	1 2	BLK F. SAND SOME ~~GRAVEL~~ CINDER SLAG + BRICK DRY			
S-2	1.0	3 5 / 4 3	450	3 4	As Above			
S-3	0.6	3 1 / 5 1	428	5	As Above			
S-4	0.4	3 3 / 3 2	456		As Above Wet @ 7.8			
				10		B.o.B. 8.0		
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

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PROJECT ID: NEAM
BORING/WELL #: B-106
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 8/8/97 COMPLETED: 8/8/97
DRILLING COMPANY: MARTIN
DRILLER: CHRIS / RICH
CEC REPRESENTATIVE: KJM
DRILLING METHOD: S.S.
BORE HOLE ø: 2" CORE SIZE:
BACKFILL: Cuttings
AIR MONITORING INSTRUMENT: PID HL
CASING ELEVATION:
GROUND ELEVATION
KEY #:
COMMENTS/PROBLEMS:

WELL INSTALLED: ☐ YES ☑ NO
WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW
OUTER CASING:
DEVELOPMENT METHOD:
RESULTS:
YIELD:
SURFACE PROTECTION:
WATER LEVELS:
TOC=TOP OF INNER CASING
GS=GROUND SURFACE
OPEN BORE HOLE @ COMPLETION: 8.06.5
OPEN BORE HOLE @: ____ HRS:
WELL @ COMPLETION:
WELL ON / / :
WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS R/D	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.0	10 8 7 5	28.7		BLK/BRN F. SAND AND CINDER TRACE SLAG AND BRICK DRY FILL			
S-2	1.3	4 5 3 1	36.9		As Above			
S-3	1.3	4 4 3 3	32.5	5	As Above			
S-4	1.2	5 4 4 2	21.8		As Above wet @ 7.8'			
S-5						B.O.B. 8.0		
				10				
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: B-106
PROJECT #: 94502

S-11

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PROJECT ID: N.E.A.M

BORING/WELL #: B-107

PROJECT #: 94502

PAGE 1 OF 1

DATE STARTED: 8/8/97 COMPLETED: 8/8/97

DRILLING COMPANY: MAXIM

DRILLER: CHRIS / RICH

CEC REPRESENTATIVE: KJM

DRILLING METHOD: SS.

BORE HOLE ø: 2" CORE SIZE:

BACKFILL: Cuttings

AIR MONITORING INSTRUMENT: PID #4

CASING ELEVATION:

GROUND ELEVATION

KEY #:

COMMENTS/PROBLEMS:

WELL INSTALLED: ☐ YES ☒ NO

WELL HEAD STICKUP: FT. ☐ ABOVE ☐ BELOW

OUTER CASING:

DEVELOPMENT METHOD:

RESULTS:

YIELD:

SURFACE PROTECTION:

WATER LEVELS:

TOC=TOP OF INNER CASING

GS=GROUND SURFACE

OPEN BORE HOLE @ COMPLETION:

OPEN BORE HOLE @: _____ HRS:

WELL @ COMPLETION:

WELL ON / / :

WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS RUN	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.4	17 / 5 / 4	20.0	1	BLK/GRAY F. SAND AND CONCR TRACE SLAG AND BRICK DRY FILL			
S-2	1.2	13 / 9 / 13 / 8	26.4	3	As Above			
S-3	1.0	10 / 5 / 5 / 7	35.4	5	BRN SILT SOME F. SAND TRACE CLAY AND BRICK MOIST FILL			
S-4	0.3	5 / 4 / 3	31.8		As Above			
S-5	1.0	9 / 11 / 15	18.7		BRN SILT SOME F. SAND TRACE CLAY AND GRAY WET @ 8.3 REWORKED TILL			
				10		B.O.B. 10.0		
				15				
				20				

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

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PROJECT ID: NEAM
BORING/WELL #: MW-9
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 8/6/97 COMPLETED: 8/7/97
DRILLING COMPANY: MAXIM
DRILLER: RICH / BRAC
CEC REPRESENTATIVE: KJM
DRILLING METHOD: 8¼
BORE HOLE ø: 8 12" CORE SIZE:
BACKFILL:
AIR MONITORING INSTRUMENT: PID #4
CASING ELEVATION:
GROUND ELEVATION
KEY #:
COMMENTS/PROBLEMS:

WELL INSTALLED: ☒ YES ☐ NO
WELL HEAD STICKUP: FT. ☐ ABOVE ☒ BELOW
OUTER CASING: FLUSH MOUNT W/LOCKING CAP
DEVELOPMENT METHOD: Bailed
RESULTS:
YIELD:
SURFACE PROTECTION: 2x2' Pad CONCRETE
WATER LEVELS:
TOC=TOP OF INNER CASING
GS=GROUND SURFACE
OPEN BORE HOLE ⊙ COMPLETION: 10.26 GS
OPEN BORE HOLE ⊙: HRS:
WELL ⊙ COMPLETION: 8.2 T.O.C
WELL ON / / :
WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS RUN	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)
S-1	1.2	6 6 / 5	67.4	1	BLK/BRN F-SAND AND C-SAND TRACE BRICK DRY M. DENSE FILL		
S-2	1.3	4 4 / 5	68.3	2 3 4	AS ABOVE		
S-3	0.8	2 2 / 1	75.1	5	AS ABOVE MOIST		
S-4	0.1	2 / 1 1	46.2		AS ABOVE		
S-5	0.5	1 / 1 1	54.8		AS ABOVE WET @ 8.0		
S-6	0.2	1 / 2 2	50.1	10	AS ABOVE		
S-7	1.3	1 / 1 5	31.3		AS ABOVE TO 13.0 13.0 - BLK/GRAY SILT SOME F. SAND TRACE CLAY AND GRAY WET REWORKED TILL		
S-8	0.5	33 / 30 16	32.9	15	BLK/GRAY F. SAND AND SILT TRACE GRAVEL REWORKED TILL		
S-9	1.0	33 / 36 23 21	26.9		BLK/GRAY F. SAND AND SILT TRACE GRAVEL AND CLAY DRY TILL		
				20			

WELL DIAGRAM: 16/30 SILICA SAND; 2" SCH 40 PVC SLOTTED 0.010

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: MW-9
PROJECT #: 94502

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PROJECT ID: NEAM
BORING/WELL #: MW-10
PROJECT #: 94502
PAGE 1 OF 1

DATE STARTED: 8/19/97 COMPLETED: 8/19/97	WELL INSTALLED: ☒ YES ☐ NO
DRILLING COMPANY: MAXIM	WELL HEAD STICKUP: FT. ☐ ABOVE ☒ BELOW
DRILLER: RRH/CHSP	OUTER CASING: Flush Mount w/lock box
CEC REPRESENTATIVE: KJM	DEVELOPMENT METHOD: Bailed
DRILLING METHOD: 6¼ HSA	RESULTS:
BORE HOLE ø: 12 CORE SIZE:	YIELD:
BACKFILL: —	SURFACE PROTECTION:
AIR MONITORING INSTRUMENT: PID HNu	WATER LEVELS:
CASING ELEVATION:	TOC=TOP OF INNER CASING — OPEN BORE HOLE @ COMPLETION: 11.15GS
GROUND ELEVATION	OPEN BORE HOLE @: ____ HRS:
KEY #:	GS=GROUND SURFACE — WELL @ COMPLETION:
COMMENTS/PROBLEMS:	WELL ON / / :
	WASTE HANDLING (CUTTINGS, DRILLING FLUIDS, DEVELOPMENT WATER):

SAMPLE NO. CORE RUN	RUN/RECOVERY % RECOVERY	BLOWS COUNTS N@0	ORGANIC VAPOR READING (PPM)	DEPTH (FEET)	MATERIAL DESCRIPTION AND COMMENTS	GRAPHIC LOG	ELEVATION (FEET, MSL)	WELL DIAGRAM
S-1	1.3	7, 10, 10, 14	52.1	1	BLK/BRN F SAND AND CINDER TRACE SLAG + BRICK DRY FILL			
S-2	1.3	17, 12, 8, 7	74.8	3	AS ABOVE			
S-3	1.5	4, 3, 3, 3	28.4	5	AS ABOVE			
S-4	1.2	3, 2, 1, 2	37.0		AS ABOVE WET @ 7.0			
S-5	1.0	3, 2, 1, 1	29.5	10	AS ABOVE			
S-6	0.7	3, 2, 1, 1	38.8		AS ABOVE			N/20 SAND SAND
S-7	0.5	1, WOH, 1, 2	31.8 46.8		AS ABOVE			2" SCH.40 PVC SLOTTED 0.010
S-8	0.2	2, 1, 1, 3	46.8	15	AS ABOVE TRACE WOOD			
S-9	0.3	4, 7, 12, 17	45.8		AS ABOVE to 17.0			
S-10	0.5	14, 33, 19, 16	27.1		17 - BLK REWORD TILL SL. HYDROCARBON ODOR AS ABOVE to 19.5 19.5 - DK GRAY/BRN SILT SAND			
				20	T. SAND TRACE CLAY AND GRAVEL MOIST TILL			

CONTACT TYPES: ABRUPT ——— GRADATIONAL — — —
IRREGULAR OR ANGULAR ~~~~ ESTIMATED .....

BORING/WELL #: MW-10
PROJECT #: 94502

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APPENDIX B

LABORATORY VALIDATION SUMMARY AND REPORTS

B.1 SUMMARY REPORT
B.2 PHASE I VALIDATION REPORT
B.3 PHASE II VALIDATION REPORT

B.1 SUMMARY REPORT

CEC SUMMARY OF
DATA VALIDATION AND QA SAMPLE EVALUATIONS

VALIDATION

Soil Data: EQA's data validation resulted in qualification of the majority of VOC results for soil samples as estimated values ("J" qualifier) due to matrix effects. Reported results for TCE concentrations in soil samples RW-1 (18 to 20 feet), RW-2 (22 to 24 feet), RW-2 (26 to 27.3 feet) were rejected due to excessive matrix interferences. For some soil samples, concentrations of acetone and methylene chloride were qualified as estimated values due to excursions of validation precision criteria. The majority of the VOC analyses for soil samples were qualified as estimated values due to low matrix spike recoveries caused by matrix effects. All the VOC results for sample S-4 (0 to 2 ft) were qualified as estimated values because the calibration method did not match the methanol-based extraction method. Several metals, including antimony, arsenic, chromium, potassium, mercury, and selenium were qualified as estimated values at the majority of soil samples due to matrix spike recoveries outside acceptable ranges. Arsenic concentrations in all soil samples were qualified as estimated as a result of unacceptable duplicate precision. Mercury concentrations were rejected for all soil samples due to low matrix spike recovery. EQA indicated the rejection of the data was not due to the field or laboratory procedures used.

Groundwater Data: Groundwater sampling results were found to be valid with minimum exceptions and/or qualifiers. Results of several VOC analyses were qualified as estimated because they were detected at concentrations below the detection limit. Results of VOC analyses at RW-2 were qualified as estimated values because the sample was analyzed 18 minutes outside the specified 12-hour period following performance standard injection. Reported results for aluminum, chromium, copper, magnesium, and zinc analyses performed during the Phase I RI were qualified as estimated as a result of duplicate precision outside the validated action limit. Antimony, arsenic, cadmium, chrome, lead, selenium and zinc results for the Phase II RI were qualified due to interferences, or low recoveries from matrix spikes or serial dilutions. Results for lead and manganese analyses performed during the Phase I RI were rejected because matrix spike recoveries were outside the specified range. EQA indicated the rejection of the data was not due to the field or laboratory procedures used.

Laboratory Sample Receiving Procedure: Additionally, EQA identified the lack of proper sample receiving procedures by Galston who analyzed samples collected during the Phase I RI. Galston did not log the temperature of the majority of samples when they were received, which violates proper protocol. Initial discussions with NYSDEC

personnel indicated they would be willing to accept the data as being valid for site characterization, but the data could have limited use for litigation.

QA EVALUATION

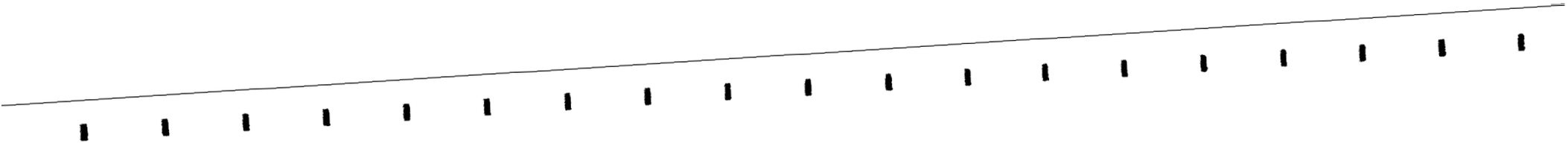
EQA also evaluated the QA of samples collected in accordance with the QAPP. EQA's report is included in Appendix B and is summarized in the following items.

Completeness: EQA's evaluation resulted in rejection of approximately 5% of the soil data and 2% of the groundwater data. The data is considered to be valid and usable are within the acceptable completeness objective of 90%. Completeness is measured as the percentage of the data that is considered valid.

Analytical results for VOCs and several metals were qualified or rejected as a result of matrix interferences in the majority of soil samples and some groundwater samples. A small portion of soil and aqueous samples were rejected. All TCE results for soil samples from RW-1 and RW-2 were rejected as a result of unacceptable matrix spike recovery or matrix interference. Mercury results were rejected in all soil samples due to low matrix spike recovery. EQA indicated that laboratory and sampling procedures were not responsible for the rejected and/or qualified data.

Representativeness: Field documentation was reviewed to confirm that sampling protocols presented in the FSP of the QAPP were followed, and that sample identification and integrity were maintained. As indicated in Section 3.1.1, the analytical laboratory that analyzed the samples collected during Phase I of the RI failed to log in the sample temperatures for several soil and water samples. In addition, the pH was not recorded for several aqueous samples. EQA chose to qualify the sample results for VOCs and metals in all affected samples as estimated values. Since preservation of samples is part CEC's standard operating procedures, the data are considered representative despite improper documentation of sample conditions by the laboratory upon receipt. No breaches in field sampling protocol were identified. Additionally, there are no indications that sample identification or integrity had been compromised. The field data is therefore considered to be representative of the media sampled as outlined in the QAPP.

Precision: Sampling precision was evaluated by obtaining one blind duplicate sample obtained during each phase of the RI for both groundwater and soil sampling. Precision was evaluated by calculating the relative percent differences (RPD) for each analytical parameter. Reported results for arsenic were qualified as estimated in all soil samples because concentrations were outside the duplicate precision validation action limit of ± 2 x Contract Required Detection Limit (CRDL). In aqueous samples, results for aluminum, chromium, copper, magnesium, and zinc analyses performed



during the Phase I RI were qualified as estimated due to duplicate precision outside the validation action limit of ±2 x CRDL. All other RPD values were within applicable limits.

Accuracy: Potential sources of sampling errors as a result of the sampling process were assessed by collecting and analyzing two types of field blanks: bailer rinsate blanks and trip blanks. Trip blank TB-1was found to contain chloromethane (6J μg/l), methylene chloride (12 μg/l) and hexane (10 JN μg/l). No VOCs were detected in TB-2. Soil and water equipment blanks from the Phase I RI were found to contain low levels of chloromethane, hexane, and methylene chloride at levels similar to the trip blank. Based on the similar results from the trip blank and field rinsate blanks, sampling preparation procedures are not considered to be significant sources of sampling error.

B.2 PHASE 1 VALIDATION REPORT

Environmental Quality Associates, Inc.
Specialists in Data Validation and Quality Assurance

April 10, 1997

Mr. Robert Valli
Civil & Environmental Consultants, Inc.
601 Holiday Drive, Foster Plaza #3
Pittsburgh, Pennsylvania 15220

Re: Data Validation for Northeast Alloys & Metal; CEC Project 94502

Dear Mr. Valli,

We are pleased to submit to Civil & Environmental Consultants, Inc., under cover of this letter, our Data Validation Report (DVR) for Laboratory Sample Delivery Groups L35266 (soil samples) and L35313 (water samples) pertaining to the above referenced Site. These data deliverables were received by EQA on March 28 (L35266) and March 31 (L35313), 1997, from your office.

The associated samples were analyzed by Galson Laboratories, East Syracuse, New York. The samples were analyzed for TCL Volatiles, Semivolatiles and Pesticides/PCBs, and TAL Inorganics. All samples were reviewed and validated in accordance with applicable QA guidelines and QC requirements, in conjunction with guidance set forth in USEPA Region II's SOPs for Organics Data Review[1] and Inorganics Data Review[2].

The DVR is compiled in the following format:

1) A Cover Page, summarizing SDG#, associated samples and IDs, sample matrix, collection and VTSR dates, and testing performed.
2) An Organics Review Summary, detailing specific areas evaluated for each sample and any non-compliant items found, with description of data qualifiers applied by the reviewer. This section is sub-divided into Volatiles, Semi-volatiles and PCB evaluation areas, for ease of review.(Please note that any data qualifiers applied have been entered on the associated sample Form I results sheets which are included with the DVR.)
3) An Inorganics Review Summary, detailing specific areas evaluated for each sample and any non-compliant items found, with description of data qualifiers applied by the reviewer. Data qualifiers applied have been entered directly onto the associated Form I results sheets.

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[1] USEPA Region II, SOP No. HW-6, Revision #11, June, 1996
[2] USEPA Region II, SOP No. HW-2, Revision #11, January, 1992

4) Summary Tables detailing specific areas of evaluation.
5) Laboratory Case Narrative and Sample Summary Sheets, Form Is, and any other SDG Forms / data which have been corrected, qualified or modified from the original SDG as submitted by the Laboratory.

We trust that the enclosed DVR satisfies your data validation needs and expectations for this phase of the project, and we look forward to fulfilling CEC's requirements for similar projects in the future. Should you have any questions regarding the contents of this report, please do not hesitate to contact me.

Very truly yours,
Environmental Quality Associates, Inc.

Chris W. Taylor
Vice President

CWT/sr

encl.

DATA VALIDATION REPORT
for
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Project: Northeast Alloy & Metals
CEC Project No.: 94502

Laboratory: Galson Laboratories
Lab. SDG No.: L35266; L35313

Sample Summary

Lab. ID No.	Sample ID	Matrix	Date Collected	VTSR	Analysis
L35266-1	S-1 (0-2')	soil	2/11/97	2/11/97	TCL Organics; TAL Metals
L35266-2	S-2 (0-2')	soil	2/11/97	2/11/97	TCL Organics; TAL Metals
L35266-3	S-3 (0-2')	soil	2/11/97	2/11/97	TCL Organics; TAL Metals
L35266-4	S-4 (0-2')	soil	2/11/97	2/11/97	TCL Organics; TAL Metals
L35266-5	S-5 (0-2')	soil	2/11/97	2/11/97	TCL Organics; TAL Metals
L35266-6	S-1 (0-2') MS	soil	2/11/97	2/11/97	TCL Organics; TAL Metals
L35266-7	S-2 (0-2') MSD	soil	2/11/97	2/11/97	TCL Organics; TAL Metals
L35266-8	MSB	soil	2/11/97	2/11/97	TCL Organics; TAL Metals
L35313-13	RW-1 (2-4')	soil	2/14/97	2/14/97	TCL Organics; TAL Metals
L35313-14	RW-1 (8-10')	soil	2/14/97	2/14/97	TCL Organics; TAL Metals
L35313-15	RW-1 (18-20')	soil	2/14/97	2/14/97	TCL Organics; TAL Metals
L35313-16	RW-1 (24-26.9')	soil	2/14/97	2/14/97	TCL Organics; TAL Metals
L35323-1	RW-1 (14-16')	soil	2/14/97	2/15/97	TCL Organics; TAL Metals
L35323-2	RW-2 (8-10')	soil	2/14/97	2/15/97	TCL Organics; TAL Metals
L35323-3	RW-2 (14-16')	soil	2/14/97	2/15/97	TCL Organics; TAL Metals
L35323-4	RW-2 (22-24')	soil	2/14/97	2/15/97	TCL Organics; TAL Metals
L35323-5	RW-2 (26-27.3')	soil	2/14/97	2/15/97	TCL Organics; TAL Metals
L35313-1	MW-1	water	2/13/97	2/14/97	TCL Organics; TAL Metals
L35313-2	MW-2	water	2/14/97	2/14/97	TCL Organics; TAL Metals
L35313-3	MW-3	water	2/13/97	2/14/97	TCL Organics; TAL Metals
L35313-4	MW-4	water	2/13/97	2/14/97	TCL Organics; TAL Metals
L35313-5	MW-5	water	2/13/97	2/14/97	TCL Organics; TAL Metals
L35313-6	MW-6	water	2/13/97	2/14/97	TCL Organics; TAL Metals
L35313-7	MW-7	water	2/13/97	2/14/97	TCL Organics; TAL Metals
L35313-8	MW-8	water	2/13/97	2/14/97	TCL Organics; TAL Metals
L35313-9	MW-66	water	2/13/97	2/14/97	TCL Organics; TAL Metals
L35313-10	Trip Blank	water		2/14/97	TCL Volatiles
L35313-11	WEQ-1	water	2/14/97	2/14/97	TCL Volatiles
L35313-12	SEQ-1	water	2/14/97	2/14/97	TCL Volatiles
L35323-6	RW-2	water	2/15/97	2/15/97	TCL Organics; TAL Metals
L35323-7	RW-1	water	2/15/97	2/15/97	TCL Organics; TAL Metals
L35323-8	RW-1 MS	water	2/15/97	2/15/97	TCL Organics; TAL Metals
L35323-9	RW-1 MSD	water	2/15/97	2/15/97	TCL Organics; TAL Metals
L35323-10	MSB	water	2/15/97	2/15/97	TCL Organics; TAL Metals
L35323-11	Trip Blank	water		2/15/97	TCL Volatiles

Project: Northeast Alloy & Metals
CEC Project No.: 94502

Laboratory: Galson Laboratories
Lab. SDG No.: L35266; L35313

Sample Deliverables Packages Received on: 3/28&31/97 Via: Federal Express
Validated By: Chris W. Taylor
DVR Shipped Via: Federal Express To: Robert Valli / CEC Date: 4/10/97

Organics Review Summary

This section applies to Volatile, Semi-volatile and Pesticide-PCB analyses evaluated under NYSDEC ASP and EPA Region II protocols and guidlines, respectively. Specific QC parameters evaluated included:

1) Data Completeness
2) Holding Times
3) GC/MS Tuning (Volatiles & Semi-volatiles)
4) Calibration (Initial and Continuing)
5) Blanks
6) Surrogate Recovery
7) Matrix Spike / Matrix Spike Duplicate/ Blank Spike Recovery
8) Internal Standard Recovery (Volatiles & Semi-volatiles)
9) Compound Identification and Quantitation
10) Non-Target Compounds (Volatiles & Semi-volatiles)
11) Instrument Detection Limits
12) Raw Data
13) Calculations and Data Transcription / Reporting

Volatiles Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness

The data package for soil samples (SDG No. L35266) was missing calibration quantitation report / chromatogram for File CT501 on 2/17/97; this data was requested from the laboratory via fax on 3/31/97.
The data package for water samples (SDG No. L35313) was missing a complete quant report for the 10 ug/L calibration (File FE062) on 2/14/97.

The data deliverables packages for organics did not indicate cooler / sample temperatures on receipt (with the exception of samples collected on 2/14-15/97, nor were pH measurements for aqueous samples documented. In the absence of documentation to verify sample temperatures and pH values, the reviewer cannot assume that these parameters were within specified limits (i.e., 4 $\pm$ 2 ° C for all samples; pH < 2 for aqueous samples). Therefore, reported values for **all samples except RW-1, RW-2, RW-1(14-16), RW-2(8-10), RW-2(14-16), RW-2(22-24), and RW-2(26-27.3)** must be considered as **estimated** and were '**J**' qualified. The bias suggested by these possible excursions is negative, since lack of temperature control can promote biological activity in the samples, and improper (or no) pH preservation will allow degradation to occur.

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GC/MS Tuning

All BFB ion abundance ratios were within limits. Reported results were checked and verified from the raw data. All samples were analyzed within 12 hours of associated performance standard injection, with the exception of water sample RW-2, which was analyzed 18 minutes after the allotted 12 hours beginning with BFB standard injection. This sample was re-analyzed on the following day ; validation guidelines call for rejection of analyses performed outside the 12-hour analytical sequence. However, the re-analysis was performed at a 25x dilution, vs. the original 10x dilution, and target compounds identified as present in the initial analysis were lost on further dilution. Therefore, it is the reviewer's opinion that the original analysis be utilized, with data considered as estimated and 'J' qualified, in addition to the second analysis for target compounds which exceeded calibration range in the first analysis.

Calibration

Calibration for the Medium-concentration soils method was not performed to accomodate sample S-4 (0-2'); this sample was extracted with methanol based on screening results. Method protocols require a separate calibration with ambient-temperature purge (as opposed to the heated-purge method for low-level soils), in addition to a Method Blank and MS-MSD, in order to determine potential method-induced contaminants and extraction efficiency. Sample S-4 (0-2') was analyzed by the low-soil method; it is uncertain what effects this may have imposed on the reported results. Results for S-4 (0-2) are considered estimated and were '**J**' qualified.

Initial Calibration for low-level soils was performed on MS C on 2/14/97; the %RSDs for acetone and 2-butanone exceeded the validation action limit of 30% (@ 45 and 39%, resp.); positive results for these compounds in associated samples should be considered as estimated values, and were '**J**' qualified. Response factors (RF) for all target compounds were above the validation action limit of 0.050. The RF (average) for bromoform was below the NYSDEC-ASP specified value of 0.100 (@0.07); no qualification was required.

Initial calibration for aqueous samples was performed on MS F on 2/14/97; the %RSD for bromomethane exceeded the validation action limit of 30% (@ 57%); no positive results for bromomethane in associated samples were noted, therefore no qualification due to this excursion was required. RFs for all target compounds were above the validation action limit of 0.050.

Continuing calibrations (CCALs) for soil samples were performed on 2/14, 2/17, 2/18 and 2/19/97. The following compounds exceeded the validation precision criterion of <25 % D in the noted calibrations. These compounds should be considered as estimated values and were '**J**' qualified in the associated samples.
2/14 (File CT474): acetone, 37%.
2/17 (File CT501): 2-butanone, 26%.
2/19 (File CT551): 4-methyl-2-pentanone, 26%.

Calibration (cont'd.)
CCALs for aqueous samples were performed on 2/14, 2/17 and 2/18/97. The following compounds exceeded the validation precision criterion of <25% D in the noted calibrations. These compounds should be considered as estimated values and were '**J**' qualified in the associated samples.
2/14 (File FE064): bromomethane, 65%.
2/17 (File FE093): bromomethane, methylene chloride, acetone, dibromochloromethane, 1,1,2-trichloroethane, bromoform, 4-methyl-2-pentanone, 2-hexanone, 1,1,2,2-tetrachloroethane.
2/18 (File FE122): acetone, 29%.
Response factor, %RSD and %D for one target compound per each internal standard were verified for each calibration event; please refer to the attached summary tables titled "Verification of VOA Calibration Parameters".

It is noted that manual integrations performed for various target compounds in the calibrations were not initialled by the analyst; NYSDEC-ASP protocols require explanation of all manual integrations performed.

Blanks
Method Blanks for soil samples contained the following compounds at the noted levels.
VBLK1 (2/14/97): methylene chloride, 5 ug/kg; hexane (non-target compound at 5.3 minutes RT), 12 JN.
VBLK2 (2/14/97): was submitted as a blank for use with medium-level soil S-4 (0-2'); however this blank was not a methanol-extraction blank and therefore may not accurately reflect potential contamination introduced by the extraction solvents / process.
VBLK3 (2/17/97): methylene chloride, 4 J ug/Kg; acetone 8 J ug/Kg; hexane 10 JN (5.23 minutes RT).
VBLK4 (2/18/97): methylene chloride, 2 J ug/Kg; hexane 15 JN (5.30 minutes RT).
VBLK5 (2/19/97): methylene chloride, 4 J ug/Kg; acetone 6 J ug/Kg; hexane 18 JN (5.30 minutes RT).

Method Blanks for water samples contained the following compounds at the noted levels.
VBLK1 (2/14/97): chloromethane, 2 J ug/L; methylene chloride, 4 J ug/L.
VBLK2 (2/17/97): methylene chloride, 9 ug/L.
VBLK3 (2/18/97): methylene chloride, 8 ug/L; acetone 6 J ug/L; hexane 7 JN (5.35 minutes RT).

Only one Trip Blank of two associated with this sampling event (2/14/97) was reported; it exhibited chloromethane, methylene chloride and (non-target) hexane at 6 J, 12 and 10 JN ug/L, respectively. The presence of chloromethane in associated samples may be attributable to storage and transport conditions. Samples SEQ-1 and WEQ-1 are assumed to be soil and water equipment blanks, resp.; chloromethane, methylene chloride and hexane were also present in these samples, in addition to a non-target unknown compound at 2.41 minutes RT in SEQ-1. The highest concentration of these compounds in any blank were used to establish action levels for qualification / negation of associated sample results (5x factor for acetone, methylene chloride and non-target compounds; 1x for other target compounds. Non-target compounds present in blanks at less than the action level were red-lined and rejected '**R**'.

System Monitor Compound Recovery

Soil Samples exhibited consistent recoveries outside of established ranges; the typical failure mode was that toluene-d8 recoveries were high (122 to 225%), 1,2-dcea-d4 recoveries were low (52 to 66%), and BFB recoveries were low (0 to 62%). Only samples S-2 (0-2), RW-1 (8-10) and RW-1 (2-4) exhibited acceptable SMC recoveries. Although Internal Standard failures had some impact on recoveries, the fact that toluene-d8 and BFB share a common internal standard (chlorobenzene-d5) for quantitation only serves to complicate matters, since they typically failed in different directions (see above). The sample matrix seems to have exerted significant effects on SMC recovery; similar suppression or enhancement of analogous target compounds is inferred. It is suggested that methanol extraction for low-level soils be investigated to determine if matrix effects can be mitigated. It is further noted that the laboratory performed according to method protocols in re-analyzing all samples which exhibited SMC recovery failures. Results upon re-analysis were typically the same as regards SMC recoveries, with positive target analytes generally exhibiting lower concentrations on re-analysis. Samples were qualified according to the severity of recovery failure; non-detect (U) results for those samples with recovery of <10% for any SMC were rejected '**R**' ; all results were 'J' qualified for low recoveries >10%, and positive results 'J' qualified for high recoveries. As noted above, sample matrix had significant deleterious effects on compound recovery and quantitation; the reported values can be characterized as semi-quantitative at best, with greater utility for presence / absence and relative degrees of contamination than for absolute determination of target compound concentrations.

Water samples exhibited acceptable SMC recoveries for all samples; no qualifications were necessary.

One surrogate value from each sample was re-calculated and verified; results are contained in the attached summary tables titled "Verification of Volatile System Monitor Compound Recovery".

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery

Soil sample matrix spike recoveries for S-1 (0-2) -MS and -MSD were within acceptable limits, with the exception of toluene, which recovered high at 182 and 160%, resp.. It is noted that IS compounds 2 and 3 were below acceptable range in the sample, MS and MSD, which affected recovery.

Water sample matrix spike recoveries for RW-1 -MS and -MSD were within acceptable limits with the exception of trichloroethene, which demonstrated no recovery ; the level of tce in the unspiked sample was 2100 ug/L, which may have obscured the spiked level of 50 ug/L.

Blank Spike recoveries for both soil and aqueous matrices were within acceptable limits. Recoveries for the aqueous Blank Spike were high for all compounds (120 - 126%), although all were within acceptable range; the cause of this high bias is unexplained. Recoveries were verified for all compounds; results are contained in the attached summary table titled "Verification of Volatile Spike Recovery". No qualifications were made on the basis of spike recoveries.

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Internal Standard Recovery

Soil samples in general exhibited low recoveries for all three IS compounds, with 1,4-difluorobenzene and chlorobenzene-d5 consistently below 50% of the daily CCAL values; chlorobenzene-d5 values were often <10% of CCALs, necessitating rejection of associated target compounds. Sample re-analyses, which the laboratory performed for all samples with initial analysis IS failures, typically produced similar responses. Internal standard RTs for all samples were within limits of ± 0.5 minutes from CCAL RTs.

Aqueous samples exhibited IS recoveries within acceptable range of +100% to -50% of the associated daily CCAL responses. Internal standard RTs for all samples were within limits of ± 0.5 minutes from CCAL RTs.

All reported values were checked and verified from the raw data.

Compound Identification and Quantitation

All reported concentrations (as qualified) and identifications were in conformance with method requirements. As noted above, soil samples exhibited significant matrix effects which affected quantitated results and necessitated numerous qualifications based on SMC and IS recoveries; refer to Form Is for qualifications.

Non-Target Compounds

Soil samples : Several non-target compounds, characterized as unknown hydrocarbons, were present in sample S-1 (0-2); this sample also exhibited low levels of benzene, toluene, chlorobenzene and ethylbenzene.

Instrument Detection Limits

Detection limits for all reported method compounds were within the SOW established CRQLs.

Calculations and Data Transcription / Reporting

Calculations and transcription of reported parameters were checked on a random basis; no anomalies were discovered.

Sample Dilutions

Aqueous samples MW-6, MW-66, RW-1 and RW-2 were re-analyzed at diluted volumes due to the presence of target compounds in the original analysis which exceeded calibrated range, as noted below.
MW-6: x100; x1000. 1,2-dichloroethene.
MW-66: x100; x1000. 1,2-dichloroethene.
RW-1: x25. 1,1-dichloroethane, 1,2-dichloroethene, 1,1,1-trichloroethane, trichloroethene.
RW-2: 1,2-dichloroethene, trichloroethene.

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Sample Dilutions (cont'd.)
Soil sample S-4 (0-2) was analyzed via the medium-soil (methanol extraction) method; all reported results for this sample, which contained high concentrations of acetone and trichloroethene, are considered as estimated and were 'J' qualified due to inappropriate calibration technique and lack of required QC samples i.e., method blank and MS-MSD.

Raw Data
Raw data contained within the SDG were found to be complete as received, except as noted above.

Other
As noted above, soil samples exhibited significant SMC and IS excursions which forced sample re-analysis. The characteristic failure mode of the original analysis was typically replicated upon re-analysis, with lower concentrations of target analytes due to volatilization from sample handling and other factors. Therefore, the more representative samples in terms of actual concentrations and presence of target compounds are typically the original analyses, unless otherwise noted. In the case of diluted samples, the results from the dilution re-analysis were manually entered on the original analysis Form I, in order to provide all compound concentrations on a single form.

Project: Northeast Alloy & Metals
CEC Project No.: 94502

Laboratory: Galson Laboratories
Lab. SDG No.: L35266; L35313

Semi-volatiles Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness

The Data Package for Semi-volatile Organics Analysis was complete as received.

Holding Times

All reported samples were extracted within five days of collection, and analyzed within 14 days from extraction, which is compliant with both technical and method / contractual holding time requirements.

GC/MS Tuning

All DFTPP ion abundance ratios were within method-specified limits. All samples were analyzed within 12 hours of associated performance standard injection. Reported results were checked and verified from the raw data.

