COPY

EVALUATION OF ENVIRONMENTAL SUBSURFACE CONDITIONS THE GLEASON WORKS 1000 UNIVERSITY AVENUE ROCHESTER, NEW YORK

Prepared for:
The Gleason Works
1000 University Avenue
Rochester, New York

Prepared by:
Leader Environmental, Inc.
640 Kreag Road - Suite 300
Pittsford, New York

February 2000

LEADER

EVALUATION OF ENVIRONMENTAL SUBSURFACE CONDITIONS THE GLEASON WORKS 1000 UNIVERSITY AVENUE ROCHESTER, NEW YORK

Prepared for:
The Gleason Works
1000 University Avenue
Rochester, New York

Prepared by:
Leader Environmental, Inc.
640 Kreag Road - Suite 300
Pittsford, New York

February 2000

TABLE OF CONTENTS

1. Introduction

Leader Environmental, Inc. has prepared this evaluation for two purposes:

- To summarize all of the available information collected during previous investigations completed by: Roy F. Weston, Inc. ("Weston"); ERM Northeast ("ERM"); Galson Corporation ("Galson"); and Alliance Environmental Services, Inc. ("Alliance"); and

- To re-evaluate the geologic data and chemical analyses.

The previous investigations were completed to evaluate the environmental conditions and possible impacts resulting from three existing and former operations at the Gleason Works ("Gleason") facility. These operations include: Heat Treat Building; the former hazardous waste storage pad; and the former paint thinner underground storage tanks.

2. Background and Facility Setting

The Gleason facility has been in operation at the 1000 University Avenue, Rochester, New York location since approximately 1905 as a machine tool manufacturing operation. Since Gleason's operation began at this location, a number of changes have occurred; buildings have been built, and adjacent buildings have been bought and sold. In general, the main Gleason operation has remained in the same approximate area since its beginning. The facility covers approximately 30 acres.

Surrounding the Gleason facility, the land use has stayed relatively the same. To the north, Gleason is bordered by a large railroad yard which includes a railroad repair facility and switching yard. To the east, Gleason is bordered by other industrial facilities including a chemical blending plant. To the south, Gleason borders on University Avenue which is a main thoroughfare in Rochester. The University Avenue area is largely a residential area. To the west, the residential flavor of University Avenue changes slightly to include commercial use.

In general, the changes to the Gleason facility and the surrounding properties have been documented by aerial photographs collected by the Monroe County Environmental Management Council ("EMC") and copied for this report. The aerial photographs are provided as Appendix 1. The earliest available photograph was taken in 1930, and the photographic collection continues in approximately 10-year increments until 1999. As the photographs indicate, the most notable changes to the Gleason facility occur on the north side of the facility where building expansion has occurred and land use changes are discernible.

The most significant changes to the facility occurred between 1930 and 1951. Unfortunately, the photographic record of the facility during the 1940's is not owned by the EMC. Between 1930 and 1951, there was a large expansion to the north of the main manufacturing building and a removal of several smaller buildings on the west side of the facility. The north side of the facility was used for storage of materials and was criss-crossed by access roads and rail spurs. In 1951, the powerhouse building is evident on the north side of the facility as are coal piles. In the 1961, 1970, and 1978 photographs, the main manufacturing building is expanding on the east side. These photographs indicate that the northeast side of the facility was used for the outside storage of coal and raw materials. In addition, in the 1961 photograph, the north side of the facility appears to have been paved for the first time, and the difference in surface shading helps define the limits of materials in storage better than in previous photographs. However, in none of the photographs does there appear to be a significant storage of drums or materials which might indicate the storage of waste materials.

3. Geologic/Hydrogeologic Setting

3.1 Geology

Subsurface investigations at the Gleason facility have been completed on the west and north sides of the facility to evaluate conditions surrounding a leaking underground storage tank of paint thinner (on the west side of the facility), remediation of polychlorinated biphenyls ("PCBs") in the Heat Treat Building (north side), and the closure of the former hazardous waste pad (north side). Figure 2 shows the approximate locations of these areas.

A total of 71 borings have been completed to investigate the Gleason facility, and these have included soil borings and bedrock coring for the collection of soil and groundwater samples (see Appendix 2 and 4 for available boring logs). During the collection of these samples, the surficial deposits beneath the facility have been described. In general, three basic units have been defined above the bedrock:

- A non-native surficial silty sand and gravel which can include brick, coal and flyash;
- A silt and clay layer; and
- A sand and gravel layer.

The surficial silty sand and gravel layer appears to be relatively consistent across the facility and extends in depth ranging from 4 feet to 8 feet below ground surface. Below this layer, a silt and clay layer was encountered, and this may be part of a regional unit of lacustrine (sand, silt and clay lake deposits). In some areas of the facility, this unit is encountered at approximately 4 feet below ground surface and continues to the bedrock surface. Although found continuously across much of the southern shore of Lake Ontario, the borings within the Gleason building and near Atlantic Avenue (Test Borings

TB-12 and TB-13, see Appendix 2) did not encounter clay, but instead a layer of sand and gravel. The absence of silt and clay beneath the building is not unusual, since the silt and clay may not have supported the heavy use of the building slab or foundations and was removed for construction purposes. Elsewhere on the facility, the silt and clay layer has a thickness of 3 to 6 feet. The sand and gravel layer can reach a thickness of 12 feet in the vicinity of TB-12 and TB-13 on the north side of the facility. On the northeast side of the facility, the sand and gravel grades into a clay, silt, sand, gravel mixture which Alliance may have more accurately classified as a silt-clay with lesser amounts of sand and gravel based on grain size distribution analyses (see Table 1 of Appendix 3). On the west side of the facility, the soil types appear to be more consistent with those found on the northeast side of the facility. Galson found, in the vicinity of the paint thinner USTs, a sandy fill soil to a depth of approximately 4 feet to 7 feet before changing to a clay dominant soil.

Bedrock beneath the area consists of limestone and dolomitic rock types from the Lockport Dolomite. Bedrock was encountered at a depth ranging from 9 to 15 feet below the ground surface. Figure 4 presented in Appendix 3 provides a bedrock surface contour map of the former hazardous waste storage pad. At test boring TB-13, 3 feet of bedrock was cored and the exposed core showed up to 3 fractures per foot.

3.2 Hydrogeology

In general, only 10 of the 71 borings completed at the facility encountered groundwater. The boring logs indicate approximately 2 feet of the overburden was saturated (Weston 1993 and Galson 1997).

In the vicinity of the former hazardous waste pad, neither groundwater nor sand and gravel were encountered in any of the 30 borings (Alliance 1996). The absence of groundwater was unexpected, because groundwater is typically encountered on the top of the clay or the bedrock. Both the clay and the limestone bedrock have very low permeabilities, and it would be expected that water would accumulate and remain for long periods of time on the top of these surfaces.

Soil moistures measured during the grain size analyses (see Table 1 of Appendix 3) ranged from 10.6-percent (sandy clay) to 11.2 percent (silty sand found between the ground surface and 8 feet below ground surface). This relatively uniform moisture content of the soil suggests two scenarios:

1. That the soil is more porous than indicated by the grain size distribution, thus allowing water to pass through the soil and into the bedrock. Or,

2. The ground surface is so compact that water tends to run off as oppose to infiltrating into the soil.

Galson's analysis of the grain size distribution also estimated the hydraulic conductivity for the analyzed soils. The silty sand from the ground surface to the 4 foot sample interval and the 4 to 8 foot sample interval had the same estimated hydraulic conductivity values, 10^{-4} centimeter per second (cm/sec). The hydraulic conductivity for the 8 to 12 foot sample interval was much lower, 10^{-6} cm/sec, and is similar to the 10^{-7} cm/sec permeability value needed for the State approved landfill liners. The data from the 8 to 12 foot layer suggests that water infiltrating downward through the soil should accumulate on the clay, thus protecting groundwater quality from impacts from the overlying ground surface or soil. In addition, the clay should also keep groundwater from rising into the overburden as a result of high groundwater levels in the bedrock that can occur in the spring and fall. Where the clay is absent, groundwater would not have the protection of the low permeability clay.

The limited information available from the groundwater zone beneath the Gleason facility suggests there is no uniform direction of groundwater flow. It is suspected that groundwater flow is controlled by the surface of the bedrock; the presence and absence of the saturated sand and gravel present below the clay layer; and available discharge points. Based on these controlling factors, it is suspected that groundwater on the north side of the facility would tend to flow north toward Atlantic Avenue. On the south side of the facility, the direction of groundwater flow may be affected by the presence of utilities beneath University Avenue which have disturbed the native soil, and possibly the bedrock, and formed a more permeable path for groundwater flow.

3.3 Groundwater Quality in the Site Vicinity

The area surrounding Gleason is largely industrial to the north and residential to the south. As a result of the land use in the industrial area to the north, it is suspected that the area's groundwater quality has been compromised. Leader conducted a review of environmental site databases which list suspected and known sources of contamination. The list indicates that there are a number of suspected properties located directly adjacent to, and east of, Gleason and north of the Gleason property. The suspected properties are listed on Table 1 of this report.

Based on the assumed direction of groundwater flow, suspected off-site sources of contamination would be located to the east and south of the Gleason Works. Sources located north of Gleason should not be totally eliminated from suspicion, because spills that occur on the ground surface may migrate along the pavement or within sewers prior to infiltrating into the subsurface soil and groundwater. Where spill infiltration occurs may dramatically affect where groundwater contamination is observed.

4. Summary of Environmental Investigations

This section summarizes the environmental investigations completed at the Gleason facility to characterize any environmental impacts. Five investigations were completed in three areas: the Heat Treat Building, (see Appendix 2); the former hazardous waste storage pad (see Appendix 3); and the former paint thinner underground storage tanks (see Appendix 4). The investigations completed for these areas include:

- "Environmental Assessment Report on Subsurface PCB Contamination at the Heat Treat Building," Roy F. Weston, January 11, 1993.
- "Remedial Action Plan for the Gleason Works Former Waste Storage Area," ERM-Northeast, May 1994.
- "Waste Storage Pad Investigation," Galson Corporation, October 1995.
- "RCRA Facility Investigation and Feasibility Study for the Former Hazardous Waste Storage Pad," Alliance Environmental Services, Inc., April 12, 1996.
- "Environmental Subsurface Evaluation Tanks 1& 2," Galson Consulting, February 1997.

4.1 Heat Treat Building

The PCB investigation of the Heat Treat Building was caused by the discovery of PCBs in quenching oil used in Gleason's heat treating process. In addition to the PCB investigation, Gleason completed a massive cleanup of the Heat Treat Building which included: removal and disposal of process equipment, the decontamination of process equipment, and the decontamination and epoxy sealing of surfaces. An extensive sampling of potentially contaminated surfaces and media also occurred. The investigation report prepared by Weston details the subsurface investigation.

Sampling completed during the cleanup of the basement floor areas led to sampling of the soil below. The locations of the samples were selected randomly in open floor areas where drilling could occur without interference and with the intent of providing samples representative of the subsurface under the entire basement floor. These samples revealed the presence of PCBs. Additional investigation of the soil and groundwater outside the building footprint followed. The investigation included the drilling and sampling of 18 test borings (see Figure 2 prepared by Weston and included in Appendix 2).

The sampling and analysis of the soil found that measurable concentrations of PCBs were limited to the area beneath the building. Six test borings were advanced beneath the Heat Treat Building basement floor to a depth of approximately 3 feet before encountering bedrock. Of the six borings completed and the fourteen samples analyzed, PCBs were

found in only three locations; test borings TB-01, TB-03, and TB-06. The detected PCB concentrations ranged from 0.12 parts per million ("ppm") to 450 ppm. Only three samples found PCBs at concentrations greater than 1 ppm: test boring TB-03 at a depth of 1 foot and a concentration of 110 ppm; TB-06 at a depth of 1 foot and a concentration of 450 ppm and at a depth of 3 feet and a concentration of 68 ppm (see Table 1 of Appendix 2 for a copy of the Weston data table).

Groundwater sample analyses revealed no measurable PCB contamination and no evidence of a free oil product. Groundwater samples were collected from the following 6 sample locations located outside the Heat Treat Building: TB-08, TB-11, TC-01, TC-02, TC-03, and TC-04 (see Figure 2 of Appendix 2).

Soil samples collected outside the Heat Treat Building revealed only limited PCB contamination with no obvious connection to the contamination found beneath the building. Samples collected from four locations found PCBs:

- Three samples were collected from test boring TB-08: the sample collected at a depth of 1 foot below ground surface contained PCBs at a concentration of 6.5 ppm; the sample collected at 4 feet below ground surface contained PCBs at a concentration of 25 ppm; and the sample collected at 5 feet below ground surface contained PCBs at a concentration of 2.1 ppm.

- One sample was collected from test boring TB-10, at a depth of 1 foot below ground surface, and contained PCBs at a concentration of 1 ppm.

- One sample was collected from test boring TB-12, at a depth of 13 feet below ground surface, and contained PCBs at a concentration of 0.062 ppm.

- One sample was collected from test boring TB-13, at a depth of 6 feet below ground surface, and contained PCBs at a concentration of 0.026 ppm.

4.2 Former Hazardous Waste Pad

The former hazardous waste concrete pad was located on the northeast side of the facility and covered an area of approximately 1,700 square feet (see Figure 3 of Appendix 3 for a location map for the former pad). Only a small part of the pad was used for the temporary storage of hazardous waste. This 675 square foot area of the former pad was once part of a RCRA Treatment, Storage, and Disposal ("TSDF") Permit application (e.g., "Part A") by Gleason. Like many other companies, Gleason submitted the TSDF permit application to provide themselves with some relief from RCRA's 90-day hazardous waste storage requirements. The pad was used by Gleason for the temporary storage of waste materials from 1981 to 1990. The pad was located in an area that had been historically used for the facility's access roads, railroad spurs, and miscellaneous

storage of pig iron for Gleasons' former foundry, coal, and coal cinders and flyash from the facility's boilers.

In 1994, the flyash and coal cinders covering the pad, and the pad itself, were excavated and disposed of offsite. The uncovered soil was then covered with plastic and then covered with clean fill. The area is maintained in this condition today.

The investigations prepared for this area were completed to assist in the closure of the pad and to define the limits of soil contamination.

4.2.1 Summary of Investigation Findings

A total of 30 soil borings were completed by ERM, Galson, and Alliance for the investigations, and the locations of the borings are shown on Figure 4 of Appendix 3. Figure 4 was originally prepared by Alliance for their April 1996 "RCRA Facility Investigation And Feasibility Study For The Former Hazardous Waste Storage Pad." This figure, and others, and data tables are also presented in Appendix 3. From these soil borings, samples were visually inspected to determine the geologic/hydrogeologic setting of the area and selected samples were submitted for chemical analyses which include: volatile organic compounds ("VOCs"), PCBs, metals, and total organic carbon ("TOC"). In addition to these chemical analyses, soil gas headspace analyses, grain size distribution analyses, and moisture content analyses were completed on selected samples. The results of these analyses are summarized on Table 1 through 6 of Appendix 3.

VOCs

Two types of VOC data were collected during the investigations: soil gas data from soil sample headspace analyses and chemical analyses on soil samples. The samples from three former storage pad soil borings, B-9, B-16 and B-21, had elevated soil gas VOC concentrations (see Table 3 of Appendix 3). The VOCs most often detected were Trichloroethene ("TCE") and Cis 1,2-dichloroethene ("Cis"). These compounds are, however, rather ubiquitous across the investigation area. The majority of the VOCs identified by headspace analyses appear to be in the 4 to 6 foot of soil interval.

Soil VOC sample data mimics the soil headspace data in that TCE and Cis are the most common VOCs detected. Table 2 lists the VOC soil data and identifies those samples that exceed the NYSDEC's soil cleanup values for the protection of groundwater quality. The sample locations where soil concentrations appear to exceed the NYSDEC's soil cleanup values include the following sample areas:

- The pad area;
- An area extending from the west side of the pad to sample location B-22; and

- Three possibly isolated areas that include sample locations B-26, B-28, and B-29.

In addition to TCE and Cis, other chlorinated compounds, aromatic hydrocarbons, and ketones have been detected. These "other" chlorinated compounds that have been detected included Methylene Chloride, Perchloroethene ("PCE") and 1,1,1-Trichloroethane ("TCA"). Concentrations for these chlorinated VOCs ranged from below detection limits to 901 ppm (for TCE at sample location B-8 at the 0 to 2-foot sampling interval). Breakdown products from the degradation of PCE, TCE and TCA were identified in the soil samples and include the following compounds: 1,1-Dichloroethane ("DCA"), Cis and Trans 1,2-Dichloroethene ("Trans"), and Vinyl Chloride ("VC"). These breakdown products were found at concentrations ranging from below detection limits to 480 ppm (for Cis at sample location B-8 at a depth of 0 to 2 feet below ground surface). The NYSDEC soil cleanup value for Cis is 0.3 ppm.

In addition to chlorinated compounds, aromatic hydrocarbons have also been identified. These aromatic compounds include Xylene and Toluene. Xylene was found at a total of 4 sampling locations B-1, B-3, B-5 and B-27 at depths ranging from 1 to 4 feet below ground surface. Only once, at sampling location B-27, was the Xylene found above NYSDEC's cleanup value for the protection of groundwater quality. The concentration of Xylene found at B-27 was 6.9 ppm. NYSDEC's Xylene cleanup value is 1.2 ppm. Toluene was found only three times during sampling: at sample location B-3 at a concentration of 0.053 ppm, at sample location B-26 at a concentration of 0.037 ppm, and at sample location B-27 at a concentration of 15 ppm. The NYSDEC's Toluene soil cleanup value for the protection of groundwater quality is 1.5 ppm.

A minor VOC (ketone) contaminant found in the soil samples was Acetone. Acetone was found in 15 samples at concentrations ranging from below the detection limit to 0.740 ppm. The NYSDEC acetone cleanup value for the protection of groundwater is 0.110 ppm.

PCBs

A total of 53 soil samples, from 30 sampling locations, were analyzed for PCBs. PCB contamination was found to occur at 22 of 30 sampling locations. At 18 of the sampling locations samples were collected and analyzed from a depth of 0 to 2 feet below ground surface. NYSDEC's PCB surface soil cleanup criteria is 1 ppm. In 15 of the 18 surface soil samples, PCBs were found at concentrations which exceed the surface soil cleanup values. In most cases, PCB surface soil concentrations exceeded the PCB concentrations found below a depth of 2 feet. However, at 10 of the sampling locations, the level of PCBs also exceeded the subsurface cleanup value of 10 ppm.

The occurrence of PCBs and VOCs appear to be linked, suggesting a common source and migration pathway.

Metals

Forty soil samples were analyzed for 10 heavy metals and cyanide to define the horizontal and vertical of possible metal contamination. The metals analyzed include: arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, selenium, and silver. Of these metals, only barium, cadmium, chromium, copper, lead, mercury, and selenium were found at concentrations that exceeded NYSDEC's cleanup criteria. Cyanide was found once at a concentration that exceeded NYSDEC's cleanup criteria.

Barium was found at only 1 sampling location at a concentration that exceeded the NYSDEC's cleanup criteria of 300 ppm. The single exceedence of barium was found at sample location B-8 at a depth of 0 to 2 feet below ground surface.

Cadmium was found at 7 sampling locations at concentrations that are greater than or equal to the NYSDEC's cleanup criteria of 1 ppm. The elevated concentrations of cadmium were found at various depths without a consistent pattern. However, the lack of a pattern suggests this may be an artifact of the sampling rather than a statement about the occurrence of cadmium in the environment. In general, the majority of the samples that exceeded the NYSDEC's cleanup value contained cadmium within a narrow concentration range of 1 to 1.9 ppm. The highest concentration of cadmium was found at sample location B-20, at a depth of 8.5 to 10 feet below ground surface and at a concentration of 3.7 ppm.

Chromium was one of the most frequently detected metals found in the soil samples. Chromium was found at concentrations which exceed the NYSDEC's cleanup criteria of 10 ppm at sample locations B-1 through B-8 and B-21 in the former storage pad area. In addition, chromium was found at sample location B-30 next to the pad and at sample locations B-18, B-20, and B-28 north of the pad. Chromium was also found in the background samples at a concentration that exceeds NYSDEC's cleanup values. In general, chromium was found at all sample depths, but with the highest concentrations being found in the 2 to 4 and the 4 to 6 foot sampling intervals.

Copper was frequently found in samples and has a pattern of occurrence like chromium. In general, the highest concentrations of copper were found in the 0 to 2 feet below ground surface sampling interval. The NYSDEC's cleanup value for copper is 25 ppm. Thirty-five samples where analyzed for copper and 17 samples had concentrations greater than 25 ppm. The highest concentration was found at sampling location B-3 at a concentration of 439 ppm.

Cyanide was analyzed in 18 samples, but only one sample, from soil boring B-5 in the sample taken from 0 to 2 foot below ground surface, contained cyanide. Cyanide was found at a concentration of 5.46 ppm. The NYSDEC's cleanup value for cyanide is 0.1 ppm. In the samples collected directly below the 0 to 2-foot sample interval, cyanide was not detected.

Lead was found in every sample analyzed with the exception of the sample from soil boring B-7 at the 0 to 2 foot sampling interval. Only 1 sample, at sample location B-8 at a depth of 4 to 6 feet below ground surface, exceeded the NYSDEC's cleanup criteria 500 ppm for urban soil. This sample found lead at a concentration of 5,920 ppm. Lead found at this concentration must have been metallic lead and part of a metal fragment picked up inadvertently by the sampler.

Mercury was found in 14 samples at concentrations above detection limits. Twelve samples contained mercury at concentrations above the NYSDEC's cleanup criteria of 0.1 ppm. The mercury concentrations ranged from below the detection limit to 0.648 ppm. In general, the highest concentrations found were in the 0 to 2-foot sampling interval.

Selenium was analyzed in 6 soil samples, but only 1 sample exceeded the NYSDEC's cleanup criteria of 2 ppm. The single exceedence was found at sampling location B-30 at a depth of 2 to 4 feet below ground surface and at a concentration of 5.99 ppm.

Of the metals detected, it is probable that many are the result of keeping coal, coal cinders and flyash on the facility. The presence of mercury, cadmium, and selenium are typical indicator metals for coal wastes. The pad area appears to be a "hot spot" for metal contaminants. Barium and chromium may have been related to the storage of foundry materials in the pad area.

Other Analyses

During the investigations completed by ERM, Galson and Alliance, several unconventional analyses were completed, including TOC and leaching analyses.

TOC Content

The TOC analyses were completed to assess the potential leachability of the contaminants found on the Site. Carbon has a natural affinity for absorbing other carbon based compounds and some metals. Materials with high TOC content may absorb VOCs, PCBs, and metals equal to many times the weight of carbon. As a result, it can be an instructive parameter to analyze.

The analysis found that the TOC content of the surface soil ranged from 41 to 91 percent. Table 2. of this report, compiled from information obtained by H&A of New York for Galson lists the TOC concentrations measured. Figure 11 of Appendix 3 shows the locations of the TOC samples. One foot below ground surface, the TOC content dropped from 0.2 to 21 percent. Typical TOC values for soil range from 0.5 percent to 5 percent. The values appear to be elevated over these normal soil ranges and it is thought that the coal pieces in the soil, from Gleason's past use of coal, is responsible for these elevated levels. During the analysis of TOC, all sources of carbon, whether they are plant, coal or carbon based contaminants, can be part of the measured result.

Given that the Site soil has an elevated level of TOC, the soil should have increased ability to absorb organic compounds and in some instances metals. With such an increased capacity to absorb contaminants, there should be a lesser chance for the downward migration of contaminants through the soil at Gleason. To verify this ability, several tests using the toxicity characteristic leaching procedure ("TCLP") and synthetic precipitation leaching procedure ("SPLP") were completed.

Leaching Analyses

TCLP and SPLP tests were completed to determine if contaminants can migrate from the soil at Gleason. The TCLP test is used on materials suspected for being a hazardous waste. The procedure exposes the material to an acidic solution for 48 hours to forcibly leach contaminants from materials. The SPLP test uses a solution similar to the acidity of rain water and is therefore a less rigorous, but more realistic test to determine the leachability of contaminants in a non-landfill setting.

The results of these analyses are shown in Table 6. In general, the results show that both tests are capable of leaching contaminants from the soil, and that the contaminant concentrations are variable. The contaminant concentrations leached are probably different because of the different contaminant concentrations in the three soil mixes; the original soil sample analyzed using USEPA Method 8260, the TCLP extraction and the SPLP extraction. One general statement can be made, the SPLP did produce lower contaminant concentrations in the leachate.

4.3 Former Paint Thinner Tanks

An investigation was completed on the west side of the facility (see Figure 2) in the area of the former Paint Thinner underground storage tanks to investigate a spill that was discovered in 1994 during a tank upgrade program. A total of 19 soil borings and geoprobe borings were completed. Soil samples collected during the investigation detected aromatic hydrocarbons which include: Benzene, Xylene, Ethylbenzene, Trimethylbenzene, Isopropylbenzene, n-Propylbenzene, Toluene, n-Butylbenzene, and sec-Butylbenzene. No semi-volatile organic compounds were detected. The investigation determined that the contamination had not migrated away from the tanks and appeared to remain in the overburden.

To remove the contaminates, Gleason installed a soil vapor extraction system. In 1997, 4 additional soil borings were completed to determine if remedial efforts had removed the soil contaminants. In the spill area, 2 soil samples were collected and analyzed for NYSDEC STARS listed VOCs (see Table 1 of Appendix 4). Based on the levels detected, the use of the SVE system was continued.

