REMEDIAL INVESTIGATION WORK PLAN
FORMER AMERICAN LINEN SUPPLY LAUNDRY FACILITY
822 SENECA STREET
BUFFALO, NEW YORK
BCP SITE #C915241

By:

Haley & Aldrich of New York
Rochester, New York

On behalf of:

AmeriPride Services, Inc.
Minneapolis, Minnesota

For:

New York State Department of Environmental Conservation
Buffalo, New York

File No. 37319-020
31 May 2011

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31 May 2011
File No. 37319-021

New York State Department of Environmental Conservation
Region 9 Division of Environmental Remediation
270 Michigan Avenue
Buffalo, New York 14203

Attention: Mr. Jaspal S. Walia

Subject: Remedial Investigation Work Plan
Former American Linen Supply Laundry Facility
822 Seneca Street
Buffalo, New York
BCP Site #C915241

Dear Mr. Walia:

On behalf of the Site owner, AmeriPride Services, Inc. (formerly American Linen Supply Company), Haley & Aldrich of New York (Haley & Aldrich) is submitting herewith the Remedial Investigation Work Plan (RIWP) for the above referenced Site (the “Site”). The Site owner submitted a NYSDEC Brownfield Cleanup Program (BCP) Application and Draft Remedial Investigation Work Plan in January 2011. The Site was accepted into the BCP on 8 March 2011, and AmeriPride subsequently executed a Brownfield Cleanup Agreement with the NYSDEC in May 2011.

The RIWP has been developed in accordance with the NYSDEC 6 NYCRR Part 375 Brownfield Cleanup Regulations that became effective in December 2006, the “Technical Guidance for Site Investigation and Remediation” (DER-10 dated May 2010) and other relevant NYSDEC technical and administrative guidance. This RIWP incorporates AmeriPride’s responses to the NYSDEC’s comments received on 10 March 2011 and 15 April 2011, and incorporates information consistent with our subsequent conversations. In addition, AmeriPride provided a response to the NYSDEC, regarding a comment letter from AFI Environmental received during the public comment period. Responses to the NYSDEC’s comments dated 10 March 2011, and the NYSDEC’s letter accepting AmeriPride’s responses dated 15 April 2011 with modifications are included in Appendix H of this work plan. In addition, the response the NYSDEC regarding the AFI Environmental comment letter is included in Appendix H.

If you have any questions or comments regarding this document, please do not hesitate to contact us.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

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1. INTRODUCTION

AmeriPride Services, Inc. is requesting acceptance of the former American Linen Supply Company located at 822 Seneca Street in the City of Buffalo, Erie County, New York (the “Site”) into the Brownfield Site Cleanup Program (BCP). This document comprises a Remedial Investigation Work Plan (RIWP) to be implemented at the Site and is being submitted to the New York State Department of Environmental Conservation (NYSDEC) along with a completed Brownfield Cleanup Program Application (under separate cover) as recommended by the NYSDEC in the BCP-pre-application meeting held on August 5, 2010.

This Draft RIWP includes a summary of site history, a summary of previous environmental assessments and investigations, a description of the site geologic and hydrogeologic setting, a summary of subsurface features and sensitive receptors, and a plan of action for further delineation of areas of concern identified previously by others.

1.1 Site Description

The Site is located at 822 Seneca Street in the City of Buffalo, Erie County, New York. The Site is identified on the City of Buffalo tax maps as the parcel with section 122.27, block 1, lot 4, and is approximately 2.91 acres. The Site is located on the west side of Lord Street and bound to the north by Seymour Street and the south by Seneca Street, and is approximately one mile north of the Buffalo River. A site location map is included as Figure 1. Maps showing the Site property boundaries and historical Site features are included as Figures 2 and 3.

AmeriPride Services, Inc. (formerly American Linen Supply Company) has owned this property since approximately 1978, and since 2005, the Site has been unoccupied. The parcel is currently developed with a vacant industrial building. The Site is located in an urban area of mixed industrial, commercial land use. The Site is currently zoned for light industrial use. It is anticipated that future development of the Site would be commercial and/or industrial in nature; however, there are no specific Site redevelopment plans as of the date of this Draft RIWP.

1.2 Site History

According to a Phase I Environmental Site Assessment Report by C.T. Male Associates, P.C., dated December 2004, the Site building was first developed in 1910. Prior to 1910, the Site is indicated to have been occupied by residential and commercial properties. Between 1910 and 1978, the Site appeared to be used as a book binding and printing facility.

Coverall Service and Supply Co., (Coverall) a uniform cleaning facility, reportedly first occupied the Site in 1978. The facility was used for dry cleaning operations until 1985. Available records indicate that dry-cleaning with tetrachloroethylene (PCE) was conducted at the Site between 1978 and 1985; use and/or storage of PCE were not reported after 1985. The laundry operations occupied the first floor of the Site building as well as portions of the basement. Thorner Sydney Press occupied the second floor of the Site building as well as portions of the basement until 1997. According to a purchase agreement dated 1977, Thorner Sydney Press’ lease agreement was initiated in 1965.

In April 2004, laundering operations ceased at the Site building. It was used as a laundry depot from April 2004 to spring 2005 and then as a fleet vehicle maintenance shop until July 2005. Operations moved out of the building at the end of July 2005, and it has been vacant since.

1.3 Purpose

The Draft RIWP has been developed to achieve the following BCP objectives:

- To define the nature and extent of contamination on the Site.
- To identify if residual contaminant source areas are present on the Site.
- To determine whether remedial action is needed to protect human health and the environment.
- To produce data of sufficient quantity and quality to support the remediation of the Site, if warranted.

This Draft RIWP was developed in general accordance with the NYSDEC's Division of Environmental Remediation Technical Guidance for Site Investigation and Remediation (DER-10), dated May 2010.

Specifically, this Draft RIWP provides a summary of environmental conditions including the following information:

- Relevant information from existing environmental reports and previously conducted Site investigations.
- Technical overview and findings from previous reports
- Planned investigation activities as outlined in Section 2 for the Draft RIWP (including soil, soil vapor, and groundwater investigations)
- Site base mapping, supporting figures presenting sampling results/data, groundwater contour mapping and locations of planned investigational activities.
- Field Sampling Plan (FSP)
- Quality Assurance Project Plan (QAPP)
- Site specific Health & Safety Plan (HASP)
- Community Air Monitoring Plan (CAMP)
- Citizen Participation Plan (CPP)

References used in assessment of this Site and for development of this work plan are identified in the References section at the end of this document.

1.4 Summary of Previous Investigations and Assessments

In accordance with the DER-10, this Draft RIWP incorporates a summary of the previous Environmental Site Assessments and Site Investigations, which provide the basis for identifying the areas of concern (AOCs) and the principal constituents of concern (COCs) on the Site. AOC locations are shown on Figure 3.

1.4.1 Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment prepared by C.T. Male Associates, P.C., dated December 2004, identified the following recognized environmental conditions in connection with the Site:

- The Site has been used since 1910 for commercial purposes including a printing facility, a dry cleaning facility and a commercial industrial laundering facility. Each of those facilities stored and utilized a variety of chemical and petroleum products.

- Several disposal features were noted within the Site building including floor drains, troughs, sumps and pits. The troughs and pits were reportedly installed for Coverall for wastewater collection and disposal. Although the floor drains and sumps were reported to discharge to a pit (pit No.1) located in the basement of the building at the time, and ultimately to the municipal sanitary sewer system, the discharge location of these drainage features prior to the installation of the pits is not known.

- Six underground storage tanks (USTs) were located at the Site; four of the six USTs have been closed-in-place, and two have been removed. Limited tank closure documentation exists.

  The tanks include:
  1. a removed 10,000 gallon gasoline storage tank
  2. a removed 1,000 gallon alcohol storage tank
  3. a closed in-place 20,000 gallon diesel storage tank
  4. a closed in-place 20,000 gallon No.6 oil tank
  5. a closed in-place 1,500 gallon waste oil tank
  6. a closed in-place 5,000 gallon heating oil tank located within a vault beneath the sidewalk on the east side of the building along Lord Street.

  Fire Department records also indicated a 6,000 gallon storage tank in a vault off the boiler room in 1964, and further noted that this tank may have leaked due to the presence of fuel oil coming up through a tile drain in the "boiler room." It cannot be determined based on available documentation where the location of the boiler room was in 1964. It is possible that the "6000-gallon" and "5000-gallon" heating oil tank described above are the same and that the tank was incorrectly described in the 1964 letter.

  The Phase I report concluded that further assessment would be necessary to determine if the use of the tanks and associated piping had an impact to the quality of soils or groundwater at the Site. Subsurface investigations conducted subsequently by ENSR International are summarized in sections 1.4.2, 1.4.3, and 1.4.4 below. Additional investigations to further evaluate the USTs will be conducted as part of this Remedial Investigation.

- During the Phase I site visit, staining was noted in several locations including within the existing boiler room, in an elevator room, near drums and containers, and near the hydraulic lifts. Staining was also noted within the basement of the Site building. C.T. Male Associates recommended that a further assessment would be necessary to determine the extent of the staining and to determine potential impacts to soil or groundwater at the Site. As part of Phase II investigations described below, wipe sampling for PCBs was conducted in some of the stained areas mentioned above.

1.4.2 Initial Phase II Subsurface Investigations

Initial Phase II investigations were conducted by ENSR International during August 2005.The investigations included a total of 28 soil borings and four solid surface wipe samples for PCB analysis. The investigation locations are presented on Figures 3.

Phase II Scope of Work:

Soil borings were advanced to depths ranging from 6 feet (ft) to 20 ft below ground surface (bgs). At locations that were accessible to vehicles, soil borings were advanced using a direct-push rig (i.e., Geoprobe). In the basement of the building, soil borings were advanced using hand-held hammer-drill type equipment. Soils were continuously logged in the field, and screened with a photoionization detector (PID) for the presence of volatile organic compounds. Soil classifications, PID responses, and additional subsurface information were recorded on soil boring logs. Soil boring logs are included in Appendix A.

Soil samples were collected from each soil boring location, based on field observations and/or PID responses, and submitted for laboratory analysis. The rationale for sample collection at a given sample location was presented the Phase II memorandum ENSR International, dated October 2005 (Appendix A). Samples were analyzed for one or more of the following: Target Compound List (TCL) volatile organic compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, selenium, silver and mercury), and polychlorinated biphenyls (PCBs).

The analytical results for the soil samples collected during the subsurface investigation are summarized on Table I.

In addition to subsurface soil investigation activities, wipe samples for PCB analysis were also collected at the four locations depicted on Figure 3, including two transformer pads, the floor adjacent to a bank of PCB capacitors, and an area in the basement where a pool of oil was observed adjacent to an elevator shaft. Wipe sampling consisted of wiping a 100 cm^2 area with a hexane saturated gauze pad and submitting the gauze for PCB analysis.

Phase II Findings:

Analytical data collected during the Phase II investigation indicated that Site soils contain concentrations of chlorinated VOCs (PCE and TCE), PAHs, and arsenic, cadmium, chromium, lead, silver and mercury in excess of NYSDEC TAGM 4046 standards, which were the regulatory comparison standards at that time. Based on the findings of the Phase II Investigation, the following four potential areas of concern (AOCs) were identified:

- **AOC-1 -** vicinity of SB-2 (PAHs) located at the west end of the former (removed) 10,000 gallon gasoline UST,
- **AOC-2** – vicinity of SB-13 (PCE, TCE, chromium) adjacent to the Site catch basin near Seneca Street,
- **AOC-3** – vicinity of SB-7 and SB-8 (PCE, TCE, PAHs, mercury) adjacent to the former 1,500 gallon waste oil UST area, and
- **AOC-4** – General area underlying the southwestern half of the building. Impacts identified in the soils underlying the on-slab (central) portion of the building include VOCs, PAHs and metals. VOCs and/or metals were also identified in soils underlying the western portion of the basement.

PCBs were not detected in the wipe samples collected, except for the sample collected from the floor near the elevator shaft. PCBs were detected at 4.1 ug/100 cm^2. This detection is less than the US EPA Spill Cleanup Level of 10 ug/100 cm^2 (Table III).

1.4.3 Supplemental Phase II

To further evaluate the nature and extent of soil impacts within the AOCs identified in the initial Phase II Investigation, ENSR International conducted a supplemental Phase II Investigation during November and December 2005. This investigation included the collection of additional soil samples within each of the four AOCs, and from locations upgradient of the AOCs; and a groundwater investigation to identify depth to groundwater and determine whether groundwater was impacted by the COCs previously detected in the soil. General procedures and results are summarized below for each media.

1.4.3.1 Soil Investigation

During this soil investigation 19 supplemental soil borings were advanced at locations depicted on Figure 3. Soil borings were advanced to depths ranging from 14 feet (ft) to 20 ft bgs. One or more soil samples were collected from each soil boring location, based on field observations and/or PID responses, and submitted for laboratory analysis. Soil samples were analyzed for one or more of the following compounds: TCL VOCs, TCL SVOCs, and RCRA 8 metals.

Analytical results for soil samples collected during the supplemental investigation are summarized in Table I and compared to the Soil Cleanup Objectives (SCOs) in 6 NYCRR Part 375 Environmental Remediation Program (December 2006) for commercial land use and protection of groundwater.

Analytical results for the supplemental soil investigation indicated that one or more VOCs were detected in many of the soil samples:

- In most samples, VOCs were detected at concentrations below SCOs.
- Results for samples SB-40 (12-14’), SB-40 (14-16’), and SB-46 (2-3’) indicated concentrations of chlorinated VOCs above their respective protection of groundwater SCOs. In addition, acetone was detected in sample SB-48 (1.5-2’) at 0.066 mg/kg which slightly exceeded its protection of groundwater SCO.

PAHs were also detected in many of the soil samples. However, PAHs were detected at concentrations exceeding commercial SCOs in only one sample (SB-46).

One or more RCRA 8 metals including arsenic, barium, cadmium, chromium, lead and nickel were detected in each of the supplemental soil samples. Concentrations of metals detected did not exceed SCOs.

1.4.3.2 Groundwater Investigation

To evaluate groundwater quality across the Site, six soil borings were completed as overburden groundwater monitoring wells (see Figure 3 for locations).

Groundwater samples were submitted for laboratory analysis for TCL VOCs, TCL SVOCs and RCRA 8 Metals. The analytical results for groundwater samples are summarized on Table II and compared to the water quality standards presented in the NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS):

Analytical results for the groundwater investigation indicated the following:

- VOCs including PCE, TCE, cis-1,2-dichloroethene (cis-1,2-DCE) and/or vinyl chloride (VC) were reported in groundwater samples collected from monitoring wells MW-3 and MW-4 at concentrations that exceeded groundwater quality standards established for these compounds in excess of TOGS.

- Concentrations (or estimated concentrations) of other VOCs detected in MW-3 and MW-4, and in the samples from other wells were below their respective water quality standards.

- Bis(2-ethylhexyl)phthalate was reported at an estimated concentration (5 ug/L) equal to the TOGS criteria. This compound may be a laboratory artifact (compound was detected in blanks associated with many soil samples collected during the supplemental investigation).

- With the exception of phenanthrene, which was detected at estimated concentrations well below TOGS criteria in groundwater samples collected from MW-2 and MW-5, SVOCs were not detected in groundwater samples.

- Barium was detected in groundwater samples collected from all wells at the Site, at levels well below TOGS criteria.

- Chromium and lead were detected in the groundwater sample collected from MW-4 at concentrations below TOGS criteria.

- Other RCRA metals were not detected above laboratory detection limits in the water samples collected.

1.4.4 Site Wide Groundwater Monitoring

In June 2009, samples were collected from the six onsite wells. Results were generally consistent with the previous event conducted in 2005, with the exception of an increase in PCE and VC concentrations in MW-5 (Table II).

1.4.5 Summary of Soil and Groundwater Investigations

1.4.5.1 Summary of Soil Analytical Results

- *PCE:* Analytical results for soil indicate that the highest concentrations of PCE have been detected in samples collected from soil borings SB-13 and SB-40 (AOC-2), soil boring SB-7 (AOC-3) and soil borings SB-21, SB-24, SB-28, and SB-46 (AOC-4). The distribution of soil borings and sample results suggest multiple potential PCE source areas, including the Site drainage feature near Seneca Street in AOC-2, and the former 1,500-gallon waste oil UST in AOC-3. In AOC-4, sources of soil impact by chlorinated VOCs appear to include the trough drain in the former washroom area on the main floor and the cistern-structures (Pit-2 and Pit-1) in the basement.

- *Mercury:* Total mercury was detected at concentrations slightly exceeding the protection of groundwater SCOs in samples collected from soil borings SB- 20, SB-22 and SB-23 (AOC-4).

- *PAHs:* One or more PAHs were detected at concentrations in exceedance of commercial and protection of groundwater SCOs in several of the AOC-4 soil borings.

  Analytical data suggest that PAH impacts may be limited to the shallow soils (i.e. – within 5 feet of ground surface); PAHs were not detected above laboratory reporting limits in the vast majority of samples collected below 5 feet bgs. These data suggest that the PAHs are a result of urban soil fill and not related to a specific source of petroleum, ash, or other common product or waste material known to contain PAHs.

1.4.5.2 Summary of Groundwater Analytical Results

Concentrations of PCE, and it's breakdown products TCE, cis-1,2-DCE and/or VC exceeding water quality standards, have been detected in groundwater samples collected from monitoring wells MW-3, MW-4, and MW-5, which are located on the southern half of the Site, during the two groundwater sampling events (2005 and 2009) (see Figure 3). Lack of detections of chlorinated VOCs in the central and northern wells (MW-1 and MW-2) indicate that groundwater upgradient from the suspected potential source area has not been impacted.

1.5 Physical Setting

The Site incorporates approximately 2.9 acres of fairly level land situated in the City of Buffalo, Erie County, New York. According to the United States Geological Survey (USGS) Topographic Map, the Site lies at approximately 590 feet above Mean Sea Level.

1.5.1 Geologic Setting

The Site is generally flat and is situated approximately one mile north of the Buffalo River. The unconsolidated geologic materials (soil) encountered at the Site range in thickness from approximately 15 to greater than 20 feet thick.

According to the March 2007 supplemental Phase II report, soils observed during investigation activities consist of fill materials overlying native soil. The fill materials, which pre-date industrial activity at the Site, include gravel, sand, silt, and clay, and varying amounts of anthropogenic materials such as brick fragments, wood fragments, clinker, glass, plastic, etc. It is noted that the boring logs provided in the Phase II did not identify specific soil strata or fill contents; therefore the extent of fill across the Site cannot be defined. Under the fill, the native soils consist of lacustrine silt and clay deposited in proglacial lakes during late Wisconsinan glaciation. At many locations (i.e., SB-31, SB-32, SB-38, SB-47, SB-48, SB-49 and SB-50), a basal unit of fine to medium sand was observed that may represent a basal till or lacustrine sand.

The Site is situated in the Central Lowlands Physiographic Province, characterized by nearly flat-lying rocks of Devonian, Silurian and Ordovician Age. Bedrock underlying the Site is mapped as middle Devonian Onondaga Limestone.

1.5.2 Hydrogeologic Setting

Subsurface investigation activities conducted at the Site indicate that the uppermost groundwater bearing unit is situated at or near the interface between the soil and bedrock. Groundwater elevation data suggest that groundwater flows toward the south with an interpreted hydraulic gradient of 0.05 feet per foot (ft/ft). This southward flow direction is consistent with the expectation that groundwater may be locally controlled by the Buffalo River, which is located less than one mile south of the Site. Additional discussions regarding the previous groundwater investigation are presented in the previous investigation reports included in Appendix A.

1.5.3 Subsurface Features

Six underground storage tanks (USTs) were formerly used at the Site; four of the six USTs have each been closed-in-place and two have been removed (refer to Figure 3 and Section 1.4.1 above). The closed in-place tanks are reportedly located as follows:

- Three of the tanks are located on the south side of the Site just west of the Site building, two of which were reported to be connected to a fuel dispensing shed.
- The fourth tank was reportedly used for heating oil and is located on the eastern side of the Site building beneath the sidewalk adjacent to Lord Street.

In addition to the USTs, a drainage catch basin is located on the south side of the Site along Seneca Street. This catch basin will be removed during demolition activities.

1.5.4 Sensitive Receptors

No sensitive ecological receptors such as wetlands have been identified adjacent to or near the project area. There are residential areas located immediately to the north, west and south of the Site (see Figure 4). There are no drinking water wells in the area.

2. REMEDIAL INVESTIGATION

The work described in this Draft RIWP will be conducted in accordance with 6 NYCRR Part 375 - Brownfield Cleanup Regulations, and in general conformance with the NYSDEC DER-10 (Technical Guidance for Investigation and Remediation). The RI work will also comply with the quality assurance project plan (QAPP) and field sampling plan (FSP) appended to this Draft RIWP. The investigation process will involve sampling of soil/fill, native soil, soil vapor and groundwater sampling. Exploration and testing locations may be modified during the field program based on observations made in the field.

The analytical data obtained during the RI will be compared to the commercial and protection of groundwater SCOs assuming that the future land use will be commercial or industrial or a combination of these uses. Various site redevelopment alternatives are currently being considered.

2.1 Purpose and Objectives

The purpose of this Draft RIWP is to define the nature and extent of contamination on the Site; to determine whether contamination is present that warrants remedial action; and to provide data of sufficient quantity and quality to support development of a Remedial Action Alternatives Analysis, if remedial action is warranted for the Site. This Draft RIWP was developed to meet the following specific objectives:

- Abate and demolish the Site building to allow Remedial Investigation within the building footprint
- Define the nature and extent of the historical fill at the Site
- Delineate the extent of potential sources of residual contaminants within AOCs 1, 2, 3 and 4 identified in previous assessments and investigations
- Further delineate the extent of COCs in groundwater at the Site
- Evaluate the potential for soil vapor impacts related to Site COCs and the potential for soil vapor to migrate via preferred pathways, if present.

2.2 Site Preparation for Remediation Investigation

Site preparation activities include the abatement and demolition of the existing building, removal of portions of the existing building slab located above the basement areas of the building, and removal of a subsurface drainage structure. Removal will facilitate remedial investigation activities. During demolition activities, the contractor will perform community air monitoring in accordance with the NYSDOH generic Community Air Monitoring Plan (CAMP) for particulates. During removal of the drainage structure, community air monitoring will include particulates and VOCs.

Site preparation work oversight and management is being conducted by Asbestos and Environmental Consulting Corporation (AECC) of East Syracuse, NY; their work scope is described below. Haley & Aldrich will provide environmental monitoring during site preparation activities that involve excavation and management of subsurface soil materials.

The Site Contractor is responsible for obtaining applicable permits from local government agencies prior to building demolition activities and providing copies to Haley & Aldrich. Those permits will be provided to the NYSDEC prior to commencement of Site work and will also be included in the Final Engineering Report for the Site.

2.2.1 Abatement

Prior to building demolition, hazardous materials within the building, including PCB and mercury-containing electrical equipment, asbestos-containing materials, lead-based paint, and remaining drums will be removed and miscellaneous waste (drums, etc.) will be managed or disposed of in accordance with state and federal regulations and AECC's Site-specific specifications. The superstructure will be abated of hazardous materials including loose and flaking lead paint, asbestos, PCBs, and demolished to the building slab (see Section 2.2.2). Lead paint that is adhered to surfaces and is not loose or flaking will not be removed prior to demolition.

2.2.2 Dewatering

Prior to abatement of the basement of the building, dewatering will be required to remove water that has accumulated over time, and routine dewatering during and after abatement may be required until the basement can be backfilled.

It is anticipated that the source of the water in the basement is from infiltrating groundwater. Sampling of the basement water was conducted in October 2010 and November 2010 to facilitate planning for discharge. The results are summarized in Table IV.

Currently, AECC plans to discharge dewatering effluent to the Buffalo Sewer Authority under a temporary discharge permit. Approval is pending.

2.2.3 Reuse and Disposal of Building Materials

During building demolition, building materials including concrete and brick will be segregated for either disposal and/or potential reuse onsite as fill material. Brick and concrete materials coated with paint and materials that appear to be contaminated (e.g., staining is observed) will be segregated, staged on and beneath poly-sheeting, characterized for disposal in accordance with disposal facility requirements, and transported off site for disposal.

Building debris free of coatings and that do not otherwise appear contaminated will be segregated into 1,000 cubic yard piles. Each pile will be sampled and analyzed as follows based on the "Recommended Number of Soil Samples for Soil Imported to or Exported from a Site" included in DER-10:

- TCL VOCs: Two (2) discrete samples per 1000 cubic yards of material
- TCL SVOCs, RCRA 8 Metals, PCBs, Pesticides: One (1) composite sample per 1000 cubic yards of material.

If the results meet the commercial SCOs, the pile may be reused onsite for backfill of the existing basement, subsurface features, and for Site grading. For piles where the results do not meet the SCOs, they will be characterized and disposed at a NYSDEC-permitted disposal facility.

2.2.4 Management of the Building Slab

Currently, project plans call for a majority of the building slab to remain in place; the slab above basement areas of the building will be removed. In order to evaluate soils beneath the building slab in the AOC-4, the former dry cleaning operations (see Figure 3), portions of the building slab in that area will be removed to facilitate installation of test pits and/or soil borings (see Section 2.4.1).

2.2.5 Removal of Subsurface Drainage Feature and Other Potential Source Features

A subsurface drainage feature, located to the immediate west of the tanks, will be removed as part of building demolition activities. In addition as part of slab removal, other subsurface features may be encountered and subsequently removed by the contractor. Haley & Aldrich will observe removal activities and provide oversight and soil screening using a PID to evaluate potential impacts to the surrounding soil.

Other drainage features onsite that will be decommissioned (i.e., filled in place with concrete slurry) include drains, sumps, and vaults inside and adjacent to the Site building. Remaining contents in these features will be removed and characterized for proper disposal. Once the contents have been removed, these drainage features will be observed for evidence of compromised integrity (e.g. holes, cracks, broken seals, etc.). If the integrity of a drainage feature appears to be compromised, it will be removed.

If drainage features are removed, the bedding immediately surrounding the structures and the native soil beyond the bedding will be screened visually and with a PID for evidence of potential impacts. The former structure will be disposed of properly.

There are five storm sewer catch basins located to the west of the Site building. If sediments and/or water are observed in the storm sewer catch basins, one sediment sample and one water sample will be collected from the catch basin furthest downstream (closest to the property boundary) in which a sufficient amount of water and/or sediment could be collected. If the field conditions warrant, sediment and water samples will be collected from up to two more catch basins in consultation with the NYSDEC field representative. The sample(s) will be analyzed for the constituents of concern (PCE, TCE, cis-1,2-DCE, VC, and petroleum-related VOCs and PAHs per NYSDEC CP-51[1].

If evidence of localized potential impacts is encountered such as elevated PID readings, oil saturated soil, or significant odors, the following procedures will be conducted:

- The contractor will assist with additional excavation to visually evaluate the extent of impacted soil. Excavated soil will be placed on and under poly-sheeting for temporary staging.

- A sample will be collected for laboratory analysis of both the potentially impacted soil and the soil remaining in-place. Haley & Aldrich will coordinate with the NYSDEC to develop the target analyte list.

- If laboratory results indicate concentrations of compounds are detected in excess of the applicable SCOs, the soil will be removed from the Site to an appropriate disposal facility.

- If laboratory results indicate that concentrations of compounds are not detected in excess of the applicable SCOs, the soil will used to backfill the excavation.

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[1] NYSDEC Commissioners Policy 51 (CP-51), Table 2 (VOCs) and Table 3 (SVOCs), 21 October 2010.

If excavation and visual assessment indicate that the impacts may be wide-spread, samples of impacted material will be collected as described above, and the material will be replaced in the excavation and additional assessment and/or remediation if necessary will be conducted as part of future work.

2.3 Scope of Remedial Investigations

Remedial investigations will begin after building demolition is complete. Explorations will include installation of soil borings, test pits, and groundwater monitoring wells within the previously identified AOCs and other areas of the Site that have not been previously investigated. In addition, soil vapor sampling and analysis will be conducted in the western portion of the Site. The type, location, and rationale for each exploration are detailed in the sections below. Surface soil sampling has not been proposed because open unpaved are not present on the Site. The Site is covered with the Site building and pavement. Installation of soil borings, groundwater monitoring wells, test pits, and soil gas sampling points will be completed in accordance with sections 2.4 through 2.6 below and the standard procedures included in Appendix B. Laboratory analyses to be conducted are summarized in the Sampling and Analysis Plan included as Table V.

2.3.1 AOC-1

AOC-1 was defined as a result of the detection of PAHs in soil and the potential for a release to have occurred from a former 10,000-gallon underground gasoline storage tank. In previous investigations, PAHs were detected in shallow soil samples in AOC-1 at concentrations that slightly exceed protection of groundwater and/or commercial SCOs. Previous investigation results did not indicate gasoline impacts in soil; however, groundwater investigation is necessary to further evaluate this AOC.

Additional investigation is proposed as follows:

2.3.1.1 Potential Gasoline UST Impacts Evaluation

At least one soil boring, SB-101, will be completed in AOC-1 downgradient of the former UST location (see Figure 5). SB-101 will be advanced to the top of bedrock. If evidence of petroleum impacts is observed, additional borings may be installed to delineate the extent impacts in the area. At least one boring (SB-101) in this area will be completed as a 2-inch diameter groundwater monitoring well. Note that the location of the monitoring well may be installed in SB-101 or in another more appropriate location if SB-101 will not produce a viable well or one appropriate for investigation purposes. Groundwater sampling and analysis is discussed in Section 2.3.4 and summarized on Table V. Groundwater well installation procedures are discussed in Section 2.6.4.

A soil sample(s) will be collected from the location with the highest PID reading and/or evidence of petroleum impact including staining and petroleum odor. Soil samples will be analyzed for TCL and petroleum-related VOCs specified in CP-51 lists using EPA Method 8260, and TCL and petroleum-related SVOCs specified in CP-51 using EPA Method 8270. For vertical delineation purposes soil samples may be collected at the bottom of the exploration or at the water table.

2.3.1.2 Urban Fill Evaluation

Based on the existing analytical data, which does not indicate gasoline impacts to soil in AOC-1, it is anticipated that the presence of PAHs in shallow soil is attributable to the nature of the historic urban fill. To obtain information regarding the nature and extent of historic urban fill in this area, additional characterization, sampling and laboratory analysis of shallow fill will be conducted in at least one location in AOC-1 in conjunction with further investigation at depth in the vicinity of the former gasoline UST described above. Soil/fill samples will be analyzed for the target compound list TCL SVOCs using EPA Method 8270 (this analysis is inclusive of PAHs), target analyte list (TAL) metals using EPA Method 6010. If evidence of volatile organic compounds are present (including PID readings above background and odor), TCL VOCs and CP-51 list VOCs (petroleum-related VOCs) will also be analyzed using EPA Method 8260.

2.3.2 AOC-2/AOC-3

Areas AOC-2 and AOC-3 were defined as a result of the detection of dry cleaner solvent-related chlorinated VOCs (CVOCs) in soil and groundwater. It is anticipated that the CVOCs are associated with the former waste oil UST and/or drainage structure located in that area. Although existing data do not indicate petroleum impacts near the former abandoned USTs, assessment of groundwater and deeper soil is necessary to further evaluate these areas of concern. Since AOC-2 and AOC-3 are in close proximity to one another (see Figure 5), these two areas are combined for discussion of remedial investigations in their vicinity.

Additional investigation is proposed as follows:

2.3.2.1 Soil Investigation

At least two soil borings will be advanced to the top of bedrock in AOC-2/3 (SB-102 and SB-105). Soil samples will be collected from the location with the highest PID readings and analyzed for TCL VOCs using EPA Method 8260. For vertical delineation purposes soil samples may be collected at the bottom of the exploration or at the water table. Saturated soil samples will not be collected for laboratory analysis.

Additional soil investigation will be completed in the area using test pits and/or soil borings (if needed to achieve sufficient vertical impact delineation). Soil samples will be collected for laboratory analysis from the locations with the highest PID readings and/or from areas where evidence of petroleum impact is observed during drilling, if any, and will be analyzed for TCL and CP-51 lists VOCs using EPA Method 8260, and TCL and CP-51 lists SVOCs using EPA Method 8270. For vertical delineation purposes, soil samples may be also be analyzed from the bottom of the exploration or at the vadose/saturated zone interface.

If visual evidence of impacts is observed during test pit explorations, then the procedure described in Section 2.2.5 will be followed.

To assess potential impacts related to the closed in-place USTs, test pits will be conducted at the locations shown on Figure 5 (TP-UST-1 through TP-UST-11). . In general, test pits will be advanced around each in-place UST to a depth below the tanks as determined in the field. If it is not practicable to advance a test pit to the applicable depth, a soil boring will be installed. If evidence of contamination is identified, a sample will be collected from that location, and if necessary additional soil borings will be advanced in the impacted areas and analyzed as follows:

- *Soil around the Fuel Oil, Heating Oil, and Diesel Tanks:* TCL and CP-51 lists VOCs using EPA Method 8260, and TCL and CP-51 lists SVOCs using EPA Method 8270.

- *Soil around the Waste Oil Tank:* TCL and CP-51 lists VOCs using EPA Method 8260, and TCL and CP-51 lists SVOCs using EPA Method 8270; TAL Metals via EPA Methods 6010/7471, and PCBs via EPA method 8082.

2.3.2.2 Groundwater Investigation

Groundwater monitoring wells MW-3 and MW-4 were previously installed and sampled in this area; analytical results are summarized in Table II. Two additional overburden groundwater monitoring wells, MW-102 and MW-105 will be installed to assess the approximate western limit of CVOC migration in groundwater. Groundwater sampling and analysis is discussed in Section 2.3.4 and summarized on Table V. Groundwater well installation procedures are discussed in Section 2.6.4.

2.3.2.3 Soil Vapor

A total of four soil vapor points will also be installed and sampled in this area to evaluate whether soil vapor has been impacted by CVOCs. Two points will be installed between the sanitary sewer and the adjacent residence and garage, and two points will be installed near or within the sanitary sewer pipe trench to assess whether it is acting as a preferred vapor migration pathway (see Figure 5). Soil vapor samples will be analyzed for VOCs using method TO-15.

2.3.3 AOC-4

AOC-4 was defined based on historical facility operations, and the results of previous investigation results indicating that total CVOCs were detected in soil at concentrations up to 98.5 mg/kg (Table I). In addition to CVOCs detected in soil and groundwater samples, elevated concentrations of PAHs (greater than commercial SCOs) were also identified in some of the soil samples collected from the area (see Table I).

Groundwater monitoring wells MW-5 and MW-6 were previously installed in AOC-4; results indicated that concentrations of CVOCs were detected above TOGS criteria. Groundwater monitoring results are summarized in Table II.

2.3.3.1 Soil Investigation

Additional soil investigation will be completed in AOC-4 using test pits and soil borings (if needed to achieve sufficient vertical impact delineation). At least one sample of shallow soil/fill from this area will be collected for laboratory analysis to better understand the nature of the historic urban soil/fill. The extent of historic urban soil/fill will be assessed visually during explorations in the area. Soil/fill samples will be analyzed for TCL SVOCs using EPA Method 8270 and TAL metals using EPA Method 6010. If evidence of VOC impacts are present (including PID readings above background and odor), TCL VOCs will also be analyzed using EPA Method 8260.

At least three soil borings (SB-103, SB-104, 106) to be subsequently installed as overburden/bedrock monitoring wells (see below) will be installed to the top of bedrock. Soil samples will be collected from the locations with the highest PID readings and analyzed for TCL VOCs using EPA Method 8260. For vertical delineation purposes soil samples may be collected at the bottom of the exploration or at the water table. Saturated soil samples will not be collected for laboratory analysis.

2.3.3.2 Groundwater Investigation

At least two of the soil borings installed to the top of bedrock will be completed as 2-inch groundwater monitoring wells MW-103 and MW-104 (see Figure 5). MW-103 will be installed to evaluate the eastern limit of dissolved CVOC migration in groundwater, and MW-104 will be installed to assess groundwater quality within the potential source area. The location of MW-104 is subject to change based on the results of the soil investigation conducted in the potential source area. Groundwater sampling and analysis is discussed in Section 2.3.4 and summarized on Table V. Groundwater well installation procedures are discussed in Section 2.6.4.

Following installation and sampling of the overburden wells onsite, an additional bedrock monitoring well, BMW-106 (Figure 5) will be installed in this area to evaluate the nature of groundwater impacts in the bedrock groundwater and or the potential presence of dry cleaner solvent dense non-aqueous phase liquid (DNAPL). Note that the proposed location of the bedrock groundwater well is subject to change based on field observations, drilling conditions, and on the previous groundwater sampling results. Should the location of the bedrock well significantly change from what is proposed, the new location will be discussed with the NYSDEC prior to installation. Bedrock drilling procedures are included in Appendix B.

2.3.4 Site-Wide Groundwater Investigation

Groundwater samples will be collected from the pre-existing monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6) and newly installed monitoring wells (MW-101, MW-102, MW-103, MW-104, MW-105, and BMW-106).Prior to sample collection, the wells will be developed in accordance with the procedure included in Appendix B. Sampling will be conducted using Low-Flow purge and sampling methods. Laboratory analysis of the samples will consist of TCL and CP-51 lists VOCs via EPA Method 8260, CP-51 list SVOCs via EPA Method 8270, and TAL metals by EPA Method 6010.

Prior to purging and sampling the wells, site-wide groundwater levels will be collected in order to evaluate groundwater flow. In addition, and if practicable pending receipt of a signed access agreement, groundwater levels will be collected from both onsite and offsite wells installed in connection with remediation of the adjacent property to the southwest (Site Number C915235) during the same event in order to further evaluate groundwater flow. It is anticipated that the NYSDEC will assist in obtaining a signed access agreement. Groundwater samples will not be collected from wells installed in connection with the remediation of the adjacent property.

If results from the groundwater investigation indicate that potential offsite migration of groundwater constituents, additional drilling activities may be considered and reviewed with the NYSDEC. If additional drilling is deemed necessary, an addendum to this RIWP will be prepared to discuss the work.

2.3.5 Site-Wide Historic Urban Fill Characterization

Characterization and logging of soil in all soil borings and test pits will be done during installation of the explorations described above. In addition, 5-10 test pits will be conducted on the north side of the property specifically to characterize the nature and extent of historic fill at the Site.

To evaluate the quality of the fill across the Site, one sample of the fill will be collected from each of 5 locations as follows (Figure 5):

- the northeast corner of the Site
- the north central side of the Site
- the northwest corner of the Site
- AOC-4 (southeast corner of the Site)
- AOC-2/AOC-3

The fill samples will be analyzed for some or all of the following: Total Petroleum Hydrocarbons (TPH) via EPA Method 8015, TCL VOCs via EPA Method 8260, TCL Semi-Volatile Organic Compounds (SVOCs) via EPA Method 8270, TAL Metals via EPA Methods 6010/7471, PCBs via EPA method 8082, and Pesticides via EPA Method 8081.

Samples will be analyzed according to the following frequency per the May 2010 NYSDEC DER-10 Guidance:

- 5 Samples – TPH
- 5 Samples – Priority Pollutant Metals
- 5 Samples – PAHs
- 2 Samples – PCBs
- 5 Samples – Screening for VOCs using a photoionization detector (PID). If screening results are more than 5x background, analyze for VOCs via EPA Method 8260B.

If fill is not encountered in the test pits, sampling and analytical testing will not be conducted.

2.4 Soil Investigation Procedures

Although Site-specific cleanup goals have not been defined, for comparison purposes, chemical analytical results for soil will be compared to the 6 NYCRR Part 375 restricted SCOs for commercial use and the protection of groundwater. The soil investigation activities under this work plan will be conducted in accordance with the FSP (Appendix B) and as described below. It is noted that split soil samples may be collected by the NYSDEC. Should the NYSDEC require a split sample, glassware will be provided contingent upon the NYSDEC giving notice at least three working days prior to the sampling event.

2.4.1 Test Pit Explorations

Overall, test pit explorations will be conducted in accordance with the standard procedures in Appendix B. Test pits will be advanced to refusal, the top of the water table, or to a practical depth limited by excavation stability and reach of equipment. Soils will be characterized and screened for VOCs using a photoionization detector (PID); evidence of contamination (e.g. odor, staining, ash, cinders, slag, etc.) will be documented on log forms along with soil characterization information and observations. Soil samples may be collected for laboratory analysis. Typically, samples will be collected from the location with the strongest evidence of contaminant impact, or if no evidence of impact is observed, one sample from immediately above the water table may be collected and submitted for applicable analysis. A sample will be collected from each test pit. At the end of the work day, samples will not be analyzed per Section 2.3.5 will be discarded upon concurrence from the NYSDEC.