Calibration

The %RSDs and response factors (RF) for 2,4-dinitrophenol were outside acceptable validation limits in the ICAL performed 2/27/97 on MS E; the RRF20 for this compound was at 0.036, indicating lack of sensitivity for low-level concentrations. The average RRF for 2,4-dinitrophenol was acceptable, therefore concentrations of this compound in associated samples between non-detect levels and 20 ppb are considered estimated and were 'J' qualified; low bias is suggested. The %RSD and RRF results for all other target compounds were within acceptable validation limits of <30% and >/= 0.05, respectively.

The %Ds for bis(2-ethylhexyl)phthalate and di-n-octylphthalate in the CCAL of 2/28/97 (File EI068) were outside the validation limit of |25%|; results for these compounds in associated samples (**MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-66, RW-1**) are considered estimated values, and were '**J**' qualified. RRF values for all compounds were >0.050; no qualifications were required.

The %Ds for 4,6-dinitro-2-methylphenol and 3,3'-dichlorobenzidine in the CCAL of 2/28/97 (File EI085) were outside the validation limit of |25%|; results for these compounds in associated sample **RW-2** are considered estimated values and were '**J**' qualified.

The %RSDs and RRFs for all target compounds in the ICAL performed 3/3/97 on MS E were within acceptable validation limits.

The %Ds and RRFs for all compounds in the CCALs performed 3/3,4&5/97 on MS E (Files EI121, EI134, and EI150, resp.) were within acceptable validation limits; no data qualifications were required.

Calibration (cont'd.)
Response factor, %RSD and %D for one target compound (or surrogate) per each internal standard were verified for each calibration event; please refer to the attached summary tables titled "Verification of SVOA Calibration Parameters".

It is noted that benzyl alcohol, which is not a TCL target analyte, is included in the calibration target compound list, and carbazole, which is a TCL target compound, is not included. Carbazole was included in the calibration mixture, but is not reported on Forms 6 or 7. Soil sample S-5 (0-2) contained carbazole; the RRF for this compound was calculated from the raw calibration data and the correct concentration reported on Form 1.

Blanks
Method Blanks SBLK4583 (aqueous; extracted 2/19/97), SBLK4574 and SBLK4585 (soils; extracted 2/14 and 2/19/97, resp.) were free of target analytes. SBLK4583 was free of non-target compounds; the soil blanks contained several non-targets between 5 and 8 minutes RT; similar compounds with RT matches contained in associated samples were red-lined and rejected 'R' if their respective concentrations were < 5x the concentration in the associated blank. Probable aldol condensation products were also red-lined and rejected.

Surrogate Recovery
Soil sample surrogate compound recoveries were all within acceptable limits.
Surrogate phenol-d6 recoveries were above the acceptable limit in water samples MW-6, MW-7, MW-8, MW-66, RW-1 and RW-2; no qualifications were required due to these excursions.

One surrogate value from each sample was re-calculated and verified; results are contained in the attached summary tables titled "Verification of Semi-volatile Surrogate Recovery".

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery
Matrix spike recoveries for 1,2,4-trichlorobenzene, 4-nitrophenol and pentachlorophenol exceeded the upper limit in aqueous sample RW-1 MS; recoveries for 4-nitrophenol and pentachlorophenol exceeded the upper limit in RW-1 MSD. No qualifications were required due to these excursions.

Matrix spike recoveries for 2,4-dinitrotoluene exceeded the upper limit in soil sample S-1 (0-2) MS; %RSDs for 1,4-dichlorobenzene, 4-nitrophenol and pyrene exceeded limits in S-1 (0-2) MSD. No qualifications were required due to these excursions.

Blank Spike recoveries for aqueous and soil matrices were within acceptable limits.

Recoveries were verified for all compounds; results are contained in the attached summary tables titled "Verification of Semi-volatile Spike Recovery".

Internal Standard Recovery

Recoveries of internal standards in all reported samples were within the acceptable limits of +100 / -50% of daily CCAL response. Rts for all IS compounds were within the acceptable limits of ± 0.5 minutes from that of the associated daily CCAL.

Compound Identification and Quantitation

Reported concentrations of benzo(b)- and benzo(k)fluoranthene in several samples were 'N' qualified due to secondary ion rations outside normal limits. These two compounds were not completely resolved chromatographically and share common quantitation (primary) and secondary ions. Although the spectral matches were reasonably close, ion ratios were significantly deviant from the norm to warrant qualification. The 'N' qualifier indicates to the user that the compound is presumptively present, at an estimated concentration (J).

Non-Target Compounds

Several non-target compounds were present in samples; the presence of probable aldol condensation products were rejected. In some cases, reasonable spectral library matches yielded a probable identification; in others no reasonable identification could be established. Several samples (e.g., MW-6, MW-66) exhibited a small "hump-o-gram" between 16 and 19 minutes RT; these are believed to be unknown hydrocarbon compounds.

The presence of trichloroethene was noted as a TIC in several samples; it was rejected, since target compounds from other fractions (i.e., VOA) should not be reported as Semi-VOA non-target compounds.

Instrument Detection Limits

Detection limit studies reported were from 10/95; current detection limit studies must be provided by the laboratory in order to document reported quantitation levels.

Calculations and Data Transcription / Reporting

Calculations and transcription of reported parameters were checked on a random basis; no anomalies were discovered.

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CEC Project No.: 94502 | Lab. SDG No.: L35266; L35313

Pesticide / PCB Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness

The Data Package for Pesticide / PCB Organics Analysis was complete as received.

Holding Times

All reported samples were extracted within five days of collection, and analyzed within nine days from extraction, which is compliant with both technical and method / contractual holding time requirements.

Calibration

Initial calibration covering both aqueous and soil sample analyses was performed on 2/8-9/97; %RSDs for the five-point calibration were within the method requirement of 20%. It is noted that the Form 6 indicates concentration gradients from low-level to high-level of x1, x2, x4, x10 and x20; calculation of these factors from the raw data responses indicates a x1 to x16 range, with actual multipliers of x1, x2, x4, x8 and x16.

Continuing calibration (CCAL) %Ds were >15% for the following compounds in the noted CCALs; associated soil sample results are considered estimated and were '**J**' qualified as follow.

2/21/97 8080ALV3A3: 4,4'-DDE , Dieldrin, Endrin. 2/21/97 8080ALV3A4: Endosulfan sulfate.	affects samples RW-1(2-4), RW-1(8-10), RW-1(18-20), RW-1(24-26.9) .
2/21/97 8080ALV3A6: 4,4'-DDD, 4,4'-DDT, Dieldrin, Endrin. 2/21/97 8080ALV3A7: Aldrin, delta-BHC, Endrin aldehyde, Endosulfan sulfate, Endosulfan II, Heptachlor.	affects samples RW-1(14-16), RW-2(8-10), RW-2(14-16), RW-2(22-24), RW-2(26-27.3).
2/24/97 8080ALV3A8: 4,4'-DDD, Methoxychlor.	affects samples S-2(0-2), S-3(0-2).

%Ds were >15% for the following compounds in the noted CCALs; associated aqueous sample results are considered estimated and were '**J**' qualified as follow.

2/26/97 8080ALV3A1: alpha-BHC, gamma-BHC, delta-BHC, 2/26/97 8080ALV3A2: Heptachlor, Heptachlor epoxide, Endosulfan I, Dieldrin, Endrin, 4,4'-DDD, Endosulfan II, 4,4'-DDT, Endrin aldehyde, Endosulfan sulfate.	affects samples MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7.

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Calibration (cont'd.)

2/26/97 8080ALV3A3: alpha-BHC, 4,4'-DDD, 4,4'-DDT, Dieldrin, Endosulfan I, Endrin, Heptachlor, gamma-BHC, Methoxychlor. affects samples MW-8, MW-66, RW-1, RW-2.

2/26/97 8080ALV3A4: Aldrin, 4,4'-DDE, delta-BHC, Endrin aldehyde, Endosulfan sulfate, Endosulfan II, Heptachlor epoxide.

It is noted that although sample results were 'J' qualified on the basis of CCAL %D failures, all excursions were determined to be negative %Ds, meaning that the CCAL response for a particular compound was greater (i.e., more sensitive) than the corresponding initial calibration average response. Therefore, since all reported results were non-detects (U), it is suggested that the sample detection limits are technically valid and may be used to confirm the absence of target compounds at the reported sensitivity levels.

Blanks

Method Blanks PBLK4584 (aqueous; extracted 2/19/97), PBLK4575 and PBLK4586 (soils; extracted 2/15 and 2/19/97, resp.) were free of target analytes.

It is noted that no Instrument Blanks were reported ; since no reportable levels of target compounds were determined, this is of no consequence. However, instrument blanks are a required element for the analysis sequence and should have been reported.

Surrogate Recovery

Soil sample surrogate compound recoveries were within acceptable limits, with the exception of decachlorobiphenyl on Column 2 in sample RW-1(2-4); the analyst noted that the run ended abruptly for an unknown reason; no data qualifiers were applied due to this excursion, since TCMX recovery in the sample was acceptable, and the RT within established window.

Aqueous sample surrogate recoveries were within acceptable limits in all samples.

Surrogate recoveries were re-calculated and verified at random, and retention times compared to established windows; no anomalies were discovered.

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery

Recoveries of all spiked compounds in the aqueous sample MS and MSD (RW-1), the soil sample MS and MSD (S-1(0-2)), the aqueous Spiked Blank and the soil Spiked Blank were within acceptable limits, as were the %RPD values between both MS-MSD pairs.

Recoveries were verified for all compounds; results are contained in the attached summary tables titled "Verification of Pesticide Spike Recovery".

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CEC Project No.: 94502

Laboratory: Galson Laboratories
Lab. SDG No.: L35266; L35313

Compound Identification and Quantitation

All aqueous and soil sample results were below the quantitation limits as reported on Form 1s; sample chromatograms and quantitation report raw data were reviewed to verify reported results. Several samples exhibited low levels of target compounds on the primary column (DB-608) which were not confirmed on the secondary column (DB-1701); the method requires second-column confirmation of all potential target hits, due to the high sensitivity and relative lack of selectivity for the E-C detector. Review of the data indicates that all results as reported are correct, i.e., no reportable levels of target Pest-PCB compounds were present in samples.

Detection Limits

Detection limit study results were included with the raw data for both analytical columns; data support the reported quantitation levels with adequate sensitivity.

Calculations and Data Transcription / Reporting

Reported results were verified at random from the raw data; no anomalies were noted.

Project: Northeast Alloy & Metals Laboratory: Galson Laboratories
CEC Project No.: 94502 Lab. SDG No.: L35266; L35313

Inorganics Review Summary / Metals

This section applies to metals analyses evaluated under NYSDEC ASP and EPA Regon II protocols and guidelines, respectively. Specific QC parameters evaluated included:

1) Data Completeness
2) Holding Times / Sample Preservation
3) Calibration (Initial and Continuing)
4) Blanks (Digestion / Preparative and Instrument)
5) CRDL Check Sample (ICP analytes)
6) Interference Check Samples (ICP analytes)
7) Matrix Spikes
8) Duplicates (Laboratory and Field)
9) Laboratory Control Samples
10) Serial Dilutions (ICP analytes)
11) Instrument Detection Limits
12) Raw Data (Instrument results, Digestion / Prep. Logs)
13) Calculations and Data Transcription / Reporting

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness

The data deliverables packages for metals did not indicate cooler / sample temperatures on receipt (with the exception of samples collected on 2/14-15/97, nor were pH measurements for aqueous samples documented. In the absence of documentation to verify sample temperatures and pH values, the reviewer cannot assume that these parameters were within specified limits (i.e., 4 $\pm$ 2 ° C for all samples; pH < 2 for aqueous samples). Therefore, reported values for all samples **except** RW-1(14-16), RW-2(8-10), RW-2(14-16), RW-2(22-24), and RW-2(26-27.3) must be considered as **estimated** and were '**J**' qualified. The bias suggested by these possible excursions is negative, since lack of temperature control can promote biological activity in the samples, and improper (or no) pH preservation will allow absorption and/or precipitation of metals to occur.

The laboratory was contacted on 4/8/97 (voice-mail to Lyndi Mott, Galson Labs) and requested to supply verification of sample temperature and preservation. A response was received from the laboratory via fax on 4/8/97 which included a copy of a document titled "Galson Laboratories Environmental Prep Request", which indicated HCl and HNO_3 preservation of containers for aqueous volatiles and metals, resp. This document may be taken as presumptive evidence of proper preservation; however, the document is not signed by the container prep. person. Further, the issue of proper sample temperature is unresolved.

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Holding Times / Sample Preservation

Soil samples were received at the laboratory between 2/11 and 2/15/97, and analyzed on 3/5 (ICP) and 3/10/97 (Hg); (Note: Fe and Tl were analyzed by ICP on 3/11 for samples S-1(0-2) and S-1(0-2) MSD, resp.).

Aqueous samples were received at the laboratory between 2/14 and 2/15/97; all samples were analyzed on 2/26/97.

The above holding times were within the validation technical holding times of six months maximum from collection to analysis for metals (other than mercury) and 28 days maximum from collection to analysis for mercury. It is noted that the soil samples received at the laboratory on 2/11/97 were analyzed one day outside the NYSDEC ASP limit of 26 days from VTSR to analysis; no data qualifiers were required due to this excursion.

Refer to comments under Data Completeness above regarding sample preservation. It may be necessary for CEC to contact field-sampling personnel to ascertain whether samples were properly field-preserved and iced upon collection in order to determine ultimate sample data usability.

Calibration

The site Quality Assurance Project Plan (QAPjP) listed SW-846 method 6010 for metals analysis (exception: mercury, which must be analyzed by cold-vapor AA); the QC requirements for 6010 differ considerably from CLP ICP methods, most significantly in the area of calibration. Method 6010 requires a blank + 3 levels of standards in establishing the calibration curve, while CLP requires only a blank + 1 standard. Further, the 6010 requirements for initial verification of calibration are more stringent, @ 95 - 105% recovery for the ICAL (ICV) check vs. 90 - 110% for CLP. Conversely, CLP requires a CRDL sample check, which verifies instrument accuracy and sensitivity in the lower ranges of the calibration curve, while 6010 does not require a low-level check. Both methods require continuing calibration verification (CCV) at a concentration in the mid-range of the calibration curve.

The laboratory utilized the CLP requirement of a blank + one standard; this is not in compliance with 6010A, Sect. 7.3, which states "... the calibration curve should consist of a blank and three standards.".

The concentration of the CCV was at the same concentration as the ICV, which is compliant with neither CLP nor SW-846 requirements. 6010A, Sect. 5.6 states, "... concentrations equivalent to the midpoint of their respective calibration curves...", while CLP protocol states specifically that "... analyte concentrations in the continuing calibration standard shall be different than the concentration used for for the (ICV) and shall be ... at or near the mid-range levels of the calibration curve...".

Calibration (cont'd.)

The issue of method compliance is in many cases related less to technical validity of the data generated than to legal defensibility of the data. For example, a particular value for selenium generated by CLP methodology may be very close to or exactly the same as the value generated by the comparable SW-846 methodology; however, if the laboratory stated that (SW-846) 6010 was used, and actually ran the sample either with CLP protocol or some variation of 6010 which was not wholly method-compliant, the data result(s) may easily be impeached in the courtroom.

ICV and CCV recoveries for the soil SDG calibrations were within established SW-846 ranges, with the exception of sodium, which recovered at 94% in the ICV. Data qualification was not required for this excursion.

ICV and CCV recoveries for all target analytes in the aqueous SDG calibrations were within established SW-846 ranges.

Blanks (Digestion / Preparative and Instrument)

Prep blanks were free of contamination above the CRDL for all target analytes for both soil and aqueous sample matrices. Instrument blanks (ICB, CCB) for both SDGs (soil: L35266; aqueous: L35313) were below CRDLs for all target analytes.

CRDL Check Samples

Recoveries for all applicable target analytes in the CRDL samples (CRI) for both soil and aqueous matrices were within the acceptable range of 80 - 120%.

Interference Check Samples (ICP analytes)

Recoveries of all applicable target analytes in the interference check samples (ICSA, ICSAB) for both soil and aqueous matrices were within the acceptable range of 80 - 120%.

Matrix Spikes

Recoveries for the following analytes in soil spike sample S-1 (0-2) MS (SDG No. L35266) were outside the acceptable range of 75 - 125%: antimony (19%); arsenic (74%); chromium (192%); lead (**-10%**); manganese (**802%**); mercury (**-26%**); selenium (127%). The recoveries for lead and manganese were mitigated by the fact that the concentrations of these analytes in the native (unspiked) samples were 30x and 36x the spike added concentrations, respectively. Matrix spike recoveries outside range are not qualified when the concentration in the native sample exceeds that of the spike added by a factor of 4x or greater, nor do these elements require a post-digestion spike.

Results for the following analytes in all soil samples are considered estimated and were '**J**' qualified due to spike recovery: antimony, arsenic, chromium and selenium. Positive bias is suggested for chromium and selenium; negative bias is suggested for antimony and arsenic.

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Matrix Spikes (cont'd.)
Results for mercury in all soil samples are rejected '**R**', due to spike recovery below 10%. Mercury post-spikes are not required in the event of MS recovery failure, therefore it is unknown whether and to what extent the sample matrix affected the recovery. Severe negative bias is suggested for mercury results; although the reported results are rejected, positive Hg values may be considered as the absolute minimum concentrations likely to be present in the samples, with a strong possibility of false negatives.

Recoveries for the following analytes in aqueous spike sample RW-1 MS (SDG No. L35313) were outside the acceptable range of 75 - 125%: aluminum (**591%**); iron (**1,965%**); lead (**204%**); manganese (**601%**). The recoveries for aluminum and iron were mitigated by the fact that the concentrations of these analytes in the native (unspiked) samples were 5x and 28x the spike added concentrations, respectively. Matrix spike recoveries outside range are not qualified when the concentration in the native sample exceeds that of the spike added by a factor of 4x or greater, nor do these elements require a post-digestion spike.

Results for the following analytes in all aqueous samples are **rejected** and were '**R**' qualified and red-lined due to spike recovery > 150%: **lead** and **manganese**. Significant positive bias is suggested due to matrix effects.

Analytical (post-matrix) Spikes
Recoveries for the required post-matrix spikes for soil sample S-1 (0-2) A ('A' designating analytical spike) were within acceptable recovery range of 85 - 115%; this indicates significant sample matrix suppression (Sb,As) and enhancement effects (Cr, Se), and that the analytical system was in control during sample analysis.

Recoveries for the required post-matrix spikes for aqueous sample RW-1 A ('A' designating analytical spike) for lead and manganese were within acceptable recovery range of 85 - 115%; this indicates significant sample matrix interference effects, and that the analytical system was in control during sample analysis.

Duplicates
The %RPDs for the following analytes in duplicate soil sample S-1 (0-2) D exceeded the control limit of 20% for analytes with concentrations > 5x CRDL or the control limit of ± CRDL for analyte concentrations < 5x CRDL : arsenic, barium, copper, iron, mercury and nickel.

Reported results for arsenic, in all soil samples are considered estimated and were '**J**' qualified due to duplicate precision outside the validation action limit of ± 2x CRDL. It is noted that soil samples with results > 5x CRDL are not qualified for %RPD values < 100%. The %RPDs for the following analytes in duplicate aqueous sample RW-1 MSD exceeded the control limit of 20% for analytes with concentrations > 5x CRDL or the control limit of ± CRDL for analyte concentrations < 5x CRDL : aluminum, chromium, copper, iron, lead, magnesium, manganese, selenium, sodium and zinc.

Duplicates (cont'd.)
Reported results for aluminum, chromium, copper, lead, magnesium, manganese and zinc in all aqueous samples are considered estimated and were '**J**' qualified due to duplicate precision outside the validation action limits of either ± CRDL or 50%RPD, as applicable. It is noted that aqueous samples with results > 5x CRDL are not qualified for %RPD values < 50%.

Field Duplicates
Aqueous sample MW-66 was identified by CEC as the field duplicate sample of MW-6; %RPDs were calculated (as for Lab Duplicates). Precision for all target analytes was within applicable limits, indicating acceptable field collection techniques and analytical system precision.

Laboratory Control Samples (LCS)
Recoveries for all analytes in the soil LCS, which indicate overall system accuracy and efficiency, including the preparative digestion process, were within acceptable range limits. It is noted that the LCS value for Hg recovery was well within range, indicating a strong probability for negative bias due to sample matrix (see Matrix Spikes, above).

Recoveries for all analytes in the aqueous LCS were within acceptable limits, indicating overall system accuracy and efficiency, including the preparative digestion process. Indicated problems with matrix spike recoveries are likely due to sample matrix interference and suppression effects.

Serial Dilution
Soil sample serial dilution recoveries, for ICP analytes present in selected samples at a concentration > 10x CRDL, were within acceptable limits (max. 10%D) , with the exception of potassium in sample RW-1 (14-16) L. Results for potassium in all associated (soil) samples with concentrations > 10x IDL (i.e., > 370 mg/Kg) are considered estimated and were 'J' qualified (Note: soil samples S-2 (0-2) and S-3 (0-2) contained < 370 mg/Kg of K, and therefore were not 'J' qualified; K results for all other soil samples were qualified).

Aqueous sample serial dilution recoveries, for ICP analytes present in selected samples at a concentration > 10x CRDL, were within acceptable limits (max. 10%D) , with the exception of lead, nickel and zinc in sample MW-2 L. Results for lead and zinc in associated samples were 'J' qualified due to spike recovery or duplicate precision excursions; nickel results in associated samples are considered estimated and were '**J**' qualified.

Instrument Detection Limits
Detection limits were compliant with (i.e., <) NYSDEC-ASP Contract Required Detection Limits (CRDLs) for all target analytes.

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Raw Data

Raw data submitted with this package are complete and acceptable, unless noted otherwise elsewhere in this report. See comments under Data Completeness above.

Calculations and Data Transcription / Reporting

Calculations and reported values were verified at random from raw data values; no anomalies were noted.

B.3 PHASE II VALIDATION REPORT

Environmental Quality Associates, Inc.
Specialists in Data Validation and Quality Assurance

October 13, 1997

Mr. Robert Valli
Civil & Environmental Consultants, Inc.
601 Holiday Drive, Foster Plaza #3
Pittsburgh, Pennsylvania 15220

Re: Data Validation for Northeast Alloys & Metal; Samples Collected 8/6/97 - 8/8/97

Dear Mr. Valli,

We are pleased to submit to Civil & Environmental Consultants, Inc., under cover of this letter, our Data Validation Report (DVR) for Laboratory Sample Delivery Group MW2, consisting of eight water samples and six soil samples, with associated QC samples, pertaining to the above referenced Site. These data deliverables were received by EQA on September 24, 1997, from Columbia Analytical Services, Inc.

The associated samples were analyzed by Columbia Analytical Services, Inc., Rochester, New York, for TCL Volatiles and TAL Metals, per Chain-of-Custody instructions. All samples were reviewed and validated in accordance with applicable QA guidelines and QC requirements, in conjunction with guidance set forth in USEPA Region II's SOPs for Organics Data Review[1] and Inorganics Data Review[2].

The DVR is compiled in the following format:

1) A Cover Page, summarizing SDG#, associated samples and IDs, sample matrix, collection and VTSR dates, and testing performed.
2) An Organics Review Summary, detailing specific areas evaluated for each sample and any non-compliant items found, with description of data qualifiers applied by the reviewer. Please note that any data qualifiers applied have been entered on the associated sample Form I results sheets which are included with the DVR.)
3) An Inorganics Review Summary, detailing specific areas evaluated for each sample and any non-compliant items found, with description of data qualifiers applied by the reviewer. Data qualifiers applied have been entered directly onto the associated Form I results sheets.
4) Summary Tables detailing specific areas of evaluation.
5) Laboratory Case Narrative and Sample Summary Sheets, Form Is, and any other SDG Forms / data which have been corrected, qualified or modified from the original SDG as submitted by the Laboratory.

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[1] USEPA Region II, SOP No. HW-6, Revision #11, June, 1996
[2] USEPA Region II, SOP No. HW-2, Revision #11, January, 1992

We trust that the enclosed DVR satisfies your data validation needs and expectations for this phase of the project, and we look forward to fulfilling CEC's requirements for similar projects in the future. Should you have any questions regarding the contents of this report, please do not hesitate to contact me.

Very truly yours,
Environmental Quality Associates, Inc.

Chris W. Taylor
Vice President

CWT/sr

encl.

DATA VALIDATION REPORT
for
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Project: Northeast Alloy & Metals
Laboratory: Columbia Analytical Services, Inc.
Lab. SDG No.: MW2

Sample Summary

Lab. ID No.	Sample ID	Matrix	Date Collected	VTSR	Analysis
162227	MW-2	water	8/8/97	8/12/97	TAL Metals
162228	MW-2D	water	8/8/97	8/12/97	TAL Metals
162229	MW-9	water	8/8/97	8/12/97	VOA
162230	MW-9D	water	8/8/97	8/12/97	VOA
162231	EQW1	water	8/8/97	8/12/97	VOA; TAL Metals
162232	EQS1	water	8/8/97	8/12/97	VOA
162233	TB1	water	8/8/97	8/12/97	VOA
162234	MW-10	water	8/8/97	8/12/97	VOA
162235	B-103/S-4/6-8'	soil	8/6/97	8/15/97	VOA
162236	MW-10/S-2/2-4'	soil	8/8/97	8/15/97	VOA
162237	B-106/S-2/2-4'	soil	8/8/97	8/15/97	VOA
162238	B-105/S-2/2-4'	soil	8/8/97	8/15/97	VOA
162239	B-107/S-3/4-6'	soil	8/8/97	8/15/97	VOA
162240	B-99/S-4/0-2'	soil	8/8/97	8/15/97	VOA

Sample Deliverables Package Received on: 9/24/97 Via: Federal Express
Validated By: Chris W. Taylor
DVR Shipped Via: Federal Express To: Robert Valli / CEC Date: 10/13/97

Organics Review Summary

This section applies to Volatile analyses evaluated under NYSDEC ASP and EPA Region II protocols and guidlines, respectively. Specific QC parameters evaluated included:

1) Data Completeness
2) Holding Times
3) GC/MS Tuning
4) Calibration
5) Blanks
6) Surrogate Recovery
7) Matrix Spike / Matrix Spike Duplicate/ Blank Spike Recovery
8) Internal Standard Recovery
9) Compound Identification and Quantitation
10) Non-Target Compounds
11) Instrument Detection Limits
12) Raw Data
13) Calculations and Data Transcription / Reporting

Project: Northeast Alloy & Metals Laboratory: Columbia Analytical Services, Inc.
Lab. SDG No.: MW2

Volatiles Analysis

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness

The data deliverables package for Volatiles analysis was complete as received from the laboratory.

Holding Times

All reported samples were analyzed within the NYSDEC ASP's holding time requirements of seven and 10 days from VTSR to analysis for preserved (aqueous) and unpreserved (soil) samples, respectively. All samples were analyzed within 14 days from sample collection.

GC/MS Tuning

All BFB ion abundance ratios were within limits. Reported results were checked and verified from the raw data. All samples were analyzed within 12 hours of associated performance standard injection.

Calibration

Initial calibration for aqueous samples was performed on MS #1 on 8/20/97; %RSDs for all reported compounds were below 30%, and all RRFs above the validation action level of 0.05, with RRFs for the system performance check compounds (SPCC) above the method-specified level of 0.300.

Continuing calibration for aqueous samples was performed on 8/22/97; %Ds for all reported compounds were below 25%, and all RRFs above 0.05, with RRFs for the system performance check compounds (SPCC) above the method-specified level of 0.300. No qualifications for aqueous samples due to GC-MS calibration were required.

Initial calibrations for soil samples (heated-purge method) were performed on MS #3 on 7/9/97 and 8/20/97; %RSDs for all reported compounds were below 30%, and all RRFs above the validation action level of 0.05, with RRFs for the system performance check compounds (SPCC) above the method-specified level of 0.300.

Continuing calibrations (CCALs) for soil samples were performed on 8/19, 8/21 and 8/22/97. The following compounds exceeded the validation precision criterion of 25 % D in the noted calibration. These compounds should be considered as estimated values and were 'J' qualified in the associated samples.

8/19 (File X3315.D): chloromethane, 35%; bromomethane, 33%; acetone, 32%; 2-hexanone, 35% (affects samples B-103, Soil Blank 1).

Calibration (cont'd.)
It is noted that manual integrations performed for various target compounds in the calibrations were not initialled by the analyst; NYSDEC-ASP protocols require explanation of all manual integrations performed.

Blanks
Method Blanks for both aqueous and soil samples were free of contamination. The Trip Blank for samples collected on 8/8/97 was free of contamination. No blank-related sample qualifications were necessary.

Equipment blank EQW1 for water samples exhibited the presence of cis-1,2-dichloroethene at 1.7 ug/L; this compound was not present below the action level of 8.6 ug/L in associated samples; no qualifiers were necessary.

Equipment blank EQS1 for soil samples was free of contamination.

System Monitor Compound Recovery
Water samples exhibited acceptable SMC recoveries; no qualifications were necessary.

SMC 4-bromofluorobenzene (BFB) recoveries were below the acceptable limit of 74% in samples MW-10/S2 (reported by the laboratory as MW-101), B-106, B-105, B-107 and B-99, at 47%, 45%, 51%, 70% and 60%, respectively. The -MS&-MSD of sample B-106 also exhibited low recoveries of BFB. Re-analyses of these samples exhibited similar low recoveries of BFB. Reported results for all compounds in low-SMC recovery samples are considered estimated values, and were '**J**' qualified. Low bias is suggested due to sample matrix effects; the data user is advised that reported concentrations of analagous compounds should be considered as the minimal amounts likely to be present in these samples. It is noted that the laboratory acted according to protocol requirements in re-analyzing these samples; surrogate recovery problems are not considered to be attributable to laboratory performance.

Matrix Spike / Matrix Spike Duplicate / Blank Spike Recovery
Soil sample matrix spike recoveries for B-106 -MS and -MSD were within acceptable limits. The % RPD for recovery precision of 1,1-dichloroethene was outside the limit of 22%, at 23%; no data qualification was warranted due to this minor deviation. It is noted that IS compounds 2, 3 and 4 were below acceptable range in the sample, MS and MSD, which contributed significant positive bias to spike compound recoveries; recovery failures for 4 of 5 spike compounds would occur if IS levels are normalized to daily CCAL value. It is reiterated that the soil samples under consideration exert significant low-bias matrix effects on target compound recoveries; reported values should be considered as minimum amounts of these compounds present.

Water sample matrix spike recoveries and precision for MW-9 -MS and -MSD were within acceptable limits.

Blank Spike recoveries for both soil and aqueous matrices were within acceptable limits.

Internal Standard Recovery
Several soil samples exhibited low recoveries for three of four IS compounds. Sample re-analyses, which the laboratory performed for all samples with initial analysis IS failures, typically produced similar responses. Internal standard RTs for all samples were within limits of ± 0.5 minutes from CCAL RTs. Associated sample results are considered estimated values, and were '**J**' qualified. Significant matrix effects are present, with negative bias suggested. Reported concentrations of associated target compounds should be considered by the data user as the minimum concentrations present. Consideration should be given to alternate methods of sample collection, e.g., methanol extraction, to minimize matrix efffects and potentially characterize sample concentrations more accurately.

Aqueous samples exhibited IS recoveries within acceptable range of +100% to -50% of the associated daily CCAL responses. Internal standard RTs for all samples were within limits of ± 0.5 minutes from CCAL RTs.

All reported values were checked and verified from the raw data.

Compound Identification and Quantitation
All reported concentrations (as qualified) and identifications were in conformance with method requirements. As noted above, soil samples exhibited significant matrix effects which affected quantitated results and necessitated numerous qualifications based on SMC and IS recoveries; refer to Form Is for qualifications.

Non-Target Compounds
No non-target compounds were determined to be present in the reported samples.

Instrument Detection Limits
Detection limits for all reported method compounds were within established CRQLs.

Calculations and Data Transcription / Reporting
Calculations and transcription of reported parameters were checked on a random basis; no anomalies were discovered.

Sample Dilutions
The following soil samples were analyzed at the noted dilutions in order to bring concentrations of the listed compounds into calibrated instrument range:
B-103: 5x; trichloroethene
B-99: 5x; trichloroethene.

It is noted that sample B-105, which was analyzed undiluted, exhibited trichloroethene at 250 ug/Kg in the initial analysis; it was re-analyzed, again undiluted, and exhibited tce at 110 ug/Kg. The initial value of 250, although estimated (J), should be considered as the more representative concentration for this sample.

Project: Northeast Alloy & Metals Laboratory: Columbia Analytical Services, Inc.
Lab. SDG No.: MW2

Raw Data
Raw data contained within the SDG were found to be complete as received.

Other
As noted above, soil samples exhibited significant SMC and IS excursions which forced sample re-analysis. The characteristic failure mode of the original analysis was typically replicated upon re-analysis, with lower concentrations of target analytes due to volatilization from sample handling and other factors. Therefore, the more representative samples in terms of actual concentrations and presence of target compounds are typically the original analyses, unless otherwise noted.

Project: Northeast Alloy & Metals Laboratory: Columbia Analytical Services, Inc.
Lab. SDG No.: MW2

Inorganics Review Summary / Metals

This section applies to metals analyses evaluated under NYSDEC ASP and EPA Regon II protocols and guidelines, respectively. Specific QC parameters evaluated included:

1) Data Completeness
2) Holding Times / Sample Preservation
3) Calibration (Initial and Continuing)
4) Blanks (Digestion / Preparative and Instrument)
5) CRDL Check Sample (ICP analytes)
6) Interference Check Samples (ICP analytes)
7) Matrix Spikes
8) Duplicates (Laboratory and Field)
9) Laboratory Control Samples
10) Serial Dilutions (ICP analytes)
11) Instrument Detection Limits
12) Raw Data (Instrument results, Digestion / Prep. Logs)
13) Calculations and Data Transcription / Reporting

The following information summarizes the areas evaluated and details any non-compliances or items generating reviewer comments or concerns; associated qualifications of sample results are noted.

Data Completeness
The data deliverables packages for metals was complete as received.

Holding Times / Sample Preservation
Aqueous samples were received at the laboratory on 8/12/97, and were analyzed between 8/27 and 9/9/97. ICP analyses were performed on 8/27; GFAA analyses were performed on 8/29 (Se), 9/5 (Sb) and 9/9 (Tl); CVAA analysis for Hg was performed on 8/25/97.

The above holding times were within the validation technical holding times of six months maximum from collection to analysis for metals (other than mercury) and 28 days maximum from collection to analysis for mercury. The laboratory sample receipt and preservation check form (p. 00004) indicated proper pH preservation ($pH < 2$, w/ HNO_3) and temperature preservation $4 \pm 2°$ C for aqueous samples.

Calibration

The laboratory utilized the same concentrations for initial (ICV) and continuing (CCV) calibration check standards; CLP protocol states specifically that "... analyte concentrations in the continuing calibration standard shall be different than the concentration used for for the (ICV) and shall be ... at or near the mid-range levels of the calibration curve...". The laboratory should take necessary corrective action to bring calibration procedures into compliance with method / protocol requirements.

ICV and CCV recoveries for all target analytes were within acceptable limits.

Blanks (Digestion / Preparative and Instrument)

Prep blanks were free of contamination above the CRDL for all target analytes; Instrument blanks (ICB, CCB) were below CRDLs for all target analytes.