Soil borings completed for the investigation suggest that the contamination is bound in the soil above the bedrock. Contamination was indicated by the presence of vapor screening of the soil which found organic vapor concentrations ranging from less than 1 ppm to 300 ppm at a depths ranging from 7 to 12 feet below ground surface (see Appendix 4 for soil boring logs).

5. Nature and Extent of Contamination

There are three areas of known contamination on the Gleason facility: the PCB contamination found beneath the basement floor of the Heat Treat Building; the VOC, PCB and metals contamination related to the former hazardous waste storage pad; and the VOCs related to the former paint thinner underground storage tanks.

5.1 Heat Treat Building

The data obtained during the PCB investigation of the Heat Treat Building does not indicate that the PCBs have migrated away from the original operation area. This assessment is based on where the PCBs were spilled and entered into the subsurface, in the basement area of the Heat Treat building.

Using this as a working premise, it is difficult to link a spill in the basement of the Heat Treat Building approximately 10 feet below ground surface to finding PCBs at shallow depths outside the building, e.g. test boring TB-08 where PCBs were found at depths of 1, 4, and 5 feet below ground surface or at TB-10 where PCBs were found at a depth of 1 foot. Even where PCBs were found at lower elevations, the connection between the source and test borings TB-12, where PCBs were found at very low concentrations is tenuous, because no PCB contaminated groundwater was found. The presence of PCBs at test boring TB-08 may be associated with PCBs found in the area of the former waste storage area.

5.2 Former Hazardous Waste Storage Pad

The contaminants found on the Site include VOCs, PCBs, and metals, and they are found across the former storage pad area. Alliance Figure 5, 6, 7 and 8, presented in Appendix 3, illustrate the distribution of the VOCs and PCBs across the Site. Metals are found to have a similar distribution as VOCs. The majority of sampling for metals occurred on the soils within the pad area, therefore, the appearance of metals appears (possibly incorrectly) to be concentrated in the pad area.

VOCs

Figures 5 and 6, of Appendix 3, show the distribution of VOCs in the Site area and suggests a hotspot of contamination in the pad area. The primary VOC contaminants found include TCE and Cis. Other VOCs are also present, but TCE and Cis appear to be most common and have the highest concentration in the sample results.

Figure 5 and Figure 6 show that the majority of contamination was found below the ground surface in the sampling intervals between 2 and 6 feet. In general, the VOC concentration trend shown by the sample results shows there are lower VOC concentrations at the ground surface followed by an increase in concentration at lower sampling intervals. The concentration of Cis at sample locations B-1, B-2, B-3, B-4, and B-7 are a good example of this distribution. It appears that between the ground surface and the 2-foot below ground surface sampling interval, there are lower contaminant concentrations. A possible explanation for lower VOC concentration may be the soil being exposed to the weather. Exposure to variable air temperatures and wind can cause the volatilization of the VOCs. Below the 4 foot sampling depth, a trend of decreasing contaminant concentrations appears to be present but harder to claim because of the lack of sample locations where samples were analyzed continuously. In some cases on the individual contaminant level, there does appear to be a noticeable trend. This trend may be a result of microbial degradation of contaminants and the appearance of daughter products. For example, at sample location B-8, daughter products of TCE; Cis, Trans, and VC, appear to be increasing at the expense (the decreasing concentration) of TCE until a depth of 6 to 8 feet where the concentration of TCE bounces back and Trans and VC disappear. This same pattern occurs to a lesser extent at sampling locations B-2, B-4 and B-5.

The same decreasing concentration with increasing depth trend is suggested in Alliance Table 3 (see Appendix 3) which shows the results of VOC headspace analyses completed on soil samples. The use of headspace data to make conclusions on contaminant concentrations in the soil is at times tenuous, because of vapors can originate from two contaminant sources: the absorbed contaminant on the soil and contaminants in the soil moisture or pore water. As a result of these two potential contaminant sources, the contaminants will tend to vaporize into the headspace gas at different rates. Therefore, the soil gas sample results may not give an accurate picture of the extent of contamination.

PCBs

Alliance Figures 7 and 8, provided in Appendix 3, provides an assessment of the distribution of PCBs across the pad area. Comparing these figures, and especially Figure 7 "Highest PCB Concentrations in 0-4' BGS Intervals," to Figure 5 suggests that the occurrence of PCBs and VOCs are linked. The figures show two "hot spots". One hot spot is located in the former pad area, and the other is located north of the pad. At lower sampling depths, there is still a level of consistency between the occurrence of VOCs and

PCBs (see Alliance Figures 6 and 8). Four hot spots are represented in each of the figures, and these appear to be outgrowths of the VOC hot spots shown on Figure 5.

The appearance of PCBs in the former hazardous waste storage pad area are not associated with PCB migration from the Heat Treat Building. This conclusion is based on the fact that there is PCB contamination at the ground surface within the former pad area, and the release of PCBs from the Heat Treat Building most likely occurred through the basement floor. In addition, no PCBs were found in the samples from below the Steam Tunnel which is located between the Heat Treat Building and the former hazardous waste storage pad.

The connection between the appearance of PCBs at test borings TB-10 and TB-13 and the finding of PCBs in the Heat Treat Building and the former hazardous waste storage pad is as of yet uncertain. PCBs were found at 1 ppm at a test boring, TB-10, located north of the Heat Treat Building, at a sampling interval between 0 and 1 foot below ground surface. The appearance of PCBs at this depth suggests diminimus losses from PCB contaminated equipment or vehicles tracking the PCB laden sediment across the facility.

The presence of PCBs in the soil at test boring TB-12 needs to be clarified. The log from this test boring indicates that the sample was collected from bedrock at a depth of 13 feet with fill materials present at a depth of at least 5 feet below ground surface. It is possible that some of the fill materials, present at 5 feet, could have fallen into the sampling zone and inadvertently contaminated the sample.

It is also possible, but unlikely, that the contamination is from contaminated groundwater since PCBs have a low solubility, approximately 0.031 milligrams per liter, and they have a high affinity for absorption onto soil, in particular soil with organic material. The tendency for PCBs to absorb onto soil is measured by its organic-water partitioning coefficient which is approximately 530,000 milliliters per gram. To illustrate PCBs tendency to absorb onto soil, if a soil has a 5-percent organic content (TOC content for subsurface soil at Gleason ranges from 0.2 to 21 percent), then 1 ppm PCBs in groundwater will be at equilibrium with 26,500 ppm in soil. As this example shows, it is unlikely that PCBs will dissolve into groundwater or migrate any appreciable distance. To support our example, PCBs have not been found in the groundwater in the vicinity of the Heat Treat Building.

A possible source of contamination is from the laboratory and from other sampling equipment. Supporting this accusation is the fact that 1 equipment blank sample was found to be contaminated with PCBs at a concentration of 1.3 ppm in water. This is a substantial concentration given the solubility and absorptive characteristics of PCBs. It would also seem likely that the PCBs were present on soil or as an oil residue on the tool being sampled for the equipment blank. After rinsing the tool for the equipment blank sample and use for soil sampling, it seems apparent that a trace amount could cross contaminate the following soil sample.

Metals

The occurrence of metals at concentrations which exceed the NYSDEC cleanup criteria for soil is relatively wide spread, but because of the sampling frequency appears to be biased toward the pad area. However, the appearance of metals in the soil may be caused by the use of coal, the generation of coal cinders and flyash, and Gleason's former operation of a foundry. Aerial photographs, presented in Appendix 1, show the former pad area as being in the middle of access roads, railroad spurs, and the storage of pig iron and coal. With this type of activity, the appearance of elevated concentrations of metals is not unusual.

To assess the Site soil sample results, given the historical use of the pad area, Alliance collected two background soil samples and analyzed them for metals. These results are shown on Alliance Table 5 provided in Appendix 3. In Table 5, the background sample results are compared to NYSDEC cleanup values for metals. As the table indicates, the background soil samples appear to be elevated when compared to NYSDEC cleanup standards for chromium, copper and mercury. This comparison suggests that the background soil may have been impacted by the same operations as the soil in the former pad area. If cleanup were to focus on metals, then the Site background levels should be considered as the cleanup level as allowed by the NYSDEC Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels.

5.3 Former Paint Thinner Tanks

Contamination surrounding the former paint thinner underground storage tanks is limited to the soil immediately surrounding the tanks and to contaminants consistent with the materials formerly held in the tanks. Table 1 of Appendix 4 lists the sample analyses completed as part of the tank closure process. Table 1 shows that contaminants are still present above NYSDEC's STARS Memo #1 cleanup values.

The presence of exhaust stacks, the air handler, and the building has, however, limited some contaminant delineation efforts, but investigation in accessible areas has shown contaminants limited to a zone approximately 7 to 12 feet below ground surface. This zone of contamination is consistent with the bottom of the tanks. The soil present in the zone of contamination is a clay which extends from a depth of approximately 5 feet below ground surface to bedrock, a depth that ranges from approximately 9 feet to 12 feet. Groundwater was not encountered, but some wet soil was found. Since the amount of available moisture from groundwater appears to be limited, the presence of the building and pavement over the remediation area is further limiting the amount of moisture infiltrating downward through the contaminated area. Given that there is a lack of water or moisture which could potentially contribute to contaminant migration, it is unlikely that contaminants have escaped the absorptive capacity of the clay and impacted groundwater. Gleason is actively remediating the tank area under NYSDEC supervision.

6. Contaminant Migration Potential

The existence of contaminated soil creates the potential for contaminants to migrate from the site. However, specific facility conditions can significantly lessen the degree which this can occur. As the background information indicates, the Gleason facility conditions where the majority of the contamination exists have been encapsulated by pavement, building space, or a layer of plastic and soil, thus lessening the role precipitation can play driving contaminants deeper into the soil. Outside the limits of these impervious coverings, the soil contamination is still prone to the effects of infiltrating precipitation; but at Gleason, we believe this is limited due to the following factors.

The physical characteristics of the facility are an advantage to controlling the potential downward migration of contaminants. In particular, the Site's geology consists of sandy silt and clay with hydraulic conductivity's ranging from 10^{-4} to 10^{-6} cm./sec. The clay layer is believed to blanket much of the facility with up to 3 feet of relatively impermeable material. The clay layer appears to be serving other functions on the facility as well as providing an impermeable barrier to the downward migration of contaminants. The clay also appears to be retarding the upward migration of groundwater from the bedrock. This is suggested by the absence of groundwater or moisture in the clay.

The absence of groundwater or a significant moisture content in the subsurface soil indicates that there is little precipitation migrating downward into the soil, and therefore, there is no mechanism to drive VOC, PCB or metal contaminant migration. Without water (precipitation or soil moisture) present, there can be no desorption of contaminants into an aqueous phase which can later migrate. Even if sufficient water was present for contaminant migration, the water chemistry must also be right for migration.

Metals, for example, are only mobile in certain circumstances such as reducing or acidic environments. The majority of the metals of concern on the facility (barium, cadmium, copper, lead and mercury) only migrate in acidic conditions. Chromium would tend to migrate in alkaline conditions. Given the presence of coal and flyash in the soil, any water in the soil would tend to be acidic, promoting the migration of barium, cadmium, copper, lead and mercury. The presence of acidic conditions, however, may be buffered by the native soil which originates in limestone bedrock regions. As a result of this apparent contradiction, additional analyses would be needed to determine if metals can migrate through the soil.

VOCs and PCBs, unlike metals, will migrate under a wider range of conditions, but still, the key element is water or the containment to be present in a liquid form, for example, TCE solvent or PCB oil. None of the soil sample results indicate pure solvent or PCB oil to be present. In a situation where a solvent is present and is not migrating under its own hydraulic force, migration can only be advanced by the presence of water. Even in these circumstances (with the exception of Acetone), the VOCs and PCBs have such low water

solubilities that it would require a large contaminant mass to dissolve even a small amount into the water. These minor amounts of VOCs and PCBs would then be susceptible to absorption onto the soil at lower depths.

7. Conclusions

There are three areas on the Gleason facility that have been environmentally impacted. These areas are located on the west side and north side of the facility (see Figure 2). The three areas of concern include: the Heat Treat Building; the former hazardous waste storage pad; and the former paint thinner underground storage tanks. To investigate these areas of concern, Gleason conducted five different investigations to define the limits of contamination or to assist in the closure of the former hazardous waste storage pad. This report was prepared to comprehensively summarize the information obtained previously by Weston, ERM, Galson, and Alliance, and to re-evaluate the geologic data and chemical analyses.

We believe, that based upon the accumulated data, there are several steps that can be taken to conclude the investigation and, concurrently, allow for the selection of site-specific remedial alternatives. We look forward to discussing these matters with the Department.

TABLE 1
Summary of Suspected Offsite Sources of Contamination

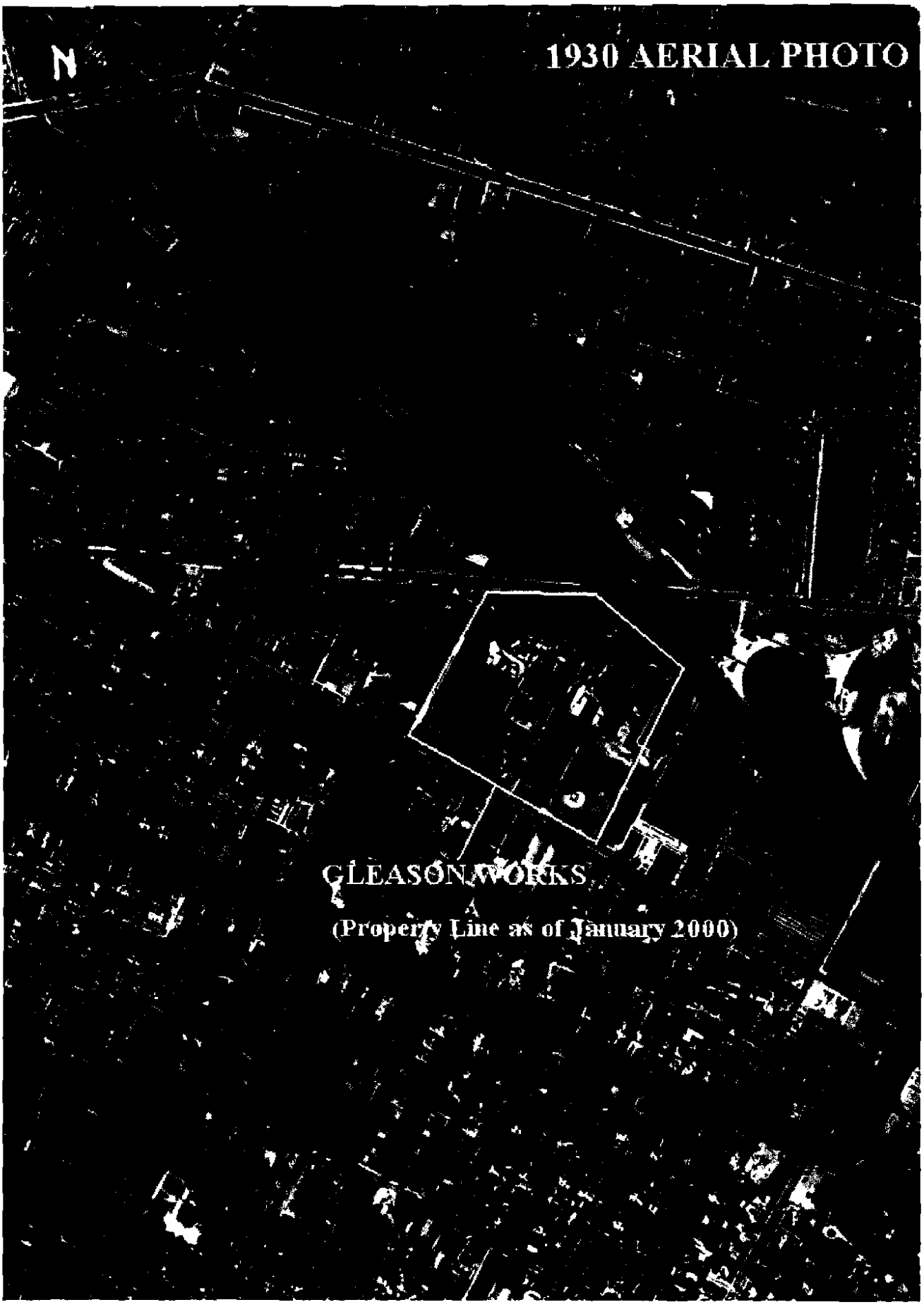
Site Name	Location	Suspected Contaminant
University Business Center, 1044 University Ave.	East, adjacent	Fuel Oil, Groundwater contamination not suspected.
Bill Johnson Residence, 64 Oliver Street	Southeast, 09 miles	Gasoline, Groundwater contamination not suspected.
Oser Press, 1239 University Ave.	East, 0.22 miles	Fuel Oil, Groundwater Contamination not suspected.
Patrick Media Group, 745 Park Ave.	South, 0.33 miles	Gasoline, groundwater affected.
Sunoco, 645 Culver Road	Northeast, 0.37 miles	Gasoline, groundwater believed affected.
Davis-Howland Oil, 200 Anderson Ave.	Northwest, 0.38 miles	Toluene and Trichloroethene, groundwater affected.
RP Meyers, Inc., 1 Merton Street	Northeast, 0.46 miles	Gasoline, Groundwater contamination not suspected
Railroad Yard, Atlantic Ave.	North, Adjacent	Suspected Site

TABLE 2

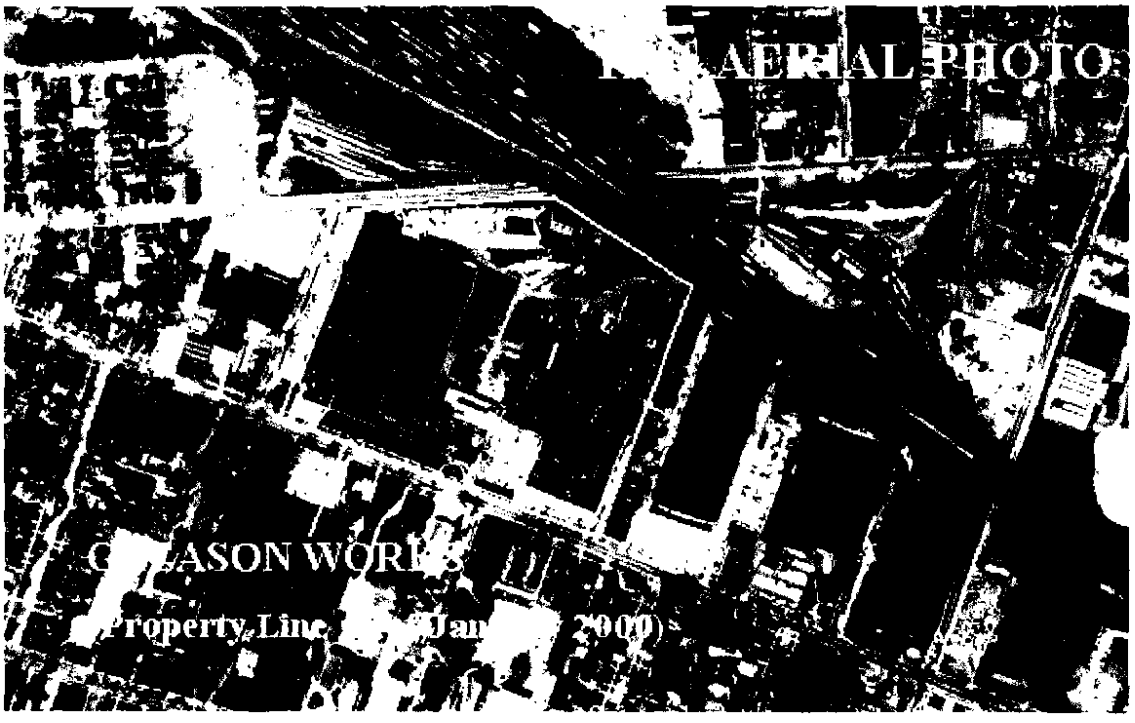
Summary of Total Organic Carbon Results

Sample Location	Sample Interval	Concentration (Percent)
SS-1	0-1 ft.	41
SS-2	0-1 ft.	91
SS-4	0-1 ft.	86
SS-5	0-1 ft.	71
SS-6	0-1 ft.	50
B-4	10-13 ft.	0.2
B-8	6-8 ft.	3
B-8	10-12 ft.	3
B-26	2-4 ft.	6
B-27	1-3 ft.	21

APPENDIX 1
HISTORIC AERIAL PHOTOGRAPHS


N
1930 AERIAL PHOTO
GLEASON WORKS
(Property Line as of January 2000)


ARK-2H-78
1951 AERIAL PHOTO
GLEASON WORKS
(Property Line as of January 2000)


AERIAL PHOTO
ASON WORK
Property Line
Jan 2000


1970 AERIAL PHOTO
GLEASON WORKS
(Property Line as of January 2000)


GLEASON WORKS
(Property Line as of January 2000)

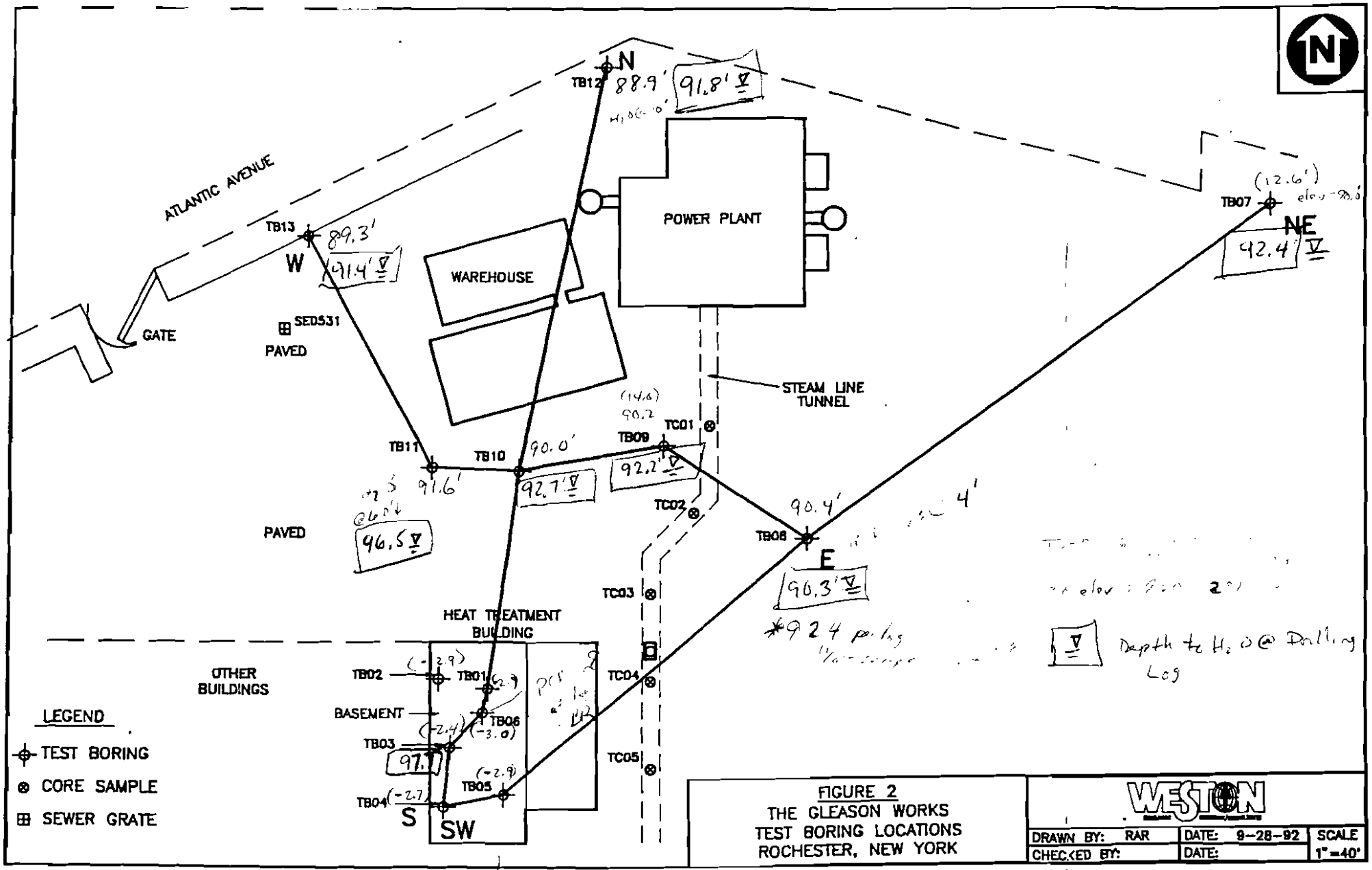

GLE
ON WORKS
(Property Line as of January 2020)


1993 AERIAL PHOTO


1996 AERIAL PHOTO
EPA 96-1S 13-19
GLEASON WORKS
(Property Lines as of January 2000)


PHOTO

APPENDIX 2
ROY F. WESTON
TABLES, FIGURES, & DATA


N
TB12
88.9'
91.8'
ATLANTIC AVENUE
TB13
89.3'
W
91.4'
POWER PLANT
WAREHOUSE
GATE
SED531
PAVED
STEAM LINE TUNNEL
TB07
(12.6')
NE
92.4'
TB11
TB10
90.0'
TB09
92.2'
TC01
TC02
91.6'
92.7'
96.5'
PAVED
90.4'
TB08
E
90.3'
TC03
HEAT TREATMENT BUILDING
OTHER BUILDINGS
TB02
TB01
TB06
BASEMENT
TB03
TB05
TB04
S
SW
TC04
TC05
LEGEND
TEST BORING
CORE SAMPLE
SEWER GRATE
Depth to H2O @ Drilling
Log
FIGURE 2
THE GLEASON WORKS
TEST BORING LOCATIONS
ROCHESTER, NEW YORK
WESTON
DRAWN BY: RAR
DATE: 9-28-92
SCALE 1"=40'
CHECKED BY:
DATE:

The Gleason Works
Environmental Assessment
7/8/92 – 7/10/92

Table 1
Summary of PCB Soil and Groundwater Results

Analyzed by:
Roy F. Weston, Inc.