2.4.2 Soil Boring Explorations

Overall, soil boring explorations will be conducted as summarized below and in accordance with the standard procedures in Appendix B. Soil borings will be advanced to the top of bedrock utilizing direct-push (macro-core sampling) and/or conventional hollow stem auger and continuous soil sampling methods. Soils will be characterized and screened continuously for VOCs using a photoionization detector (PID); any evidence of contamination (e.g. odor, staining, ash, cinders, slag, etc.) will be documented. Soil characterization and observations will be documented on log forms. Typically, samples will be collected from the location with the strongest evidence of contaminant impact, or if no evidence of impact is observed, one sample from immediately above the water table may be collected and submitted for applicable analysis. A sample will be collected from each soil boring. At the end of the work day, samples that will not be analyzed per Section 2.3.5 will be discarded upon concurrence from the NYSDEC.

2.4.3 Investigation of Waste Material Encountered in Soil Borings and Test Pits

If during soil boring and test pit investigations, waste material is encountered (e.g. buried solid waste, etc.), a sample of the material will be collected and analyzed for the following: TPH via EPA Method 8015, TCL VOCs via EPA Method 8260, TCL SVOCs via EPA Method 8270, TAL Metals via EPA Methods 6010/7471, PCBs via EPA method 8082, and Pesticides EPA Method 8081 unless otherwise directed by the NYSDEC.

2.5 Soil Vapor Investigation Procedures

Soil vapor point installation and sampling will be conducted in general conformance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006 (NYSDOH Guidance), and in accordance with the FSP included in Appendix B. The procedures are summarized in the sections below.

2.5.1 Soil Vapor Point Installation Procedure

Soil vapor points will be installed at the approximate locations as shown on Figure 5 and listed below:

- **SV-101 and 102:** Between the adjacent residence and garage and the sanitary sewer line located in the western portion of the site
- **SV-103 and SV-104**: Near or within the sanitary sewer pipe trench

Soil vapor probes will be installed to a depth corresponding to subsurface features such as the sewer line and/or building footing foundations or to depth of 1 foot above groundwater as determined in the field. The probes will be backfilled using a porous, inert backfill material (e.g., glass beads, washed #1 crushed stone, etc.) allowing a sampling zone of 1 to 2 feet in length, and sealed at the ground surface to prevent any inflow from ambient surface air. In order to prevent short circuiting of ambient air into the sub-surface, the surface seal design for each point will either include, depending on conditions determined in the field:

- a 18-inch diameter surface seal of hydrated bentonite clay mounded around the soil gas probe at the ground surface, with an overlying layer of poly sheeting (a minimum of three feet in diameter), and an additional bentonite clay seal atop the poly sheeting around the soil vapor probe; or
- a permanent concrete roadway box installed around each point.

2.5.2 Soil Vapor Sampling Procedure

Soil vapor sampling will be conducted in general conformance with the NYSDOH Guidance.

The samples will be collected at least 24 hours after installation of the probes. Prior to sampling, the soil vapor probes will be briefly evacuated to purge any stagnant vapors within the probe (the purge volume will approximate one borehole volume). In addition, during the purging process, helium will be released around the probe at the ground surface, and vapor samples will be collected from the installed probe and analyzed for helium to assess potential short-circuiting and ensure that the surface seal is intact.

The soil vapor samples will be collected in dedicated, laboratory-supplied “batch certified clean” stainless steel Summa canisters at rates no greater than 0.2 L/min, with an average target fill-time of approximately 2 hours per canister.

Samples will be analyzed by an ELAP certified laboratory for VOCs using EPA Method TO-15. The target compound list will be consistent with the NYSDOH air sampling guidance and with the compounds detected in soil and groundwater at the site.

2.6 Groundwater Monitoring Well Installation

Groundwater monitoring wells will be installed using procedures generally consistent with the NYSDEC recommended practice as described below and in Appendix B. The procedures will be modified if necessary based on field conditions. Typical flush-mount and above-grade overburden monitoring well installation details are presented on the attached FSP (Appendix B).

2.6.1 Overburden Well Installation

The monitoring wells will be completed as follows: A 2-inch diameter, 10-foot length (or other length not longer than 15 ft or as determined by field conditions) of PVC, 10-slot (0.010 inch) well screen attached to a riser section will be installed to the top of weathered bedrock (or top of bedrock, absent a weathered zone) and to straddle the water table. Sufficient solid riser pipe will be used to complete the well at ground surface or as a stick-up casing approximately 2 to 3 feet above ground surface.

The well construction will include installation of a sand filter pack around the well screen extending approximately 2 feet above the top of the screen, a (hydrated) bentonite-pellet seal approximately 2 feet thick above the sand pack, and bentonite/cement grout to ground surface, as well as a protective, lockable, flush-mounted or stick-up casing.

2.6.2 Bedrock Well Installation

The bedrock well will be installed according to the procedures included in Appendix B. Well screening will be determined based on field conditions.

2.6.3 Well Development

Wells will be developed following installation to remove any fines yielded by the formation during drilling, and then further development by surging or over-pumping to reduce well-water turbidity.

Upon the completion of a well, it will be developed to provide sufficient communication with the formation to yield representative data. Three development techniques, including mechanical surging with a rubber surge block, over-pumping using a submersible pump, and bailing have been identified for use at the discretion of the field personnel.

The amount of water removed during development will be recorded. Development will continue until the development water is relatively free of sediment, exhibiting a turbidity of 50 NTU or as close to 50 NTU as practical and at least 10 well volumes of water has been removed. Some wells may never reach the target level of 50 NTU.

The development water will be contained in 55-gallon drums and analyzed and staged on site until appropriate disposal options are determined.

2.6.4 Groundwater Sampling Procedure

One complete round of groundwater sampling will be conducted a minimum of two weeks after completion of development activities. The groundwater sampling event will include water-level monitoring, and sample collection at each well. In addition, water level measurements will be collected from onsite wells, and offsite wells installed in connection with remediation of the property to the southwest and across Seneca St (Site Number C915235) pending a signed access agreement as noted in Section 2.3.4. Groundwater samples will not be collected from wells installed in connection with the remediation of the adjacent property.

One sample from each well for laboratory analysis plus necessary QA/QC samples (refer to the QAPP in Appendix C). The wells will be purged prior to sampling using low-flow purging methods and a bladder pump. Refer to Table V for the Sampling & Analysis Plan, and to Appendix D for the procedure utilized for low-flow groundwater sampling. The following groundwater quality parameters will be monitored during the purge using a flow-through cell: pH, temperature, oxidation/reduction potential (ORP), dissolved oxygen (DO), turbidity, and conductivity. Groundwater samples will be collected once groundwater quality parameters stabilize. The flow-through cell will be disconnected before collecting a sample. Disposable bladders and tubing will be replaced at each well location.

2.7 Investigation Derived Waste Management

It is anticipated that drums of soil cuttings and groundwater will be generated during site characterization activities. In addition, wastes such as used personal protective equipment (PPE) will be generated during sampling and drilling activities. Used PPE and other non-hazardous materials will be disposed of in municipal trash dumpsters on-site. Drums of soil cuttings and liquid waste will be removed from the Site and properly disposed of by a contracted waste broker. To the extent practicable, soils determined through sampling to be impacted by F-listed hazardous materials, if any, will be managed under the "contained-in" Policy (NYSDEC TAGM 3028) as approved by the NYSDEC.

3. REMEDIAL INVESTIGATION SUPPORTING PLANS

3.1 Quality Assurance Project Plan

The Quality Assurance Project Plan (QAPP) included as Appendix C is a stand-alone document that outlines the scope of the quality assurance and quality control (QA/QC) activities to be performed in support of the RIWP.

The QAPP documents procedures regarding the accuracy and precision of data collection during the RI and data interpretation periods. The QAPP identifies procedures for sample collection to mitigate the potential for cross-contamination, as well as analytical requirements necessary to assure compliance with USEPA SW-846 methodology. The QAPP has been prepared in accordance with USEPA's Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QAlR-5); the EPA Region 1\CERCLA Quality Assurance Manual, and NYSDEC's May 2010 DER-10 Technical Guidance for Site Investigation and Remediation.

3.2 Health & Safety Plan

A site specific Health & Safety Plan (HASP) has been prepared in accordance with 40 CFR 300.150 of the NCP and 29 CFR 1910.120 for the proposed RIWP activities. A copy of the HASP is included as Appendix D of this Work Plan. The HASP covers on-site investigation activities. A member of the field team will be designated to serve as the on-site Health and Safety Officer throughout the field program. This person will report directly to the Project Manager and the Health and Safety Coordinator. The HASP will be subject to revision as necessary, based on new information that is discovered during the field investigation.

3.3 Community Air Monitoring Plan

The NYSDOH Generic Community Air Monitoring Plan (CAMP) has been included as Appendix E. The CAMP describes required VOC vapor and/or particulate monitoring that will be conducted during demolition and intrusive site investigation activities. The intent of this CAMP is to provide for a measure of protection of the downwind communities from potential airborne releases of constituents of concern during RI activities. As such, this CAMP specifies the potential air emissions, air monitoring procedures, and monitoring schedule.

3.4 Citizen Participation Plan

In accordance with NYSDEC's Brownfield Cleanup Program guidance, a Citizen Participation Plan (CPP) is required for the Site investigative activities. The CPP, included as Appendix F, meets the requirements of NYSDEC DER-23 and DER-10 guidance.

4. PROJECT SCHEDULE

Based upon current knowledge of the site the following remedial investigation schedule, subject to change, is proposed. A minimum of 5-day notice will be provided to NYSDEC in advance of field sampling.

January 2011	*Submit Brownfield Application*
January 2011	*Submittal of Draft Remedial Investigation Work Plan (RIWP)*
January 2011	*Public Notice completed*
First Quarter 2011	*Acceptance into Brownfield Program, Execution of Brownfield Cleanup Agreement*
Second Quarter 2011	*Remedial Investigation Work Plan is approved by NYSDEC.*
Third Quarter 2011	*Abatement/demolition of Site structures begins.*
Third Quarter 2011	*Additional remedial investigation field work commences.*
December 2011	*Draft Remedial Investigation Report/Alternatives Analysis Report submitted to NYSDEC.*

REFERENCES

1. New York State Department of Environmental Conservation, (2010) Commissioners Policy – CP-51/Soil Cleanup Guidance, 21 October 2010.

2. New York State Department of Environmental Conservation, (1992) STARS Memo #1 - Petroleum Contaminated Soil Guidance Policy, August 1992.

3. New York State Department of Environmental Conservation, (2010). DER-10 Technical Guidance for Site Investigation and Remediation. Division of Environmental Remediation, May 2010.

4. New York State Department of Environmental Conservation, (2006). 6 NYCRR Part 375 Environmental Remediation Programs. Division of Environmental Remediation, December, 2006.

5. New York State Department of Environmental Conservation, (as revised June 1998) Division of Water Technical and Operational Guidance Series (1.1.1), Ambient Water Quality Standards and Guidance Values and Effluent Limitations.

6. New York State Department of Environmental Conservation, (2007). Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR), September 2007.

7. New York State Department of Environmental Conservation (undated), DER-23 Citizen Participation Handbook for Remedial Programs, Division of Environmental Remediation.

8. “Phase I Environmental Site Assessment, AmeriPride Services, Inc. Site, 7 and 8 Lord Street, City of Buffalo, Erie County, New York,” dated 8 December 2004. Prepared by C.T. Male Associates, P.C.

9. “Phase II Technical Memorandum,” dated 19 October 2005. Prepared by ENSR Corporation.

10. “Supplemental Phase II Investigation Report,” dated 21 March 2007. Prepared by ENSR Corporation.

11. Letter Regarding “Groundwater Monitoring – June 2009,” dated 23 July 2009. Prepared by Delta Environmental.

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TABLE I - SUMMARY OF SOIL QUALITY DATA
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

Refer to the Notes and Abbreviations on Page 4

SAMPLE DESIGNATION	NYSDEC	NYSDEC	SB-1	SB-2	SB-3	SB-4	SB-5	SB-5 (dup)	SB-6	SB-7	SB-8	SB-9	SB-10	SB-11	SB-12	SB-120	SB-13	SB-16	SB-16	SB-16	SB-17	SB-17	SB-17
SAMPLE DEPTH (FT BGS)	6 NYCRR Part 375	6 NYCRR Part 375	7.5 - 8.5 ft	0.5-1.5 ft	17.5-18.7 ft	14-15 ft	15-16 ft	15-16 ft	3-4 ft	7-8 ft	4-5 ft	17.5-18.4 ft	17-17.5 ft	18-18.8 ft	14.5-15.5 ft	14.5-15.5 ft	17-17.4 ft	0.5-2 ft	4-5 ft	6-7 ft	5-6 ft	6-7 ft	7-7.5 ft
AREA OF CONCERN (AOC)	Commercial	Protection of	--	AOC-1	AOC-1	--	--	--	AOC-3	AOC-3	AOC-3	AOC-2	AOC-2	AOC-2	AOC-2	AOC-2	AOC-2	--	--	--	--	--	--
SAMPLING DATE		Groundwater	8/22/2005	8/22/2005	8/22/2005	8/23/2005	8/23/2005	8/23/2005	8/25/2005	8/25/2005	8/25/2005	8/23/2005	8/23/2005	8/25/2005	5/25/2005	5/25/2005	8/25/2005	8/24/2005	8/24/2005	8/24/2005	8/24/2005	8/24/2005	8/24/2005
SAMPLED BY			ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR
MATRIX			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Volatile Organic Compounds																							
1,1-Dichloroethene	500	0.33	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	0.003 J	ND (0.006)	-	-	-	ND (0.005)	-
1,2-Dichlorobenzene	500	1.1	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	ND (0.006)	ND (0.006)	-	-	-	ND (0.005)	-
cis-1,2-Dichloroethene	500	0.25	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	**1.7 D**	0.019 DJ	ND (0.006)	ND (0.005)	0.024	0.034	-	**1.6 E**	ND (0.006)	-	-	-	ND (0.005)	-
trans-1,2-Dichloroethene	500	0.19	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	0.006	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	0.007	ND (0.006)	-	-	-	ND (0.005)	-
1,4-Dichlorobenzene	130	1.8	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	ND (0.006)	ND (0.006)	-	-	-	ND (0.005)	-
2-Butanone	NA	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	NR	-	-	-	NR	-
Acetone	500	0.05	ND (0.029)	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.031)	ND (0.032)	ND (0.029)	ND (0.027)	ND (0.032)	ND (0.03)	ND (0.027)	ND (0.029)	ND (0.029)	-	ND (0.03)	ND (0.032)	-	-	-	ND (0.027)	-
Carbon Disulfide	NA	NA	ND (0.006)	ND (0.006)	0.001 J	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	ND (0.006)	ND (0.006)	-	-	-	ND (0.005)	-
Carbon tetrachloride	22	0.76	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	ND (0.006)	ND (0.006)	-	-	-	ND (0.005)	-
Chlorobenzene	500	1.1	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	ND (0.006)	ND (0.006)	-	-	-	ND (0.005)	-
Chloroform	350	0.37	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	ND (0.006)	ND (0.006)	-	-	-	ND (0.005)	-
Dichlorofluoromethane	NA	NA	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	ND (0.006)	ND (0.006)	-	-	-	ND (0.005)	-
Ethylbenzene	390	1	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	0.004 J	ND (0.006)	-	-	-	ND (0.005)	-
Isopropylbenzene	NA	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	NR	-	-	-	NR	-
Methylcyclohexane	NA	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	NR	-	-	-	NR	-
Methylene Chloride	500	0.05	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	0.006 B	ND (0.006)	0.006	0.008	0.006	0.006 B	0.005 B	0.008	0.01	-	0.009	0.007	-	-	-	ND (0.005)	-
Tetrachloroethane	150	1.3	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	**4.2 D**	0.78 D	ND (0.006)	ND (0.005)	0.002 J	0.001 J	-	**98 D**	0.002 J	-	-	-	0.001 J	-
Toluene	500	0.7	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	0.035 D	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	-	ND (0.006)	ND (0.006)	-	-	-	ND (0.005)	-
Trichloroethene	200	0.47	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	**9.8 D**	0.14 D	ND (0.006)	ND (0.005)	0.056	0.002 J	-	**3 DJ**	ND (0.006)	-	-	-	ND (0.005)	-
Vinyl Chloride	13	0.02	ND (0.012)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.012)	ND (0.013)	ND (0.012)	ND (0.011)	ND (0.013)	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.011)	-	**0.021**	ND (0.013)	-	-	-	ND (0.011)	-
Xylene (mixed)	500	1.6	ND (0.018)	ND (0.017)	ND (0.017)	ND (0.017)	ND (0.019)	ND (0.019)	ND (0.017)	ND (0.016)	ND (0.019)	ND (0.018)	ND (0.016)	ND (0.018)	ND (0.017)	-	0.006 J	ND (0.019)	-	-	-	ND (0.016)	-
Semi-Volatile Organic Compounds																							
2-methylnapthalene	NA	NA	ND (0.38)	ND (3.6)	ND (0.36)	ND (2.1)	ND (0.42)	-	ND (0.39)	ND (1.8)	ND (2.2)	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Acenaphthene	500	98	ND (0.38)	ND (3.6)	ND (0.36)	ND (2.1)	ND (0.42)	-	ND (0.39)	ND (1.8)	ND (2.2)	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Acenapthylene	500	107	ND (0.38)	ND (3.6)	ND (0.36)	ND (2.1)	ND (0.42)	-	ND (0.39)	ND (1.8)	ND (2.2)	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Anthracene	500	1000	ND (0.38)	0.36 J	ND (0.36)	ND (2.1)	ND (0.42)	-	ND (0.39)	ND (1.8)	0.13 J	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Benzo(a)anthracene	5.6	1	ND (0.38)	**1.3 J**	0.023 J	0.12 J	0.032 J	-	ND (0.39)	0.1 J	0.33 J	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Benzo(a)pyrene	1	22	ND (0.38)	**1.5 J**	ND (0.36)	0.14 J	ND (0.42)	-	ND (0.39)	**ND (1.8)**	0.24 J	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Benzo(b)fluoranthene	5.6	1.7	ND (0.38)	**1.9 J**	0.019 J	0.21 J	ND (0.42)	-	ND (0.39)	**ND (1.8)**	0.35 J	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Benzo(g,h,i)perylene	500	1000	ND (0.38)	1.4 J	ND (0.36)	ND (2.1)	ND (0.42)	-	ND (0.39)	ND (1.8)	0.16 J	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Benzo(k)fluoranthene	56	1.7	ND (0.38)	0.35 J	ND (0.36)	0.22 J	ND (0.42)	-	ND (0.39)	**ND (1.8)**	**ND (2.2)**	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Bis(2-ethylhexyl) phthalate	NA	NA	NR	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	-	-	-	NR
Butylbenzylphthalate	NA	NA	NR	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	-	-	-	NR
Chrysene	56	1	ND (0.38)	1.5 J	0.024 J	0.16 J	ND (0.42)	-	ND (0.39)	ND (1.8)	0.35 J	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Dibenz(a,h)anthracene	0.56	1000	ND (0.38)	**ND (3.6)**	ND (0.36)	**ND (2.1)**	ND (0.42)	-	ND (0.39)	**ND (1.8)**	**ND (2.2)**	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Dibenzofuran	NA	NA	NR	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	-	-	-	NR
Di-n-butyl phthalate	NA	NA	NR	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	-	-	-	NR
Di-n-octyl phthalate	NA	NA	NR	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	-	-	-	NR
Fluoranthene	500	1000	ND (0.38)	2.8 J	0.039 J	0.25 J	0.049 J	-	ND (0.39)	0.14 J	0.73 J	0.023 J	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Fluorene	500	386	ND (0.38)	ND (3.6)	ND (0.36)	ND (2.1)	ND (0.42)	-	ND (0.39)	ND (1.8)	ND (2.2)	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Indeno(1,2,3-cd)pyrene	5.6	8.2	ND (0.38)	ND (3.6)	ND (0.36)	ND (2.1)	ND (0.42)	-	ND (0.39)	ND (1.8)	0.15 J	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Naphthalene	500	12	ND (0.38)	ND (3.6)	ND (0.36)	ND (2.1)	ND (0.42)	-	ND (0.39)	ND (1.8)	ND (2.2)	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Phenanthrene	500	1000	ND (0.38)	1.4 J	0.03 J	0.14 J	0.042 J	-	ND (0.39)	ND (1.8)	0.67 J	ND (0.38)	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Pyrene	500	1000	ND (0.38)	2.4 J	0.043 J	0.23 J	0.046 J	-	ND (0.39)	0.13 J	0.6 J	0.023 J	ND (0.36)	ND (0.36)	ND (0.39)	ND (0.37)	ND (0.41)	-	ND (0.36)	-	-	-	ND (0.37)
Metals																							
Arsenic	16	16	-	-	-	-	-	-	7.8	5.6	6.7	-	-	-	-	-	7.2	-	ND (2.2)	-	-	-	ND (2.2)
Barium	400	820	-	-	-	-	-	-	114 E	27.9 E	98.2 E	-	-	-	-	-	48.1 E	-	35.3	-	-	-	19.6
Cadmium	9.3	7.5	-	-	-	-	-	-	0.68	0.55	0.5	-	-	-	-	-	0.53	-	ND (0.22)	-	-	-	ND (0.22)
Chromium, trivalent[1]	1500	-	-	-	-	-	-	-	20.4	8.1	9.4	-	-	-	-	-	14.2	-	5.8	-	-	-	3.6
Lead	1000	450	-	-	-	-	-	-	10.7	13.2	124	-	-	-	-	-	12	-	5.9	-	-	-	3.1
Selenium	1500	4	-	-	-	-	-	-	**ND (4.7)**	**ND (4.6)**	**ND (5.3)**	-	-	-	-	-	**ND (5.1)**	-	**ND (4.4)**	-	-	-	**ND (4.4)**
Silver	1500	8.3	-	-	-	-	-	-	ND (0.59)	ND (0.58)	ND (0.67)	-	-	-	-	-	ND (0.63)	-	ND (0.55)	-	-	-	ND (0.55)
Total Mercury	2.8	0.73	-	-	-	-	-	-	ND (0.019)	0.02	0.671	-	-	-	-	-	ND (0.021)	-	0.05	-	-	-	ND (0.018)
PCBs/Pestacides																							
Aroclor 1016	NA	NA	-	-	-	-	-	-	-	ND (0.019)	ND (0.022)	-	-	-	-	-	-	-	-	ND (0.018)	ND (0.018)	-	-
Aroclor 1221	NA	NA	-	-	-	-	-	-	-	ND (0.019)	ND (0.022)	-	-	-	-	-	-	-	-	ND (0.018)	ND (0.018)	-	-
Aroclor 1232	NA	NA	-	-	-	-	-	-	-	ND (0.019)	ND (0.022)	-	-	-	-	-	-	-	-	ND (0.018)	ND (0.018)	-	-
Aroclor 1242	NA	NA	-	-	-	-	-	-	-	ND (0.019)	ND (0.022)	-	-	-	-	-	-	-	-	ND (0.018)	ND (0.018)	-	-
Aroclor 1248	NA	NA	-	-	-	-	-	-	-	ND (0.019)	0.022	-	-	-	-	-	-	-	-	ND (0.018)	ND (0.018)	-	-
Aroclor 1254	NA	NA	-	-	-	-	-	-	-	0.041	0.016 J	-	-	-	-	-	-	-	-	ND (0.018)	ND (0.018)	-	-
Aroclor 1260	NA	NA	-	-	-	-	-	-	-	ND (0.019)	ND (0.022)	-	-	-	-	-	-	-	-	ND (0.018)	ND (0.018)	-	-
Total Polychlorinated Biphenyls	1	3.2	-	-	-	-	-	-	-	0.041	0.038 J	-	-	-	-	-	-	-	-	ND	ND	-	-

TABLE I - SUMMARY OF SOIL QUALITY DATA
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

Refer to the Notes and Abbreviations on Page 4

SAMPLE DESIGNATION	NYSDEC	NYSDEC	SB-18	SB-19	SB-20	SB-21	SB-21 (Dup)	SB-22	SB-23	SB-24	SB-25	SB-250	SB-26	SB-26	SB-27	SB-27	SB-28	SB-29	SB-30	SB-31	SB-31
SAMPLE DEPTH (FT BGS)	6 NYCRR Part 375	6 NYCRR Part 375	2.5-3.5 ft	12-13 ft	4-5 ft	3.7-4.7 ft	3.7-4.7 ft	3-5 ft	3-4 ft	2-3 ft	5-7 ft	5-7 ft	4.5-5 ft	5-6 ft	4-5 ft	5-6 ft	4-6 ft	0.5-2 ft	2-3 ft	13-16 ft	16-18.5 ft
AREA OF CONCERN (AOC)	Commercial	Protection of Groundwater	--	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	--	--	AOC-4	AOC-4	AOC-4	AOC-4	--	AOC-1	AOC-1
SAMPLING DATE			8/26/2005	8/26/2005	8/26/2005	8/26/2005	8/26/2005	8/29/2005	8/26/2005	8/29/2005	8/29/2005	8/29/2005	8/24/2005	8/24/2005	8/24/2005	8/24/2005	8/24/2005	8/24/2005	8/29/2005	12/1/2005	12/1/2005
SAMPLED BY			ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR
MATRIX			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Volatile Organic Compounds																					
1,1-Dichloroethene	500	0.33	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	ND (0.006)	ND (0.007)	-	-
1,2-Dichlorobenzene	500	1.1	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	0.013	ND (0.007)	-	-
cis-1,2-Dichloroethene	500	0.25	ND (0.006)	ND (0.006)	0.001 J	0.002 J	0.002 J	ND (0.006)	0.002 J	ND (0.006)	ND (0.006)	-	-	0.16	-	0.24	**2.3 DJ**	0.018	ND (0.007)	-	-
trans-1,2-Dichloroethene	500	0.19	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	0.009	**ND (3.2)**	ND (0.006)	ND (0.007)	-	-
1,4-Dichlorobenzene	130	1.8	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	0.006	ND (0.007)	-	-
2-Butanone	NA	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	-	NR	-	NR	NR	NR	NR	-	-
Acetone	500	0.05	ND (0.03)	ND (0.028)	ND (0.03)	0.027 J	0.031 J	ND (0.028)	ND (0.035)	ND (0.028)	ND (0.031)	-	-	ND (0.027)	-	ND (0.032)	**ND (16)**	ND (0.03)	ND (0.033)	-	-
Carbon Disulfide	NA	NA	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	0.002 J	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	ND (0.006)	ND (3.2)	ND (0.006)	ND (0.007)	-	-
Carbon tetrachloride	22	0.76	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	0.027	ND (0.007)	-	-
Chlorobenzene	500	1.1	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	0.026	ND (0.007)	-	-
Chloroform	350	0.37	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	0.063	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	0.015	ND (0.007)	-	-
Dichlorofluoromethane	NA	NA	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	0.003 J	ND (3.2)	ND (0.006)	ND (0.007)	-	-
Ethylbenzene	390	1	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	ND (0.006)	ND (0.007)	-	-
Isopropylbenzene	NA	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	-	NR	-	NR	NR	NR	NR	-	-
Methylcyclohexane	NA	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	-	NR	-	NR	NR	NR	NR	-	-
Methylene Chloride	500	0.05	0.006	0.008	0.006	ND (0.006)	0.006 J	0.009	0.006 J	0.001	0.009	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	0.006	0.014	-	-
Tetrachloroethane	150	1.3	0.002 J	ND (0.006)	0.18	**9.4 D**	**11 D**	0.004 J	0.094	**5.4 D**	0.001 J	-	-	ND (0.005)	-	0.068	**92 D**	0.12	ND (0.007)	-	-
Toluene	500	0.7	ND (0.006)	0.002 J	ND (0.006)	0.002 J	0.002 J	ND (0.006)	0.002 J	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	ND (0.006)	**ND (3.2)**	0.002 J	ND (0.007)	-	-
Trichloroethene	200	0.47	ND (0.006)	ND (0.006)	0.004 J	0.13 DJ	0.11 DJ	ND (0.006)	0.002 J	ND (0.006)	ND (0.006)	-	-	ND (0.005)	-	0.076	**4.2**	0.012	ND (0.007)	-	-
Vinyl Chloride	13	0.02	ND (0.012)	ND (0.011)	ND (0.012)	0.005 J	0.002 J	ND (0.011)	ND (0.014)	ND (0.011)	ND (0.012)	-	-	0.013	-	**0.081**	**ND (6.4)**	ND (0.012)	ND (0.013)	-	-
Xylene (mixed)	500	1.6	ND (0.018)	ND (0.017)	ND (0.018)	ND (0.017)	ND (0.02)	ND (0.017)	ND (0.021)	ND (0.017)	ND (0.018)	-	-	ND (0.016)	-	ND (0.019)	**ND (9.6)**	ND (0.018)	ND (0.02)	-	-
Semi-Volatile Organic Compounds																					
2-methylnapthalene	NA	NA	ND (2)	ND (0.38)	ND (2.1)	ND (1.9)	-	0.43	ND (2.1)	0.34 DJ	ND (0.42)	ND (0.41)	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Acenaphthene	500	98	ND (2)	ND (0.38)	ND (2.1)	ND (1.9)	-	0.75	ND (2.1)	0.24 DJ	ND (0.42)	ND (0.41)	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Acenapthylene	500	107	ND (2)	ND (0.38)	ND (2.1)	ND (1.9)	-	0.39	ND (2.1)	0.4 DJ	ND (0.42)	ND (0.41)	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Anthracene	500	1000	0.19 J	ND (0.38)	ND (2.1)	ND (1.9)	-	1.5	0.13 J	2 D	ND (0.42)	ND (0.41)	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Benzo(a)anthracene	5.6	1	0.53 J	ND (0.38)	0.38 J	0.274 J	-	**3.6**	0.54 J	**9.5 D**	0.042 J	0.061 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Benzo(a)pyrene	1	22	0.48 J	ND (0.38)	0.31 J	0.18 J	-	**3.4**	0.41 J	**7.6 D**	0.038 J	0.064 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Benzo(b)fluoranthene	5.6	1.7	0.81 J	ND (0.38)	0.51 J	0.21 J	-	**4.2**	0.47 J	**9.4 D**	0.045 J	0.1 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Benzo(g,h,i)perylene	500	1000	0.34 J	ND (0.38)	0.26 J	0.12 J	-	1.6 D	0.27 J	5.2 D	0.022 J	0.061 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Benzo(k)fluoranthene	56	1.7	0.87 J	ND (0.38)	0.55 J	**ND (1.9)**	-	1.4 DJ	0.22 J	**3.7 D**	ND (0.42)	0.11 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Bis(2-ethylhexyl) phthalate	NA	NA	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	-	NR	-	NR	NR	NR	0.12 BJ	0.035 BJ
Butylbenzylphthalate	NA	NA	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	-	NR	-	NR	NR	NR	ND (0.37)	ND (0.34)
Chrysene	56	1	0.51 J	ND (0.38)	0.37 J	0.2 J	-	**3.5**	0.51 J	**9 D**	0.032 J	0.068 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Dibenz(a,h)anthracene	0.56	1000	**ND (2)**	ND (0.38)	**ND (2.1)**	**ND (1.9)**	-	0.52	**ND (2.1)**	**1.6 DJ**	ND (0.42)	ND (0.41)	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Dibenzofuran	NA	NA	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	-	NR	-	NR	NR	NR	ND (0.37)	ND (0.34)
Di-n-butyl phthalate	NA	NA	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	-	NR	-	NR	NR	NR	0.045 BJ	0.031 BJ
Di-n-octyl phthalate	NA	NA	NR	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	-	NR	-	NR	NR	NR	ND (0.37)	ND (0.34)
Fluoranthene	500	1000	1.1 J	ND (0.38)	0.7 J	0.35 J	-	7.8 D	0.96 J	21 D	0.059 J	0.12 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Fluorene	500	386	ND (2)	ND (0.38)	ND (2.1)	ND (1.9)	-	0.96	ND (2.1)	0.33 DJ	ND (0.42)	ND (0.41)	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Indeno(1,2,3-cd)pyrene	5.6	8.2	0.28 J	ND (0.38)	0.2 J	ND (1.9)	-	1.5	0.2 J	4.4 D	ND (0.42)	0.038 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Naphthalene	500	12	ND (2)	ND (0.38)	ND (2.1)	ND (1.9)	-	0.88	ND (2.1)	0.24 DJ	ND (0.42)	ND (0.41)	ND (0.36)	-	ND (0.42)	-	0.027 J	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Phenanthrene	500	1000	0.89 J	ND (0.38)	0.38 J	0.3 J	-	6.7 D	0.41 J	18 D	0.04 J	0.085 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Pyrene	500	1000	1.1 J	ND (0.38)	0.57 J	0.39 J	-	6.5 D	0.94 J	16 D	0.052 J	0.087 J	ND (0.36)	-	ND (0.42)	-	ND (0.34)	ND (0.39)	ND (0.45)	ND (0.37)	ND (0.34)
Metals																					
Arsenic	16	16	15.1	3.3	8.5	12.5	-	13	5.5	4.7	5.8	-	ND (2.1)	-	7.8	-	2.3	2.6	ND (2.6)	-	-
Barium	400	820	114 EN*	105 EN*	133 EN*	245 EN*	-	186	96.9 EN*	111	119	-	30.8	-	100	-	76.1	38	94.2	-	-
Cadmium	9.3	7.5	0.85	0.51	0.92	0.53	-	ND (0.22)	2.6	ND (0.23)	ND (0.26)	-	ND (0.21)	-	ND (0.27)	-	ND (0.2)	ND (0.2)	ND (0.26)	-	-
Chromium, trivalent[1]	1500	-	16.3	15.6	21.2	8.5	-	10.4	99.2	15.8	11	-	3.4	-	21.6	-	15.3	11.7	13.8	-	-
Lead	1000	450	53.3	12.2	42.4	90	-	422 N*	97.3	15.2 N*	110 N*	-	3.6	-	10.6	-	10.8	12.5	14 N*	-	-
Selenium	1500	4	**ND (4.5)**	**ND (4.4)**	**ND (5.3)**	**ND (4.6)**	-	**ND (4.5)**	**ND (5.4)**	**ND (4.6)**	**ND (5.2)**	-	**ND (4.3)**	-	**ND (5.3)**	-	**ND (4.1)**	ND (3.9)	**ND (5.1)**	-	-
Silver	1500	8.3	ND (0.53)	ND (0.56)	ND (0.67)	ND (0.58)	-	ND (0.56)	2.7	ND (0.58)	ND (0.65)	-	ND (0.54)	-	ND (0.67)	-	ND (0.51)	ND (0.49)	ND (0.64)	-	-
Total Mercury	2.8	0.73	0.445	ND (0.02)	**0.794**	0.201	-	**0.836 N**	**0.794**	0.033 N	0.273 N	-	ND (0.019)	-	ND (0.022)	-	ND (0.018)	ND (0.019)	0.086 N	-	-
PCBs/Pestacides																					
Aroclor 1016	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Polychlorinated Biphenyls	1	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE I - SUMMARY OF SOIL QUALITY DATA
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

Refer to the Notes and Abbreviations on Page 4

SAMPLE DESIGNATION	NYSDEC	NYSDEC	SB-32	SB-32	SB-33	SB-33	SB-34	SB-35	SB-36	SB-38	SB-39	SB-39	SB-40	SB-40	SB-41	SB-41	SB-42	SB-42	SB-100*	SB-43	SB-43	SB-44
SAMPLE DEPTH (FT BGS)	6 NYCRR Part 375	6 NYCRR Part 375	12.5-13 ft	17 ft	13-14 ft	16-17 ft	17-17.5 ft	15-16 ft	13-14 ft	18-19 ft	13-14 ft	18.5-19 ft	12-14 ft	14-16 ft	5-7 ft	17-18 ft	16-16.5	19-20 ft	19-20 ft	7.5-8 ft	8-8.5 ft	11-12 ft
AREA OF CONCERN (AOC)	Commercial	Protection of	AOC-1	AOC-1	AOC-1	AOC-1	--	--	--	--	--	--	AOC-2	AOC-2	AOC-2	AOC-2	AOC-4	AOC-4	AOC-4	AOC-3	AOC-3	AOC-3
SAMPLING DATE		Groundwater	12/1/2005	12/1/2005	12/1/2005	12/1/2005	12/1/2005	11/30/2005	12/1/2005	12/1/2005	12/7/2005	12/7/2005	12/7/2005	12/7/2005	11/30/2005	11/30/2005	12/8/2005	12/8/2005	12/8/2005	12/7/2005	12/7/2005	12/7/2005
SAMPLED BY			ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR
MATRIX			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Volatile Organic Compounds																						
1,1-Dichloroethene	500	0.33	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	0.003 J	0.002 J	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.007)
1,2-Dichlorobenzene	500	1.1	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
cis-1,2-Dichloroethene	500	0.25	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	1.5 DJ	0.98 D	ND (0.006)	0.009	ND (0.006)	ND (0.007)	ND (0.006)	0.009	0.048	ND (0.007)
trans-1,2-Dichloroethene	500	0.19	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	0.019	0.008	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.007)
1,4-Dichlorobenzene	130	1.8	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-Butanone	NA	NA	-	-	-	-	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.027)	ND (0.031)	ND (0.032)	ND (0.032)	ND (0.029)	ND (0.03)	ND (0.03)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.027)	ND (0.028)	ND (0.033)
Acetone	500	0.05	-	-	-	-	ND (0.029)	ND (0.028)	ND (0.029)	ND (0.027)	ND (0.031)	ND (0.032)	ND (0.032)	0.033	ND (0.03)	ND (0.03)	ND (0.032)	ND (0.033)	ND (0.033)	ND (0.027)	ND (0.028)	ND (0.033)
Carbon Disulfide	NA	NA	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	0.002 J	ND (0.006)	ND (0.006)	0.003 J	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.007)
Carbon tetrachloride	22	0.76	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlorobenzene	500	1.1	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	350	0.37	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dichlorofluoromethane	NA	NA	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.007)
Ethylbenzene	390	1	-	-	-	-	0.002 J	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	0.007	0.001 J	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.007)
Isopropylbenzene	NA	NA	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	0.006	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.007)
Methylcyclohexane	NA	NA	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	ND (0.006)	0.001 J	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.007)
Methylene Chloride	500	0.05	-	-	-	-	0.007	0.01	ND (0.006)	ND (0.005)	0.006	0.01	0.008	0.01	ND (0.006)	0.008	0.01	0.025	0.025	0.006	0.005 J	0.007
Tetrachloroethane	150	1.3	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	0.002 J	0.002 J	**45 D**	**11 D**	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	0.33 D	0.021	0.001 J
Toluene	500	0.7	-	-	-	-	0.002 J	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	0.003 J	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.007)
Trichloroethene	200	0.47	-	-	-	-	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.005)	ND (0.006)	ND (0.006)	**3.2 DJ**	**1 D**	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.007)	ND (0.006)	0.018	0.12	ND (0.007)
Vinyl Chloride	13	0.02	-	-	-	-	ND (0.012)	ND (0.011)	ND (0.006)	ND (0.011)	ND (0.012)	ND (0.013)	**0.065**	0.01 J	ND (0.012)	ND (0.012)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.011)	ND (0.011)	ND (0.013)
Xylene (mixed)	500	1.6	-	-	-	-	0.013 J	ND (0.017)	0.003 J	ND (0.016)	ND (0.019)	ND (0.019)	0.022	0.005 J	ND (0.018)	ND (0.018)	ND (0.018)	ND (0.02)	ND (0.02)	ND (0.016)	ND (0.017)	ND (0.02)
Semi-Volatile Organic Compounds																						
2-methylnapthalene	NA	NA	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Acenaphthene	500	98	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Acenapthylene	500	107	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Anthracene	500	1000	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Benzo(a)anthracene	5.6	1	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	0.033 J	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.049 J	0.022 J	ND (0.43)
Benzo(a)pyrene	1	22	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	0.023 J	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.042 J	0.022 J	ND (0.43)
Benzo(b)fluoranthene	5.6	1.7	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	0.028 J	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.055 J	0.026 J	ND (0.43)
Benzo(g,h,i)perylene	500	1000	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	0.023 J	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.031 J	0.026 J	ND (0.43)
Benzo(k)fluoranthene	56	1.7	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.021 J	ND (0.4)	ND (0.43)
Bis(2-ethylhexyl) phthalate	NA	NA	0.044 BJ	ND (0.35)	0.029 BJ	ND (0.36)	0.029 BJ	0.062 BJ	ND (0.4)	ND (0.35)	0.36 BJ	0.42 BJ	ND (0.42)	0.11 BJ	0.066 BJ	0.11 BJ	0.031 BJ	0.18 J	-	0.13 BJ	0.018 BJ	0.016 BJ
Butylbenzylphthalate	NA	NA	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.021 J	ND (0.4)	ND (0.43)
Chrysene	56	1	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	0.028 J	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.046 J	0.026 J	ND (0.43)
Dibenz(a,h)anthracene	0.56	1000	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Dibenzofuran	NA	NA	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Di-n-butyl phthalate	NA	NA	0.03 BJ	ND (0.35)	0.025 BJ	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Di-n-octyl phthalate	NA	NA	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	0.37 J	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Fluoranthene	500	1000	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	0.063 J	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.077 J	0.049 J	ND (0.43)
Fluorene	500	386	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Indeno(1,2,3-cd)pyrene	5.6	8.2	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.032 J	0.02 J	ND (0.43)
Naphthalene	500	12	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	ND (0.35)	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	ND (0.4)	ND (0.43)
Phenanthrene	500	1000	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	0.055 J	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	ND (0.35)	0.032 J	ND (0.43)
Pyrene	500	1000	ND (0.38)	ND (0.35)	ND (0.39)	ND (0.36)	ND (0.38)	ND (0.44)	ND (0.4)	0.056 J	ND (0.42)	ND (0.43)	ND (0.42)	ND (0.39)	ND (0.43)	ND (0.37)	ND (0.42)	ND (0.43)	-	0.065 J	0.048 J	ND (0.43)
Metals																						
Arsenic	16	16	-	-	-	-	ND (2.5)	ND (2.2)	2.8	ND (1.8)	3.2	ND (2.3)	7.3	2.7	4.2	2.5	3.8	4.8	3.9	5.4	4.8	3
Barium	400	820	-	-	-	-	41.7 E	51 E	75.9 E	30 E	113	69.2	93.1	46.5	117 E	52 E	94.8 E	83.1 E	80.5 E	24.1	22.2	116
Cadmium	9.3	7.5	-	-	-	-	ND (0.25)	ND (0.22)	ND (0.22)	ND (0.18)	ND (0.27)	ND (0.23)	ND (0.18)	ND (0.25)	0.24	0.27	ND (0.25)	ND (0.26)	ND (0.25)	ND (0.21)	ND (0.23)	ND (0.24)
Chromium, trivalent[1]	1500	-	-	-	-	-	8.2	8.6	12.4	5	20.5	14.5	21.1	7.5	20	8.7	21.7	18.1	15.3	7.4	6.5	21
Lead	1000	450	-	-	-	-	5.3	8.5	8.3	6.3	15.3	8.9	14.3	6.4	19.6	14	12 N*	10.9 N*	8.9 N*	9.9	7.2	14
Selenium	1500	4	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Silver	1500	8.3	-	-	-	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total Mercury	2.8	0.73	-	-	-	-	ND (0.018)	ND (0.022)	ND (0.019)	ND (0.018)	0.047	ND (0.022)	ND (0.02)	ND (0.02)	0.022	ND (0.021)	ND (0.02)	ND (0.022)	ND (0.023)	ND (0.017)	ND (0.02)	ND (0.022)
PCBs/Pestacides																						
Aroclor 1016	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Polychlorinated Biphenyls	1	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE I - SUMMARY OF SOIL QUALITY DATA
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