Equipment Blank

EQW1 contained the following analytes at the noted concentrations: barium (Ba), 73 ug/L; calcium (Ca), 55,000 ug/L; magnesium (Mg), 10,700 ug/L; potassium (K), 2,030 ug/L; sodium (Na), 16,300 ug/L; zinc (Zn), 46 ug/L. The source of the water used for this equipment blank is unknown; it is possible that the DI system used for purification of the raw water was malfunctioning and allowing bleed-through of the above analytes. However, this is speculative and cannot be confirmed by the reviewer. An extremely conservative approach would be to consider levels of these analytes in the reported samples at less than levels in EQW1 as potentially due to sampling equipment contamination, although a scenario whereby the sampling equipment used would leach comparable concentrations of salts is difficult to envision.

CRDL Check Samples

Recoveries for the following analytes were outside the acceptable limits of 80 - 120% : antimony (Sb) and selenium (Se) by GFAA, at 139 and 75%, respectively ; arsenic (As) and lead (Pb), at Initial 123%, and Initial / Final 55 and 64%, respectively.

Sb and Se results in samples MW-2 and MW-2 D1 were '**J**' qualified, as estimated values, due to CRDL recovery values. Potential high bias for Sb and low bias for Se is suggested. No qualifiers were applied to As and Pb, since concentrations for these analytes in the samples were > 2x respective CRDLs of 10 and 6 ug/L.

Interference Check Samples (ICP analytes)

Significant negative concentrations of As and Pb, and positive concentrations of cadmium (Cd) were present in the ICS A solutions; concentrations of > 2x analyte CRDLs in this solution indicates improperly established interelement correction factors which may be manifested in over- or under-correction of analytes with CRDLs < 10 ug/L. Reported results for these analytes were '**J**' qualified, and are considered estimated values. Significant negative bias is suggested for As, potential negative bias for Pb, and potential positive bias for Cd.

Project: Northeast Alloy & Metals Laboratory: Columbia Analytical Services, Inc.
Lab. SDG No.: MW2

Matrix Spikes
Recovery for chromium (Cr) in spike sample MW-2 S was outside the acceptable range of 75 - 125%, at 136%. Results for Cr in reported samples are considered estimated and were '**J**' qualified due to spike recovery: Positive bias is suggested for chromium.

Duplicates
The %RPDs for all target analytes in duplicate sample MW-2 D1 were within the applicable control limits of 20% for analytes with concentrations > 5x CRDL or the control limit of ± CRDL for analyte concentrations < 5x CRDL.

Laboratory Control Samples (LCS)
Recoveries for all analytes in spiked blank (LCS), which indicate overall system accuracy and efficiency, including the preparative digestion process, were within acceptable range limits of 80 to 120%.

Serial Dilution
Serial dilution recoveries, for ICP analytes present in selected samples at a concentration > 10x CRDL, were within acceptable limits (max. 10%D) , with the exception of lead and zinc. Results for Pb and Zn in associated samples are considered estimated and were '**J**' qualified.

Instrument Detection Limits
Detection limits were compliant with (i.e., <) NYSDEC-ASP Contract Required Detection Limits (CRDLs) for all target analytes.

Raw Data
Raw data submitted with this package are complete and acceptable, unless noted otherwise elsewhere in this report.

Calculations and Data Transcription / Reporting
Calculations and reported values were verified at random from raw data values; no anomalies were noted.

IMPORTANT NOTICE TO DATA USER

THE DATA RESULTS CONTAINED IN THIS PACKAGE HAVE BEEN TECHNICALLY REVIEWED AND QUALIFIED IN ACCORDANCE WITH METHOD PROTOCOLS AND EPA REGION II GUIDELINES. DATA WHICH DO NOT EXHIBIT EVIDENCE OF QUALIFICATION OR REVIEW SHOULD NOT BE USED.

APPENDIX C

SHALLOW SOIL SAMPLING RESULTS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: S-1-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-1

Sample wt/vol: 5 (g/mL) g Lab File ID: CT483

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 9 Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**140**	~~B~~
67-64-1	**Acetone**	**200**	
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	**Benzene**	**2**	**J**
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	**Toluene**	**10**	
108-90-7	**Chlorobenzene**	**4**	**J**
100-41-4	**Ethylbenzene**	**2**	**J**
100-42-5	Styrene	5	U
1330-20-7	**Xylene (total)**	**4**	**J**

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SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-1-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-1

Sample wt/vol: 5 (g/mL) g Lab File ID: CT483

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 9 Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000106-97-8	Butane	1.91	13	J N
2.	000109-66-0	Pentane	2.89	21	J N
3.		Unknown Alkane	3.09	11	J
4.	000060-29-7	Ether	3.21	10	J N
5.		Unknown	4.81	10	J
6.	000110-54-3	Hexane	5.31	110	~~JB~~ J
7.		Unknown Hydrocarbon	6.33	16	J
8.		Unknown Hydrocarbon	7.48	13	J
9.		Unknown Hydrocarbon	7.79	20	J
10.		Unknown Hydrocarbon	8.58	10	J
11.					
12.					
13.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-2-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-2

Sample wt/vol: 5 (g/mL) g Lab File ID: CT503

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 10 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**29**	**B**
67-64-1	**Acetone**	**80**	**B**
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.: S-2-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-2

Sample wt/vol: 5 (g/mL) g Lab File ID: CT503

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 10 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~110-54-3~~	~~Hexane~~	~~5.23~~	~~23~~	~~JB~~
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. S-3-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-3

Sample wt/vol: 5 (g/mL) g Lab File ID: CT487

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 13 Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	**Methylene Chloride**	**120**	~~B~~	J
67-64-1	**Acetone**	**220**		J
75-15-0	Carbon Disulfide	6	U	
75-35-4	1,1-Dichloroethene	6	U	
75-34-3	1,1-Dichloroethane	6	U	
540-59-0	1,2-Dichloroethene (total)	6	U	
67-66-3	Chloroform	6	U	
107-06-2	1,2-Dichloroethane	6	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	6	U	
56-23-5	Carbon Tetrachloride	6	U	
108-05-4	Vinyl Acetate	11	U	
75-27-4	Bromodichloromethane	6	U	
78-87-5	1,2-Dichloropropane	6	U	
10061-01-5	cis-1,3-Dichloropropene	6	U	
79-01-6	Trichloroethene	6	U	
124-48-1	Dibromochloromethane	6	U	
79-00-5	1,1,2-Trichloroethane	6	U	
71-43-2	Benzene	6	U	J
10061-02-6	trans-1,3-Dichloropropene	6	U	J
75-25-2	Bromoform	6	U	J
108-10-1	4-Methyl-2-Pentanone	11	U	J
591-78-6	2-Hexanone	11	U	J
127-18-4	Tetrachloroethene	6	U	J
79-34-5	1,1,2,2-Tetrachloroethane	6	U	J
108-88-3	**Toluene**	**13**		J
108-90-7	Chlorobenzene	6	U	J
100-41-4	Ethylbenzene	6	U	J
100-42-5	Styrene	6	U	J
1330-20-7	**Xylene (total)**	**3**	**J**	J

CT 4/1/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.: S-3-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-3

Sample wt/vol: 5 (g/mL) g Lab File ID: CT487

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 13 Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.96	10	J
~~2.~~	~~000110-54-3~~	~~Hexane~~	~~5.31~~	~~42~~	~~JB~~
3.		Unknown	6.33	6	J
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-3-(0-2')RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-3RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT504

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 13 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**34**	~~B~~
67-64-1	**Acetone**	**64**	~~B~~
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	**Toluene**	**2**	**J**
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

S-3-(0-2') RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-3 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT504

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 13 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	3.89	6	J
~~2.~~	~~000110-54-3~~	~~Hexane~~	~~5.24~~	~~26~~	~~JB~~
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. S-4-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-4

Sample wt/vol: 4 (g/mL) g Lab File ID: CT489

Level: (low/med) MED Date Received: 02/11/97

%Moisture: not dec. 15 Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1500	U
74-83-9	Bromomethane	1500	U
75-01-4	Vinyl Chloride	1500	U
75-00-3	Chloroethane	1500	U
75-09-2	**Methylene Chloride**	**1000**	**B**
67-64-1	**Acetone**	**1700**	
75-15-0	Carbon Disulfide	740	U
75-35-4	1,1-Dichloroethene	740	U
75-34-3	1,1-Dichloroethane	740	U
540-59-0	1,2-Dichloroethene (total)	740	U
67-66-3	Chloroform	740	U
107-06-2	1,2-Dichloroethane	740	U
78-93-3	2-Butanone	1500	U
71-55-6	1,1,1-Trichloroethane	740	U
56-23-5	Carbon Tetrachloride	740	U
108-05-4	Vinyl Acetate	1500	U
75-27-4	Bromodichloromethane	740	U
78-87-5	1,2-Dichloropropane	740	U
10061-01-5	cis-1,3-Dichloropropene	740	U
79-01-6	**Trichloroethene**	**8200**	
124-48-1	Dibromochloromethane	740	U
79-00-5	1,1,2-Trichloroethane	740	U
71-43-2	Benzene	740	U
10061-02-6	trans-1,3-Dichloropropene	740	U
75-25-2	Bromoform	740	U
108-10-1	4-Methyl-2-Pentanone	1500	U
591-78-6	2-Hexanone	1500	U
127-18-4	Tetrachloroethene	740	U
79-34-5	1,1,2,2-Tetrachloroethane	740	U
108-88-3	Toluene	740	U
108-90-7	Chlorobenzene	740	U
100-41-4	Ethylbenzene	740	U
100-42-5	Styrene	740	U
1330-20-7	Xylene (total)	740	U

J

CWT 4/1/97

This sample was analyzed on a heated purge run.

No Calibration curve was run for med-level (Methanol extract)

No Methanol Blank was prepared/analyzed. CWT

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.: S-4-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-4

Sample wt/vol: 4 (g/mL) g Lab File ID: CT489

Level: (low/med) MED Date Received: 02/11/97

%Moisture: not dec. 15 Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.30~~	~~2100~~	~~JB~~
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CAT 4/14

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-5-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-5

Sample wt/vol: 5 (g/mL) g Lab File ID: CT490

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 11 Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**220**	~~B~~
67-64-1	**Acetone**	**440**	**E**
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	**Trichloroethene**	**1**	**J**
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	**Toluene**	**11**	
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

J

CMT 4/1/97

FORM I CLP VOA

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-5-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-5

Sample wt/vol: 5 (g/mL) g Lab File ID: CT490

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 11 Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000060-29-7	Ether	3.21	8	JN
~~2.~~	~~000110-54-3~~	~~Hexane~~	~~5.31~~	~~40~~	~~JB~~
3.	000142-82-5	Heptane	8.58	6	JN
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cwt 4/11/97

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-5-(0-2')RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-5RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT505

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 11 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**79**	~~B~~
67-64-1	**Acetone**	**150**	~~B~~
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	**Toluene**	**6**	
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

J

4/11/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

S-5-(0-2') RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35266-5 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT505

Level: (low/med) LOW Date Received: 02/11/97

%Moisture: not dec. 11 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~110-54-3~~	~~Hexane~~	~~5.24~~	~~24~~	~~JB~~
2.					
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FORM I VOA-TIC 12/91

- 2s

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-1-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-1

Sample wt/vol: 30.3 (g/mL) g Lab File ID: EI158

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 9 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	360	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	360	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-1-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-1

Sample wt/vol: 30.3 (g/mL) g Lab File ID: EI158

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 9 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	360	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	360	U
100-02-7	4-Nitrophenol	360	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
86-73-7	Fluorene	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
100-01-6	4-Nitroaniline	360	U
534-52-1	4,6-Dinitro-2-methylphenol	360	U
86-30-6	N-Nitrosodiphenylamine	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	360	U
85-01-8	**Phenanthrene**	**490**	
120-12-7	**Anthracene**	**95**	**J**
84-74-2	**Di-n-butylphthalate**	**96**	**J**
206-44-0	**Fluoranthene**	**620**	
129-00-0	**Pyrene**	**580**	
85-68-7	Butylbenzylphthalate	360	U
56-55-3	**Benzo(a)anthracene**	**350**	**J**
91-94-1	3,3'-Dichlorobenzidine	360	U
218-01-9	**Chrysene**	**430**	
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	**Benzo(b)fluoranthene**	**340**	**J N**
207-08-9	**Benzo(k)fluoranthene**	**300**	**J N**
50-32-8	**Benzo(a)pyrene**	**370**	
193-39-5	**Indeno(1,2,3-cd)pyrene**	**210**	**J**
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	**Benzo(g,h,i)perylene**	**210**	**J N**

CVT 4/3/97

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-1-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-1

Sample wt/vol: 30.3 (g/mL) g Lab File ID: EI158

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.33~~	~~1800~~	~~JAB~~
~~2.~~		~~Aldol condensate~~	~~6.99~~	~~31000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.60~~	~~1200~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.77~~	~~15000~~	~~JAB~~
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R

4/3/97

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-2-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-2

Sample wt/vol: 30.8 (g/mL) g Lab File ID: EI156

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	360	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	360	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-2-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-2

Sample wt/vol: 30.8 (g/mL) g Lab File ID: EI156

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	360	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	360	U
100-02-7	4-Nitrophenol	360	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
86-73-7	Fluorene	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
100-01-6	4-Nitroaniline	360	U
534-52-1	4,6-Dinitro-2-methylphenol	360	U
86-30-6	N-Nitrosodiphenylamine	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	360	U
85-01-8	**Phenanthrene**	**780**	
120-12-7	**Anthracene**	**140**	J
84-74-2	Di-n-butylphthalate	360	U
206-44-0	**Fluoranthene**	**860**	
129-00-0	**Pyrene**	**730**	
85-68-7	Butylbenzylphthalate	360	U
56-55-3	**Benzo(a)anthracene**	**350**	J
91-94-1	3,3'-Dichlorobenzidine	360	U
218-01-9	**Chrysene**	**390**	
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	**Benzo(b)fluoranthene**	**230**	J N
207-08-9	**Benzo(k)fluoranthene**	**230**	J N
50-32-8	**Benzo(a)pyrene**	**270**	J
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	**Benzo(g,h,i)perylene**	**110**	J N

4/3/97

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-2-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-2

Sample wt/vol: 30.8 (g/mL) g Lab File ID: EI156

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.32~~	~~1800~~	~~JAB~~
~~2.~~		~~Aldol condensate~~	~~6.99~~	~~31000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.60~~	~~1100~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.77~~	~~14000~~	~~JAB~~
5.		Unknown	20.02	1600	J
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CW 4/3/97

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: S-3-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-3

Sample wt/vol: 30.5 (g/mL) g Lab File ID: EI155

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 13 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	380	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
100-51-6	Benzyl alcohol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	380	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

- 2s

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-3-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-3

Sample wt/vol: 30.5 (g/mL) g Lab File ID: EI155

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/14/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	380	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	380	U
100-02-7	4-Nitrophenol	380	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
86-73-7	Fluorene	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
100-01-6	4-Nitroaniline	380	U
534-52-1	4,6-Dinitro-2-methylphenol	380	U
86-30-6	N-Nitrosodiphenylamine	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	380	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
56-55-3	Benzo(a)anthracene	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-3-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-3

Sample wt/vol: 30.5 (g/mL) g Lab File ID: EI155

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 13 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.33~~	~~1200~~	~~JAB~~ R
2.		Unknown	6.60	1300	J
~~3.~~		~~Aldol condensate~~	~~7.01~~	~~38000~~	~~JAB~~
~~4.~~		~~Branched hydrocarbon~~	~~7.60~~	~~1200~~	~~JB~~
~~5.~~		~~Aldol condensate~~	~~7.73~~	~~2800~~	~~JAB~~
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CLS 4/3/6

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-4-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-4

Sample wt/vol: 30.3 (g/mL) g Lab File ID: EI159

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	390	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
100-51-6	Benzyl alcohol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	390	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: S-4-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-4

Sample wt/vol: 30.3 (g/mL) g Lab File ID: EI159

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	390	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	390	U
100-02-7	4-Nitrophenol	390	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
86-73-7	Fluorene	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
100-01-6	4-Nitroaniline	390	U
534-52-1	4,6-Dinitro-2-methylphenol	390	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	390	U
85-01-8	**Phenanthrene**	**210**	**J**
120-12-7	Anthracene	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	**Fluoranthene**	**250**	**J**
129-00-0	**Pyrene**	**200**	**J**
85-68-7	Butylbenzylphthalate	390	U
56-55-3	**Benzo(a)anthracene**	**130**	**J**
91-94-1	3,3'-Dichlorobenzidine	390	U
218-01-9	**Chrysene**	**190**	**J**
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	**Benzo(b)fluoranthene**	**170**	**J N**
207-08-9	**Benzo(k)fluoranthene**	**150**	**J N**
50-32-8	**Benzo(a)pyrene**	**160**	**J N**
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	**Benzo(g,h,i)perylene**	**120**	**J N**

4/3/97

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

S-4-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-4

Sample wt/vol: 30.3 (g/mL) g Lab File ID: EI159

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.33~~	~~1200~~	~~JAB~~
~~2.~~		~~Aldol condensate~~	~~7.00~~	~~40000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.61~~	~~1400~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.73~~	~~2400~~	~~JAB~~
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CW 9/3/97

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

S-5-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-5

Sample wt/vol: 30.7 (g/mL) g Lab File ID: EI157

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 11 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	360	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	360	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

- 2s

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. S-5-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-5

Sample wt/vol: 30.7 (g/mL) g Lab File ID: EI157

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 11 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	360	U
83-32-9	**Acenaphthene**	**88**	**J**
51-28-5	2,4-Dinitrophenol	360	U
100-02-7	4-Nitrophenol	360	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
86-73-7	**Fluorene**	**110**	**J**
7005-72-3	4-Chlorophenyl-phenylether	360	U
100-01-6	4-Nitroaniline	360	U
534-52-1	4,6-Dinitro-2-methylphenol	360	U
86-30-6	N-Nitrosodiphenylamine	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	360	U
85-01-8	**Phenanthrene**	**1100**	
120-12-7	**Anthracene**	**230**	**J**
84-74-2	Di-n-butylphthalate	360	U
206-44-0	**Fluoranthene**	**1200**	
129-00-0	**Pyrene**	**1100**	
85-68-7	Butylbenzylphthalate	360	U
56-55-3	**Benzo(a)anthracene**	**570**	
91-94-1	3,3'-Dichlorobenzidine	360	U
218-01-9	**Chrysene**	**630**	
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	**Benzo(b)fluoranthene**	**520**	**N**
207-08-9	**Benzo(k)fluoranthene**	**470**	**N**
50-32-8	**Benzo(a)pyrene**	**570**	
193-39-5	**Indeno(1,2,3-cd)pyrene**	**280**	**J**
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	**Benzo(g,h,i)perylene**	**270**	**J N**

Carbazole present @ 150 µg/kg J

FORM I SV-I

CWF 4/3/97

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

S-5-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-5

Sample wt/vol: 30.7 (g/mL) g Lab File ID: EI157

Level: (low/med) LOW Date Received: 02/11/97

% Moisture: 11 decanted: (Y/N) N Date Extracted:02/14/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~7.00~~	~~36000~~	~~JAB~~
~~2.~~		~~Branched hydrocarbon~~	~~7.60~~	~~1400~~	~~JB~~
~~3.~~		~~Aldol condensate~~	~~7.73~~	~~2200~~	~~JAB~~
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C.T 4/3/97

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: S-1-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-1

Sample wt/vol: 30.5 (g/mL) g Lab File ID: HP13A\97022434

% Moisture: 9 decanted: (Y/N) N Date Received: 02/11/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/15/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/24/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.8	U
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
57-74-9	Chlordane	18	U
72-54-8	4,4'-DDD	3.6	U
72-55-9	4,4'-DDE	3.6	U
50-29-3	4,4'-DDT	3.6	U
60-57-1	Dieldrin	3.6	U
959-98-8	Endosulfan I	1.8	U
332-13-659	Endosulfan II	3.6	U
103-10-78	Endosulfan sulfate	3.6	U
72-20-8	Endrin	3.6	U
7421-36-3	Endrin aldehyde	3.6	U
76-44-8	Heptachlor	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
72-43-5	Methoxychlor	18	U
8001-35-2	Toxaphene	36	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	18	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: S-2-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-2

Sample wt/vol: 30.1 (g/mL) g Lab File ID: HP13A\97022414

% Moisture: 10 decanted: (Y/N) N Date Received: 02/11/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/15/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/24/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.8	U
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
57-74-9	Chlordane	18	U
72-54-8	4,4'-DDD	3.7	U J
72-55-9	4,4'-DDE	3.7	U
50-29-3	4,4'-DDT	3.7	U
60-57-1	Dieldrin	3.7	U
959-98-8	Endosulfan I	1.8	U
332-13-659	Endosulfan II	3.7	U
103-10-78	Endosulfan sulfate	3.7	U
72-20-8	Endrin	3.7	U
7421-36-3	Endrin aldehyde	3.7	U
76-44-8	Heptachlor	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
72-43-5	Methoxychlor	18	U J
8001-35-2	Toxaphene	37	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	18	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

Cwt 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: S-3-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-3

Sample wt/vol: 30.1 (g/mL) g Lab File ID: HP13A\97022416

% Moisture: 13 decanted: (Y/N) N Date Received: 02/11/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/15/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/24/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.9	U
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
57-74-9	Chlordane	19	U
72-54-8	4,4'-DDD	3.8	U J
72-55-9	4,4'-DDE	3.8	U
50-29-3	4,4'-DDT	3.8	U
60-57-1	Dieldrin	3.8	U
959-98-8	Endosulfan I	1.9	U
332-13-659	Endosulfan II	3.8	U
103-10-78	Endosulfan sulfate	3.8	U
72-20-8	Endrin	3.8	U
7421-36-3	Endrin aldehyde	3.8	U
76-44-8	Heptachlor	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
72-43-5	Methoxychlor	19	U J
8001-35-2	Toxaphene	38	U
12674-11-2	Aroclor-1016	19	U
11104-28-2	Aroclor-1221	19	U
11141-16-5	Aroclor-1232	19	U
53469-21-9	Aroclor-1242	19	U
12672-29-6	Aroclor-1248	19	U
11097-69-1	Aroclor-1254	19	U
11096-82-5	Aroclor-1260	19	U

CMS 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: S-4-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-4

Sample wt/vol: 30.8 (g/mL) g Lab File ID: HP13A\97022436

% Moisture: 15 decanted: (Y/N) N Date Received: 02/11/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/15/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/24/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.9	U
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
57-74-9	Chlordane	19	U
72-54-8	4,4'-DDD	3.8	U
72-55-9	4,4'-DDE	3.8	U
50-29-3	4,4'-DDT	3.8	U
60-57-1	Dieldrin	3.8	U
959-98-8	Endosulfan I	1.9	U
332-13-659	Endosulfan II	3.8	U
103-10-78	Endosulfan sulfate	3.8	U
72-20-8	Endrin	3.8	U
7421-36-3	Endrin aldehyde	3.8	U
76-44-8	Heptachlor	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
72-43-5	Methoxychlor	19	U
8001-35-2	Toxaphene	38	U
12674-11-2	Aroclor-1016	19	U
11104-28-2	Aroclor-1221	19	U
11141-16-5	Aroclor-1232	19	U
53469-21-9	Aroclor-1242	19	U
12672-29-6	Aroclor-1248	19	U
11097-69-1	Aroclor-1254	19	U
11096-82-5	Aroclor-1260	19	U

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: S-5-(0-2')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35266-5

Sample wt/vol: 30.7 (g/mL) g Lab File ID: HP13A\97022438

% Moisture: 11 decanted: (Y/N) N Date Received: 02/11/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/15/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/24/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.8	U
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
57-74-9	Chlordane	18	U
72-54-8	4,4'-DDD	3.6	U
72-55-9	4,4'-DDE	3.6	U
50-29-3	4,4'-DDT	3.6	U
60-57-1	Dieldrin	3.6	U
959-98-8	Endosulfan I	1.8	U
332-13-659	Endosulfan II	3.6	U
103-10-78	Endosulfan sulfate	3.6	U
72-20-8	Endrin	3.6	U
7421-36-3	Endrin aldehyde	3.6	U
76-44-8	Heptachlor	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
72-43-5	Methoxychlor	18	U
8001-35-2	Toxaphene	36	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	18	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

FORM I PEST

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

S-1-(0-2)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35266-1

Level (low/med): LOW Date Received: 02/11/97

% Solids: 91.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11100			P
7440-36-0	Antimony	1.5	B	N J	P
7440-38-2	Arsenic	8.4		N* J	P
7440-39-3	Barium	124		* ~~J~~	P
7440-41-7	Beryllium	0.66			P
7440-43-9	Cadmium	0.77			P
7440-70-2	Calcium	41600			P
7440-47-3	Chromium	54.9		N J	P
7440-48-4	Cobalt	5.5			P
7440-50-8	Copper	112		* ~~J~~	P
7439-89-6	Iron	47000		* ~~J~~	P
7439-92-1	Lead	65.6			P
7439-95-4	Magnesium	2110			P
7439-96-5	Manganese	1970			P
7439-97-6	Mercury	~~0.14~~		~~N*~~ R	AV
7440-02-0	Nickel	17.9		* ~~J~~	P
7440-09-7	Potassium	1120		E J	P
7782-49-2	Selenium	0.90		N J	P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	211	B		P
7440-28-0	Thallium	1.3	U		P
7440-62-2	Vanadium	35.2			P
7440-66-6	Zinc	59.7			P
57-12-5	Cyanide				NR

J

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS
TL WAS ANALYZED AT A 2X DILUTION.
FE WAS ANALYZED AT A 4X DILUTION.

See comments on p. 168

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

S-2-(0-2)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35266-2

Level (low/med): LOW Date Received: 02/11/97

% Solids: 89.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1630			P
7440-36-0	Antimony	0.89	U	N J	P
7440-38-2	Arsenic	2.6		N* J	P
7440-39-3	Barium	20.7	B	* ~~J~~	P
7440-41-7	Beryllium	1.1			P
7440-43-9	Cadmium	0.32	B		P
7440-70-2	Calcium	144000			P
7440-47-3	Chromium	32.7		N J	P
7440-48-4	Cobalt	33.0			P
7440-50-8	Copper	13.5		* ~~J~~	P
7439-89-6	Iron	8950		* ~~J~~	P
7439-92-1	Lead	15.8			P
7439-95-4	Magnesium	2970			P
7439-96-5	Manganese	246			P
7439-97-6	Mercury	~~0.06~~	~~U~~	~~N*~~ R	AV
7440-02-0	Nickel	210		* ~~J~~	P
7440-09-7	Potassium	357	B	E	P
7782-49-2	Selenium	0.33	U	N J	P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	136	B		P
7440-28-0	Thallium	0.67	U		P
7440-62-2	Vanadium	6.3			P
7440-66-6	Zinc	29.3			P
57-12-5	Cyanide				NR

J

cw 4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

CA WAS ANALYZED AT A 10X DILUTION.

See comments on p. 168 cw

NYSDEC ASP

1

NYSDEC SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

S-3-(0-2)

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35266-3

Level (low/med): LOW Date Received: 02/11/97

% Solids: 87.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2460			P
7440-36-0	Antimony	0.92	U	N J	P
7440-38-2	Arsenic	1.5		N* J	P
7440-39-3	Barium	12.8	B	* ~~J~~	P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.14	B		P
7440-70-2	Calcium	79700			P
7440-47-3	Chromium	4.8		N J	P
7440-48-4	Cobalt	2.1	B		P
7440-50-8	Copper	6.6		* ~~J~~	P
7439-89-6	Iron	6870		* ~~J~~	P
7439-92-1	Lead	5.5			P
7439-95-4	Magnesium	2380			P
7439-96-5	Manganese	207			P
7439-97-6	Mercury	~~0.06~~	~~U~~	~~N*~~ R	AV
7440-02-0	Nickel	6.9		* ~~J~~	P
7440-09-7	Potassium	370	B	E	P
7782-49-2	Selenium	0.55	B	N J	P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	157	B		P
7440-28-0	Thallium	0.69	U		P
7440-62-2	Vanadium	5.5	B		P
7440-66-6	Zinc	30.3			P
57-12-5	Cyanide				NR

J

4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

CA WAS ANALYZED AT A 2X DILUTION.

See comments on p. 168

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

S-4-(0-2)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35266-4

Level (low/med): LOW Date Received: 02/11/97

% Solids: 85

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3500			P
7440-36-0	Antimony	1.0	B	N J	P
7440-38-2	Arsenic	2.6		N* J	P
7440-39-3	Barium	25.6		* ~~J~~	P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	0.26	B		P
7440-70-2	Calcium	15200			P
7440-47-3	Chromium	19.2		N J	P
7440-48-4	Cobalt	4.1	B		P
7440-50-8	Copper	59.4		* ~~J~~	P
7439-89-6	Iron	15500		* ~~J~~	P
7439-92-1	Lead	65.8			P
7439-95-4	Magnesium	1020			P
7439-96-5	Manganese	246			P
7439-97-6	Mercury	~~0.10~~	~~B~~	~~N*~~ R	AV
7440-02-0	Nickel	14.1		* ~~J~~	P
7440-09-7	Potassium	478	B	E J	P
7782-49-2	Selenium	0.38	B	N J	P
7440-22-4	Silver	0.24	U		P
7440-23-5	Sodium	147	B		P
7440-28-0	Thallium	1.4	U		P
7440-62-2	Vanadium	9.0			P
7440-66-6	Zinc	95.5			P
57-12-5	Cyanide				NR

J

cvt 4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

TL WAS ANALYZED AT A 2X DILUTION.

See comments on p. 168 cvt.

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

S-5-(0-2)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35266-5

Level (low/med): LOW Date Received: 02/11/97

% Solids: 89

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4980			P
7440-36-0	Antimony	0.91	U	N J	P
7440-38-2	Arsenic	9.0		N* J	P
7440-39-3	Barium	99.7		* ~~J~~	P
7440-41-7	Beryllium	0.44	B		P
7440-43-9	Cadmium	0.95			P
7440-70-2	Calcium	9680			P
7440-47-3	Chromium	19.6		N J	P
7440-48-4	Cobalt	3.5	B		P
7440-50-8	Copper	149		* ~~J~~	P
7439-89-6	Iron	20100		* ~~J~~	P
7439-92-1	Lead	93.6			P
7439-95-4	Magnesium	1060			P
7439-96-5	Manganese	662			P
7439-97-6	Mercury	~~0.22~~		~~N*~~ R	AV
7440-02-0	Nickel	9.4		* ~~J~~	P
7440-09-7	Potassium	509	B	E J	P
7782-49-2	Selenium	0.95		N J	P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	168	B		P
7440-28-0	Thallium	0.68	U		P
7440-62-2	Vanadium	14.9			P
7440-66-6	Zinc	87.0			P
57-12-5	Cyanide				NR

J

cwc 4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:
SMALL ROCKS

See comments on p. 168 cwc.