Sample Number	TB01-01-002	TB01-01-003
Units	mg/kg	mg/kg
Aroclor-1016	0.087 U	0.087 U
Aroclor-1221	0.087 U	0.087 U
Aroclor-1232	0.087 U	0.087 U
Aroclor-1242	0.087 U	0.087 U
Aroclor-1248	0.087 U	0.12
Aroclor-1254	0.17 U	0.17 U
Aroclor-1260	0.17 U	0.17 U
Sample Number	TB02-01-001	TB02-01-003
Units	mg/kg	mg/kg
Aroclor-1016	0.18 U	0.09 U
Aroclor-1221	0.18 U	0.09 U
Aroclor-1232	0.18 U	0.09 U
Aroclor-1242	0.18 U	0.09 U
Aroclor-1248	0.18 U	0.09 U
Aroclor-1254	0.36 U	0.18 U
Aroclor-1260	0.36 U	0.18 U
Sample Number	TB03-01-001	TB03-01-003
Units	mg/kg	mg/kg
Aroclor-1016	17.0 U	0.18 U
Aroclor 1221	17.0 U	0.18 U
Aroclor-1232	17.0 U	0.18 U
Aroclor-1242	17.0 U	0.18 U
Aroclor-1248	110	0.42
Aroclor-1254	35.0 U	0.36 U
Aroclor-1260	35.0 U	0.36 U
Sample Number	TB04-01-002	TB04-01-003
Units	mg/kg	mg/kg
Aroclor-1016	0.090 U	0.088 U
Aroclor-1221	0.090 U	0.088 U
Aroclor-1232	0.090 U	0.088 U
Aroclor-1242	0.090 U	0.088 U
Aroclor-1248	0.090 U	0.088 U
Aroclor-1254	0.180 U	0.180 U
Aroclor-1260	0.180 U	0.180 U
Sample Number	TB05-01-001	TB05-01-003
Units	mg/kg	mg/kg
Aroclor-1016	0.087 U	0.091 U
Aroclor-1221	0.087 U	0.091 U
Aroclor-1232	0.087 U	0.091 U
Aroclor-1242	0.087 U	0.091 U
Aroclor-1248	0.087 U	0.091 U
Aroclor-1254	0.170 U	0.180 U
Aroclor-1260	0.170 U	0.180 U

Sample Numbering Protocol:

TB0X-0X-00X
TB0X = Test Boring Number
0X = Sample Matrix
01 = Soil
02 = Water
00X = Depth in Feet Below Ground Surface
TB = Test Boring.TC = Tunnel Core.EB = Equip. Blank.

U = Analyzed, not detected. J = Present below detection limit.

Sample Number	TB06-01-001	TB06-01-003						
Units	mg/kg	mg/kg						
Aroclor-1016	89.0 U	8.80 U						
Aroclor-1221	89.0 U	8.80 U						
Aroclor-1232	89.0 U	8.80 U						
Aroclor-1242	89.0 U	8.80 U						
Aroclor-1248	450	68.0						
Aroclor-1254	160 U	18.0 U						
Aroclor-1260	160 U	18.0 U						
Sample Number	TB07-01-002	TB07-01-003	TB07-01-006	TB07-01-07	TB07-01-010	TB07-01-011	TB07-01-013	
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Aroclor-1016	0.480 U	0.520 U	0.10 U	0.096 U	0.110 U	0.086 U	0.160 U	
Aroclor-1221	0.480 U	0.520 U	0.10 U	0.096 U	0.110 U	0.086 U	0.160 U	
Aroclor-1232	0.480 U	0.520 U	0.10 U	0.096 U	0.110 U	0.086 U	0.160 U	
Aroclor-1242	0.480 U	0.520 U	0.10 U	0.096 U	0.110 U	0.086 U	0.160 U	
Aroclor-1248	0.480 U	0.520 U	0.10 U	0.096 U	0.110 U	0.086 U	0.160 U	
Aroclor-1254	0.950 U	1.0 U	0.20 U	0.190 U	0.210 U	0.170 U	0.320 U	
Aroclor-1260	0.950 U	1.0 U	0.20 U	0.190 U	0.210 U	0.170 U	0.320 U	
Sample Number	TB08-01-001	TB08-01-004	TB08-01-005	TB08-01-007	TB08-01-010	TB08-01-011	TB08-01-013	TB08-02-013
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/l
Aroclor-1016	8.6 U	9.40 U	0.450 U	0.099 U	0.096 U	0.088 U	0.087 U	1.2 U
Aroclor-1221	8.6 U	9.40 U	0.450 U	0.099 U	0.096 U	0.088 U	0.087 U	1.2 U
Aroclor-1232	8.6 U	9.40 U	0.450 U	0.099 U	0.096 U	0.088 U	0.087 U	1.2 U
Aroclor-1242	8.6 U	9.40 U	0.450 U	0.099 U	0.096 U	0.088 U	0.087 U	1.2 U
Aroclor-1248	8.5 J	25.0	2.10	0.099 U	0.096 U	0.088 U	0.087 U	1.2 U
Aroclor-1254	17.0 U	19.0 U	0.90 U	0.20 U	0.190 U	0.180 U	0.170 U	2.4 U
Aroclor-1260	17.0 U	19.0 U	0.90 U	0.20 U	0.190 U	0.180 U	0.170 U	2.4 U
Sample Number	TB09-01-001	TB09-01-003	TB09-01-006	TB09-01-008	TB09-01-009	TB09-01-012	TB09-01-013	
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Aroclor-1016	0.093 U	1.0 U	0.30 U	0.30 U	0.280 U	0.092 U	0.079 U	
Aroclor-1221	0.093 U	1.0 U	0.30 U	0.30 U	0.280 U	0.092 U	0.079 U	
Aroclor-1232	0.093 U	1.0 U	0.30 U	0.30 U	0.280 U	0.092 U	0.079 U	
Aroclor-1242	0.093 U	1.0 U	0.30 U	0.30 U	0.280 U	0.092 U	0.079 U	
Aroclor-1248	0.093 U	1.0 U	0.30 U	0.30 U	0.280 U	0.092 U	0.079 U	
Aroclor-1254	0.190 U	2.0 U	0.590 U	0.590 U	0.560 U	0.180 U	0.160 U	
Aroclor-1260	0.190 U	2.0 U	0.590 U	0.590 U	0.560 U	0.180 U	0.160 U	
Sample Number	TB10-01-001	TB10-01-003	TB10-01-006	TB10-01-007	TB10-01-009	TB10-01-011	TB10-01-013	TB10-01-015
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aroclor-1016	0.50 U	0.270 U	0.290 U	0.30 U	0.099 U	0.086 U	0.090 U	0.093 U
Aroclor-1221	0.50 U	0.270 U	0.290 U	0.30 U	0.099 U	0.086 U	0.090 U	0.093 U
Aroclor-1232	0.50 U	0.270 U	0.290 U	0.30 U	0.099 U	0.086 U	0.090 U	0.093 U
Aroclor-1242	0.50 U	0.270 U	0.290 U	0.30 U	0.099 U	0.086 U	0.090 U	0.093 U
Aroclor-1248	0.50 U	0.270 U	0.290 U	0.30 U	0.099 U	0.086 U	0.090 U	0.093 U
Aroclor-1254	1.0	0.550 U	0.580 U	0.590 U	0.20 U	0.170 U	0.180 U	0.190 U
Aroclor-1260	1.0 U	0.550 U	0.580 U	0.590 U	0.20 U	0.170 U	0.180 U	0.190 U

Sample Number	TB11-01-002	TB11-01-003	TB11-01-005	TB11-01-008	TB11-01-009	TB11-02-011
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/l
Aroclor-1016	0.470 U	0.190 U	0.10 U	0.099 U	0.092 U	1.2 U
Aroclor-1221	0.470 U	0.190 U	0.10 U	0.099 U	0.092 U	1.2 U
Aroclor-1232	0.470 U	0.190 U	0.10 U	0.099 U	0.092 U	1.2 U
Aroclor-1242	0.470 U	0.190 U	0.10 U	0.099 U	0.092 U	1.2 U
Aroclor-1248	0.470 U	0.190 U	0.10 U	0.099 U	0.092 U	1.2 U
Aroclor-1254	0.930 U	0.370 U	0.20 U	0.20 U	0.180 U	2.4 U
Aroclor-1260	0.930 U	0.370 U	0.20 U	0.20 U	0.180 U	2.4 U

Sample Number	TB12-01-002	TB12-01-003	TB12-01-005	TB12-01-007	TB12-01-012	TB12-01-013
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aroclor-1016	0.087 U	0.440 U	0.042 U	0.087 U	0.086 U	0.086 U
Aroclor-1221	0.087 U	0.440 U	0.042 U	0.087 U	0.086 U	0.086 U
Aroclor-1232	0.087 U	0.440 U	0.042 U	0.087 U	0.086 U	0.086 U
Aroclor-1242	0.087 U	0.440 U	0.042 U	0.087 U	0.086 U	0.086 U
Aroclor-1248	0.087 U	0.440 U	0.042 U	0.087 U	0.086 U	0.062 J
Aroclor-1254	0.170 U	0.690 U	0.083 U	0.170 U	0.170 U	0.170 U
Aroclor-1260	0.170 U	0.690 U	0.083 U	0.170 U	0.170 U	0.170 U

Sample Number	TB13-01-003	TB13-01-006	TB13-01-007	TB13-01-009	TB13-01-011
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aroclor-1016	0.10 U	0.085 U	0.084 U	0.089 U	0.090 U
Aroclor-1221	0.10 U	0.085 U	0.084 U	0.089 U	0.090 U
Aroclor-1232	0.10 U	0.085 U	0.084 U	0.089 U	0.090 U
Aroclor-1242	0.10 U	0.085 U	0.084 U	0.089 U	0.090 U
Aroclor-1248	0.10 U	0.026 J	0.084 U	0.089 U	0.090 U
Aroclor-1254	0.20 U	0.170 U	0.170 U	0.90 U	0.180 U
Aroclor-1260	0.20 U	0.170 U	0.170 U	0.90 U	0.180 U

Sample Number	TC01-01	TC01-02	TC02-01	TC02-02	TC03-01	TC03-02	TC04-01	TC04-02	TC05-01
Units	mg/kg	ug/l	mg/kg	ug/l	mg/kg	ug/l	mg/kg	ug/l	mg/kg
Aroclor-1016	0.560 U	0.52 U	0.250 U	0.58 U	0.270 U	0.56 U	0.230 U	0.58 U	0.480 U
Aroclor-1221	0.560 U	0.52 U	0.250 U	0.58 U	0.270 U	0.56 U	0.230 U	0.58 U	0.480 U
Aroclor-1232	0.560 U	0.52 U	0.250 U	0.58 U	0.270 U	0.58 U	0.230 U	0.58 U	0.480 U
Aroclor-1242	0.560 U	0.52 U	0.250 U	0.58 U	0.270 U	0.58 U	0.230 U	0.58 U	0.480 U
Aroclor-1248	0.560 U	0.52 U	0.250 U	0.58 U	0.270 U	0.56 U	0.230 U	0.58 U	0.480 U
Aroclor-1254	1.10 U	1.0 U	0.510 U	1.2 U	0.540 U	1.1 U	0.460 U	1.2 U	0.960 U
Aroclor-1260	1.10 U	1.0 U	0.510 U	1.2 U	0.540 U	1.1 U	0.460 U	1.2 U	0.960 U

Sample Number	EB01-10	EB02-10	EB03-10	EB04-20	EB05-10	SE0531
Units	ug/l	ug/l	ug/l	ug/l	ug/l	mg/kg
Aroclor-1016	0.59 U	0.57 U	0.50 U	0.50 U	0.50 U	0.94 U
Aroclor-1221	0.59 U	0.57 U	0.50 U	0.50 U	0.50 U	0.94 U
Aroclor-1232	0.59 U	0.57 U	0.50 U	0.50 U	0.50 U	0.94 U
Aroclor-1242	0.59 U	0.57 U	0.50 U	0.50 U	0.50 U	0.94 U
Aroclor-1248	0.59 U	0.57 U	0.50 U	0.50 U	1.3	0.94 U
Aroclor-1254	1.2 U	1.1 U	1.0 U	1.0 U	1.0 U	1.90 U
Aroclor-1260	1.2 U	1.1 U	1.0 U	1.0 U	1.0 U	1.90 U

Borehole Log **ROY F. WESTON, Inc.**

CLIENT	: ENVIRONMENTAL ASSESSMENT	TOTAL DEPTH	: 2.90
SITE NAME	: GLEASON WORKS	LOGGER	: SCOTT HUBBARD/WESTON
WELL ID	: TB-01	DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING	: -94.7500 estimated	DRILLING RIG	: TRIPOD/CATHEAD
EASTING	: 55.0000 estimated	DATE STARTED	: 07/09/92
ELEVATION	: 100.000 estimated	DATE COMPLETED	: 07/09/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			100	SAND, sm SILT, lt GRAVEL	DK GRAYISHBROWN	SFT	MST	19 30 22 40		Trace clay from 1.0-1.5 feet BGS (<5%), staining (black) noted in spoon.
99	1									
98	2		50	Sand, sm SILT, lt GRAVEL	DK GRAY BROWN	LSE	NA	31 100 0 0		1.5 inch rock fragment in head of spoon. Bedrock at 2.9 feet BGS
97	3									
96	4									
95	5									
94	6									
93	7									
92	8									
91	9									
90	10									

Borehole Log

ROY F. WESTON, Inc.

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 2.90
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-02		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : -87.0900 estimated		DRILLING RIG	: TRIPOD/CATHEAD
EASTING : 31.0000 estimated		DATE STARTED	: 07/09/92
ELEVATION : 100.000 estimated		DATE COMPLETED	: 07/09/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			60	SAND and SILT, sm GRAVEL	BROWN	SFT	MST	19 15 22 30		
99	1									
98	2		25	SAND and SILT, lt GRAVEL	DK GRYSH BROWN	SFT	WET	39 100		
97	3									
96	4									
95	5									
94	6									
93	7									
92	8									
91	9									
90	10									

Borehole Log

ROY F. WESTON, Inc.

CLIENT	: ENVIRONMENTAL ASSESSMENT	TOTAL DEPTH	: 2.40
SITE NAME	: GLEASON WORKS	LOGGER	: SCOTT HUBBARD/WESTON
WELL ID	: TB-03	DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING	: -119.5900 estimated	DRILLING RIG	: TRIPOD/CATHEAD
EASTING	: 37.6700 estimated	DATE STARTED	: 07/10/92
ELEVATION	: 100.000 estimated	DATE COMPLETED	: 07/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			50	SAND, sm SILT, lt CLAY, tr GRAVEL	VERY DARK GREY	SFT	MST	20		
99	1									
98	2		15	SAND, sm SILT, lt GRAVEL	DK BROWN	SFT	WET	100		Water entry at 2.3 BGS
97	3									
96	4									
95	5									
94	6									
93	7									
92	8									
91	9									
90	10									

Borehole Log **ROY F. WESTON, Inc.**

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 2.70
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-04		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : -146.5900 estimated		DRILLING RIG	: TRIPOD/CATHEAD
EASTING : 33.5000 estimated		DATE STARTED	: 07/10/92
ELEVATION : 100.000 estimated		DATE COMPLETED	: 07/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	SAND, sm SILT, lt GRAVEL, tr CLAY	BROWN	SFT	DMP	17 20 20 28		
99	1									
98	2		15	SAND, sm GRAVEL, sm SILT	BROWN	SFT	WET	37 100 0 0		Bedrock at 2.7 feet BGS. Water entry at 2.3 BGS. One inch of water noted in borehole.
97	3									
96	4									
95	5									
94	6									
93	7									
92	8									
91	9									
90	10									

Borehole Log

ROY F. WESTON, Inc.

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 2.90
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-05		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : -137.9200 estimated		DRILLING RIG	: TRIPOD/CATHEAD
EASTING : 60.5000 estimated		DATE STARTED	: 07/10/92
ELEVATION : 100.000 estimated		DATE COMPLETED	: 07/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
99	1		40	SAND, sm SILT, sm GRAVEL	DK GRAYISHBROWN	SFT	MST	14 3 4 4		
98	2		25	SAND, sm SILT, lt CLAY, lt GRAVEL	DK GRAYISHBROWN	SFT	WET	2 1 0 0		
97	3									
96	4									
95	5									
94	6									
93	7									
92	8									
91	9									
90	10									

Borehole Log **ROY F. WESTON, Inc.**

CLIENT	: ENVIRONMENTAL ASSESSMENT	TOTAL DEPTH	: 3.00
SITE NAME	: GLEASON WORKS	LOGGER	: SCOTT HUBBARD/WESTON
WELL ID	: TB-06	DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING	: -105.4200 estimated	DRILLING RIG	: TRIPOD/CATHEAD
EASTING	: 54.6700 estimated	DATE STARTED	: 07/10/92
ELEVATION	: 100.000 estimated	DATE COMPLETED	: 07/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			25	SAND and SILT, lt GRAVEL	VRY DK GRBROWN	LSE	WET	20		
99	1									
98	2		15	SAND and silt, little gravel.	DK YELLOWBROWN	LSE	WET	35		Bedrock at 3.0 feet BGS.
97	3							150		
96	4									
95	5									
94	6									
93	7									
92	8									
91	9									
90	10									

Borehole Log

ROY F. WESTON, Inc.

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 12.60
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-07		DRILLING COMPANY	: EMPIRE SOILS
NORTHING : 173.1300 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : 375.4700 estimated		DATE STARTED	: 07/13/92
ELEVATION : 102.670 estimated		DATE COMPLETED	: 07/13/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
101	1		100	SAND, sm GRAVEL, lt SILT	BLACK	LSE	DMP	15 22 40 40		Coal fragments noted in sample. Sample stained black. No odor.
100	2		25	SAND, sm GRAVEL, lt SILT	BLACK	LSE	DMP	WOH/WOH		Photo 20. Same as 0-2 feet.
99	3									
98	4		60	SILT and CLAY, tr GRAVEL	OLIVE	FRM	DMP	WOH/WOH		
97	5									
96	6		50	SILT and CLAY, lt SAND, tr GRAVEL	LT OLIVE BROWN	FRM	DMP	5 12 20 30		Increasing sand as sample goes deeper.
95	7									
94	8		75	SILT and CLAY, tr SAND	DK OLIVE BROWN	FRM	DMP	19		Black staining noted.
				SAND, sm GRAVEL, lt SILT	DK OLIVE BROWN	LSE	DMP	30 40 44		May be fill. Red coloration noted, possible brick. Photo 23.
93	9									
92	10		50	SAND, sm SILT, lt GRAVEL	DK GRAYISHBROWN	SFT	SAT	12 17 35 20		Decreasing sand with depth, trace clay at 10.7 to 11.0 feet. Water entry at 10.3 feet.

CLIENT :	ENVIRONMENTAL ASSESSMENT	TOTAL DEPTH :	12.60
SITE NAME :	GLEASON WORKS	LOGGER :	SCOTT HUBBARD/WESTON
WELL ID :	TB-07	DRILLING COMPANY :	EMPIRE SOILS
NORTHING :	173.1300 estimated	DRILLING RIG :	SKID MOUNTED RIG
EASTING :	375.4700 estimated	DATE STARTED :	07/13/92
ELEVATION :	102.670 estimated	DATE COMPLETED :	07/13/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				SAND, sm SILT, lt GRAVEL	DK GRAYISHBROWN	SFT	SAT			Decreasing sand with depth, trace clay at 10.7 to 11.0 feet. Water entry at 10.3 feet.
91	11									
90	12		5	SAND, sm SILT, sm GRAVEL	GRAY	LSE	SAT	19 100 0 0		Bedrock at 12.6. May not be enough sample for analysis. No library sample.
89	13									
88	14									
87	15									
86	16									
85	17									
84	18									
83	19									
82	20									

Borehole Log

ROY F. WESTON, Inc.

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 13.90
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-08		DRILLING COMPANY	: EMIRE SOILS INVESTIGATIONS
NORTHING : -6.7200 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : 184.6500 estimated		DATE STARTED	: 07/14/92
ELEVATION : 104.270 estimated		DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
103	1		50	SAND, sm GRAVEL, sm SILT	BLACK	LSE	DMP	55 100 0 0		Petroleum hydrocarbon odor. Refuse at 1 foot. Move rig west 10 feet and auger to 2 feet.
102	2		50	SAND, sm GRAVEL, sm SILT	BLACK	LSE	MST	3 12 20 12		Heavily stained and petroleum odor.
101	3									
100	4		25	SAND, sm SILT, sm GRAVEL, lt CLAY	BLACK	LSE	MST	11 8 10 10		Staining, Petroleum hydrocarbon odor, Not enough recovery for library sample.
99	5									
98	6		50	SILT, sm CLAY, sm SAND	GRAYISH BROWN	SFT	MST	6 11 8 8		
97	7									
96	8		75	SILT, sm CLAY, sm SAND, lt GRAVEL	GRAY	SFT	MST	7 8 11 23		
95	9									
94	10		50	SAND, lt GRAVEL, lt SILT	YELLOWISH BROWN	LSE	MST	30 35 45 15		

Borehole Log

ROY F. WESTON, Inc.

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 13.90
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-08		DRILLING COMPANY	: EMIRE SOILS INVESTIGATIONS
NORTHING : -6.7200 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : 184.6500 estimated		DATE STARTED	: 07/14/92
ELEVATION : 104.270 estimated		DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				SAND, lt GRAVEL, lt SILT	YELLOWISH BROWN	LSE	MST			
93	11									
92	12		50	SAND, sm GRAVEL	GRAY BROWN	LSE	SAT	35 40 47 100		Groundwater Sample collected immediately above bedrock using hydropunch. BR = 13.9'BGS
91	13									
90	14									
89	15									
88	16									
87	17									
86	18									
85	19									
84	20									

Borehole Log

ROY F. WESTON, Inc.

CLIENT :	ENVIRONMENTAL ASSESSMENT	TOTAL DEPTH :	14.00
SITE NAME :	GLEASON WORKS	LOGGER :	SCOTT HUBBARD/WESTON
WELL ID :	TB-09	DRILLING COMPANY :	EMPIRE SOILS INVESTIGATIONS
NORTHING :	32.9300 estimated	DRILLING RIG :	SKID MOUNTED RIG
EASTING :	116.9100 estimated	DATE STARTED :	07/14/92
ELEVATION :	104.230 estimated	DATE COMPLETED :	07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
103	1		50	SAND, sm SILT, sm GRAVEL	YELLOW	LSE	DMP	16 20 12		
102	2		50	SAND, sm GRAVEL, sm SILT	YELLOW	LSE	DMP	4 5 5 9		
101	3									
100	4		75	SILT and SAND, lt GRAVEL	BLACK	SFT	DMP	5 5 7 8		2 inch sand zone at 5.0-5.2 feet. Heavy staining follows sand bed.
99	5									
98	6		75	SILT, sm SAND, sm CLAY	YELLOWISH BROWN	FRM	DMP	5 8 8 9		3 inch sand bed at 6.2-6.5 feet stained black.
97	7									
96	8		50	SAND and SILT, lt GRAVEL	YELLOWISH BROWN	SFT	DMP	5 10 11 15		Stained from 8.8 -9.0 feet.
95	9									
94	10		50	CLAY and SILT, sm GRAVEL	BROWN	FRM	DMP	10 13 30 16		

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 14.00
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-09		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : 32.9300 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : 116.9100 estimated		DATE STARTED	: 07/14/92
ELEVATION : 104.230 estimated		DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
93	11			CLAY and SILT, sm GRAVEL	BROWN	FRM	DMP			
92	12		50	SAND, sm GRAVEL, sm SILT	GRAYISH BROWN	LSE	SAT	29 40 49 100		Bedrock at 14 feet below ground surface, Water entry at 12.0 feet below ground surface.
91	13									
90	14									
89	15									
88	16									
87	17									
86	18									
85	19									
84	20									

Borehole Log **ROY F. WESTON, Inc.**

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 14.70
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-10		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : 5.9300 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : 56.6900 estimated		DATE STARTED	: 07/14/92
ELEVATION : 104.710 estimated		DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
103	1			SAND, sm GRAVEL, sm SILT	DK YELLOW BROWN	LSE	DMP	5-6-6-5 11		Staining from 0-0.7 feet below ground surface.
102	2		50	SAND, sm SILT, sm GRAVEL	GRAY	LSE	DMP	4-5-6-6 11		Staining at 2.5-3.0 feet.
101	3									
100	4		75	SILT, sm GRAVEL, lt SAND, lt CLAY	GRAY	SFT	DMP	3-3-3-3 6		Staining.
99	5									
98	6		25	SILT, sm GRAVEL, sm SAND, lt CLAY	BLACK	LSE	DMP	4 2 3 6		Staining. Not enough recovery for library sample.
97	7									
96	8		50	CLAY and SILT, sm GRAVEL	GRAY	FRM	DMP	6 11 8 15		Sand from 8.8-9.0 feet.
95	9									
94	10		50	CLAY, sm SILT	GRAY BROWN	FRM	DMP	11 15 18 25		

Borehole Log

ROY F. WESTON, Inc.