Refer to the Notes and Abbreviations on Page 4

SAMPLE DESIGNATION	NYSDEC	NYSDEC	SB-44	SB-45	SB-45	SB-46	SB-46	SB-47	SB-47	SB-48	SB-48	SB-49	SB-49	SB-50	SB-50
SAMPLE DEPTH (FT BGS)	6 NYCRR Part 375	6 NYCRR Part 375	17-17.5 ft	12.5-14 ft	18-20 ft	2-3 ft	16-17 ft	16-17 ft	19-20 ft	1.5-2 ft	14-15 ft	12.5-13 ft	16-17 ft	12-16 ft	17-19 ft
AREA OF CONCERN (AOC	Commercial	Protection of	AOC-3	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	AOC-4	--	--	AOC-4	AOC-4
SAMPLING DATE		Groundwater	12/7/2005	12/8/2005	12/8/2005	12/2/2005	12/2/2005	12/2/2005	12/2/2005	12/2/2005	12/2/2005	12/2/2005	12/2/2005	12/1/2005	12/1/2005
SAMPLED BY			ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR	ENSR
MATRIX			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Volatile Organic Compounds															
1,1-Dichloroethene	500	0.33	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
1,2-Dichlorobenzene	500	1.1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
cis-1,2-Dichloroethene	500	0.25	ND (0.006)	ND (0.006)	ND (0.006)	2.9 DJ	0.011	ND (0.006)	ND (0.006)	0.002 J	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
trans-1,2-Dichloroethene	500	0.19	ND (0.006)	ND (0.006)	ND (0.006)	0.006	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
1,4-Dichlorobenzene	130	1.8	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2-Butanone	NA	NA	ND (0.028)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.032)	ND (0.03)	ND (0.028)	0.01 J	ND (0.031)	ND (0.032)	ND (0.032)	ND (0.03)	ND (0.028)
Acetone	500	0.05	ND (0.028)	0.034	ND (0.032)	ND (0.03)	0.033	ND (0.03)	ND (0.028)	**0.066**	ND (0.031)	ND (0.032)	ND (0.032)	ND (0.03)	ND (0.028)
Carbon Disulfide	NA	NA	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
Carbon tetrachloride	22	0.76	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlorobenzene	500	1.1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	350	0.37	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dichlorofluoromethane	NA	NA	ND (0.006)	ND (0.006)	ND (0.006)	0.002 J	0.002 J	0.002 J	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
Ethylbenzene	390	1	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
Isopropylbenzene	NA	NA	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
Methylcyclohexane	NA	NA	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	0.001 J
Methylene Chloride	500	0.05	0.005 J	0.017	0.006	0.006	0.006	ND (0.006)	ND (0.006)	0.007	0.006	ND (0.006)	ND (0.006)	0.007	0.008
Tetrachloroethane	150	1.3	ND (0.006)	ND (0.006)	ND (0.006)	**44 D**	0.002 J	ND (0.006)	0.006	ND (0.006)	ND (0.006)	0.002 J	ND (0.006)	ND (0.006)	ND (0.006)
Toluene	500	0.7	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
Trichloroethene	200	0.47	ND (0.006)	ND (0.006)	ND (0.006)	**3.6 DJ**	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)	ND (0.006)
Vinyl Chloride	13	0.02	ND (0.011)	ND (0.012)	ND (0.013)	ND (0.012)	0.013	ND (0.012)	ND (0.011)	ND (0.012)	ND (0.012)	ND (0.013)	ND (0.013)	ND (0.012)	ND (0.011)
Xylene (mixed)	500	1.6	ND (0.017)	ND (0.018)	ND (0.02)	ND (0.018)	ND (0.019)	ND (0.018)	ND (0.017)	ND (0.018)	ND (0.018)	ND (0.019)	ND (0.019)	0.004 J	ND (0.017)
Semi-Volatile Organic Compounds															
2-methylnapthalene	NA	NA	ND (0.37)	ND (0.39)	ND (0.44)	5.1 J	ND (0.44)	ND (0.43)	ND (0.36)	0.24 J	ND (0.41)	ND (0.43)	ND (0.42)	ND (0.42)	ND (0.38)
Acenaphthene	500	98	ND (0.37)	ND (0.39)	ND (0.44)	13	ND (0.44)	ND (0.43)	ND (0.36)	0.44 J	ND (0.41)	ND (0.43)	ND (0.42)	0.028 J	0.022 J
Acenapthylene	500	107	ND (0.37)	ND (0.39)	ND (0.44)	2.7 J	ND (0.44)	ND (0.43)	ND (0.36)	ND (2)	ND (0.41)	ND (0.43)	ND (0.42)	ND (0.42)	ND (0.38)
Anthracene	500	1000	ND (0.37)	ND (0.39)	ND (0.44)	28	ND (0.44)	ND (0.43)	ND (0.36)	0.73 J	ND (0.41)	ND (0.43)	ND (0.42)	0.053 J	0.042 J
Benzo(a)anthracene	5.6	1	ND (0.37)	ND (0.39)	ND (0.44)	**33**	ND (0.44)	ND (0.43)	ND (0.36)	0.96 J	ND (0.41)	ND (0.43)	ND (0.42)	0.12 J	0.12 J
Benzo(a)pyrene	1	22	ND (0.37)	ND (0.39)	ND (0.44)	**29**	ND (0.44)	ND (0.43)	ND (0.36)	0.63 J	ND (0.41)	ND (0.43)	ND (0.42)	0.098 J	0.09 J
Benzo(b)fluoranthene	5.6	1.7	ND (0.37)	ND (0.39)	ND (0.44)	**42**	ND (0.44)	ND (0.43)	ND (0.36)	0.76 J	ND (0.41)	ND (0.43)	ND (0.42)	0.11 J	0.11 J
Benzo(g,h,i)perylene	500	1000	ND (0.37)	ND (0.39)	ND (0.44)	18	ND (0.44)	ND (0.43)	ND (0.36)	0.39 J	ND (0.41)	ND (0.43)	ND (0.42)	0.073 J	0.064 J
Benzo(k)fluoranthene	56	1.7	ND (0.37)	ND (0.39)	ND (0.44)	**45**	ND (0.44)	ND (0.43)	ND (0.36)	0.28 J	ND (0.41)	ND (0.43)	ND (0.42)	0.051 J	0.05 J
Bis(2-ethylhexyl) phthalate	NA	NA	0.014 BJ	0.059 J	0.083 J	ND (8.2)	ND (0.44)	0.04 BJ	0.025 BJ	ND (2)	0.052 BJ	ND (0.43)	0.2 BJ	0.37 BJ	ND (0.38)
Butylbenzylphthalate	NA	NA	ND (0.37)	ND (0.39)	ND (0.44)	ND (8.2)	ND (0.44)	ND (0.43)	ND (0.36)	ND (2)	ND (0.41)	ND (0.43)	ND (0.42)	0.052 J	ND (0.38)
Chrysene	56	1	ND (0.37)	ND (0.39)	ND (0.44)	**28**	ND (0.44)	ND (0.43)	ND (0.36)	0.69 J	ND (0.41)	ND (0.43)	ND (0.42)	0.11 J	0.094 J
Dibenz(a,h)anthracene	0.56	1000	ND (0.37)	ND (0.39)	ND (0.44)	**5.2 J**	ND (0.44)	ND (0.43)	ND (0.36)	**ND (2)**	ND (0.41)	ND (0.43)	ND (0.42)	0.022 J	ND (0.38)
Dibenzofuran	NA	NA	ND (0.37)	ND (0.39)	ND (0.44)	13	ND (0.44)	ND (0.43)	ND (0.36)	0.29 J	ND (0.41)	ND (0.43)	ND (0.42)	ND (0.42)	ND (0.38)
Di-n-butyl phthalate	NA	NA	ND (0.37)	ND (0.39)	ND (0.44)	ND (8.2)	ND (0.44)	ND (0.43)	ND (0.36)	ND (2)	ND (0.41)	ND (0.43)	ND (0.42)	0.14 BJ	0.029 BJ
Di-n-octyl phthalate	NA	NA	ND (0.37)	ND (0.39)	ND (0.44)	ND (8.2)	ND (0.44)	ND (0.43)	ND (0.36)	ND (2)	ND (0.41)	ND (0.43)	ND (0.42)	ND (0.42)	ND (0.38)
Fluoranthene	500	1000	ND (0.37)	ND (0.39)	ND (0.44)	94	ND (0.44)	ND (0.43)	ND (0.36)	2.7	ND (0.41)	ND (0.43)	ND (0.42)	0.29 J	0.24 J
Fluorene	500	386	ND (0.37)	ND (0.39)	ND (0.44)	19	ND (0.44)	ND (0.43)	ND (0.36)	0.63 J	ND (0.41)	ND (0.43)	ND (0.42)	ND (0.42)	ND (0.38)
Indeno(1,2,3-cd)pyrene	5.6	8.2	ND (0.37)	ND (0.39)	ND (0.44)	**14**	ND (0.44)	ND (0.43)	ND (0.36)	0.31 J	ND (0.41)	ND (0.43)	ND (0.42)	0.052 J	0.052 J
Naphthalene	500	12	ND (0.37)	ND (0.39)	ND (0.44)	10	ND (0.44)	ND (0.43)	ND (0.36)	0.29 J	ND (0.41)	ND (0.43)	ND (0.42)	ND (0.42)	ND (0.38)
Phenanthrene	500	1000	ND (0.37)	ND (0.39)	ND (0.44)	110	ND (0.44)	ND (0.43)	ND (0.36)	3.9	ND (0.41)	ND (0.43)	ND (0.42)	0.25 J	0.2 J
Pyrene	500	1000	ND (0.37)	ND (0.39)	ND (0.44)	66	ND (0.44)	ND (0.43)	ND (0.36)	2.1	ND (0.41)	0.023 J	ND (0.42)	0.26 J	0.21 J
Metals															
Arsenic	16	16	ND (2.3)	7.1	3.7	9.3	11	4.1	ND (2.3)	5.6	4.9	3.3	3.3	5.1	ND (2.3)
Barium	400	820	60.1	101 E	124 E	397 E	153 E	126 E	75.7 E	112 E	85.9 E	101 E	106 E	83.1 E	61.4 E
Cadmium	9.3	7.5	ND (0.23)	ND (0.22)	ND (0.28)	0.61	0.75	0.6	0.27	0.65	0.48	0.59	0.5	0.64	ND (0.23)
Chromium, trivalent[1]	1500	-	6.8	15.4	17.3	19.6	22.3	16.6	6.4	17.1	17.9	18.5	16.3	17.3	8.3
Lead	1000	450	6.3	13.5 N*	13.9 N*	381	13.5	14.9	5	15.1	13.1	14.5	11.5	17.3	11
Selenium	1500	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Silver	1500	8.3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total Mercury	2.8	0.73	ND (0.019)	ND (0.021)	ND (0.021)	0.164	ND (0.024)	ND (0.02)	ND (0.018)	0.23	ND (0.022)	ND (0.021)	ND (0.021)	0.026	0.021
PCBs/Pestacides															
Aroclor 1016	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Polychlorinated Biphenyls	1	3.2	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES & ABBREVIATIONS:
NA = Not Applicable/No Standard or Value
ND = Not Detected above laboratory detection limits. Number in parenthesis is the laboratory detection limit.
NR = Not reported in report tables. Analyte was either not detected above laboratory detection limit or not sampled.
J = Value estimated below detection limit
E = Value estimated due to dilution
D = Diluted
N* = Spike sample recovery and sipek or duplicate analysis not within quality control limits
B = Detected in the Method Blank
* SB-100 is a duplicate of SB-42 (19-20 ft)
-- = No Area of Concern was identified.
\- = Not Analyzed
1. Bold analytes exceed the Protection of Groundwater SCOs
2. Bold and shaded analytes exceed the Commercial SCOs.

TABLE II - SUMMARY OF GROUNDWATER QUALITY DATA
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

SAMPLE DESIGNATION	NYS	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6
WELL SCREEN DEPTH	Ambient Water Quality	7.11 - 16.69 ft.		9.31 - 18.69 ft.		7.31 - 16.89 ft.		7.31 - 16.69 ft.		10.11 - 19.0 ft.		NR
		--		--		AOC-2		AOC-3		AOC-4		AOC-4
SAMPLING DATE	Standards and	12/14/2005	6/9/2009	12/14/2005	6/9/2009	12/14/2005	6/9/2009	12/14/2005	6/9/2009	12/14/2005	6/9/2009	12/14/2005
SAMPLED BY	Guidance	ENSR	Delta	ENSR	Delta	ENSR	Delta	ENSR	Delta	ENSR	Delta	ENSR
MATRIX	TOGS 1.1.1	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Volatile Organic Compounds												
1,2,4-Trichlorobenzene	5	ND (5)	NR	ND (5)	NR	ND (5)	NR	ND (5)	NR	ND (5)	NR	ND (5)
Acetone	50	2.9 J	ND	11 J	ND	ND (25)	ND	ND (25)	ND	10 J	ND	ND (25)
Carbon Disulfide	NA	0.65 J	ND	1.3 J	ND	ND (5)	ND	ND (5)	ND	1.2 J	ND	ND (5)
cis-1,2-Dichloroethene	5	ND (5)	ND	ND (5)	ND	**94 D**	**42**	**66**	**180**	ND (5)	**70**	ND (5)
Dichlorodifluoromethane	5	ND (5)	ND	ND (5)	ND	0.68 J	ND	ND (5)	ND	ND (5)	ND	ND (5)
Methyl tert butyl ether	10	2.2 J	6.5	ND (5)	ND	0.52 J	ND	0.88 J	ND	ND (5)	ND	ND (5)
Tetrachloroethene	5	ND (5)	ND	ND (5)	ND	ND (5)	ND	**140 D**	**92**	0.91 J	ND	ND (5)
trans-1,2-Dichloroethene	5	ND (5)	ND	ND (5)	ND	3.6 DJ	1.7	0.9 J	3.2	ND (5)	ND	ND (5)
Trichloroethene	5	ND (5)	ND	ND (5)	ND	0.73 J	ND	**87**	**96**	ND (5)	ND	ND (5)
Vinyl Chloride	2	**ND (5)**	ND	**ND (5)**	ND	**26 D**	**25**	**ND (5)**	1.1	**ND (5)**	**16**	**ND (5)**
Metals												
Barium	1000	52.2	-	85.1	-	51	-	106	-	216	-	104
Chromium, trivalent[1]	50	ND (4)	-	ND (4)	-	ND (4)	-	6.5	-	ND (4)	-	ND (4)
Lead	25	ND (5)	-	ND (5)	-	ND (5)	-	9.6	-	ND (5)	-	ND (5)
Semivolatile Organic Compounds												
Bis(2-ethylhexyl)phthalate	5	**ND (9)**	-	5 J	-	**ND (10)**	-	**ND (10)**	-	**ND (9)**	-	**ND (10)**
Phenanthrene	50	ND (9)	-	0.5 J	-	ND (10)	-	ND (10)	-	1 J	-	ND (10)

NOTES & ABBREVIATIONS:
NA = Not Applicable/No Standard or Value
ND = Not Detected above laboratory detection limits. Number in parenthesis is the laboratory detection limit.
NR = Not reported in report tables. Analyte was either not detected above laboratory detection limit or not sampled.
-- = No Area of Concern was identified.
- = Not Sampled
1. Bold analytes exceed the Standards and Guidance Criteria
2. Only detected compounds/analytes are shown.

TABLE III - SUMMARY OF WIPE SAMPLE DATA
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

SAMPLE DESIGNATION	WIPE-1	WIPE-2	WIPE-3	WIPE-4
LOCATION	South Transformer	North Transformer	Floor Near Capacitors	Floor Near Elevator
SAMPLING DATE	8/22/2005	8/22/2005	8/26/2005	8/26/2005
SAMPLED BY	ENSR	ENSR	ENSR	ENSR
MATRIX	Wipe	Wipe	Wipe	Wipe
UNITS	ug/100 cm^2	ug/100 cm^2	ug/100 cm^2	ug/100 cm^2
Aroclor 1016	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1221	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1232	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1242	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1248	ND (0.5)	ND (0.5)	ND (0.5)	2.2
Aroclor 1254	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Aroclor 1260	ND (0.5)	ND (0.5)	ND (0.5)	1.9
Total Polychlorinated Biphenyls	ND	ND	ND	4.1

NOTES & ABBREVIATIONS:

ND = Not Detected above laboratory detection limits. Number in parenthesis is the laboratory detection limit.

TABLE IV - BASEMENT WATER QUALITY DATA
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

SAMPLE DESIGNATION	NYS Ambient Water Quality Standards and Guidance	NYS Groundwater Effluent Limitations	WATER-1	WATER-2	WATER-3	WATER-1	WATER-2
SAMPLING DATE			10/11/2010	10/11/2010	10/11/2010	11/4/2010	11/4/2010
SAMPLED BY			AECC	AECC	AECC	AECC	AECC
MATRIX	TOGS 1.1.1		Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
UNITS	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
General Chemistry							
Total Phosphorus	20	NA	--	--	--	0.0701 BJ	0.0755 BJ
Volatile Organic Compounds	NA	NA	ND	ND	ND	--	--
Metals							
Aluminum	NA	2000	190 J	118 J	205	--	--
Antimony	3	6	**ND (20)**	**ND (20)**	**17.9 J**	--	--
Barium	1000	2000	47.8	74.1	41.3	--	--
Cadmium	5	10	1	0.7 J	0.9 J	--	--
Calcium	NA	NA	73800	69100	66000	--	--
Total Chromium	50	100	5.1 B	2.9 BJ	3.8 BJ	--	--
Cobalt	NA	NA	0.7 J	ND (4)	0.9 J	--	--
Copper	200	1000	25.3	12.1	15.9	--	--
Iron	300	600	**1300**	**523**	**1390**	--	--
Lead	25	50	17.7	11	**45.1**	--	--
Magnesium	35000	35000	22200	20500	21200	--	--
Manganese	300	600	64	40.3	111	--	--
Nickel	100	200	8.7 J	6.9 J	7.7 J	--	--
Potassium	NA	NA	18100	17000	18500	--	--
Sodium	20000	NA	**127000**	**120000**	**140000**	--	--
Vandium	NA	NA	2.6 J	1.4 J	3.1 J	--	--
Zinc	2000	5000	124	109	272	--	--
Semivolatile Organic Compounds							
Benzo(a)anthracene	NA	NA	0.38 J	ND (4.8)	0.47 J	--	--
Benzo(b)pyrene	ND	ND	**0.49 J**	ND (4.8)	ND (5)	--	--
Benzo(b)fluoranthene	0.002	0.002	**0.56 J**	**ND (4.8)**	**0.54 J**	--	--
Benzo(g,h,i)perylene	NA	NA	0.48 J	ND (4.8)	ND (5)	--	--
Bis(2-ethylhexyl) phthalate	5	5	4.2 J	ND (4.8)	ND (5)	--	--
Butyl benzyl phthalate	50	50	1.1 J	ND (4.8)	0.5 J	--	--
Chrysene	0.002	0.002	**0.33 J**	**ND (4.8)**	**0.35 J**	--	--
Diethyl phthalate	50	50	ND (4.9)	1 J	ND (5)	--	--
Di-n-butyl phthalate	50	50	0.42 BJ	0.91 BJ	0.57 BJ	--	--
Fluoranthene	50	50	0.5 J	ND (4.8)	0.65 J	--	--
Pyrene	50	50	0.5 J	ND (4.8)	0.52 J	--	--

NOTES & ABBREVIATIONS:
NA = Not Applicable/No Standard or Value
ND = Not Detected above laboratory detection limits.
Number in parenthesis is the laboratory detection limit.
B = Analyte detected in the Method Blank.
J = Result estimated below the laboratory reporting limit.
-- = Not Analyzed
1. Bold analytes exceed the Standards and Guidance Criteria
2. Only detected compounds/analytes are shown

TABLE V - SAMPLING AND ANALYSIS PLAN
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

Soil Boring/Monitoring Well Sampling

Sample ID	Matrix	Sample Depth (Feet b.g.s)	Drilling Method	Soil Sampling Method	GW Sample Method	Analytical Method	Purpose
SB-101	Soil	TBD per field screening	GeoProbe or Hollow Stem Auger	PID Screening/Grab	N/A	TCL VOCs by EPA 8260B, and STARS VOCs list.	To evaluate soil impacts associated with the former gasoline UST.
SB-102						TCL VOCs by EPA 8260B	To evaluate potential soil impacts from chlorinated solvents.
SB-103							
SB-104							
SB-105							
SB-106							
MW-1	Groundwater	8-13 Feet	Installed in December 2005	None - Previously Sampled (December 2005)	Obtain Water Level, Low Flow Methods	TCL/STARS VOCs via EPA Method 8260, STARS SVOCs EPA Method 8270, and TAL metals by EPA Method 6010.	Evaluate groundwater flow direction, Estimate impacts to on-site groundwater
MW-2							
MW-3							
MW-4							
MW-5							
MW-6							
MW-101		TBD per water table depth	GeoProbe or Hollow Stem Auger	PID Screening/Grab			Evaluate groundwater flow direction and the nature and extent of groundwater impacts near the former gasoline UST.
MW-102							Evaluate groundwater flow direction and the nature and extent of groundwater impacts near the western corner of the Site.
MW-103							Evaluate groundwater flow direction and the nature and extent of groundwater impacts in the former dry cleaning area of the Site building.
MW-104							Evaluate groundwater flow direction and the nature and extent of groundwater impacts near the southern corner of the Site.
MW-105							Evaluate groundwater flow direction and the nature and extent of groundwater impacts on the southwest side of the Site.
BMW-106			GeoProbe or Hollow Stem Auger & Rock Coring				Evaluate potential groundwater impacts in bedrock in the vicinity of the inferred source area.

Refer to Notes and Abbreviations on Page 4

TABLE V - SAMPLING AND ANALYSIS PLAN
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

Soil Vapor Sampling

Sample ID	Matrix	Sample Depth	Drilling Method	Sampling Method	Analytical Method	Purpose
SV-101	Soil Vapor	48 inches below ground surface or 1 foot above groundwater	Soil Vapor Probe (GeoProbe or Hammer Drill)	2-hour Summa Canisters.	TCL VOCs by EPA Method TO-15	Estimate soil vapor impacts along the property boundary and potentially at residence.
SV-102						Evaluate the sewer line as a potential vapor conduit.
SV-103						
SV-104						

Refer to Notes and Abbreviations on Page 4

TABLE V - SAMPLING AND ANALYSIS PLAN
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

Soil Boring/Test Pits

Sample ID	Matrix	Sample Depth (Feet b.g.s)	Sampling Method and Description	Analytical Method	Purpose
TP-1	Soil	TBD per field screening	Test pits will be advanced using an excavator and will be screened using a PID. If warranted, grab samples will be collected. If test pitting is impracticable or delineation of vertical impact is necessary, soil borings will be advanced using a GeoProbe or Hollow Stem Auger in lieu of a test pit.	If evidence of VOC impacts are present (including PID readings greater than 5 times background and odor), TCL VOCs will also be analyzed using EPA Method 8260	To evaluate potential soil impacts associated with the former closed in-place waste oil UST
TP-2					
TP-3					
TP-4					
TP-5					To evaluate potential soil impacts associated with the former closed in-place diesel and fuel oil USTs
TP-6					
TP-7					
TP-8					
TP-9					
TP-10					
TP-11					To evaluate potential soil impacts associated with the former heating oil tank.
Dry Cleaning Area	Soil	TBD per field screening	Multiple test pits/soil borings will be advanced in the Dry Cleaning Area shown on Figure 5 Test pits will be advanced using an excavator and will be screened using a PID. If warranted, grab samples will be collected. If test pitting is impracticable or delineation of vertical impact is necessary, soil borings will be advanced using a GeoProbe or Hollow Stem Auger in lieu of a test pit.	If evidence of VOC impacts are present (including PID readings greater than 5 times background and odor), TCL VOCs will also be analyzed using EPA Method 8260 One sample from this area will be analyze for fill characterization purposes as described below.	To evaluate potential soil impacts associated with the former dry cleaning operations.
Fill Characterization Extent	Soil	Samples will not be collected in this area except were noted below	Up to 10 test pits will be advanced in the Fill Characterization Area shown on Figure 5 Test pits will be advanced using an excavator and will be screened using a PID.	If evidence of VOC impacts are present (including PID readings greater than 5 times background and odor), TCL VOCs will also be analyzed using EPA Method 8260 Three samples from this area will be analyze for fill characterization purposes as described below.	To evaluate the extent of fill on the north side of the Site.
Fill Characterization Nature	Soil	To be collected from historic fill layer	Analytical testing will be conducted for samples from 5 locations onsite as shown on Figure 5. Three will be collected from the Fill Characterization Test Pitting Area, one will be collected from the Dry Cleaning Area, and one will be collected from an area just northeast of the former waste oil tank. Test pits will be advanced using an excavator and will be screened using a PID.	The fill samples will be analyzed for any or all of the following: TCL VOCs via EPA Method 8260, PAHs via EPA Method 8270, TPH via Method 8015, Priority Pollutant Metals via EPA Methods 6010/7471, and PCBs via EPA method 8082. Refer to Note 5 below for additional information. If fill is not encountered in the test pits, sampling and analytical testing will not be conducted.	To evaluate the nature of fill on the Site.

Refer to Notes and Abbreviations on Page 4

TABLE V - SAMPLING AND ANALYSIS PLAN
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK
37319-020

Notes & Abbreviations:

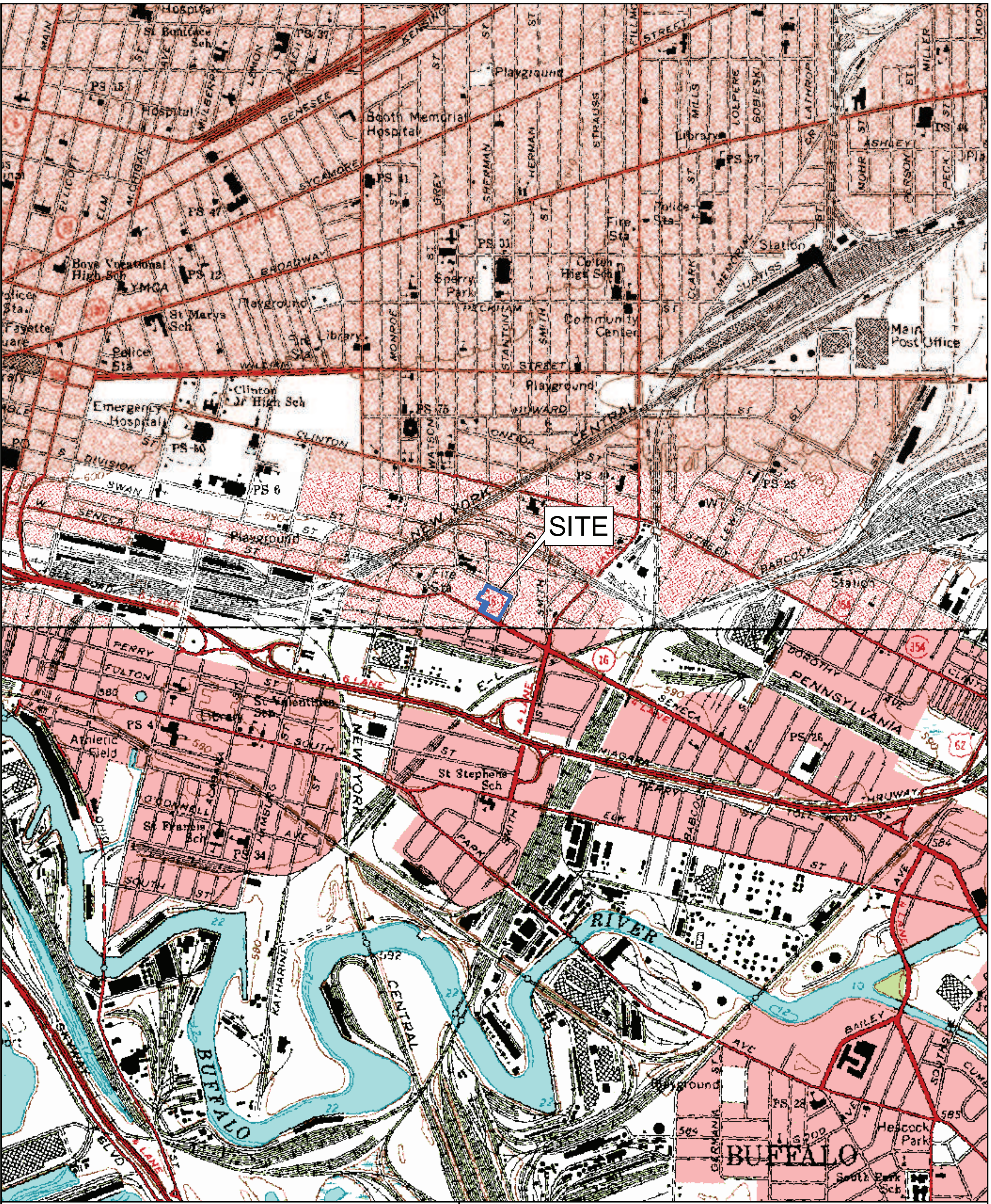
PID: Photoionization Detector
VOCs: Volatile Organic Compounds
SVOCs: Semi-volatile Organic Compounds
PCBs: Polychlorinated Biphenyls
TAL: Target Analyte List
TCL: Target Compound List
STARS: Spill Technology and Remediation Series

1. Wells to be drilled will be continuously sampled during drilling using a PID. Soil samples will be collected per screening results as described in the RI Work Plan.
2. Sample depth for Soil and Groundwater Sampling refers to groundwater screen depth only. Refer to note 1 regarding soil sampling.
3. Water levels will be collected from all wells during the groundwater sampling event.
4. Soil vapor sampling will be completed in accordance with the New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006.

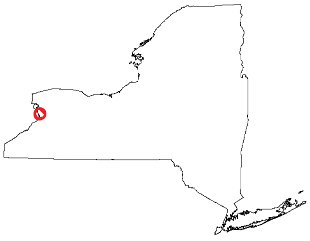
5. Fill Sample Distribution

A total of 5 fill samples will be collected and will be analysed as follows *(Per the May 2010 NYSDEC DER-10 Guidance)* :

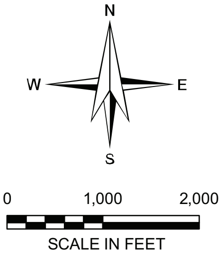
- 5 Samples - TPH via EPA Method 8015
- 5 Samples - Priority Pollutant Metals via EPA Methods 6010/7471
- 5 Samples - PAHs via EPA Method 8270C
- 2 Samples - PCBs via EPA Method 8081
- 5 Samples - Screening for VOCs using a photoionization detector (PID). If screening results are more than 5x background, analyse for VOCs via EPA Method 8260B.



COORDINATES: 78° 50' 48.28' W, 42° 52' 34.00"



USGS QUADRANGLE: BUFFALO NE



SCALE IN FEET

HALEY & ALDRICH

FORMER AMERICAN LINEN SUPPLY CO.
822 SENECA STREET
BUFFALO, NEW YORK

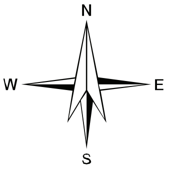
PROJECT LOCUS

SCALE: AS SHOWN
MAY 2011

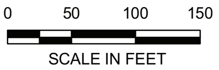
FIGURE 1

G:\37319 (AmeriPrideSOQ, 8 Lord Street, Buffalo)\GIS\MapProjects\2011_0523_TJV_LocusAP_D3.mxd

▭ SITE BOUNDARY



NOTES:
1) AERIAL IMAGERY COURTESY NYS GIS CLEARINGHOUSE, 2008.



HALEY& ALDRICH

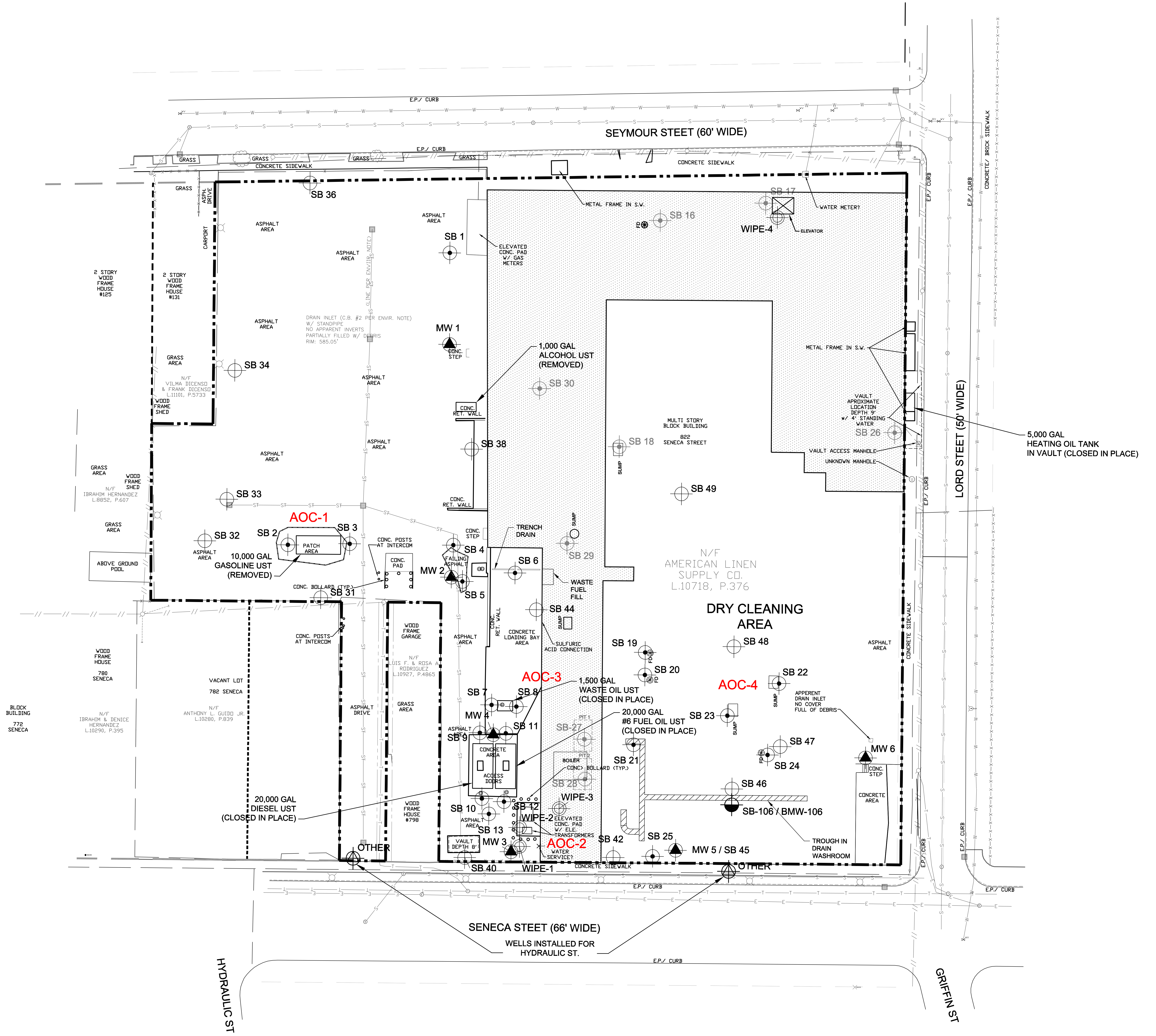
FORMER AMERICAN LINEN SUPPLY CO.
822 SENECA STREET
BUFFALO, NEW YORK

AERIAL PHOTOGRAPH OF SITE AREA

SCALE: AS SHOWN
MAY 2011

FIGURE 2

G:\37319 (AmeriPrideSOQ, 8 Lord Street, Buffalo)\GIS\MapProjects\2011_0523_TJV_SiteBoundaryAP_D3.mxd

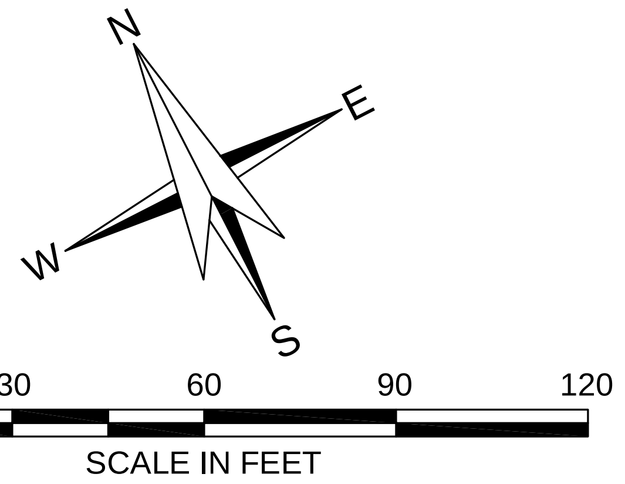


LEGEND:

SB 30	APPROXIMATE LOCATION OF SOIL BORING INSTALLED BY ENSR IN AUGUST 2005.
SB 30	APPROXIMATE LOCATION OF SOIL BORING INSTALLED BY ENSR IN AUGUST 2005, LOCATED IN BASEMENT.
SB 31	APPROXIMATE LOCATION OF SOIL BORING INSTALLED BY ENSR IN DECEMBER 2006.
MW 5 / SB 45	APPROXIMATE LOCATION OF MONITOR WELLS INSTALLED BY ENSR IN DECEMBER 2005.
OTHER	APPROXIMATE LOCATION OF MONITOR WELLS INSTALLED BY OTHERS FOR ADJACENT PROPERTY.
WIPE-2	APPROXIMATE LOCATION OF WIPE SAMPLE COLLECTED BY ENSR IN AUGUST 2005.
— · · —	PROPERTY LINE
—ST—	STORM WATER LINE
—//—	OVERHEAD ELECTRIC LINE
—E—	UNDERGROUND ELECTRIC LINE
—S—	UNDERGROUND SEWER LINE
—T—	COMMUNICATION LINE
—W—	UNDERGROUND WATER LINE
⌀	POWER POLE
FD ⊛	FLOOR DRAIN
■	STORM DRAIN
AOC-3	AREA OF CONCERN
▨	APPROXIMATE LIMITS OF BASEMENT AREA

NOTES:

1. ONSITE UTILITY LOCATIONS, TANK LOCATIONS, SOIL BORING LOCATIONS, INTERIOR WELL LOCATIONS, PROPOSED SAMPLING LOCATIONS, INTERIOR BUILDING FEATURES, AND BASEMENT DIMENSIONS ARE APPROXIMATE.
2. BASEMAP BASED ON ELECTRONIC CAD FILE ENTITLED "AMERICAN LINEN TOPO BNDY MAP.DWG" FROM HOFFMAN LAND SURVEYING & GEOMATICS OF ONTARIO, NEW YORK DATED 1 DECEMBER 2010 AND FROM ELECTRONIC IMAGES ENTITLED "BASEMENT PLAN SOIL BORING LOCATIONS" DATED 18 JANUARY 2007 AND IMAGE ENTITLED "SITE MAP SOIL BORING AND MONITORING WELL LOCATIONS" DATED 18 JANUARY 2007 FROM ENSR INTERNATIONAL.