FORM I - IN

10/95

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/18/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~B103~~ (5-9) 6-8' DL

Date Sampled : 08/06/97 **Order #:** 162235 **Sample Matrix:** SOIL/SEDIMEN
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 87.0

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/19/97			
ANALYTICAL DILUTION: 5.0			Dry Weight
ACETONE	20	110 U J	UG/KG
BENZENE	5.0	29 U	UG/KG
BROMODICHLOROMETHANE	5.0	29 U	UG/KG
BROMOFORM	5.0	29 U	UG/KG
BROMOMETHANE	5.0	29 U J	UG/KG
2-BUTANONE (MEK)	10	57 U	UG/KG
CARBON DISULFIDE	10	57 U	UG/KG
CARBON TETRACHLORIDE	5.0	29 U	UG/KG
CHLOROBENZENE	5.0	29 U	UG/KG
CHLOROETHANE	5.0	29 U	UG/KG
CHLOROFORM	5.0	29 U	UG/KG
CHLOROMETHANE	5.0	29 U J	UG/KG
DIBROMOCHLOROMETHANE	5.0	29 U	UG/KG
1,1-DICHLOROETHANE	5.0	29 U	UG/KG
1,2-DICHLOROETHANE	5.0	29 U	UG/KG
1,1-DICHLOROETHENE	5.0	29 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	29 U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	29 U	UG/KG
1,2-DICHLOROPROPANE	5.0	29 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	29 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	29 U	UG/KG
ETHYLBENZENE	5.0	29 U	UG/KG
2-HEXANONE	10	57 U J	UG/KG
METHYLENE CHLORIDE	5.0	29 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	57 U	UG/KG
STYRENE	5.0	29 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	29 U	UG/KG
TETRACHLOROETHENE	5.0	29 U	UG/KG
TOLUENE	5.0	29 U	UG/KG
1,1,1-TRICHLOROETHANE	5.0	29 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	29 U	UG/KG
TRICHLOROETHENE	5.0	790	UG/KG
VINYL CHLORIDE	5.0	29 U	UG/KG
O-XYLENE	5.0	29 U	UG/KG
M+P-XYLENE	5.0	29 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	88	%
TOLUENE-D8	(81 - 117 %)	98	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	110	%

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COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : MW10~~/SB~~(2-4') BV MW-10

Date Sampled : 08/08/97 **Order #:** 162236 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 94.7

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/21/97			
ANALYTICAL DILUTION: 1.0			Dry Weight
ACETONE	20	21 U	UG/KG
BENZENE	5.0	5.3 U	UG/KG
BROMODICHLOROMETHANE	5.0	5.3 U	UG/KG
BROMOFORM	5.0	5.3 U	UG/KG
BROMOMETHANE	5.0	5.3 U	UG/KG
2-BUTANONE (MEK)	10	11 U	UG/KG
CARBON DISULFIDE	10	11 U	UG/KG
CARBON TETRACHLORIDE	5.0	5.3 U	UG/KG
CHLOROBENZENE	5.0	5.3 U	UG/KG
CHLOROETHANE	5.0	5.3 U	UG/KG
CHLOROFORM	5.0	5.3 U	UG/KG
CHLOROMETHANE	5.0	5.3 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	5.3 U	UG/KG
1,1-DICHLOROETHANE	5.0	5.3 U	UG/KG
1,2-DICHLOROETHANE	5.0	5.3 U	UG/KG
1,1-DICHLOROETHENE	5.0	5.3 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	5.3 U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	5.3 U	UG/KG
1,2-DICHLOROPROPANE	5.0	5.3 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	5.3 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	5.3 U	UG/KG
ETHYLBENZENE	5.0	5.3 U	UG/KG
2-HEXANONE	10	11 U	UG/KG
METHYLENE CHLORIDE	5.0	5.3 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	11 U	UG/KG
STYRENE	5.0	5.3 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	5.3 U	UG/KG
TETRACHLOROETHENE	5.0	5.3 U	UG/KG
TOLUENE	5.0	5.3 U	UG/KG
1,1,1-TRICHLOROETHANE	5.0	5.3 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	5.3 U	UG/KG
TRICHLOROETHENE	5.0	53	UG/KG
VINYL CHLORIDE	5.0	5.3 U	UG/KG
O-XYLENE	5.0	5.3 U	UG/KG
M+P-XYLENE	5.0	5.3 U	UG/KG

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SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	47 *	%
TOLUENE-D8	(81 - 117 %)	85	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	119	%

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult. MW 10 BU
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : MW101 RE

Date Sampled : 08/08/97 **Order #:** 162236 **Sample Matrix:** SOIL/SEDIMEN
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 94.7

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/21/97			
ANALYTICAL DILUTION: 1.0			Dry Weight
ACETONE	20	21 U	UG/KG
BENZENE	5.0	5.3 U	UG/KG
BROMODICHLOROMETHANE	5.0	5.3 U	UG/KG
BROMOFORM	5.0	5.3 U	UG/KG
BROMOMETHANE	5.0	5.3 U	UG/KG
2-BUTANONE (MEK)	10	11 U	UG/KG
CARBON DISULFIDE	10	11 U	UG/KG
CARBON TETRACHLORIDE	5.0	5.3 U	UG/KG
CHLOROBENZENE	5.0	5.3 U	UG/KG
CHLOROETHANE	5.0	5.3 U	UG/KG
CHLOROFORM	5.0	5.3 U	UG/KG
CHLOROMETHANE	5.0	5.3 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	5.3 U	UG/KG
1,1-DICHLOROETHANE	5.0	5.3 U	UG/KG
1,2-DICHLOROETHANE	5.0	5.3 U	UG/KG
1,1-DICHLOROETHENE	5.0	5.3 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	5.3 U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	5.3 U	J UG/KG
1,2-DICHLOROPROPANE	5.0	5.3 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	5.3 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	5.3 U	UG/KG
ETHYLBENZENE	5.0	5.3 U	UG/KG
2-HEXANONE	10	11 U	UG/KG
METHYLENE CHLORIDE	5.0	5.3 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	11 U	UG/KG
STYRENE	5.0	5.3 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	5.3 U	UG/KG
TETRACHLOROETHENE	5.0	5.3 U	UG/KG
TOLUENE	5.0	5.3 U	UG/KG
1,1,1-TRICHLOROETHANE	5.0	5.3 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	5.3 U	UG/KG
TRICHLOROETHENE	5.0	51	UG/KG
VINYL CHLORIDE	5.0	5.3 U	UG/KG
O-XYLENE	5.0	5.3 U	UG/KG
M+P-XYLENE	5.0	5.3 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	54 *	%
TOLUENE-D8	(81 - 117 %)	98	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	116	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~B106~~ S-14 (2-4') BC

Date Sampled : 08/08/97 **Order #:** 162237 **Sample Matrix:** SOIL/SEDIMEN
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 86.8

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/21/97			
ANALYTICAL DILUTION: 1.0			Dry Weight
ACETONE	20	23 U	UG/KG
BENZENE	5.0	5.8 U	UG/KG
BROMODICHLOROMETHANE	5.0	5.8 U	UG/KG
BROMOFORM	5.0	5.8 U	UG/KG
BROMOMETHANE	5.0	5.8 U	UG/KG
2-BUTANONE (MEK)	10	12 U	UG/KG
CARBON DISULFIDE	10	12 U	UG/KG
CARBON TETRACHLORIDE	5.0	5.8 U	UG/KG
CHLOROBENZENE	5.0	5.8 U	UG/KG
CHLOROETHANE	5.0	5.8 U	UG/KG
CHLOROFORM	5.0	5.8 U	UG/KG
CHLOROMETHANE	5.0	5.8 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	5.8 U	UG/KG
1,1-DICHLOROETHANE	5.0	5.8 U	UG/KG
1,2-DICHLOROETHANE	5.0	5.8 U	UG/KG
1,1-DICHLOROETHENE	5.0	5.8 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	5.8 U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	5.8 U	UG/KG
1,2-DICHLOROPROPANE	5.0	5.8 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	5.8 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	5.8 U	UG/KG
ETHYLBENZENE	5.0	5.8 U	UG/KG
2-HEXANONE	10	12 U	UG/KG
METHYLENE CHLORIDE	5.0	5.8 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	12 U	UG/KG
STYRENE	5.0	5.8 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	5.8 U	UG/KG
TETRACHLOROETHENE	5.0	5.8 U	UG/KG
TOLUENE	5.0	5.8 U	UG/KG
1,1,1-TRICHLOROETHANE	5.0	5.8 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	5.8 U	UG/KG
TRICHLOROETHENE	5.0	5.8	UG/KG
VINYL CHLORIDE	5.0	5.8 U	UG/KG
O-XYLENE	5.0	5.8 U	UG/KG
M+P-XYLENE	5.0	5.8 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	45 *	%
TOLUENE-D8	(81 - 117 %)	94	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	129	%

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COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~B105~~ S-10(2-4') BV

Date Sampled : 08/08/97 **Order #:** 162238 **Sample Matrix:** SOIL/SEDIMEN
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 92.4

DATE ANALYZED : 08/21/97
ANALYTICAL DILUTION: 1.0

ANALYTE	PQL	RESULT	UNITS
			Dry Weigh
ACETONE	20	22 U	UG/KG
BENZENE	5.0	~~5.4 U~~ 2.7 J	UG/KG
BROMODICHLOROMETHANE	5.0	5.4 U	UG/KG
BROMOFORM	5.0	5.4 U	UG/KG
BROMOMETHANE	5.0	5.4 U	UG/KG
2-BUTANONE (MEK)	10	11 U	UG/KG
CARBON DISULFIDE	10	11 U	UG/KG
CARBON TETRACHLORIDE	5.0	5.4 U	UG/KG
CHLOROBENZENE	5.0	5.4 U	UG/KG
CHLOROETHANE	5.0	5.4 U	UG/KG
CHLOROFORM	5.0	5.4 U	UG/KG
CHLOROMETHANE	5.0	5.4 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	5.4 U	UG/KG
1,1-DICHLOROETHANE	5.0	5.4 U	UG/KG
1,2-DICHLOROETHANE	5.0	5.4 U	UG/KG
1,1-DICHLOROETHENE	5.0	5.4 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	5.4 U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	5.4 U	UG/KG
1,2-DICHLOROPROPANE	5.0	5.4 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	5.4 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	5.4 U	UG/KG
ETHYLBENZENE	5.0	~~5.4 U~~ 2.3 J	UG/KG
2-HEXANONE	10	11 U	UG/KG
METHYLENE CHLORIDE	5.0	5.4 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	11 U	UG/KG
STYRENE	5.0	5.4 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	5.4 U	UG/KG
TETRACHLOROETHENE	5.0	~~5.4 U~~ 1.3 J	UG/KG
TOLUENE	5.0	9.2	UG/KG
1,1,1-TRICHLOROETHANE	5.0	5.4 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	5.4 U	UG/KG
TRICHLOROETHENE	5.0	250 E J	UG/KG
VINYL CHLORIDE	5.0	5.4 U	UG/KG
O-XYLENE	5.0	~~5.4 U~~ 4.0 J	UG/KG
M+P-XYLENE	5.0	~~5.4 U~~ 5.3 J	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	51 *	%
TOLUENE-D8	(81 - 117 %)	95	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	145 *	%

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COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~B105~~ - RE @ S-10(2-4') BL

Date Sampled : 08/08/97 **Order #:** 162238 **Sample Matrix:** SOIL/SEDIMEN
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 92.4

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 1.0			Dry Weight
ACETONE	20	22 U	UG/KG
BENZENE	5.0	~~5.4 U~~ 1.3 J	UG/KG
BROMODICHLOROMETHANE	5.0	5.4 U	UG/KG
BROMOFORM	5.0	5.4 U	UG/KG
BROMOMETHANE	5.0	5.4 U	UG/KG
2-BUTANONE (MEK)	10	11 U	UG/KG
CARBON DISULFIDE	10	11 U	UG/KG
CARBON TETRACHLORIDE	5.0	5.4 U	UG/KG
CHLOROBENZENE	5.0	5.4 U	UG/KG
CHLOROETHANE	5.0	5.4 U	UG/KG
CHLOROFORM	5.0	5.4 U	UG/KG
CHLOROMETHANE	5.0	5.4 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	5.4 U	UG/KG
1,1-DICHLOROETHANE	5.0	5.4 U	UG/KG
1,2-DICHLOROETHANE	5.0	5.4 U	UG/KG
1,1-DICHLOROETHENE	5.0	5.4 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	5.4 U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	5.4 U	UG/KG
1,2-DICHLOROPROPANE	5.0	5.4 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	5.4 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	5.4 U	UG/KG
ETHYLBENZENE	5.0	~~5.4 U~~ 1.4 J	UG/KG
2-HEXANONE	10	11 U	UG/KG
METHYLENE CHLORIDE	5.0	5.4 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	11 U	UG/KG
STYRENE	5.0	5.4 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	5.4 U	UG/KG
TETRACHLOROETHENE	5.0	5.4 U	UG/KG
TOLUENE	5.0	~~5.4 U~~ 3.6 J	UG/KG
1,1,1-TRICHLOROETHANE	5.0	5.4 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	5.4 U	UG/KG
TRICHLOROETHENE	5.0	110	UG/KG
VINYL CHLORIDE	5.0	5.4 U	UG/KG
O-XYLENE	5.0	~~5.4 U~~ 1.7 J	UG/KG
M+P-XYLENE	5.0	~~5.4 U~~ 2.0 J	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	36 *	%
TOLUENE-D8	(81 - 117 %)	85	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	118	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~B107~~ S-12 (4-6') B1

Date Sampled : 08/08/97 **Order #:** 162239 **Sample Matrix:** SOIL/SEDIMEN
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 86.3

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/21/97			
ANALYTICAL DILUTION: 1.0			Dry Weigh
ACETONE	20	23 U	UG/KG
BENZENE	5.0	~~5.8 U~~ 2.3 J	UG/KG
BROMODICHLOROMETHANE	5.0	5.8 U	UG/KG
BROMOFORM	5.0	5.8 U	UG/KG
BROMOMETHANE	5.0	5.8 U	UG/KG
2-BUTANONE (MEK)	10	12 U	UG/KG
CARBON DISULFIDE	10	12 U	UG/KG
CARBON TETRACHLORIDE	5.0	5.8 U	UG/KG
CHLOROBENZENE	5.0	5.8 U	UG/KG
CHLOROETHANE	5.0	5.8 U	UG/KG
CHLOROFORM	5.0	5.8 U	UG/KG
CHLOROMETHANE	5.0	5.8 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	5.8 U	UG/KG
1,1-DICHLOROETHANE	5.0	5.8 U	UG/KG
1,2-DICHLOROETHANE	5.0	5.8 U	UG/KG
1,1-DICHLOROETHENE	5.0	5.8 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0 J	5.8 U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	5.8 U	UG/KG
1,2-DICHLOROPROPANE	5.0	5.8 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	5.8 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	5.8 U	UG/KG
ETHYLBENZENE	5.0	~~5.8 U~~ 1.6 J	UG/KG
2-HEXANONE	10	12 U	UG/KG
METHYLENE CHLORIDE	5.0	5.8 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	12 U	UG/KG
STYRENE	5.0	5.8 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	5.8 U	UG/KG
TETRACHLOROETHENE	5.0	5.8 U	UG/KG
TOLUENE	5.0	8.1	UG/KG
1,1,1-TRICHLOROETHANE	5.0	5.8 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	5.8 U	UG/KG
TRICHLOROETHENE	5.0	6.4	UG/KG
VINYL CHLORIDE	5.0	5.8 U	UG/KG
O-XYLENE	5.0	~~5.8 U~~ 2.4 J	UG/KG
M+P-XYLENE	5.0	~~5.8 U~~ 5.0 J	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	~~70 *~~	%
TOLUENE-D8	(81 - 117 %)	~~95~~	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	112	%

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RLG 10/2

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~B107~~ - RE S-12 (4-6') BL

Date Sampled : 08/08/97 **Order #:** 162239 **Sample Matrix:** SOIL/SEDIMEN
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 86.3

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 1.0			Dry Weight
ACETONE	20	23 U	UG/KG
BENZENE	5.0	5.8 U	UG/KG
BROMODICHLOROMETHANE	5.0	5.8 U	UG/KG
BROMOFORM	5.0	5.8 U	UG/KG
BROMOMETHANE	5.0	5.8 U	UG/KG
2-BUTANONE (MEK)	10	12 U	UG/KG
CARBON DISULFIDE	10	12 U	UG/KG
CARBON TETRACHLORIDE	5.0	5.8 U	UG/KG
CHLOROBENZENE	5.0	5.8 U	UG/KG
CHLOROETHANE	5.0	5.8 U	UG/KG
CHLOROFORM	5.0	5.8 U	UG/KG
CHLOROMETHANE	5.0	5.8 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	5.8 U	UG/KG
1,1-DICHLOROETHANE	5.0	5.8 U	UG/KG
1,2-DICHLOROETHANE	5.0	5.8 U	UG/KG
1,1-DICHLOROETHENE	5.0	5.8 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	5.8 U	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	5.8 U	UG/KG
1,2-DICHLOROPROPANE	5.0	5.8 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	5.8 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	5.8 U	UG/KG
ETHYLBENZENE	5.0	5.8 U	UG/KG
2-HEXANONE	10	12 U	UG/KG
METHYLENE CHLORIDE	5.0	5.8 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	12 U	UG/KG
STYRENE	5.0	5.8 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	5.8 U	UG/KG
TETRACHLOROETHENE	5.0	5.8 U	UG/KG
TOLUENE	5.0	5.8 U	UG/KG
1,1,1-TRICHLOROETHANE	5.0	~~5.8 U~~ 2.2 J	UG/KG
1,1,2-TRICHLOROETHANE	5.0	5.8 U	UG/KG
TRICHLOROETHENE	5.0	~~5.8 U~~ 2.1 J	UG/KG
VINYL CHLORIDE	5.0	5.8 U	UG/KG
O-XYLENE	5.0	5.8 U	UG/KG
M+P-XYLENE	5.0	~~5.8 U~~ 1.8 J	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	56 *	%
TOLUENE-D8	(81 - 117 %)	82	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	103	%

cwk 10/9/97

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~B99~~ S-8 (4-6) BL

Date Sampled : 08/08/97 **Order #:** 162240 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 88.5

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : ~~08/22/97~~			
ANALYTICAL DILUTION: 5.0			Dry Weight
ACETONE	20	110 U	UG/KG
BENZENE	5.0	28 U	UG/KG
BROMODICHLOROMETHANE	5.0	28 U	UG/KG
BROMOFORM	5.0	28 U	UG/KG
BROMOMETHANE	5.0	28 U	UG/KG
2-BUTANONE (MEK)	10	56 U	UG/KG
CARBON DISULFIDE	10	56 U	UG/KG
CARBON TETRACHLORIDE	5.0	28 U	UG/KG
CHLOROBENZENE	5.0	28 U	UG/KG
CHLOROETHANE	5.0	28 U	UG/KG
CHLOROFORM	5.0	28 U	UG/KG
CHLOROMETHANE	5.0	28 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	28 U	UG/KG
1,1-DICHLOROETHANE	5.0	28 U	UG/KG
1,2-DICHLOROETHANE	5.0	28 U	UG/KG
1,1-DICHLOROETHENE	5.0	28 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	~~28 U~~ 12 J	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	28 U	UG/KG
1,2-DICHLOROPROPANE	5.0	28 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	28 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	28 U	UG/KG
ETHYLBENZENE	5.0	28 U	UG/KG
2-HEXANONE	10	56 U	UG/KG
METHYLENE CHLORIDE	5.0	28 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	56 U	UG/KG
STYRENE	5.0	28 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	28 U	UG/KG
TETRACHLOROETHENE	5.0	28 U	UG/KG
TOLUENE	5.0	~~28 U~~ 7.3 J	UG/KG
1,1,1-TRICHLOROETHANE	5.0	28 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	28 U	UG/KG
TRICHLOROETHENE	5.0	780	UG/KG
VINYL CHLORIDE	5.0	28 U	UG/KG
O-XYLENE	5.0	28 U	UG/KG
M+P-XYLENE	5.0	~~28 U~~ 6.3 J	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	60 *	%
TOLUENE-D8	(81 - 117 %)	89	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	99	%

10/9/97 10/7/97

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/22/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~B99~~ - RE SS-8-(4-6')

Date Sampled : 08/08/97 **Order #:** 162240 **Sample Matrix:** SOIL/SEDIMENT
Date Received: 08/15/97 **Submission #:** 9708000169 **Percent Solid:** 88.5

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 5.0			Dry Weight
ACETONE	20	110 U	UG/KG
BENZENE	5.0	28 U	UG/KG
BROMODICHLOROMETHANE	5.0	28 U	UG/KG
BROMOFORM	5.0	28 U	UG/KG
BROMOMETHANE	5.0	28 U	UG/KG
2-BUTANONE (MEK)	10	56 U	UG/KG
CARBON DISULFIDE	10	56 U	UG/KG
CARBON TETRACHLORIDE	5.0	28 U	UG/KG
CHLOROBENZENE	5.0	28 U	UG/KG
CHLOROETHANE	5.0	28 U	UG/KG
CHLOROFORM	5.0	28 U	UG/KG
CHLOROMETHANE	5.0	28 U	UG/KG
DIBROMOCHLOROMETHANE	5.0	28 U	UG/KG
1,1-DICHLOROETHANE	5.0	28 U	UG/KG
1,2-DICHLOROETHANE	5.0	28 U	UG/KG
1,1-DICHLOROETHENE	5.0	28 U	UG/KG
CIS-1,2-DICHLOROETHENE	5.0	~~28 U~~ 8.1 J	UG/KG
TRANS-1,2-DICHLOROETHENE	5.0	28 U	UG/KG
1,2-DICHLOROPROPANE	5.0	28 U	UG/KG
CIS-1,3-DICHLOROPROPENE	5.0	28 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	5.0	28 U	UG/KG
ETHYLBENZENE	5.0	28 U	UG/KG
2-HEXANONE	10	56 U	UG/KG
METHYLENE CHLORIDE	5.0	28 U	UG/KG
4-METHYL-2-PENTANONE (MIBK)	10	56 U	UG/KG
STYRENE	5.0	28 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	5.0	28 U	UG/KG
TETRACHLOROETHENE	5.0	28 U	UG/KG
TOLUENE	5.0	~~28 U~~ 5.3 J	UG/KG
1,1,1-TRICHLOROETHANE	5.0	28 U	UG/KG
1,1,2-TRICHLOROETHANE	5.0	28 U	UG/KG
TRICHLOROETHENE	5.0	510	UG/KG
VINYL CHLORIDE	5.0	28 U	UG/KG
O-XYLENE	5.0	28 U	UG/KG
M+P-XYLENE	5.0	28 U	UG/KG

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(74 - 121 %)	63 *	%
TOLUENE-D8	(81 - 117 %)	89	%
DIBROMOFLUOROMETHANE	(80 - 120 %)	98	%

cws 10/9/97

APPENDIX D

SOIL SAMPLING RESULTS FROM RW-1 AND RW-2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-1-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-1

Sample wt/vol: 5 (g/mL) g Lab File ID: CT511

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 9 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	~~10~~ 11	~~U~~ U B
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
~~108-10-1~~	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
~~1330~~-20-7	Xylene (total)	5	U

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CWT 4/1/97

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-1

Sample wt/vol: 5 (g/mL) g Lab File ID: CT511

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 9 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~000110-54-3~~	~~Hexane~~	~~5.25~~	~~17~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
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29.					
30.					

1A

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

RW-1-(14-16')RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-1RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT553

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 9 Date Analyzed: 02/19/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	11 ~~8~~	U ~~B~~
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

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FORM I CLP VOA

4/15/97

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1-(14-16') R

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-1 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT553

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 9 Date Analyzed: 02/19/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.30~~	~~28~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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27.					
28.					
29.					
30.					

FORM I VOA-TIC 12/91

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(18-20')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-15

Sample wt/vol: 5 (g/mL) g Lab File ID: CT506

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 9 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**27**	B
67-64-1	**Acetone**	**25**	U B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

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CWT 4/11/97

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1-(18-20')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-15

Sample wt/vol: 5 (g/mL) g Lab File ID: CT506

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 9 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~000110-54-3~~	~~Hexane~~	~~5.25~~	~~43~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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12.					
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30.					

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(18-20')RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-15RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT510

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 9 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**13**	U B
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

J

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Cwt 4/1/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-1-(18-20') R

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-15 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT510

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 9 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~110-54-3~~	~~Hexane~~	~~5.25~~	~~7~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. RW-1-(2-4')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-13

Sample wt/vol: 5 (g/mL) g Lab File ID: CT534

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 34 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	**Methylene Chloride**	**10**	**U B**
67-64-1	**Acetone**	**130**	
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	**1,1-Dichloroethane**	**12**	
540-59-0	**1,2-Dichloroethene (total)**	**190**	
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	15	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	15	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	**Trichloroethene**	**49**	
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

CWT 4/1/97

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CWT

FORM I CLP VOA

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.: RW-1-(2-4')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-13

Sample wt/vol: 5 (g/mL) g Lab File ID: CT534

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 34 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~110-54-3~~	~~Hexane~~	5.29	.18	~~JB~~
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(24-26.9')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-16

Sample wt/vol: 5 (g/mL) g Lab File ID: CT509

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 10 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**29**	~~B~~
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	**Toluene**	**8**	
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

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CW 4/11

FORM I CLP VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-1-(24-26.9')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-16

Sample wt/vol: 5 (g/mL) g Lab File ID: CT509

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 10 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~110-54-3~~	~~Hexane~~	~~5.25~~	~~34~~	~~JB~~
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(24-26.9')
RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-16RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT536

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 10 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**28**	~~B~~
67-64-1	**Acetone**	**42**	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

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CWS 4/1/9

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1-(24-26.9')
RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-16 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT536

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 10 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000075-69-4	Trichloromonofluoromethane	2.78	9	J N
~~2.~~	~~000110-54-3~~	~~Hexane~~	~~5.32~~	~~13~~	~~JB~~
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-14

Sample wt/vol: 5 (g/mL) g Lab File ID: CT507

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 15 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	**Methylene Chloride**	**15**	U B
67-64-1	**Acetone**	**19**	U B
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

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SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35313-14

Sample wt/vol: 5 (g/mL) g Lab File ID: CT507

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. 15 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~110-54-3~~	~~Hexane~~	~~5.24~~	~~20~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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CVA 4/11/97

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-2-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-3

Sample wt/vol: 5 (g/mL) g Lab File ID: CT513

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 15 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	**Methylene Chloride**	**12**	U B
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	**1,2-Dichloroethene (total)**	**2**	J
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

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CWT 4/11/97

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.: RW-2-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-3

Sample wt/vol: 5 (g/mL) g Lab File ID: CT513

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 15 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~110-54-3~~	~~Hexane~~	~~5.25~~	~~24~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(14-16')RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-3RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT540

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 15 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	12	U	
74-83-9	Bromomethane	12	U	
75-01-4	Vinyl Chloride	12	U	
75-00-3	Chloroethane	12	U	
75-09-2	**Methylene Chloride**	12 ~~2~~	U,~~JB~~	J
67-64-1	Acetone	12	U	
75-15-0	Carbon Disulfide	6	U	
75-35-4	1,1-Dichloroethene	6	U	
75-34-3	1,1-Dichloroethane	6	U	
540-59-0	**1,2-Dichloroethene (total)**	**5**	**J**	
67-66-3	Chloroform	6	U	
107-06-2	1,2-Dichloroethane	6	U	
78-93-3	2-Butanone	12	U	
71-55-6	1,1,1-Trichloroethane	6	U	
56-23-5	Carbon Tetrachloride	6	U	
108-05-4	Vinyl Acetate	12	U	
75-27-4	Bromodichloromethane	6	U	
78-87-5	1,2-Dichloropropane	6	U	
10061-01-5	cis-1,3-Dichloropropene	6	U	J
79-01-6	**Trichloroethene**	**7**		
124-48-1	Dibromochloromethane	6	U	
79-00-5	1,1,2-Trichloroethane	6	U	
71-43-2	Benzene	6	U	
10061-02-6	trans-1,3-Dichloropropene	6	U	
75-25-2	Bromoform	6	U	
~~108-10-1~~	~~4-Methyl-2-Pentanone~~	12	U	
591-78-6	2-Hexanone	12	U	
127-18-4	Tetrachloroethene	6	U	
79-34-5	1,1,2,2-Tetrachloroethane	6	U	R
108-88-3	Toluene	6	U	
108-90-7	Chlorobenzene	6	U	
100-41-4	Ethylbenzene	6	U	
100-42-5	Styrene	6	U	
~~1330-20-7~~	~~Xylene (total)~~	6	U	

CWO 4/1/1

FORM I CLP VOA

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-2-(14-16') R

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-3 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT540

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 15 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.30~~	~~16~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
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30.					

JB 4/1/97

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SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

RW-2-(22-24')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-4

Sample wt/vol: 5 (g/mL) g Lab File ID: CT514

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 9 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	**13**	**U B**
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	**1,2-Dichloroethene (total)**	**38**	
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	**Trichloroethene**	**62**	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

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CVT 4/1/1a

FORM I CLP VOA

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.: RW-2-(22-24')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-4

Sample wt/vol: 5 (g/mL) g Lab File ID: CT514

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 9 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	1.88	10	J
2.	000110-54-3	Hexane	5.25	70	JB N
3.		Unknown	6.27	12	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(22-24')RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-4RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT541

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 9 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	**Vinyl Chloride**	**2**	**J**
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	11 ~~5~~	U ~~B~~
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	**1,2-Dichloroethene (total)**	**18**	
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	**Trichloroethene**	**22**	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-2-(22-24') R

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-4 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT541

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 9 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	1.74	6	J
~~2.~~	~~000110-54-3~~	~~Hexane~~	~~5.30~~	~~28~~	~~JB~~
3.					
4.					
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6.					
7.					
8.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(26-27.3')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-5

Sample wt/vol: 5 (g/mL) g Lab File ID: CT515

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 10 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	11	U	J
74-83-9	Bromomethane	11	U	J
75-01-4	Vinyl Chloride	11	U	J
75-00-3	Chloroethane	11	U	J
75-09-2	**Methylene Chloride**	~~11~~ 10	U B	J
67-64-1	Acetone	11	U	J
75-15-0	Carbon Disulfide	6	U	J
75-35-4	1,1-Dichloroethene	6	U	J
75-34-3	1,1-Dichloroethane	6	U	J
540-59-0	**1,2-Dichloroethene (total)**	**34**		J
67-66-3	Chloroform	6	U	J
107-06-2	1,2-Dichloroethane	6	U	J
78-93-3	2-Butanone	11	U	J
71-55-6	1,1,1-Trichloroethane	6	U	R
56-23-5	Carbon Tetrachloride	6	U	R
108-05-4	Vinyl Acetate	11	U	R
75-27-4	Bromodichloromethane	6	U	R
78-87-5	1,2-Dichloropropane	6	U	R
10061-01-5	cis-1,3-Dichloropropene	6	U	R
79-01-6	**Trichloroethene**	**64**		R
124-48-1	Dibromochloromethane	6	U	R
79-00-5	1,1,2-Trichloroethane	6	U	R
71-43-2	Benzene	6	U	R
10061-02-6	trans-1,3-Dichloropropene	6	U	R
75-25-2	Bromoform	6	U	R
108-10-1	4-Methyl-2-Pentanone	11	U	R
591-78-6	2-Hexanone	11	U	R
127-18-4	Tetrachloroethene	6	U	R
79-34-5	1,1,2,2-Tetrachloroethane	6	U	R
108-88-3	Toluene	6	U	R
108-90-7	Chlorobenzene	6	U	R
100-41-4	Ethylbenzene	6	U	R
100-42-5	Styrene	6	U	R
1330-20-7	Xylene (total)	6	U	R

CWT 4/11/97

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-2-(26-27.3')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-5

Sample wt/vol: 5 (g/mL) g Lab File ID: CT515

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 10 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000106-97-8	Butane	1.89	25	J N
~~2.~~	~~110-54-3~~	~~Hexane~~	~~5.25~~	~~26~~	~~JB~~
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(26-27.3') RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-5RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT542

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 10 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	11 ~~2~~	U ~~JB~~
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	**1,2-Dichloroethene (total)**	**18**	
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	**Trichloroethene**	**34**	
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

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4/1/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-2-(26-27.3')
RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-5 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT542

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 10 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	1.74	12	J
~~2.~~	~~000110-54-3~~	~~Hexane~~	~~5.31~~	~~15~~	~~JB~~
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-2

Sample wt/vol: 5 (g/mL) g Lab File ID: CT512

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 12 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	**Methylene Chloride**	11 ~~9~~	U ~~B~~
67-64-1	**Acetone**	**14**	U ~~B~~
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	**1,2-Dichloroethene (total)**	**3**	J
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	**Trichloroethene**	**27**	
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

J

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4/1/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.: RW-2-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-2

Sample wt/vol: 5 (g/mL) g Lab File ID: CT512

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 12 Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000110-54-3	Hexane	5.26	12	JB
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(8-10')RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-2RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT539

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 12 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	**Methylene Chloride**	11	U,JB	J
67-64-1	**Acetone**	18		
75-15-0	Carbon Disulfide	6	U	
75-35-4	1,1-Dichloroethene	6	U	
75-34-3	1,1-Dichloroethane	6	U	
540-59-0	**1,2-Dichloroethene (total)**	1	J	
67-66-3	Chloroform	6	U	
107-06-2	1,2-Dichloroethane	6	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	6	U	
56-23-5	Carbon Tetrachloride	6	U	
108-05-4	Vinyl Acetate	11	U	
75-27-4	Bromodichloromethane	6	U	
78-87-5	1,2-Dichloropropane	6	U	
10061-01-5	cis-1,3-Dichloropropene	6	U	
79-01-6	**Trichloroethene**	8		
124-48-1	Dibromochloromethane	6	U	
79-00-5	1,1,2-Trichloroethane	6	U	
71-43-2	Benzene	6	U	
10061-02-6	trans-1,3-Dichloropropene	6	U	
75-25-2	Bromoform	6	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	6	U	
79-34-5	1,1,2,2-Tetrachloroethane	6	U	
108-88-3	Toluene	6	U	
108-90-7	Chlorobenzene	6	U	
100-41-4	Ethylbenzene	6	U	
100-42-5	Styrene	6	U	
1330-20-7	Xylene (total)	6	U	

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4/1/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.: RW-2-(8-10') RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35266

Matrix: (soil/water) Soil Lab Sample ID: L35323-2 RE

Sample wt/vol: 5 (g/mL) g Lab File ID: CT539

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. 12 Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000110-54-3	Hexane	5.30	21	JB
2.					
3.					
4.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-1

Sample wt/vol: 29.9 (g/mL) g Lab File ID: EI137

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	370	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	370	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	370	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35[illegible]3-1

Sample wt/vol: 29.9 (g/mL) g Lab File ID: EI137

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 9 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	370	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	370	U
100-02-7	4-Nitrophenol	370	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
86-73-7	Fluorene	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
100-01-6	4-Nitroaniline	370	U
534-52-1	4,6-Dinitro-2-methylphenol	370	U
86-30-6	N-Nitrosodiphenylamine	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	370	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
56-55-3	Benzo(a)anthracene	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	370	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**640**	
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

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SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-1

Sample wt/vol: 29.9 (g/mL) g Lab File ID: EI137

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 9 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.29~~	~~1000~~	~~JA~~
~~2.~~		~~Aldol condensate~~	~~6.97~~	~~34000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.60~~	~~1200~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.73~~	~~4600~~	~~JAB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-1-(18-20')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-15

Sample wt/vol: 29.8 (g/mL) g Lab File ID: EI144

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 9 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	370	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	370	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	370	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. RW-1-(18-20')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-15

Sample wt/vol: 29.8 (g/mL) g Lab File ID: EI144

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 9 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	370	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	370	U
100-02-7	4-Nitrophenol	370	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
86-73-7	Fluorene	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
100-01-6	4-Nitroaniline	370	U
534-52-1	4,6-Dinitro-2-methylphenol	370	U
86-30-6	N-Nitrosodiphenylamine	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	370	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
56-55-3	Benzo(a)anthracene	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	370	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**350**	**J**
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

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SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1-(18-20')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-15

Sample wt/vol: 29.8 (g/mL) g Lab File ID: EI144

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 9 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Aldol condensate	5.28	920	JA
2.		Aldol condensate	6.95	30000	JAB
3.		Branched hydrocarbon	7.60	1100	JB
4.		Aldol condensate	7.72	3700	JAB
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(2-4')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-13

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI142

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 34 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	500	U
108-95-2	Phenol	500	U
111-44-4	bis(2-Chloroethyl)ether	500	U
95-57-8	2-Chlorophenol	500	U
541-73-1	1,3-Dichlorobenzene	500	U
106-46-7	1,4-Dichlorobenzene	500	U
95-50-1	1,2-Dichlorobenzene	500	U
100-51-6	Benzyl alcohol	500	U
95-48-7	2-Methylphenol	500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	500	U
106-44-5	4-Methylphenol	500	U
621-64-7	N-Nitroso-di-n-propylamine	500	U
67-72-1	Hexachloroethane	500	U
98-95-3	Nitrobenzene	500	U
78-59-1	Isophorone	500	U
88-75-5	2-Nitrophenol	500	U
105-67-9	2,4-Dimethylphenol	500	U
111-91-1	bis(2-Chloroethoxy)methane	500	U
120-83-2	2,4-Dichlorophenol	500	U
120-82-1	1,2,4-Trichlorobenzene	500	U
91-20-3	Naphthalene	500	U
106-47-8	4-Chloroaniline	500	U
87-68-3	Hexachlorobutadiene	500	U
59-50-7	4-Chloro-3-methylphenol	500	U
91-57-6	2-Methylnaphthalene	500	U
77-47-4	Hexachlorocyclopentadiene	500	U
88-06-2	2,4,6-Trichlorophenol	500	U
95-95-4	2,4,5-Trichlorophenol	500	U
91-58-7	2-Chloronaphthalene	500	U
88-74-4	2-Nitroaniline	500	U
131-11-3	Dimethylphthalate	500	U
208-96-8	Acenaphthylene	500	U
606-20-2	2,6-Dinitrotoluene	500	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(2-4')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-13

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI142

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 34 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	500	U
83-32-9	Acenaphthene	500	U
51-28-5	2,4-Dinitrophenol	500	U
100-02-7	4-Nitrophenol	500	U
132-64-9	Dibenzofuran	500	U
121-14-2	2,4-Dinitrotoluene	500	U
84-66-2	Diethylphthalate	500	U
86-73-7	Fluorene	500	U
7005-72-3	4-Chlorophenyl-phenylether	500	U
100-01-6	4-Nitroaniline	500	U
534-52-1	4,6-Dinitro-2-methylphenol	500	U
86-30-6	N-Nitrosodiphenylamine	500	U
101-55-3	4-Bromophenyl-phenylether	500	U
118-74-1	Hexachlorobenzene	500	U
87-86-5	Pentachlorophenol	500	U
85-01-8	Phenanthrene	500	U
120-12-7	Anthracene	500	U
84-74-2	Di-n-butylphthalate	500	U
206-44-0	Fluoranthene	500	U
129-00-0	Pyrene	500	U
85-68-7	Butylbenzylphthalate	500	U
56-55-3	Benzo(a)anthracene	500	U
91-94-1	3,3'-Dichlorobenzidine	500	U
218-01-9	Chrysene	500	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**220**	**J**
117-84-0	Di-n-octylphthalate	500	U
205-99-2	Benzo(b)fluoranthene	500	U
207-08-9	Benzo(k)fluoranthene	500	U
50-32-8	Benzo(a)pyrene	500	U
193-39-5	Indeno(1,2,3-cd)pyrene	500	U
53-70-3	Dibenzo(a,h)anthracene	500	U
191-24-2	Benzo(g,h,i)perylene	500	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-1-(2-4')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-13