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 14.70
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-10		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : 5.9300 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : 56.6900 estimated		DATE STARTED	: 07/14/92
ELEVATION : 104.710 estimated		DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				CLAY, sm SILT	GRAY BROWN	FRM	DMP			
				SAND and GRAVEL	DK BROWN	LSE	MST			
				SILT, sm SAND	DK YELLOW BROWN	SFT	MST			
93	11									
92	12		50	SAND and GRAVEL		SFT	SAT	16 21 28 15 22		Water entry at 12.0 feet below ground surface.
91	13									
90	14		50	SAND and GRAVEL, lt SILT	GRAY	LSE	SAT	35 100 0 0		Bedrock at 14.7 feet.
89	15									
88	16									
87	17									
86	18									
85	19									
84	20									

Borehole Log

ROY F. WESTON, Inc.

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 10.90
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-11		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : 41.5400 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : -40.4700 estimated		DATE STARTED	: 07/13/92
ELEVATION : 102.500 estimated		DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			75	SAND, sm SILT, lt GRAVEL	BLACK	LSE	DMP	10 10 12 16		Drilled through 6 inch concrete. 0 to 1 foot black staining. 1 to 1.2 feet oxidation.
101	1									
100	2		50	SAND, sm GRAVEL, lt SILT	BLACK	LSE		5 5 7 16		Black staining noted in spoon.
99	3									
98	4		50	CLAY and SILT, tr GRAVEL	DK GRAY BROWN	FRM	MST	33 6 6 6		Sand bed from 4.5 to 4.7 feet BGS.
97	5									
96	6			SAND, lt GRAVEL, lt SILT	DK YELLOW BROWN	SFT	SAT	5		Water entry at 6 to 6.5 feet BGS. Possible confining or semi-confining unit.
				SILT and CLAY	YELLOWISH BROWN	FRM	SMP	5 9 9		
95	7									
94	8		50	SAND	DK YELLOW BROWN	LSE	SAT	7 16 19		Possible oxidation.
				SAND and SILT	YELLOWISH BROWN	SFT	SAT	22		Saturated.
93	9									
92	10			SAND				27 100 0 0		Bedrock at 10.9 feet BGS. Spoon wet. No Recovery

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 10.90
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-11		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : 41.5400 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : -40.4700 estimated		DATE STARTED	: 07/13/92
ELEVATION : 102.500 estimated		DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				SAND						Bedrock at 10.9 feet BGS. Spoon Wet. No Recovery
91	11									
90	12									
89	13									
88	14									
87	15									
86	16									
85	17									
84	18									
83	19									
82	20									

Borehole Log

ROY F. WESTON, Inc.

CLIENT	: ENVIRONMENTAL ASSESSMENT	TOTAL DEPTH	: 12.90
SITE NAME	: GLEASON WORKS	LOGGER	: SCOTT HUBBARD/WESTON
WELL ID	: TB-12	DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING	: 188.0800 estimated	DRILLING RIG	: SKID MOUNTED RIG
EASTING	: 102.9200 estimated	DATE STARTED	: 07/13/92
ELEVATION	: 101.840 estimated	DATE COMPLETED	: 07/13/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
100	1		75	SAND and GRAVEL	BROWN	LSE	DMP	25 20 14 11		0-6 inch asphalt, 6-8 inch white/gray staining, 8-12 inch sand/fill.
99	2		50	GRAVEL, sm SAND, sm SILT	YELLOWISH RED	LSE	DMP	12 5 5		Staining photo number 4.
98	3									
97	4		50	GRAVEL, sm SAND	GRAY	LSE	DMP	25 38 32 100		4.0-4.5 feet mixture of fragmented concrete and sand, 4.5-5.0 feet fragmented masonry brick.
96	5									
95	6		25	SAND, sm GRAVEL, lt SILT	DK YELLOWISH BR	LSE	DMP	15 11 100 20		
94	7									
93	8			SAND, sm GRAVEL, lt SILT						No Recovery
92	9									
91	10		75	SAND, sm SILT, lt GRAVEL	GRAYISH BROWN	SFT	SAT	25 35 30 25		Water entry at 10.0 feet below ground surface.

Borehole Log

ROY F. WESTON, Inc.

CLIENT	: ENVIRONMENTAL ASSESSMENT	TOTAL DEPTH	: 12.90
SITE NAME	: GLEASON WORKS	LOGGER	: SCOTT HUBBARD/WESTON
WELL ID	: TB-12	DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING	: 188.0800 estimated	DRILLING RIG	: SKID MOUNTED RIG
EASTING	: 102.9200 estimated	DATE STARTED	: 07/13/92
ELEVATION	: 101.840 estimated	DATE COMPLETED	: 07/13/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				SAND, sm SILT, lt GRAVEL	GRAYISH BROWN	SFT	SAT			Water entry at 10.0 feet below ground surface.
90	11									
89	12		25	SAND, lt GRAVEL, lt SILT	DK GRAY BROWN	SFT	SAT	42 100 oo		Bedrock at 12.9 feet BGS.
88	13									
87	14									
86	15									
85	16									
84	17									
83	18									
82	19									
81	20									

Borehole Log

ROY F. WESTON, Inc.

CLIENT	: ENVIRONMENTAL ASSESSMENT	TOTAL DEPTH	: 13.60
SITE NAME	: GLEASON WORKS	LOGGER	: SCOTT HUBBARD/WESTON
WELL ID	: TB-13	DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING	: 151.9700 estimated	DRILLING RIG	: SKID MOUNTED RIG
EASTING	: -73.9200 estimated	DATE STARTED	: 07/13/00
ELEVATION	: 101.390 estimated	DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
100	1		5	GRAVEL, sm SAND		LSE	DMP	2 4		Not enough recovery for sample. Vegetative matter noted in sample (wood etc).
99	2		10	SAND, sm SILT, lt CLAY, tr GRAVEL	YELLOW BROWN	FRM	DMP	4 4 5 5		No library sample collected. Plastic noted in spoon.
98	3									
97	4		75	SAND, sm SILT	VY DK YEL BRN	SFT	DMP	7 7 10 13		Photo 3.
96	5			SAND	DK YELLOW BROWN	SHP	DMP	7 7 10 13		
95	6		50	SAND	BROWN	LSE	DMP	7 13 17 20		Interbedding from 6.2 to 6.3 feet. Iron-oxide staining 1/2 inch width, ironoxide also 7 feet BGS
94	7									
93	8		50	SAND, sm SILT, lt GRAVEL	DK GRAY BROWN	FRM	WET	8 10 12 17		Interbedding was oxidized. Possible iron-oxide.
92	9									
91	10		50	GRAVEL, sm SAND, lt SILT, tr CLAY	DK YELLOW BROWN	LSE	SAT	12 14 17 15		Fill like material noted. Contained steel wool, and various stone fragments. Water entry at 10.0 BGS.

CLIENT : ENVIRONMENTAL ASSESSMENT		TOTAL DEPTH	: 13.60
SITE NAME : GLEASON WORKS		LOGGER	: SCOTT HUBBARD/WESTON
WELL ID : TB-13		DRILLING COMPANY	: EMPIRE SOILS INVESTIGATIONS
NORTHING : 151.9700 estimated		DRILLING RIG	: SKID MOUNTED RIG
EASTING : -73.9200 estimated		DATE STARTED	: 07/13/00
ELEVATION : 101.390 estimated		DATE COMPLETED	: 07/14/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
90	11			GRAVEL, sm SAND, lt SILT, tr CLAY	DK YELLOW BROWN	LSE	SAT			Fill like material noted. Contained steel wool, and various stone fragments. Water entry at 10.0 BGS.
89	12			Lockport Dolomite Bedrock				100		Refusal at 12.1 feet BGS. Bedrock Confirmed by 4' Core
88	13									
87	14									
86	15									
85	16									
84	17									
83	18									
82	19									
81	20									

APPENDIX 3
ALLIANCE ENVIRONMENTAL SERVICES, INC.
TABLES, FIGURES & DATA

Alliance
ENVIRONMENTAL SERVICES, INC.

SCALE: 1" = 2000'

0 2000 4000
Feet

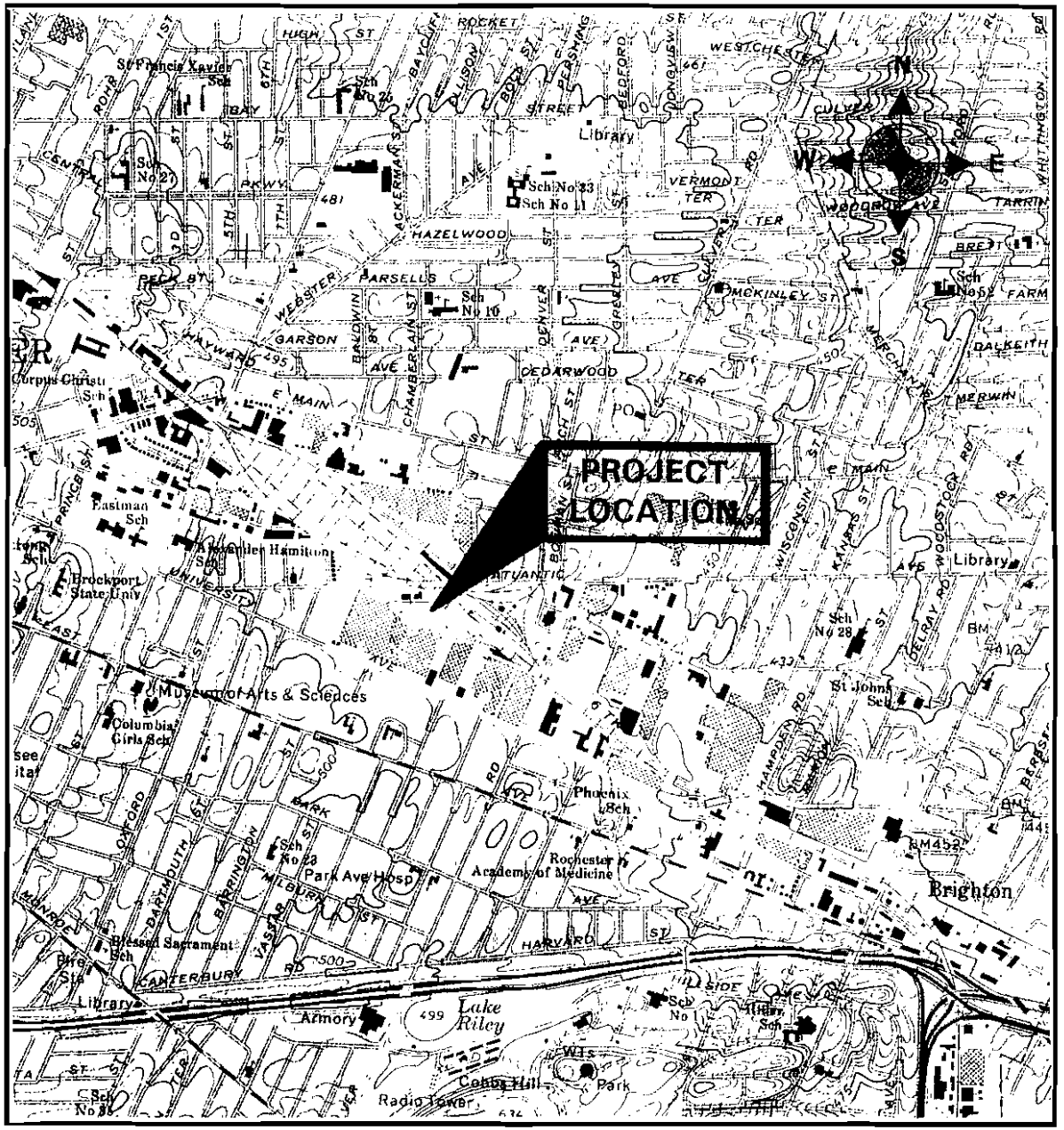
DRAWN BY	REVISIONS	DATE
BAM		APR. 1996
CHECKED BY		PROJECT NO.
JDY		96010.020
APPROVED BY		CAD FILE NAME
PEN		96010PLM

THE GLEASON WORKS

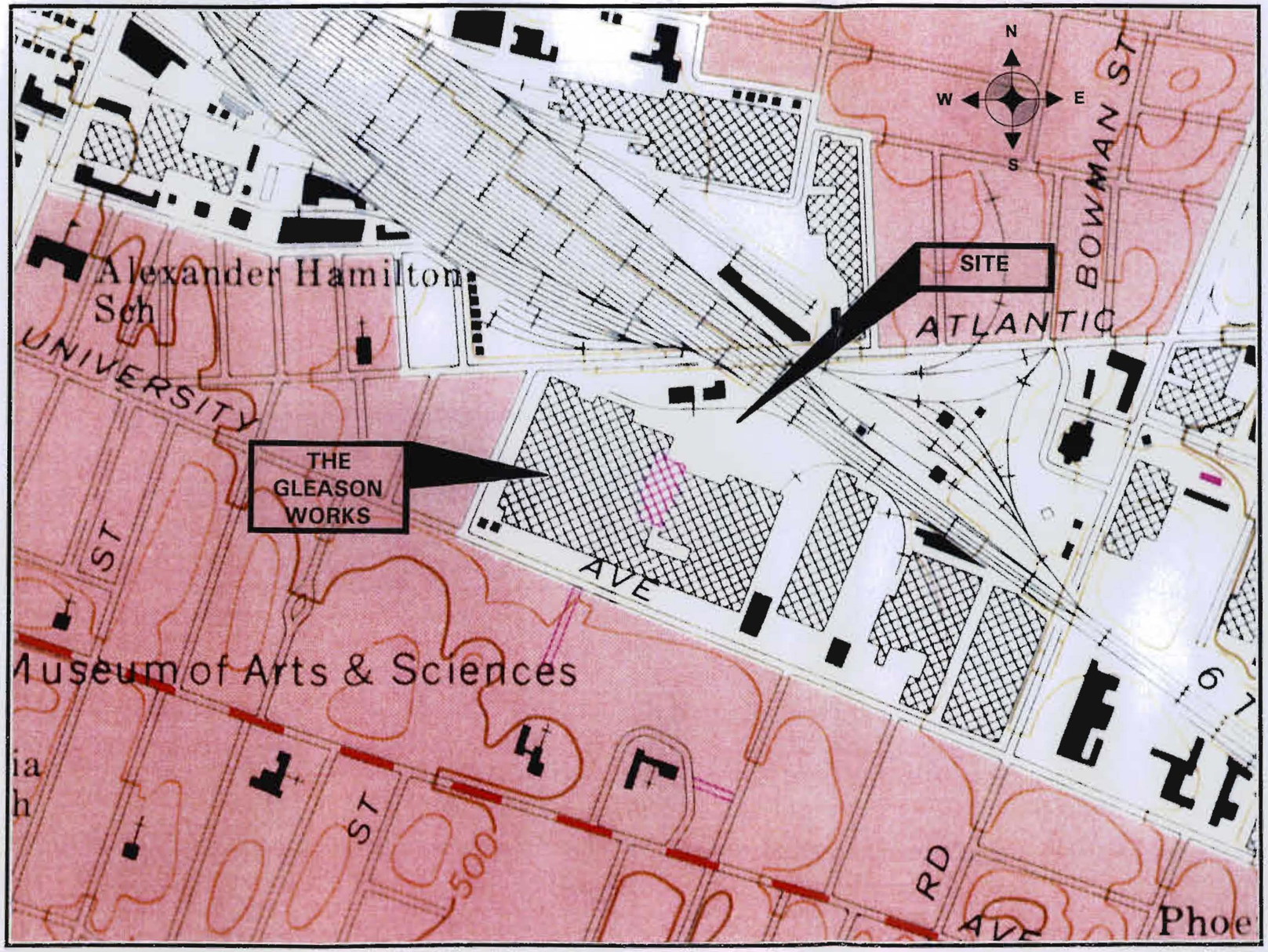
1000 University Avenue
City of Rochester, Monroe County
New York

PROJECT LOCATION MAP

FIGURE 1



BASE MAP: ROCHESTER EAST, N.Y. USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE (1971, PHOTOREVISED 1978)



BASE MAP: ROCHESTER EAST, N.Y. USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE (1971, PHOTOREVISED 1978) (ENLARGED 400%)

THE GLEASON WORKS

1000 University Avenue
City of Rochester, Monroe County
New York

IMMEDIATE PROJECT AREA MAP

FIGURE 2

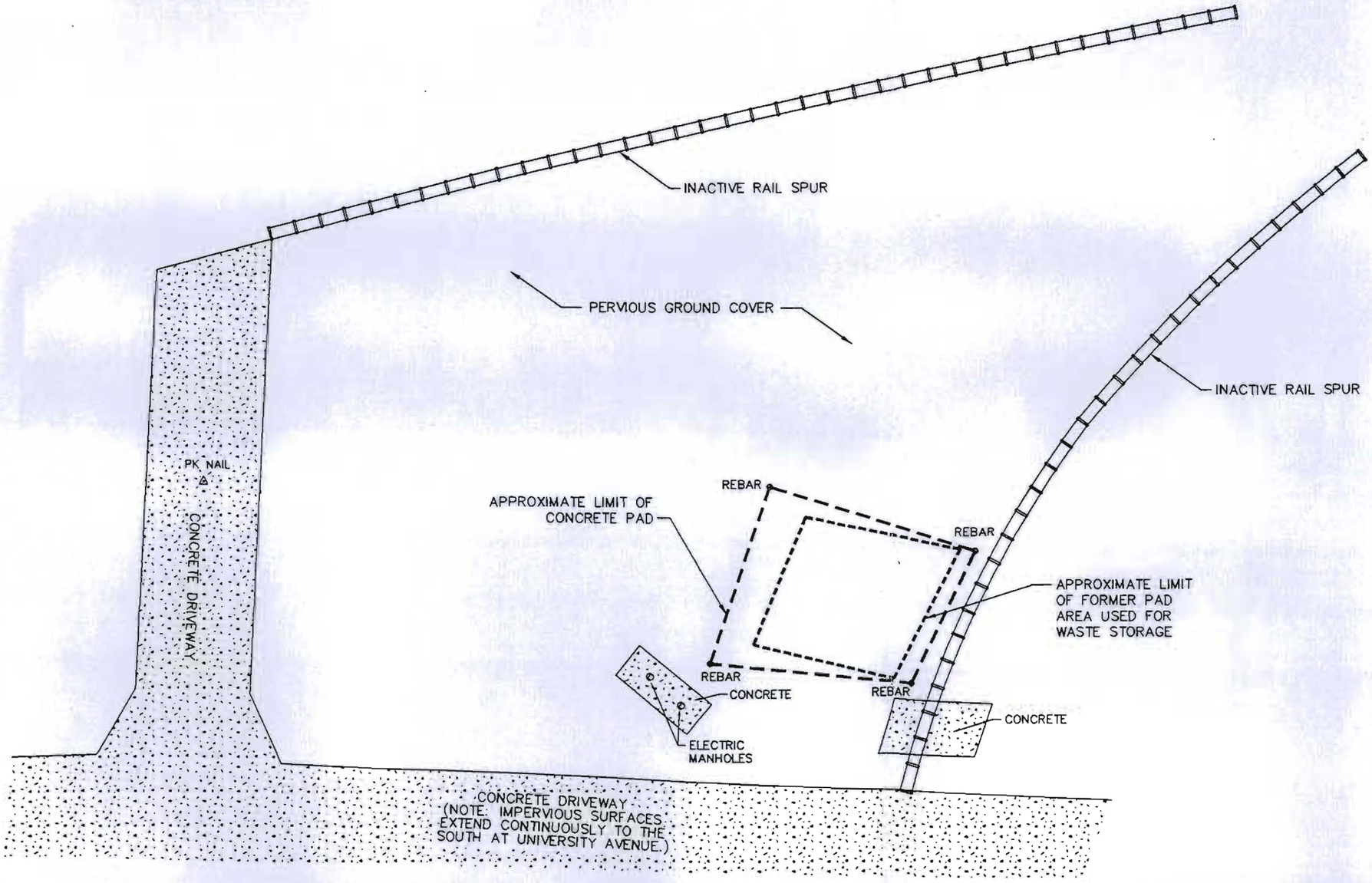
0 500 1000

Approximate Scale In Feet

DRAWN BY	REVISIONS	DATE
BAM		APR. 1996
CHECKED BY		PROJECT NO.
JDY		96010.020
APPROVED BY		CAD FILE NAME
PEN		96010 FIG2

Alliance
ENVIRONMENTAL SERVICES, INC.

APPROXIMATE LOCATION OF STEAM PLANT



LEGEND:

PK NAIL
△ SURVEY BENCHMARK

NOTES:

1. BASE PLAN PROVIDED BY LOZIER ENGINEERS INC. WITH THE BORING LOCATIONS SURVEYED BY LOZIER, SEPTEMBER 1995. ALL TEST LOCATION AND OTHER FEATURES ARE APPROXIMATE.
2. REBAR INDENTIFIES THE CORNERS OF THE EXCAVATION CREATED BY REMOVAL OF THE CONCRETE PAD.

20 10 0 20

APPROX. SCALE IN FEET

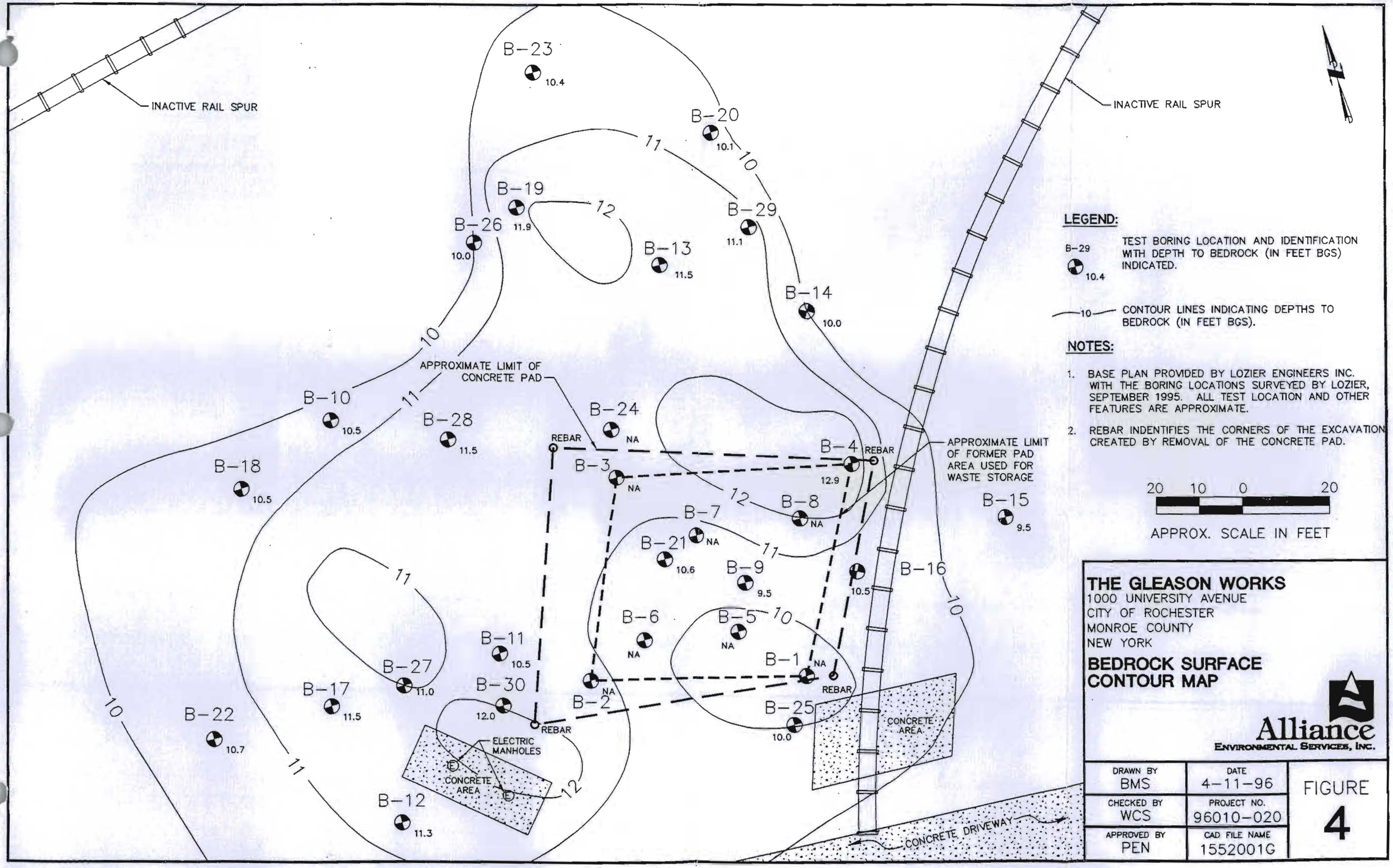
THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

SITE AREA

Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY	DATE
DEC/TKG	4-11-96
CHECKED BY	PROJECT NO.
DRV	96010-020
APPROVED BY	CAD FILE NAME
PEN	1552001H

FIGURE 3



LEGEND:

B-29 / 10.4 — TEST BORING LOCATION AND IDENTIFICATION WITH DEPTH TO BEDROCK (IN FEET BGS) INDICATED.