HALEY & ALDRICH

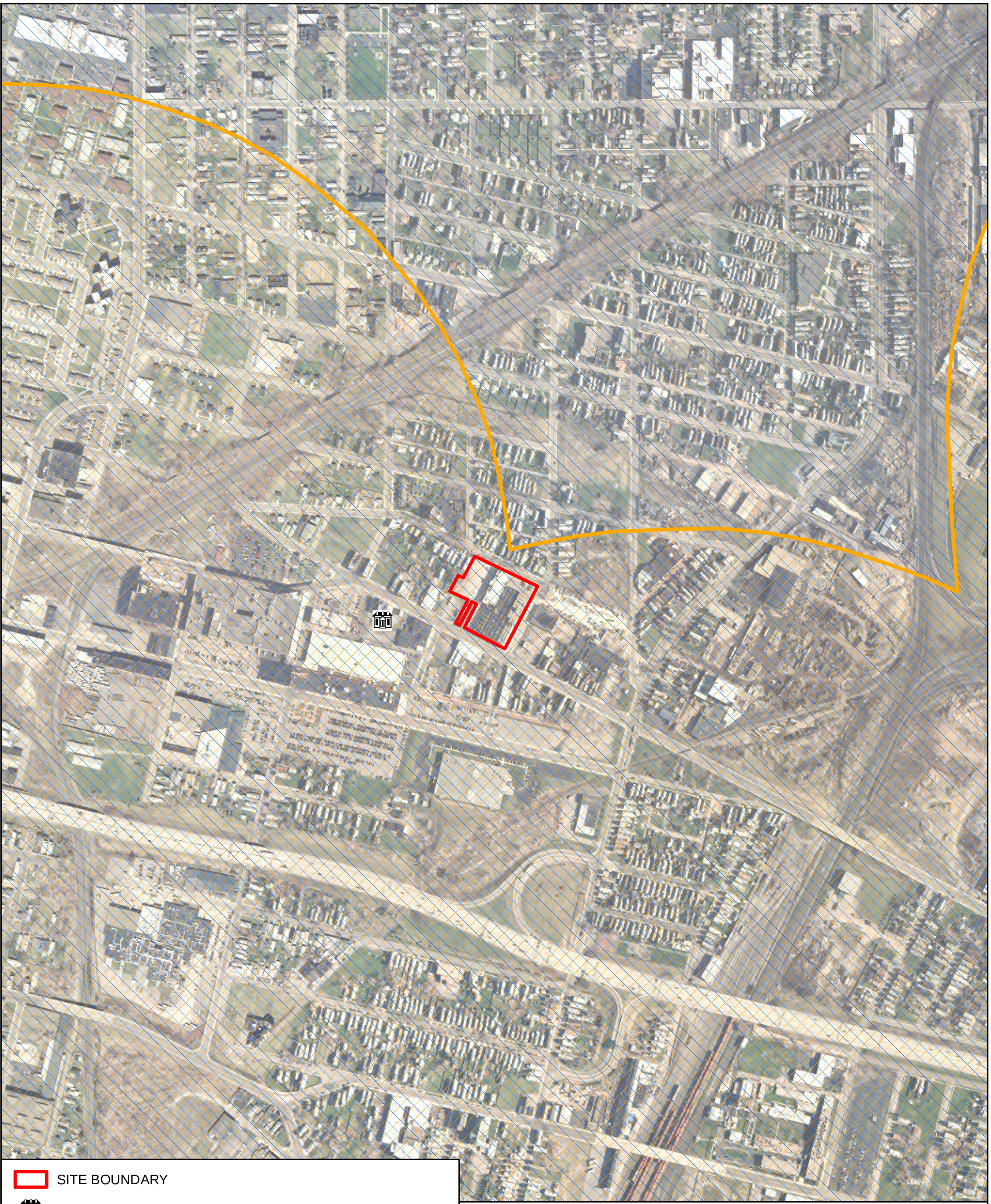
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
822 SENECA STREET
BUFFALO, NEW YORK

SITE PLAN

SCALE: AS SHOWN
MAY 2011

FIGURE 3

G:\37319_AMERIPRIDE\GLOBAL\DRAWINGS\37319-020-002D SITE.DWG



NOTES:

1) CULTURAL RESOURCE DATA: NYS HISTORIC PRESERVATION OFFICE, 2010.
2) AERIAL IMAGERY: NYS GIS CLEARING-HOUSE, 2008.

HALEY & ALDRICH

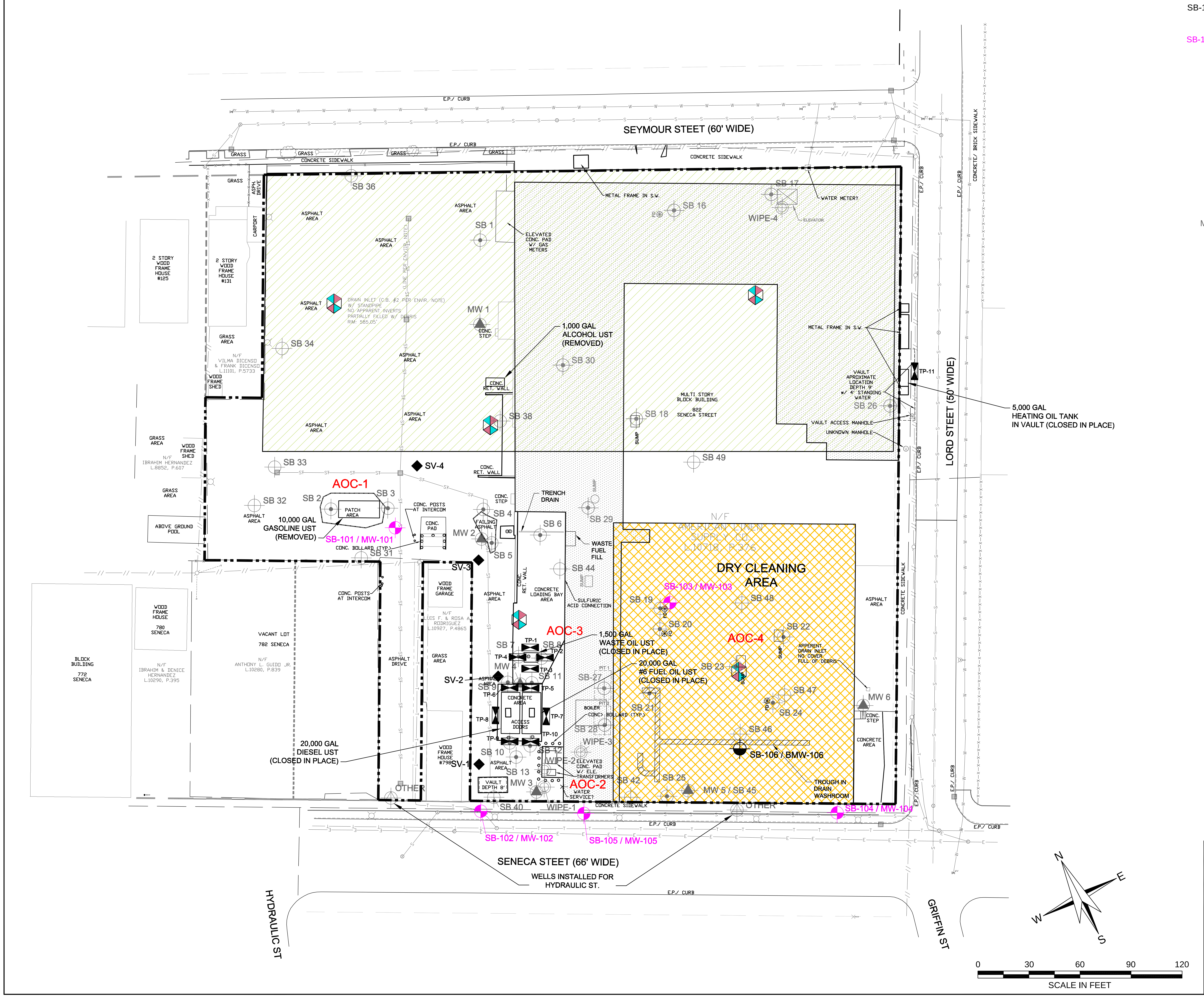
FORMER AMERICAN LINEN SUPPLY CO.
822 SENECA STREET
BUFFALO, NEW YORK

CULTURAL RESOURCES

SCALE: AS SHOWN
MAY 2011

FIGURE 4

G:\37319 (AmeriPrideSOQ, 8 Lord Street, Buffalo)\GIS\MapProjects\2011_0523_TJV_CulturalResourcesAP_D2.mxd



LEGEND:

SB-106 / MW-106	PROPOSED SOIL BORING / BEDROCK MONITORING WELL
SB-102 / MW-102	PROPOSED SOIL BORING / MONITORING WELL
◆	PROPOSED SOIL VAPOR SAMPLING LOCATION
⧓	PROPOSED TEST PIT OR SOIL BORING (TBD BASED ON FIELD CONDITIONS)
SB 30	APPROXIMATE LOCATION OF SOIL BORING INSTALLED BY ENSR IN AUGUST 2005.
SB 31	APPROXIMATE LOCATION OF SOIL BORING INSTALLED BY ENSR IN DECEMBER 2006.
MW 5 / SB 45	APPROXIMATE LOCATION OF MONITOR WELLS INSTALLED BY ENSR IN DECEMBER 2005.
OTHER	APPROXIMATE LOCATION OF MONITOR WELLS INSTALLED BY OTHERS FOR ADJACENT PROPERTY.
WIPE-2	APPROXIMATE LOCATION OF WIPE SAMPLE COLLECTED BY ENSR IN AUGUST 2005.
⬢	APPROXIMATE LOCATION OF FILL CHARACTERIZATION SAMPLE (ANALYTICAL)
—·—·—	PROPERTY LINE
AOC-3	AREA OF CONCERN
▒	APPROXIMATE LIMITS OF BASEMENT AREA
▨	APPROXIMATE LIMITS OF FILL CHARACTERIZATION TEST PITTING AREA.
▩	APPROXIMATE LIMITS OF DRY CLEANING AREA TEST PITS AND OR SOIL BORINGS.

NOTES:

1. 5 TO 10 TEST PITS WILL BE ADVANCED IN FILL CHARACTERIZATION AREA. LOCATIONS WILL BE DETERMINED BASED ON FIELD CONDITIONS.
2. THE NUMBER AND LOCATIONS OF TEST PITS AND OR SOIL BORINGS ADVANCED IN THE DRY CLEANING AREA WILL BE DETERMINED BASED ON FIELD CONDITIONS.
3. ONSITE UTILITY LOCATIONS, TANK LOCATIONS, SOIL BORING LOCATIONS, INTERIOR WELL LOCATIONS, PROPOSED SAMPLING LOCATIONS, INTERIOR BUILDING FEATURES, AND BASEMENT DIMENSIONS ARE APPROXIMATE.
4. BASEMAP BASED ON ELECTRONIC CAD FILE ENTITLED "AMERICAN LINEN TOPO BNDY MAP.DWG" FROM HOFFMAN LAND SURVEYING & GEOMATICS OF ONTARIO, NEW YORK DATED 1 DECEMBER 2010 AND FROM ELECTRONIC IMAGES ENTITLED "BASEMENT PLAN SOIL BORING LOCATIONS" DATED 18 JANUARY 2007 AND IMAGE ENTITLED "SITE MAP SOIL BORING AND MONITORING WELL LOCATIONS" DATED 18 JANUARY 2007 FROM ENSR INTERNATIONAL.

HALEY & ALDRICH

FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
822 SENECA STREET
BUFFALO, NEW YORK

INVESTIGATION LOCATION PLAN

SCALE: AS SHOWN
MAY 2011

FIGURE 5

G:\37319_AMERIPRIDE\GLOBAL\DRAWINGS\37319-020-003D SAMP PLAN.DWG

APPENDIX A

Excerpts from Previous Investigations

December 8, 2004

Phase I
Environmental Site Assessment
AmeriPride Services Inc. Site
7 and 8 Lord Street
City of Buffalo
Erie County, New York

Prepared for:

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PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
AMERIPRIDE SERVICES INC. SITE

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PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
AMERIPRIDE SERVICES INC. SITE

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APPENDICES

1.0 INTRODUCTION

This report presents the findings of a Phase I Environmental Site Assessment (ESA) conducted at the AmeriPride Services Inc. Site which is located in the City of Buffalo, Erie County, New York.

The purpose of this site assessment was to reasonably identify recognized environmental conditions. A recognized environmental condition is defined as the presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release. The finding of no recognized environmental conditions is not a warranty or guarantee that the site remains free from contamination. This environmental site assessment is designed to reduce, but not eliminate, uncertainty within reasonable limits of time and cost.

The site assessment included a site visit/observation, a review of existing documents and environmental lists, and background research on the previous uses and practices at the subject site as reported and documented by site contacts and Local, State and County officials known to be responsible for regulating and enforcing site area environmental conditions. This site assessment has been performed in general conformance with the scope and limitations as outlined in ASTM E-1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

This site assessment did not include a review of non-scope issues as identified by ASTM E-1527 with the exception of asbestos containing materials.

This site assessment was conducted by C.T. Male Associates, P.C. (C.T. Male) as requested by Mr. Jim Burlingame of AmeriPride Services Inc. in Minnetonka, MN. Mr. Kevin Tobin of AmeriPride Services Inc. was the site contact for this assessment.

2.0 SITE DESCRIPTION

2.1 Site Location

The subject site is located at 7 and 8 Lord Street in the City of Buffalo, Erie County, New York. The subject site was identified on the City of Buffalo tax maps as being within the parcel with section 122.27, block 1, lot 4 and section 111.83, block 9, lot 7.1. The site is located on the east and west sides of Lord Street. The main parcel, which contains the site building, is also bound to the north by Seymour Street and the south by Seneca Street and is referenced as 822 Seneca Street in the City of Buffalo assessment records. A site location map is included in Appendix A as Figure 1. Maps showing the site property boundaries are included in Appendix A as Figures 2 and 3. A site plan depicting the building layout is included in Appendix A as Figure 14.

2.2 Property/Business Owner

According to assessment records, the current property owner is AmeriPride Services Inc. of Buffalo, New York.

2.3 Current Site Uses

The site building is currently occupied by AmeriPride Services Inc. and is used as a service center/depot. Prior to April of 2004, the facility was an operating plant providing cleaning services for industrial uniforms and linen.

2.4 Former/Historic Site Uses

American Linen Supply Co., which operated under the name Coverall Service and Supply Co., (Coverall) a uniform cleaning facility, reportedly occupied the site in 1978. The facility used a dry cleaning operation up until 1985. The name of the facility changed to AmeriPride Services Inc. (AmeriPride) in 1997. The operations of Coverall and AmeriPride occupied the first floor of the site building as well as portions of the basement. Thorner Sydney Press occupied the second floor of the site building as well as portions of the basement up until 1997. According to a purchase agreement dated 1977, Thorner Sydney Press had a lease agreement since 1965.

Prior to 1978 the site is reported to have been used as a book binding and printing facility. It appears the site was developed with the current site building for this purpose in 1910. Prior to 1910, the site is indicated to have been occupied by residential and commercial properties.

The overflow parking lot parcel at one time was improved with a dwelling.

2.5 Total Site Area and Topographic Description

The subject site incorporates approximately 3.2 acres of fairly level land. According to the United States Geological Survey (USGS) Topographic Map, the subject site lies at approximately 590 feet above Mean Sea Level.

2.6 Site Geology

Soils are mapped by the Erie County Soil Survey as urban land. Urban land is described as areas where 80 percent or more of the soil surface is covered by asphalt, concrete, buildings or other impervious structures. Surficial geology is mapped as lacustrine silt and clay. These soils consist of generally calcareous and laminated silts and clays which range in thickness up to 100 meters.

2.7 Nearby Surface Water Bodies and Water Supply Wells

The surrounding area is reportedly supplied with municipal water from the City of Buffalo.

The Buffalo River lies approximately 4,700 feet south of the site.

2.8 Site Buildings and Structures

The site building is a masonry and steel building comprised of one and two story sections. The one story portion of the building occupies the southern portion of the building and the central portion of the building and has a brick façade. The two story portion of the building occupies a U shaped area on the northern portion of the building. The one story portion of the building is constructed on a slab foundation while the two story portion of the building is constructed on a full basement. The original portion of the building was constructed in 1910. Additions to the west side of the building were constructed in 1923.

The roof of the building is a built-up style roof.

A one story concrete block former fuel dispensing shed is located to the west of the site building. The shed is constructed on a slab foundation and has a metal roof.

2.9 Roadways or Driveways on or Adjoining the Site

The main site parcel is bound to the east by Lord Street, to the south by Seneca Street and to the north by Seymour Street. The overflow parking lot parcel is bound to the west by Lord Street.

The overflow parking lot parcel is paved with access from Lord Street.

A paved parking/loading area is located to the southeast of the site building with access from Lord Street. A paved parking area is located to the west of the site building with two paved driveways from Seneca Street and access from Seymour Street.

2.10 Rights-of-Way and/or Easements (On-Site and Adjacent)

According to the site contact, an easement for ingress and egress may exist along the southwestern portion of the site for the adjoining residential property. Other than utility easements, no other rights-of-way or easements are reported to exist for the site.

2.11 Surrounding Land Uses

The surrounding land uses, as identified during the site visit, are described as follows:

Main Parcel:

North	-	Seymour Street lies north of the site. Residential properties lie north of Seymour Street.
West	-	Residential properties and a vacant parcel of land lie west of the site.
East	-	Lord Street lies east of the site. Buffalo Plumbing Supply and Unilock, Inc. lie east of Lord Street.
South	-	Seneca Street lies south of the site. Residential properties, an apparently vacant warehouse, Southern Body Parts, The Good Door Store and Custom Canvas lie south of Seneca Street.

Overflow Parking Lot Parcel:

North	-	Residential properties and a vacant parcel of land lie north of the site.
West	-	Lord Street lies west of the site. A vacant parcel of land and residential properties lie west of Lord Street.
East	-	A vacant parcel of land which fronts on Smith Street lies east of the site.
South	-	Unilock, Inc. lies south of the site.

3.0 SITE AND SURROUNDING AREA HISTORIC AND RECORDS REVIEW

3.1 Ownership Information

A purchase agreement for the site indicates the site was purchased in 1977 by American Linen Supply Co. from Edward Seeberg in 1977. The agreement indicates a lease existed for the site to Thorner-Sidney Press, which involved the second floor and a portion of the basement.

An abstract of title was not provided at the time of this report.

Assessment records indicate the site was previously owned by J.W. Clement Company and Coverall Service and Supply Company. Years of ownership are not provided within the assessment records.

No environmental liens or activity/land or use limitations are reported to exist for the site.

3.2 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps were reviewed for the years 1889, 1926, 1951, 1981 and 1986. The maps depict the following:

<u>Main Parcel</u>

1889: Several dwellings and stores are depicted on the site. A warehouse is depicted on the northeastern portion of the site and a building labeled as the Mason Brundey Chain Works is depicted on the northwestern portion of the site.

1926: The current site building is depicted on the site and is labeled as being occupied by J.W. Clement Co. and Tenants, Printers, Book Binders and Electrotypers. Some dwellings and stores are depicted on the site in areas now improved as parking lots.

1951: The current site building is depicted on the site and is labeled as being occupied by J.W. Clement Co. and Tenants, Printers, Book Binders and Electrotypers. A restaurant and a store are depicted on the southwestern portion of the site along Seneca Street.

1981/1986: The current site building is depicted on the site, however, the tenant of the building is not displayed.

Overflow Parking Lot Parcel

1889: No buildings are depicted on the site.

1926/1951: A dwelling is depicted on the site.

1981/1986: No buildings are depicted on the site.

The Sanborn Maps are included in Appendix A as Figures 4-13.

3.3 Aerial Photographs

Aerial photographs were reviewed for the years 1968, 1974, 1983 and 1985 at the New York State Department of Transportation, Map Information Unit. Throughout these years the site appears to be improved with the current site building. The surrounding area appears to be improved with a combination of residential, commercial and industrial properties. Original quality copies of the aerial photographs reviewed at the New York State Department of Transportation, Map Information Unit could not be obtained at the time of this report.

3.4 Information From the Local Historian

A FOIL request was submitted to the City of Buffalo Clerk's Office requesting information related to the historic use of the site from the City of Buffalo Historian. According to the clerks office, the City of Buffalo does not currently have an historian on staff. In lieu of historian records, the City of Buffalo provided assessment records for the site. Information from the assessment records is included in the appropriate sections of this report.

3.5 Information From Health Department Official(s)

The Erie County Department of Health reported they do not have records concerning soil or groundwater contamination for the subject site.

3.6 Information From Other Local Official(s)

The City of Buffalo Fire Department provided several fire incident reports for the site. The general information included within the reports is as follows:

Year	Comments
1976	Wood and paper - confined to dumpster
1982	Spontaneous combustion of oil soaked rags - confined to bin
1983	Origin - linen bins area
1983	Clothing fire
1984	Loading dock area caused by criminal mischief
1987	Loading dock area - spontaneous combustion of rags and wood
1987	Clothing bin - fire caused by careless smoking
1998	Smoldering linen
1999	Fire started in area of oily rags
1999	Spontaneous ignition of oily rags
1999	Fire in a washing machine
1999	Alarm set of by burning rags
2000	Dryer fire
2000	Rubbish burning near building

Other information provided by the Fire Department includes:

A 1944 Fire Prevention Service form indicates the site building was occupied by J. W. Clement. The fuel source is indicated to be coal. Volatiles and liquids present at the site are indicated to include acetone, olaic acid, ethyl acetate, tollas solvent, syrasal, sun spirits, C.P. acetate, magnesium powder, cornstarch, carbitol solvent, thriethanalumium, linseed oil, ethyl hexanol, kerosene, sulfuric acid, aqua ammonia, bluestone, printing ink, ink oil, varnish and resin. The form indicates processes included gas smelting and lead melting.

A 1950 letter provided by the Fire Department indicates that plans were reviewed to install a new boiler and oil tank at the facility, then occupied by J.W. Clement. The plan was not enclosed with the letter.

A 1952 Bureau of Fire Prevention form indicates the site building was occupied by J. W. Clement. The heating system for the facility is indicated to be a low pressure steam boiler with an associated 5,000 gallon fuel tank located underground on Lord

Street. Volatile liquids used within the site are indicated to include acetone, toluene, ethylacetate and alcohol.

An apparent memo, dated November 2, 1964 indicates the site was occupied by Rugby Knitting Mills. The memo indicates that heavy fuel was coming through drain tile in the boiler room and entering a sump hole. A 6,000 gallon oil tank is indicated to be located in the vault of the boiler room, previously used to store No. 6 fuel oil. The tank is indicated to be in the process of being changed to No. 2 fuel oil. Testing of the tank was recommended, however a notation dated November 4, 1964 indicates that the test was not completed at that time.

A 1968 letter indicates the site contained an incinerator.

A 1977 application indicates that American Linen applied for the installation of the following underground storage tanks:

- 20,000 gallon fuel oil tank
- 20,000 gallon fuel oil tank
- 10,000 gallon gasoline tank
- 1,500 gallon waste oil tank
- 1,000 gallon alcohol storage tank

The application was approved in 1978.

A 1986 form indicates that a 5,000 gallon fuel oil tank located along Lord Street under the sidewalk was filled.

A 1987 form indicates that a 1,000 gallon alcohol tank was removed. The tank is indicated to have been owned by Thorner Sydney Press.

A 1988 form indicates that a 10,000 gasoline tank was removed from the site.

A 1988 form indicates that a 20,000 gallon diesel and a 1,500 gallon waste oil tank were closed in place at the site.

A 1998 form indicates a 20,000 gallon fuel oil tank was closed at the site.

3.7 Information From Current or Former Property Owner(s)

Mr. Kevin Tobin of AmeriPride Services Inc., was the site contact and acted as a representative of the current property owner. Mr. Tobin was interviewed on the site during the site visit and provided a tour of the site buildings and grounds. Information from Mr. Tobin is included in the appropriate sections of this report.

A list of references, including people and agencies contacted and documents reviewed, and records of communication are included in Appendix C of this report.

3.8 Summary of Previous Environmental Assessments

No previous environmental site assessments are reported to have been conducted for the subject site.

3.9 ASTM Federal and State Database Review

Federal and state environmental databases were reviewed in accordance with ASTM E-1527 Standards to determine if the site or nearby surrounding properties are listed on these databases. The databases were searched for the areas within the ASTM recommended search distance, unless otherwise noted. Reviewed databases are listed below. A copy of the database report is included in Appendix D.

3.9.1 Federal National Priorities List (NPL) Facilities

The subject site was not identified as a NPL hazardous waste facility. No NPL facilities were identified within one mile of the subject site.

3.9.2 Federal CERCLA Hazardous Waste Facility List

The subject site was not identified as a CERCLA hazardous waste facility. Two CERCLA hazardous waste facilities were identified within ½ mile of the subject site. They are:

- NYD013703632, Bern Metals, 22 Bender Street, located approximately 4/10 mile northeast of the site; and

- NYD986910206, Universal Irons and Metal, 933 Clinton Street, located approximately ½ mile northeast of the site.

3.9.3 Federal Resource Conservation and Recovery Act (RCRA) Treatment, Storage and Disposal (TSD) Facilities List

The subject site was not identified as a RCRA TSD facility. The following RCRA TSD facilities were identified within ½ mile of the subject site:

- NYD080335052, Buffalo Color, 340 Elk Street, located approximately 6/10 mile southeast of the site;
- NYD000632315, Honeywell, Inc. - Buffalo Research, 20 Peabody Street, located approximately 6/10 mile southeast of the site; and
- NYD980534390, PVS Chemical, Inc. New York, 55 Lee Street, located approximately ¾ mile southeast of the site.

Several violations are listed for each of these facilities.

3.9.4 Federal RCRA Generators List and Corrective Action List

The subject site was identified on the RCRA generator list with the following ID Nos. and names:

- NYD000829622, AmeriPride, 8 Lord Street, Small Quantity Generator;
- NYD058655705, Coverall Service and Supply Co., No Longer Regulated; and
- NYD002108256, Thorner Sidney Press, Inc., No Longer Regulated.

No enforcement actions or violations are listed for the site under these names. According to the site contact AmeriPride is currently listed for its parts washing station which is maintained by Safety Kleen.

Coverall reportedly generated hazardous waste from its dry cleaning operation. Thorner Sidney Press reportedly generated printing materials (inks/oils) from its operation.

One immediately adjoining property was identified as a RCRA generator facility. The facility is:

- NYD986972768, Unilock, Inc., 510 Smith Street, located north and east of the site, No Longer Regulated. No enforcement actions or violations are listed for this facility.

The subject site was not identified as a RCRA corrective action facility. The following RCRA corrective action facilities were identified within one mile of the subject site:

- NYD001863372, Allied Chemical Corp.-Buffalo Chem, 35 Lee Street, located approximately 7/10 mile southeast of the site;
- NYD080335052, Buffalo Color, 340 Elk Street, located approximately 6/10 mile southeast of the site;
- NYD000632315, Honeywell, Inc. - Buffalo Research, 20 Peabody Street, located approximately 6/10 mile southeast of the site; and
- NYD980534390, PVS Chemical, Inc. New York, 55 Lee Street, located approximately ¾ mile southeast of the site.

Several violations are listed for each of these facilities.

3.9.5 Federal Emergency Response Notification System (ERNS) List

The subject site was not identified on the ERNS list.

3.9.6 State Hazardous Waste Facility List

The subject site was not identified as a State hazardous waste facility. The following State hazardous waste facilities were identified within one mile of the subject site:

- ID No. 915004, Allied Chemical Ind. Chemical Division, 55 Lee Street, located approximately 9/10 mile southeast of the site;
- ID No. 945002, Allied Chemical, R and D Facility, 20 Peabody Street, located approximately 6/10 mile southeast of the site;

- ID No. 915155, Behringer Property (Imson Street), 181 Imson Street, located approximately ¾ mile southeast of the site;
- ID No. 915115, Bengart and Memel, Inc. 1091 Clinton Street, located approximately 6/10 mile northeast of the site;
- ID No. 915135, Bern Metal Corp./Universal Iron Metal, 22 Bender Street/993 Clinton Street, located approximately 4/10 mile northeast of the site;
- ID No. 915170, Bristol Street, 204 and 208 Bristol Street, located approximately 4/10 mile northwest of the site;
- ID No. 915134, C & D Power, 45 Scoville Avenue, located approximately 1 mile southeast of the site;
- ID No. HS9023, GCF Industries, located approximately one mile southeast of the site;
- ID No. 915037, Houdaille Industries, - Manzel Division, 315 Babcock Street, located approximately 7/10 mile southeast of the site;
- ID No. 915041, Mollenberg-Betz, 300 Scott Street, located approximately one mile southwest of the site; and
- ID No. HS9070, WL McDougall Co., Elk and Prenatt Streets, located approximately ½ mile southeast of the site.

3.9.7 State Solid Waste Facility List

The subject site was not identified on the State solid waste facility list. One State listed solid waste facility was identified within ½ mile of the subject site. The facility is CTS Crushing and Recycling located at 1070 Seneca Street, located approximately 4/10 mile southeast of the site. According to the database report, this facility processes construction and demolition debris.

3.9.8 State Petroleum Bulk Storage (PBS) Tank Facilities

The site was identified on the State PBS facilities list with PBS No. 9-013773. The following tanks are included on the registry:

NYSDEC Reg. #	Type (AG/UG)	Capacity (Gallons)	Date Installed	Date Closed	Content	Location
1	UG	20,000	1978	1998	No. 6 Fuel Oil	Driveway, west of site building
2	UG	20,000	1978	1988	Diesel	Driveway, west of site building
3	UG	1,500	1978	1988	Waste Oil	Driveway, west of site building
4	UG	10,000	1978	1988	Gasoline	Parking area, west of site building
5	UG	5,000	Unknown	1986	Other	East of building along Lord Street

According to a Notification for Underground Storage Tanks form dated 1986 and provided by AmeriPride Services Inc., Tank No. 5 was filled in place with inert material. This information is consistent with the information provided by the City of Buffalo Fire Department as noted in Section 3.6, which included a 1986 form indicating that a 5,000 gallon fuel oil tank located along Lord Street under the sidewalk was filled.

A 1988 Memo generated by American Linen indicates the following information pertaining to the PBS tanks:

- Tank No. 2 was pumped out, cleaned and filled in place with concrete slurry.
- The contents of Tank No. 3 were sampled and found to contain chlorinated solvents. The material was removed and the tank was cleaned and filled with concrete.
- Tank No. 4 was pumped out, cleaned and removed.
- The fittings within the fuel dispensing shed were filled and suction lines were either filled with concrete or removed.

This tank closure information is consistent with City of Buffalo Fire Department records.

SLC Constructors, Inc., provided closure services for Tank No. 1 in 1998. A closure letter and laboratory results were provided for this activity. The tank was filled in place with flowable fill. The laboratory results indicate soil samples were collected from around the tank, though the depths or relative locations are not specified. The soil samples were submitted for laboratory analysis for petroleum compounds. The following compounds were detected above the laboratory method detection limit:

PARAMETER	SAMPLE ID AND CONCENTRATION (1)		NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVE(2)
	Sample Around Tank	Sample Around Tank Low	ug/kg(3)
Volatile Organic Compounds by EPA Method 8021:			
Napthalene	6.5	1.0	13,000
MTBE	Non Detect	1.2	120
Tert-Butylbenzene	Non Detect	1.0	NS(4)

(1) Only the compounds that were detected are listed.
(2) TAGM 4046, Determination of Soil Cleanup Levels, New York State Department of Environmental Conservation, January 24, 1994, Revised December 20, 2000.
(3) ug/kg denotes parts per billion.
(4) NS denotes no standard

As noted, the compounds detected were below NYSDEC guidance values.

Tank closure documentation provided by AmeriPride Services Inc., is included in Appendix E.

The site was also identified on the State Chemical Bulk Storage (CBS) list with CBS No. 9-000151. The following tanks are included on the registry:

NYSDEC Reg. #	Type (AG/UG)	Capacity (Gallons)	Date Installed	Date Closed	Content	Location
005	AG	200	1986	1999	Sodium Hypochlorite	First floor of building
006	AG	215	1986	1999	Sodium Hypochlorite	First floor of building
007	AG	1,000	1990	Not Listed	Sulfuric Acid	Basement, southwestern portion of building
008	AG	1,000	1990	Not Listed	Sulfuric Acid	Basement, southwestern portion of building
0011	AG	200	1990	2004	Sulfuric Acid	First floor, southwest portion of building

No immediately adjoining properties were identified on the State PBS or CBS facilities list.

3.9.9 State Leaking Storage Tanks List

The site was not identified on the state leaking storage tank list. Ten leaking storage tank incidents were identified within ½ mile of the site. Of the leaking tank incidents one is listed for an adjoining property. Spill No. 930848 is listed for Buffalo Plumbing Supply located at 840 Seneca Street to the east of the main site parcel. According to the spill fact sheet for this incident, contaminated soil was found during an assessment of the site. The contaminated soil is indicated to have been staged on plastic and then removed from the facility. The New York State Department of Environmental Conservation (NYSDEC) issued a closed status to the spill.

Of the leaking tank incidents two are identified as active. Spill No. 0475260 is listed for the LCO Building located at 726 Exchange Street located approximately ¼ mile southwest of the site. The spill is attributed to a tank failure. Spill No. 0375440 is listed for School 40, located at 89 Clare Street, approximately 4/10 mile northeast of the site. According to the spill fact sheet a tank at this facility failed a tightness test.

3.9.10 Applicable State Lists

The NYSDEC spills database was reviewed to determine if spills have occurred at the subject site or adjoining parcels. The following spills were identified for the subject site:

Spill No. 9207422. According to the spill fact sheet for this incident, forty drums were stored along the property line. Although the drums were not leaking they are indicated to have had an odor. The site contacts were not able to provide further information concerning this spill, however, they indicated that the drums may have been the result of cleaning the pits within the basement of the site building and the drums may have been stored on site temporarily. The spill was issued a closed status on October 2, 1992.

Spill No. 9601734. According to the spill fact sheet for this incident, 5 gallons of hydraulic oil were released from a refuse truck. The spill is indicated to have been cleaned and was issued a closed status on May 20, 1996. The site contact did not have knowledge of this spill.

Spill No. 0175474. According to the spill fact sheet for this incident, 1,000 gallons of sulfuric acid were released due to an equipment failure. According to information provided by AmeriPride Services Inc., following an inspection of the two 1,000 gallon sulfuric acid storage tanks one developed a leak. Although the leak was fixed, the gasket on the tank gave way releasing sulfuric acid into a concrete block containment area. The acid penetrated the mortar of the containment area and was released into the basement of the site building. According to the site contact, although the acid reached the sump pits, the sumps failed due to contact of the acid with the pumps. Optech was reportedly hired to clean up the spill. The NYSDEC issued a closed status on April 10, 2002.

One spill was identified for the immediately adjoining properties. Spill No. 8710236 was assigned to a traffic accident which occurred at 797 Seneca Street, to the south of the site. Twenty gallons of gasoline is indicated to have been flushed to the sewer. The spill was issued a closed status on March 2, 1988.

4.0 SITE VISIT

4.1 Conditions of the Visit

4.1.1 Site Contact(s)

Mr. Kevin Tobin of AmeriPride was the site contact and was present during the site visit. Mr. Bruce Bednarz, the Fleet Maintenance Manager, also provided information during the site visit.

4.1.2 Date of Visit

The site visit was conducted on Tuesday, October 12, 2004 by Ms. Aimee Gates of C.T. Male Associates, P.C. During the site visit the weather was approximately 60°F with sunny skies.

4.1.3 Ground Cover

The site ground surface is covered by the site building, paved driveways and parking areas and concrete sidewalks.

4.1.4 Areas Observed

The main site parcel and surrounding areas were observed from Lord Street, Seymour Street, Seneca Street and the approximate site boundaries. The central areas of the site were traversed and the site building was entered. The overflow parking lot parcel and surrounding areas were observed from Lord Street, Smith Street and Division Street. Photographs taken during the site visit are included in Appendix B.

4.2 Uses of Site Buildings and Structures

The first floor of the southeastern portion of the building contains a loading dock area, known as the soil count area, where uniforms and linens were previously brought into the building. To the west of the soil count area is the former wash room. The wash room is currently unoccupied, however troughs are still present within the area. The southwestern portion of the building contains the boiler room. The waste water treatment room lies north of the boiler room. The fleet maintenance area lies north of the waste water treatment room occupying the approximate center of the western portion of the building. A garage and parking area lies north of the fleet maintenance area.

A flatwork area occupies the central portion of the building north of the wash room where ironing, packaging and sorting occurred. According to the site contact, the washroom and the flatwork area formerly comprised the dry cleaning area. The wash room at one time is reported to have been located in the flatwork area.

Offices are located in the central portion of the eastern side of the building. The northeastern corner of the building contains a garment stock room. A maintenance shop and flat goods storeroom are located west of the garment stock room.

The central portion of the building is occupied by a garment sorting department, clean room and service department.

A majority of these rooms are no longer used, although the office area, maintenance shop and fleet maintenance area are still used.

The second floor of the site building has been unoccupied since 1997. The second floor contains a number of offices and large open rooms which may have been used as print rooms.

The basement of the site building is currently primarily unoccupied. The southwestern portion of the basement contains two pit areas, a sulfuric acid storage area, lime slurry tank area and former boiler rooms. On the north side of the building access is provided to the basement from Seymour Street. This area contains a lift, bailer and scale which appear to have been used for the printing operation.

The former fuel dispensing shed housed two pumps, one for the former gasoline underground storage tank and one for the former diesel underground storage tank. The former fuel dispensing shed is no longer used but was observed at the time of the site visit to contain the dismantled pumps.

4.3 Site Utilities

Electricity is supplied to the site by Niagara Mohawk Power Corporation, a National Grid company. Natural gas is provided to the site by National Fuel. Municipal water and sewer service are provided by the City of Buffalo. The site building is heated by natural gas space heaters and a natural gas boiler.

4.4 Transformers/Capacitors (Liquid Filled Only)

Two pad mounted transformers were identified to the west of the southern portion of the site building. No PCB labeling was identified on the transformers during the site visit. No evidence of leakage was noted from the transformers during the site visit.