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI142

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 34 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		~~Aldol condensate~~	~~6.95~~	~~37000~~	~~JAB~~
2.		~~Branched hydrocarbon~~	~~7.60~~	~~1400~~	~~JB~~
3.		~~Aldol condensate~~	~~7.72~~	~~3100~~	~~JAB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(24-26.9')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-16

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI145

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	370	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	370	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	370	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(24-26.9')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-16

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI145

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	370	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	370	U
100-02-7	4-Nitrophenol	370	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
86-73-7	Fluorene	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
100-01-6	4-Nitroaniline	370	U
534-52-1	4,6-Dinitro-2-methylphenol	370	U
86-30-6	N-Nitrosodiphenylamine	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	370	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
56-55-3	Benzo(a)anthracene	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	370	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**180**	**J**
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-1-(24-26.9')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-16

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI145

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.28~~	~~960~~	~~JA~~
~~2.~~		~~Aldol condensate~~	~~6.96~~	~~31000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.60~~	~~1100~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.72~~	~~4200~~	~~JAB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-14

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI143

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	390	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
100-51-6	Benzyl alcohol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	390	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-14

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI143

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	390	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	390	U
100-02-7	4-Nitrophenol	390	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
86-73-7	Fluorene	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
100-01-6	4-Nitroaniline	390	U
534-52-1	4,6-Dinitro-2-methylphenol	390	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	390	U
85-01-8	**Phenanthrene**	**120**	**J**
120-12-7	Anthracene	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	**Fluoranthene**	**130**	**J**
129-00-0	**Pyrene**	**110**	**J**
85-68-7	Butylbenzylphthalate	390	U
56-55-3	Benzo(a)anthracene	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
218-01-9	**Chrysene**	**63**	**J**
117-81-7	**bis(2-Ethylhexyl)phthalate**	**1200**	
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-1-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-14

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI143

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/05/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.30~~	~~1100~~	~~JA~~
~~2.~~		~~Aldol condensate~~	~~6.97~~	~~36000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.59~~	~~1300~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.74~~	~~4400~~	~~JAB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-3

Sample wt/vol: 30 (g/mL) g Lab File ID: EI139

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	390	U
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
100-51-6	Benzyl alcohol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	390	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	390	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-3

Sample wt/vol: 30 (g/mL) g Lab File ID: EI139

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	390	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	390	U
100-02-7	4-Nitrophenol	390	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
86-73-7	Fluorene	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
100-01-6	4-Nitroaniline	390	U
534-52-1	4,6-Dinitro-2-methylphenol	390	U
86-30-6	N-Nitrosodiphenylamine	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	390	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
56-55-3	Benzo(a)anthracene	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
218-01-9	Chrysene	390	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**340**	**J**
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-2-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-3

Sample wt/vol: 30 (g/mL) g Lab File ID: EI139

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.27~~	~~1100~~	~~JA~~
~~2.~~		~~Aldol condensate~~	~~6.95~~	~~36000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.59~~	~~1200~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.72~~	~~4800~~	~~JAB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(22-24')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-4

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI140

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 9 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	360	U
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	360	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	360	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

RW-2-(22-24')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-4

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI140

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.27~~	~~1100~~	~~JA~~
~~2.~~		~~Aldol condensate~~	~~6.95~~	~~36000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.59~~	~~1300~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.72~~	~~4700~~	~~JAB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(26-27.3')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-5

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI141

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	370	U
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	370	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	370	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(26-27.3')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-5

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI141

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	370	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	370	U
100-02-7	4-Nitrophenol	370	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
86-73-7	Fluorene	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
100-01-6	4-Nitroaniline	370	U
534-52-1	4,6-Dinitro-2-methylphenol	370	U
86-30-6	N-Nitrosodiphenylamine	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	370	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
56-55-3	Benzo(a)anthracene	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
218-01-9	Chrysene	370	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**650**	
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

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SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-2-(26-27.3')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-5

Sample wt/vol: 30.1 (g/mL) g Lab File ID: EI141

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.25~~	~~1000~~	~~JA~~
~~2.~~		~~Aldol condensate~~	~~6.94~~	~~34000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.59~~	~~1200~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.72~~	~~4500~~	~~JAB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-2

Sample wt/vol: 30.2 (g/mL) g Lab File ID: EI138

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 12 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
62-75-9	N-Nitrosodimethylamine	380	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
100-51-6	Benzyl alcohol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	380	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	380	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-2

Sample wt/vol: 30.2 (g/mL) g Lab File ID: EI138

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 12 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	380	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	380	U
100-02-7	4-Nitrophenol	380	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
86-73-7	Fluorene	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
100-01-6	4-Nitroaniline	380	U
534-52-1	4,6-Dinitro-2-methylphenol	380	U
86-30-6	N-Nitrosodiphenylamine	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	380	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
56-55-3	Benzo(a)anthracene	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
218-01-9	Chrysene	380	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	**270**	**J**
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-2-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 2 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-2

Sample wt/vol: 30.2 (g/mL) g Lab File ID: EI138

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: 12 decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~		~~Aldol condensate~~	~~5.28~~	~~1100~~	~~JA~~
~~2.~~		~~Aldol condensate~~	~~6.96~~	~~35000~~	~~JAB~~
~~3.~~		~~Branched hydrocarbon~~	~~7.60~~	~~1300~~	~~JB~~
~~4.~~		~~Aldol condensate~~	~~7.72~~	~~4400~~	~~JAB~~
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PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-1-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-1

Sample wt/vol: 30.18 (g/mL) g Lab File ID: HP13A\97022132

% Moisture: 9 decanted: (Y/N) N Date Received: 02/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.8	U J
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U J
58-89-9	gamma-BHC (Lindane)	1.8	U
57-74-9	Chlordane	18	U
72-54-8	4,4'-DDD	3.6	U J
72-55-9	4,4'-DDE	3.6	U
50-29-3	4,4'-DDT	3.6	U J
60-57-1	Dieldrin	3.6	U J
959-98-8	Endosulfan I	1.8	U
332-13-659	Endosulfan II	3.6	U J
103-10-78	Endosulfan sulfate	3.6	U J
72-20-8	Endrin	3.6	U J
7421-36-3	Endrin aldehyde	3.6	U J
76-44-8	Heptachlor	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U J
72-43-5	Methoxychlor	18	U
8001-35-2	Toxaphene	36	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	18	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

CWT 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-1-(18-20')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-15

Sample wt/vol: 29.84 (g/mL) g Lab File ID: HP13A\97022122

% Moisture: 9 decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.8	U
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
57-74-9	Chlordane	18	U
72-54-8	4,4'-DDD	3.7	U J
72-55-9	4,4'-DDE	3.7	U
50-29-3	4,4'-DDT	3.7	U
60-57-1	Dieldrin	3.7	U J
959-98-8	Endosulfan I	1.8	U
332-13-659	Endosulfan II	3.7	U
103-10-78	Endosulfan sulfate	3.7	U J
72-20-8	Endrin	3.7	U J
7421-36-3	Endrin aldehyde	3.7	U
76-44-8	Heptachlor	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
72-43-5	Methoxychlor	18	U
8001-35-?	Toxaphene	37	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	18	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

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FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-1-(2-4')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-13

Sample wt/vol: 30.09 (g/mL) g Lab File ID: HP13A\97022118

% Moisture: 34 decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	2.5	U
319-84-6	alpha-BHC	2.5	U
319-85-7	beta-BHC	2.5	U
319-86-8	delta-BHC	2.5	U
58-89-9	gamma-BHC (Lindane)	2.5	U
57-74-9	Chlordane	25	U
72-54-8	4,4'-DDD	5.0	U J
72-55-9	4,4'-DDE	5.0	U
50-29-3	4,4'-DDT	5.0	U
60-57-1	Dieldrin	5.0	U J
959-98-8	Endosulfan I	2.5	U
332-13-659	Endosulfan II	5.0	U
103-10-78	Endosulfan sulfate	5.0	U J
72-20-8	Endrin	5.0	U J
7421-36-3	Endrin aldehyde	5.0	U
76-44-8	Heptachlor	2.5	U
1024-57-3	Heptachlor epoxide	2.5	U
72-43-5	Methoxychlor	25	U
8001-35-2	Toxaphene	50	U
12674-11-2	Aroclor-1016	25	U
11104-28-2	Aroclor-1221	25	U
11141-16-5	Aroclor-1232	25	U
53469-21-9	Aroclor-1242	25	U
12672-29-6	Aroclor-1248	25	U
11097-69-1	Aroclor-1254	25	U
11096-82-5	Aroclor-1260	25	U

CMT 4/7/97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1-(24-26.9')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-16

Sample wt/vol: 30.09 (g/mL) g Lab File ID: HP13A\97022124

% Moisture: 10 decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.8	U
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
57-74-9	Chlordane	18	U
72-54-8	4,4'-DDD	3.7	U J
72-55-9	4,4'-DDE	3.7	U
50-29-3	4,4'-DDT	3.7	U
60-57-1	Dieldrin	3.7	U J
959-98-8	Endosulfan I	1.8	U
332-13-659	Endosulfan II	3.7	U
103-10-78	Endosulfan sulfate	3.7	U J
72-20-8	Endrin	3.7	U J
7421-36-3	Endrin aldehyde	3.7	U
76-44-8	Heptachlor	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
72-43-5	Methoxychlor	18	U
8001-35-2	Toxaphene	37	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	18	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

4/1/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-1-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35313-14

Sample wt/vol: 29.99 (g/mL) g Lab File ID: HP13A\97022120

% Moisture: 15 decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	2.0	U
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
57-74-9	Chlordane	20	U
72-54-8	4,4'-DDD	3.9	U J
72-55-9	4,4'-DDE	3.9	U
50-29-3	4,4'-DDT	3.9	U
60-57-1	Dieldrin	3.9	U J
959-98-8	Endosulfan I	2.0	U
332-13-659	Endosulfan II	3.9	U
103-10-78	Endosulfan sulfate	3.9	U J
72-20-8	Endrin	3.9	U J
7421-36-3	Endrin aldehyde	3.9	U
76-44-8	Heptachlor	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
72-43-5	Methoxychlor	20	U
8001-35-2	Toxaphene	39	U
12674-11-2	Aroclor-1016	20	U
11104-28-2	Aroclor-1221	20	U
11141-16-5	Aroclor-1232	20	U
53469-21-9	Aroclor-1242	20	U
12672-29-6	Aroclor-1248	20	U
11097-69-1	Aroclor-1254	20	U
11096-82-5	Aroclor-1260	20	U

CWS 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-2-(14-16')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-3

Sample wt/vol: 30.08 (g/mL) g Lab File ID: HP13A\97022136

% Moisture: 15 decanted: (Y/N) N Date Received: 02/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	2.0	U J
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U J
58-89-9	gamma-BHC (Lindane)	2.0	U
57-74-9	Chlordane	20	U
72-54-8	4,4'-DDD	3.9	U J
72-55-9	4,4'-DDE	3.9	U
50-29-3	4,4'-DDT	3.9	U J
60-57-1	Dieldrin	3.9	U J
959-98-8	Endosulfan I	2.0	U
332-13-659	Endosulfan II	3.9	U J
103-10-78	Endosulfan sulfate	3.9	U J
72-20-8	Endrin	3.9	U J
7421-36-3	Endrin aldehyde	3.9	U J
76-44-8	Heptachlor	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U J
72-43-5	Methoxychlor	20	U
8001-35-2	Toxaphene	39	U
12674-11-2	Aroclor-1016	20	U
11104-28-2	Aroclor-1221	20	U
11141-16-5	Aroclor-1232	20	U
53469-21-9	Aroclor-1242	20	U
12672-29-6	Aroclor-1248	20	U
11097-69-1	Aroclor-1254	20	U
11096-82-5	Aroclor-1260	20	U

4/7/97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-2-(22-24')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-4

Sample wt/vol: 30.08 (g/mL) g Lab File ID: HP13A\97022138

% Moisture: 9 decanted: (Y/N) N Date Received: 02/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.8	U J
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U J
58-89-9	gamma-BHC (Lindane)	1.8	U
57-74-9	Chlordane	18	U
72-54-8	4,4'-DDD	3.6	U J
72-55-9	4,4'-DDE	3.6	U
50-29-3	4,4'-DDT	3.6	U J
60-57-1	Dieldrin	3.6	U J
959-98-8	Endosulfan I	1.8	U
332-13-659	Endosulfan II	3.6	U J
103-10-78	Endosulfan sulfate	3.6	U J
72-20-8	Endrin	3.6	U J
7421-36-3	Endrin aldehyde	3.6	U J
76-44-8	Heptachlor	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U J
72-43-5	Methoxychlor	18	U
8001-35-2	Toxaphene	36	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	18	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

4/1/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-2-(26-27.3')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-5

Sample wt/vol: 30.02 (g/mL) g Lab File ID: HP13A\97022140

% Moisture: 10 decanted: (Y/N) N Date Received: 02/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.8	U J
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U J
58-89-9	gamma-BHC (Lindane)	1.8	U
57-74-9	Chlordane	18	U
72-54-8	4,4'-DDD	3.7	U J
72-55-9	4,4'-DDE	3.7	U
50-29-3	4,4'-DDT	3.7	U J
60-57-1	Dieldrin	3.7	U J
959-98-8	Endosulfan I	1.8	U
332-13-659	Endosulfan II	3.7	U J
103-10-78	Endosulfan sulfate	3.7	U J
72-20-8	Endrin	3.7	U J
7421-36-3	Endrin aldehyde	3.7	U J
76-44-8	Heptachlor	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U J
72-43-5	Methoxychlor	18	U
8001-35-2	Toxaphene	37	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	18	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-2-(8-10')

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35266

Matrix: (soil/water) SOIL Lab Sample ID: L35323-2

Sample wt/vol: 30.14 (g/mL) g Lab File ID: HP13A\97022134

% Moisture: 12 decanted: (Y/N) N Date Received: 02/15/97

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
309-00-2	Aldrin	1.9	U J
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U J
58-89-9	gamma-BHC (Lindane)	1.9	U
57-74-9	Chlordane	19	U
72-54-8	4,4'-DDD	3.8	U J
72-55-9	4,4'-DDE	3.8	U
50-29-3	4,4'-DDT	3.8	U J
60-57-1	Dieldrin	3.8	U J
959-98-8	Endosulfan I	1.9	U
332-13-659	Endosulfan II	3.8	U J
103-10-78	Endosulfan sulfate	3.8	U J
72-20-8	Endrin	3.8	U J
7421-36-3	Endrin aldehyde	3.8	U J
76-44-8	Heptachlor	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U J
72-43-5	Methoxychlor	19	U
8001-35-2	Toxaphene	38	U
12674-11-2	Aroclor-1016	19	U
11104-28-2	Aroclor-1221	19	U
11141-16-5	Aroclor-1232	19	U
53469-21-9	Aroclor-1242	19	U
12672-29-6	Aroclor-1248	19	U
11097-69-1	Aroclor-1254	19	U
11096-82-5	Aroclor-1260	19	U

CWT 4/7/97

FORM I PEST

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-1-(14-16)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35323-1

Level (low/med): LOW Date Received: 02/15/97

% Solids: 91.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8040			P
7440-36-0	Antimony	1.2	B	N J	P
7440-38-2	Arsenic	10.2		N* J	P
7440-39-3	Barium	81.9		* ~~J~~	P
7440-41-7	Beryllium	0.64			P
7440-43-9	Cadmium	0.63			P
7440-70-2	Calcium	46300			P
7440-47-3	Chromium	12.8		N J	P
7440-48-4	Cobalt	13.2			P
7440-50-8	Copper	35.7		* ~~J~~	P
7439-89-6	Iron	30500		* ~~J~~	P
7439-92-1	Lead	15.0			P
7439-95-4	Magnesium	9760			P
7439-96-5	Manganese	481			P
7439-97-6	Mercury	~~0.07~~	~~B~~	~~N*~~ R	AV
7440-02-0	Nickel	39.0		* ~~J~~	P
7440-09-7	Potassium	2180		E J	P
7782-49-2	Selenium	0.51	B	N J	P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	182	B		P
7440-28-0	Thallium	0.65	U		P
7440-62-2	Vanadium	18.5			P
7440-66-6	Zinc	68.6			P
57-12-5	Cyanide				NR

CW 4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

FE WAS ANALYZED AT A 2X DILUTION.

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-1-(18-20)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35313-15

Level (low/med): LOW Date Received: 02/14/97

% Solids: 90.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6100			P
7440-36-0	Antimony	1.1	B	N J	P
7440-38-2	Arsenic	8.5		N* J	P
7440-39-3	Barium	70.5		* ~~J~~	P
7440-41-7	Beryllium	0.52	B		P
7440-43-9	Cadmium	0.48	B		P
7440-70-2	Calcium	58800			P
7440-47-3	Chromium	9.9		N J	P
7440-48-4	Cobalt	10.0			P
7440-50-8	Copper	30.0		* ~~J~~	P
7439-89-6	Iron	24200		* ~~J~~	P
7439-92-1	Lead	11.1			P
7439-95-4	Magnesium	10500			P
7439-96-5	Manganese	464			P
7439-97-6	Mercury	~~0.10~~	B	~~N*~~ R	AV
7440-02-0	Nickel	26.8		* ~~J~~	P
7440-09-7	Potassium	1530		E J	P
7782-49-2	Selenium	0.33	B	N J	P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	172	B		P
7440-28-0	Thallium	0.65	U		P
7440-62-2	Vanadium	15.6			P
7440-66-6	Zinc	56.7			P
57-12-5	Cyanide				NR

J

CWT 4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

CA AND FE WERE ANALYZED AT A 2X DILUTION.

All sample results are estimated (J) w/ the exception of Hg which is Rejected R. 10/95

FORM I - IN

See DV narrative under Data Completeness & Preservation sections for explanation. CWT 4/9/97

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-1-(2-4)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35313-13

Level (low/med): LOW Date Received: 02/14/97

% Solids: 66.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11400			P
7440-36-0	Antimony	1.3	B	N J	P
7440-38-2	Arsenic	5.0		N* J	P
7440-39-3	Barium	86.1		* J	P
7440-41-7	Beryllium	0.80			P
7440-43-9	Cadmium	0.33	B		P
7440-70-2	Calcium	4690			P
7440-47-3	Chromium	15.9		N J	P
7440-48-4	Cobalt	7.9			P
7440-50-8	Copper	23.5		* J	P
7439-89-6	Iron	16300		* J	P
7439-92-1	Lead	32.1			P
7439-95-4	Magnesium	2900			P
7439-96-5	Manganese	532			P
7439-97-6	Mercury	~~0.16~~	~~B~~	~~N*~~ R	AV
7440-02-0	Nickel	14.0		* J	P
7440-09-7	Potassium	786		E J	P
7782-49-2	Selenium	1.5		N J	P
7440-22-4	Silver	0.30	U		P
7440-23-5	Sodium	155	B		P
7440-28-0	Thallium	0.89	U		P
7440-62-2	Vanadium	21.5			P
7440-66-6	Zinc	72.1			P
57-12-5	Cyanide				NR

J

4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:
SMALL ROCKS

see comments on p. 168 cont.

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-1-(24-26.0)

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35313-16

Level (low/med): LOW Date Received: 02/14/97

% Solids: 90.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6000			P
7440-36-0	Antimony	1.4	B	N J	P
7440-38-2	Arsenic	6.5		N* J	P
7440-39-3	Barium	66.3		* ~~J~~	P
7440-41-7	Beryllium	0.53	B		P
7440-43-9	Cadmium	0.48	B		P
7440-70-2	Calcium	60800			P
7440-47-3	Chromium	9.7		N J	P
7440-48-4	Cobalt	10.1			P
7440-50-8	Copper	29.0		* ~~J~~	P
7439-89-6	Iron	22200		* ~~J~~	P
7439-92-1	Lead	10.3			P
7439-95-4	Magnesium	11300			P
7439-96-5	Manganese	438			P
7439-97-6	Mercury	~~0.11~~	~~B~~	~~N*~~ R	AV
7440-02-0	Nickel	28.3		* ~~J~~	P
7440-09-7	Potassium	1590		E J	P
7782-49-2	Selenium	0.58		N J	P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	176	B		P
7440-28-0	Thallium	0.67	U		P
7440-62-2	Vanadium	14.6			P
7440-66-6	Zinc	57.0			P
57-12-5	Cyanide				NR

J

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

CA WAS ANALYZED AT A 2X DILUTION.

See comments on p.168 ant.

FORM I - IN

10/95

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-1-(8-10)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35313-14

Level (low/med): LOW Date Received: 02/14/97

% Solids: 85.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7430			P
7440-36-0	Antimony	1.0	B	N J	P
7440-38-2	Arsenic	5.8		N* J	P
7440-39-3	Barium	83.0		* J	P
7440-41-7	Beryllium	0.46	B		P
7440-43-9	Cadmium	0.27	B		P
7440-70-2	Calcium	77900			P
7440-47-3	Chromium	9.8		N J	P
7440-48-4	Cobalt	9.0			P
7440-50-8	Copper	28.6		* J	P
7439-89-6	Iron	23100		* J	P
7439-92-1	Lead	8.4			P
7439-95-4	Magnesium	13000			P
7439-96-5	Manganese	1100			P
7439-97-6	Mercury	~~0.10~~	~~B~~	~~N*~~ R	AV
7440-02-0	Nickel	23.4		* J	P
7440-09-7	Potassium	1010		E J	P
7782-49-2	Selenium	0.66		N J	P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	129	B		P
7440-28-0	Thallium	0.70	U		P
7440-62-2	Vanadium	11.8			P
7440-66-6	Zinc	43.3			P
57-12-5	Cyanide				NR

J

CA 4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

CA WAS ANALYZED AT A 2X DILUTION.

See comments on p. 168 CA

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-2-(14-16)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35323-3

Level (low/med): LOW Date Received: 02/15/97

% Solids: 85.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5130			P
7440-36-0	Antimony	1.1	B	N	P
7440-38-2	Arsenic	7.1		N*	P
7440-39-3	Barium	47.7		*	P
7440-41-7	Beryllium	0.46	B		P
7440-43-9	Cadmium	0.47	B		P
7440-70-2	Calcium	67700			P
7440-47-3	Chromium	8.5		N	P
7440-48-4	Cobalt	9.1			P
7440-50-8	Copper	28.6		*	P
7439-89-6	Iron	21000		*	P
7439-92-1	Lead	23.3			P
7439-95-4	Magnesium	11500			P
7439-96-5	Manganese	504			P
7439-97-6	Mercury	~~0.11~~	~~B~~	~~N*~~ R	AV
7440-02-0	Nickel	24.8		*	P
7440-09-7	Potassium	1390		E	P
7782-49-2	Selenium	0.63		N	P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	168	B		P
7440-28-0	Thallium	0.70	U		P
7440-62-2	Vanadium	14.5			P
7440-66-6	Zinc	51.2			P
57-12-5	Cyanide				NR

4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

CA WAS ANALYZED AT A 2X DILUTION.

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-2-(22-24)

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35323-4

Level (low/med): LOW Date Received: 02/15/97

% Solids: 90.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7140			P
7440-36-0	Antimony	1.5	B	N J	P
7440-38-2	Arsenic	7.9		N* J	P
7440-39-3	Barium	50.9		* ~~B~~	P
7440-41-7	Beryllium	0.56			P
7440-43-9	Cadmium	0.61			P
7440-70-2	Calcium	46900			P
7440-47-3	Chromium	11.7		N J	P
7440-48-4	Cobalt	12.0			P
7440-50-8	Copper	34.1		* ~~B~~	P
7439-89-6	Iron	28100		* ~~B~~	P
7439-92-1	Lead	13.2			P
7439-95-4	Magnesium	8880			P
7439-96-5	Manganese	440			P
7439-97-6	Mercury	~~0.06~~	~~U~~	~~N*~~ R	AV
7440-02-0	Nickel	30.8		* ~~J~~	P
7440-09-7	Potassium	1910		E J	P
7782-49-2	Selenium	0.33	U	N J	P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	173	B		P
7440-28-0	Thallium	0.67	U		P
7440-62-2	Vanadium	16.3			P
7440-66-6	Zinc	70.9			P
57-12-5	Cyanide				NR

CW 4/4/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

FE WAS ANALYZED AT A 2X DILUTION.

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-2-(26-27.3)

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35323-5

Level (low/med): LOW Date Received: 02/15/97

% Solids: 90.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8800			P
7440-36-0	Antimony	1.7	B	N J	P
7440-38-2	Arsenic	7.7		N* J	P
7440-39-3	Barium	76.2		* ~~J~~	P
7440-41-7	Beryllium	0.73			P
7440-43-9	Cadmium	0.62			P
7440-70-2	Calcium	37300			P
7440-47-3	Chromium	14.0		N J	P
7440-48-4	Cobalt	14.1			P
7440-50-8	Copper	41.8		* ~~J~~	P
7439-89-6	Iron	33300		* ~~J~~	P
7439-92-1	Lead	15.1			P
7439-95-4	Magnesium	8370			P
7439-96-5	Manganese	506			P
7439-97-6	Mercury	~~0.07~~	~~B~~	~~N*~~ R	AV
7440-02-0	Nickel	37.7		* ~~J~~	P
7440-09-7	Potassium	2590		E J	P
7782-49-2	Selenium	0.76		N J	P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	198	B		P
7440-28-0	Thallium	0.67	U		P
7440-62-2	Vanadium	21.1			P
7440-66-6	Zinc	73.3			P
57-12-5	Cyanide				NR

4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

FE WAS ANALYZED AT A 4X DILUTION.

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-2-(8-10)

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35266

Matrix (soil/water): Soil Lab Sample ID: L35323-2

Level (low/med): LOW Date Received: 02/15/97

% Solids: 87.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6660			P
7440-36-0	Antimony	1.2	B	N J	P
7440-38-2	Arsenic	8.4		N* J	P
7440-39-3	Barium	117		* ~~J~~	P
7440-41-7	Beryllium	0.55	B		P
7440-43-9	Cadmium	0.54	B		P
7440-70-2	Calcium	44600			P
7440-47-3	Chromium	10.5		N J	P
7440-48-4	Cobalt	10.8			P
7440-50-8	Copper	36.7		* ~~J~~	P
7439-89-6	Iron	24500		* ~~J~~	P
7439-92-1	Lead	30.9			P
7439-95-4	Magnesium	7140			P
7439-96-5	Manganese	767			P
7439-97-6	Mercury	~~0.12~~		~~N*~~ R	AV
7440-02-0	Nickel	28.6		* ~~J~~	P
7440-09-7	Potassium	1680		E J	P
7782-49-2	Selenium	0.34	U	N J	P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	141	B		P
7440-28-0	Thallium	0.68	U		P
7440-62-2	Vanadium	17.1			P
7440-66-6	Zinc	61.2			P
57-12-5	Cyanide				NR

CVS 4/9/97

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: CLEAR Artifacts: YES

Comments:

SMALL ROCKS

FE WAS ANALYZED AT A 2X DILUTION.

APPENDIX E

GROUNDWATER SAMPLING RESULTS

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.
MW-1

Lab Name: GALSON LABORATORIES   Contract: Civil & Env

Lab Code: Case No.: 1   SAS No.:   SDG No.: L35313

Matrix: (soil/water) Water   Lab Sample ID: L35313-1

Sample wt/vol: 5 (g/mL) mL   Lab File ID: FE098

Level: (low/med) LOW   Date Received: 02/14/97

%Moisture: not dec.   Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm)   Dilution Factor: 1

Soil Extract Volume: (uL)   Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	2	J	
74-83-9	Bromomethane	10	U	J
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride *	~~10 4~~ 5	U ~~JB~~	J J
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	5	U	
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	5	U	
56-23-5	Carbon Tetrachloride	5	U	
108-05-4	Vinyl Acetate	10	U	
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	
10061-01-5	cis-1,3-Dichloropropene	5	U	
79-01-6	Trichloroethene	5	U	
124-48-1	Dibromochloromethane	5	U	J
79-00-5	1,1,2-Trichloroethane	5	U	J
71-43-2	Benzene	5	U	
10061-02-6	trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	J
108-10-1	4-Methyl-2-Pentanone	10	U	J
591-78-6	2-Hexanone	10	U	J
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	5	U	J
108-88-3	Toluene	5	U	
108-90-7	Chlorobenzene	5	U	
100-41-4	Ethylbenzene	5	U	
100-42-5	Styrene	5	U	
1330-20-7	Xylene (total)	5	U	

All J

* Correct reportable value for Methylene Chloride is 5 UJ CWT.

FORM I CLP VOA

CWT 4/1/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

MW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-1

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE098

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	110-54-3	Hexane	5.28	8	J N
2.					
3.					
4.					
5.					
6.					
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8.					
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SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-2

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE099

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	**Chloromethane**	**2**	**J**	
74-83-9	Bromomethane	10	U	J
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	**Methylene Chloride**	**12**	**U B**	JJ
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	5	U	
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	5	U	
56-23-5	Carbon Tetrachloride	5	U	All J
108-05-4	Vinyl Acetate	10	U	
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	
10061-01-5	cis-1,3-Dichloropropene	5	U	
79-01-6	Trichloroethene	5	U	
124-48-1	Dibromochloromethane	5	U	
79-00-5	1,1,2-Trichloroethane	5	U	J
71-43-2	Benzene	5	U	
10061-02-6	trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	J JJ
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	5	U	J
108-88-3	Toluene	5	U	
108-90-7	Chlorobenzene	5	U	
100-41-4	Ethylbenzene	5	U	
100-42-5	Styrene	5	U	
1330-20-7	Xylene (total)	5	U	

CW 4/11/97

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1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-2

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE099

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Volatiles Found			
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-3

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-3

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE074

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	**Vinyl Chloride**	5	J
75-00-3	Chloroethane	10	U
75-09-2*	**Methylene Chloride**	~~10~~ 2 5	~~U~~ JB U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

J

OK cmt

All J cmt

* Correct reportable value for Methylene Chloride is 5 U cmt

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-3

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-3

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE074

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Volatiles Found			
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-4

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-4

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE128

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	UG/L	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	OK cmT.
75-09-2	Methylene Chloride *	~~10~~ ~~3~~ 5	U ~~JB~~	
67-64-1	Acetone	10 ~~6~~	~~JB~~	UJ
75-15-0	Carbon Disulfide	5	U	
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	5	U	
56-23-5	Carbon Tetrachloride	5	U	
108-05-4	Vinyl Acetate	10	U	All
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	J
10061-01-5	cis-1,3-Dichloropropene	5	U	cmT
79-01-6	Trichloroethene	5	U	
124-48-1	Dibromochloromethane	5	U	
79-00-5	1,1,2-Trichloroethane	5	U	
71-43-2	Benzene	5	U	
10061-02-6	trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	5	U	
108-88-3	Toluene	5	U	
108-90-7	Chlorobenzene	5	U	
100-41-4	Ethylbenzene	5	U	
100-42-5	Styrene	5	U	
1330-20-7	Xylene (total)	5	U	

* Correct reportable value for Methylene Chloride is 5 U
cmT.