10 — CONTOUR LINES INDICATING DEPTHS TO BEDROCK (IN FEET BGS).

NOTES:

1. BASE PLAN PROVIDED BY LOZIER ENGINEERS INC. WITH THE BORING LOCATIONS SURVEYED BY LOZIER, SEPTEMBER 1995. ALL TEST LOCATION AND OTHER FEATURES ARE APPROXIMATE.
2. REBAR INDENTIFIES THE CORNERS OF THE EXCAVATION CREATED BY REMOVAL OF THE CONCRETE PAD.

20 10 0 20

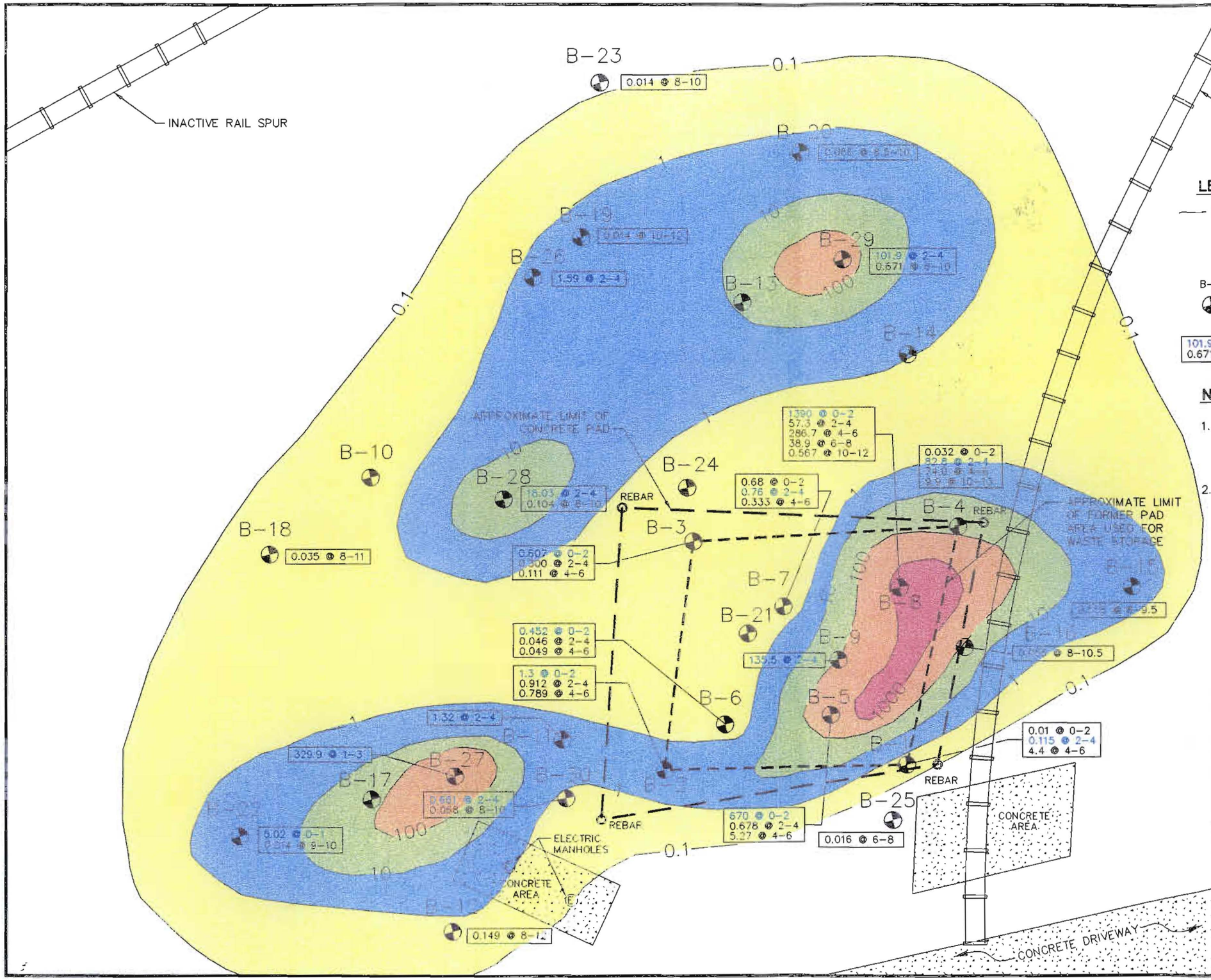
APPROX. SCALE IN FEET

THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

BEDROCK SURFACE CONTOUR MAP

Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY	DATE	FIGURE
BMS	4-11-96	4
CHECKED BY	PROJECT NO.	
WCS	96010-020	
APPROVED BY	CAD FILE NAME	
PEN	1552001G	



LEGEND:

—— 0.1 —— INDICATES ISOCONCENTRATION LINE FOR TOTAL VOCs IN PPM, THE DATA IN BLUE ARE CONTOURED.

B-29 TEST BORING LOCATION AND IDENTIFICATION. TOTAL VOC CONCENTRATIONS ARE INDICATED IN PPM FOR THE SPECIFIED DEPTH INTERVAL IN FEET BGS.

101.9 @ 2-4
0.671 @ 8-10

NOTES:

1. BASE PLAN PROVIDED BY LOZIER ENGINEERS INC. WITH THE BORING LOCATIONS SURVEYED BY LOZIER, SEPTEMBER 1995. TEST LOCATIONS AND OTHER FEATURES ARE OTHERWISE APPROXIMATE.
2. REBAR INDICATES THE CORNERS OF THE EXCAVATION CREATED BY REMOVAL OF THE CONCRETE PAD.

10 5 0 10

APPROX. SCALE IN FEET

THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

HIGHEST TOTAL VOC CONCENTRATIONS IN 0-4' BGS INTERVALS

Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY: BMS	DATE: 4-11-96
CHECKED BY: WCS	PROJECT NO.: 96010-020
APPROVED BY: PEN	CAD FILE NAME: 1552001A

FIGURE 5

INACTIVE RAIL SPUR

B-23
0.014 @ 8-10

B-20
0.065 @ 8.5-10

B-19
0.014 @ 10-12

B-26
1.59 @ 2-4

B-29
101.9 @ 2-4
0.671 @ 8-10

B-13

B-14

0.1

0.01

APPROXIMATE LIMIT OF CONCRETE PAD

B-10

B-28
18.03 @ 2-4
0.104 @ 8-10

B-24

REBAR

0.68 @ 0-2
0.76 @ 2-4
0.333 @ 4-6

B-3

B-18
0.035 @ 8-11

0.607 @ 0-2
0.300 @ 2-4
0.111 @ 4-6

B-7

B-21

0.452 @ 0-2
0.046 @ 2-4
0.049 @ 4-6

1.3 @ 0-2
0.912 @ 2-4
0.789 @ 4-6

B-6

1.32 @ 2-4

B-11

329.9 @ 1-3

B-27

B-17

B-30

0.661 @ 2-4
0.068 @ 8-10

B-22
5.02 @ 0-1
0.014 @ 9-10

B-2

REBAR

ELECTRIC MANHOLES

CONCRETE AREA

B-12
0.149 @ 8-12

1390 @ 0-2
57.3 @ 2-4
286.7 @ 4-6
38.9 @ 6-8
0.567 @ 10-12

0.032 @ 0-2
82.8 @ 2-4
74.0 @ 4-6
9.9 @ 10-13

B-4

REBAR

APPROXIMATE LIMIT OF FORMER PAD AREA USED FOR WASTE STORAGE

B-8

B-15
0.555 @ 8-9.5

B-9
135.5 @ 2-4

B-16
0.055 @ 8-10.5

B-5

B-1

0.01 @ 0-2
0.115 @ 2-4
4.4 @ 4-6

REBAR

B-25
0.016 @ 6-8

670 @ 0-2
0.678 @ 2-4
5.27 @ 4-6

CONCRETE AREA

CONCRETE DRIVEWAY

INACTIVE RAIL SPUR

N

LEGEND:

0.1 — INDICATES ISOCONCENTRATION LINE FOR TOTAL VOCs IN PPM, THE DATA IN BLUE ARE CONTOURED.

B-29 — TEST BORING LOCATION AND IDENTIFICATION. TOTAL VOC CONCENTRATIONS ARE INDICATED IN PPM FOR THE SPECIFIED DEPTH INTERVAL IN FEET BGS.

101.9 @ 2-4
0.671 @ 8-10

NOTES:

1. BASE PLAN PROVIDED BY LOZIER ENGINEERS INC. WITH THE BORING LOCATIONS SURVEYED BY LOZIER, SEPTEMBER 1995. TEST LOCATIONS AND OTHER FEATURES ARE OTHERWISE APPROXIMATE.
2. REBAR INDICATES THE CORNERS OF THE EXCAVATION CREATED BY REMOVAL OF THE CONCRETE PAD.

10 5 0 10
APPROX. SCALE IN FEET

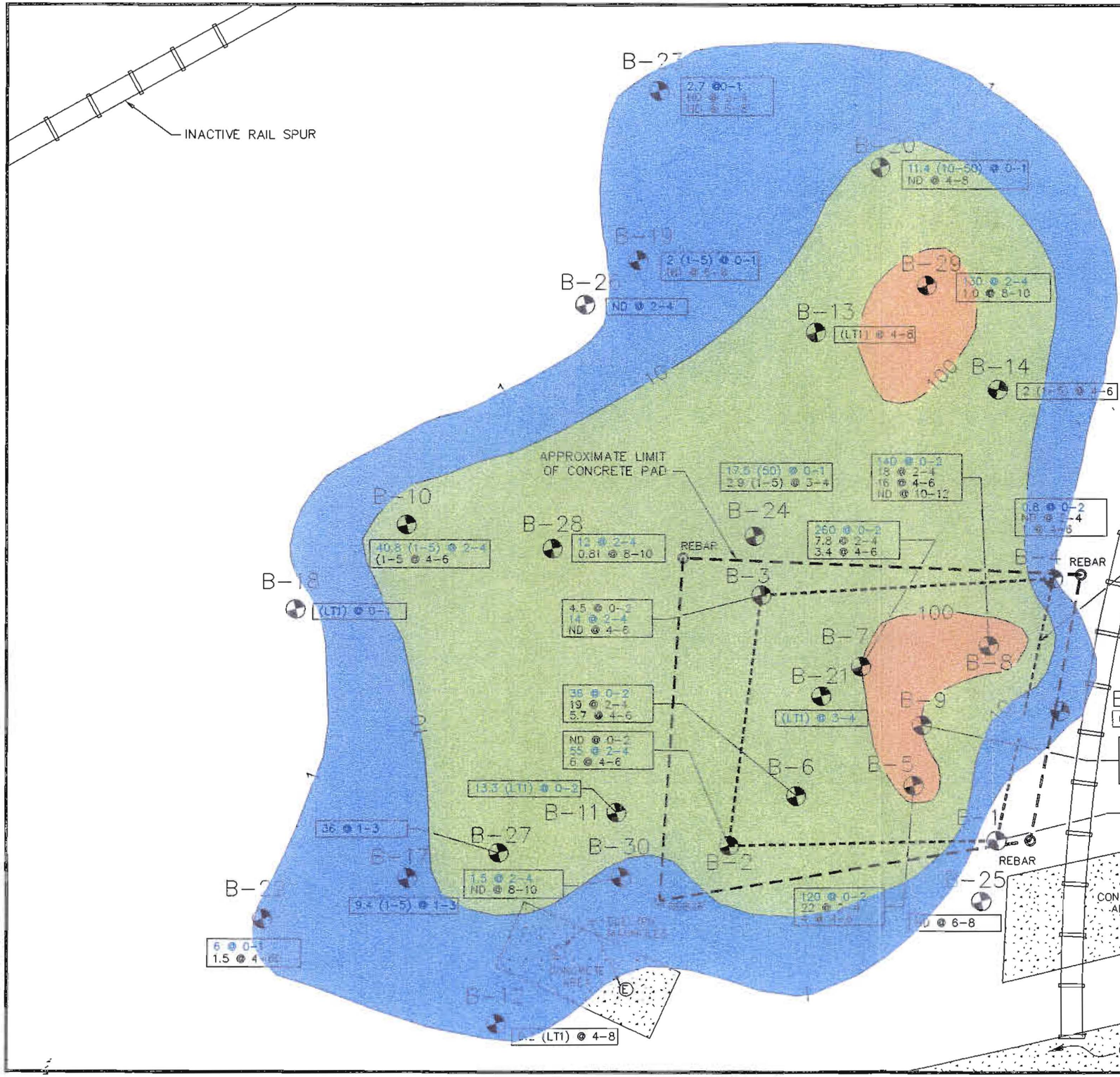
THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

HIGHEST TOTAL VOC CONCENTRATIONS IN 8-13' BGS INTERVALS

Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY	DATE
BMS	4-11-96
CHECKED BY	PROJECT NO.
WCS	96010-020
APPROVED BY	CAD FILE NAME
PEN	1552001B

FIGURE 6



LEGEND:

---0.1--- INDICATES ISOCONCENTRATION LINE FOR PCBs IN PPM, THE DATA IN BLUE ARE CONTOURED.

B-29 TEST BORING LOCATION AND IDENTIFICATION. PCBs CONCENTRATIONS BY LABORATORY ANALYSIS ARE INDICATED (11.4) IN PPM FOR THE SPECIFIED DEPTH INTERVAL. VALUES IN PARENTHESES (10-50) INDICATE PCB CONCENTRATIONS BY FIELD TESTING WHERE AVAILABLE.

11.4 (10-50) @ 0-1
ND @ 4-8

NOTES:

1. BASE PLAN PROVIDED BY LOZIER ENGINEERS INC. WITH THE BORING LOCATIONS SURVEYED BY LOZIER, SEPTEMBER 1995. TEST LOCATIONS AND OTHER FEATURES ARE OTHERWISE APPROXIMATE.
2. REBAR INDICATES THE CORNERS OF THE EXCAVATION CREATED BY REMOVAL OF THE CONCRETE PAD.

10 5 0 10

APPROX. SCALE IN FEET

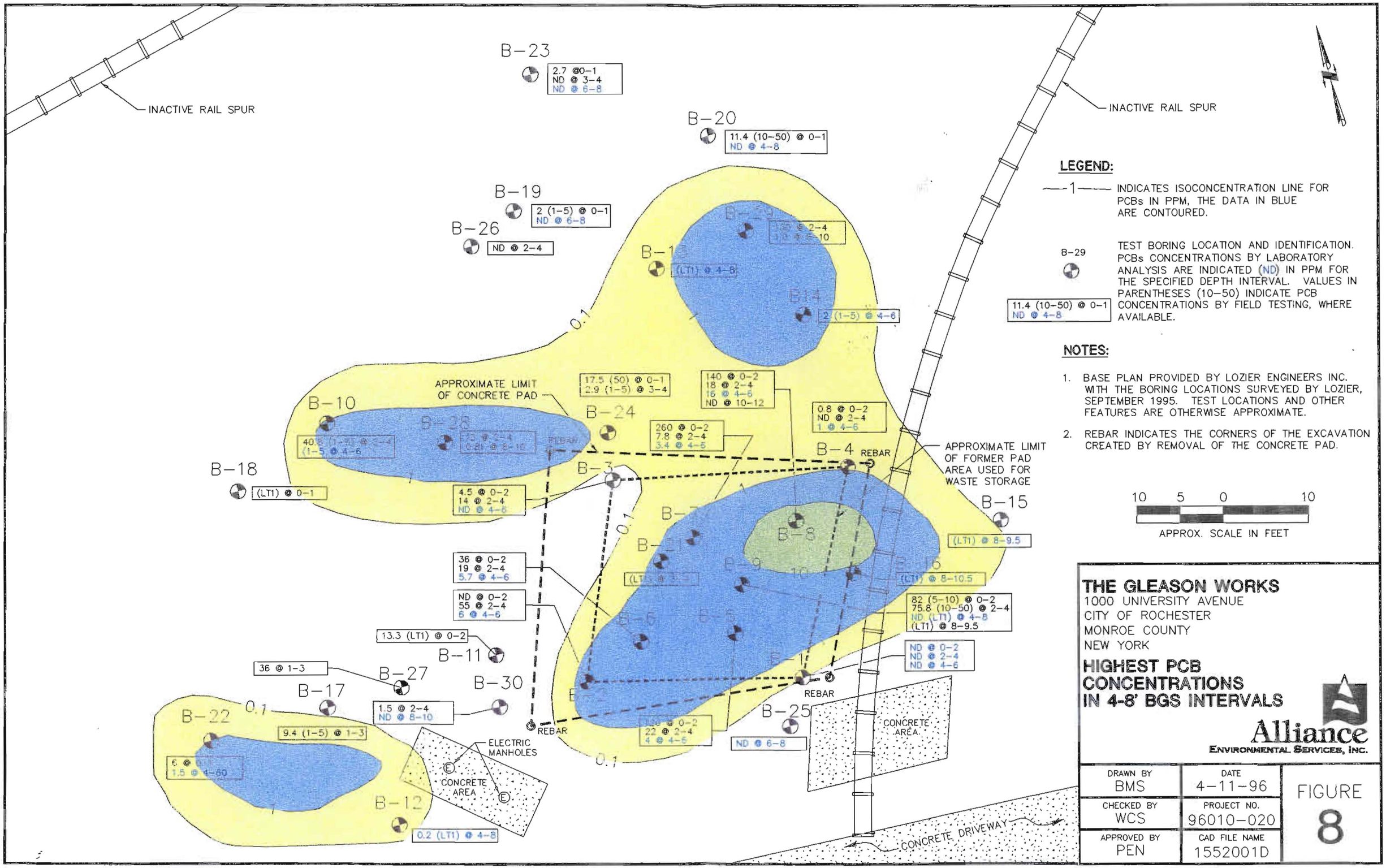
THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

HIGHEST PCB CONCENTRATIONS IN 0-4' BGS INTERVALS

Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY	DATE
BMS	4-11-96
CHECKED BY	PROJECT NO.
WCS	96010-020
APPROVED BY	CAD FILE NAME
PEN	1552001C

FIGURE 7



LEGEND:

—1— INDICATES ISOCONCENTRATION LINE FOR PCBs IN PPM, THE DATA IN BLUE ARE CONTOURED.

B-29 TEST BORING LOCATION AND IDENTIFICATION. PCBs CONCENTRATIONS BY LABORATORY ANALYSIS ARE INDICATED (ND) IN PPM FOR THE SPECIFIED DEPTH INTERVAL. VALUES IN PARENTHESES (10-50) INDICATE PCB CONCENTRATIONS BY FIELD TESTING, WHERE AVAILABLE.

11.4 (10-50) @ 0-1
ND @ 4-8

NOTES:

1. BASE PLAN PROVIDED BY LOZIER ENGINEERS INC. WITH THE BORING LOCATIONS SURVEYED BY LOZIER, SEPTEMBER 1995. TEST LOCATIONS AND OTHER FEATURES ARE OTHERWISE APPROXIMATE.
2. REBAR INDICATES THE CORNERS OF THE EXCAVATION CREATED BY REMOVAL OF THE CONCRETE PAD.

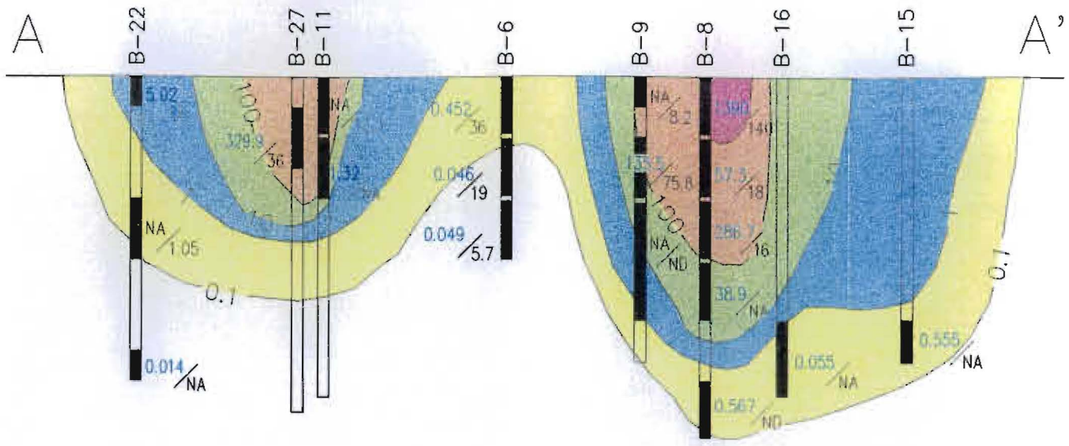
10 5 0 10
APPROX. SCALE IN FEET

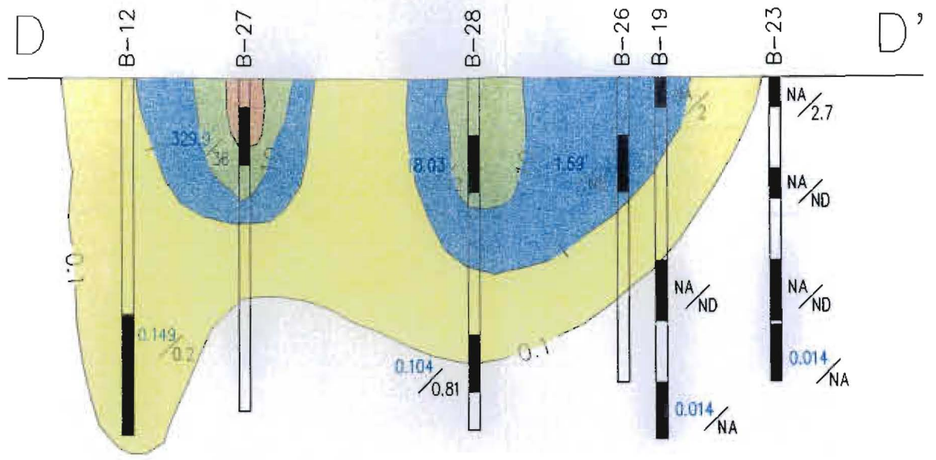
THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

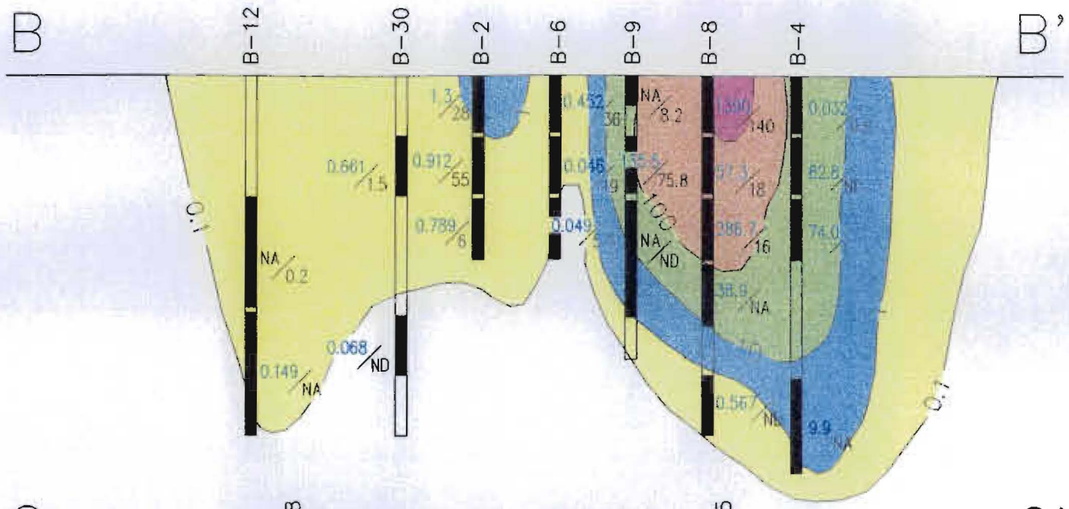
HIGHEST PCB CONCENTRATIONS IN 4-8' BGS INTERVALS

Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY	DATE	FIGURE
BMS	4-11-96	8
CHECKED BY	PROJECT NO.	
WCS	96010-020	
APPROVED BY	CAD FILE NAME	
PEN	1552001D	







LEGEND:

1.3/28 — INDICATES A SAMPLE INTERVAL WITH THE TOTAL VOC CONCENTRATION (1.3 PPM) AND THE TOTAL PCB CONCENTRATION (28 PPM) IN A SAMPLE SUBMITTED FOR LABORATORY ANALYSIS.

—0.1— INDICATES ISOCONCENTRATION LINE FOR TOTAL VOCs, THE DATA IN BLUE ARE CONTOURED.