A set of three pole mounted transformers was identified to the east of the site building along Lord Street. No PCB related labeling was identified on the transformers. No evidence of leakage was noted from the transformers at the time of the site visit.

A bank of eleven capacitors was identified on the first floor of the southwestern portion of the site building. A space was noted where a twelfth capacitor appears to have been located at one time. The site contact was not aware of the circumstances of the missing capacitor. Although some of the capacitors exhibited rusting, no evidence of leakage was noted from the capacitors at the time of the site visit. The capacitors were labeled as PCB. The capacitors have reportedly not been used for a few years.

4.5 Asbestos Containing Materials (ACM)

Suspect asbestos containing materials were identified in the forms of pipe insulation, floor tile, mastic, ceiling tile, boiler insulation, tank insulation and built-up roofing materials. Based on the age of the site building, (constructed prior to 1987), asbestos may be present in other building materials. An asbestos containing materials survey was not completed as a function of this assessment.

4.6 Site Surface Water Bodies/Areas

No surface water bodies were identified on the site during the site visit.

4.7 Site Drainage

4.7.1 Site Catch Basins and Discharge Location(s)

Catch basins are located within the paved parking areas to the west of the site building. The catch basins reportedly discharge to the City of Buffalo municipal sewer system. No staining or sheens were noted in or surrounding the catch basins at the time of the site visit.

Metal covers having a diameter of approximately five inches were noted within a few feet of each of the catch basins located in the parking area to the west of the site building. The covers appeared to be associated with clean-outs for the catch basins.

4.7.2 Building Floor Drains and Discharge Location(s)

Floor drains were identified within the site building including within the garage, washroom and flatwork rooms. Troughs are also located within the washroom. These drainage features are reported to discharge to pit No. 1 located in the basement of the site building. The pit is described in Section 4.8.1. Staining was noted along the troughs as well as on the concrete floor surface in the vicinity of some of the floor drains. Material and debris was noted within the troughs at the time of the site visit.

The troughs were reportedly installed within the site building for Coverall and therefore have always likely discharged to pit No. 1. The former discharge location of the floor drains is unclear.

A trench style drain is located in a loading area on the west side of the site building. According to the site contact the loading area was sealed by plugging the trench outlet and sealing cracks within the concrete following the installation of the waste water treatment system to prevent a release of sulfuric acid during delivery of the acid to the site building. No staining or sheens were noted in or surrounding the drain within the loading area.

4.7.3 Dry Wells and Sumps

No dry wells were identified on the site during the site visit. According to the site contact, no dry wells are located on the site.

Five sumps were identified within the basement of the site building. The sumps are reported to discharge into pit No. 1 in the basement of the building. Standing water noted in the basement of the site building was discolored with areas of black and tan during the site visit. The discolored water did not exhibit a petroleum type odor and may be associated with iron bacteria and/or iron deposits. This discolored water was noted in and near the sump pits.

The sumps are reportedly used to control overflow from pit No. 1. As noted in Section 3.6, a 1964 memo indicates that a sump was located in the building, indicating at least one sump was present prior to the building being occupied by AmeriPride Services Inc. and their predecessors. The purpose of the sumps prior to 1978 and their discharge location prior to the installation of pit No. 1 is unknown.

4.8 Site Waste Profile

4.8.1 Solid Wastes/General Trash (Generation/Storage/Disposal)

Solid waste was formerly generated at the site from the washing operation. The troughs within the washroom and floor drains located within the building are reported to discharge to pit No. 1 which is located in the basement of the site building. Pit No. 1 is a poured concrete above ground tank. Materials which passed through this tank were pumped through a vibrating screen to remove various solids such as lint and sand. This material was collected in five gallon containers which were discarded as solid waste in an on-site dumpster. This material was reportedly tested on an annual basis and reportedly consistently tested as non-hazardous.

Remaining water from the vibrating screen was pumped into pit No. 2, a 5,000 gallon concrete poured tank located in the basement of the building. Prior to 1990 the water from this pit was discharged to the City of Buffalo municipal sanitary sewer system without treatment other than the removal of solids with the vibrating screen. In 1990 a waste water treatment system was installed to treat waste water prior to being discharged to the municipal sanitary sewer system. Sulfuric acid was used with the treatment system to lower the pH and to "crack" the oil within the waste water. The resulting oil was skimmed into drums. Powdered lime and a polymer were used to create a floc to aide in removing contaminants from the wastewater. The wastewater then flowed to an inclined plate settler to remove the contaminants in the form of solids. The cleaned wastewater was then discharged to the city sewer system. The solids were dewatered through a press. This sludge, known as lime cake, was tested and disposed of as solid waste.

Currently, office wastes generated at the site are collected in a dumpster located to the west of the site building. Modern Disposal reportedly services the dumpster.

Batteries and tires generated from truck maintenance activities are reportedly returned to the supplier. Oil filters are collected in a 30 gallon drum and are periodically removed from the site by Safety Kleen.

4.8.2 Sludges (Generation/Storage/Disposal)

No sludge wastes were identified on the site during the site visit. According to the site contact, no sludges are currently generated, stored or disposed of on the site.

A material, known as pit sludge, was reportedly removed from pit No. 1 and pit No. 2 during cleaning of these tanks, which is reported to have occurred approximately every 10 years. Previously, the pit sludge was reportedly collected in drums which were transported off-site for disposal. The pits were reportedly last cleaned in 2003, at which time a vacuum truck was utilized to clean the pits. The material was reportedly tested prior to removal and is reported by the site contact to have not been classified as a hazardous waste.

4.8.3 Liquids (Generation/Storage/Disposal)

Waste oil is currently generated on-site from the maintenance of trucks. The waste oil is collected in 55 gallon drums. NoCo reportedly removes the waste oil approximately two times per year. Historically, the waste oil was collected in the underground waste oil storage tank located to the west of the site building.

A parts washer station is located within the garage area of the site building. The parts washer station is reportedly replenished and maintained approximately every six weeks by Safety Kleen.

Antifreeze is generated on the site in limited quantities. The waste antifreeze is collected in an above ground 300 gallon storage tank and is reportedly removed by Safety Kleen on an as-needed basis. Antifreeze was historically collected with waste oil in the underground waste oil tank to the west of the site building.

The waste oil skimmed from the waste water treatment process was reportedly used as fuel oil for the boiler. Approximately one drum of oil was reportedly generated every two months.

Two hydraulic lifts are located within the garage area of the site building. The hydraulic lift cylinders extend into the basement of the site building. As noted within Section 4.7.3, standing water noted in the basement of the site building was discolored with areas of black and tan during the site visit. The discolored water was noted in the area of the hydraulic cylinders. Since the discolored water did not exhibit a petroleum type odor, it may be associated with iron bacteria and/or iron deposits and may not be leakage from the cylinders.

Liquids stored in drums either as a waste or raw product are further discussed in Sections 4.8.7 and 4.8.8 respectively. Liquids stored in tanks are discussed in Section 4.9.

4.8.4 Wastewater Discharge(s)

No wastewater discharges are reportedly currently generated on the site. As discussed in Section 4.8.1, waste water was generated while the site was in operation. A waste water treatment system was reportedly installed within the site in 1990 at the request of the City of Buffalo. The waste water treatment system has since been dismantled and no longer exists within the site building. According to the site contact, waste water has historically been discharged to the City of Buffalo sanitary sewer system.

4.8.5 Waste Lagoons or Disposal Pits (Current and Historic)

No waste lagoons or disposal pits were identified on the site during the site visit. According to the site contact, no current or historic waste lagoons or disposal pits are located on the site.

4.8.6 On-site Septic Systems

No septic systems were identified on the site during the site visit. The site is reportedly connected to the City of Buffalo municipal sanitary sewer system.

4.8.7 Waste Drums/Containers

Three drums of waste oil were identified in the northwestern portion of the garage. The drums were stored on a pallet which exhibited some light staining. A fourth drum of waste oil was identified in the southwestern portion of the garage. Empty drums are also located within the facility. Some of the empty drums are used as trash receptacles.

4.8.8 Raw Product Drums/Containers

Several drums and containers were noted throughout the first floor of the site building. The drums included a drum of boiler treatment, one drum of sulfuric acid, one drum of mop oil, two drums of motor oil, and one drum of hydraulic oil. According to the site contact, following the spill of sulfuric acid in 2001, the bulk storage of sulfuric acid within the above ground tanks was discontinued, and the material was instead stored in drums.

A drum, which is used as part of the parts washer station was identified in the garage.

The one and five gallon containers included cleaners, paints, dyes, polymer, greases, oils and floor tile adhesive were identified throughout the first floor of the site building.

Four bags of soda ash, used as a neutralizer in case of a release of sulfuric acid, were also noted within the site building.

Raw materials formerly stored in drums within the site for the cleaning operation included detergents, bleach, milicide, starch and other related fluids.

4.9 Underground (UG) and/or Above Ground (AG) Storage Tanks

Remains of three of the closed in place underground storage tanks were observed on the west side of the site building. Concrete pads which had square steel covers were observed to the west of the southern portion of the building. A vent pipe was observed along the exterior wall of the site building in this area. These remnants are reportedly associated with the 20,000 gallon No. 6 fuel oil and diesel storage tanks. A concrete filled metal cover was noted to the north of the No. 6 fuel oil tank. This tank is reported to be the closed in place 1,500 gallon waste oil tank. The fill for the waste oil tank was noted within the site building in the western portion of the garage.

A pavement patch was identified to the northwest of the former fuel dispensing shed. The patch is reported to be the location of the former 10,000 gallon gasoline tank which was removed from the site.

Evidence of a fifth tank was noted to the east of the site building within the sidewalk, which is the reported location of the 5,000 gallon fuel oil tank. A manhole cover was identified in this location.

Several other appurtenances including manhole covers were noted within the sidewalk areas of the site near Lord, Seneca and Seymour Streets and may be associated with utilities.

Above ground tanks noted within the site include the two 1,000 gallon tanks formerly used to store sulfuric acid and a 275 gallon tank of unknown use located in the basement of the site building. The tanks appeared to be empty at the time of the site visit. A 300 gallon above ground tank which is still used to store waste antifreeze is located in the garage area.

As noted in previous sections of this report, two poured concrete tanks identified as pit No. 1 and pit No. 2 are located in the basement of the site building and were used as part of the waste water treatment system. At the time of the site visit flooding had occurred within the basement of the site building. Since the sumps within the basement currently discharge to pit No. 1, this pit was partially full of water at the time of the site visit, as observed from a manhole on the first floor of the building.

A third concrete block structure which appeared to be of similar design to that of pit No. 1 and pit No. 2 was identified in the basement of the site building. The site contact was not aware of the purpose of the structure. Piping associated with the structure appeared to discharge to the west of the building.

An above ground metal tank was also identified in the basement of the site building to the north of pit No. 1. The tank was reportedly used to store lime slurry which was used with the waste water treatment system.

4.10 Observed Evidence of Potential or Known Site Contamination

4.10.1 Evidence of Soil Contamination/Liquid Discharges

Oil type staining was noted in the former boiler room area in the eastern portion of the basement of the site building. Standing water was noted in the basement of the site building during the site visit. The water within the basement was discolored with areas of black and tan. The discolored areas did not exhibit a petroleum type odor and may be associated with iron bacteria and/or iron deposits. The discoloration was noted within and near the sumps and hydraulic lift cylinders within the basement of the site building at the time of the site visit.

Staining was noted in and surrounding the troughs in the washroom area. According to the site contact, the staining is attributed to wash room chemicals used within the washing machines.

Staining was also noted within an elevator room within the basement of the site building. The elevator is one of four elevators and one lift no longer in use at the site.

Staining was noted throughout the garage area of the site building. The staining was noted around drums and in the vicinity of the hydraulic lifts.

4.10.2 Soil or Surface Disturbances

A metal covered depression was noted in the southwestern portion of the parking area. The area was reportedly used as a snow pit. As noted in Section 4.9, various disturbances were noted within the pavement to the west of the site building which were associated with underground storage tanks.

Surface disturbances were also noted within the sidewalk to the east of the site building. Concrete filled areas are reported to be former coal bins. A manhole cover to the south of the coal bins may be associated with an underground storage tank.

4.10.3 Evidence of Waste Deposits (Piles/Pits/Landfills/Lagoons)

No waste deposits were identified on the site during the site visit. The site contact was not aware of waste deposits being located on the site.

5.0 FINDINGS, OPINION AND CONCLUSIONS

5.1 Findings

The subject site is indicated to have been improved with the current site building in 1910 and is reported to have been used for commercial purposes since that time. The building appears to have been initially occupied by a printing facility. Fire Department records indicate the building may have been occupied by a knitting facility in the 1960s. Beginning in the late 1970s, the site was occupied by American Linen Supply Co. which operated under the name Coverall Service and Supply Company, which was used as a dry cleaning facility for industrial uniforms up until 1985. American Linen later became known as AmeriPride Services Inc. which continued with commercial/industrial laundering up until April of 2004.

The subject site was identified on reviewed environmental databases and lists. Three tenants of the building, AmeriPride, Coverall Service and Supply Co., and Thorner Sidney Press, a tenant of the building up until 1997, were identified as RCRA generators. Three spills were also identified for the site. Each of the spills is currently listed as closed.

The site is located within a commercial area within the City of Buffalo where a number of the area facilities have been identified on the reviewed environmental databases and lists. Therefore, there may be degradation of soils and groundwater in the vicinity of the subject site.

A number of underground storage tanks were identified for the site. Two underground storage tanks were closed in place at the site in 1988 and a third was removed. Little documentation of this activity exists. A fourth underground storage tank was closed in place at the site in 1998. Closure documentation for this tank closure includes laboratory analysis. These underground storage tanks were identified to the west of the site building. Two of the underground tanks were connected to a fuel dispensing shed.

A 5,000 gallon underground storage tank is reported to have been located to the east of the site along Lord Street. Although limited documentation exists for this tank, the tank is indicated to have been filled in place in 1986. A manhole cover was identified to the east of the site building and may be associated with this tank.

The City of Buffalo Fire Department records indicate that a 6,000 gallon No. 6 oil tank was located at the site in 1964. Staining was noted in the vicinity of the tank according to the Fire Department records. No other documentation was found concerning this tank or the leakage.

Fire Department records also indicate a 1,000 gallon alcohol storage tank was located on the site. The tank is indicated as having been removed in 1987. No other information was provided for this tank.

Fire Department records also indicate that a number of inks, solvents and oils were used at the site in the 1940s and 1950s. The storage and disposal practices for these liquids is not known. Fire Department records indicate an incinerator was present on the site in 1968. The disposal and use practices involving the incinerator are not known.

During the site visit staining was noted in several locations including within the former boiler room, in an elevator room, near drums and containers and near the hydraulic lifts. Staining was also noted within the basement of the site building, consisting of areas of tan and black discolored water. The discolored water was noted in and surrounding sumps located in the basement of the building. The water did not exhibit a petroleum type odor and may be associated with iron bacteria and/or iron deposits.

Various appurtenances were identified on the site during the site visit. Although these may be associated with utilities, this could not be confirmed during the site visit and therefore there is a potential that these manholes and piping could be associated with underground storage tanks or disposal features.

Several disposal features were noted within the site building including floor drains, troughs, sumps and pits. The troughs and pits were reportedly installed for Coverall for waste water collection and disposal. Although the floor drains and sumps are reported to currently discharge to pit No. 1 and ultimately to the municipal sanitary sewer system, the discharge location of these drainage features prior to the installation of the pits is not known. A concrete block feature was noted within the basement of the site building which resembled the pits and may represent a former disposal system.

A bank of eleven capacitors was identified on the first floor of the southwestern portion of the site building. A space was noted where a twelfth capacitor appears to have been located at one time. The site contact was not aware of the circumstances of the missing capacitor. Although some of the capacitors exhibited rusting, no evidence of leakage was noted from the capacitors at the time of the site visit. The capacitors were labeled as PCB. The capacitors have reportedly not been used for a few years.

Suspect asbestos containing materials were identified in the forms of pipe insulation, floor tile, mastic, ceiling tile, boiler insulation, tank insulation and built-up roofing materials. Based on the age of the site building, (constructed prior to 1987), asbestos may be present in other building materials. An asbestos containing materials survey was not completed as a function of this assessment. If these or other building materials contain asbestos, they must be managed in accordance with applicable New York State Department of Labor and Federal EPA and OSHA laws and regulations, particularly if the buildings are to be renovated or demolished.

5.2 Opinion

It is our opinion that the information and data collected during this Phase I ESA indicates the presence or likely presence of hazardous substances or petroleum product within the site under conditions which indicate an existing release, past release or material threat of a release. This opinion is based on the former use of the site as a printing facility, dry cleaning facility and laundering facility, along with the presence of underground storage tanks which are or were currently located on the site for which there is limited closure documentation.

5.3 Conclusions

C.T. Male has completed a Phase I Environmental Site Assessment for the AmeriPride Services Inc. Site in general conformance with the scope and limitations of ASTM Practice E-1527. This assessment has revealed no evidence of recognized environmental conditions in connection with the property except for the following:

The subject site has been used since 1910 for commercial purposes including a printing facility, a dry cleaning facility and a commercial/industrial laundering facility. Further assessment would be necessary to determine if the use of the site for these commercial purposes has had an impact to the quality of soils or groundwater at the site. Each of these facilities utilized a variety of chemical and petroleum products. Although the disposal practices of the laundering facility are generally known, the historic storage and disposal practices of the dry cleaning facility and printing facility are not known. Based on a review of Fire Department records, disposal practices may have included the use of an incinerator.

Several disposal features were noted within the site building including floor drains, troughs, sumps and pits. The troughs and pits were reportedly installed for Coverall for waste water collection and disposal. Although the floor drains and sumps are reported to currently discharge to pit No. 1 and ultimately to the municipal sanitary sewer system, the discharge location of these drainage features prior to the installation of the pits is not known. A concrete block feature was noted within the basement of the site building which resembled the pits and may represent a former disposal system. Further assessment would be necessary to determine if the historic use of these disposal features has had an impact to the quality of soils or groundwater at the site.

Several underground storage tanks are associated with the site. Little closure documentation is available for these tanks. The tanks include a removed 10,000 gallon gasoline storage tank, a 20,000 gallon diesel storage tank which is closed in place, a 20,000 gallon No. 6 oil tank which is closed in place, a removed 1,000 gallon alcohol storage tank, a 1,500 gallon waste oil tank which is closed in place and a 5,000 gallon heating oil tank which is closed in place. Fire Department records indicate a 6,000 gallon underground storage tank is also associated with the site. Records indicate that this tank may have leaked. Further assessment would be necessary to determine if the use of these tanks and associated piping has had an impact to the quality of soils or groundwater at the site. Further assessment would also be necessary to confirm that other appurtenances identified on the site are not associated with underground storage tanks or disposal features.

During the site visit staining was noted in several locations including within the former boiler room, in an elevator room, near drums and containers and near the hydraulic lifts. Staining was also noted within the basement of the site building, consisting of areas of tan and black discolored water. The discolored water was noted in and surrounding sumps located in the basement of the building. The water did not exhibit a petroleum type odor and may be associated with iron bacteria and/or iron deposits. Further assessment would be necessary to determine the extent of the staining and to determine potential impacts to soil or groundwater at the site.

The information presented in this report is limited to the investigation conducted as described in the referenced ASTM guidelines for conducting environmental site assessments, and is not necessarily all inclusive of conditions present at the subject site. Due to inherent limits of time and cost, uncertainty about site conditions remains. If you have any questions regarding this report, please contact this office at (518) 786-7400.

Respectfully submitted,

C.T. MALE ASSOCIATES, P.C.

Aimee Gates
Aimee Gates
Environmental Scientist

Reviewed and approved by:

Elizabeth W. Rovers
Elizabeth W. Rovers, P.E.
Managing Engineer

asg
CTMA Project No. 04.9629
December 8, 2004
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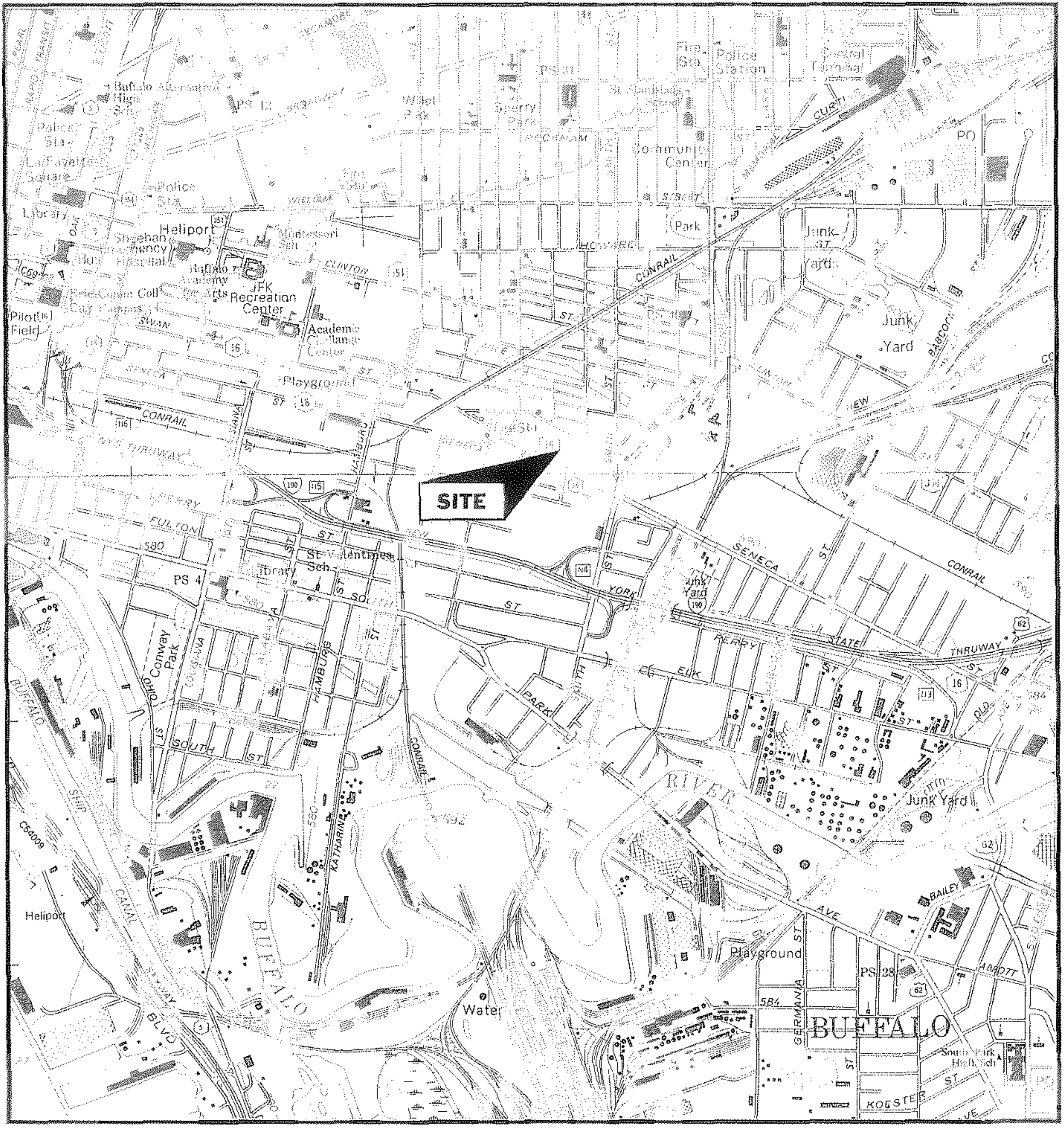
APPENDIX A

Figures/Maps



MAP REFERENCE

New York State Department of Transportation
7.5 Minute Series Topographic Map
Quadrangles: Buffalo SE, New York, 1989 and
Buffalo NE, 1989

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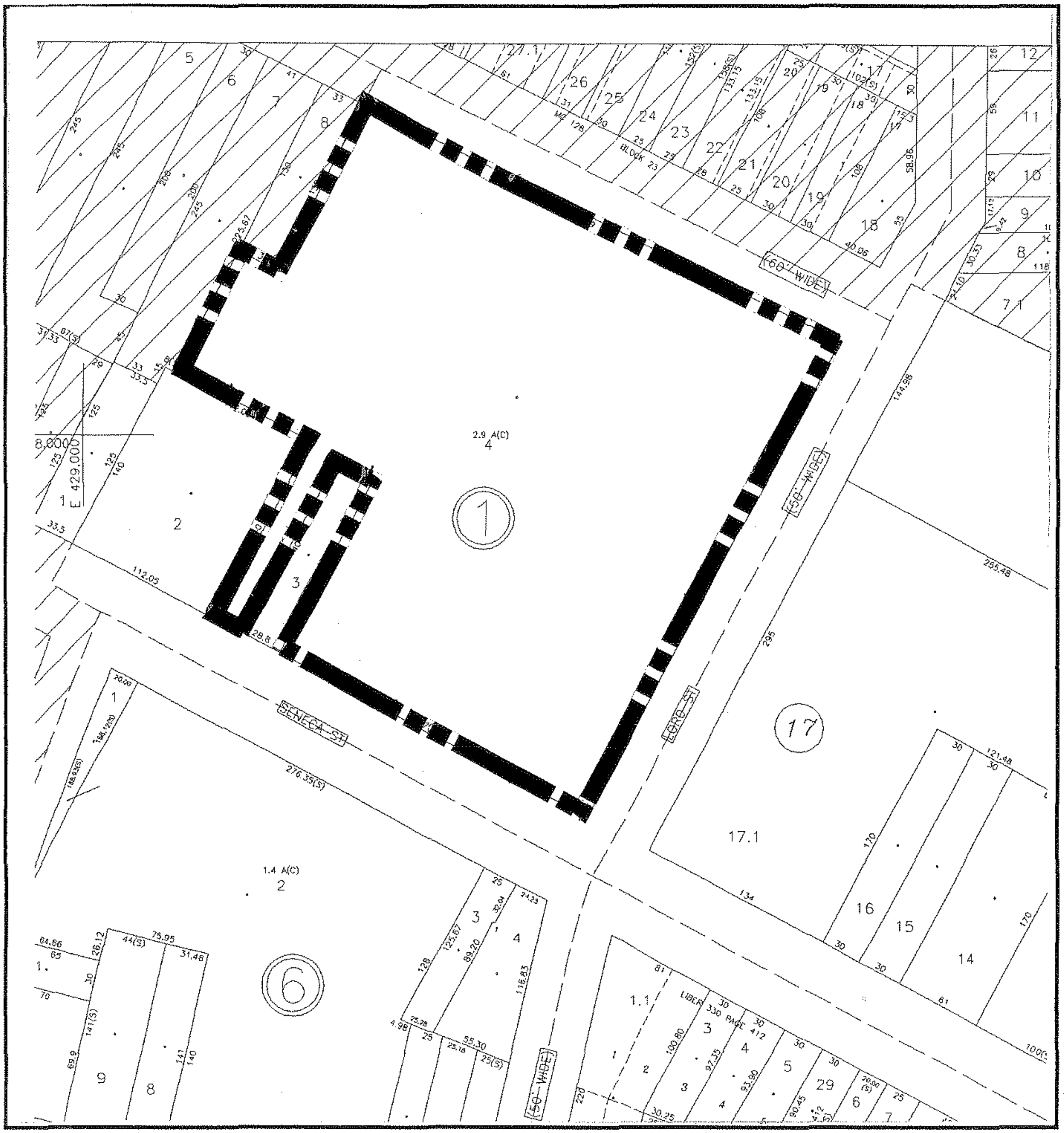
FIGURE 1 SITE LOCATION MAP

AMERIPRIDE SERVICES, INC.

CITY OF BUFFALO
ERIE COUNTY, NY

SCALE: 1:24,000
DRAFTER: ASG
PROJECT No. 04.9627



MAP REFERENCE
City of Buffalo Tax Map

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FIGURE 2 – SITE PLAN MAP

8 LORD STREET

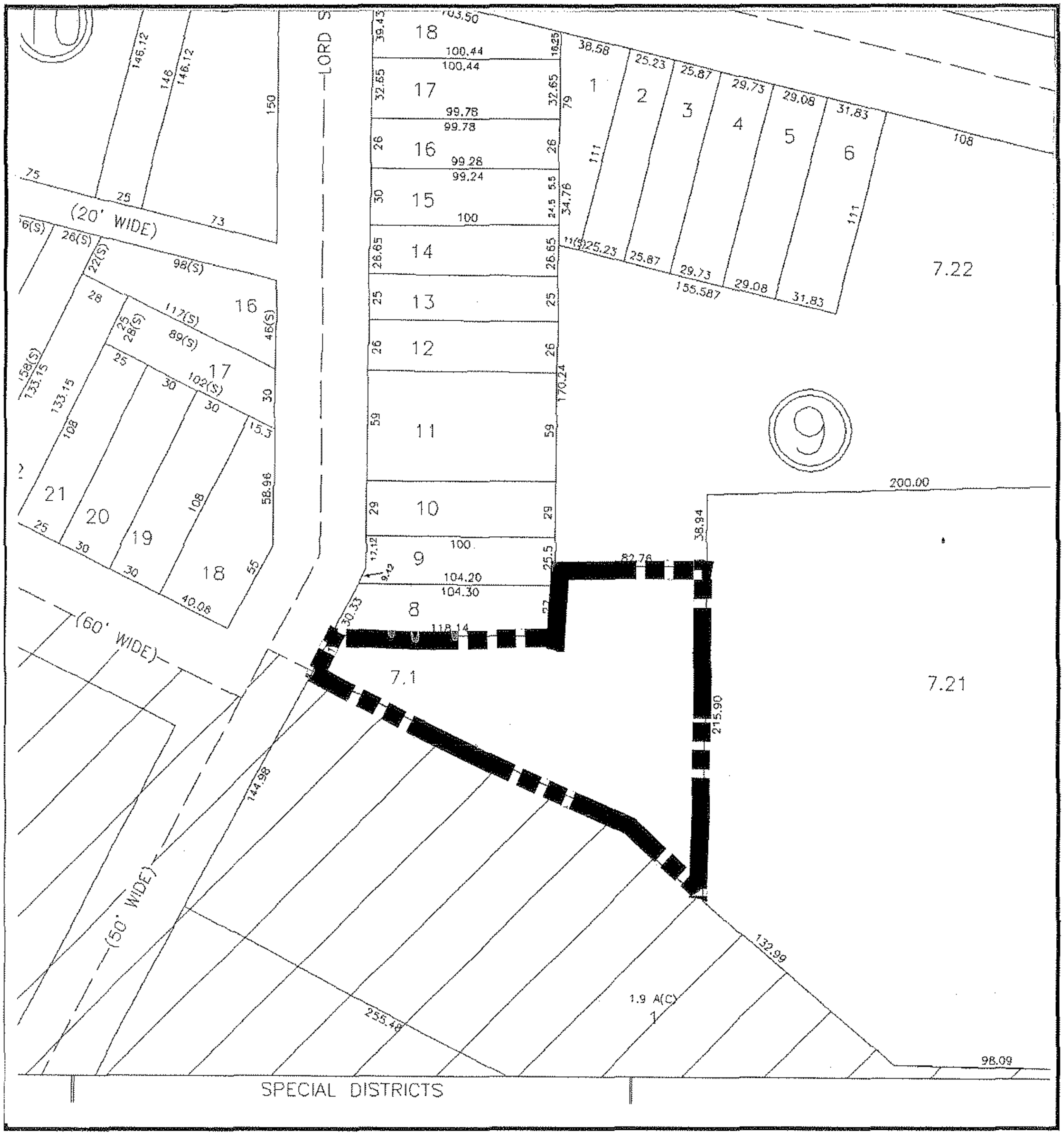
CITY OF BUFFALO	ERIE COUNTY, NY

SCALE: Not to Scale

DRAFTER: ASG

PROJECT No. 04.9629

The locations and features depicted on this map are approximate and do not represent an actual survey.



MAP REFERENCE
City of Buffalo Tax Map

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FIGURE 3 – SITE PLAN MAP

7 LORD STREET

CITY OF BUFFALO | **ERIE COUNTY, NY**

SCALE: Not to Scale
DRAFTER: ASG
PROJECT No. 04.9629

The locations and features depicted on this map are approximate and do not represent an actual survey.

FIGURES 4-13

Sanborn Fire Insurance Maps

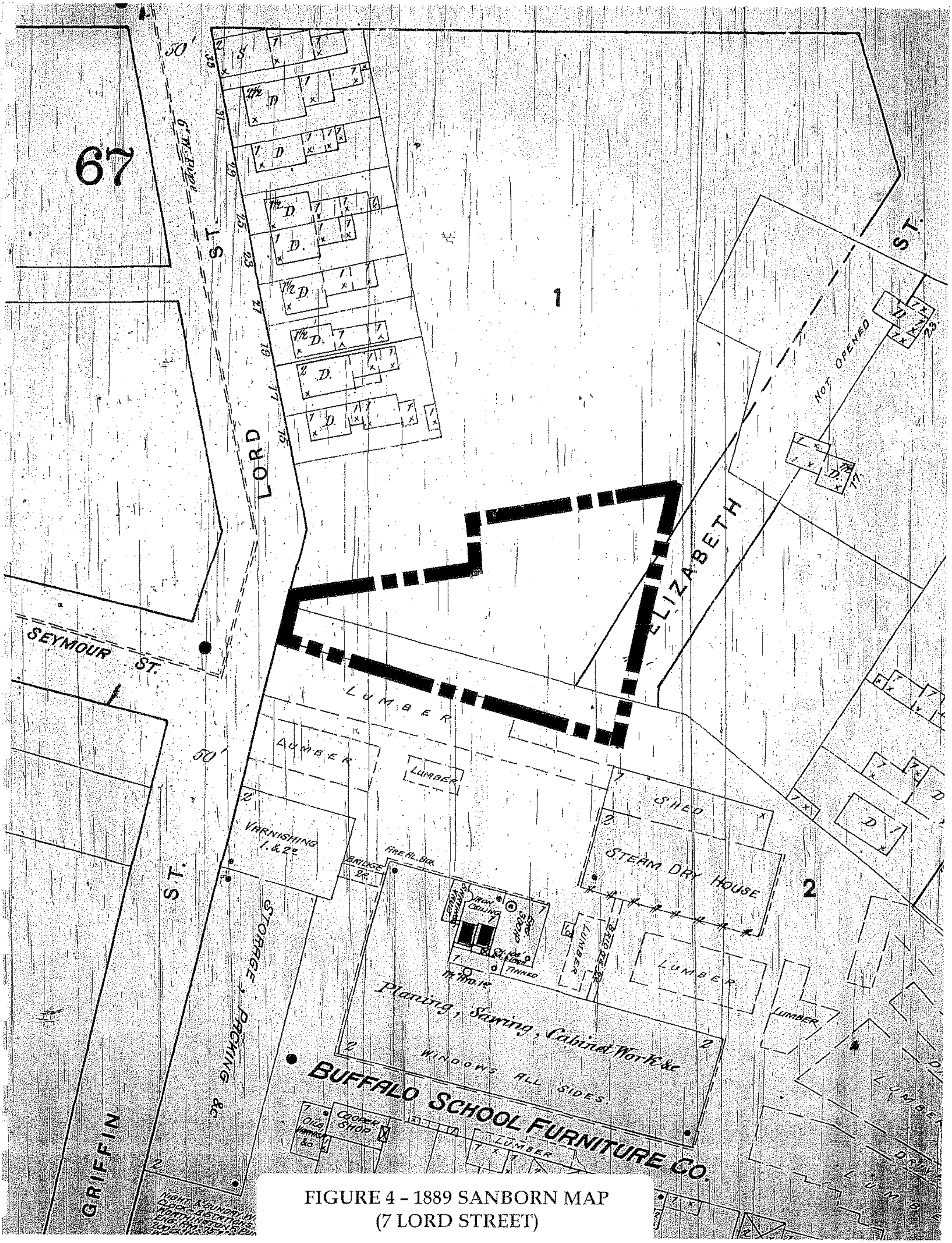

FIGURE 4 – 1889 SANBORN MAP
(7 LORD STREET)

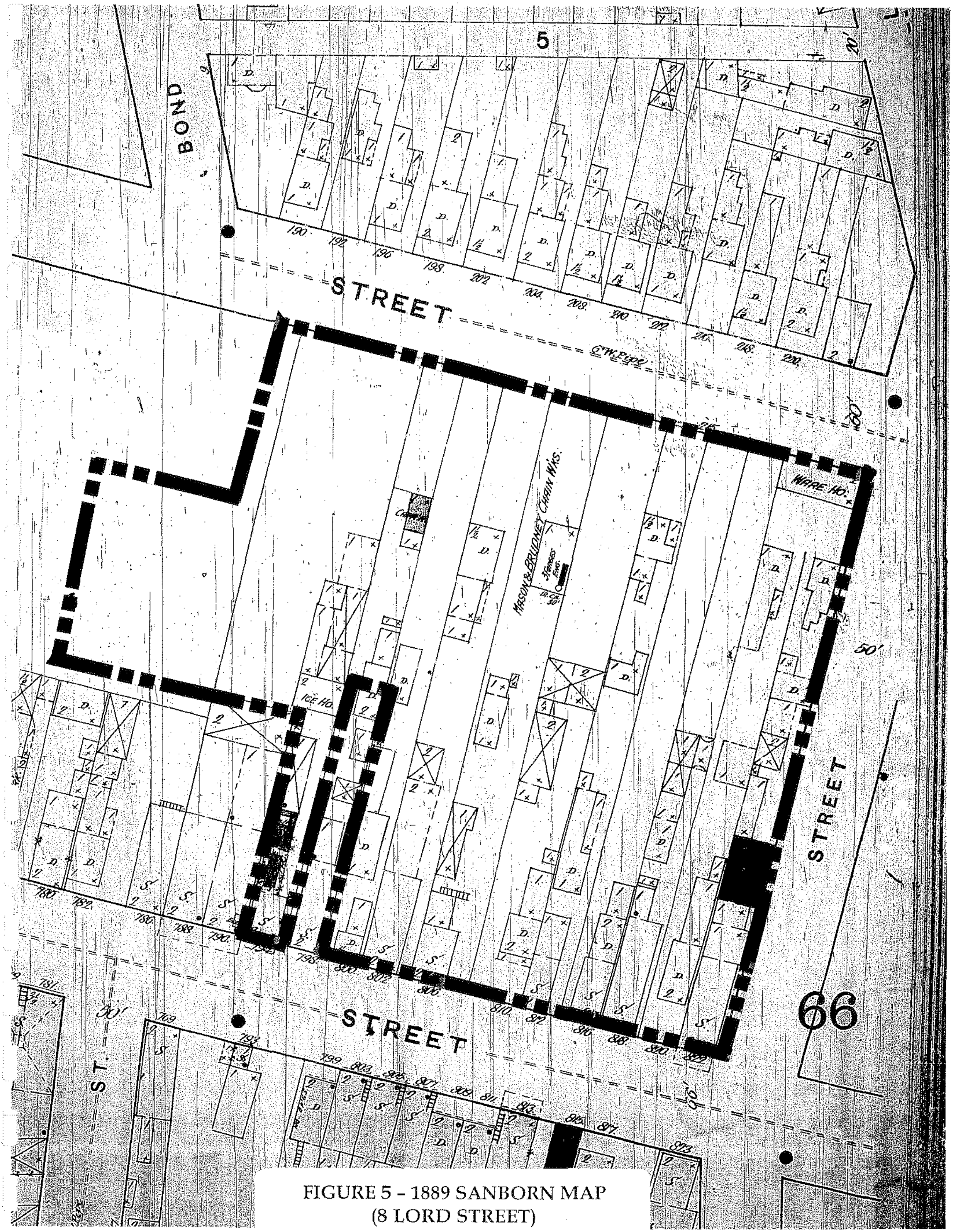

FIGURE 5 – 1889 SANBORN MAP
(8 LORD STREET)