FORM I CLP VOA

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SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-4

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-4

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE128

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~000110-54-3~~	~~Hexane~~	~~5.35~~	~~6~~	~~JB~~
2.					
3.					
4.					
5.					
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CW 4/11/97

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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-5

Lab Name: GALSON LABORATORIES   Contract: Civil & Env

Lab Code: Case No.: 1   SAS No.:   SDG No.: L35313

Matrix: (soil/water) Water   Lab Sample ID: L35313-5

Sample wt/vol: 5 (g/mL) mL   Lab File ID: FE076

Level: (low/med) LOW   Date Received: 02/14/97

%Moisture: not dec.   Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm)   Dilution Factor: 1

Soil Extract Volume: (uL)   Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	J
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	**Methylene Chloride** *	~~10~~ ~~3~~ 5	U ~~J~~	(ok) WS
67-64-1	Acetone	10	U	
75-15-0	**Carbon Disulfide**	2	J	
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	All
71-55-6	1,1,1-Trichloroethane	5	U	
56-23-5	Carbon Tetrachloride	5	U	J
108-05-4	Vinyl Acetate	10	U	
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	
10061-01-5	cis-1,3-Dichloropropene	5	U	
79-01-6	Trichloroethene	5	U	
124-48-1	Dibromochloromethane	5	U	
79-00-5	1,1,2-Trichloroethane	5	U	
71-43-2	Benzene	5	U	
10061-02-6	trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	5	U	
108-88-3	Toluene	5	U	
108-90-7	Chlorobenzene	5	U	
100-41-4	Ethylbenzene	5	U	
100-42-5	Styrene	5	U	
1330-20-7	Xylene (total)	5	U	

Cert 4/1/97

* Correct reportable value for Methylene Chloride is 5U
WS

FORM I CLP VOA

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-5

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-5

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE076

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Volatiles Found			
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: MW-6

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-6

Sample wt/vol: .05 (g/mL) mL Lab File ID: FE124

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 100

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	1000	U	
74-83-9	Bromomethane	1000	U	
75-01-4	Vinyl Chloride	1000	U	
75-00-3	Chloroethane	1000	U	
75-09-2	**Methylene Chloride** *	540 ~~540~~ ~~1000~~	U ~~B~~	J or cnf 4/1/9
67-64-1	**Acetone**	~~470~~ 1000	U ~~JB~~	
75-15-0	Carbon Disulfide	500	U	
75-35-4	**1,1-Dichloroethene**	**460**	J	
75-34-3	**1,1-Dichloroethane**	**7800**		
540-59-0	**1,2-Dichloroethene (total)**	~~46000~~	~~B~~	36000
67-66-3	Chloroform	500	U	
107-06-2	1,2-Dichloroethane	500	U	
78-93-3	2-Butanone	1000	U	
71-55-6	**1,1,1-Trichloroethane**	**15000**		
56-23-5	Carbon Tetrachloride	500	U	
108-05-4	Vinyl Acetate	1000	U	
75-27-4	Bromodichloromethane	500	U	
78-87-5	1,2-Dichloropropane	500	U	
10061-01-5	cis-1,3-Dichloropropene	500	U	
79-01-6	**Trichloroethene**	**190**	J	
124-48-1	Dibromochloromethane	500	U	
79-00-5	1,1,2-Trichloroethane	500	U	
71-43-2	Benzene	500	U	
10061-02-6	trans-1,3-Dichloropropene	500	U	
75-25-2	Bromoform	500	U	
108-10-1	4-Methyl-2-Pentanone	1000	U	
591-78-6	2-Hexanone	1000	U	
127-18-4	Tetrachloroethene	500	U	
79-34-5	1,1,2,2-Tetrachloroethane	500	U	
108-88-3	Toluene	500	U	
108-90-7	Chlorobenzene	500	U	
100-41-4	Ethylbenzene	500	U	
100-42-5	Styrene	500	U	
1330-20-7	Xylene (total)	500	U	

All values are J cnf

* Correct reportable value for Methylene Chloride above is 540 U cnf.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

MW-6

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-6

Sample wt/vol: .05 (g/mL) mL Lab File ID: FE124

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 100

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	~~000110-54-3~~	~~Hexane~~	~~5.34~~	~~720~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: MW-6DL

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-6DL

Sample wt/vol: .005 (g/mL) mL Lab File ID: ~~FE131~~

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1000

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10000	U
74-83-9	Bromomethane	10000	U
75-01-4	Vinyl Chloride	10000	U
75-00-3	Chloroethane	10000	U
75-09-2	**Methylene Chloride**	~~3000~~ **5000**	~~U JDB~~ J
67-64-1	Acetone	10000	U
75-15-0	Carbon Disulfide	5000	U
75-35-4	1,1-Dichloroethene	5000	U
75-34-3	**1,1-Dichloroethane**	**6400**	**D**
540-59-0	**1,2-Dichloroethene (total)**	**36000**	**D**
67-66-3	Chloroform	5000	U
107-06-2	1,2-Dichloroethane	5000	U
78-93-3	2-Butanone	10000	U
71-55-6	**1,1,1-Trichloroethane**	**13000**	**D**
56-23-5	Carbon Tetrachloride	5000	U
108-05-4	Vinyl Acetate	10000	U
75-27-4	Bromodichloromethane	5000	U
78-87-5	1,2-Dichloropropane	5000	U
10061-01-5	cis-1,3-Dichloropropene	5000	U
79-01-6	Trichloroethene	5000	U
124-48-1	Dibromochloromethane	5000	U
79-00-5	1,1,2-Trichloroethane	5000	U
71-43-2	Benzene	5000	U
10061-02-6	trans-1,3-Dichloropropene	5000	U
75-25-2	Bromoform	5000	U
108-10-1	4-Methyl-2-Pentanone	10000	U
591-78-6	2-Hexanone	10000	U
127-18-4	Tetrachloroethene	5000	U
79-34-5	1,1,2,2-Tetrachloroethane	5000	U
108-88-3	Toluene	5000	U
108-90-7	Chlorobenzene	5000	U
100-41-4	Ethylbenzene	5000	U
100-42-5	Styrene	5000	U
1330-20-7	Xylene (total)	5000	U

CWS 4/1/97

Use values on Form I

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

MW-6 DL

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-6 DL

Sample wt/vol: .005 (g/mL) mL Lab File ID: FE131

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1000

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.35~~	~~7200~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-7

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-7

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE130

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	**Methylene Chloride**	5 ~~3~~	U ~~JB~~
67-64-1	Acetone	10	U J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

All J

4/1/97

FORM I CLP VOA

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

MW-7

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-7

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE130

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.35~~	~~6~~	~~JB~~
2.					
3.					
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CWT 4/1/97

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SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW-8

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-8

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE129

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	10	U	
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	**Methylene Chloride**	5 ~~2~~	U ~~JB~~	J
67-64-1	Acetone	10	U	
75-15-0	Carbon Disulfide	5	U	
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	
71-55-6	1,1,1-Trichloroethane	5	U	
56-23-5	Carbon Tetrachloride	5	U	
108-05-4	Vinyl Acetate	10	U	
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	
10061-01-5	cis-1,3-Dichloropropene	5	U	
79-01-6	Trichloroethene	5	U	
124-48-1	Dibromochloromethane	5	U	
79-00-5	1,1,2-Trichloroethane	5	U	
71-43-2	Benzene	5	U	
10061-02-6	trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	
108-10-1	4-Methyl-2-Pentanone	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	5	U	
108-88-3	Toluene	5	U	
108-90-7	Chlorobenzene	5	U	
100-41-4	Ethylbenzene	5	U	
100-42-5	Styrene	5	U	
1330-20-7	Xylene (total)	5	U	

All J

CMT 4/1/97

FORM I CLP VOA

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

MW-8

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-8

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE129

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1. 000110-54-3~~	~~Hexane~~	~~5.35~~	~~5~~	~~JB~~ R
2.				
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FORM I VOA-TIC 12/91

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

~~MW-66~~ MW 6 Dup

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-9

Sample wt/vol: .05 (g/mL) mL Lab File ID: FE125

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 100

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	1000	U	
74-83-9	Bromomethane	1000	U	
75-01-4	**Vinyl Chloride**	**280**	**J**	
75-00-3	Chloroethane	1000	U	
75-09-2	**Methylene Chloride**	~~270~~ 500	~~U JB~~	
67-64-1	Acetone	1000	U	J
75-15-0	Carbon Disulfide	500	U	
75-35-4	**1,1-Dichloroethene**	**500**		
75-34-3	**1,1-Dichloroethane**	**6800**		
540-59-0	**1,2-Dichloroethene (total)**	~~40000~~	~~E~~	41 000
67-66-3	Chloroform	500	U	
107-06-2	1,2-Dichloroethane	500	U	
78-93-3	2-Butanone	1000	U	
71-55-6	**1,1,1-Trichloroethane**	**15000**		
56-23-5	Carbon Tetrachloride	500	U	All J
108-05-4	Vinyl Acetate	1000	U	
75-27-4	Bromodichloromethane	500	U	
78-87-5	1,2-Dichloropropane	500	U	
10061-01-5	cis-1,3-Dichloropropene	500	U	
79-01-6	**Trichloroethene**	**280**	**J**	
124-48-1	Dibromochloromethane	500	U	
79-00-5	1,1,2-Trichloroethane	500	U	
71-43-2	Benzene	500	U	
10061-02-6	trans-1,3-Dichloropropene	500	U	
75-25-2	Bromoform	500	U	
108-10-1	4-Methyl-2-Pentanone	1000	U	
591-78-6	2-Hexanone	1000	U	
127-18-4	Tetrachloroethene	500	U	
79-34-5	1,1,2,2-Tetrachloroethane	500	U	
108-88-3	Toluene	500	U	
108-90-7	Chlorobenzene	500	U	
100-41-4	Ethylbenzene	500	U	
100-42-5	Styrene	500	U	
1330-20-7	Xylene (total)	500	U	

Cmt 4/1/97

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

~~MW-66~~ MW-6 DUP RE

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-9

Sample wt/vol: .05 (g/mL) mL Lab File ID: FE125

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 100

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.34~~	~~640~~	~~JB~~
2.					
3.					
4.					
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9.					
10.					
11.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

~~MW-66DL~~ MW-6 Dup DL

Lab Name: GALSON LABORATORIES   Contract: Civil & Env

Lab Code: Case No.: 1   SAS No.:   SDG No.: L35313

Matrix: (soil/water) Water   Lab Sample ID: L35313-9DL

Sample wt/vol: .005 (g/mL) mL   Lab File ID: FE132

Level: (low/med) LOW   Date Received: 02/14/97

%Moisture: not dec.   Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm)   Dilution Factor: 1000

Soil Extract Volume: (uL)   Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10000	U
74-83-9	Bromomethane	10000	U
75-01-4	Vinyl Chloride	10000	U
75-00-3	Chloroethane	10000	U
75-09-2	**Methylene Chloride**	~~4600~~ 5000	U ~~JDB~~
67-64-1	Acetone	10000	U J
75-15-0	Carbon Disulfide	5000	U
75-35-4	1,1-Dichloroethene	5000	U
75-34-3	**1,1-Dichloroethane**	**7200**	D
540-59-0	**1,2-Dichloroethene (total)**	**41000**	D
67-66-3	Chloroform	5000	U
107-06-2	1,2-Dichloroethane	5000	U
78-93-3	2-Butanone	10000	U
71-55-6	**1,1,1-Trichloroethane**	**15000**	D
56-23-5	Carbon Tetrachloride	5000	U
108-05-4	Vinyl Acetate	10000	U
75-27-4	Bromodichloromethane	5000	U
78-87-5	1,2-Dichloropropane	5000	U
10061-01-5	cis-1,3-Dichloropropene	5000	U
79-01-6	Trichloroethene	5000	U
124-48-1	Dibromochloromethane	5000	U
79-00-5	1,1,2-Trichloroethane	5000	U
71-43-2	Benzene	5000	U
10061-02-6	trans-1,3-Dichloropropene	5000	U
75-25-2	Bromoform	5000	U
108-10-1	4-Methyl-2-Pentanone	10000	U
591-78-6	2-Hexanone	10000	U
127-18-4	Tetrachloroethene	5000	U
79-34-5	1,1,2,2-Tetrachloroethane	5000	U
108-88-3	Toluene	5000	U
108-90-7	Chlorobenzene	5000	U
100-41-4	Ethylbenzene	5000	U
100-42-5	Styrene	5000	U
1330-20-7	Xylene (total)	5000	U

ant 4/1/97

FORM I CLP VOA

Use the values on form 1 p. 119 ant.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

~~MW-66 DL~~ MW-6 Dup BV

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-9 DL

Sample wt/vol: .005 (g/mL) mL Lab File ID: FE132

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1000

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.35~~	~~5900~~	~~JB~~
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35323-7

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE107

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	**Chloromethane**	**2**	**J**	
74-83-9	Bromomethane	10	U	J
75-01-4	**Vinyl Chloride**	**160**		
75-00-3	Chloroethane	10	U	
75-09-2	**Methylene Chloride**	**9**	U ~~B~~	J
67-64-1	**Acetone**	**6**	J	J
75-15-0	Carbon Disulfide	5	U	
75-35-4	**1,1-Dichloroethene**	**33**		
75-34-3	**1,1-Dichloroethane**	~~520~~	~~E~~	450
540-59-0	**1,2-Dichloroethene (total)**	~~3100~~	~~E~~	2900
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5	U	
78-93-3	2-Butanone	10	U	
71-55-6	**1,1,1-Trichloroethane**	~~320~~	~~E~~	300
56-23-5	Carbon Tetrachloride	5	U	
108-05-4	Vinyl Acetate	10	U	
75-27-4	Bromodichloromethane	5	U	
78-87-5	1,2-Dichloropropane	5	U	
10061-01-5	cis-1,3-Dichloropropene	5	U	
79-01-6	**Trichloroethene**	~~2100~~	~~E~~	2100 J
124-48-1	Dibromochloromethane	5	U	J
79-00-5	**1,1,2-Trichloroethane**	**2**	**J**	J
71-43-2	Benzene	5	U	
10061-02-6	trans-1,3-Dichloropropene	5	U	
75-25-2	Bromoform	5	U	
108-10-1	4-Methyl-2-Pentanone	10	U	J
591-78-6	2-Hexanone	10	U	J
127-18-4	Tetrachloroethene	5	U	
79-34-5	1,1,2,2-Tetrachloroethane	5	U	J
108-88-3	Toluene	5	U	
108-90-7	Chlorobenzene	5	U	
100-41-4	Ethylbenzene	5	U	
100-42-5	Styrene	5	U	
1330-20-7	Xylene (total)	5	U	

Cut 4/1/97

Values for analytes exceeding Calibration range (E) were taken from the 25 x dilution. Cut.

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35323-7

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE107

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Volatiles Found			
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VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1DL

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35323-7DL

Sample wt/vol: .2 (g/mL) mL Lab File ID: FE127

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. ~~Date Analyzed~~: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 25

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane	250		U
74-83-9	Bromomethane	250		U
75-01-4	**Vinyl Chloride**	**160**		**JD**
75-00-3	Chloroethane	250		U
75-09-2	**Methylene Chloride**	~~87~~ 125		U ~~JDB~~ J
67-64-1	Acetone	250		U
75-15-0	Carbon Disulfide	120		U
75-35-4	**1,1-Dichloroethene**	**35**		**JD**
75-34-3	**1,1-Dichloroethane**	**450**	✓	**D**
540-59-0	**1,2-Dichloroethene (total)**	**2900**	✓	**D**
67-66-3	Chloroform	120		U
107-06-2	1,2-Dichloroethane	120		U
78-93-3	2-Butanone	250		U
71-55-6	**1,1,1-Trichloroethane**	**300**	✓	**D**
56-23-5	Carbon Tetrachloride	120		U
108-05-4	Vinyl Acetate	250		U
75-27-4	Bromodichloromethane	120		U
78-87-5	1,2-Dichloropropane	120		U
10061-01-5	cis-1,3-Dichloropropene	120		U
79-01-6	**Trichloroethene**	**2100**	✓	**D**
124-48-1	Dibromochloromethane	120		U
79-00-5	1,1,2-Trichloroethane	120		U
71-43-2	Benzene	120		U
10061-02-6	trans-1,3-Dichloropropene	120		U
75-25-2	Bromoform	120		U
108-10-1	4-Methyl-2-Pentanone	250		U
591-78-6	2-Hexanone	250		U
127-18-4	Tetrachloroethene	120		U
79-34-5	1,1,2,2-Tetrachloroethane	120		U
108-88-3	Toluene	120		U
108-90-7	Chlorobenzene	120		U
100-41-4	Ethylbenzene	120		U
100-42-5	Styrene	120		U
1330-20-7	Xylene (total)	120		U

4/11/97

Use the values for RW-1 on p. 137 Form I

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1 DL

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35323-7 DL

Sample wt/vol: .2 (g/mL) mL Lab File ID: FE127

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 25

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.34~~	~~140~~	~~JB~~
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35323-6

Sample wt/vol: .5 (g/mL) mL Lab File ID: FE110

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 10

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	14	J	
74-83-9	Bromomethane	100	U	J
75-01-4	Vinyl Chloride	57	J	
75-00-3	Chloroethane	100	U	
75-09-2	Methylene Chloride	~~30~~ 50	U ~~JB~~	44 J
67-64-1	Acetone	100	U	
75-15-0	Carbon Disulfide	50	U	
75-35-4	1,1-Dichloroethene	18	J	
75-34-3	1,1-Dichloroethane	50	U	
540-59-0	1,2-Dichloroethene (total)	~~3100~~	~~E~~	3200
67-66-3	Chloroform	50	U	
107-06-2	1,2-Dichloroethane	50	U	
78-93-3	2-Butanone	100	U	
71-55-6	1,1,1-Trichloroethane	50	U	
56-23-5	Carbon Tetrachloride	50	U	
108-05-4	Vinyl Acetate	100	U	
75-27-4	Bromodichloromethane	50	U	
78-87-5	1,2-Dichloropropane	50	U	
10061-01-5	cis-1,3-Dichloropropene	50	U	
79-01-6	Trichloroethene	~~2300~~	~~E~~	2400 J
124-48-1	Dibromochloromethane	50	U	44
79-00-5	1,1,2-Trichloroethane	50	U	
71-43-2	Benzene	50	U	
10061-02-6	trans-1,3-Dichloropropene	50	U	
75-25-2	Bromoform	50	U	
108-10-1	4-Methyl-2-Pentanone	100	U	
591-78-6	2-Hexanone	100	U	
127-18-4	Tetrachloroethene	50	U	
79-34-5	1,1,2,2-Tetrachloroethane	50	U	
108-88-3	Toluene	50	U	
108-90-7	Chlorobenzene	50	U	
100-41-4	Ethylbenzene	50	U	
100-42-5	Styrene	50	U	
1330-20-7	Xylene (total)	50	U	

Cnf 4/1/97

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35323-6

Sample wt/vol: .5 (g/mL) mL Lab File ID: FE110

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 10

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Volatiles Found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2DL

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35323-6DL

Sample wt/vol: .2 (g/mL) mL Lab File ID: FE126

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 25

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane	250		U
74-83-9	Bromomethane	250		U
75-01-4	**Vinyl Chloride**	**70**		**JD**
75-00-3	Chloroethane	250		U
75-09-2	**Methylene Chloride**	**72**		**JDB**
67-64-1	**Acetone**	**120**		**JDB**
75-15-0	Carbon Disulfide	120		U
75-35-4	1,1-Dichloroethene	120		U
75-34-3	1,1-Dichloroethane	120		U
540-59-0	**1,2-Dichloroethene (total)**	**3200**	✓	**D**
67-66-3	Chloroform	120		U
107-06-2	1,2-Dichloroethane	120		U
78-93-3	2-Butanone	250		U
71-55-6	1,1,1-Trichloroethane	120		U
56-23-5	Carbon Tetrachloride	120		U
108-05-4	Vinyl Acetate	250		U
75-27-4	Bromodichloromethane	120		U
78-87-5	1,2-Dichloropropane	120		U
10061-01-5	cis-1,3-Dichloropropene	120		U
79-01-6	**Trichloroethene**	**2400**	✓	**D**
124-48-1	Dibromochloromethane	120		U
79-00-5	1,1,2-Trichloroethane	120		U
71-43-2	Benzene	120		U
10061-02-6	trans-1,3-Dichloropropene	120		U
75-25-2	Bromoform	120		U
108-10-1	4-Methyl-2-Pentanone	250		U
591-78-6	2-Hexanone	250		U
127-18-4	Tetrachloroethene	120		U
79-34-5	1,1,2,2-Tetrachloroethane	120		U
108-88-3	Toluene	120		U
108-90-7	Chlorobenzene	120		U
100-41-4	Ethylbenzene	120		U
100-42-5	Styrene	120		U
1330-20-7	Xylene (total)	120		U

J (L)

Qual 4/1/97

Use the results on Form 1 (p. 159) for this sample. Qual

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-2 DL

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35323-6 DL

Sample wt/vol: .2 (g/mL) mL Lab File ID: FE126

Level: (low/med) LOW Date Received: 02/15/97

%Moisture: not dec. Date Analyzed: 02/18/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 25

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	000110-54-3	Hexane	5.34	160	JB
2.					
3.					
4.					
5.					
6.					
7.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

SEQ-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-12

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE071

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	CONCENTRATION (UG/L)	Q
74-87-3	Chloromethane	~~2~~ ~~10~~ 2 J	~~U~~ ~~JB~~ J
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	~~U~~ ~~B~~ U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

CWT 4/1/97 All J CWT

FORM I CLP VOA

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

SEQ-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-12

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE071

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	2.41	8	J
2.	000110-54-3	Hexane	5.35	5	JN
3.					
4.					
5.					
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30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

TRIP BLANK TB# (B)

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-10

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE069

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	6	JB
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	12	B
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

J

All J

4/1/97

FORM I CLP VOA

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SAMPLE NO.

TRIP BLANK
TB#1 R2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-10

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE069

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/14/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	110-54-3	Hexane	5.42	10	J N
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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cvf 4/11/97

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

WEQ-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-11

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE097

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	3	J
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	8	~~U~~ B
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

All J

4/1/97

1E

SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WEQ-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) Water Lab Sample ID: L35313-11

Sample wt/vol: 5 (g/mL) mL Lab File ID: FE097

Level: (low/med) LOW Date Received: 02/14/97

%Moisture: not dec. Date Analyzed: 02/17/97

GC Column: HP-624 ID: .2 (mm) Dilution Factor: 1

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~000110-54-3~~	~~Hexane~~	~~5.28~~	~~8~~	~~JN~~
2.					
3.					
4.					
5.					
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7.					
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FORM I VOA-TIC 12/91

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-1

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI127

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 03/03/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-1

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI127

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 03/03/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	10	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	10	U
100-02-7	4-Nitrophenol	10	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	10	U
534-52-1	4,6-Dinitro-2-methylphenol	10	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-1

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI127

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 03/03/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	18.81	26	J
2.		Unknown	20.03	34	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-2

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI074

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-2

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI074

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	10	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	10	U
100-02-7	4-Nitrophenol	10	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	10	U
534-52-1	4,6-Dinitro-2-methylphenol	10	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

J

J

CWF 4/3/97

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SAMPLE NO.

MW-2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-2

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI074

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Branched hydrocarbon	9.03	11	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MW-3

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-3

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI082

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-3

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-3

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI082

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
99-09-2	3-Nitroaniline	10	U	
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	10	U	J
100-02-7	4-Nitrophenol	10	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
86-73-7	Fluorene	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
100-01-6	4-Nitroaniline	10	U	
534-52-1	4,6-Dinitro-2-methylphenol	10	U	
86-30-6	N-Nitrosodiphenylamine	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	10	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
56-55-3	Benzo(a)anthracene	10	U	
91-94-1	3,3'-Dichlorobenzidine	10	U	
218-01-9	Chrysene	10	U	
117-81-7	bis(2-Ethylhexyl)phthalate	10	U	J
117-84-0	Di-n-octylphthalate	10	U	J
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenzo(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

4/5/97

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SAMPLE NO.

MW-3

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-3

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI082

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	8.59	8	J
2.		Unknown	8.94	10	J
3.		Unknown	9.04	13	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-4

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-4

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI075

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-4

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-4

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI075

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
99-09-2	3-Nitroaniline	10	U	
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	10	U	J
100-02-7	4-Nitrophenol	10	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
86-73-7	Fluorene	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
100-01-6	4-Nitroaniline	10	U	
534-52-1	4,6-Dinitro-2-methylphenol	10	U	
86-30-6	N-Nitrosodiphenylamine	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	10	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
56-55-3	Benzo(a)anthracene	10	U	
91-94-1	3,3'-Dichlorobenzidine	10	U	
218-01-9	Chrysene	10	U	
117-81-7	**bis(2-Ethylhexyl)phthalate**	5	J	J
117-84-0	Di-n-octylphthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenzo(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

cwl 4/3/97

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-4

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-4

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI075

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Branched hydrocarbon	9.02	9	J
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-5

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-5

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI076

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-5

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-5

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI076

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	10	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	10	U
100-02-7	4-Nitrophenol	10	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	10	U
534-52-1	4,6-Dinitro-2-methylphenol	10	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	7	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

J

J

Cwc 4/3/97

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SAMPLE NO.

MW-5

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-5

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI076

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 3

VOA target compound list

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~79-01-6~~	~~Trichloroethylene~~	~~3.67~~	~~98~~	~~JN~~
2.	123-91-1	1,4-Dioxane	3.86	27	JN
3.		Unknown	9.03	11	J
4.					
5.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-6

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-6

Sample wt/vol: 950 (g/mL) mL Lab File ID: EI077

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	**4-Methylphenol**	6	J
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-6

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-6

Sample wt/vol: 950 (g/mL) mL Lab File ID: EI077

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
99-09-2	3-Nitroaniline	10	U	
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	10	U	J
100-02-7	4-Nitrophenol	10	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
86-73-7	Fluorene	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
100-01-6	4-Nitroaniline	10	U	
534-52-1	4,6-Dinitro-2-methylphenol	10	U	
86-30-6	N-Nitrosodiphenylamine	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	10	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
56-55-3	Benzo(a)anthracene	10	U	
91-94-1	3,3'-Dichlorobenzidine	10	U	
218-01-9	Chrysene	10	U	
117-81-7	**bis(2-Ethylhexyl)phthalate**	**80**		JJ
117-84-0	Di-n-octylphthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenzo(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

4/3/97

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SAMPLE NO.

MW-6

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-6

Sample wt/vol: 950 (g/mL) mL Lab File ID: EI077

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 17

VOA target compound

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~79-01-6~~	~~Trichloroethylene~~	~~3.71~~	~~22~~	~~JN~~
2.	123-91-1	1,4-Dioxane	3.92	200	JN
3.		Unknown	9.04	9	J
4.		Long chain hydrocarbon	16.10	17	J
5.		Long chain hydrocarbon	16.83	22	J
6.		Long chain hydrocarbon	17.13	21	J
7.		Long chain hydrocarbon	17.29	15	J
8.		Cyclic hydrocarbon	17.46	14	J
9.		Long chain hydrocarbon	17.54	17	J
10.		Long chain hydrocarbon	17.69	10	J
11.		Long chain hydrocarbon	17.82	18	J
12.		Unknown	17.87	10	J
13.		Long chain hydrocarbon	18.06	18	J
14.		Long chain hydrocarbon	18.47	25	J
15.		Unknown	18.84	29	J
16.		Long chain hydrocarbon	19.09	81	J
17.		Long chain hydrocarbon	19.69	39	J
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. ~~MW-66~~ MW-6 Dup

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-9

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI078

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	**4-Methylphenol**	5	J N
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

cwg 4/3/97

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

~~MW-66~~ MW-6 Dup

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-9

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI078

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
99-09-2	3-Nitroaniline	10	U	
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	10	U	J
100-02-7	4-Nitrophenol	10	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
86-73-7	Fluorene	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
100-01-6	4-Nitroaniline	10	U	
534-52-1	4,6-Dinitro-2-methylphenol	10	U	
86-30-6	N-Nitrosodiphenylamine	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	10	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
56-55-3	Benzo(a)anthracene	10	U	
91-94-1	3,3'-Dichlorobenzidine	10	U	
218-01-9	Chrysene	10	U	
117-81-7	**bis(2-Ethylhexyl)phthalate**	4	J	JA
117-84-0	Di-n-octylphthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenzo(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

4/3/97

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SAMPLE NO.

~~MW-66~~ MW-6 Dup 15

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-9

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI078

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 20 VOA-ug/L

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~79-01-6~~	~~Trichloroethylene~~	~~3.66~~	~~16~~	~~JN~~
2.	123-91-1	1,4-Dioxane	3.88	170	JN
3.		Long chain hydrocarbon	16.10	13	J
4.		Long chain hydrocarbon	16.83	18	J
5.		Long chain hydrocarbon	17.13	19	J
6.		Long chain hydrocarbon	17.29	12	J
7.		Cyclic hydrocarbon	17.45	12	J
8.		Long chain hydrocarbon	17.54	13	J
9.		Long chain hydrocarbon	17.82	18	J
10.		Unknown	17.86	14	J
11.		Unknown	17.94	11	J
12.		Long chain hydrocarbon	18.06	25	J
13.		Cyclic hydrocarbon	18.17	16	J
14.		Long chain hydrocarbon	18.22	12	J
15.		Unknown	18.32	17	J
16.		Long chain hydrocarbon	18.46	37	J
17.		Long chain hydrocarbon	18.69	10	J
18.		Cyclic hydrocarbon	18.84	26	J
19.		Long chain hydrocarbon	19.09	54	J
20.		Long chain hydrocarbon	19.71	27	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-7

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-7

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI072

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-7

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-7

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI072

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	10	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	10	U
100-02-7	4-Nitrophenol	10	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
86-73-7	Fluorene	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
100-01-6	4-Nitroaniline	10	U
534-52-1	4,6-Dinitro-2-methylphenol	10	U
86-30-6	N-Nitrosodiphenylamine	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	10	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
56-55-3	Benzo(a)anthracene	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
218-01-9	Chrysene	10	U
117-81-7	**bis(2-Ethylhexyl)phthalate**	7	J
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

J

4J

4/3/97

1F

SAMPLE NO.

MW-7

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-7

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI072

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No BNA compounds found			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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29.					
30.					

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-8

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-8

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI073

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-8

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-8

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI073

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
99-09-2	3-Nitroaniline	10	U	
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	10	U	J
100-02-7	4-Nitrophenol	10	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
86-73-7	Fluorene	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
100-01-6	4-Nitroaniline	10	U	
534-52-1	4,6-Dinitro-2-methylphenol	10	U	
86-30-6	N-Nitrosodiphenylamine	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	10	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
56-55-3	Benzo(a)anthracene	10	U	
91-94-1	3,3'-Dichlorobenzidine	10	U	
218-01-9	Chrysene	10	U	
117-81-7	**bis(2-Ethylhexyl)phthalate**	**30**		JB
117-84-0	Di-n-octylphthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenzo(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

CWS 4/3/97

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-8

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-8

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI073

Level: (low/med) LOW Date Received: 02/14/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	17.15	9	J
2.		Long chain hydrocarbon	19.09	10	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35323-7

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI079

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO. RW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35323-7

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI079

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
99-09-2	3-Nitroaniline	10	U	
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	10	U	J
100-02-7	4-Nitrophenol	10	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
86-73-7	Fluorene	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
100-01-6	4-Nitroaniline	10	U	
534-52-1	4,6-Dinitro-2-methylphenol	10	U	
86-30-6	N-Nitrosodiphenylamine	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	10	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
56-55-3	Benzo(a)anthracene	10	U	
91-94-1	3,3'-Dichlorobenzidine	10	U	
218-01-9	Chrysene	10	U	
117-81-7	**bis(2-Ethylhexyl)phthalate**	**12**	J	J
117-84-0	Di-n-octylphthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenzo(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

CLS 4/3/97

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35323-7

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI079

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 02/28/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~79-01-6~~	~~Trichloroethylene~~	~~3.71~~	~~470~~	~~JN~~
2.	123-91-1	1,4-Dioxane	3.91	65	JN
3.		Unknown	8.88	24	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
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27.					
28.					
29.					
30.					

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35323-6

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI097

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume:2000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
62-75-9	N-Nitrosodimethylamine	10	U
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

- 2s

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

RW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35323-6

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI097

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: decanted: (Y/N) N Date Extracted: 02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
99-09-2	3-Nitroaniline	10	U	
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	10	U	J
100-02-7	4-Nitrophenol	10	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
86-73-7	Fluorene	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
100-01-6	4-Nitroaniline	10	U	
534-52-1	4,6-Dinitro-2-methylphenol	10	U	J
86-30-6	N-Nitrosodiphenylamine	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	10	U	
85-01-8	**Phenanthrene**	**2**	**J**	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-butylphthalate	10	U	
206-44-0	**Fluoranthene**	**4**	**J**	
129-00-0	**Pyrene**	**4**	**J**	
85-68-7	Butylbenzylphthalate	10	U	
56-55-3	**Benzo(a)anthracene**	**2**	**J**	
91-94-1	3,3'-Dichlorobenzidine	10	U	J
218-01-9	**Chrysene**	**2**	**J**	
117-81-7	bis(2-Ethylhexyl)phthalate	10	U	
117-84-0	Di-n-octylphthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	U	
207-08-9	Benzo(k)fluoranthene	10	U	
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenzo(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

4/3/97

1F

SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 1 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35323-6

Sample wt/vol: 1000 (g/mL) mL Lab File ID: EI097

Level: (low/med) LOW Date Received: 02/15/97

% Moisture: decanted: (Y/N) N Date Extracted:02/19/97

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 03/01/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0

Number TICS found: 3 10 of target compound

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~79-01-6~~	~~Trichloroethylene~~	~~3.70~~	~~400~~	~~JN~~
2.		Unknown	6.90	65	J
3.		Unknown	7.54	43	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
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25.					
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27.					
28.					
29.					
30.					

R

ok 3/13/97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: MW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-1

Sample wt/vol: 1050 (g/mL) mL Lab File ID: HP13A\97022616

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
319-85-7	beta-BHC	0.048	U
76-44-8	Heptachlor	0.048	U
319-86-8	delta-BHC	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U
72-20-8	Endrin	0.1	U
72-54-8	4,4'-DDD	0.1	U
332-13-659	Endosulfan II	0.1	U
50-29-3	4,4'-DDT	0.1	U
7421-36-3	Endrin aldehyde	0.1	U
103-10-78	Endosulfan sulfate	0.1	U
72-43-5	Methoxychlor	0.48	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

CWF 4/1/97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-2

Sample wt/vol: 1020 (g/mL) mL Lab File ID: HP13A\97022618

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.049	U J
58-89-9	gamma-BHC (Lindane)	0.049	U J
319-85-7	beta-BHC	0.049	U
76-44-8	Heptachlor	0.049	U J
319-86-8	delta-BHC	0.049	U J
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U J
959-98-8	Endosulfan I	0.049	U J
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U J
72-20-8	Endrin	0.1	U J
72-54-8	4,4'-DDD	0.1	U J
332-13-659	Endosulfan II	0.1	U J
50-29-3	4,4'-DDT	0.1	U J
7421-36-3	Endrin aldehyde	0.1	U J
103-10-78	Endosulfan sulfate	0.1	U J
72-43-5	Methoxychlor	0.49	U
57-74-9	Chlordane	0.49	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

4/7/97

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: MW-3

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-3

Sample wt/vol: 1020 (g/mL) mL Lab File ID: HP13A\97022620

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
319-85-7	beta-BHC	0.049	U
76-44-8	Heptachlor	0.049	U
319-86-8	delta-BHC	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U
72-20-8	Endrin	0.1	U
72-54-8	4,4'-DDD	0.1	U
332-13-659	Endosulfan II	0.1	U
50-29-3	4,4'-DDT	0.1	U
7421-36-3	Endrin aldehyde	0.1	U
103-10-78	Endosulfan sulfate	0.1	U
72-43-5	Methoxychlor	0.49	U
57-74-9	Chlordane	0.49	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

CWS 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: MW-4

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-4

Sample wt/vol: 1000 (g/mL) mL Lab File ID: HP13A\97022622

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
319-85-7	beta-BHC	0.05	U
76-44-8	Heptachlor	0.05	U
319-86-8	delta-BHC	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U
72-20-8	Endrin	0.1	U
72-54-8	4,4'-DDD	0.1	U
332-13-659	Endosulfan II	0.1	U
50-29-3	4,4'-DDT	0.1	U
7421-36-3	Endrin aldehyde	0.1	U
103-10-78	Endosulfan sulfate	0.1	U
72-43-5	Methoxychlor	0.5	U
57-74-9	Chlordane	0.5	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.5	U
11104-28-2	Aroclor-1221	0.5	U
11141-16-5	Aroclor-1232	0.5	U
53469-21-9	Aroclor-1242	0.5	U
12672-29-6	Aroclor-1248	0.5	U
11097-69-1	Aroclor-1254	0.5	U
11096-82-5	Aroclor-1260	0.5	U

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FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

MW-5

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-5

Sample wt/vol: 1050 (g/mL) mL Lab File ID: HP13A\97022624

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.048	U J
58-89-9	gamma-BHC (Lindane)	0.048	U J
319-85-7	beta-BHC	0.048	U
76-44-8	Heptachlor	0.048	U J
319-86-8	delta-BHC	0.048	U J
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U J
959-98-8	Endosulfan I	0.048	U J
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U J
72-20-8	Endrin	0.1	U J
72-54-8	4,4'-DDD	0.1	U J
332-13-659	Endosulfan II	0.1	U J
50-29-3	4,4'-DDT	0.1	U J
7421-36-3	Endrin aldehyde	0.1	U J
103-10-78	Endosulfan sulfate	0.1	U J
72-43-5	Methoxychlor	0.48	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

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FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: MW-6

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-6

Sample wt/vol: 1040 (g/mL) mL Lab File ID: HP13A\97022626

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.048	U J
58-89-9	gamma-BHC (Lindane)	0.048	U J
319-85-7	beta-BHC	0.048	U
76-44-8	Heptachlor	0.048	U J
319-86-8	delta-BHC	0.048	U J
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U J
959-98-8	Endosulfan I	0.048	U J
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U J
72-20-8	Endrin	0.1	U J
72-54-8	4,4'-DDD	0.1	U J
332-13-659	Endosulfan II	0.1	U J
50-29-3	4,4'-DDT	0.1	U J
7421-36-3	Endrin aldehyde	0.1	U J
103-10-78	Endosulfan sulfate	0.1	U J
72-43-5	Methoxychlor	0.48	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

CWF 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.