ND INDICATES NO DETECTION

NA INDICATES NO ANALYSIS

0 20 40

HORIZONTAL SCALE IN FEET

0 5 10

VERTICAL SCALE IN FEET

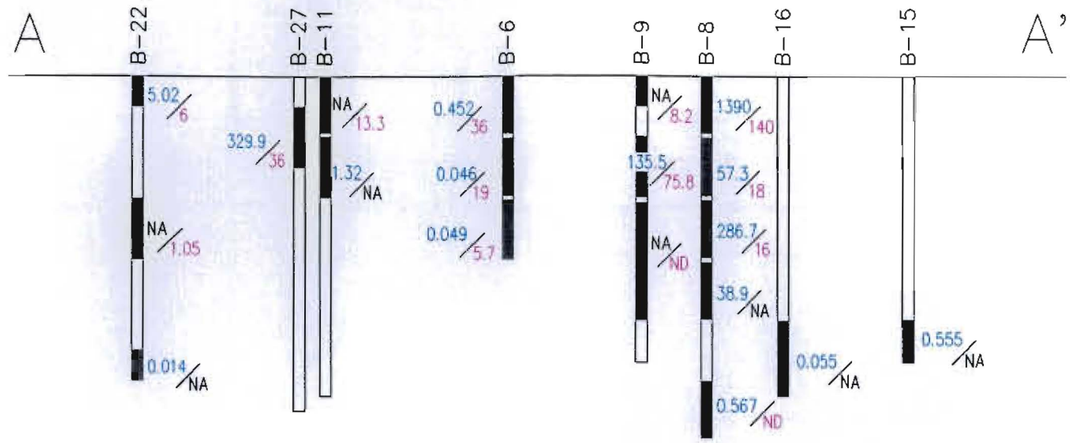
VERTICAL EXAGERATION 4X

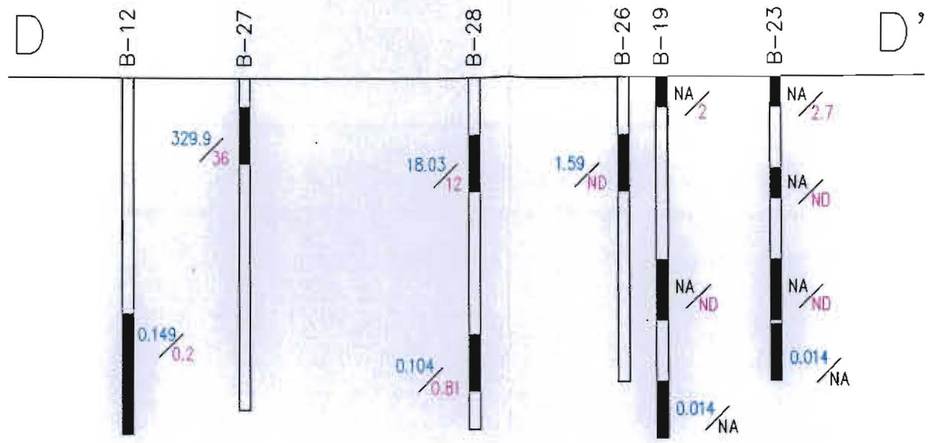
THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

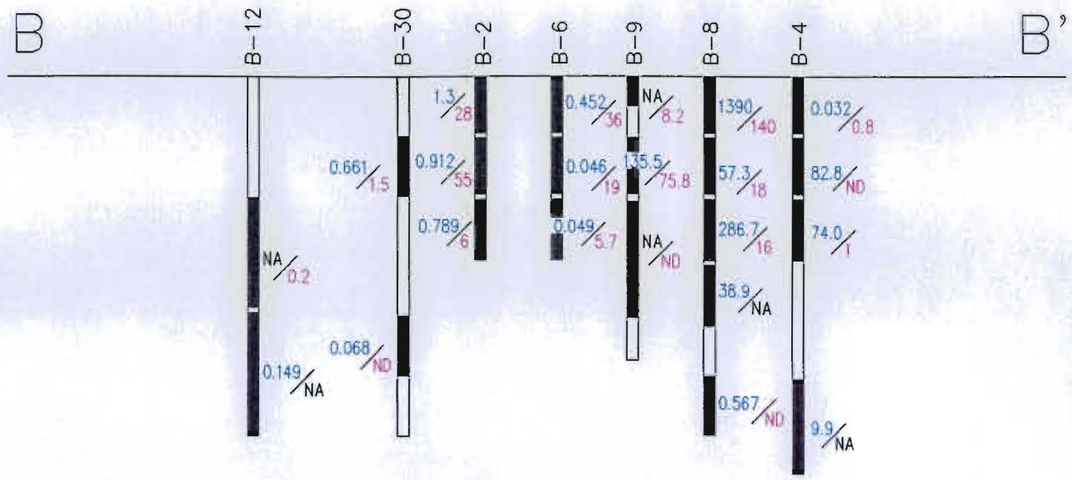
VERTICAL OCCURENCES OF TOTAL VOCs AT THE FORMER PAD AREA

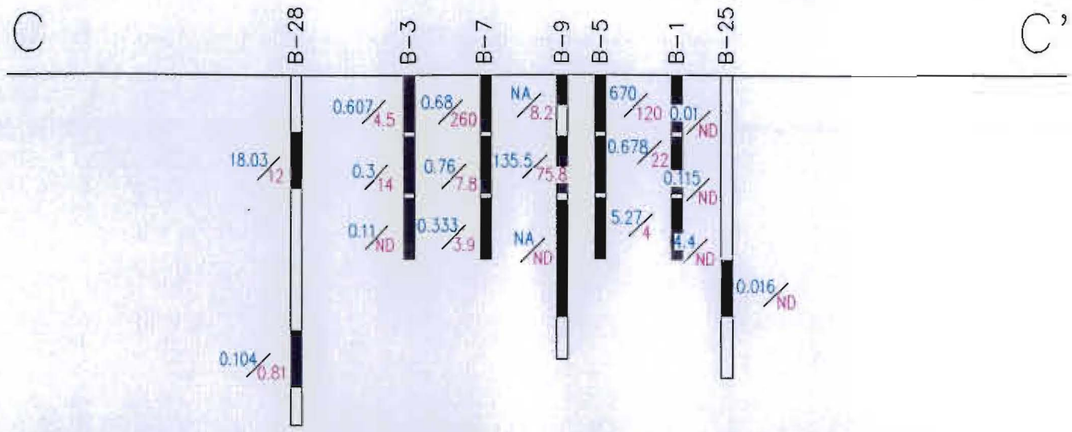
Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY	DATE	FIGURE
BMS	4-11-96	9
CHECKED BY	PROJECT NO.	
WCS	96010-020	
APPROVED BY	CAD FILE NAME	
PEN	1552001F	









LEGEND:

1.3/28 — INDICATES A SAMPLE INTERVAL WITH THE TOTAL VOC CONCENTRATION (1.3 PPM) AND THE TOTAL PCB CONCENTRATION (28 PPM) IN A SAMPLE SUBMITTED FOR LABORATORY ANALYSIS.

ND — INDICATES NO DETECTION

NA — INDICATES NO ANALYSIS

0 20 40

HORIZONTAL SCALE IN FEET

0 5 10

VERTICAL SCALE IN FEET

VERTICAL EXAGERATION 4X

THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

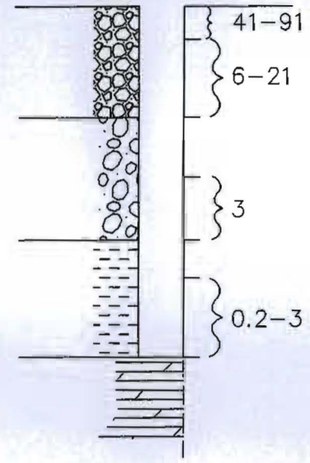
TOTAL VOC AND PCB CONCENTRATIONS ALONG PROFILES

Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY	DATE	FIGURE
BMS	4-11-96	10
CHECKED BY	PROJECT NO.	
WCS	96010-020	
APPROVED BY	CAD FILE NAME	
PEN	1552001E	

INACTIVE RAIL SPUR

TYPICAL SUBSURFACE PROFILE



B–23

SS–5
71@0–1

B–20

B–19

B–26
6@2–4

SS–4
86@0–1

B–29

SS–6
50@0–1

B–13

B–14

SS–2
91@0–1

B–10

B–28

APPROXIMATE LIMIT OF CONCRETE PAD

B–24

REBAR

B–3

B–4

REBAR

APPROXIMATE LIMIT OF FORMER PAD AREA USED FOR WASTE STORAGE

0.2@10–13

B–8

3@6–8
3@10–12

B–15

B–18

B–7

B–21

B–9

B–16

B–6

B–5

B–11

SS–1
41@0–1

B–17

B–27
21@1–3

B–30

B–2

B–1

REBAR

B–22

B–25

REBAR

CONCRETE AREA

ELECTRIC MANHOLES

CONCRETE AREA

B–12

CONCRETE DRIVEWAY

INACTIVE RAIL SPUR

LEGEND:

SS–5
71@0–1

TRIANGLE DESIGNATES LOCATION OF SAMPLING FOR ANALYSIS. TOC CONCENTRATIONS (71) IN PERCENT ARE INDICATED FOR THE INDICATED SAMPLE DEPTH INTERVAL IN FEET BELOW GROUND SURFACE.

NOTES:

1. BASE PLAN PROVIDED BY LOZIER ENGINEERS INC. WITH THE BORING LOCATIONS SURVEYED BY LOZIER, SEPTEMBER 1995. ALL TEST LOCATION AND OTHER FEATURES ARE APPROXIMATE.
2. REBAR INDICATES THE CORNERS OF THE EXCAVATION CREATED BY REMOVAL OF THE CONCRETE PAD.

10 5 0 10
APPROX. SCALE IN FEET

THE GLEASON WORKS
1000 UNIVERSITY AVENUE
CITY OF ROCHESTER
MONROE COUNTY
NEW YORK

TOTAL ORGANIC CARBON AREAL AND VERTICAL DISTRIBUTIONS

Alliance
ENVIRONMENTAL SERVICES, INC.

DRAWN BY	DATE	FIGURE
BMS	4–11–96	11
CHECKED BY	PROJECT NO.	
WCS	96010–020	
APPROVED BY	CAD FILE NAME	
PEN	1552001G	

TABLE 1: SUMMARY OF GRAIN SIZE DISTRIBUTION
The Gleason Works, Former Pad Storage Area
City of Rochester, Monroe County, New York

0 - 4 Feet Interval		4 - 8 Feet Interval		8 - 12 Feet Interval	
Sieve Size	Percent Passing	Sieve Size	Percent Passing	Sieve Size	Percent Passing
1/2"	99.7	1"	99.6	3/8"	96.5
3/8"	88.4	3/4"	95.1	No. 4	88.9
No. 4	80.5	1/2"	88.7	No. 8	82.3
No. 8	79.6	3/8"	77.9	No. 10	78.2
No. 10	76.0	No. 4	69.3	No. 30	72.1
No. 30	66.5	No. 8	57.9	No. 100	63.9
No. 100	47.9	No. 10	52.1	No. 200	51.3
No. 200	39.5	No. 30	47.0		
		No. 100	41.3		
		No. 200	36.8		
Diameter of Particle	Percent Passing	Diameter of Particle	Percent Passing	Diameter of Particle	Percent Passing
0.0328	27.4	0.0309	33.3	0.0301	55.7
0.0210	25.3	0.0201	29.4	0.0199	50.0
0.0124	22.1	0.0120	25.5	0.0174	44.3
0.0088	21.0	0.0086	23.5	0.0085	38.6
0.0063	18.9	0.0061	21.5	0.0062	32.9
0.0031	17.9	0.0030	20.6	0.0031	28.6
0.0013	16.8	0.0013	18.6	0.0013	22.9
Percent Moisture Saturation Potential	11.2	Percent Moisture Saturation Potential	10.8	Percent Moisture Saturation Potential	10.6
Hydraulic Conductivity	10^{-4} cm/sec	Hydraulic Conductivity	10^{-4} cm/sec	Hydraulic Conductivity	10^{-6} cm/sec

Table 2
Summary of Volatile Organic Compounds Detected in Soil
(All concentrations shown in parts per million)

Sample ID	Depth (Feet)	Acetone	B methane	C methane	Chloroform	1,1-DCA	1,1-DCE	CIS
NYDEC Clean up Value		0.110	NL	NL	300	0.2	0.4	0.3
B-1	0-2	ND	ND	ND	ND	ND	ND	ND
B-1	2-4	ND	ND	ND	ND	ND	ND	0.100
B-1	4-6	ND	ND	ND	ND	ND	ND	**4.400**
B-2	0-2	**0.740**	ND	ND	ND	0.160	ND	0.180
B-2	2-4	**0.120**	ND	ND	ND	0.075	ND	**0.610**
B-2	4-6	ND	ND	ND	ND	0.059	ND	**0.620**
B-3	0-2	0.060	ND	ND	ND	0.140	ND	0.099
B-3	2-4	0.065	ND	ND	ND	ND	ND	0.200
B-3	4-6	ND	ND	ND	ND	ND	ND	0.110
B-4	0-2	0.023	ND	ND	ND	ND	ND	ND
B-4	2-4	ND	ND	ND	ND	ND	ND	**55.00**
B-4	4-6	ND	ND	ND	ND	ND	ND	**47.00**
B-4	10-13	ND	ND	ND	ND	ND	ND	**9.900**
B-5	0-2	ND	ND	ND	ND	ND	ND	**130**
B-5	2-4	ND	ND	ND	ND	0.100	ND	0.170
B-5	4-6	ND	ND	ND	ND	ND	ND	**4.400**
B-6	0-2	ND	ND	ND	ND	**0.290**	ND	ND
B-6	2-4	0.046	ND	ND	ND	ND	ND	ND
B-6	4-6	0.049	ND	ND	ND	ND	ND	ND

Table 2
Summary of Volatile Organic Compounds Detected in Soil
(All concentrations shown in parts per million)

Sample ID	Depth (Feet)	Acetone	B.methane	C.methane	Chloroform	1,1-DCA	1,1-DCE	CIS
NYDEC Clean up Value		0.110	NL	NL	300	0.2	0.4	0.3
B-7	0-2	**0.500**	ND	ND	ND	0.180	ND	ND
B-7	2-4	ND	ND	ND	ND	ND	ND	**0.760**
B-7	4-6	ND	ND	ND	ND	ND	ND	0.290
B-8	0-2	ND	ND	ND	ND	ND	ND	**480.0**
B-8	2-4	ND	ND	ND	ND	ND	ND	**52.0**
B-8	4-6	ND	ND	ND	ND	ND	ND	**280.0**
B-8	6-8	ND	ND	ND	ND	ND	ND	**9.900**
B-8	10-12	0.097	ND	ND	ND	ND	ND	0.280
B-9	2-4	ND	0.0013	ND	ND	ND	ND	ND
B-10	NS	NA	ND	ND	ND	NA	NA	NA
B-11	2-4	ND	0.650B	ND	0.130B	ND	ND	ND
B-12	8-12	ND	ND	ND	ND	0.0034	ND	ND
B-13	NS	NA	ND	ND	ND	NA	NA	NA
B-14	NS	NA	ND	ND	ND	NA	NA	NA
B-15	8-9.5	ND	0.0085	0.0079	0.0068	0.028	ND	ND
B-16	8-10.5	ND	ND	ND	ND	0.002	ND	ND
B-17	NS	NA	ND	ND	ND	NA	NA	NA
B-18	8-11	ND	ND	.006	ND	0.007	ND	ND
B-19	10-12	ND	ND	ND	ND	ND	ND	ND
B-20	8.5-10	ND	ND	ND	ND	0.012	ND	ND

Table 2
Summary of Volatile Organic Compounds Detected in Soil
(All concentrations shown in parts per million)

Sample ID	Depth (Feet)	Acetone	B.methane	C.methane	Chloroform	1,1-DCA	1,1-DCE	CIS
NYDEC Clean up Value		0.110	NL	NL	300	0.2	0.4	0.3
B-21	NS	NA	ND	ND	ND	NA	NA	NA
B-22	0-1	ND	0.460B	.250B	0.120B	**0.580**	ND	ND
B-22	9-10	ND	0.0007	0.0006	ND	0.007	ND	ND
B-23	8-10	ND	0.001B	0.0007	ND	0.006	ND	ND
B-24	NS	NA	ND	ND	ND	NA	NA	NA
B-25	6-8	0.016	ND	ND	ND	ND	ND	ND
B-26	2-4	**0.180**	ND	ND	ND	0.095	ND	**0.860**
B-27	1-3	ND	ND	ND	ND	**38.00**	**2.300**	**86.00**
B-28	2-4	ND	ND	ND	ND	**0.830**	ND	**10**
B-28	8-10	0.050	ND	ND	ND	ND	ND	0.042
B-29	2-4	ND	ND	ND	ND	**4.500**	ND	**59.00**
B-29	8-10	0.088	ND	ND	ND	ND	ND	**0.470**
B-30	2-4	0.036	ND	ND	ND	0.042	ND	**0.350**
B-30	8-10	0 031	ND	ND	ND	ND	ND	0.024

NS	Not Sampled	CIS	Cis 1,2 Dichloroethene
NA	Not Analyzed	TRANS	Trans 1,2 Dichloroethene
ND	Not Detected	PCE	Perchloroethene
ACE	Acetone	TOL	Toluene
DCA	1,1-Dichloroethane	TCA	1,1,1-Trichloroethane
DCE	1,1 Dichloroethene	VC	Vinyl Chloride
MC	Methylene Chloride	XYL	Xylene

Table 2
Summary of Volatile Organic Compounds Detected in Soil
(All concentrations shown in parts per million)

Sample ID	Depth (Feet)	MIBK	TRANS	PCE	Toluene	TCA	TCE	VC	Xylene	MC
NYDEC Clean up Value		1.0	0.3	1.4	1.5	0.76	0.7	0.12	1.2	0.1
B-1	0-2	ND	ND	ND	ND	ND	ND	ND	0.0095	ND
B-1	2-4	ND	ND	ND	ND	ND	0.015	ND	ND	ND
B-1	4-6	ND	ND	ND	ND	1.7	ND	ND	ND	ND
B-2	0-2	ND	ND	ND	ND	ND	ND	**0.180**	ND	0.040
B-2	2-4	ND	0.043	ND	ND	ND	0.064	ND	ND	ND
B-2	4-6	ND	ND	ND	ND	ND	0.110	ND	ND	ND
B-3	0-2	ND	ND	ND	0.053	ND	0.054	0.091	0.110	ND
B-3	2-4	ND	ND	ND	ND	ND	0.035	ND	0.033	ND
B-3	4-6	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-4	0-2	ND	ND	ND	ND	ND	0.009	ND	ND	ND
B-4	2-4	ND	ND	ND	ND	ND	**25.00**	**2.800**	ND	ND
B-4	4-6	ND	ND	ND	ND	ND	**27.00**	ND	ND	ND
B-4	10-13	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-5	0-2	ND	ND	ND	ND	ND	**540**	ND	ND	ND
B-5	2-4	ND	ND	ND	ND	ND	0.220	0.038	0.150	ND
B-5	4-6	ND	ND	ND	ND	ND	**0.870**	ND	ND	ND
B-6	0-2	0.059	ND	ND	ND	0.032	ND	0.095	ND	0.035
B-6	2-4	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-6	4-6	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table 2
Summary of Volatile Organic Compounds Detected in Soil
(All concentrations shown in parts per million)

Sample ID	Depth (Feet)	MIBK	TRANS	PCE	Toluene	TCA	TCE	VC	Xylene	MC
NYDEC Clean up Value		1.0	0.3	1.4	1.5	0.76	0.7	0.12	1.2	0.1
B-7	0-2	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-7	2-4	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-7	4-6	ND	ND	ND	ND	ND	0.043	ND	ND	ND
B-8	0-2	ND	ND	ND	ND	ND	**910.0**	ND	ND	ND
B-8	2-4	ND	**1.600**	ND	ND	ND	**3.700**	ND	ND	ND
B-8	4-6	ND	**1.700**	ND	ND	ND	ND	**5.000**	ND	ND
B-8	6-8	ND	ND	ND	ND	ND	**29.00**	ND	ND	ND
B-8	10-12	ND	ND	ND	ND	ND	0.190	ND	ND	ND
B-9	2-4	ND	ND	**2.800**	ND	ND	**130**	ND	ND	**2.700**
B-10	**NS**	ND	NA	NA	NA	NA	NA	NA	NA	NA
B-11	2-4	ND	ND	ND	ND	0.150	**0.990**	ND	ND	**0.180B**
B-12	8-12	ND	ND	0.015	ND	0 0058	0.120	ND	ND	0.0045B
B-13	NS	ND	NA	NA	NA	NA	NA	NA	NA	NA
B-14	NS	ND	NA	NA	NA	NA	NA	NA	NA	NA
B-15	8-9.5	ND	0 0085	ND	ND	0 036	0 440	0.021	ND	0.021
B-16	8-10 5	ND	0 001	ND	ND	0 001	0 049	ND	ND	0.002
B-17	NS	ND	NA	NA	NA	NA	NA	NA	NA	NA
B-18	8-11	ND	0 0008	0 012	ND	0.002	0.0087	0 0006	ND	0 0025
B-19	10-12	ND	ND	ND	ND	ND	0 012	ND	ND	0.002
B-20	8.5-10	ND	0.0011	ND	ND	0.0033	0.046	ND	ND	0.0029

Table 2
Summary of Volatile Organic Compounds Detected in Soil
(All concentrations shown in parts per million)

Sample ID	Depth (Feet)	MIBK	TRANS	PCE	Toluene	TCA	TCE	VC	Xylene	MC
NYDEC Clean up Value		1.0	0.3	1.4	1.5	0.76	0.7	0.12	1.2	0.1
B-21	NS	ND	NA	NA	NA	NA	NA	NA	NA	NA
B-22	0-1	ND	ND	0.510	ND	**3.000**	**0.740**	ND	ND	**0.190**
B-22	9-10	ND	ND	ND	ND	0.001	0.004	ND	ND	0.002
B-23	8-10	ND	ND	ND	ND	0.0012	0.0036	0.0028	ND	0.002
B-24	NS	ND	NA	NA	NA	NA	NA	NA	NA	NA
B-25	6-8	ND	ND	ND	ND	ND	ND	ND	ND	ND
B-26	2-4	ND	0.028	ND	0.037	ND	0.280	0.110	ND	ND
B-27	1-3	ND	**8.700**	**5.000**	**15.00**	**92.00**	**76.00**	ND	**6.900**	ND
B-28	2-4	ND	ND	ND	ND	ND	**7.200**	ND	ND	ND
B-28	8-10	ND	ND	ND	ND	ND	0.012	ND	ND	ND
B-29	2-4	ND	**1.800**	ND	ND	**1.200**	**27.00**	**8.400**	ND	ND
B-29	8-10	ND	ND	ND	ND	ND	0.084	0.029	ND	ND
B-30	2-4	ND	ND	0.014	ND	0.019	0.200	ND	ND	ND
B-30	8-10	ND	ND	ND	ND	ND	0.013	ND	ND	ND

NS	Not Sampled	CIS	Cis 1,2 Dichloroethene
NA	Not Analyzed	TRANS	Trans 1,2 Dichloroethene
ND	Not Detected	PCE	Perchloroethene
ACE	Acetone	TOL	Toluene
DCA	1,1-Dichloroethane	TCA	1,1,1-Trichloroethane
DCE	1,1 Dichloroethene	VC	Vinyl Chloride
MC	Methylene Chloride	XYL	Xylene

TABLE 3: VAPOR PHASE VOC DATA
The Gleason Works, Former Pad Storage Area
City of Rochester, Monroe County, New York

Sample Location	Depth (Feet)	DCA	TRANS	CIS	TCA	TCE	TOL	EB	XYL	Unknowns	Total VOCs by G.C.	Total VOCs by PID
B-9	0-1	ND	ND	ND	ND	0.01	ND	ND	ND	ND	0.01	<2
B-9	2-4	3.60	0.02	1.40	ND	0.10	ND	ND	ND	0.42	5.54	<2
B-9	4-8	ND	ND	0.09	ND	0.03	ND	ND	ND	0.24	0.36	ND
B-9	8-9.5	ND	ND	0.77	ND	0.03	ND	ND	ND	0.08	0.88	ND
B-10	2-4	ND	0.01	0.77	ND	0.05	ND	ND	ND	0.17	1.00	15
B-10	4-6	ND	0.08	0.01	ND	ND	ND	ND	ND	0.17	0.26	10
B-10	6-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00	5
B-10	8-9.8	ND	ND	0.11	ND	<0.01	ND	ND	ND	0.32	0.43	5
B-11	0-2	ND	ND	<0.01	ND	ND	ND	ND	ND	0.01	0.01	5
B-11	2-4	1.50	0.01	0.48	ND	<0.01	ND	ND	ND	0.21	2.20	20-100
B-11	4-6	ND	ND	0.21	ND	0.01	ND	ND	ND	0.01	0.23	30
B-11	8-10.5	ND	ND	0.01	ND	<0.01	ND	ND	ND	<0.01	0.01	15
B-12	4-8	ND	ND	0.07	0.02	0.09	ND	ND	ND	0.03	0.21	10
B-12	8-12	ND	ND	0.05	0.02	0.13	ND	ND	ND	0.02	0.22	5
B-13	4-8	ND	ND	0.09	ND	ND	ND	ND	ND	0.31	0.40	2
B-13	10-11.5	ND	ND	1.50	ND	0.01	ND	ND	ND	0.19	1.70	25-30
B-14	4-6	ND	0.01	0.50	0.08	0.02	0.01	ND	ND	1.30	1.92	15
B-14	8-10	ND	ND	<0.01	ND	ND	ND	ND	ND	0.02	0.02	2
B-15	8-9.5	ND	ND	0.13	0.04	0.05	ND	ND	ND	ND	0.22	<2
B-16	8-10.5	ND	ND	0.04	ND	0.01	ND	ND	ND	0.06	0.11	5
B-17	0-1	1.80	ND	0.20	8.60	0.20	0.01	ND	ND	0.12	10.93	<1
B-17	8-9	1.40	ND	0.63	0.56	0.02	ND	ND	ND	0.65	3.26	20
B-17	9-11.5	ND	ND	0.03	0.05	0.02	ND	ND	ND	0.03	0.13	3
B-18	0-1	ND	ND	ND	ND	ND	ND	ND	ND	0.12	0.12	<1
B-18	2-4	ND	ND	0.64	0.15	0.18	ND	ND	ND	0.07	1.04	20
B-18	8-11	ND	ND	0.35	ND	0.02	<0.01	ND	ND	0.20	0.57	10
B-19	0-1	ND	ND	0.02	ND	<0.01	ND	ND	ND	0.12	0.14	<2
B-19	3-4	4.60	0.02	1.00	ND	0.20	ND	ND	ND	0.77	6.59	10
B-19	6-8	0.69	0.01	0.79	ND	0.10	ND	ND	ND	0.50	2.09	6
B-19	10-11.9	ND	ND	1.10	ND	0.02	ND	ND	ND	0.13	1.25	20
B-20	0-1	ND	ND	0.01	ND	ND	ND	ND	ND	0.24	0.25	<3
B-20	3-4	12.00	0.01	0.93	ND	0.08	ND	ND	ND	ND	13.02	10
B-20	4-8	ND	ND	0.68	ND	0.05	ND	ND	ND	0.33	1.06	10
B-20	8.5-10	ND	ND	0.03	ND	<0.01	ND	ND	ND	0.09	0.12	1
B-21	3-4	ND	ND	0.01	ND	ND	ND	ND	ND	0.18	0.19	<2
B-21	8-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5