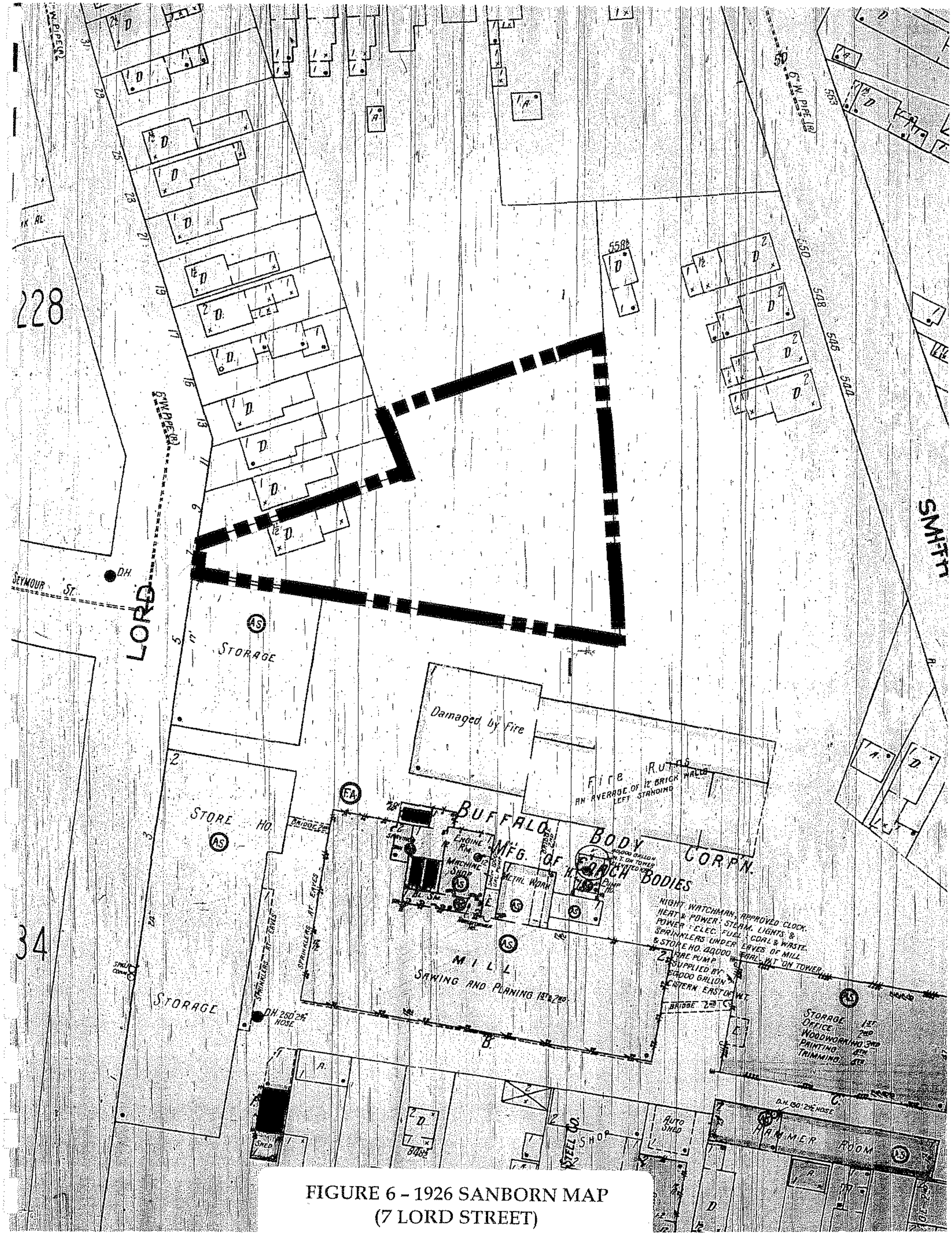

FIGURE 6 – 1926 SANBORN MAP
(7 LORD STREET)

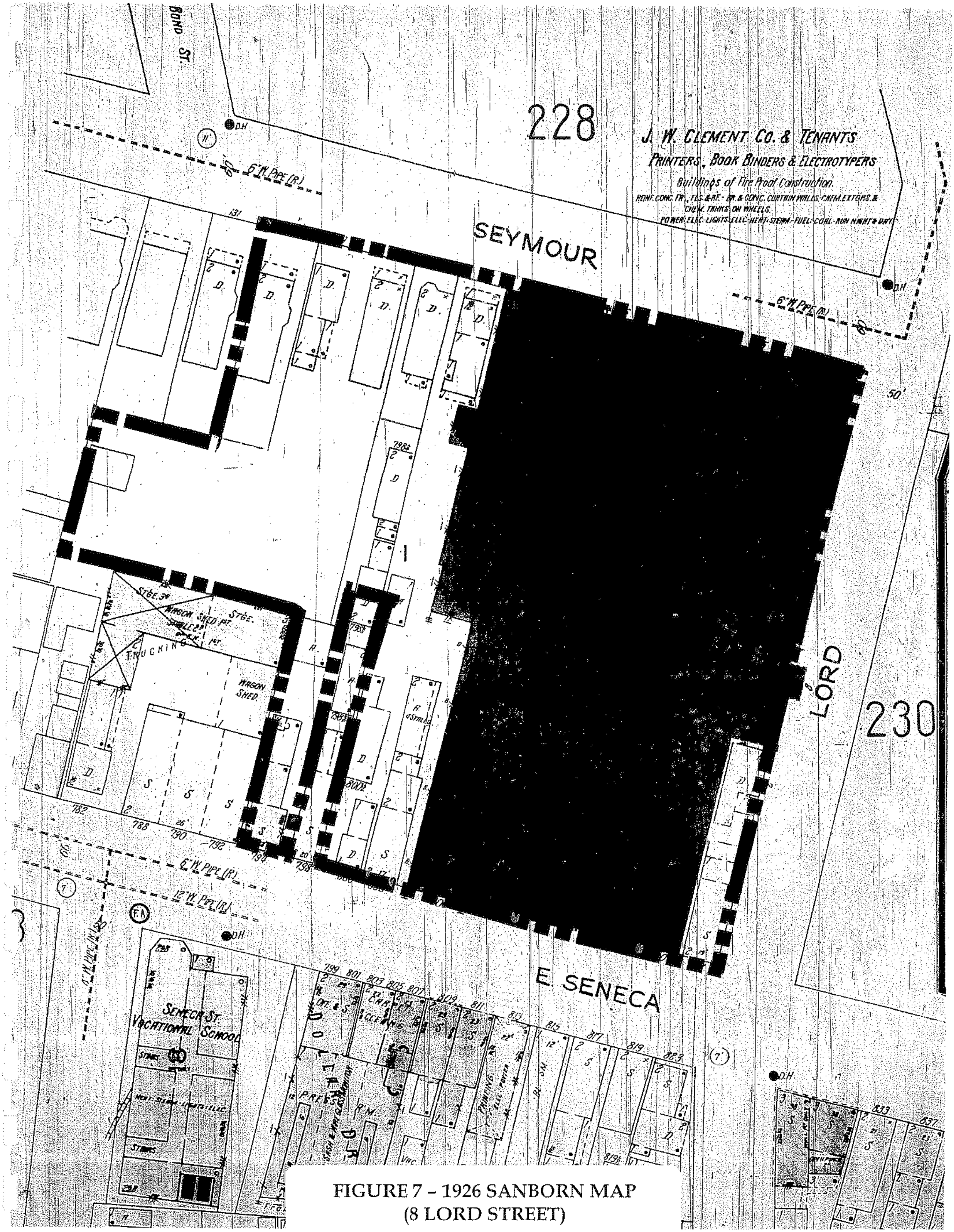

FIGURE 7 – 1926 SANBORN MAP
(8 LORD STREET)

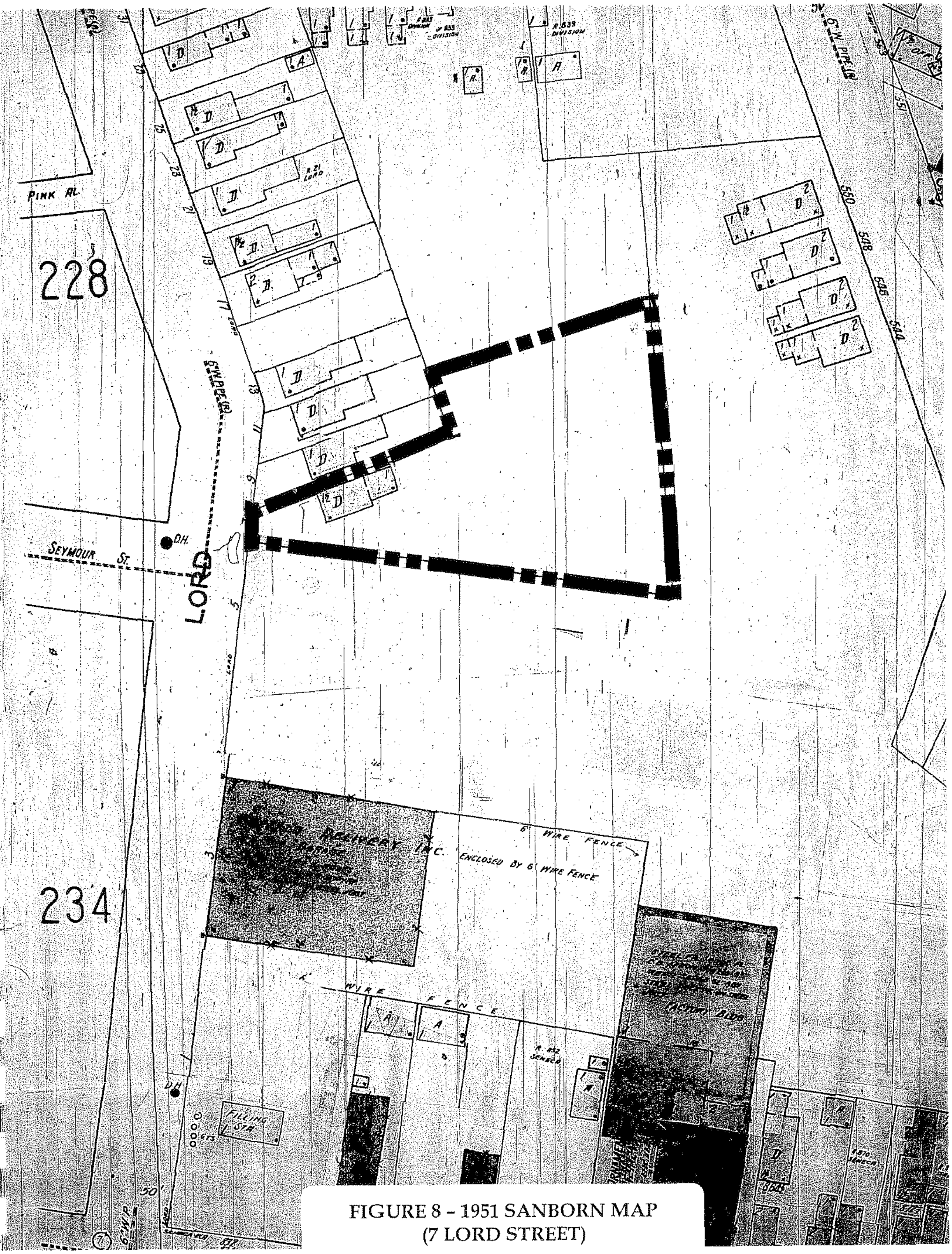

FIGURE 8 – 1951 SANBORN MAP
(7 LORD STREET)

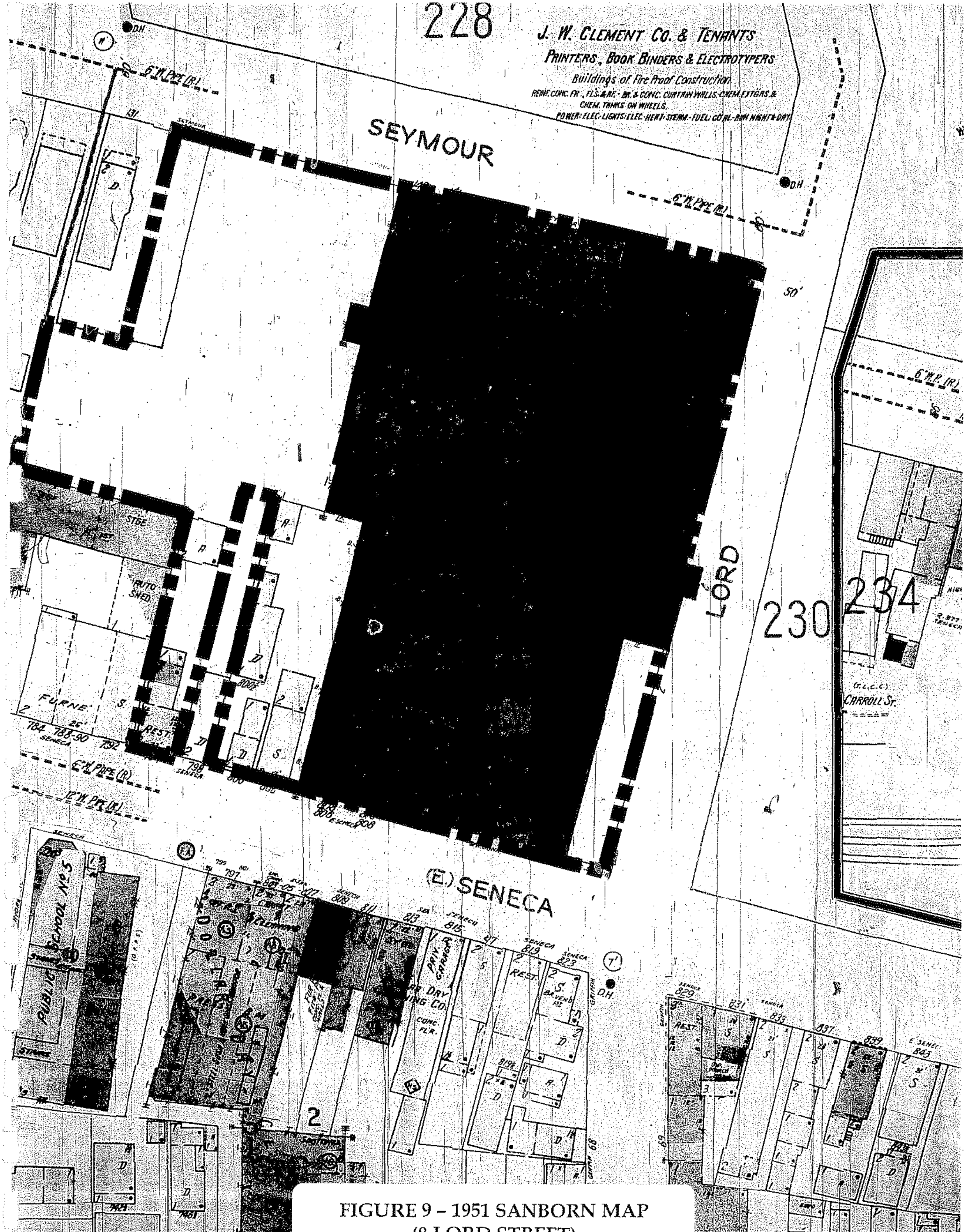

FIGURE 9 – 1951 SANBORN MAP
(8 LORD STREET)

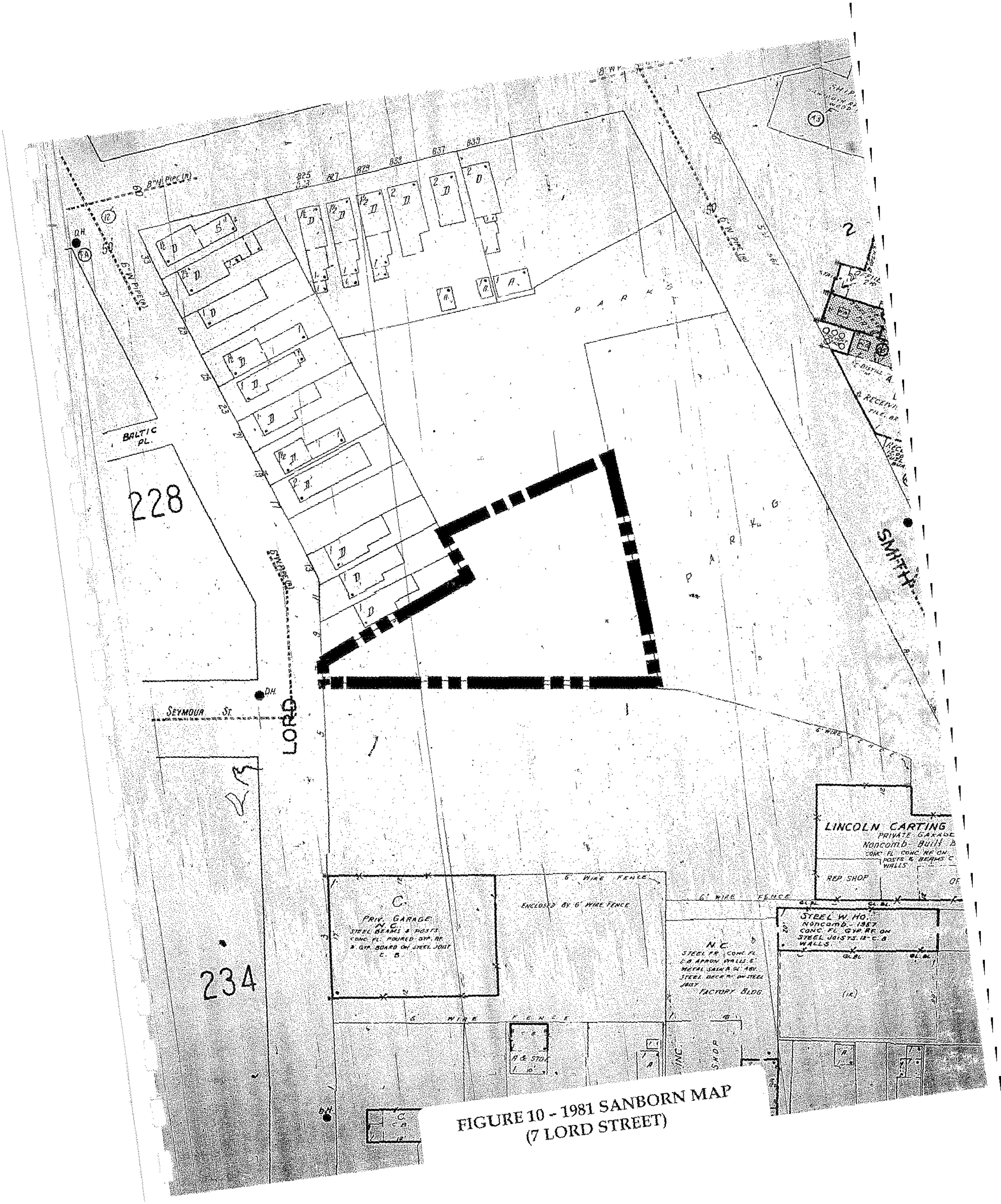

FIGURE 10 - 1981 SANBORN MAP
(7 LORD STREET)

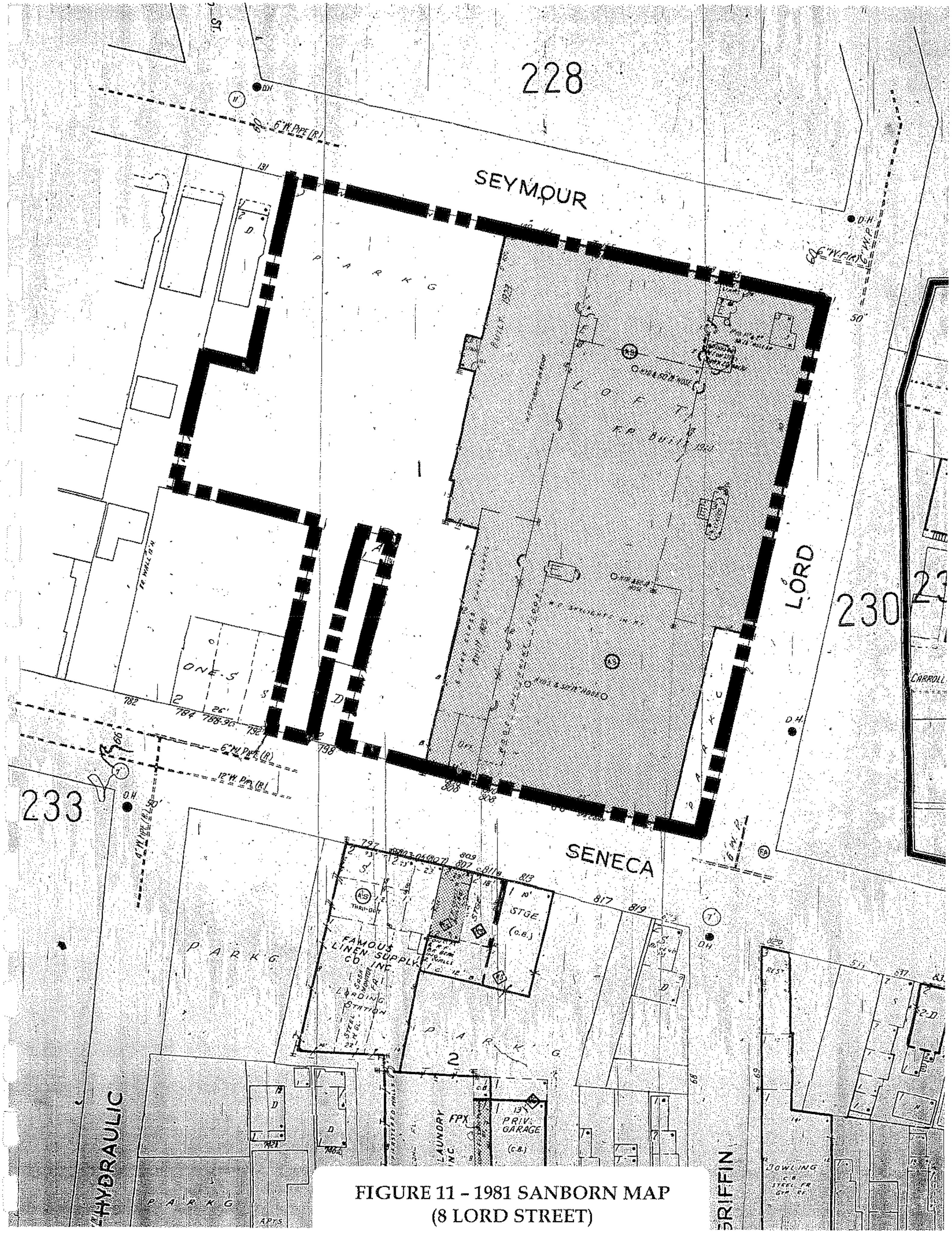

FIGURE 11 – 1981 SANBORN MAP
(8 LORD STREET)

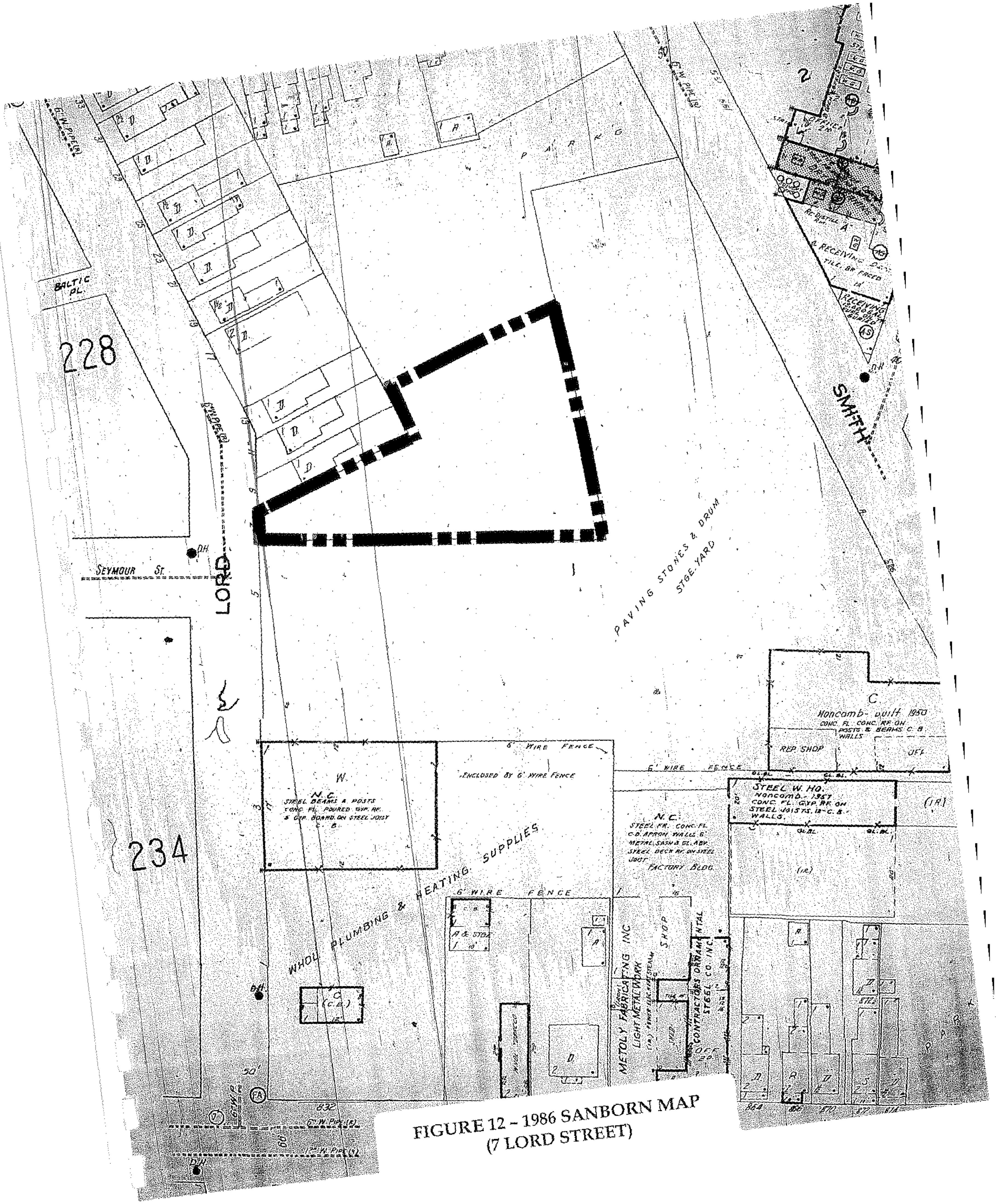

FIGURE 12 – 1986 SANBORN MAP
(7 LORD STREET)

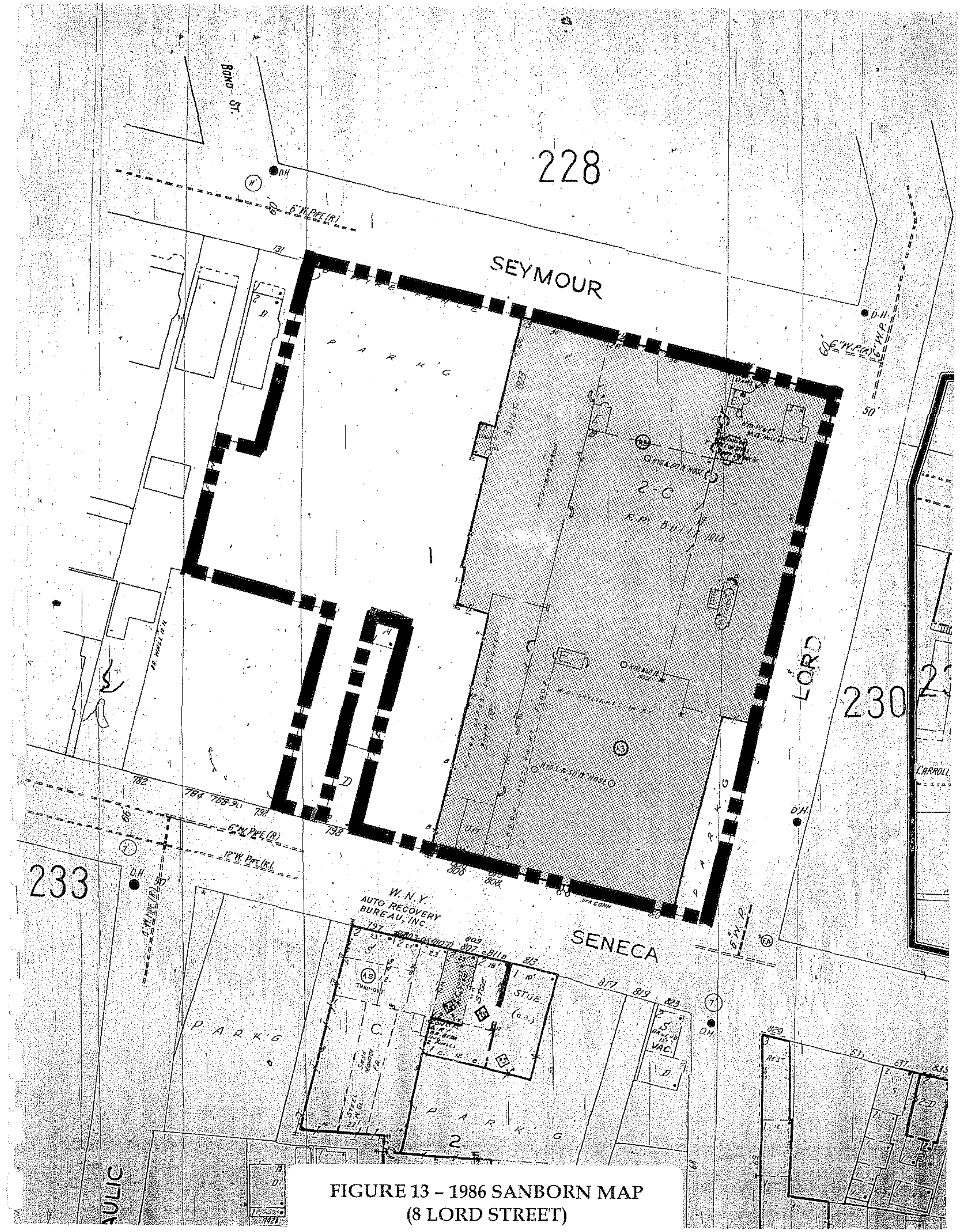

FIGURE 13 – 1986 SANBORN MAP
(8 LORD STREET)

FIGURE 14

Building Layout Plan

APPENDIX B

Site Visit Photographs

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
AMERIPRIDE SERVICES INC. SITE

PHOTO LOG

NUMBER	DESCRIPTION
1.	A view of the south side of the site building from Seneca Street.
2.	A view along the east side of the site building from the corner of Seneca Street and Lord Street.
3.	A view along the west side of the site building from Seneca Street.
4.	A view along the west side of the site building from Seymour Street.
5.	A view along the north side of the site building from the intersection of Seymour Street and Lord Street.
6.	The gas pump shed located to the west of the site building.
7.	A view of the parking area to the east of Lord Street.
8.	A view of the pavement patch in the area to the northwest of the pump shed where the underground gasoline storage tank was reportedly removed.
9.	A view of the concrete pads for the No. 6 oil and diesel underground storage tanks.
10.	A view of the remnants of the waste oil tank.
11.	Manhole cover identified in the sidewalk area to the east of the site building along Lord Street which may be associated with an underground storage tank.
12.	The 275 gallon above ground storage tank identified in the basement of the site building.
13.	The above ground sulfuric acid tanks located in the basement of the site building.
14.	The troughs in the washroom area which discharge to pit No. 1.
15.	A view of a production area on the second floor of the site building.
16.	A view of pit No. 1 located in the basement of the site building.

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
AMERIPRIDE SERVICES INC. SITE

PHOTO LOG
(Continued)

NUMBER	DESCRIPTION
17.	Staining noted on the floor surface in the basement of the site building in the vicinity of the former boiler.
18.	The PCB containing capacitors located on the first floor of the site building.
19.	Drums of waste oil located in the western portion of the site building.
20.	Parts washer station and above ground storage tank of waste antifreeze located within the western portion of the site building.
21.	Pit of unknown use identified in the basement of the site building.
22.	One of the two hydraulic lifts located in the basement of the site building.
23.	Typical sump located in the basement of the site building.
24.	Above ground lime slurry tank located in the basement of the site building.

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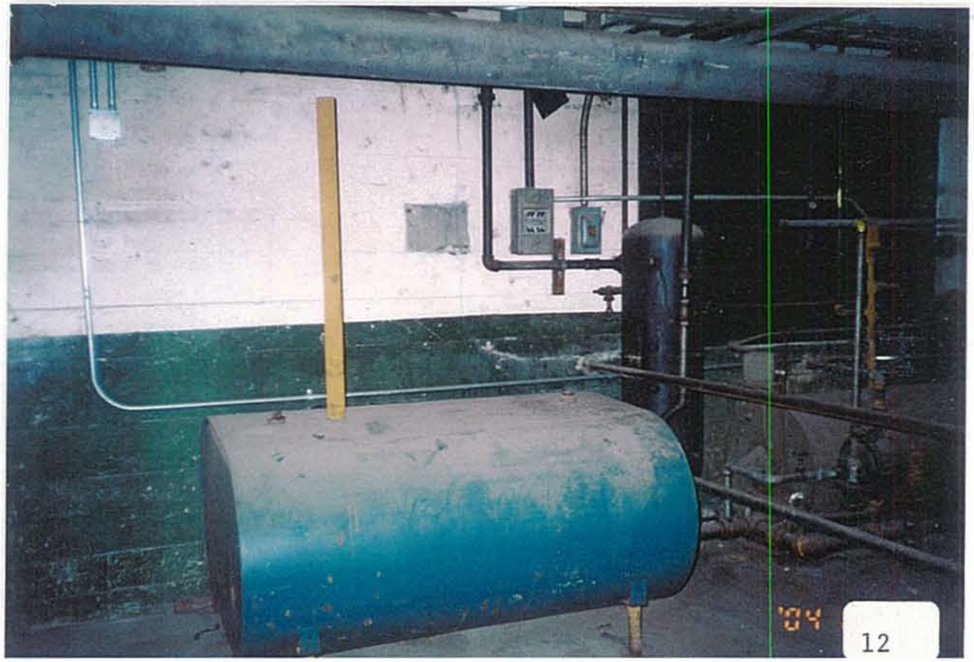

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PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
AMERIPRIDE SERVICES INC. SITE

DOCUMENTS REVIEWED

1. Aerial Photographs of the Buffalo NE Quadrangle for the years: 1968, 1974, 1983 and 1985. Courtesy of the New York State Department of Transportation.

2. EPA's Comprehensive Environmental Response Compensation and Liability Information System, June 23, 2004.

3. EPA's Emergency Response Notification System, December 31, 2003.

4. EPA's National Priority List, June 15, 2004.

5. EPA's Resource Conservation and Recovery Information System, July 12, 2004.

6. EPA's Resource Conservation and Recovery Information System, Listing of Transportation, Storage and Disposal Facilities, July 12, 2004.

7. Fire Insurance Maps from the Sanborn Map Company Archives. Late 19th Century to 1990: New York University Publications of America. Bethesda, Maryland (New York State Library).

8. New York Solid Waste Facilities Listing Report, January 1, 2004.

9. New York State Department of Environmental Conservation Region 9 list of active and closed spill files, August 27, 2004.

10. New York State Department of Environmental Conservation, Division of Hazardous Waste Remediation "Inactive Hazardous Waste Disposal Sites in New York State, " Region 9, July 1, 2004.

11. New York State Department of Environmental Conservation, Region 9 Petroleum Bulk Storage Registration List, January 1, 2002.

12. New York State Department of Transportation Topographic Map of the Buffalo SE Quadrangle, 1989, 7.5 Minute Series.

13. New York State Department of Transportation Topographic Map of the Buffalo NE Quadrangle, 1989, 7.5 Minute Series.

14. Site Plans - City of Buffalo Tax Maps.

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
AMERIPRIDE SERVICES INC. SITE

DOCUMENTS REVIEWED
(Continued)

15. Site Plan - Building Layout Plan provided by AmeriPride Services Inc., preparer unknown.
16. Soil Conservation Service Mapping for Erie County, New York, 1986.
17. Surficial Geologic Map of New York, Hudson Mohawk Sheet, 1987.
18. Title Information Reference - Purchase Agreement dated January 31, 1977.
19. United States Geological Survey Topographic Map of the Buffalo, NE, NY Quadrangle, 1965, 7.5 Minute Series.

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT
AMERIPRIDE SERVICES INC. SITE

LIST OF PEOPLE AND AGENCIES CONTACTED

1. AmeriPride Services Inc., Mr. Kevin Tobin.
2. AmeriPride Services Inc., Mr. Bruce Bednarz.
3. Erie County Department of Health, Mr. John Kociela.
4. City of Buffalo Clerks Office.
5. City of Buffalo Department of Assessment and Taxation, Bruna Michaux..
6. City of Buffalo Fire Department, Ms. Linda Kelly.

Records of Communication

C.T. MALE ASSOCIATES, P.C.

50 Century Hill Drive, P.O. Box 727, Latham, New York 12110-0727
518.786.7400 FAX 518.786.7299 ctmale@ctmale.com

September 20, 2004

Records Access Officer
City of Buffalo Fire Department
1850 William Street
Buffalo, New York 14206

Re: FOIL Request
Phase I Environmental Site Assessment
AmeriPride Services, Inc. (American Linen Supply Company) Site
CTMA Project No.: 04.9627

To Whom It May Concern:

Our office is completing a Phase I Environmental Site Assessment for the above listed site which is located at 7 and 8 Lord Street and 822 Seneca Street in the City of Buffalo. The site is referenced with tax map numbers 122.27-1-4 and 111.83-9-7.1. Enclosed please find a site location map.

Pursuant to the Freedom of Information Law (FOIL), please indicate the following:

- Responses made to the site for major fires;
- Responses made to the site or the surrounding properties for spills;
- Records concerning hazardous materials at the site and
- Records of above ground or underground storage tanks.

If you have any questions or comments regarding this request, or need additional information, please feel free to contact me at (518) 786-7551.

Our office will gladly reimburse for copying and postal expenses. Please contact me before copies are made if the fee exceeds $10.00. Your assistance is greatly appreciated.

Sincerely,
C.T. MALE ASSOCIATES, P.C.

Aimee Gates

Aimee Gates
Environmental Scientist

CITY OF BUFFALO
BUREAU OF FIRE PREVENTION
65 Niagara Square, Room 321 City Hall
Buffalo, New York 14202
(716) 851-5707 ◆ FAX (716) 851-4680

Department of Fire
195 Court Street
Buffalo, New York 14202

Chief Robert J. Stasio
Bureau of Fire Prevention

FAX TRANSMITTAL

TO: Aimee Gates
C.T. Male Associates P.C.

NUMBER OF RECEIVING TELECOPIER: (518) 786-7299
Area Code Fax Number

FROM: FIRE PREVENTION BUREAU; FAX Number (716) 851-4680

Linda Kelly

DATE: 9/29/04 TIME:

MESSAGE: Re: 7 + 8 Lord St
822 Seneca Street (Attached)

Fee is $25.00
Check payable to "City of Buffalo"

NUMBER OF PAGES (INCLUDING TRANSMISSION SHEET) 2

1460.

BUREAU OF FIRE PREVENTION - FIRE RECORD

F 33
~~REV 3-1~~

Batt.Dist 3 | Time 1220 | Day of Week Wed | Month Aug | Day 25 | Year 76

Address 8 Lord | Room or Apt. No. | Occupant

Owner Semrco Sales Corp | Address of Owner 8 Lord

Transmission of Alarm 3-768 | Type of Situation Found Fire

Type of Action Taken Ext | Eng. Co. (1st-In Dist.) 32 | Platoon 3 | No. Alarms 1 | Mutual Aid YES NO

Property Classification Dumpster | Complex | Area of Origin Interior | Const. Metal | Size 15 12 X 18

Height or Floor | If Mobile Year | Make | Model | Licens

Number Injured Civilians Fire Service | Number Killed Civilians Fire Service

NAME AND ADDRESS OF INJURED | NAME AND ADDRESS OF KILLED

STATEMENT OF INJURY Example: Smoking in bed, playing with matches, traffic accident, unknown cause

Number Fire Service Personnel at Scene	Number Eng. Cos.	Number Truck Cos.	Number Other Vehicles
Officers 5 Men 12	3	1	F-15 B-43

Equipment Involved in Ignition UNK	Form of Heat Ignition UNK
Material Ignited WOOD PAPER	Form of Material Ignited R.U.
Act or Omission (cause of fire) See B.F.I. Report (Under UNDER. INVEST. by Police (over)	Extent of Flame Damage CONFINED TO DUMPSTER

Extent of Other Damage	Estimated Property Loss	Bldg.	Contents
NONE	100 00	$100 00	0

Method of Extinguishment	Number Streams ¾-1"	1½"	2½"	Feet of Ladders
WATER	1	1		

Ins. Carried Bldg.	Ins. Carried Contents	Officer in Charge (Name, Position)
		CHIEF KORSDORPHER

Ins. Paid Bldg.	Ins. Paid Contents	Member Making Report (If Different from Above)
		Black

Additional Information

07-2348

BUREAU OF FIRE PREVENTION - FIRE RECORD

F 33
REV. 3-1-70

Batt.Dist 3rd | Time 0112 | Day of Week WEDNESDAY | Month JULY | Day 28 | Year 1982

Address 8 LORD

Room or Apt. No.