~~MW-66~~ MW-6 Dup FB

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-9

Sample wt/vol: 1020 (g/mL) mL Lab File ID: HP13A\97022636

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.049	U
58-89-9	gamma-BHC (Lindane)	0.049	U
319-85-7	beta-BHC	0.049	U
76-44-8	Heptachlor	0.049	U
319-86-8	delta-BHC	0.049	U
309-00-2	Aldrin	0.049	U
1024-57-3	Heptachlor epoxide	0.049	U
959-98-8	Endosulfan I	0.049	U
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U
72-20-8	Endrin	0.1	U
72-54-8	4,4'-DDD	0.1	U
332-13-659	Endosulfan II	0.1	U
50-29-3	4,4'-DDT	0.1	U
7421-36-3	Endrin aldehyde	0.1	U
103-10-78	Endosulfan sulfate	0.1	U
72-43-5	Methoxychlor	0.49	U
57-74-9	Chlordane	0.49	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.49	U
11104-28-2	Aroclor-1221	0.49	U
11141-16-5	Aroclor-1232	0.49	U
53469-21-9	Aroclor-1242	0.49	U
12672-29-6	Aroclor-1248	0.49	U
11097-69-1	Aroclor-1254	0.49	U
11096-82-5	Aroclor-1260	0.49	U

CLP 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: MW-7

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-7

Sample wt/vol: 1040 (g/mL) mL Lab File ID: HP13A\97022628

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.048	U J
58-89-9	gamma-BHC (Lindane)	0.048	U J
319-85-7	beta-BHC	0.048	U
76-44-8	Heptachlor	0.048	U J
319-86-8	delta-BHC	0.048	U J
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U J
959-98-8	Endosulfan I	0.048	U J
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U J
72-20-8	Endrin	0.1	U J
72-54-8	4,4'-DDD	0.1	U J
332-13-659	Endosulfan II	0.1	U J
50-29-3	4,4'-DDT	0.1	U J
7421-36-3	Endrin aldehyde	0.1	U J
103-10-78	Endosulfan sulfate	0.1	U J
72-43-5	Methoxychlor	0.48	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

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FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: MW-8

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35313-8

Sample wt/vol: 1040 (g/mL) mL Lab File ID: HP13A\97022650

% Moisture: decanted: (Y/N) N Date Received: 02/14/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
319-85-7	beta-BHC	0.048	U
76-44-8	Heptachlor	0.048	U
319-86-8	delta-BHC	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U
72-20-8	Endrin	0.1	U
72-54-8	4,4'-DDD	0.1	U
332-13-659	Endosulfan II	0.1	U
50-29-3	4,4'-DDT	0.1	U
7421-36-3	Endrin aldehyde	0.1	U
103-10-78	Endosulfan sulfate	0.1	U
72-43-5	Methoxychlor	0.48	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

CWT 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-1

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35323-7

Sample wt/vol: 1040 (g/mL) mL Lab File ID: HP13A\97022640

% Moisture: decanted: (Y/N) N Date Received: 02/15/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
319-85-7	beta-BHC	0.048	U
76-44-8	Heptachlor	0.048	U
319-86-8	delta-BHC	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U
72-20-8	Endrin	0.1	U
72-54-8	4,4'-DDD	0.1	U
332-13-659	Endosulfan II	0.1	U
50-29-3	4,4'-DDT	0.1	U
7421-36-3	Endrin aldehyde	0.1	U
103-10-78	Endosulfan sulfate	0.1	U
72-43-5	Methoxychlor	0.48	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

cwb 4/7/97

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

SAMPLE NO.: RW-2

Lab Name: GALSON LABORATORIES Contract: Civil & Env

Lab Code: Case No.: 6 SAS No.: SDG No.: L35313

Matrix: (soil/water) WATER Lab Sample ID: L35323-6

Sample wt/vol: 1050 (g/mL) mL Lab File ID: HP13A\97022638

% Moisture: decanted: (Y/N) N Date Received: 02/15/97

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/19/97

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/97

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 8.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.048	U
58-89-9	gamma-BHC (Lindane)	0.048	U
319-85-7	beta-BHC	0.048	U
76-44-8	Heptachlor	0.048	U
319-86-8	delta-BHC	0.048	U
309-00-2	Aldrin	0.048	U
1024-57-3	Heptachlor epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
72-55-9	4,4'-DDE	0.1	U
60-57-1	Dieldrin	0.1	U
72-20-8	Endrin	0.1	U
72-54-8	4,4'-DDD	0.1	U
332-13-659	Endosulfan II	0.1	U
50-29-3	4,4'-DDT	0.1	U
7421-36-3	Endrin aldehyde	0.1	U
103-10-78	Endosulfan sulfate	0.1	U
72-43-5	Methoxychlor	0.48	U
57-74-9	Chlordane	0.48	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.48	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

4/7/97

FORM I PEST

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-1

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-1

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10800		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	12.5			P
7440-39-3	Barium	165	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.4	B		P
7440-70-2	Calcium	130000			P
7440-47-3	Chromium	33.0		*	P
7440-48-4	Cobalt	17.1	B		P
7440-50-8	Copper	44.0		*	P
7439-89-6	Iron	31500		*	P
7439-92-1	Lead	~~14.9~~ R		N*	P
7439-95-4	Magnesium	20700		*	P
7439-96-5	Manganese	~~1590~~ R		N*	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	37.8	B		P
7440-09-7	Potassium	4540	B		P
7782-49-2	Selenium	5.8		*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	46400		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	22.4	B		P
7440-66-6	Zinc	90.1		*	P
57-12-5	Cyanide				NR

J

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

10/95

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-2

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-2

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	66300		*	P
7440-36-0	Antimony	12.4	B		P
7440-38-2	Arsenic	61.4			P
7440-39-3	Barium	713			P
7440-41-7	Beryllium	4.5	B		P
7440-43-9	Cadmium	7.3			P
7440-70-2	Calcium	614000			P
7440-47-3	Chromium	202		*	P
7440-48-4	Cobalt	121			P
7440-50-8	Copper	269		*	P
7439-89-6	Iron	230000		*	P
7439-92-1	Lead	~~109~~ R		N*	P
7439-95-4	Magnesium	91500		*	P
7439-96-5	Manganese	~~9180~~ R		N*	P
7439-97-6	Mercury	0.53			AV
7440-02-0	Nickel	251			P
7440-09-7	Potassium	15700			P
7782-49-2	Selenium	9.0		*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	18100		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	166			P
7440-66-6	Zinc	510		*	P
57-12-5	Cyanide				NR

J

4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:
CA AND FE WERE ANALYZED AT A 10X DILUTION.

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-3

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-3

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4650		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	11.7			P
7440-39-3	Barium	300			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	3.7	B		P
7440-70-2	Calcium	143000			P
7440-47-3	Chromium	9.7	B	*	P
7440-48-4	Cobalt	5.6	B		P
7440-50-8	Copper	71.5		*	P
7439-89-6	Iron	22200		*	P
7439-92-1	Lead	~~148~~ R		N*	P
7439-95-4	Magnesium	25900		*	P
7439-96-5	Manganese	~~925~~ R		N*	P
7439-97-6	Mercury	0.80			AV
7440-02-0	Nickel	17.6	B		P
7440-09-7	Potassium	5520			P
7782-49-2	Selenium	3.0	U	*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	12500		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	9.6	B		P
7440-66-6	Zinc	306		*	P
57-12-5	Cyanide				NR

J

CW 4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-4

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-4

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11100		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	70.4			P
7440-39-3	Barium	279			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.6	B		P
7440-70-2	Calcium	155000			P
7440-47-3	Chromium	24.1		*	P
7440-48-4	Cobalt	15.3	B		P
7440-50-8	Copper	36.8		*	P
7439-89-6	Iron	76800		*	P
7439-92-1	Lead	~~18.8~~ R		N*	P
7439-95-4	Magnesium	28000		*	P
7439-96-5	Manganese	~~2200~~ R		N*	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	30.4	B		P
7440-09-7	Potassium	4800	B		P
7782-49-2	Selenium	5.2		*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	38200		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	21.3	B		P
7440-66-6	Zinc	88.8		*	P
57-12-5	Cyanide				NR

J

4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

10/95

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-5

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-5

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1510		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	8.9	B		P
7440-39-3	Barium	97.1	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	182000			P
7440-47-3	Chromium	3.0	U	*	P
7440-48-4	Cobalt	3.8	B		P
7440-50-8	Copper	7.7	B	*	P
7439-89-6	Iron	9540		*	P
7439-92-1	Lead	~~7.6~~ R		N* J	P
7439-95-4	Magnesium	13700		*	P
7439-96-5	Manganese	~~2360~~ R		N*	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	7.4	B		P
7440-09-7	Potassium	11400			P
7782-49-2	Selenium	3.0	U	*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	16900		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	36.2		*	P
57-12-5	Cyanide				NR

CWA 4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

✓

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-6

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-6

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6300		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	8.4	B		P
7440-39-3	Barium	271			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	136000			P
7440-47-3	Chromium	10.8		*	P
7440-48-4	Cobalt	9.1	B		P
7440-50-8	Copper	18.8	B	*	P
7439-89-6	Iron	30900		*	P
7439-92-1	Lead	~~7.6~~ R		N*	P
7439-95-4	Magnesium	22900		*	P
7439-96-5	Manganese	~~2600~~ R		N*	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	26.1	B		P
7440-09-7	Potassium	5950			P
7782-49-2	Selenium	3.0	U	*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	14900		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	12.9	B		P
7440-66-6	Zinc	40.2		*	P
57-12-5	Cyanide				NR

J

4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

~~MW-66~~ MW-6Dup BV

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-9

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6210		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	8.0	B		P
7440-39-3	Barium	275			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	132000			P
7440-47-3	Chromium	10.1		*	P
7440-48-4	Cobalt	7.4	B		P
7440-50-8	Copper	17.1	B	*	P
7439-89-6	Iron	29000		*	P
7439-92-1	Lead	~~6.0~~ R		N* J	P
7439-95-4	Magnesium	22800		*	P
7439-96-5	Manganese	~~2460~~ R		N*	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	23.8	B		P
7440-09-7	Potassium	6150			P
7782-49-2	Selenium	3.1	B	*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	15400		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	12.4	B		P
7440-66-6	Zinc	36.4		*	P
57-12-5	Cyanide				NR

OWS 4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

✓

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-7

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-7

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	17.0			P
7440-39-3	Barium	337			P
7440-41-7	Beryllium	1.0	B		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	149000			P
7440-47-3	Chromium	33.8		*	P
7440-48-4	Cobalt	24.2	B		P
7440-50-8	Copper	64.1		*	P
7439-89-6	Iron	44600		*	P
7439-92-1	Lead	~~34.8~~ R		N*	P
7439-95-4	Magnesium	24200		*	P
7439-96-5	Manganese	~~3150~~ R		N*	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	50.0			P
7440-09-7	Potassium	12400			P
7782-49-2	Selenium	6.5		*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	35300		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	32.6	B		P
7440-66-6	Zinc	143		*	P
57-12-5	Cyanide				NR

J

4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

MW-8

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35313-8

Level (low/med): LOW Date Received: 02/14/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12400		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	12.2			P
7440-39-3	Barium	197	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.6	B		P
7440-70-2	Calcium	183000			P
7440-47-3	Chromium	18.5		*	P
7440-48-4	Cobalt	12.8	B		P
7440-50-8	Copper	35.6		*	P
7439-89-6	Iron	30400		*	P
7439-92-1	Lead	~~14.1~~ R		N* J	P
7439-95-4	Magnesium	28100		*	P
7439-96-5	Manganese	~~790~~ R		N*	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	29.8	B		P
7440-09-7	Potassium	6360			P
7782-49-2	Selenium	3.0	U	*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	28500		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	28.4	B		P
7440-66-6	Zinc	100		*	P
57-12-5	Cyanide				NR

4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-1

Lab Name: Galson Laboratories Contract: C&E CONSULT

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35323-7

Level (low/med): LOW Date Received: 02/15/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11700		*	P
7440-36-0	Antimony	8.0	U		P
7440-38-2	Arsenic	12.1			P
7440-39-3	Barium	362			P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.9	B		P
7440-70-2	Calcium	155000			P
7440-47-3	Chromium	23.8		*	P
7440-48-4	Cobalt	15.3	B		P
7440-50-8	Copper	31.0		*	P
7439-89-6	Iron	27600		*	P
7439-92-1	Lead	~~13.0~~ R		N*	P
7439-95-4	Magnesium	48500		*	P
7439-96-5	Manganese	~~642~~ R		N*	P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	26.2	B		P
7440-09-7	Potassium	9560			P
7782-49-2	Selenium	3.0	U	*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	201000		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	24.2	B		P
7440-66-6	Zinc	74.1		*	P
57-12-5	Cyanide				NR

J

4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:
NA WAS ANALYZED AT A 10X DILUTION.

NYSDEC ASP

1

INORGANIC ANALYSES DATA SHEET

NYSDEC SAMPLE NO.

RW-2

Lab Name: Galson Laboratories Contract: C&E CONSUL

Lab Code: 11626 Case No.: SAS No.: SDG No.: L35313

Matrix (soil/water): Water Lab Sample ID: L35323-6

Level (low/med): LOW Date Received: 02/15/97

% Solids: 0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15300		*	P
7440-36-0	Antimony	17.8	B		P
7440-38-2	Arsenic	24.0			P
7440-39-3	Barium	318			P
7440-41-7	Beryllium	1.1	B		P
7440-43-9	Cadmium	2.4	B		P
7440-70-2	Calcium	153000			P
7440-47-3	Chromium	38.0		*	P
7440-48-4	Cobalt	15.2	B		P
7440-50-8	Copper	703		*	P
7439-89-6	Iron	44400		*	P
7439-92-1	Lead	~~1740~~ R		N*	P
7439-95-4	Magnesium	37200		*	P
7439-96-5	Manganese	~~1320~~ R		N*	P
7439-97-6	Mercury	3.9			AV
7440-02-0	Nickel	66.6			P
7440-09-7	Potassium	6290			P
7782-49-2	Selenium	3.0	U	*	P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	17900		*	P
7440-28-0	Thallium	6.0	U		P
7440-62-2	Vanadium	34.5	B		P
7440-66-6	Zinc	571		*	P
57-12-5	Cyanide				NR

J

4/9/97

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES

Reported: 09/20/97

Civil & Environmental Consult.
Project Reference:NORTHEAST ALLOYS AND METALS
Client Sample ID :MW2 AD BU

Date Sampled :08/08/97 **Order #:**162227 **Sample Matrix:**WATER
Date Received:08/12/97 **Submission #:**9708000169

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
ALUMINUM	100	30000	UG/L	08/27/97	1.0
ANTIMONY	6.00	6.00 U J	UG/L	09/05/97	1.0
ARSENIC	10.0	25.7 J	UG/L	08/27/97	1.0
BARIUM	20.0	426	UG/L	08/27/97	1.0
BERYLLIUM	5.00	5.25	UG/L	08/27/97	1.0
CADMIUM	5.00	6.95 J	UG/L	08/27/97	1.0
CALCIUM	500	220000	UG/L	08/27/97	1.0
CHROMIUM	10.0	88.3 J	UG/L	08/27/97	1.0
COBALT	50.0	73.9	UG/L	08/27/97	1.0
COPPER	20.0	90.3	UG/L	08/27/97	1.0
IRON	100	62600	UG/L	08/27/97	1.0
LEAD	5.00	34.6 J	UG/L	08/27/97	1.0
MAGNESIUM	500	40100	UG/L	08/27/97	1.0
MANGANESE	10.0	4290	UG/L	08/27/97	1.0
MERCURY	0.300	0.300 U	UG/L	08/25/97	1.0
NICKEL	40.0	140	UG/L	08/27/97	1.0
POTASSIUM	2000	12600	UG/L	08/27/97	1.0
SELENIUM	5.00	5.00 U J	UG/L	08/29/97	1.0
SILVER	10.0	10.0 U	UG/L	08/27/97	1.0
SODIUM	500	19900	UG/L	08/27/97	1.0
THALLIUM	10.0	10.0 U	UG/L	09/09/97	1.0
VANADIUM	50.0	50.0 U	UG/L	08/27/97	1.0
ZINC	10.0	243 J	UG/L	08/27/97	1.0

ok 10/31/97

COLUMBIA ANALYTICAL SERVICES

Reported: 09/20/97

Civil & Environmental Consult.
Project Reference:NORTHEAST ALLOYS AND METALS
Client Sample ID :~~MW2D1~~ MW 2 AD DUP BL

Date Sampled :08/08/97 **Order #:**162228 **Sample Matrix:**WATER
Date Received:08/12/97 **Submission #:**9708000169

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
ALUMINUM	100	37500	UG/L	08/27/97	1.0
ANTIMONY	6.00	6.00 U J	UG/L	09/05/97	1.0
ARSENIC	10.0	27.2 J	UG/L	08/27/97	1.0
BARIUM	20.0	474	UG/L	08/27/97	1.0
BERYLLIUM	5.00	5.73	UG/L	08/27/97	1.0
CADMIUM	5.00	7.48 J	UG/L	08/27/97	1.0
CALCIUM	500	231000	UG/L	08/27/97	1.0
CHROMIUM	10.0	117 J	UG/L	08/27/97	1.0
COBALT	50.0	78.6	UG/L	08/27/97	1.0
COPPER	20.0	98.7	UG/L	08/27/97	1.0
IRON	100	67400	UG/L	08/27/97	1.0
LEAD	5.00	31.2 J	UG/L	08/27/97	1.0
MAGNESIUM	500	42000	UG/L	08/27/97	1.0
MANGANESE	10.0	4460	UG/L	08/27/97	1.0
MERCURY	0.300	0.300 U	UG/L	08/25/97	1.0
NICKEL	40.0	163	UG/L	08/27/97	1.0
POTASSIUM	2000	15300	UG/L	08/27/97	1.0
SELENIUM	5.00	5.00 U J	UG/L	08/29/97	1.0
SILVER	10.0	10.0 U	UG/L	08/27/97	1.0
SODIUM	500	20000	UG/L	08/27/97	1.0
THALLIUM	10.0	10.0 U	UG/L	09/09/97	1.0
VANADIUM	50.0	60.6	UG/L	08/27/97	1.0
ZINC	10.0	268 J	UG/L	08/27/97	1.0

CLJ 10/3/97

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/18/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : MW9

Date Sampled : 08/08/97 **Order #:** 162229 **Sample Matrix:** WATER
Date Received: 08/12/97 **Submission #:** 9708000169 **Analytical Run** 19840

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 1.0			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	~~5.0 U~~ 2.5 J	UG/L
CIS-1,2-DICHLOROETHENE	5.0	170	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	29	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	47	UG/L
VINYL CHLORIDE	5.0	~~5.0 U~~ 2.5 J	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	110	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	100	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/18/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~MW9D1~~ MW-9 Dup BV

Date Sampled : 08/08/97 **Order #:** 162230 **Sample Matrix:** WATER
Date Received: 08/12/97 **Submission #:** 9708000169 **Analytical Run** 19840

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 1.0			X
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	~~5.0 U~~ 2 J	UG/L
CIS-1,2-DICHLOROETHENE	5.0	150	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	26	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	41	UG/L
VINYL CHLORIDE	5.0	~~5.0 U~~ 2 J	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	109	%
TOLUENE-D8	(88 - 110 %)	99	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	95	%

2-5 10/2/97

COLUMBIA ANALYTICAL SERVICES

Reported: 09/20/97

Civil & Environmental Consult.
Project Reference:NORTHEAST ALLOYS AND METALS
Client Sample ID :~~EQW1~~ EQW 2 BV
1

Date Sampled :08/08/97 **Order #:**162231 **Sample Matrix:**WATER
Date Received:08/12/97 **Submission #:**9708000169

ANALYTE	PQL	RESULT	UNITS	DATE ANALYZED	ANALYTICAL DILUTION
ALUMINUM	100	100 U	UG/L	08/27/97	1.0
ANTIMONY	6.00	6.00 U J	UG/L	09/05/97	1.0
ARSENIC	10.0	10.0 U J	UG/L	08/27/97	1.0
BARIUM	20.0	73.2	UG/L	08/27/97	1.0
BERYLLIUM	5.00	5.00 U	UG/L	08/27/97	1.0
CADMIUM	5.00	5.00 U J	UG/L	08/27/97	1.0
CALCIUM	500	55000	UG/L	08/27/97	1.0
CHROMIUM	10.0	10.0 U J	UG/L	08/27/97	1.0
COBALT	50.0	50.0 U	UG/L	08/27/97	1.0
COPPER	20.0	20.0 U	UG/L	08/27/97	1.0
IRON	100	100 U	UG/L	08/27/97	1.0
LEAD	5.00	5.00 U J	UG/L	08/27/97	1.0
MAGNESIUM	500	10700	UG/L	08/27/97	1.0
MANGANESE	10.0	10.0 U	UG/L	08/27/97	1.0
MERCURY	0.300	0.300 U	UG/L	08/25/97	1.0
NICKEL	40.0	40.0 U	UG/L	08/27/97	1.0
POTASSIUM	2000	2030	UG/L	08/27/97	1.0
SELENIUM	5.00	5.00 U J	UG/L	08/29/97	1.0
SILVER	10.0	10.0 U	UG/L	08/27/97	1.0
SODIUM	500	16300	UG/L	08/27/97	1.0
THALLIUM	10.0	10.0 U	UG/L	09/09/97	1.0
VANADIUM	50.0	50.0 U	UG/L	08/27/97	1.0
ZINC	10.0	46.1 J	UG/L	08/27/97	1.0

Q.T 12/3/97

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/18/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~EQW1~~ 2 Equip Rin

Date Sampled : 08/08/97 **Order #:** 162231 **Sample Matrix:** WATER
Date Received: 08/12/97 **Submission #:** 9708000169 **Analytical Run** 19840

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 1.0			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	~~5.0 U~~ 2 J	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	109	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	100	%

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COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/18/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~EQS1~~ EQS2 DV

Date Sampled : 08/08/97 **Order #:** 162232 **Sample Matrix:** WATER
Date Received: 08/12/97 **Submission #:** 9708000169 **Analytical Run** 19840

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 1.0			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	110	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	101	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/18/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : ~~TB1~~ / TB 2 BV

Date Sampled : 08/08/97 **Order #:** 162233 **Sample Matrix:** WATER
Date Received: 08/12/97 **Submission #:** 9708000169 **Analytical Run** 19840

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 1.0			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	109	%
TOLUENE-D8	(88 - 110 %)	99	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	96	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260 TCL
Reported: 09/18/97

Civil & Environmental Consult.
Project Reference: NORTHEAST ALLOYS AND METALS
Client Sample ID : MW10

Date Sampled : 08/09/97 **Order #:** 162234 **Sample Matrix:** WATER
Date Received: 08/12/97 **Submission #:** 9708000169 **Analytical Run** 19840

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/22/97			
ANALYTICAL DILUTION: 1.0			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	114	%
TOLUENE-D8	(88 - 110 %)	102	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	98	%

APPENDIX F

SLUG TEST CALCULATIONS AND DATA PLOTS

SLUG TEST RESULTS
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
FORMER NORTHEAST ALLOYS METALS SITE
UTICA, NEW YORK

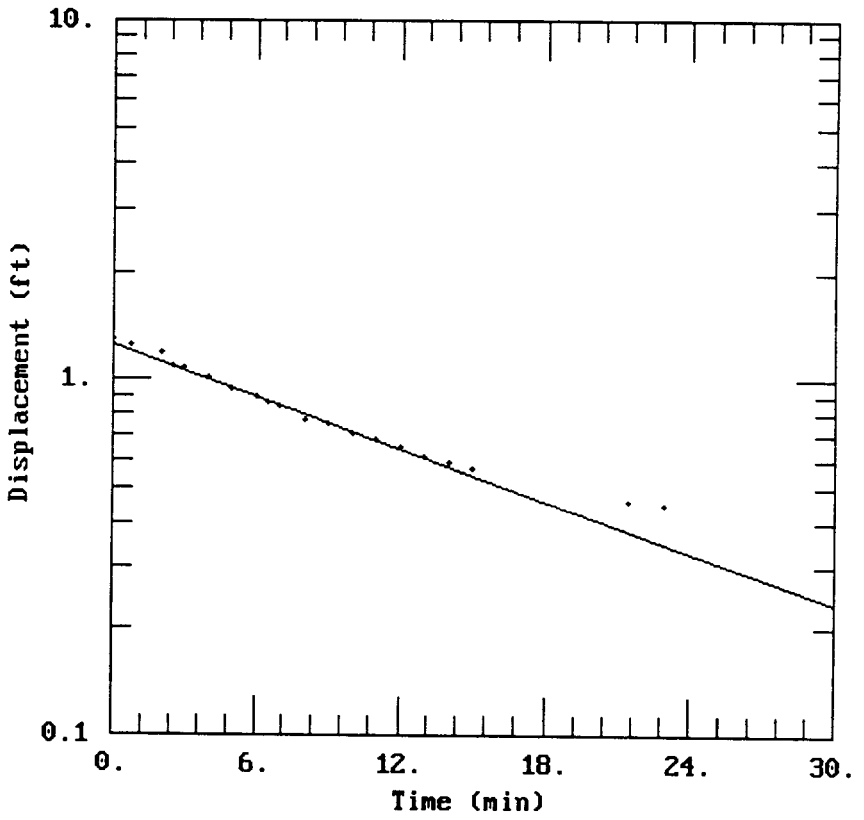
RW - 1		
Time Minutes	Water Level (ft)	Drawdown (ft)
0	3.06	0.00
0.75	4.31	1.25
2	4.25	1.19
2.5	4.15	1.09
3	4.13	1.07
4	4.07	1.01
5	4.00	0.94
6	3.95	0.89
6.5	3.92	0.86
7	3.90	0.84
8.5	3.83	0.77
9	3.81	0.75
10	3.77	0.71
11	3.74	0.68
12	3.71	0.65
13	3.67	0.61
14	3.65	0.59
15	3.63	0.57
21.5	3.52	0.46
23	3.51	0.45
26.5	3.48	0.42
31	3.45	0.39
36	3.42	0.36

RW - 2		
Time Minutes	Water Level (ft)	Drawdown (ft)
0	5.35	0.00
0.5	7.40	2.05
1	7.15	1.80
1.5	6.65	1.30
2	6.42	1.07
2.5	6.25	0.90
3	6.05	0.70
3.5	5.93	0.58
4	5.82	0.47
4.5	5.70	0.35
5	5.65	0.30
5.5	5.59	0.24
6	5.56	0.21
6.5	5.53	0.18
7	5.50	0.15
7.5	5.49	0.14
8	5.46	0.11
8.5	5.45	0.10
9	5.45	0.10

SLUG TESTS CHECKED : MLO 4/9/97

CLIENT: NORTHEAST ALLOYS METALS	COMPANY: CEC
LOCATION: UTICA, NEW YORK	PROJECT: 94502

Utica RW-1



DATA SET:
RW1SLUG
04/04/97

AQUIFER MODEL:
Unconfined ✓
SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 1.3 ft ✓
r_c= 0.25 ft ✓
r_w= 0.42 ft ✓
L = ~~6.94 ft~~ BR
b = 6.94 ft ✓
H = 6.94 ft ✓

PARAMETER ESTIMATES:
K = 0.0005167 ft/min
y0 = 1.255 ft

2.6×10^{-4} cm/sec ✓

AQTESOLV

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A Q T E S O L V   R E S U L T S
Version 2.0

Developed by Glenn M. Duffield
(c) 1993, 1994 Geraghty & Miller, Inc.

04/04/97 08:17:27

==

TEST DESCRIPTION

Data set........... RW1SLUG
Output file........ RW-1
Data set title..... Utica RW-1
Company............ CEC
Project............ 94502
Client............. NORTHEAST ALLOYS METALS
Location........... UTICA, NEW YORK
Obs. well.......... RW - 1

Units of Measurement
   Length.......... ft
   Time............ min

Test Well Data
   Initial displacement in well..... 1.3 ✓ (1.25)
   Radius of well casing............ 0.25✓ Most displacement in 6" casing
   Radius of wellbore............... 0.42✓
   Aquifer saturated thickness...... 6.94✓
   Well screen length............... ~~6.94~~ 9.0 (OK)
   Static height of water in well... 6.94✓
   Gravel pack porosity............. ~~0~~ 0.25
   Effective well casing radius..... 0.25
   Effective wellbore radius........ 0.42
   Log(Re/Rw)....................... 2.058
   Constants A, B and C............. 0.000 , 0.000, 1.550
   No. of observations.............. 19

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM VISUAL CURVE MATCHING

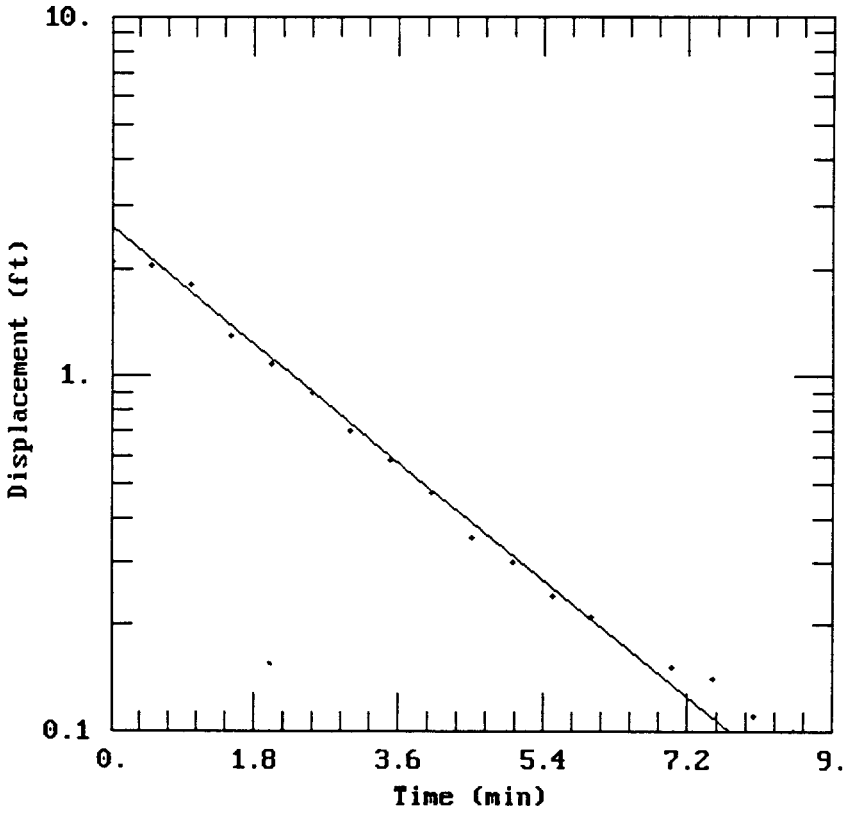
VISUAL MATCH PARAMETER ESTIMATES

Estimate
K = 5.1665E-004 ft/min
y0 = 1.2546E+000 ft

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

CLIENT: NORTHEAST ALLOYS METALS	COMPANY: CEC
LOCATION: UTICA, NEW YORK	PROJECT: 94502

Utica RW-2



DATA SET:
RW2SLUG
04/04/97

AQUIFER MODEL:
Unconfined ✓
SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 2.1 ft ✓
r_c= 0.166 ft ✓
r_w= 0.42 ft ✓
L = 10.65 ft ✓
b = 10.65 ft ✓
H = 10.65 ft ✓

PARAMETER ESTIMATES:
K = 0.001328 ft/min
y0 = 2.616 ft

6.7×10^{-4} cm/s ✓

AQTESOLV

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A Q T E S O L V R E S U L T S
Version 2.0

Developed by Glenn M. Duffield
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TEST DESCRIPTION

Data set........... RW2SLUG
Output file........ RW-2
Data set title..... Utica RW-2
Company............ CEC
Project............ 94502
Client............. NORTHEAST ALLOYS METALS
Location........... UTICA, NEW YORK
Obs. well.......... RW-2

Units of Measurement
 Length.......... ft
 Time............ min

Test Well Data
 Initial displacement in well..... 2.1 ✓
 Radius of well casing............ 0.166 ✓
 Radius of wellbore............... 0.42 ✓
 Aquifer saturated thickness...... 10.65 ✓
 Well screen length............... 10.65 ✓
 Static height of water in well... 10.65 ✓
 Gravel pack porosity............. ~~0~~ 0.25
 Effective well casing radius..... 0.166
 Effective wellbore radius........ 0.42
 Log(Re/Rw)....................... 2.426
 Constants A, B and C............. 0.000 , 0.000, 1.824
 No. of observations.............. 17

==

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

==

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	1.3278E-003 ft/min
y0 =	2.6160E+000 ft

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

Civil & Environmental Consultants, Inc.

PROJECT ADJUSTED PERMEABILITY ASSUMING PROJECT NO. 9450L

FILL IS IMPERMEABLE FOR MW-1, MW-2, AND MW-4 PAGE 1 OF 3

USING CHARTAR SCREEN LENGTH IN FILL ONLY

MADE BY K MUELLER DATE 4-4-97 CHECKED BY VALLI DATE 4-9-97

MW-1

CALCULATED PERMEABILITY $K = 6.9 \times 10^{-5}$ cm/sec $(1.3 \times 10^{-4}$ ft/min)
LENGTH OF INTAKE = 10.83 ft
RADIUS ADJUSTED FOR GRAVEL PACK = .25 ft

$$K = \frac{R^2}{2L\Delta t} \ln\left(\frac{L}{R}\right) \ln \frac{H_1}{H_2}$$

$$K = C_1 \frac{1}{L} \ln \frac{L}{R}$$ where C is a factor dependant on data collected

$$C_{1_{MW-1}} = \frac{1.3 \times 10^{-4} \text{ ft/min}}{\left(\frac{1}{10.83}\right) \ln\left(\frac{10.83}{.25}\right)} = 0.00039$$

FOR CALCULATION OF FILL PERMEABILITY ASSUMING FILL IS IMPERMEABLE
$L = 1.8$ AND $R = 0.25$

$$K_{ADJ} = 0.00039 \frac{1}{1.8} \ln \frac{1.8}{.25}$$

$$K_{ADJ} = 4.3 \times 10^{-4} \text{ ft/min} = 2.1 \times 10^{-4} \text{ cm/sec}$$

Civil & Environmental Consultants, Inc.

PROJECT: ADJUSTED PERMEABILITY ASSUMING TILL IS IMPERMEABLE — PROJECT NO. 94502

MADE BY K. HUEHNEL DATE 4-4-97 CHECKED BY ED VACCI DATE 4-9-97

MW-2 Calculated Permeability $K = 1.2 \times 10^{-4}$ cm/sec $= 2.4 \times 10^{-4}$ ft/min

LENGTH OF INTAKE = 11.82 ft

RADIUS ADJUSTED FOR GRAVEL PACK = .25 ft

$$K = \frac{R^2}{2L\Delta t} \ln\left(\frac{L}{R}\right) \ln\frac{H}{H_2}$$

$$K = C_2 \frac{1}{L} \ln\frac{L}{R}$$

$$C_{2_{MW_2}} = \frac{2.4 \times 10^{-4} \text{ ft/min}}{\left(\frac{1}{11.82}\right) \ln\left(\frac{11.82}{.25}\right)} = \frac{2.4 \times 10^{-4} \text{ ft/min}}{(0.085)(3.85)} = 0.000736$$

.326

For Calculation of FILL Permeability Assume TILL IS IMPERMEABLE

$L = 2.43$ AND $R = 0.25$

$$K_{ADJ} = 0.000736 \frac{1}{2.43} \ln\frac{2.43}{.25}$$

$$K_{ADJ} = 6.88 \times 10^{-4} \text{ ft/min} = 3.49 \times 10^{-4} \text{ cm/sec}$$

Civil & Environmental Consultants, Inc.