TABLE 3: VAPOR PHASE VOC DATA (Continued)
The Gleason Works, Former Pad Storage Area
City of Rochester, Monroe County, New York

Sample Location	Depth (Feet)	DCA	TRANS	CIS	TCA	TCE	TOL	EB	XYL	Unknowns	Total VOCs by G.C.	Total VOCs by PID
B-22	0-1	0.38	ND	0.01	0.58	0.01	ND	ND	ND	0.04	1.02	40
B-22	3-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15
B-22	4-6	0.30	ND	0.06	0.17	0.02	0.01	ND	ND	0.04	0.60	7
B-22	6-8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
B-22	9-10	ND	ND	0.01	ND	ND	ND	ND	ND	0.01	0.02	2
B-23	0-1	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.03	<2
B-23	3-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5
B-23	6-8	ND	ND	0.03	ND	ND	ND	ND	ND	0.13	0.16	<1
B-23	8-10	ND	ND	0.08	ND	ND	ND	ND	ND	0.06	0.14	<1
B-24	0-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
B-24	3-4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4
B-25	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.6
B-25	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	109
B-25	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.8
B-25	6-7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.9
B-25	7.5-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.9
B-25	8-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0
B-26	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	47.1
B-26	0-0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	47.1
B-26	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	51.3
B-26	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.1
B-26	6-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.1
B-26	8-9.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.2
B-27	1-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	123
B-27	3-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	125
B-27	5-7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.9
B-27	7-9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	48.7
B-27	9-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.8
B-28	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	60.2
B-28	2-3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	125
B-28	3-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	125
B-28	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.1
B-28	6-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.1
B-28	8-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35.7
B-28	10-11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.1
B-29	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	72.7
B-29	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	71.2
B-29	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68.4
B-29	6-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68.4
B-29	8-8.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80.8
B-29	8.5-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80.8
B-29	10-11.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.8

TABLE 3: VAPOR PHASE VOC DATA (Continued)
The Gleason Works, Former Pad Storage Area
City of Rochester, Monroe County, New York

Sample Location	Depth (Feet)	DCA	TRANS	CIS	TCA	TCE	TOL	EB	XYL	Unknowns	Total VOCs	
											by G.C.	by PID
B-30	0-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1
B-30	2-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	64.1
B-30	4-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	45.7
B-30	6-8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	45.7
B-30	8-10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.5
B-30	10-12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.7

TABLE 3 (Continued)
ADDITIONAL VAPOR PHASE VOC DATA

SUMMARY OF ERM SAMPLE ANALYTICAL DATA
GLEASON WORKS – STORAGE PAD INVESTIGATION

SAMPLE DEPTH (FT.)	0–2		2–4		4–6	
SAMPLE RESULT	TOTAL VOC's	PCB's	TOTAL VOC's	PCB's	TOTAL VOC's	PCB's
ERM B–1	<1 ppm	<1 ppm	<1 ppm	<1 ppm	**4.4 ppm**	<1 ppm
ERM B–2	**1.3 ppm**	**28 ppm**	<1 ppm	**55 ppm**	<1 ppm	6 ppm
ERM B–3	<1 ppm	**4.5 ppm**	<1 ppm	**14 ppm**	<1 ppm	<1 ppm
ERM B–4	<1 ppm	<1 ppm	**82.8 ppm**	<1 ppm	**74 ppm**	1 ppm
ERM B–5	**670 ppm**	**120 ppm**	<1 ppm	**22 ppm**	**5.3 ppm**	4 ppm
ERM B–6	<1 ppm	**36 ppm**	<1 ppm	**19 ppm**	<1 ppm	5.7 ppm
ERM B–7	<1 ppm	**260 ppm**	<1 ppm	7.8 ppm	<1 ppm	3.9 ppm
ERM B–8	**1390 ppm**	**140 ppm**	**57.3 ppm**	**18 ppm**	**286.7 ppm**	**16 ppm**

NOTES:

1. THESE DATA ARE SUMMARIZED FROM THE "REMEDIAL ACTION PLAN FOR THE GLEASON WORKS FORMER WASTE STORAGE AREA" BY DATED MAY 1994 BY ERM–NORTHEAST, INC.
2. SEE TEXT OF REPORT FOR EXPLANATION OF DATA PRESENTED AND BORING LOCATIONS.
3. ABBREVIATIONS:
   PPM – PARTS PER MILLION OR MG/KG
   VOC – VOLATILE ORGANIC COMPOUNDS
   PCB – POLYCHLORINATED BIPHENYLS

TABLE 4: SUMMARY OF PCB ANALYTICAL AND FIELD KIT DATA
The Gleason Works, Former Pad Storage Area
City of Rochester, Monroe County, New York

Sample Identification	Depth (feet)	PCBs	Field Kit
B-1	0-2	ND	
B-1	2-4	ND	
B-1	4-6	ND	
B-2	0-2	28	
B-2	2-4	55	
B-2	4-6	6	
B-3	0-2	4.5	
B-3	2-4	14	
B-3	4-6	ND	
B-4	0-2	0.800	
B-4	2-4	ND	
B-4	4-6	1	
B-5	0-2	120	
B-5	2-4	22	
B-5	4-6	4	
B-6	0-2	36	
B-6	2-4	19	
B-6	4-6	5.7	
B-7	0-2	260	
B-7	2-4	7.8	
B-7	4-6	3.9	
B-8	0-2	140	
B-8	2-4	18	
B-8	4-6	16	
B-8E	10-12	ND	
B-9	0-1	8.2	5 to 10
B-9	2-4	75.8	10 to 50
B-9	4-8	ND	LT 1
B-9	8-9.5	NA	LT 1
B-10	2-4	40.8	1 to 5
B-10	4-6	NA	1 to 5
B-11	0-2	13.3	LT 1
B-12	4-8	0.2	LT 1

TABLE 4: SUMMARY OF PCB ANALYTICAL AND FIELD KIT DATA (Continued)
The Gleason Works, Former Pad Storage Area
City of Rochester, Monroe County, New York

Sample Identification	Depth (feet)	PCBs	Field Kit
B-13	4-8	NA	LT 1
B-14	4-6	2	1 to 5
B-15	8-9.5	NA	LT1
B-16	8-10.5	NA	LT1
B-17	0-1	9.4	1 to 5
B-18	0-1	NA	LT1
B-19	0-1	2	1 to 5
B-19	6-8	ND	NA
B-20	0-1	11.4	10 to 50
B-20	4-8	ND	NA
B-21	3-4	NA	LT1
B-22	0-1	6	NA
B-22	4-6	1.05	NA
B-23	0-1	2.7	NA
B-23	3-4	ND	NA
B-23	6-8	ND	NA
B-24	0-1	17.5	50
B-24	3-4	2.9	1 to 5
B-25	6-8	ND	
B-26	2-4	ND	
B-27	1-3	36	
B-28	2-4	12	
B-28	8-10	0.810	
B-29	2-4	130	
B-29	8-10	1.000	
B-30	2-4	1.500	
B-30	8-10	ND	

TABLE 5
SUMMARY OF METALS IN SOIL
(All Concentration in Units of Parts Per Million)

Sample Id	Depth (Ft.)	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Selenium	Cyanide
NYSDEC Cleanup Level		7.5	300	1	10	25	500	Background	0.1	2	1
Background 1		NA	64.9	ND	15.2	34.9	42.9	406	0.217	NA	NA
Background 2		NA	57	ND	18.3	30.5	46	608	0.225	NA	NA
B-1	0-2	NA	121	0.968	**43**	**117**	172	398	**0.648**	NA	ND
B-1	2-4	NA	51.2	0.605	**14.6**	**87**	286	261	0.059	NA	NA
B-1	4-6	NA	35.6	ND	**21.7**	19.2	6.46	**994**	ND	NA	NA
B-2	0-2	NA	89.3	ND	**21.9**	19.3	14.1	**4700**	**0.192**	NA	ND
B-2	2-4	NA	80.7	0.636	**618**	**180**	405	414	ND	NA	NA
B-2	4-6	NA	47.3	ND	**12.2**	11.8	14.6	504	ND	NA	NA
B-3	0-2	NA	60.3	ND	**31.9**	**439**	90.6	352	**0.132**	NA	ND
B-3	2-4	NA	72.1	ND	**16.1**	**47.4**	49.8	267	**0.167**	NA	NA
B-3	4-6	NA	57.1	ND	**16.1**	12.6	13.1	369	**0.145**	NA	NA
B-4	0-2	NA	114	0.687	**737**	**297**	86.3	220	0.076	NA	ND
B-4	2-4	NA	50.2	ND	**663**	**173**	19.4	**740**	ND	NA	NA
B-4	4-6	NA	35.1	ND	**13.9**	17.3	9.72	418	ND	NA	NA
B-5	0-2	NA	58	ND	**14.7**	**187**	77.7	294	**0.296**	NA	5.46
B-5	2-4	NA	54.7	ND	9.27	**26.5**	28.4	318	ND	NA	ND
B-5	4-6	NA	125	ND	**48.4**	**38.9**	11.4	579	ND	NA	ND
B-6	0-2	NA	32.9	ND	8.58	15	23.5	404	**0.184**	NA	ND
B-6	2-4	NA	53.3	ND	**15**	**29.3**	83.6	509	ND	NA	NA
B-6	4-6	NA	59.4	ND	**12.6**	15.9	23.3	214	ND	NA	NA
B-7	0-2	NA	24.7	ND	7.51	11	ND	293	0.103	NA	ND
B-7	2-4	NA	56.6	ND	**12.3**	18.1	6.54	373	ND	NA	NA
B-7	4-6	NA	49.8	ND	**104**	**108**	13.9	256	ND	NA	NA

TABLE 5
SUMMARY OF METALS IN SOIL
(All Concentration in Units of Parts Per Million)

Sample Id	Depth (Ft.)	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Selenium	Cyanide
NYSDEC Cleanup Level		7.5	300	1	10	25	500	Background	0.1	2	1
Background 1		NA	64.9	ND	15.2	34.9	42.9	406	0.217	NA	NA
Background 2		NA	57	ND	18.3	30.5	46	608	0.225	NA	NA
B-8	0-2	NA	**426**	ND	**689**	**113**	165	381	**0.251**	NA	ND
B-8	2-4	NA	59.4	ND	**11.6**	16.6	28.7	383	**0.11**	NA	NA
B-8	4-6	NA	261	ND	**11.4**	**69.9**	**5920**	278	ND	NA	NA
B-8E	10-12	2.08	36.7	ND	8.72	NA	7.46	NA	ND	ND	NA
B-17	9-11.5	NA	31	0.94	5.8	10	8.3	420	ND	NA	ND
B-18	2-4	NA	33	**1.9**	**17**	**36**	55	400	ND	NA	ND
B-19	10-15.5	NA	27	**1**	5.9	7.1	8.2	420	ND	NA	ND
B-20	8.5-10	NA	150	**3.7**	**20**	24	22	**680**	ND	NA	ND
B-21	9-10	NA	95	**1.5**	**14**	13	9.4	200	ND	NA	ND
B-22	3-4	NA	30	**1.1**	7.8	23	14	140	ND	NA	ND
B-23	8-10	NA	36	**1.3**	8.4	10	8.9	190	ND	NA	ND
B-24	3-4	NA	41	**1.4**	9.9	13	15	290	ND	NA	ND
B-28	2-4	1.17	29.9	ND	8.69	ND	30.6	NA	ND	1.11	NA
B-28	8-10	ND	56.6	ND	**10.2**	NA	7.83		ND	ND	NA
								NA			
B-29	2-4	2.9	22.4	ND	6.23	NA	26.1	NA	ND	0.87	NA
B-30	2-4	ND	49.7	ND	**504**	NA	75.8	NA	ND	5.99	NA
B-30	8-10	ND	60.2	ND	**12.8**	NA	22.6	NA	ND	ND	NA

Note: Samples from soil borings B-9 to B-16 and B-25 to B-27 were not analyzed for metals.
Silver was also analyzed in the following samples, but not detected: B-8E; B-28 (2-4 ft.); B-28 (8-10 ft.); B-30 (2-4 ft.); and B-30 (8-10 ft.).
NA = Not Analyzed
ND = Not Detected

TABLE 6
Summary of Leaching Procedure Tests
(All concentrations shown in parts per million)

	Sample ID	Depth (Feet)	ACE	DCA	DCE	CIS	TRANS	PCE	TOL	TCA	TCE	VC	XYL	MC
NYDEC Groundwater Std.			0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050
USEPA Method 8260	B-5	0-2	ND	ND	ND	130	ND	ND	ND	ND	540	ND	ND	ND
TCLP			NA	NA	ND	NA	NA	ND	NA	NA	2.1	ND	ND	ND
USEPA Method 8260	B-8	0-2	ND	ND	ND	480.0	ND	ND	ND	ND	910.0	ND	ND	ND
TCLP			NA	NA	ND	NA	NA	ND	NA	NA	7.6	ND	NA	NA
USEPA Method 8260	B-8	6-8	ND	ND	ND	9.900	ND	ND	ND	ND	29.00	ND	ND	ND
TCLP			ND	ND	ND	0.42	ND	ND	ND	ND	0.66	0.13	ND	ND
SPLP			ND	ND	ND	0.34	ND	ND	ND	ND	0.67	0.008	ND	ND
USEPA Method 8260	B-8	10-12	0.097	ND	ND	0.280	ND	ND	ND	ND	0.190	ND	ND	ND
TCLP			0.018	ND	ND	0.015	ND	ND	ND	ND	0.023	ND	ND	ND
SPLP			0.039	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
USEPA Method 8260	B-27	1-3	ND	38.00	2.300	86.00	8.700	5.000	15.00	92.00	76.00	ND	6.900	ND
TCLP			0.026	0.15	ND	0.14	.009	ND	0.022	0.63	0.038	ND	ND	ND
SPLP			ND	.082	ND	0.085	ND	ND	0.011	0.15	0.021	ND	ND	ND

TCLP	Toxicity Characteristic Leaching Procedure
SPLP	Synthetic Precipitation Leaching Procedure
ACE	Acetone
DCA	1,1-Dichloroethane
DCE	1,1 Dichloroethene
CIS	Cis 1,2 Dichloroethene
TRANS	Trans 1,2 Dichloroethene
PCE	Perchloroethene
TOL	Toluene
TCA	1,1,1-Trichloroethane
VC	Vinyl Chloride
XYL	Xylene
MC	Methylene Chloride
ND	Not Detected

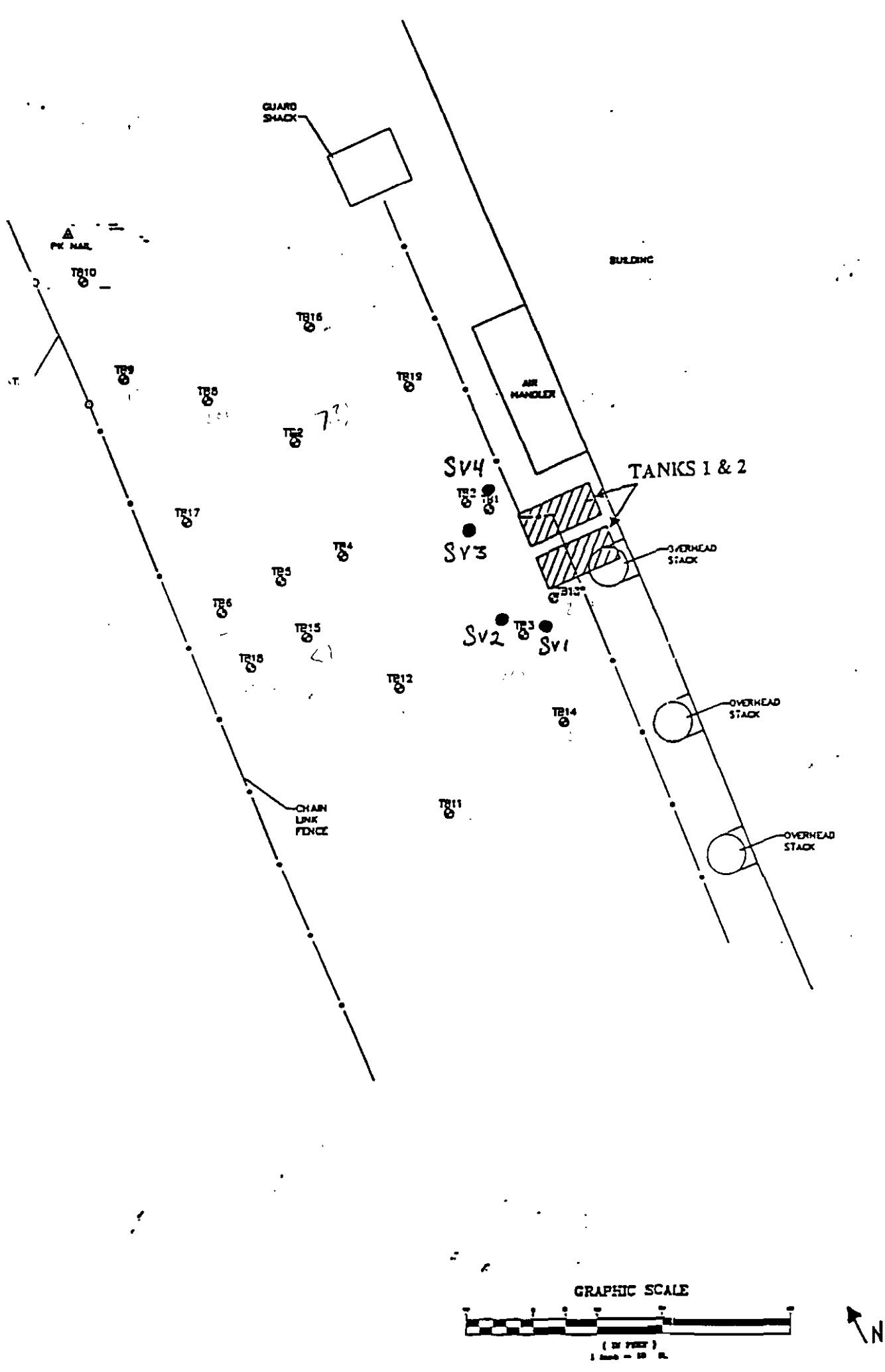
Note: Samples from B-5, B-8 and B-27 were the only samples analyzed using TCLP and SPLP procedures.

APPENDIX 4
GALSON CORPORATION
TABLES, FIGURES, & DATA

TABLE 1
FORMER PAINT THINNER TANKS
SOIL SAMPLE RESULTS
(All Concentrations Shown in Units of Micrograms/Kilogram)

Volatile Organic Compounds	Cleanup Values	TB-3 (8/94) Depth Unk.	TB-2 (8/94) Depth Unk.	TB-4 (9/95) 10.5-11 ft.	TB-10 (9/95) 11-11.9 ft.	TB-12 (9/95) 10-11.3 ft.	TB-16 (9/95) 9-10 ft.	TB-17 (9/95) 11.5-12 ft.	SV-1 (1/97) Depth Unk.	SV-4 (1/97) Depth Unk.
Benzene	14	ND	ND	ND	ND	1.2	ND	ND	ND	ND
n-Butylbenzene	100	230	<270	ND	ND	ND	ND	ND	280	<700
sec-Butylbenzene	100	<140	<270	ND	ND	ND	ND	ND	150	<700
Ethylbenzene	100	2300	5600	64	ND	ND	ND	58	<140	14000
Isopropylbezene	100	200	<270	ND	ND	ND	ND	ND	570	<700
n-Propylbenzene	100	600	<270	11	ND	ND	ND	ND	1100	760
Toluene	100	6400	<270	7.1	.9	1.9	1.7	ND	610	<700
1,2,4-Trimethylbenzene	100	650	<270	12	ND	ND	ND	ND	1100	850
1,3,5-Trimethylbezene	100	750	<270	6.8	ND	ND	ND	ND	1100	800
m,p-Xylene	100	1600	6000	48	ND	.8	1.2	15	2800	71000
o-Xylene	100	680	2000	7.5	ND	ND	ND	ND	1200	20000
Acenaphthalene	400	NA	NA	ND	ND	NA	NA	NA	NA	NA
Fluorene	1,000	NA	NA	ND	ND	NA	NA	NA	NA	NA
Phenanthrene	1,000	NA	NA	ND	ND	NA	NA	NA	NA	NA
Anthracene	1,000	NA	NA	ND	ND	NA	NA	NA	NA	NA
Fluoranthene	1,000	NA	NA	ND	ND	NA	NA	NA	NA	NA
Pyrene	1,000	NA	NA	ND	ND	NA	NA	NA	NA	NA
Benzo(a) anthracene	0.04	NA	NA	ND	ND	NA	NA	NA	NA	NA
Chrysene	0.04	NA	NA	ND	ND	NA	NA	NA	NA	NA
Benzo(b) fluoranthene	0.04	NA	NA	ND	ND	NA	NA	NA	NA	NA
Benzo(k) fluoranthene	0.04	NA	NA	ND	ND	NA	NA	NA	NA	NA
Benzo(a) pyrene	0.04	NA	NA	ND	ND	NA	NA	NA	NA	NA
Indeno (1,2,3-cd) pyrene	0.04	NA	NA	ND	ND	NA	NA	NA	NA	NA
Dibenzo (a,h) anthracene	1,000	NA	NA	ND	ND	NA	NA	NA	NA	NA
Benzo (g,h,i) perylene	0.04	NA	NA	ND	ND	NA	NA	NA	NA	NA

Note: Samples listed are the only samples analyzed for this investigation area.


GUARD SHACK
PK NAR
TB10
TB16
TB9
TB8
TB19
AIR HANDLER
BUILDING
TB2
SV4
TANKS 1 & 2
TB17
TB4
SV3
OVERHEAD STACK
TB5
TB6
TB15
SV2
SV1
TB18
TB12
TB14
OVERHEAD STACK
CHAIN LINK FENCE
TB11
GRAPHIC SCALE
N

GALSON CORPORATION
SITE ACTIVITY LOG

PROJECT Tanks 1 & 2 Addn. Inv.