Occupant COVERALL SERVICE + SUPPLY

Owner SAME AS OCCUPANT

Address of Owner SAME

Transmission of Alarm 6-848

Type of Situation Found WATER FLOW ALARM + SMOKE +

Type of Action Taken FORCE ENTER + EXT.

Eng. Co. (1st-In Dist.) 32

Platoon 3rd

No. Alarms P.S.

Mutual Aid YES___ NO ✓

Property Classification LAUNDRY + CLEANING

Complex

Area of Origin STORAGE BIN 1ST FLR

Const. BRICK

Size 2 STRY

Height or Floor

If Mobile Year

Make

Model

License N

Number Injured

Civilians Fire Service

Number Killed

Civilians Fire Service

NAME AND ADDRESS OF INJURED

NAME AND ADDRESS OF KILLED

STATEMENT OF INJURY Example: Smoking in bed, playing with matches, traffic accident, unknown cause

Number Fire Service Personnel at Scene
Officers 4 Men 10

Number Eng. Cos. 32-3

Number Truck Cos. 5

Number Other Vehicles 43

Equipment Involved in Ignition

Form of Heat Ignition

Material Ignited

Form of Material Ignited

Act or Omission (cause of fire) OIL SOAKED RAGS SPONTANEOUS COMBUSTION

Extent of Flame Damage CONFINED TO BIN (WOOD 8X8X6)

Extent of Other Damage CONFINED to STORAGE BIN + CONTENTS

Estimated Property Loss 600.00

Bldg. 100.

Contents 500.00

Method of Extinguishment WATER

Number Streams ¾-1" 1½" 3/4 ① 2½"

Feet of Ladders 18'

Ins. Carried Bldg.

Ins. Carried Contents

Officer in Charge (Name, Position) B-43- KURZDORFER

Ins. Paid Bldg.

Ins. Paid Contents

Member Making Report (If Different from Above) CHAD

Additional Information

11-1865

BUREAU OF FIRE PREVENTION - FIRE RECORD

F 33
REV. 3-1-70

Batt. Dist 3
Time 0242
Day of Week WEDENDAY
Month NOV
Day 30
Year 1983

Address 8 LORD
Room or Apt. No.
Occupant

Owner AMERICAN LINEN Supply - MANAGER, RICHARD TEAI
Address of Owner SAME 856-2727

Transmission of Alarm 6-348
Type of Situation Found WATER ON LOADING DOCK from SPRINKLER-FI

Type of Action Taken LAYED IN 1¾ TO BACK UP
Eng. Co. (1st-In Dist.) 32
Platoon 4
No. Alarms 1
Mutual Aid YES___ NO___

Property Classification BUSINESS
Complex 1-STORY
Area of Origin LINEN BINS
Const. BRICK
Size

Height or Floor
If Mobile Year
Make
Model
License

Number Injured
Civilians
Fire Service

Number Killed
Civilians
Fire Service

NAME AND ADDRESS OF INJURED

NAME AND ADDRESS OF KILLED

STATEMENT OF INJURY Example: Smoking in bed, playing with matches, traffic accident, unknown cause

Number Fire Service Personnel at Scene
Officers 4 Men 9

Number Eng. Cos.
2

Number Truck Cos.
1

Number Other Vehicles

Equipment Involved in Ignition

Form of Heat Ignition

Material Ignited

Form of Material Ignited

Act or Omission (cause of fire) Undetermined
UNDER INV SEE BFI

Extent of Flame Damage
Conf

Extent of Other Damage
Conf

Estimated Property Loss
#1100

Bldg. 100
#1000

Contents 10
#100

Method of Extinguishment
WATER

Number Streams
¾-1" 1½" 2½"
Sprinklers.

Feet of Ladders

Ins.Carried Bldg.

Ins.Carried Contents

Officer in Charge (Name, Position)
VAN DOOSER B43

Ins.Paid Bldg.

Ins.Paid Contents

Member Making Report (If Different from Above)
ROBERTSON

Additional Information

12 - 1663

BUREAU OF FIRE PREVENTION - FIRE RECORD

F 33
REV. 3-1-70

Batt. Dist 43
Time 1133
Day of Week SATURDAY
Month DEC
Day 24
Year 83

Address 8 LORD
Room or Apt. No.
Occupant COVERALL CO.

Owner COVERALL CO
Address of Owner SAME

Transmission of Alarm 6 - 348
Type of Situation Found CLOTHING FIRE

Type of Action Taken EXT
Eng. Co. (1st-In Dist.)
Platoon
No. Alarms
Mutual Aid YES____ NO____

Property Classification LAUNDRY
Complex
Area of Origin DRYER RM
Const. BR
Size

Height or Floor 1
If Mobile Year
Make
Model
License N

Number Injured Civilians Fire Service
Number Killed Civilians Fire Service

NAME AND ADDRESS OF INJURED
01- FF. J. LYNCH - E32

NAME AND ADDRESS OF KILLED

STATEMENT OF INJURY Example: Smoking in bed, playing with matches, traffic accident, unknown cause
01 INJ. FINGER

Number Fire Service Personnel at Scene Officers Men	Number Eng. Cos. 32 - 3	Number Truck Cos. 5	Number Other Vehicles 43

Equipment Involved in Ignition	Form of Heat Ignition
Material Ignited CLOTHING	Form of Material Ignited SOLID
Act or Omission (cause of fire) UNDET	Extent of Flame Damage CONF

Extent of Other Damage NONE	Estimated Property Loss	Bldg. 0	Contents 50

Method of Extinguishment H2O	Number Streams 3/4-1" 1½" 13/4 2½" 1	Feet of Ladders —

Ins.Carried Bldg.	Ins.Carried Contents	Officer in Charge (Name, Position) BULGER
Ins.Paid Bldg.	Ins.Paid Contents	Member Making Report (If Different from Above) LANE

Additional Information

07 - 0699

BUREAU OF FIRE PREVENTION - FIRE RECORD

F 33
REV. 3-1-70

Batt. Dist 3rd
Time 2229
Day of Week Thur.
Month July
Day 5
Year 1984

Address 8 Lord
Room or Apt. No.
Occupant / OWNER "American Linen Supply Co."

Owner - SEE OCC. Joseph Raucci (Manager)
Address of Owner

Transmission of Alarm 5 - 326
Type of Situation Found "Working Fire"

Type of Action Taken Extinguish
Eng. Co. (1st-In Dist.) 32
Platoon 1st
No. Alarms 1
Mutual Aid YES___ NO___

Property Classification Commercial
~~Complex~~ 1-STORY Laundry
Area of Origin OUTSIDE Loading Dock
Const. MASONRY Conc. Block
Size 150 x

Height or Floor First of One
~~If Mobile~~ Year
Make
Model
License

Number Injured
Civilians
Fire Service

Number Killed
Civilians
Fire Service

NAME AND ADDRESS OF INJURED

NAME AND ADDRESS OF KILLED

STATEMENT OF INJURY Example: Smoking in bed, playing with matches, traffic accident, unknown cause

Number Fire Service Personnel at Scene
Officers Men

Number Eng. Cos.: 32 - 35 - 3

Number Truck Cos.: 5 - 11 R1

Number Other Vehicles: B43 - B56 - 1

Equipment Involved in Ignition

Form of Heat Ignition

Material Ignited

SEE BFI

Form of Material Ignited

Act or Omission (cause of fire): Criminal Mischief
Under Investigation

Extent of Flame Damage: Exterior (Loading Dock)

Extent of Other Damage

Estimated Property Loss: $5000

Bldg.: $5000

Contents: None

Method of Extinguishment

Number Streams.
¾-1" 1½" 2½" 1-3/4 (2)

Feet of Ladders

Ins.Carried Bldg.

Ins.Carried Contents

Officer in Charge (Name, Position): 3rd Battalion Chief Leon Rowers

Ins.Paid Bldg.

Ins.Paid Contents

Member Making Report (If Different from Above): Rieman

Additional Information

BUFFALO, NEW YORK
FIRE DEPARTMENT

01-1524

BUREAU OF FIRE PREVENTION - FIRE RECORD

F 33
REV. 3-1-70

Batt. Dist 43
Time 0114
Day of Week Friday
Month January
Day 23
Year 1987

Address 8 Lord
Room or Apt. No. Loading Dock
Occupant Coverall Supply Company

Owner
Address of Owner

Transmission of Alarm 6-768
Type of Situation Found Loading Dock Fire

Type of Action Taken Extinguish
Eng. Co. (1st-In Dist.) E32
Platoon 3
No. Alarms P.S.
Mutual Aid YES__ NO X

Property Classification Commercial
Complex
Area of Origin Loading Dock
Const.
Size

Height or Floor
If Mobile Year
Make
Model
License No

Number Injured Civilians Fire Service
Number Killed Civilians Fire Service

NAME AND ADDRESS OF INJURED
NAME AND ADDRESS OF KILLED

STATEMENT OF INJURY Example: Smoking in bed, playing with matches, traffic accident, unknown cause

Number Fire Service Personnel at Scene Officers 4 Men 9	Number Eng. Cos. 2	Number Truck Cos. 1	Number Other Vehicles 2

Equipment Involved in Ignition	Form of Heat Ignition
Material Ignited Rags & Wood	Form of Material Ignited
Act or Omission (cause of fire) Spontaneous Combustion	Extent of Flame Damage

Extent of Other Damage	Estimated Property Loss $500	Bldg. $500	Contents -0-

Method of Extinguishment H_2O	Number Streams ¾-1" 1½" 2½" (1) 1-3/4"	Feet of Ladders

Ins. Carried Bldg.	Ins. Carried Contents	Officer in Charge (Name, Position) B.C. Kurzdorfer
Ins. Paid Bldg.	Ins. Paid Contents	Member Making Report (If Different from Above)

Additional Information

SMOKE DETECTORS INSTALLED?

YES __________ NO __________

DID THEY ACTIVATE?

YES __________ NO __________

BUFFALO, NEW YORK
FIRE DEPARTMENT

BUREAU OF FIRE PREVENTION - FIRE RECORD

10-0485

F 33
REV. 3-1-70

Batt. Dist 41	Time 2159	Day of Week Tuesday	Month October	Day 6	Year 1987

Address 8 Lord	Room or Apt. No.	Occupant Coverall Supply

Owner American Linen	Address of Owner Same
Transmission of Alarm 6-348	Type of Situation Found Smoke

Type of Action Taken Extinguish	Eng. Co. (1st-In Dist.) E-32	Platoon 3	No. Alarms P.S.	Mutual Aid YES____ NO____

Property Classification Factory 2	Complex	Area of Origin Clothes bin	Const. Brick	Size

Height or Floor	If Mobile Year	Make	Model	License N

Number Injured Civilians Fire Service	Number Killed Civilians Fire Service
NAME AND ADDRESS OF INJURED	NAME AND ADDRESS OF KILLED

STATEMENT OF INJURY Example: Smoking in bed, playing with matches, traffic accident, unknown cause

Number Fire Service Personnel at Scene Officers 4 Men 9	Number Eng. Cos. 2	Number Truck Cos. 1	Number Other Vehicles 1

Equipment Involved in Ignition Cigarette	Form of Heat Ignition Hot ash
Material Ignited Cloth	Form of Material Ignited
Act or Omission (cause of fire) Careless smoking - spontaneous ignition	Extent of Flame Damage

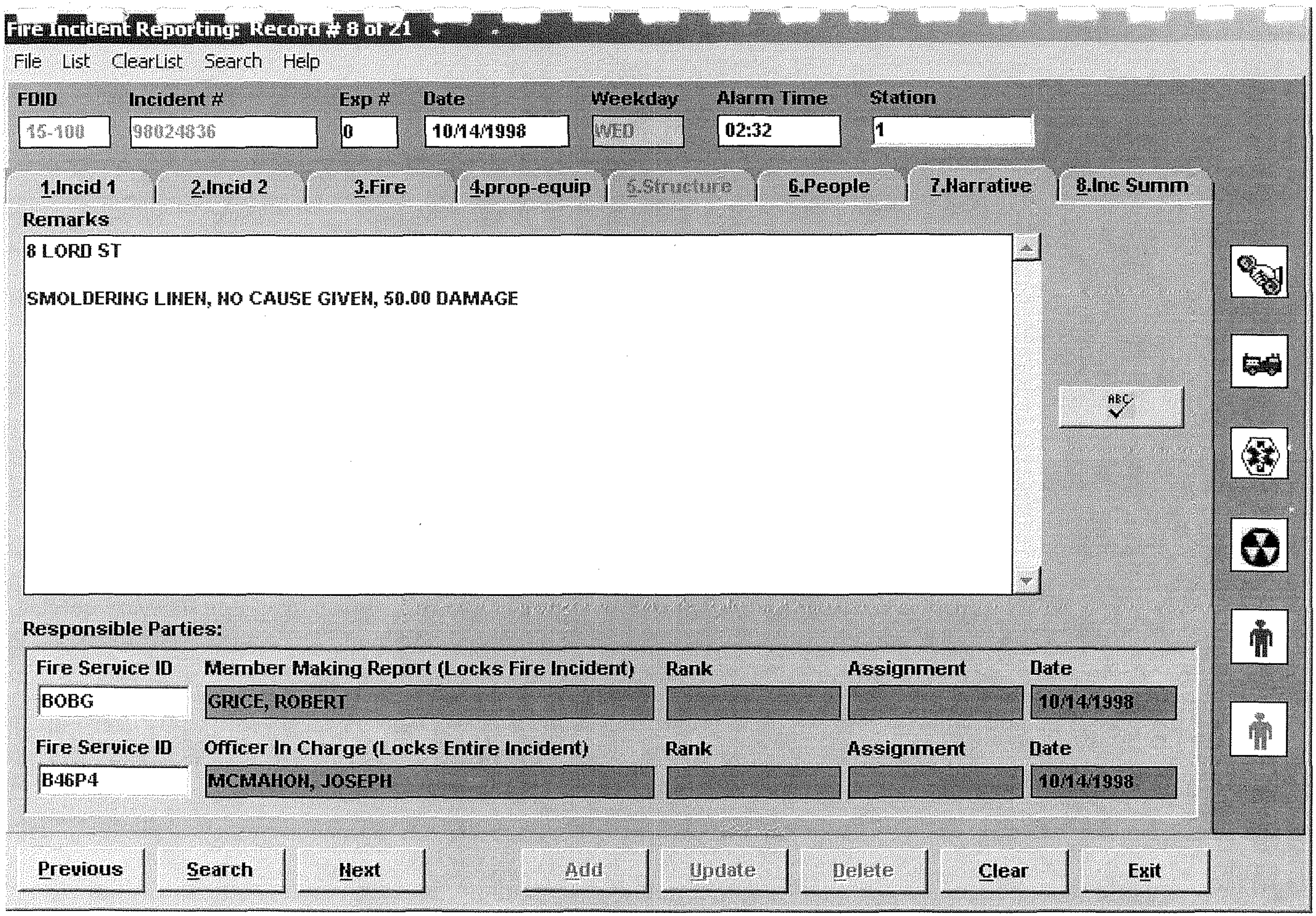
Extent of Other Damage	Estimated Property Loss $5000	Bldg. -0-	Contents $5000

Method of Extinguishment 2 H O	Number Streams ¾-1" 1½" 2½" (1) 1-3/4	Feet of Ladders

Ins. Carried Bldg.	Ins. Carried Contents	Officer in Charge (Name, Position) B.C. KEANE
Ins. Paid Bldg.	Ins. Paid Contents	Member Making Report (If Different from Above) Palmer

Additional Information

SMOKE DETECTORS INSTALLED?
YES ________ NO ________
DID THEY ACTIVATE?
YES ________ NO ________



FDID	Incident #	Exp #	Date	Weekday	Alarm Time	Station
15-100	98024836	0	10/14/1998	WED	02:32	1

Remarks

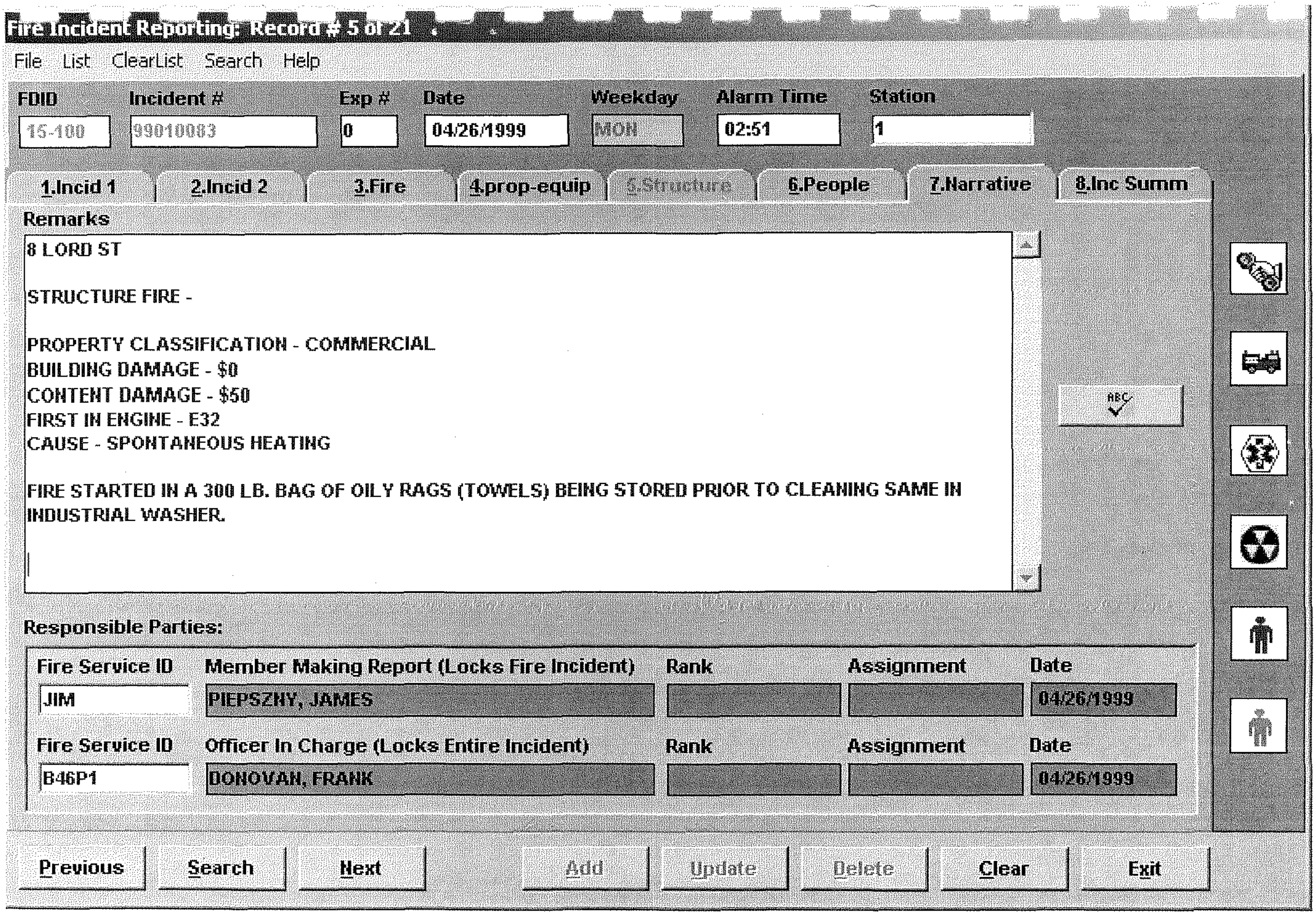
8 LORD ST

SMOLDERING LINEN, NO CAUSE GIVEN, 50.00 DAMAGE

Responsible Parties:

Fire Service ID	Member Making Report (Locks Fire Incident)	Rank	Assignment	Date
BOBG	GRICE, ROBERT			10/14/1998

Fire Service ID	Officer In Charge (Locks Entire Incident)	Rank	Assignment	Date
B46P4	MCMAHON, JOSEPH			10/14/1998



FDID 15-100
Incident # 99010083
Exp # 0
Date 04/26/1999
Weekday MON
Alarm Time 02:51
Station 1

Remarks

8 LORD ST

STRUCTURE FIRE -

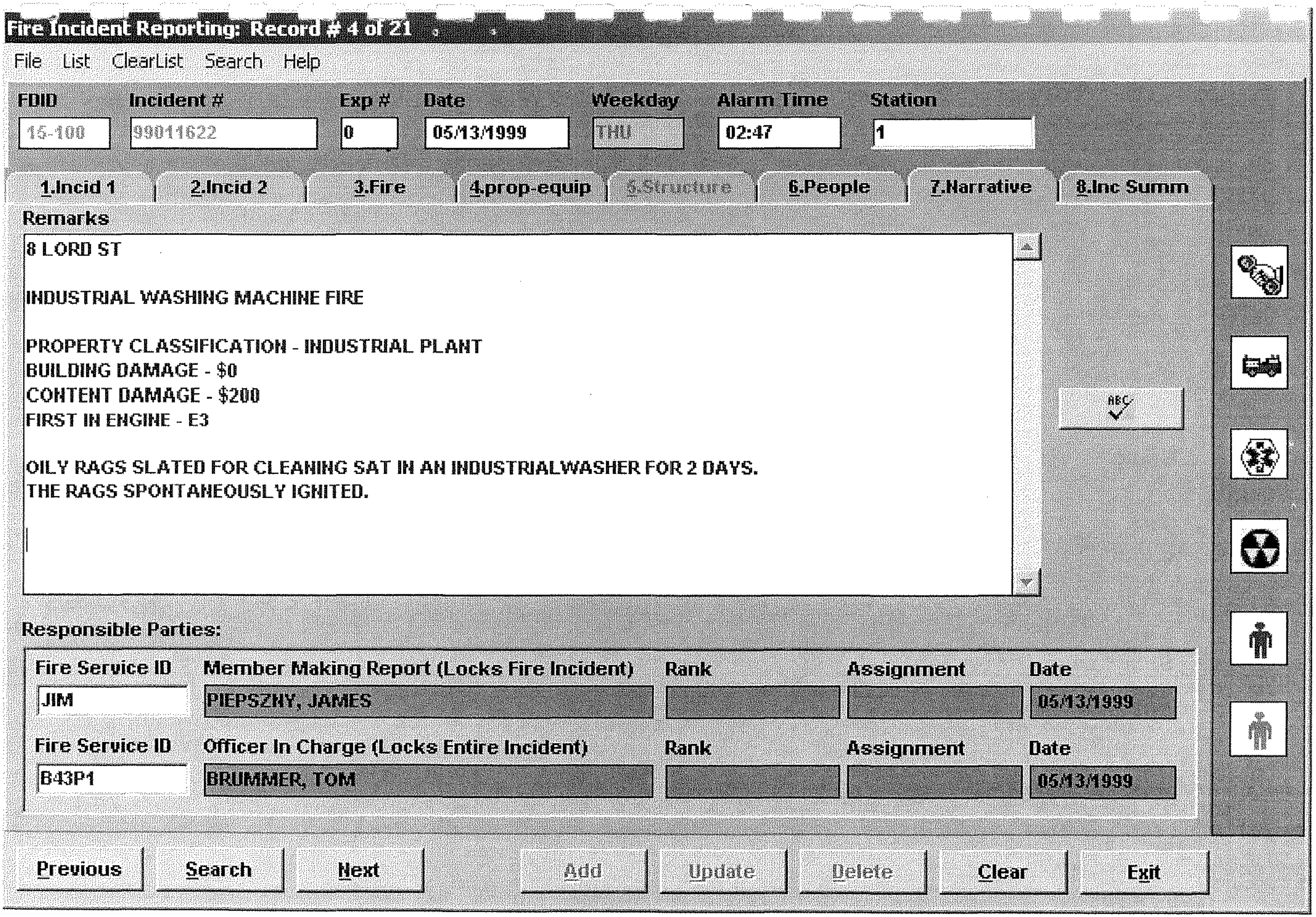
PROPERTY CLASSIFICATION - COMMERCIAL
BUILDING DAMAGE - $0
CONTENT DAMAGE - $50
FIRST IN ENGINE - E32
CAUSE - SPONTANEOUS HEATING

FIRE STARTED IN A 300 LB. BAG OF OILY RAGS (TOWELS) BEING STORED PRIOR TO CLEANING SAME IN INDUSTRIAL WASHER.

Responsible Parties:

Fire Service ID	Member Making Report (Locks Fire Incident)	Rank	Assignment	Date
JIM	PIEPSZNY, JAMES			04/26/1999

Fire Service ID	Officer In Charge (Locks Entire Incident)	Rank	Assignment	Date
B46P1	DONOVAN, FRANK			04/26/1999



FDID	Incident #	Exp #	Date	Weekday	Alarm Time	Station
15-100	99011622	0	05/13/1999	THU	02:47	1

Remarks

8 LORD ST

INDUSTRIAL WASHING MACHINE FIRE

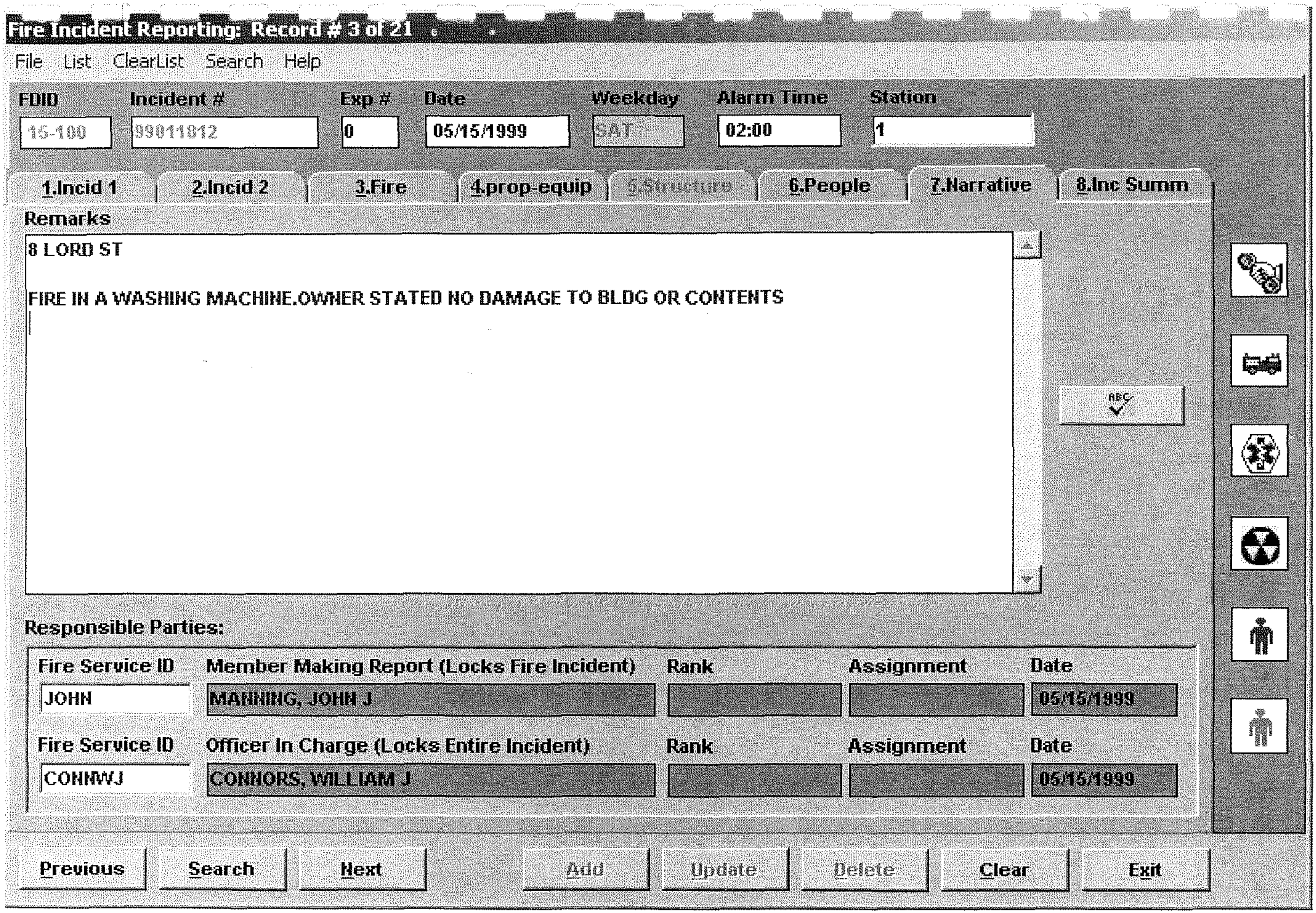
PROPERTY CLASSIFICATION - INDUSTRIAL PLANT
BUILDING DAMAGE - $0
CONTENT DAMAGE - $200
FIRST IN ENGINE - E3

OILY RAGS SLATED FOR CLEANING SAT IN AN INDUSTRIALWASHER FOR 2 DAYS.
THE RAGS SPONTANEOUSLY IGNITED.

Responsible Parties:

Fire Service ID	Member Making Report (Locks Fire Incident)	Rank	Assignment	Date
JIM	PIEPSZNY, JAMES			05/13/1999

Fire Service ID	Officer In Charge (Locks Entire Incident)	Rank	Assignment	Date
B43P1	BRUMMER, TOM			05/13/1999



FDID	Incident #	Exp #	Date	Weekday	Alarm Time	Station
15-100	99011812	0	05/15/1999	SAT	02:00	1

Remarks

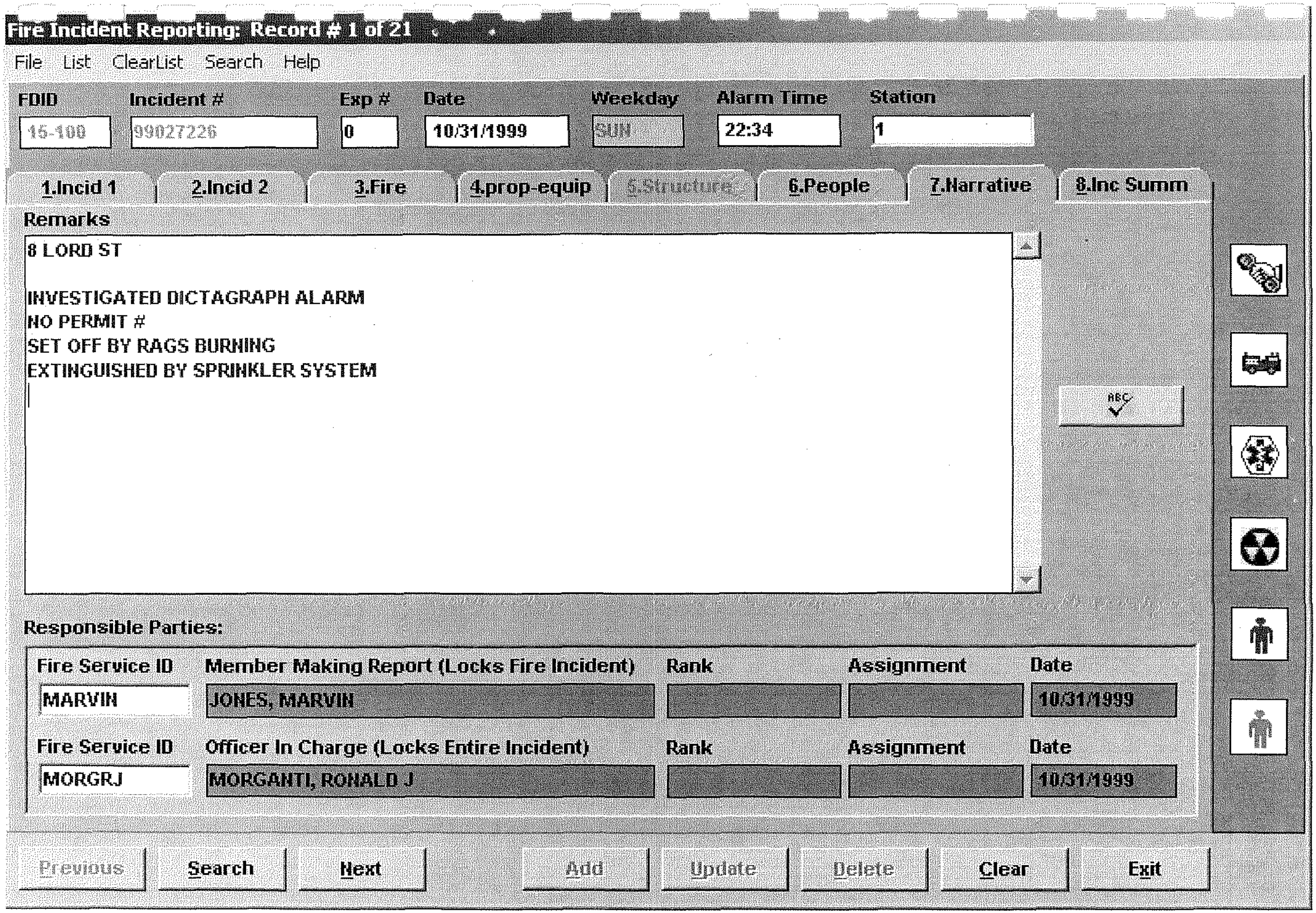
8 LORD ST

FIRE IN A WASHING MACHINE.OWNER STATED NO DAMAGE TO BLDG OR CONTENTS

Responsible Parties:

Fire Service ID	Member Making Report (Locks Fire Incident)	Rank	Assignment	Date
JOHN	MANNING, JOHN J			05/15/1999

Fire Service ID	Officer In Charge (Locks Entire Incident)	Rank	Assignment	Date
CONNWJ	CONNORS, WILLIAM J			05/15/1999



FDID: 15-100
Incident #: 99027226
Exp #: 0
Date: 10/31/1999
Weekday: SUN
Alarm Time: 22:34
Station: 1

Remarks

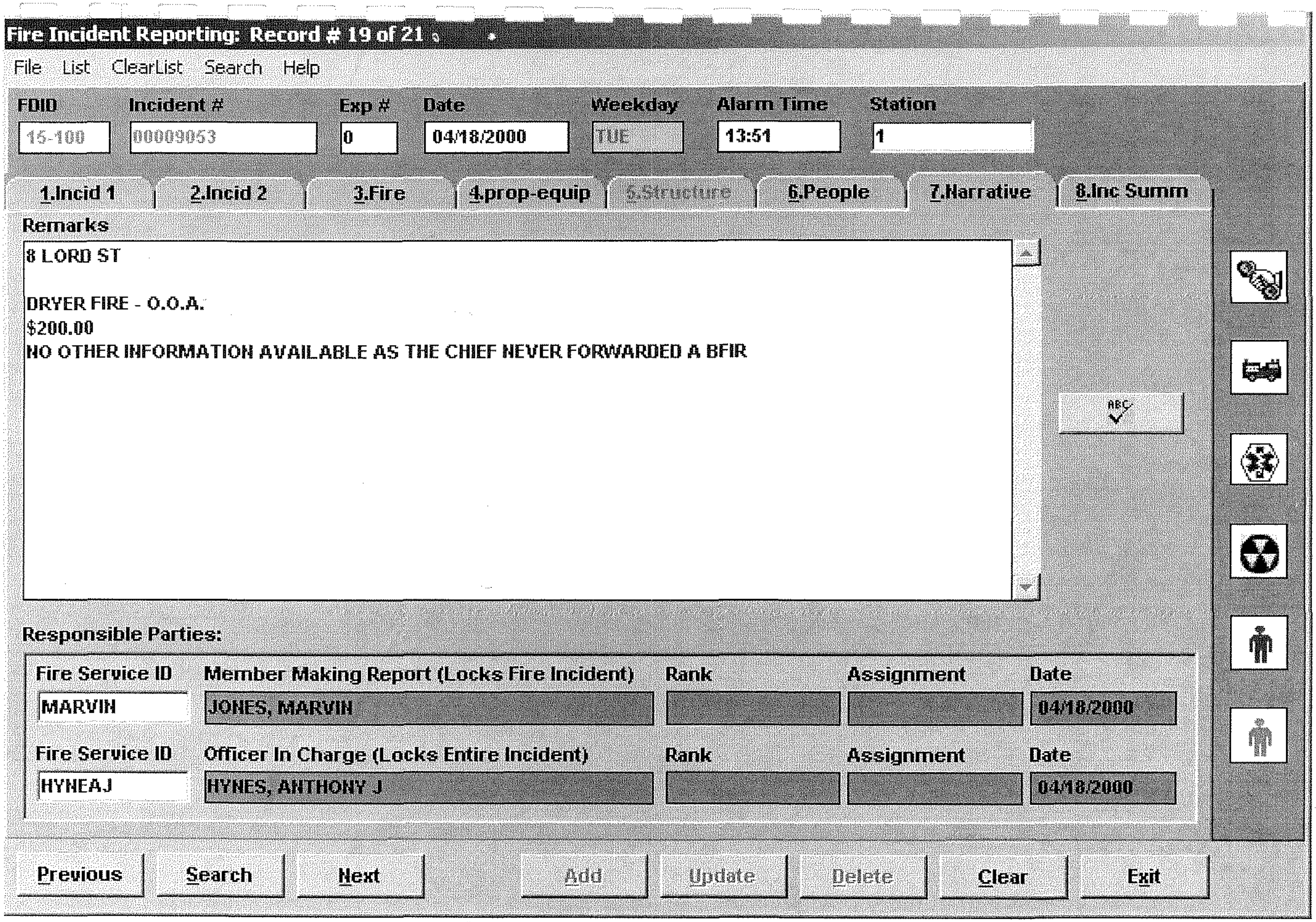
8 LORD ST

INVESTIGATED DICTAGRAPH ALARM
NO PERMIT #
SET OFF BY RAGS BURNING
EXTINGUISHED BY SPRINKLER SYSTEM

Responsible Parties:

Fire Service ID	Member Making Report (Locks Fire Incident)	Rank	Assignment	Date
MARVIN	JONES, MARVIN			10/31/1999

Fire Service ID	Officer In Charge (Locks Entire Incident)	Rank	Assignment	Date
MORGRJ	MORGANTI, RONALD J			10/31/1999



Fire Incident Reporting: Record # 19 of 21

FDID: 15-100
Incident #: 00009053
Exp #: 0
Date: 04/18/2000
Weekday: TUE
Alarm Time: 13:51
Station: 1

Remarks

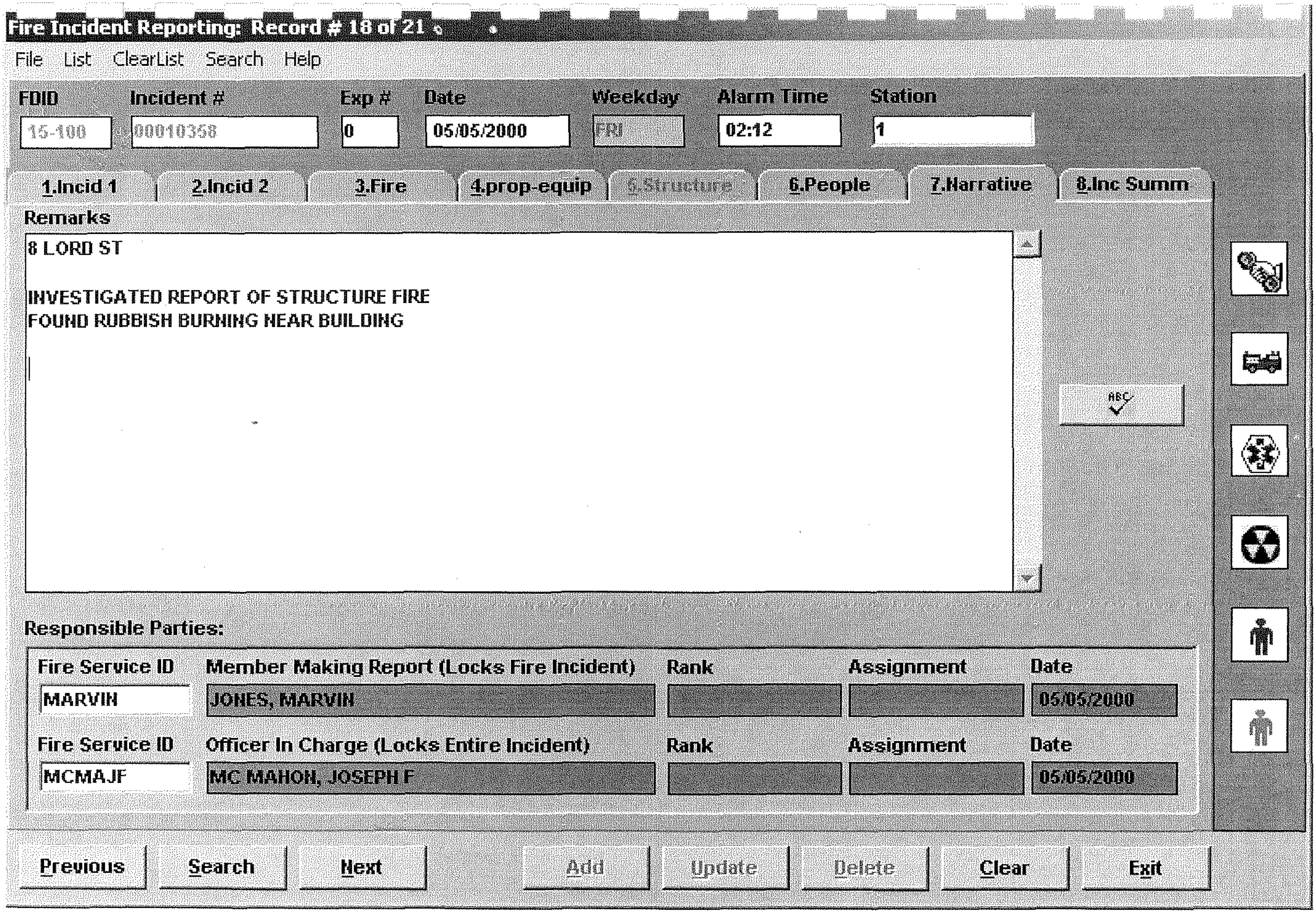
8 LORD ST

DRYER FIRE - O.O.A.
$200.00
NO OTHER INFORMATION AVAILABLE AS THE CHIEF NEVER FORWARDED A BFIR

Responsible Parties:

Fire Service ID	Member Making Report (Locks Fire Incident)	Rank	Assignment	Date
MARVIN	JONES, MARVIN			04/18/2000

Fire Service ID	Officer In Charge (Locks Entire Incident)	Rank	Assignment	Date
HYNEAJ	HYNES, ANTHONY J			04/18/2000



FDID	Incident #	Exp #	Date	Weekday	Alarm Time	Station
15-100	00010358	0	05/05/2000	FRI	02:12	1

Remarks

8 LORD ST

INVESTIGATED REPORT OF STRUCTURE FIRE
FOUND RUBBISH BURNING NEAR BUILDING

Responsible Parties:

Fire Service ID	Member Making Report (Locks Fire Incident)	Rank	Assignment	Date
MARVIN	JONES, MARVIN			05/05/2000

Fire Service ID	Officer In Charge (Locks Entire Incident)	Rank	Assignment	Date
MCMAJF	MC MAHON, JOSEPH F			05/05/2000

Form 29
11/6/67

BUREAU OF FIRE PREVENTION
FLAMMABLE LIQUID ORDINANCE CHAPTER XXIX

STORAGE AND USE OF FUEL OIL, GASOLINE, ALCOHOL, WASTE OIL (TYPE OF LIQUID) I, II, III (CLASS)

APPLICATION DATE: December 2, 1977
DISTRICT ZONING M - 1

NAME American Linen Company
ADDRESS 8 Lord Street Buffalo, New York

USE: COMMERCIAL ____ PRIVATE X
PROPERTY: CITY ____ PRIVATE ____

CONTRACTOR John W. Danforth Co.
ADDRESS 1940 Fillmore Avenue Buffalo, New York

APPROVED ~~DISAPPROVED~~ Joseph E. Hynes JOSEPH E. HYNES
TITLE Chief Bureau of Fire Prevention

Install two (2) 20,000-gallon, underground, steel, fuel oil tanks, One (1) 10,000-gallon, underground, steel, gasoline tank. One (1) * 1,500-gallon, underground, steel, waste oil tank, and one (1) 1,000-gallon, underground, steel, alcohol storage tank.