PROJECT ADJUSTMENT - (CONNECTION) FOR PROJECT NO. 945.12

PERMEABILITY CALCULATION FOR PAGE 3 OF 3

MW-4 USING THORTHEIC SCREEN LENGTH IN FILL ONLY

MADE BY K MUDNAR DATE 4-4-97 CHECKED BY VACCI DATE 4-9-97

MW-4 Calculated Permeability $K = 1.5 \times 10^{-4}$ cm/sec $(2.95 \times 10^{-4}$ ft/min)

LENGTH OF SCREEN = 12.81 ft

Radius Horizontal for Gravel Pack = 0.25 ft

$$K = \frac{R^2}{2LC_4} \ln\left(\frac{L}{R}\right) \ln\frac{H_1}{H_2}$$

$$K = C_4 \frac{1}{L} \ln\frac{L}{R}$$

$$C_{4\,MW4} = \frac{2.95 \times 10^{-4}\ \text{ft/min}}{\left(\frac{1}{12.81}\right) \ln\left(\frac{12.81}{.25}\right) .307} = \frac{2.95 \times 10^{-4}\ \text{ft/min}}{(.0078)(3.936)} = .00095$$

For Calculation of FILL PERMEABILITY ASSUMING TILL IS IMPERMEABLE

$L = 6.25$ AND $K = 0.25$

$$K_{ACS} = .00095 \frac{1}{6.25} \ln\frac{6.25}{.25}$$

$$K_{ACS} = 4.89 \times 10^{-4}\ \text{ft/min} = 2.5 \times 10^{-4}\ \text{cm/sec}$$

APPENDIX G

GROUNDWATER CALCULATIONS

G.1 FLOW VELOCITY
G.2 RETARDATION
G.3 DILUTION FACTOR
G.4 CAPTURE ZONE ANALYSIS

G.1 FLOW VELOCITY

GROUNDWATER VELOCITY
REMEDIAL INVESTIGATION / FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

$V_{average} = K I / Ne$

Where K = Hydraulic Conductivity
I = Horizontal Gradient
N = porosity

MONITORING WELL	HYDRAULIC CONDUCTIVITY (cm/s)	(ft/day)
MW - 1*	2E-04	6E-01
MW - 2*	3E-04	1E+00
MW - 3	2E-04	6E-01
MW - 4*	3E-04	7E-01
RW - 1	3E-04	7E-01
RW - 2	7E-04	2E+00
K_{Mean}	3E-04	9E-01
K_{Median}	3E-04	7E-01

FLOW LINE	LENGTH (ft)	WATER LEVEL CHANGE (ft)	HORZ. GRAD.
A	80.0	2.0	0.025
B	77.0	2.0	0.026
C	86.0	2.0	0.023
I_{Mean}			0.025

Ne = 0.2 for silt and fine sand soils

$V_{average} = K I / Ne$
$= (0.9 \text{ ft/day})(0.025)/0.2$
$= 0.1 \text{ ft/day}$

Note: * Adjusted hydraulic conductivity for fill

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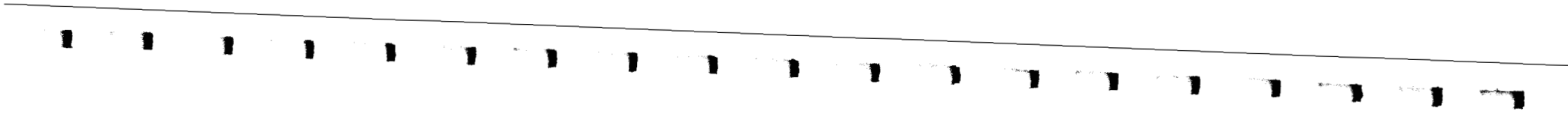
G.2 RETARDATION



EFFECTS OF RETARDATION ON MOBILIITY OF VOCS IN GROUNDWATER
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NORTHEAST ALLOYS AND METALS SITE
UTICA, NEW YORK

Chemical of Concern (COC)	Koc (1) (ml/g)	Kd (2) (ml/g)	Rf (3)	V' (4) (ft/day)	V' (ft/year)
1,1-Dichloroethene	65	1.30	11.1	0.01	3
1,1-Dichloroethane	53.4	1.07	9.3	0.01	4
1,2-Dichloroethene (Total)	35.5	0.71	6.5	0.02	6
1,1,1-Trichloroethane	135	2.70	21.9	0.00	2
Trichloroethene	94.3	1.89	15.6	0.01	2
Vinyl Chloride	18.6	0.37	3.9	0.03	9

Notes:

1. Koc values from Soil Screening Guidance: Technical Background Document, USEPA, May 1996.
2. Distribution Coefficient Kd is calcualted as Koc * fraction organic carbon (FOC). Average FOC from sampling results was 0.02.
3. Retardation Factor calculated based on Rf=1+(Kd *p/n) where p = soil density (assumed 1.55 g/cc) and n=porosity (assumed 20%).
4. Migration velocity in groundwater (V') = V/Rf. V is groundwater flow velocity estimated from site data (0.1 ft/day).

G.3 - DILUTION FACTOR

Civil & Environmental Consultants, Inc.

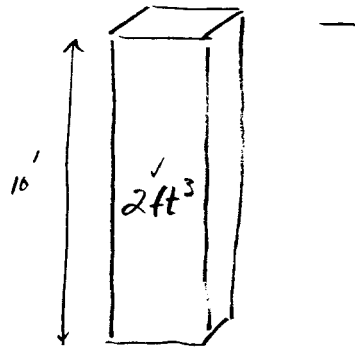
PROJECT APPROXIMATION OF DILUTION FACTOR FOR CONTAMINATION MIGRATING TO PROPERTY LINE 120' FROM SOURCE AREA — PROJECT NO. 94502

PAGE 1 OF 1

MADE BY VALLI DATE 11-2-97 CHECKED BY MAK DATE 11/14/97

1. ASSUME MOVING A 1'X 1' X 10' COLUMN OF SATURATED AQUIFER AT A VELOCITY OF 40 FEET PER YEAR.

2. ASSUME 15% OF AVERAGE ANNUAL (30 INCHES/YEAR) INFILTRATES THE GROUND RESULTING IN 4.5" YEAR OR 0.375 FT³ YEAR



SATURATED SOIL COLUMN WITH 20% POROSITY

3. AT A VELOCITY OF 40'/YEAR, THE COLUMN REACHES THE PROPERTY LINE IN 3 YEARS (DISTANCE TO PROPERTY LINE IS 120' FROM SOURCE AREA)

4. $I = .375\ ft^3 \times 3\ yrs = 1.12\ FT^3$

TOTAL WATER IN COLUMN = $I + 2\ Ft^3 = 3.12\ FT^3$

% DILUTION = $\frac{I}{\text{TOTAL IN COLUMN}} = \frac{1.12}{3.12} = 0.36$ OR 36%

G.4 - CAPTURE ZONE ANALYSIS

Civil & Environmental Consultants, Inc.

PROJECT R/FS NORTHEAST ALLOYS & METALS PROJECT NO. 94502

CAPTURE ZONE ESTIMATES FOR PAGE 1 OF 6

PUMPING AT RW-1 AND RW-2

MADE BY VALLI DATE 1-27-98 CHECKED BY MAK DATE 2/12/98

PURPOSE:
RECALCULATION OF CAPTURE ZONE USING REASONABLE SUSTAINABLE PUMPING RATES

REFERENCES
TODD 1980
JAVANDEL TSANG 1986
CEC 1993

DATA
FOR RW-2 $K = 7 \times 10^{-4}$ cm/sec = .0014 ft/min ✓
FOR RW-2 $T = K \times$ Thickness = 0.017 ft²/min

$\frac{dh}{dl}$ = hydr gradient = .025 ft

FOR RW-2 Q anticipated = .4 to .6 gpm = .05 to .08 ft³/min ✓

FOR PUMPING RATE = 0.05 ft³/min

$$X_L = \frac{Q}{2\pi T \frac{dh}{dl}} = \frac{(.05\ ft^3/min)}{2(3.14)(.017\ ft^2/min)(.025)}$$

$$= \frac{.05}{.0027} = 19\ ft$$ ✓

$$2Y_L = \frac{Q}{T \frac{dh}{dl}} = \frac{.05\ ft^3/min}{(.017\ ft^2/min)(.025)} = 120\ ft$$ ✓

For pumping rate = 0.08 ft³/min

$$X_L = \frac{.08\ ft^3/min}{2\,(3.14)(.017\ ft^3/min)(.025)} = \frac{.08}{.0027} = 30\ ft \checkmark$$

$$2y_L = \frac{.08\ ft^3/min}{(.017\ ft^2/min)(.025)} = 188\ ft \checkmark$$

For RW-1

Q_{EST} = .1 to .2 gpm or .01 ✓ to .03 ✓ ft³/min

K = 3×10^{-4} cm/sec = 6×10^{-4} ft/min ✓

T = 6×10^{-3} ft²/min ✓

For pump rate of .01 ft³/min

$$X_L = \frac{.01\ ft^3/min}{2\,(3.14)(6 \times 10^{-3}\ ft^2/min)(.025)} = \frac{.01}{.0009} = 11\ ft \checkmark$$

$$2y_L = \frac{(.01\ ft^3/min)}{(6 \times 10^{-3}\ ft^2/min)(.025)} = 66\ ft \checkmark$$

For pump rate of .03 ft³/min ✓

$$X_L = \frac{.03}{.0009} = 33\ ft$$

$$2y_L = \frac{.03}{.00015} = 200\ ft \checkmark$$

Item - 2

Estimate of drawdown sensitivity to pumping rates.

Steady-State Drawdown
Thiem Equation

Site:	*project description*
Project No.:	*project i.d.*
Pumping Well:	*well #*
Analysis by:	*your name*
27-Jan-98	*DESIGN mode*

Unconfined
Solution

INPUT DATA:

Pumping Rates for Evaluation.....	*0.2*gpm
	*0.4*gpm
	*0.6*gpm
	*0.8*gpm
	*1*gpm
Radius of Influence.....	*100*ft
Radius of Pumping Well.....	*2*in
Maximum Distance for Evaluation.....	*500*ft
K.....	*7.0E-04*cm/sec
Aquifer Thickness.....	*12*ft
Head above Top of Aquifer.....	*0*ft

	RATE	DRAWDOWNS AT DISTANCES (ft)				
	(gpm)	0.17	62.6	125.1	250.1	500.0
1	0.2	1.78	0.12	0.00	0.00	0.00
2	0.4	3.94	0.24	0.00	0.00	0.00
3	0.6	6.95	0.37	0.00	0.00	0.00
4	0.8	Dry	0.49	0.00	0.00	0.00
5	1	Dry	0.62	0.00	0.00	0.00

Pumping Well

NOTE: Values outside of a DRY point are inaccurate.

Steady-State Drawdown
Thiem Equation

Site:	*project description*
Project No.:	*project i.d.*
Pumping Well:	*well #*
Analysis by:	*your name*
27-Jan-98	*DESIGN mode*

Unconfined
Solution

INPUT DATA:

Pumping Rates for Evaluation.....	*0.2*gpm
	*0.4*gpm
	*0.6*gpm
	*0.8*gpm
	*1*gpm
Radius of Influence.....	*1000*ft
Radius of Pumping Well.....	*2*in
Maximum Distance for Evaluation.....	*500*ft
K.....	*7.0E-04*cm/sec
Aquifer Thickness.....	*12*ft
Head above Top of Aquifer.....	*0*ft

	RATE	DRAWDOWNS AT DISTANCES (ft)				
	(gpm)	0.17	62.6	125.1	250.1	500.0
1	0.2	2.50	0.74	0.55	0.36	0.18
2	0.4	5.95	1.52	1.12	0.74	0.36
3	0.6	Dry	2.37	1.73	1.12	0.55
4	0.8	Dry	3.31	2.37	1.52	0.74
5	1	Dry	4.35	3.06	1.94	0.93

Pumping Well

NOTE: Values outside of a DRY point are inaccurate.

Pg 4 of 6

ESTIMATION OF REASONABLE PUMP RATE FOR RW-1

Steady-State Drawdown
Thiem Equation

Site:	*project description*
Project No.:	*project i.d.*
Pumping Well:	*well #*
Analysis by:	*your name*
27-Jan-98	*DESIGN mode*

Unconfined
Solution

INPUT DATA:

Pumping Rates for Evaluation.....	*0.1*gpm
	*0.2*gpm
	*0.3*gpm
	*0.4*gpm
	*0.5*gpm
Radius of Influence.....	*50*ft
Radius of Pumping Well.....	*2*in
Maximum Distance for Evaluation.....	*500*ft
K.....	*3.0E-04*cm/sec
Aquifer Thickness.....	*10*ft
Head above Top of Aquifer.....	*0*ft

	RATE	DRAWDOWNS AT DISTANCES (ft)				
	(gpm)	0.17	62.6	125.1	250.1	500.0
1	0.1	2.32	0.00	0.00	0.00	0.00
2	0.2	5.78	0.00	0.00	0.00	0.00
3	0.3	Dry	0.00	0.00	0.00	0.00
4	0.4	Dry	0.00	0.00	0.00	0.00
5	0.5	Dry	0.00	0.00	0.00	0.00

Pumping Well

NOTE: Values outside of a DRY point are inaccurate.

Steady-State Drawdown
Thiem Equation

Site:	*project description*
Project No.:	*project i.d.*
Pumping Well:	*well #*
Analysis by:	*your name*
27-Jan-98	*DESIGN mode*

Unconfined
Solution

INPUT DATA:

Pumping Rates for Evaluation.....	*0.1*gpm
	*0.2*gpm
	*0.3*gpm
	*0.4*gpm
	*0.5*gpm
Radius of Influence.....	*500*ft
Radius of Pumping Well.....	*2*in
Maximum Distance for Evaluation.....	*500*ft
K.....	*3.0E-04*cm/sec
Aquifer Thickness.....	*10*ft
Head above Top of Aquifer.....	*0*ft

	RATE (gpm)	DRAWDOWNS AT DISTANCES (ft) 0.17	62.6	125.1	250.1	500.0
1	0.1	3.49	0.78	0.51	0.25	0.00
2	0.2	Dry	1.63	1.05	0.51	0.00
3	0.3	Dry	2.58	1.63	0.78	0.00
4	0.4	Dry	3.66	2.25	1.05	0.00
5	0.5	Dry	4.98	2.92	1.34	0.00

Pumping Well

NOTE: Values outside of a DRY point are inaccurate.

APPENDIX H

RESULTS OF SCREENING LEVEL CONTAMINANT TRANSPORT MODELING

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site: *Northest Alloy*
Project No.: *95402*
Analysis by: *bv*
Description: *RI/FS*
30-May-97

INPUT DATA:

SOURCE DESCRIPTION

Compound..... *Trichloroethylene*
Source Concentration..... *2,400.0* ug/l
Octanol/Water Partitioning Coefficient..... *1.95E+02*

AQUIFER DESCRIPTION

Fraction Organic Carbon..... *2.00%*
Bulk Density..... *130* lb/ft³
Porosity..... *20%*
Source Width..... *20* ft
Flow Velocity..... *1.00E-01* ft/day
Penetration Depth..... *10* ft
Transverse Dispersivity..... *1.2* ft
Vertical Dispersivity..... *0.5* ft
Longitudinal Dispersivity..... *12* ft

PROBLEM SETUP

Maximum time for calculations..... *100000* days
Maximum distance for calculations..... *120* ft

CALCULATED VALUES:

Distribution Coefficient (Kd)..... 2.5E+00 ml/g
Retardation Coefficient (Rd)..... 26.6
Longitudinal Dispersion (Dx)..... 1.200 ft²/day
Transverse Dispersion(Dy)..... 0.120 ft²/day
Vertical Dispersion (Dz)..... 0.050 ft²/day
Retarded Flow Velocity..... 3.76E-03 ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	329.4	0.0	0.0	0.0	0.0
6,667	18.26	729.0	29.5	12.0	6.2	3.5
13,333	36.53	770.5	33.2	14.7	8.5	5.4
20,000	54.79	801.4	35.5	16.2	9.7	6.5
26,667	73.06	826.8	37.2	17.3	10.6	7.2
33,333	91.32	848.7	38.5	18.2	11.3	7.8
40,000	109.59	868.0	39.7	18.9	11.8	8.3
46,667	127.85	885.5	40.8	19.5	12.3	8.7
53,333	146.12	901.4	41.7	20.0	12.8	9.0
60,000	164.38	916.0	42.5	20.5	13.1	9.3
66,667	182.65	929.6	43.3	21.0	13.5	9.6
73,333	200.91	942.3	44.0	21.4	13.8	9.9
80,000	219.18	954.1	44.6	21.8	14.1	10.2
86,667	237.44	965.2	45.2	22.1	14.3	10.4
93,333	255.71	975.8	45.8	22.4	14.6	10.6
100,000	273.97	985.7	46.4	22.7	14.8	10.8

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site:	*Northest Alloy*
Project No.:	*95402*
Analysis by:	*bv*
Description:	*RI/FS*
30-May-97	

INPUT DATA:

SOURCE DESCRIPTION

Compound	*Vinyl Chloride*
Source Concentration	*160.0* ug/l
Octanol/Water Partitioning Coefficient	*3.98E+00*

AQUIFER DESCRIPTION

Fraction Organic Carbon	*2.00%*
Bulk Density	*130* lb/ft³
Porosity	*20%*
Source Width	*20* ft
Flow Velocity	*1.00E-01* ft/day
Penetration Depth	*10* ft
Transverse Dispersivity	*1.2* ft
Vertical Dispersivity	*0.5* ft
Longitudinal Dispersivity	*12* ft

PROBLEM SETUP

Maximum time for calculations	*100000* days
Maximum distance for calculations	*120* ft

CALCULATED VALUES:

Distribution Coefficient (Kd)	5.0E-02 ml/g
Retardation Coefficient (Rd)	1.5
Longitudinal Dispersion (Dx)	1.200 ft²/day
Transverse Dispersion(Dy)	0.120 ft²/day
Vertical Dispersion (Dz)	0.050 ft²/day
Retarded Flow Velocity	6.57E-02 ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	43.7	0.0	0.0	0.0	0.0
6,667	18.26	160.0	57.1	31.9	22.1	16.9
13,333	36.53	160.0	57.2	32.0	22.2	16.9
20,000	54.79	160.0	57.2	32.0	22.2	16.9
26,667	73.06	160.0	57.2	32.0	22.2	16.9
33,333	91.32	160.0	57.2	32.0	22.2	16.9
40,000	109.59	160.0	57.2	32.0	22.2	16.9
46,667	127.85	160.0	57.2	32.0	22.2	16.9
53,333	146.12	160.0	57.2	32.0	22.2	16.9
60,000	164.38	160.0	57.2	32.0	22.2	16.9
66,667	182.65	160.0	57.2	32.0	22.2	16.9
73,333	200.91	160.0	57.2	32.0	22.2	16.9
80,000	219.18	160.0	57.2	32.0	22.2	16.9
86,667	237.44	160.0	57.2	32.0	22.2	16.9
93,333	255.71	160.0	57.2	32.0	22.2	16.9
100,000	273.97	160.0	57.2	32.0	22.2	16.9

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site:	*Northest Alloy*
Project No.:	*95402*
Analysis by:	*bv*
Description:	*RI/FS*
30-May-97	

INPUT DATA:

SOURCE DESCRIPTION

Compound	*1,1-Dichloroethane*
Source Concentration	*450.0* ug/l
Octanol/Water Partitioning Coefficient	*6.17E+01*

AQUIFER DESCRIPTION

Fraction Organic Carbon	*2.00%*
Bulk Density	*130* lb/ft³
Porosity	*20%*
Source Width	*20* ft
Flow Velocity	*1.00E-01* ft/day
Penetration Depth	*10* ft
Transverse Dispersivity	*1.2* ft
Vertical Dispersivity	*0.5* ft
Longitudinal Dispersivity	*12* ft

PROBLEM SETUP

Maximum time for calculations	*100000* days
Maximum distance for calculations	*120* ft

CALCULATED VALUES:

Distribution Coefficient (Kd)	7.8E-01 ml/g
Retardation Coefficient (Rd)	9.0
Longitudinal Dispersion (Dx)	1.200 ft²/day
Transverse Dispersion(Dy)	0.120 ft²/day
Vertical Dispersion (Dz)	0.050 ft²/day
Retarded Flow Velocity	1.10E-02 ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	103.2	0.0	0.0	0.0	0.0
6,667	18.26	282.6	20.7	9.0	5.0	3.0
13,333	36.53	312.6	24.2	11.4	7.0	4.7
20,000	54.79	331.9	26.3	12.8	8.1	5.7
26,667	73.06	345.7	27.7	13.7	8.8	6.3
33,333	91.32	356.0	28.8	14.3	9.3	6.8
40,000	109.59	363.8	29.6	14.8	9.7	7.1
46,667	127.85	369.9	30.2	15.2	10.0	7.4
53,333	146.12	374.7	30.6	15.5	10.2	7.6
60,000	164.38	378.5	31.0	15.7	10.4	7.7
66,667	182.65	381.6	31.3	15.9	10.6	7.9
73,333	200.91	384.0	31.6	16.0	10.7	8.0
80,000	219.18	386.0	31.7	16.1	10.8	8.1
86,667	237.44	387.6	31.9	16.2	10.8	8.1
93,333	255.71	388.9	32.0	16.3	10.9	8.2
100,000	273.97	390.0	32.1	16.3	10.9	8.2

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site: *Northest Alloy*
Project No.: *95402*
Analysis by: *bv*
Description: *RI/FS*
30-May-97

INPUT DATA:

SOURCE DESCRIPTION

Compound..... *cis 1,2 Dichloroethene*
Source Concentration..... *3,200.0* ug/l
Octanol/Water Partitioning Coefficient..... *7.24E+01*

AQUIFER DESCRIPTION

Fraction Organic Carbon..... *2.00%*
Bulk Density..... *130* lb/ft³
Porosity..... *20%*
Source Width..... *20* ft
Flow Velocity..... *1.00E-01* ft/day
Penetration Depth..... *10* ft
Transverse Dispersivity..... *1.2* ft
Vertical Dispersivity..... *0.5* ft
Longitudinal Dispersivity..... *12* ft

PROBLEM SETUP

Maximum time for calculations..... *100000* days
Maximum distance for calculations..... *120* ft

CALCULATED VALUES:

Distribution Coefficient (Kd)..... 9.1E-01 ml/g
Retardation Coefficient (Rd)..... 10.5
Longitudinal Dispersion (Dx)..... 1.200 ft²/day
Transverse Dispersion(Dy)..... 0.120 ft²/day
Vertical Dispersion (Dz)..... 0.050 ft²/day
Retarded Flow Velocity..... 9.53E-03 ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	701.7	0.0	0.0	0.0	0.0
6,667	18.26	1,851.4	121.8	52.4	28.7	16.9
13,333	36.53	2,039.5	142.4	66.3	40.0	26.7
20,000	54.79	2,166.0	154.8	74.3	46.5	32.4
26,667	73.06	2,259.8	163.7	79.8	51.0	36.3
33,333	91.32	2,332.7	170.4	84.0	54.3	39.2
40,000	109.59	2,390.8	175.7	87.2	56.8	41.4
46,667	127.85	2,438.0	179.9	89.7	58.8	43.1
53,333	146.12	2,476.7	183.4	91.8	60.4	44.5
60,000	164.38	2,508.7	186.2	93.5	61.8	45.7
66,667	182.65	2,535.5	188.6	94.9	62.9	46.6
73,333	200.91	2,557.9	190.5	96.1	63.8	47.4
80,000	219.18	2,576.9	192.2	97.0	64.5	48.1
86,667	237.44	2,592.9	193.6	97.9	65.1	48.6
93,333	255.71	2,606.4	194.7	98.6	65.7	49.1
100,000	273.97	2,617.9	195.7	99.1	66.1	49.5

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site:	*Northest Alloy*
Project No.:	*95402*
Analysis by:	*bv*
Description:	*RI/FS*
30-May-97	

INPUT DATA:

SOURCE DESCRIPTION

Compound	*cis 1,2 Dichloroethene*
Source Concentration	*3,200.0* ug/l
Octanol/Water Partitioning Coefficient	*7.24E+01*

AQUIFER DESCRIPTION

Fraction Organic Carbon	*2.00%*
Bulk Density	*130* lb/ft³
Porosity	*20%*
Source Width	*20* ft
Flow Velocity	*1.00E-01* ft/day
Penetration Depth	*10* ft
Transverse Dispersivity	*1.2* ft
Vertical Dispersivity	*0.5* ft
Longitudinal Dispersivity	*12* ft

PROBLEM SETUP

Maximum time for calculations	*365* days
Maximum distance for calculations	*120* ft

CALCULATED VALUES:

Distribution Coefficient (Kd)	9.1E-01 ml/g
Retardation Coefficient (Rd)	10.5
Longitudinal Dispersion (Dx)	1.200 ft²/day
Transverse Dispersion(Dy)	0.120 ft²/day
Vertical Dispersion (Dz)	0.050 ft²/day
Retarded Flow Velocity	9.53E-03 ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	701.7	0.0	0.0	0.0	0.0
24	0.07	1,235.2	0.0	0.0	0.0	0.0
49	0.13	1,289.6	0.5	0.0	0.0	0.0
73	0.20	1,318.1	2.5	0.0	0.0	0.0
97	0.27	1,337.7	5.6	0.0	0.0	0.0
122	0.33	1,352.7	9.0	0.0	0.0	0.0
146	0.40	1,365.1	12.6	0.1	0.0	0.0
170	0.47	1,375.7	16.1	0.1	0.0	0.0
195	0.53	1,385.1	19.4	0.3	0.0	0.0
219	0.60	1,393.5	22.5	0.5	0.0	0.0
243	0.67	1,401.2	25.4	0.8	0.0	0.0
268	0.73	1,408.2	28.1	1.1	0.0	0.0
292	0.80	1,414.8	30.6	1.5	0.0	0.0
316	0.87	1,421.0	33.0	1.9	0.0	0.0
341	0.93	1,426.8	35.2	2.3	0.1	0.0
365	1.00	1,432.3	37.3	2.8	0.1	0.0

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site:	*Northest Alloy*
Project No.:	*95402*
Analysis by:	*bv*
Description:	*RI/FS*
30-May-97	

INPUT DATA:

SOURCE DESCRIPTION

Compound	*1,1,1-Trichloroethane*
Source Concentration	*300.0* ug/l
Octanol/Water Partitioning Coefficient	*1.48E+02*

AQUIFER DESCRIPTION

Fraction Organic Carbon	*2.00%*
Bulk Density	*130* lb/ft³
Porosity	*20%*
Source Width	*20* ft
Flow Velocity	*1.00E-01* ft/day
Penetration Depth	*10* ft
Transverse Dispersivity	*1.2* ft
Vertical Dispersivity	*0.5* ft
Longitudinal Dispersivity	*12* ft

PROBLEM SETUP

Maximum time for calculations	*100000* days
Maximum distance for calculations	*120* ft

CALCULATED VALUES:

Distribution Coefficient (Kd)	1.9E+00 ml/g
Retardation Coefficient (Rd)	20.4
Longitudinal Dispersion (Dx)	1.200 ft²/day
Transverse Dispersion(Dy)	0.120 ft²/day
Vertical Dispersion (Dz)	0.050 ft²/day
Retarded Flow Velocity	4.90E-03 ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	48.5	0.0	0.0	0.0	0.0
6,667	18.26	111.5	5.0	2.1	1.1	0.6
13,333	36.53	119.3	5.7	2.6	1.5	1.0
20,000	54.79	125.0	6.2	2.8	1.7	1.2
26,667	73.06	129.6	6.5	3.0	1.9	1.3
33,333	91.32	133.5	6.7	3.2	2.0	1.4
40,000	109.59	137.0	7.0	3.3	2.1	1.5
46,667	127.85	140.0	7.2	3.5	2.2	1.6
53,333	146.12	142.8	7.3	3.6	2.3	1.6
60,000	164.38	145.2	7.5	3.6	2.4	1.7
66,667	182.65	147.5	7.6	3.7	2.4	1.7
73,333	200.91	149.6	7.8	3.8	2.5	1.8
80,000	219.18	151.6	7.9	3.9	2.5	1.8
86,667	237.44	153.4	8.0	3.9	2.6	1.9
93,333	255.71	155.0	8.1	4.0	2.6	1.9
100,000	273.97	156.6	8.2	4.0	2.6	1.9

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site:	*Northest Alloy*
Project No.:	*95402*
Analysis by:	*bv*
Description:	*RI/FS*
30-May-97	

INPUT DATA:

SOURCE DESCRIPTION

Compound	*1,1-Dichloroethylene*
Source Concentration	*33.0* ug/l
Octanol/Water Partitioning Coefficient	*3.02E+01*

AQUIFER DESCRIPTION

Fraction Organic Carbon	*2.00%*
Bulk Density	*130* lb/ft³
Porosity	*20%*
Source Width	*20* ft
Flow Velocity	*1.00E-01* ft/day
Penetration Depth	*10* ft
Transverse Dispersivity	*1.2* ft
Vertical Dispersivity	*0.5* ft
Longitudinal Dispersivity	*12* ft

PROBLEM SETUP

Maximum time for calculations	*100000* days
Maximum distance for calculations	*120* ft

CALCULATED VALUES:

Distribution Coefficient (Kd)	3.8E-01 ml/g
Retardation Coefficient (Rd)	5.0
Longitudinal Dispersion (Dx)	1.200 ft²/day
Transverse Dispersion(Dy)	0.120 ft²/day
Vertical Dispersion (Dz)	0.050 ft²/day
Retarded Flow Velocity	2.02E-02 ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	8.5	0.0	0.0	0.0	0.0
6,667	18.26	27.5	3.4	1.6	0.9	0.6
13,333	36.53	30.0	3.8	1.9	1.2	0.9
20,000	54.79	31.1	4.0	2.1	1.4	1.0
26,667	73.06	31.6	4.1	2.1	1.4	1.1
33,333	91.32	31.9	4.2	2.2	1.5	1.1
40,000	109.59	32.0	4.2	2.2	1.5	1.1
46,667	127.85	32.1	4.2	2.2	1.5	1.1
53,333	146.12	32.1	4.2	2.2	1.5	1.1
60,000	164.38	32.1	4.2	2.2	1.5	1.1
66,667	182.65	32.1	4.2	2.2	1.5	1.1
73,333	200.91	32.2	4.2	2.2	1.5	1.1
80,000	219.18	32.2	4.2	2.2	1.5	1.1
86,667	237.44	32.2	4.2	2.2	1.5	1.1
93,333	255.71	32.2	4.2	2.2	1.5	1.1
100,000	273.97	32.2	4.2	2.2	1.5	1.1

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site: *Northest Alloy*
Project No.: *95402*
Analysis by: *bv*
Description: *RI/FS*
30-May-97

INPUT DATA:

SOURCE DESCRIPTION

Compound..... *Vinyl Chloride*
Source Concentration..... *160.0*ug/l
Octanol/Water Partitioning Coefficient..... *3.98E+00*

AQUIFER DESCRIPTION

Fraction Organic Carbon..... *2.00%*
Bulk Density..... *130*lb/ft³
Porosity..... *20%*
Source Width..... *20*ft
Flow Velocity..... *1.00E-01*ft/day
Penetration Depth..... *10*ft
Transverse Dispersivity..... *1.2*ft
Vertical Dispersivity..... *0.5*ft
Longitudinal Dispersivity..... *12*ft

PROBLEM SETUP

Maximum time for calculations..... *100000*days
Maximum distance for calculations..... *120*ft

CALCULATED VALUES:

Distribution Coefficient (Kd)..... 5.0E-02ml/g
Retardation Coefficient (Rd)..... 1.5
Longitudinal Dispersion (Dx)..... 1.200ft²/day
Transverse Dispersion(Dy)..... 0.120ft²/day
Vertical Dispersion (Dz)..... 0.050ft²/day
Retarded Flow Velocity..... 6.57E-02ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	43.7	0.0	0.0	0.0	0.0
6,667	18.26	160.0	57.1	31.9	22.1	16.9
13,333	36.53	160.0	57.2	32.0	22.2	16.9
20,000	54.79	160.0	57.2	32.0	22.2	16.9
26,667	73.06	160.0	57.2	32.0	22.2	16.9
33,333	91.32	160.0	57.2	32.0	22.2	16.9
40,000	109.59	160.0	57.2	32.0	22.2	16.9
46,667	127.85	160.0	57.2	32.0	22.2	16.9
53,333	146.12	160.0	57.2	32.0	22.2	16.9
60,000	164.38	160.0	57.2	32.0	22.2	16.9
66,667	182.65	160.0	57.2	32.0	22.2	16.9
73,333	200.91	160.0	57.2	32.0	22.2	16.9
80,000	219.18	160.0	57.2	32.0	22.2	16.9
86,667	237.44	160.0	57.2	32.0	22.2	16.9
93,333	255.71	160.0	57.2	32.0	22.2	16.9
100,000	273.97	160.0	57.2	32.0	22.2	16.9

Contaminant-Transport Evaluation
Advective-Dispersive Transport with Retardation

Site:	*Northest Alloy*
Project No.:	*95402*
Analysis by:	*bv*
Description:	*RI/FS*
30-May-97	

INPUT DATA:

SOURCE DESCRIPTION

Compound	*Vinyl Chloride*
Source Concentration	*160.0* ug/l
Octanol/Water Partitioning Coefficient	*3.98E+00*

AQUIFER DESCRIPTION

Fraction Organic Carbon	*2.00%*
Bulk Density	*130* lb/ft³
Porosity	*20%*
Source Width	*20* ft
Flow Velocity	*1.00E-01* ft/day
Penetration Depth	*10* ft
Transverse Dispersivity	*1.2* ft
Vertical Dispersivity	*0.5* ft
Longitudinal Dispersivity	*12* ft

PROBLEM SETUP

Maximum time for calculations	*730* days
Maximum distance for calculations	*120* ft

CALCULATED VALUES:

Distribution Coefficient (Kd)	5.0E-02 ml/g
Retardation Coefficient (Rd)	1.5
Longitudinal Dispersion (Dx)	1.200 ft²/day
Transverse Dispersion(Dy)	0.120 ft²/day
Vertical Dispersion (Dz)	0.050 ft²/day
Retarded Flow Velocity	6.57E-02 ft/day

TIME (days)	TIME (years)	CONCENTRATION (ug/l) AT DISTANCE(ft) 1	30	60	90	120
1	0.00	43.7	0.0	0.0	0.0	0.0
49	0.13	92.9	0.3	0.0	0.0	0.0
97	0.27	102.1	3.5	0.0	0.0	0.0
146	0.40	108.3	7.9	0.1	0.0	0.0
195	0.53	113.2	12.2	0.4	0.0	0.0
243	0.67	117.2	16.1	1.1	0.0	0.0
292	0.80	120.6	19.5	1.9	0.1	0.0
341	0.93	123.6	22.6	3.0	0.2	0.0
389	1.07	126.3	25.3	4.2	0.4	0.0
438	1.20	128.7	27.7	5.4	0.6	0.0
487	1.33	130.8	29.9	6.6	1.0	0.1
535	1.47	132.8	31.9	7.8	1.4	0.1
584	1.60	134.6	33.6	9.0	1.9	0.2
633	1.73	136.2	35.2	10.2	2.4	0.4
681	1.87	137.7	36.7	11.3	2.9	0.5
730	2.00	139.1	38.1	12.4	3.5	0.7