LOCATION The Gleason Works
1000 University Ave
(West Side of Building)

CLIENT Gleason

DATE(S) January 30 1997

JOB NUMBER 974821

TOTAL MILEAGE

ARRIVAL TIME 7:15

DEPARTURE TIME 12:00

PURPOSE OF TRIP :

Soil Borings - Attempt to Determine Efficiency of Current Soil Vapor Extraction (SVE) System

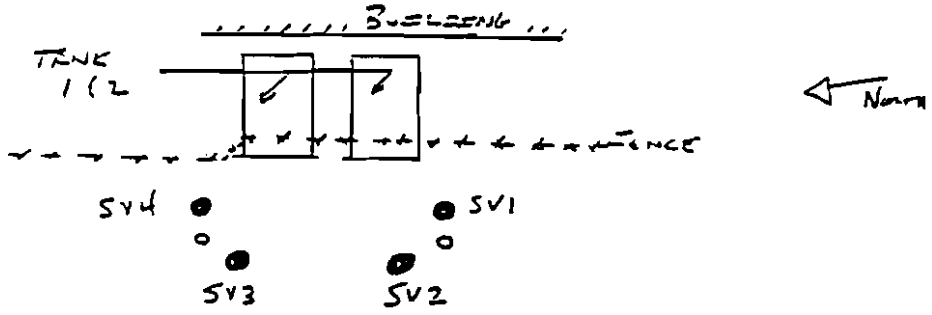
AMBIENT WEATHER CONDITIONS

Overcast 25°F

NUMBER AND TYPE OF SAMPLING LOCATIONS:

- Four Soil Borings
- 2 Soil Samples Submitted for EPA 9021 STARS
  - 2 borings near edge of TB2 (SV4, SV3)
  - 2 borings near edge of TB3 (SV2, SV1)

COMMENTS :



SAMPLER(S) : Scott Schneiderman

PAGE 1 OF 1

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT: Tanks 1 & 2 Addn Investigation

LOCATION: The Gleason Works, Rochester, New York, Monroe County

JOB NUMBER: 974021

WELL DIAMETER: 2 in

G W DEPTH: NA

SHEET: 1 OF

DATE(S) DRILLED: 1-30-97

DRILLING METHOD: Geoprobe

TOTAL DEPTH: 9.0'

DRILLING CO.: Marcor

DEPTH	SAMPLE INTERVAL	SOIL / ROCK CLASSIFICATION	HNu (ppm)	PROFILE	NOTES
	0-1	Fave			
2	1-3	Sand / Brown - Black	<1		
4	3-4	Red Brick	0		
	4-5	.5 Brick .5 Stiff Clay			
	5-6	Sand Layer - Brown Stiff Clay			
6	6-7	Brown Stiff Clay	<1		No Odor
	7.5-8	Black Moist Stiff Clay	110 ppm		Spike @ 200 ppm
8		" " "	160 ppm		Odor - Strong (LAG)
9	8-9	Refusal			
10		Bedrock			
12					

SAMPLING METHOD: Geoprobe

LOGGED BY: Scheidelman

BORING NUMBER: SV1

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT Sites 1 & 2 Addn Investigation

LOCATION The Gleason Works
Rochester, New York
Monroe County

JOB NUMBER 974821
WELL DIAMETER 2"
G W DEPTH NA
SHEET 2 OF

DATE(S) DRILLED 1-30-97
DRILLING METHOD Geoprobe
TOTAL DEPTH 10.5'
DRILLING CO. Marcor

DEPTH	SAMPLE INTERVAL	SOIL / ROCK CLASSIFICATION	HNu (ppm)	PROFILE	NOTES
	0-1	Pave			3' Rec
2	1-3	Dark Fill Material	<1		
	3-4	Sand/Course/Fill	<1		
4					
	4-7	Stiff brown clay type	<1		No odor
6		@ 7.5 sand layer (thin)			
	7-9	Sand w/ clay stiff, black streaks	70		odor
8					
	8-9				
	9-10.5	Wet Sandy clay Type	70		odor No LAB
10	10.5				
12					

SAMPLING METHOD Geoprobe
LOGGED BY Scheidelman
BORING NUMBER SV2

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT TANKS 1 & 2 ADDN. INV.

LOCATION The Gleason Works
Rochester, New York
Monroe County

JOB NUMBER 974621
WELL DIAMETER 2"
S W DEPTH NA.
SHEET 3 OF

DATE(S) DRILLED 1-30-97
DRILLING METHOD Geoprobe
TOTAL DEPTH 10.5
DRILLING CO. Marcor

DEPTH	SAMPLE INTERVAL	SOIL / ROCK CLASSIFICATION	HNu (ppm)	PROFILE	NOTES
	0-1	Pave			
	1-2	Fill			
2	2-4	Stiff brown sand/clay mix	<1		NO ODOR
4	5-6	Stiff brown clay SAND	<1		NO ODOR
6	7-8	Moist stiff brown sand clay (Damp)	<1		NO ODOR
8	9-10.5	Moist Brown clay	5 ppm		SLIGHT ODOR NO BLACK VISIBLE
10	Bottom 10.5				
12					

SAMPLING METHOD Geoprobe
LOGGED BY Scheidelman
BORING NUMBER SV3

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT TANKS 1 & 2 ABAN. INV.

LOCATION The Gleason Works
Rochester, New York
Monroe County

JOB NUMBER 974821
WELL DIAMETER 2"
G W DEPTH NA
SHEET 4 OF

DATE(S) DRILLED 1-30-97
DRILLING METHOD Geoprobe
TOTAL DEPTH 10.5
DRILLING CO. MACTEC

DEPTH	SAMPLE INTERVAL	SOIL / ROCK CLASSIFICATION	HNu (ppm)	PROFILE	NOTES
2	0-2	BLACK - FILL			
4	2-4	BROWN - SAND MATERIAL	<1		NO ODOR
6	5-7	BROWN - STIFF SAND	<1		NO ODOR
8	7.5-8	GREY - MOIST CLAY	1.0 PPM		NO ODOR SLIGHT ODOR PETRL
10	9-10.5	STIFF MOIST	300		ODOR (LAB)
	10.5				
12					

SAMPLING METHOD Geoprobe
LOGGED BY Scheidelman
BORING NUMBER SV4

Page Blank - No Log Is Available For TB-1

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT [illegible] (T-2)

LOCATION T-2

(N. W. of [illegible])

JOB NUMBER [illegible] T-2

WELL DIAMETER

G W DEPTH NA

SHEET 1 OF 2

DATE(S) DRILLED 8/15/94

DRILLING METHOD Auger

TOTAL DEPTH 12.2'

DRILLING CO. [illegible]

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	OVA (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
	0.5					
		1	<1	Fine Sand/Silt Dark Brown		6" Void
1				Moderate Sand/Gravel		Headspace .5-2 : <1 ppm
		7				
2	2.0	3		Poorly Sorted Clay to Gravel Sediment		
		4	<1			
3		6				H S 2-4 : <1
		7				
4	4.0	3		Brown, Clay		
5		3	<1			H.S 6-7.1 : <1
		5				6-8 : <1
		6				
6	6.0	15	<1	Brown, Damp, Clay		
		30				
7	7.1	50/.1				
		~~16~~				10-20 at T-P.
8	8	16	170	Brown clay 8-9.5'		170 was at bottom of spoon
		11		med.		
9		13		9.5 sandy layer w/ gravel		8'-10' Sample Taken
		16		Dark Brown clay w/ gravel		
10	10					H.S. 10-10.5 : 110 ppm

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD ASTM D- 1586-67

LOGGED BY [illegible]

BORING NUMBER B-T#2

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT

LOCATION

JOB NUMBER GG 2-3

WELL DIAMETER

G W DEPTH

SHEET 2 OF 2

DATE(S) DRILLED 8/5/94

DRILLING METHOD [illegible]

TOTAL DEPTH

DRILLING CO. Parratt Wolff

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	OVA (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
	10 - 10.3	15/.3	140	Dark Brown clay matrix w/ med grain sand		Refused @ 10.3 6" yield
11						
12	12 - 12.2	75	>20	Large Rock Fragment at Bottom of Sample (12.2 ft) Wet/Saturated Clay		OVA Reading 20 on 0-20 scale, switched to 0-200 scale & read >20
13						Headspace 12-12.2' 110-140 ppm
14						
15						

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD ASTM D-1586-67

LOGGED BY [illegible]

BORING NUMBER TB-2

GALSON CORPORATION SAMPLING LOG

PROJECT: The Gleason Works
UST/AST Bulk Storage Closure

LOCATION: 1000 University Avenue
Rochester, New York

CLIENT: The Gleason Works

DATE(S): 8/5/91

JOB NUMBER: GQ-242

TIME(S): 1550

TASK: T-T-2

SAMPLE I. D.: TB3

SAMPLE LOCATION: West of Plant
Tanks 1/2 S.W. of Tank Farm
20.2' N 75' S

DEPTH: 10' - 10.2'

DESCRIPTION: Clay / Damp
Last 6" Clay w/ Gravel

SAMPLING METHOD USED: Auger / Split Spoon

LIST OF CONTAINERS AND AMOUNT SAMPLED:

COMMENTS: HNu: Avg = 90 ppm

SAMPLED BY: Nicholson / Schaefer, [illegible]

PAGE ____ OF ____

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT [illegible] TANK CLOSURE TT2

LOCATION TB #3

(S.W. OF TRENCH TANK)

JOB NUMBER [illegible]

WELL DIAMETER

G W DEPTH NA

SHEET 1 OF 2

DATE(S) DRILLED 8/5/94

DRILLING METHOD AUGER

TOTAL DEPTH 11.2'

DRILLING CO. FROM WELL

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	OVA (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
1	1'	NA 2 2 3	<1	BROWN SILT - SOME CLAY		1' y: 45'
2	2.0	3		SAND, MED → FINE GRAIN		HEADSPACE .5'-2' : <1 6" y'clg
3		4	<1	GRAVEL [THROUGH PIECE OF CEMENT AND RED BRICK]		CONCRETE 3.0 FT
4	4.0	2 14				H.S. 2'-4' : 20 ppm
5		2 4 4	<1	BROWN DAMP / CLAY 6" of BLACK / ASPHALT DEBRIS 1.5' of CLAY / DAMP		H.S 4'-6' : <1
6	6.0	7				
7		7 9 12	7.0	CLAY, DAMP BROWN		LAST 4" OF 2' SAMPLE DIFFERENT MATERIAL
8	8.0	16		4", SAND (COARSE TO MED) DARK GRAVELLY COLOR		TB2 HAD SAME LAYER @ 9.5' FT H.S 6'-8' : 30 ppm

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD ASTM D- 1586-67

LOGGED BY [illegible]

BORING NUMBER TB #3

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT Galson

LOCATION TB3

JOB NUMBER [illegible]

DATE(S) DRILLED 8/15/94

WELL DIAMETER

DRILLING METHOD

G W DEPTH N/A

TOTAL DEPTH

SHEET 2 OF 2

DRILLING CO.

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	OVA (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
5		–		Clay/Dark		Strong Odor
				Last 6" Clay w/Gravel		
8		"	110	Average OVA - 90 ppm		H Sp 8'-10' : 200 ppm / 250 ppm
		"				Sampled
10	10.0 10.2	42 75	90	Gray/Clay/w Gravel		Strong Odor
11	11.0 11.2	Refusal	56	Poorly Sorted Rock Fragments		1' Recovered Refusal At 11.2' Headspace 11'-11.2' : 114 ppm

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD ASTM D- 1586-67

LOGGED BY [illegible]/[illegible]

BORING NUMBER TB3

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

LOCATION: Tanks 1 & 2, Gleason Works, Rochester, NY

B NUMBER: 95L 3079

WELL DIAMETER: N/A

W DEPTH: N/A

SHEET 1 OF

DATE(S) DRILLED: September 13, 1995

DRILLING METHOD: Geoprobe 85?

TOTAL DEPTH: 11.3 ft

DRILLING CO. Northwagle

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	HNU (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				1' Placement 2' Brown Sand (Dark) 1' Sand (HNU Comp)		
2					<1	3'-4' Interval
4		3-4	<1			
6				Full Recovery Brown Moist Clay Type (Sand Mix)		
8		7-8	<1	3' Recovered	<1	7'-8' Int
			<2	Brown Clay (2.5) .5' Black, ?	<2	8.5-10 V.06/2?
			200	10.5'-11	200	10.5'-11 V.N/2?
	11.3			Refusal @ 11.3'		

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD: Geoprobe

LOGGED BY: Scott Schiedeman

BORING NUMBER: TB4

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

TANKS 1 & 2
LOCATION GLEASON WORKS
ROCHESTER, NY

JOB NUMBER 95L3079
WELL DIAMETER NA
GW DEPTH NA
SHEET 2 OF

DATE(S) DRILLED SEPTEMBER 13, 1995 930
DRILLING METHOD GEOPROBE
TOTAL DEPTH 11.1'
DRILLING CO. NORTHWEST

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	HNu (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				~1.0' FILL		
2	2-4			2.5' BROWN / SAND MIX		BAG ONLY
		2-4	<1			
4						
		5-6	<1	BROWN SAND/CLAY MIX		
6	4-6					
		7-8	<1			BAG ONLY
8						
					<2	VOA / LAB
	8-11.1	9-10	<2	BROWN CLAY FILL		
10		10-11	200	TOP OF BEDROCK - GRAY BLACK MOIST CLAY	200	VOA / LAB
	11.1	11.1				
12						

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD

LOGGED BY SCOTT SCHNEIDER

BORING NUMBER TB5

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

TANKS 1 & 2
LOCATION GLEASON WORKS
ROCHESTER, NY

DB NUMBER 95Z3079
ELL DIAMETER NA
W DEPTH NA
HEET 3 OF

DATE(S) DRILLED SEPTEMBER 13, 1995 10:10
DRILLING METHOD GEOPROBE
TOTAL DEPTH 12.0'
DRILLING CO. NORTHWASTE

EPTH	SAMPLE INTERVAL	SPOON BLOWS	(ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
	1.0 FILL			3.5 FT recovered		
2				Brown Dark Sand		
	3.5					
4		3-4	<1	Med Brown Sand min clay	<1	3-4 BAG
	4-6	4-6	<1		<1	JAR
6				Brown Coarse Type SAND MOIST		
		6-8	<1		<1	JAR
8						
		9-10	<2	2.5'-3.0' Clay	<2	VOA/LAB
10	8-12					
		11-12	<2	12' SAND	<2	VOA/LAB
12	REFUSAL			REFUSAL		

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD GEOPROBE
LOGGED BY Scott Schneeman
BORING NUMBER TB6

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

TOWER 1 & 2

LOCATION Genesee Valley

ROCHESTER, NY

DATE(S) DRILLED September 13, 1995

DRILLING METHOD Geoprobe

TOTAL DEPTH 10.7

DRILLING CO. Northeast

SB NUMBER SGC 3079

ELL DIAMETER NA

W DEPTH NA

HEET 4 OF

EPTH	SAMPLE INTERVAL	SPOON BLOWS	HNA (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				1.0' Pavement		
4	4-6		21	Clay Type Brown		
	7-8		21		22	7-8 Jar
	7-9		25	Brown Clay Type	50	8-9 V.A / ~~Lid~~ Jar
	9-10.9		220		220 ppm	9-10 V.A / Lid
	10-10.7			Refusal		

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD Geoprobe

LOGGED BY Scott Schneeman

BORING NUMBER TB7

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

TANKS 1 & 2

LOCATION GLEASON WORKS
ROCHESTER, NY

JOB NUMBER 95L2079
WELL DIAMETER NA
FLOW DEPTH NA
SHEET 1 OF

DATE(S) DRILLED SEPTEMBER 13, 1995 1115
DRILLING METHOD GEOPROBE
TOTAL DEPTH 12.0'
DRILLING CO. NORTHWEST

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	(ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
4						
	4-5		21	BROWN CLAY		
6						
	6-8		21			
				BROWN CLAY > MOIST 1.5'		
	9-10			GREY CLAY 1.0'		9-10 SAT / WET
	10-11			SAND (BROWN/GREY .5'	220	10-11 WET / WET
	11-12	11-12	720	GRAY CLAY (MOIST) 1.0'	200	11-12 WET / WET
				REFUSAL		

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD GEOPROBE LOGGED BY SCOTT SCHNEEMAN BORING NUMBER TB-8

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

TANKS 1 & 2
LOCATION GLEASON WORKS
ROCHESTER, NY

JOB NUMBER 95L3079
WELL DIAMETER NA
GW DEPTH NA
SHEET 6 OF

DATE(S) DRILLED SEPTEMBER 13, 1995 1315
DRILLING METHOD GEOPROBE
TOTAL DEPTH 12.0'
DRILLING CO. NORTHWIND

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	(ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				1' Fill		
2	0-4		<1	Brown Sand		
4						
	5-6		<1	Moist Brown Clay		
6						
	7-8		<1		<1	8-7
8				Moist		
	9.5-11		<2	Clay Brown	<2	V.d / Sand
					15	V.d / Sand
	11-12		15	Sand / Gray		
12				Refusal 12' 2"	5	Sand / V.d
				2" of clay		

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD GEOPROBE
LOGGED BY Scott Schneeman
BORING NUMBER TB9

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

LOCATION Tanks 1 & 2
Gleason Works
Rochester, NY

JOB NUMBER 95L 2079
WELL DIAMETER NA
GW DEPTH NA
SHEET 7 OF

DATE(S) DRILLED September 13, 1995 1400
DRILLING METHOD Geoprobe
TOTAL DEPTH 11.9'
DRILLING CO. Nothnagle

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	(ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				0-4.0' pave		
2						
4						
	5-6		<1	Brown Clay Moist - Wet		
6					<1	Bag 7-8
	7-8		<1			
8			<1	Moist/Saturated SAND 8-10	<1	
10		10-11	<1	Sand / Black	<1	vial / Lab
		11-11.9	<1	Clay Brown/Grey	<1	vial / Lab
12	11.9			Refusal		

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD Geoprobe
LOGGED BY Scott Schoolman
BORING NUMBER TB10

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

TANKS 1 & 2

LOCATION GLEASON WORKS

ROCHESTER, NY

JOB NUMBER 95L3079

WELL DIAMETER N/A

G W DEPTH NA

SHEET 2 OF

DATE(S) DRILLED SEPTEMBER 7, 1995 1430

DRILLING METHOD GEOPROBE

TOTAL DEPTH 11.3

DRILLING CO. NORTHWEST

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	(ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
2						
4				BROWN CLAY		
		5-5	<1			
6				1.0' SAND/MIX & CLAY		
		7-8	<1			
8						
		9-10	<1	MIX/ST CLAY SEAM	<1	WET
		10-11'	<1	.5' SAND, GRAY BROWN CLAY	<1	WET/LT
	11.3			REFUSAL		

ppm - parts per million in methane equilvalents soil sample head space measurements

SAMPLING METHOD GEOPROBE

LOGGED BY SCOTT SCHERMAN

BORING NUMBER TB11

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

TANKS 1 & 2

LOCATION GALSON WORKS
ROCHESTER, NY

JOB NUMBER 554 3079

WELL DIAMETER NA

GW DEPTH NA

SHEET 9 OF

DATE(S) DRILLED SEPTEMBER 13, 1995 1540

DRILLING METHOD GEOPROBE

TOTAL DEPTH 11.3

DRILLING CO. NORTHEAST

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	(ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				0-2 PAVE		
2		1.5-2.5	<1	BLACK, BROWN SAND COARSE		
4		3-4	<1	BROWN, SILT SAND		
	5-6	5-6	<1	" "		
6	6.5-8	6.5-8	<1	MOIST BROWN / SANDY SILT CLAY		
8						
		8.5-10	<1	BROWN / GRAY, TAN CLAY	<1	8.5-10 VOA / GAS
10		10-11.3	<1	BLACK SAND MIX BROWN CLAY	<1	10-11.3 VOA / GAS
	11.3			REFUSAL		

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD GEOPROBE

LOGGED BY SCOTT SCHLEGELMILCH

BORING NUMBER TB12

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT: [illegible]
Tanks 1 & 2

LOCATION: Gleason Works
Rochester, NY

JOB NUMBER: ESL 3079
WELL DIAMETER: NA
GW DEPTH: NA
SHEET 10 OF

DATE(S) DRILLED: September 14, 1995
DRILLING METHOD: Geoprobe
TOTAL DEPTH: 9.3
DRILLING CO. Nothnagle

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	(ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				3.0' Brown 1.0 Gravel 2.0 Brown Sand		
2		3-4	<1		3-4	Jar
4				Moist / Brown Sand		
		7-8	<1		7-8	Jar
				Sand Brown Grey Clay, Moist .5	8.5-9	v. 1/ [illegible]
	9.3	8.5-9	<1	Refusal		
	9.8?					

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD: Geoprobe
LOGGED BY: Scott Schneiderman
BORING NUMBER: TB13

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT Gleason Wells
Tanks 1 & 2
LOCATION Gleason Works
Rochester, NY

JB NUMBER 95L3079
WELL DIAMETER NA
W DEPTH NA
SHEET 1 OF

DATE(S) DRILLED September 14, 1995
DRILLING METHOD Geoprobe
TOTAL DEPTH 9.5
DRILLING CO. Northeast

PTH	SAMPLE INTERVAL	SPOON BLOWS	(ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				1.0 Fill		
2				1.0-3.5' Brown Moist Sandy Clay		
	3-4	3-4	4'			
4				4-7.5 Brown Clay Type Sand		
6		7-8	42	7.5-8 Brown Sand		
8		9.5-9.5	2	Brown Moist Clay/Sand	L 2	5.5-9.5 V.J/LRG
	9.5			Refusal		

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD Geoprobe
LOGGED BY Scott Schiedeman
BORING NUMBER TB14

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT: [illegible]
Tanks 1 & 2

LOCATION: Gleason Works
Rochester, NY

B NUMBER: 95L 3079
WELL DIAMETER: NA
W DEPTH: NA
SHEET 12 OF

DATE(S) DRILLED: September 14, 1995 1020
DRILLING METHOD: Geoprobe
TOTAL DEPTH: 11.7'
DRILLING CO. Nothnagle

DEPTH	SAMPLE INTERVAL	SPOON BLOWS	HNU (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				1' [illegible]		
				2' Brown Moist Clay		
		3-4	<1		3-4	<1 [illegible]
				Brown Moist Sand Brown Clay		
		9.5-10.5	<2	Black Stained [illegible] grey Clay [illegible] Sand Black Grey	<2	9.5-10.5 [illegible]
	10.5' Dk Grey Sand	10.5-11.7	<1	Brown Sandy Clay	<1	10.5-11.7 [illegible]
11.7				Refusal		

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD: Geoprobe
LOGGED BY: Scott Schlesselman
BORING NUMBER: TB15

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT: TANKS 1 & 2

LOCATION: GLEASON WORKS, ROCHESTER, NY

NUMBER: 95L3079

ELL DIAMETER: NA

Y DEPTH: NA

EET 1 OF 3

DATE(S) DRILLED: SEPTEMBER 14, 1995 10:50

DRILLING METHOD: GEOPROBE

TOTAL DEPTH: 10.3

DRILLING CO.: NORTHWEST

PTH	SAMPLE INTERVAL	SPOON BLOWS	µNA (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
	0 - 1			CONC 1.0' gone		
2	1 - 2			Sandy, Crushed Stone Fill		
	2 - 3					
4	3 - 4					
				wet, Shale Tip		
	7 - 8			1' - 1.5' Recovered		
				Black, Crushed Brown Clay Tip	<1	
		9-10	3	Brown Sand/Clay	<1 3 ppm	9-10 v.s/LAS
	10.3			Refusal		

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD: GEOPROBES

LOGGED BY: Scott Sensenbrenner

BORING NUMBER: TB16

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

TANKS 1 & 2

LOCATION GLEASON WORKS
ROCHESTER, NY

E NUMBER 95L3079

ELL DIAMETER NA

W DEPTH NA

EET 1 OF

DATE(S) DRILLED SEPTEMBER 14, 1995 1130

DRILLING METHOD GEOPROBE

TOTAL DEPTH 12.1

DRILLING CO. NORTHRIDGE

PTH	SAMPLE INTERVAL	SPOON BLOWS	Hnu (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
	0-1			PAVEMENT		
				≈ 2.5' RECOVERED		
4	3-4			SAND / BRN MOIST SILTY SAND		
	4-5		<1	MOIST, BROWN SAND (NON CLAY)	<1 ppm	
				3.5 RECOVERED		
				8.5-10.5 BROWN MOIST SAND	<2 ppm	8.5-10.5
			50	11.5-12 BLUE SAND	50 ppm	11.5-12
	12.1			REFUSAL		
				11' WATER 1113 HRS		

ppm - parts per million in methane equivalents soil sample head space measurements

SAMPLING METHOD GEOPROBE

LOGGED BY SCOTT SCHNEIDERMAN

BORING NUMBER TB17

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT [illegible]
TANKS 1 & 2
LOCATION GALSON WORKS
ROCHESTER, NY

B NUMBER 956 3079
/ELL DIAMETER N/A
'N DEPTH N/A
IEET 1 OF 1

DATE(S) DRILLED SEPTEMBER 14, 1995
DRILLING METHOD GEOPROBE
TOTAL DEPTH 10.8
DRILLING CO. NORTHWEST

PTH	SAMPLE INTERVAL	SPOON BLOWS	HNu (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
	2-4			1' Fill		
	3-4			Brown Moist Sand		
		3-4	<1			
		5-6	<1	Wet - Wet Brown Sand		
		7-8	<1			
		7.5-9.5		Brown Wet Sand Grey Sand	3' Recovery 2 ppm	Wet
		9.5-10		9.5-10 Sand	2 ppm	Wet / Cl
		10-10.8		10-10.8	3 ppm	Wet / Cl
	10.8			Refusal		

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD GEOPROBE
LOGGED BY Scott Sensenbaugh
BORING NUMBER TB18

GALSON CORPORATION
TEST BOREHOLE / WELL LOG

PROJECT Gleason Works
Tanks 1 & 2
LOCATION Gleason Works
Rochester, NY

3 NUMBER 95-2079
ELL DIAMETER NA
V DEPTH NA
HEET 16 OF

DATE(S) DRILLED September 14, 1995
DRILLING METHOD Geoprobe
TOTAL DEPTH 11.8
DRILLING CO. Northeast

PTH	SAMPLE INTERVAL	SPOON BLOWS	HNA (ppm)	SOIL / ROCK CLASSIFICATION	PROFILE	NOTES
				1.5' Removed		
			<1			
	5.5-6.0			Red Brick Fill	<1	Lod
	6-8		<1	Moist Brown Sand		
	9.5-10		1	Sand (coarse) Moist Brown Sand/Clay	100	Vis / Lod 10-11
	10-11					Vis / Lod 11-11.5
	11-11.5		100	4" Black & Grey Moist Clay	100 ppm	
	11.8			Refusal 11.8		

ppm - parts per million in methane equivalents
soil sample head space measurements

SAMPLING METHOD Geoprobe
LOGGED BY Scott Schneeberger
BORING NUMBER TB19