INSTALLATION DATE: 3-8-78
APPLICATION NO: 152237 DATE 2-6-78 PERMIT NO: B 11110 DATE 2-6-78

THORNIL-1
340 NE-1

TANKS: ONE 20,000 gal. a of 7/4/88 LT. ALICO
VENT PIPE:

Number of Five (5)
Number of FIVE

Capacity of Each *Two 20,000-gal. *One ~~10,000-gal.~~ 1*One ~~1,500-gal.~~ 1*One 1,000-gal.
Size Varied Sizes

Total Capacity
Terminates Outside YES

Above Ground NO
Feet Above Fill Pipe 12 Feet

Feet Underground 4 Foot
Feet From Bldg. Opening 10 Feet

Feet From Property Line 20 Foot
Weaherproof Hood Yes

Feet From Street Line 30 Foot
Flame Arrester ____

Feet From Bldg. or Cellar 15 Foot

U.L. Label Numbers ____

PUMPS:
Number of Pumps ____

Public Assemblage Bldg. Within 300 Ft. No (Sec. 82)
Feet From Bldg. Line ____

Feet From Street Line ____

Less Than 50 Feet From RR & Docks? (Sec. 16, Chap. LLX) NO
U.L. Label Nos. ____

If inside Bldg., are pumps protected as required by Sec. 148 ____

FILL PIPE:
Size 4 Inch Extended Fill? ____
Located Outside Yes Protected Yes
Feet From Bldg. Opening 20 Foot

TESTS: (Sec. 91) * approved 3-8-78 Skalski
1* approved 4-26-78
2* approved 5- -78 Skalski
APPROVED ____
DISAPPROVED ____

ALL TANKS, PUMPS AND PIPING, ARE INSTALLED IN ACCORDANCE WITHIN THE REQUIREMENTS OF THE FLAMMABLE LIQUID ORDINANCE, I THEREFORE, RECOMMEND

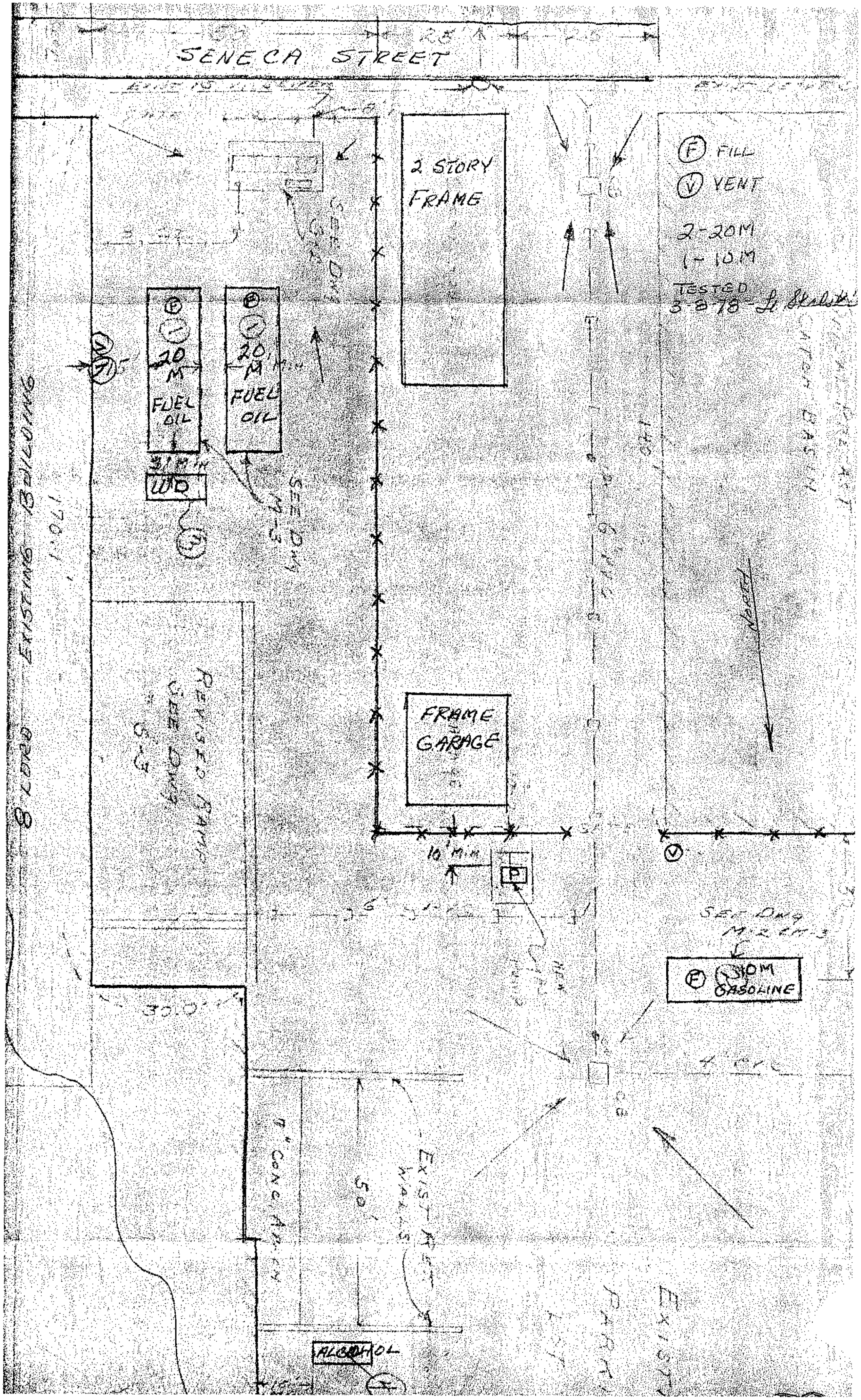
APPROVED J. E. Skalski Lieutenant Bureau of Fire Prevention DATE ____

THE ABOVE LOCATION HAS BEEN INSTALLED FOR THE FOLLOWING SUPPLIER.

NAME ____ ADDRESS ____

IMPORTANT: Include Remarks, Sketch of Pump and Tank Locations On other side, or attach sketch to form. Forward Copy to BUREAU OF FIRE PREVENTION.

LOCATION American Linen Company 8 Lord Street Buffalo, New York
LICENSE REQUIRED Yes
BATTALION 3rd
COMPANY Engine 32


SENECA STREET
2 STORY FRAME
Ⓕ FILL
Ⓥ VENT
2-20M
1-10M
TESTED 3-8-78 - L. Skalski
SEE DWG
Ⓕ ① 20 M FUEL OIL
Ⓕ ① 20 M FUEL OIL
Ⓥ
WD
SEE DWG M-3
③
8 LORD - EXISTING BUILDING
170.1
140
REVISED RAMP SEE DWG S-3
CATCH BASIN
FRAME GARAGE
10' MIN
P
Ⓥ
SEE DWG M-2 & M-3
Ⓕ ③ 10M GASOLINE
4" CRC
30.0
7" CONC APRON
50'
EXIST ASP WALKS
ALCOHOL
EXIST PART

TANKS--Removed, Watered, or Slushed

Location 8 LORD

Removed ___ Make sure vent is removed.

Slushed X Make sure vent is removed at grade or below.

Watered ___ If it is expected to be watered for 3 years, be sure pump is removed and suction and vent capped.

Number of Tanks ONE (1) Sizes 5000 GAL. (FUEL OIL)

Owner of Premises AMERICAN LINEN

Present or Former Operator SAME

Brand Name of Gasoline

Owner of Tank AMERICAN LINEN

Address 8 LORD

Contractor OWNER

Address

Draw sketch of approximate location on property on reverse side. Also, any other pertinent information.

INSTRUCTIONS BELOW THIS LINE FOR OFFICE USE ONLY.

Witnessed by Lt. R. G. Knox FPB

If station had flammable liquid license, notify the Battalion Chief to have company remove from files. If station is still in business, make note on Form 29 of which tank or tanks have been removed, slushed, or watered and date of same.

PZ:RC
5/28/63

NOTE:
TANK ON LORD ST. SIDE UNDER SIDEWALK
DICK THEIL - 856-2727

Location 8 LORD

Date 4-24-86

TANKS--Removed, Watered, or Slushed

Location 808 Seneca (8 Ford - behind bldg.)

Removed ✓ Make sure vent is removed.

Slushed ___ Make sure vent is removed at grade or below.

Watered ___ If it is expected to be watered for 3 years, be sure pump is removed and suction and vent capped.

Number of Tanks ONE Sizes 1000 gal. ALCOHOL

Owner of Premises Thorner Sydney Press

Present or Former Operator —

Brand Name of Gasoline —

Owner of Tank Thorner Sydney Press

Address same

Contractor Marshall Tanks

Address

Draw sketch of approximate location on property on reverse side. Also, any other pertinent information.

INSTRUCTIONS BELOW THIS LINE FOR OFFICE USE ONLY.

Witnessed removal on this date - Lt. Alica

If station had flammable liquid license, notify the Battalion Chief to have company remove from files. If station is still in business, make note on Form 29 of which tank or tanks have been removed, slushed, or watered and date of same.

Location 808 Seneca / Location for Records in 8 Ford

Date 11-19-87

PZ:RC
5/28/63

TANKS--Removed, Watered, or Slushed

Location 8 Ford St.

Removed X Make sure vent is removed.

Slushed ___ Make sure vent is removed at grade or below.

Watered ___ If it is expected to be watered for 3 years, be sure pump is removed and suction and vent capped.

Number of Tanks 1-10,000 gal. Sizes GASOLINE

Owner of Premises American Linen

Present or Former Operator Same

Brand Name of Gasoline

Owner of Tank American Linen

Address 8 Ford

Contractor ENVIROSURE (854-3611)

Address 333 Ganson

Draw sketch of approximate location on property on reverse side. Also, any other pertinent information.

INSTRUCTIONS BELOW THIS LINE FOR OFFICE USE ONLY.

Lt. Michael J. Dlemis
Witnessed removal

If station had flammable liquid license, notify the Battalion Chief to have company remove from files. If station is still in business, make note on Form 29 of which tank or tanks have been removed, slushed, or watered and date of same.

PZ:RC
5/28/63

Location 8 Ford St.

Date 3-24-88

TANKS—Removed, Watered, or Slushed

Location 8 Ford Street

Removed ___ Make sure vent is removed.

Slushed ✓ Make sure vent is removed at grade or below.

Watered ___ If it is expected to be watered for 3 years, be sure pump is removed and suction and vent capped.

Number of Tanks one one Sizes 20,000 - DIESEL 1,500 WASTE OIL } SLUSHED

Owner of Premises American Linen

Present or Former Operator ___

Brand Name of Gasoline ___

Owner of Tank American Linen (856-2727) MR. RICHARD TEAL (FACILITIES MANAGER)

Address 8 Ford Street

Contractor American Linen Pine Hill Concrete (American Linen had slush concrete work done by Pine Hill)

Address 8 Ford

Draw sketch of approximate location on property on reverse side. Also, any other pertinent information.

INSTRUCTIONS BELOW THIS LINE FOR OFFICE USE ONLY.

Witnessed slushing of these tanks – P. Alico

If station had flammable liquid license, notify the Battalion Chief to have company remove from files. If station is still in business, make note on Form 29 of which tank or tanks have been removed, slushed, or watered and date of same.

PZ:RC
5/28/63

Envirosure (333 Boren St.) flushed these 2 tanks - 3/23/88

Location 8 Ford Street

Date April 4, 1988

8 LORD

September 21, 1977

Mr. Earl Becker
c/o Coverall Service & Supply
551 Smith Street
Buffalo, New York 14210

RE: 8 Lord Street

Dear Mr. Becker:

Subsequent to our telephone conversation regarding your contemplated move to the above-noted address, enclosed please find some literature which may be helpful to you.

The excerpts from Chapter XII, the Building Code, pertains to the use of non-flammable solvents which you may use in your new operation.

In regard to the use of flammable solvents you are directed to write to the following address:

National Fire Protection Association
470 Atlantic Avenue
Boston, Massachusetts 02210

Ask for Pocket Edition NFPA No. 32, "Dry Cleaning Plants". This booklet will give you the standards that the City of Buffalo will require you to meet should you relocate your scene of operations.

Also enclosed is an excerpt of our Flammable Liquid Code, Chapter XXIX relating to the storage of your flammable solvent.

Hope this is of some assistance to you.

Very truly yours,

Lt. Earl J. Wickett
BUREAU OF FIRE PREVENTION

EJW/mc
Enclosures

J. W. CLEMENT CO.
Printers
EIGHT LORD STREET, BUFFALO 10, N. Y.

February 2, 1951

Mr. Uhrich
Fire Prevention Bureau
City Hall
Buffalo, New York

Dear Mr. Uhrich:

As per our conversation of two weeks ago, we are enclosing one Factory approved print of the Lord Street boiler installation.

We want to thank you for your cooperation in helping us out of an unfortunate situation.

Very truly yours,

J. W. CLEMENT COMPANY

R. F. Clock

R. F. Clock -
Engineering & Methods Dept.

RFC:MAL

8 Lord

BUREAU OF FIRE PREVENTION

Date Dec 22, 1952
Time Entered Building
Construction Fireresisting Stories 2 Area Time Left

VIOLATIONS AND FLOOR FOUND ON

Aisles, insuffient or blocked
Ashes in wooden boxes, etc.
Acids, dangerous, not placarded
Baled papers, storing too much of
Chimney defective
Celluloid improperly stored
Concealed spaces
Doors or windows, blocked or nailed
Are there sufficient exits?
No zinc under stoves, etc.
No hood or vent over ranges, etc.
No metal cans for oily rags, etc.
No metal bins for excelsior, etc.
Ovens, etc., not properly protected
Partitions, too near stoves, etc.
Rubbish in yard or building
Rubber hose on gas appliances
Smoke pipes too near woodwork
Steam pipes, too near woodwork or stock
Storing explosives contrary to law
Ventilators full of grease, dust, etc.
Windows to fire escapes, out of order

QUESTIONS Yes or No

Did you examine behind machines, ranges, shelves, benches, under stairs, dressing rooms, lockers, etc., for litter and fire hazards?
Is boiler room kept clean, cut off?
Are there any loose electric wires?
Do they use paper shades on electric lights, or tie up wires on nails, pipes, etc.?
Do they use any oil or electric appliances which would be likely to cause a fire?
Do they use any substance which would be detrimental to firemen in case of fire? If so, what is it, where is it stored and what amount is carried in stock?

Name of Occupant in Violation and Floor Found On

Owner J. W. Clement Address 8 Lord
Occupant " " Address " "
Occupancy Printers No. Tenants 1
Sprinklers: Wet ☒ Dry ☐ Condition Good Supply 6" Seneca
Location, Shut-off Valves Vault central part of Bldg 4 sections 8" Seymour
Standpipe No. Location Siamese Conn. Location Seneca St
Condition Water Supply
Portable Fire Apparatus—No. & Kind on each floor 35 Various kinds thruout Bldg 15 Hand lines of sprinkler system Condition OK
Fire Appliance Recommended: Kind
Location
Stairways: Number & Location 3 basement to 2nd floor; 1 off passageway; 1 Seymour near Lord to roof; 1 central part of Bldg to 2nd fl. Enclosed
Fire Escapes: Number - Location - Type

Elevators: Number - Location - How Enclosed 4 - 1 [illegible] on Seymour enclosed with fire doors except one only partly enclosed (pressroom)
Do Elevator Gates Work Properly? yes Condition of Pit OK
Has building fire doors? yes Condition OK
Will they work? yes If not automatic, are they kept closed? Yes
Are openings through fire walls protected?
Are floors overloaded? What floors
What conditions are skylights in?
Is there a ladder to scuttle in roof of building? Condition
Are all openings in floors protected?
Heating system: Type Low Pressure Steam Fuel Oil & coal
Fuel Oil Tank: Capacity 3000 Location underground on Lord

Volatile liquids—Oils or Acids Yes Quantity 300 gal
Where kept? vault 2nd floor
Main Shut-off: Gas 3 basement Electric transformer room
Any Violations of Laws or Ordinances?

[illegible]
Acetone
Benzol
Ethyl acetate
alcohol
basement & 2nd fl

Condition of Building Good Premises Good
Re-inspected
Whom interviewed W. MacLeod
Inspector Louis H. Moran Company Officer Captain
Batt. Chief J J Barrett

Use other side for Recommendations, Remarks and Sketches

BUFFALO FIRE DEPARTMENT **FIRE PREVENTION SERVICE** Date 2-16-44

Time Entered Building

Building Located at 8 Lord St.

Construction Fireproof Stories 2 Time Left

VIOLATIONS AND FLOOR FOUND ON

Aisles, insuffient or blocked — partially

Ashes in wooden boxes, etc.

Acids, dangerous, not placarded — in part

Baled papers, storing too much of

Chimney defective

Celluloid improperly stored

Doors or windows, blocked or nailed

Are there sufficient exits? yes

No zinc under stoves, etc.

No hood or vent over ranges, etc.

No metal cans for oily rags, etc. — filled to capacity

No metal bins for excelsior, etc.

Ovens, etc., not properly protected

Partitions, too near stoves, etc.

Rubbish in yard or building

Rubber hose on gas appliances

Smoke pipes too near woodwork

Steam pipes, too near woodwork or stock

Storing explosives contrary to law

Ventilators full of grease, dust, etc.

Windows to fire escapes, out of order

QUESTIONS — Yes or No

Did you examine behind machines, ranges, benches, under stairs, dressing rooms, lockers, etc., for fire hazards? Yes

Is boiler room kept clean? yes

Are there any loose electric wires? no

Do they use paper shades on electric lights, or tie up wires on nails, pipes, etc.? no

Do they use any oil or electric appliances which would be likely to cause a fire and did you order it protected? no

Do they use any substance which would be detrimental to firemen in case of fire? If so, what is it, where is it stored and what amount is carried in stock? (See notes)

Name of Occupant in Violation and Floor Found On

Owner J.W. Clement Co. Inc. Address 8 Lord St.

Occupant same Address same

Occupancy Printing + binding No. Tenants

Sprinklers: Wet ☒ Dry ☐ Condition good Supply City main

Location, Shut-off Valves Under floor of press - E. side center - inner section.

Standpipe Yes No 1-6" Location Rear, center + west Siamese Conn. Location Lord St. side

Condition good Water Supply Local

Portable Fire Apparatus—No. & Kind on each floor Ten 2½ gal. S+A; four 2½ gal. Foam; one 15 lb. CO²; two 1 qt. CTC; five 5 gal. loaded stream anti freeze Condition Good

Fire Appliance Recommended: Kind none

Location —

Stairways: Number & Location Two front center; one N. side center; E. side center; inner N.W. center; W. side center; S.W. corner; inner center Condition good

Fire Escapes: Number - Location - Type none

Elevators: Number - Location - How Enclosed? Four elec. freight—two N. side center; one W. side center + one N.W. center sections - concrete shafts; metal doors

Do Elevator Gates Work Properly? yes Condition of Pit Good

Has building fire doors? yes Condition good

Will they work? yes If not automatic, are they kept closed? yes

Are openings through fire walls protected? yes

Are floors overloaded? no What floors —

What conditions are skylights in? good

Is there a ladder to scuttle in roof of building? stairs Condition good

Are all openings in floors protected? yes

Heating system: Type L.P. steam Fuel coal

Fuel Oil Tank: Capacity none Location —

Volatile liquids—Oils or Acids See notes Quantity —

Where kept? — N. wall - Lead Plate

Main Shut-off: Gas Storage Room in basement Electric Generator Room - E. side center basem

Any Violations of Laws or Ordinances? See columns on left. Being remedied immediately. Will re-check in one week.

Condition of Building Good

Condition of Premises Re-inspected

Whom interviewed Mr. Greenberger, Supt.

Signature: Inspector Herbert P. Curthoys - F.P.B.

Company Officer

Batt. Chief

OVER

Use other side for Recommendations or Remarks

…pe about premises, with 50 ft. 2" hose with 3/8" open …ze. Two of them will have hose replaced.

A gas smelting room is located on the N. side of …omposing room on the 2nd floor; and an open lead …elting tank in N. section (plating room) 2nd floor; lead is …ipped from tank with ladle & poured over plates.

Paper chutes from cutting room 1st floor to baling room … basement — N.W. corner.

Volatiles & liquids: —

— In 2nd floor laboratory: —

Three 55 gal. drums acetone
Two " " " oleic acid
One " " " Ethyl acetate
" " " " Tollac solvent
" " " " Synasol
Two " " " Sun spirits
One " " " C.P. acetate
" barrel magnesia powder
Five " cornstarch
" 5 gal. cans carbitol solvent
Eight " " " Triethanolamine
One " " " Linseed oil
" " " " ethyl hexanol
" 55 " drum kerosene (in ink store room 1st)
Three carboys sulphuric acid
" " aqua ammonia
Two barrels bluestone.
Large amounts printing ink & ink oil.
One 5 gal. can driers
" " " " varnish
" barrel rosin.

C
O
P
Y

#8 Lord St.

FACTORY MUTUAL ENGINEERING DIVISION
1146 Standard Bldg.,
Cleveland 13, Ohio

October 24, 1950

Mr. Zack C. Hinds
Marine Trust Building
Buffalo 3, New York

RE: FUEL OIL TANK INSTALLATION
J. W. CLEMENT COMPANY
LORD STREET PLANT
BUFFALO, N. Y.
Index No. 28150.13

Dear Mr. Hinds:

We have reviewed your plans for the new boiler and oil tank installation at the subject plant. Two minor suggestions are shown in yellow crayon on the print. If not already done, we suggest that the combustion safeguards, wiring diagrams and piping arrangements at the new 150 lb. 160 h.p. boiler be submitted for review.

A copy of the plan is stamed approved and is enclosed. This approval is for fire insurance purposes only and, of course, is subject to a field examination of the completed installation. The liability of the Factory Mutual Companies is limited to that covered by their insurance policies, and no other liability is assumed by this letter.

Thanks for your cooperation in submitting these drawings for review.

Very truly yours,

FACTORY MUTUAL ENGINEERING DIVISION

Signed: K. S. Bowman

KSB:DEB-12
Encl. 1 cc & 1 copy of plan
cc. R. F. Clock, J. W. Clement Co.

Plan approved - by B.F.P. → 1-19-51

~~Regarding the oil leakat~~

November 2, 1964

Regarding the oil leak at the Rugby knitting mills at 8 Lord street.

Met with Bill Freitas who is working for Joe Davis Co in converting the boilers from high to low pressure.
Phone number is 852-8800x ex. 8.

The problem was that there was heavy fuel oil coming through drain tile in the boiler room and entering a sump pump hole.

Located in a vault off this same boiler room is a 6000 gallon oil tank. previously it was used to store number 6 fuel oil. However a change to number twooil is being made.

It appears that this heavy oil is being diluted by the lighter oil but the origin is still in doubt.

Mr. Freitas has requested Davis to order a test put on the tank on recommendation of inspectors Schaller and Skalski.

On November 4, 1964 this has not been done.

Awaiting test.

F-11

BUREAU OF FIRE PREVENTION
BUFFALO FIRE DEPARTMENT
2301 City Hall

Date Feb. 8, 19 66.

NOTICE OF VIOLATIONS

NAME Edward Seeberg

ADDRESS Exchange & Ellicott Sts

Inspection of premises located at 8 Ford

reveals a Fire Hazard. You are hereby notified to correct the following conditions on or before March 1, 19 66

Remove old lumber and flooring from the roof and north west stairway of the building above

BY ORDER OF
COMMISSIONER OF FIRE
Robt Howard

INSPECTED BY:
A. Gjardine
IBC

F-11

BUREAU OF FIRE PREVENTION
BUFFALO FIRE DEPARTMENT
2301 City Hall

Date. Mar. 14. 1966

NOTICE OF VIOLATIONS

NAME Edward Seeberg

ADDRESS Exchange & Ellicott Sts

Inspection of premises located at 8 Ford St

reveals a Fire Hazard. You are hereby notified to correct the following conditions on or before April 1 1966

City Ordinance Chapt. 93
1. Sect. 801
Combustible rubbish lumber inside N.W. stair shaft, top landing. Remove same
2. Sect. 1003. Remove combustible material lumber (old doors and boards) from north end of roof
3. Sect. 1014 Remove rubbish, paper cartons & contents from room North of boiler room.

BY ORDER OF
COMMISSIONER OF FIRE
Robt Howard

INSPECTED BY:
C. C. Jardine
I.B.C.

Notice #2

CITY OF BUFFALO

Department of Fire
Robert B. Howard, Jr.
Commissioner

New York

Bureau of
Fire Prevention
2301 City Hall

October 3, 1968

Re: 8 Lord

Smoke Abatement Bureau
2501 City Hall

Dear Sir:

The above location is being referred to you for the following reasons:

a fire occurred on 10/2/68; cause of the fire was listed as "defective incinerator".

Please investigate.

Incinerator was overloaded by custodian, when he couldn't get the door closed he went for help to push a large contaner into incinerator. By leaving incinerator door open other refuse in incinerator room ignited. When he came back and opened door of incinerator room, flames shot out and set off sprinkler heads near door way.

Incinerator room is to be enlarged and men are to be instructed on proper firing of incinerator.

J.E.Criddle

Thank you for your kind attention

Very truly yours

BUREAU OF FIRE PREVENTION

FJS:RC

8 LORD

TANKS--Removed, Watered, or Slushed

Location: 8 LORD

Removed ___ Make sure vent is removed

Slushed ✓ Make sure vent is removed at grade or below.

Watered ___ If it is expected to be watered for 3 years, be sure pump is removed and suction and vent capped.

Number of tanks 1 Sizes 20,000

Owner of Premises AMERICAN LINEN Co

Present or Former Operator SAME

Brand Name of Gasoline FUEL OIL

Owner of Tank SAM

Address

Contractor

Address

Draw sketch of approximate location on property on reverse side.
Also ,any other pertinent information.

Comments:
- This appears to be the Last tank slushed or removed at this Location.
- Total Capacity now 0 gal

Lt Ken Pozfalski

Location 8 LORD

Date 11-4-98

faxed 9-27-04-F

C.T. MALE ASSOCIATES, P.C.

50 Century Hill Drive, P.O. Box 727, Latham, New York 12110-0727
518.786.7400 FAX 518.786.7299 ctmale@ctmale.com

September 20, 2004

FREEDOM OF INFORMATION REQUEST

Records Access Officer
Erie County Department of Health
Division of Environmental Health
Rath Office Building
95 Franklin Street
Buffalo, New York 14202

RECEIVED
DEC - 3 2004
C.T. MALE ASSOCIATES, P.C.

No reports found in our files for this request.

John T. Kociela
Records Access Officer

Re: *FOIL Request*
Ameripride Services, Inc.(American Linen Supply) Site
CTMA Project No.: 04.9629

To Whom It May Concern:

Our office is completing a Phase I Environmental Site Assessment for the above listed site which is located at 7 and 8 Lord Street and 822 Seneca Street in the City of Buffalo, New York. The site is located on the Buffalo Northeast, NY USGS Quadrangle. Enclosed please find a site location map.

Pursuant to the Freedom of Information Law (FOIL), please indicate any Health Department records for groundwater, soil and/or surface water contamination at these sites or the immediately adjoining parcels.

If you have any questions or comments regarding this request, or need additional information, please feel free to contact our office at (518) 786-7400. Your assistance is greatly appreciated.

No Records

Sincerely,
C.T. MALE ASSOCIATES, P.C.

Aimee Gates
Aimee Gates
Environmental Scientist

RECEIVED
SEP 24 2004
Environmental Health
Services Administration

C.T. MALE ASSOCIATES, P.C.

50 Century Hill Drive, P.O. Box 727, Latham, New York 12110-0727
518.786.7400 FAX 518.786.7299 ctmale@ctmale.com

September 20, 2004

Mr. Charles L. Michaux, III
City Clerk
City of Buffalo
65 Niagara Square
Buffalo, New York 14202

Re: *FOIL Request*
Ameripride Services, Inc. (American Linen Supply Co.) Site
CTMA Project No. 04.9629

Dear Mr. Michaux:

Our office is completing a Phase I Environmental Site Assessment for the above listed site which is referenced with the following tax map numbers:

111.830-9-7.1 (7 Lord Street) and
122.27-1-4 (822 Seneca Street, also known as 8 Lord Street)

Enclosed please find a site location map.

Pursuant to the Freedom of Information Law (FOIL) the following information is requested:

Assessment Records:
- Copies of the property tax/ assessment cards (current and former);
- Indicate current and former owners, date of purchase, book and page;
- Deed (if available)

Building Department Records:
- Building permits for major structures;
- Demolition permits for the site;
- Violations for the site;
- Underground storage tank installation or removal permits for the site;
- Discharge location of floor drains
- Asbestos abatements for the site and
- Zoning classification for the site

Historian Records:
- Previous use of the site, including previous owners if available;
- General previous use of the site area

Engineering Records:

- If municipal services (water, sanitary sewer, storm sewer) are provided to this site please verify and provide dates of connection (if available)

Clerk's Records/Environmental Specialist:

- Records of environmental related liens, violations or notices for the site;
- Identify municipal or private solid waste facilities within ½ mile of the site

Four copies of this letter are provided for your use to distribute to the various referenced departments.

Our office will gladly compensate your office for any copying or postal/fax expenses. Please call this office before any copies are made with the total fee if the total fee exceeds $10.00. Our fax and mailing address are indicated above. If you have any questions or comments regarding this request, please feel free to contact our office at (518) 786-7551. Your assistance is greatly appreciated.

Sincerely,
C.T. MALE ASSOCIATES, P.C.

Aimee Gates

Aimee Gates
Environmental Scientist

/asg

CITY OF BUFFALO
DEPARTMENT OF ASSESSMENT AND TAXATION

65 Niagara Square • Room 101 City Hall • Buffalo, NY 14202-3385
Phone: (716) 851-5733

ANTHONY M. MASIELLO
Mayor

BRUNA MICHAUX
Commissioner

November 8, 2004

RECEI
NOV 1
C.T. MA

Ms. Aimee S. Gates
Environmental Scientist
CT Male Associates, Inc.
50 Century Hill Drive
Latham NY 12110-0727

Re: 822 Seneca and 7 Lord, Buffalo, New York
Ameripride Services, Inc. (American Linen Supply Co.) Site
CTMA Project No. 04.9629

Dear Ms. Gates:

As a follow up to our correspondence dated October 29, 2004 and in response to your FOIL request dated September 20, 2004 sent to Charles Michaux III, the City Clerk, enclosed is assessment data compiled by the District Assessor, Charles Cutrona, regarding the parcels assessed as 822 Seneca and 7 Lord. Included in the assessment records are "historian" records, defined in your request as records related to previous use of the site.

Building records, engineering records and Clerk's records/Environmental Specialist records must be obtained from the appropriate departments as these records are not within the purview of, or in the possession of, the Department of Assessment and Taxation. By copy of this letter to the Department of Permits & Inspections (building records), the Department Public Works, Parks & Streets (engineering records), and Sandra Nasca, Esq., Environmental Coordinator, Office of Strategic Planning, (environmental records), we are referring your request for records.

Sincerely,

DEPARTMENT OF ASSESSMENT & TAXATION

Bruna Michaux, Commissioner

BM/rjz

cc: Charles Cutrona, District Assessor
Charles L.. Michaux III, City Clerk,
Room 1301 City Hall, 65 Niagara Square, Buffalo NY 14202
Ray McGurn, Commissioner, Permit & Inspection Services, (building records)
Room 324 City Hall, 65 Niagara Square, Buffalo NY 14202
Joseph N. Giambra, Commissioner, Public Works, Parks & Streets (engineering records)
Room 502 City Hall, 65 Niagara Square, Buffalo NY 14202
Sandra Nasca, Esq., Environmental Coordinator, Strategic Planning Office (environmental records)
Room 920 City Hall, 65 Niagara Square, Buffalo NY 14202

230

232

For subscribers using the **MARSHALL VALUATION SERVICE** Calculator Cost Method

SQUARE FOOT COSTS

1. Subscriber making survey P.R.C. JACOBS INC. Date of survey 4-6-79
2. Name of building INDUSTRIAL Owner COVERALL SERVICE + SUPPLY
3. Located at 822 SENECA ST 0201-122.270-01-004

	SECTION I	SECTION II	SECTION III	SECTION IV
4. Occupancy	BASMT (IND.)	INDUSTRIAL (1ST)	INDUSTRIAL (2ND)	
5. Building class and quality	Cls B Qual GOOD	Cls B Qual AVG	Cls B Qual AVG	Cls ___ Qual ___
6. Exterior wall	CONC	CONC/BR/BLK	CONC/BR/BLK	
7. No. of stories & height per story	No. 1 Ht. 10	No. 1 Ht. 14	No. 1 Ht. 14	No. ___ Ht. ___
8. Average floor area	36,643	76,470	43,326	
9. Average perimeter	1476	1226	1014	
0. Age and condition	EFF Age 80+ Cond. AVG.	EFF Age 80+ Cond. AVG.	EFF Age 80+ Cond. AVG.	Age ___ Cond. ___

	SECTION I	SECTION II	SECTION III	SECTION IV
11. **Base Square Foot Cost**	14.35 14-11	18.57 14-11	18.57 14-11	
SQUARE FOOT REFINEMENTS (FOR OFFICES)				
12. Heating, cooling, ventilation. SEC ② + 12 % OF CENTRAL REFRIGERATION SEC ③ + 12 % " " "	—	+.22	+.22	
3. Elevator deduction	—	—	—	
14. Miscellaneous SEC ② + DOCK HIGH FLOORS	—	+.65	—	
5. Total lines 11 through 14	14.35	19.44	18.79	
HEIGHT AND SIZE REFINEMENTS				
6. Number of stories-multiplier	1.000	1.000	1.000	
7. Height per story-multiplier (see Line 7)	.921	1.000	1.000	
18. Floor area-perimeter multiplier (see Lines 8 and 9)	.984	.887	.916	
9. Combined height and size multiplier (Lines 16 x 17 x 18)	.906	.887	.916	

FINAL CALCULATIONS

	SECTION I	SECTION II	SECTION III	SECTION IV
20. Refined square foot cost (Line 15 x Line 19)	13.00	17.24	17.21	
21. Current cost multiplier (Sect. 99 p. 3)	1.07	1.07	1.07	
22. Local multiplier (Sect. 99 p. 5 and 6)	1.12	1.12	1.12	
23. Final sq. ft. cost (Line 20 x Line 21 x Line 22)	15.58	20.66	20.62	
24. Area (Back of this form)	36643	76470	43326	
25. Line 23 x Line 24	570,898	1,579,870	893,382	
26. Lump sums (Line 32)	46,203	68,532	45,180	TOTALS
27. **Replacement Cost** (Line 25 + Line 26)	617,101	1,648,402	938,562	3,204,065
28. Depreciation % (Sect. 97)				75%
29. Depreciation amount (Line 27 x Line 28)				2,403,049
30. **Depreciated Cost** (Line 27 – Line 29)				801,016

TOTAL OF ALL SECTIONS

31. Replacement cost 3,204,065 Depreciated cost 801,016 00 TOTAL IMPROV'TS ~~Insurable value~~ $837,113 00

See back of this form for drawings and area and insurable value calculations.

FORM 1003 (Calc. Cost)

Printed in U.S.A.

8-5 2-150 HYDRAULIC ELEVATORS - 4,000 lbs CAP.			
@ 3,300 X 1.00 X 1.12 = 3696 X 2 =	7392		
4-3 SPRINKLERS - 38,050 ⌗ @ .90 X 1.00 X 1.12 =			
1.02 X 38,050 =	38,811		
TOTAL	46,203		
LUMP SUMS SEC ②			
4-3 SPRINKLERS - 77,877 ⌗ @ .79 X 1.00 X 1.12 = .88			
X 77,877	68,532		
LUMP SUMS SEC ③			
4-3 SPRINKLERS - 44,733 ⌗ @ .90 X 1.00 X 1.12 = 1.01			
X 44,733 =	45,180		
YARD IMPROV'TS			
7-5- 66 ⌗ C.B. SHED @ 4.47 X 1.07 X 1.12 = 5.36 X 66 =	354	90%	319
1-3 2-20,000 GAL. FUEL STORAGE TANK (UNDERGROUND)			
@ 6100 X 1.00 X 1.12 = 6832 X 2 =	13,664	95%	12,981
6-2 6' CHAIN FENCE W/ BARBED WIRE 651' @ 4.60 +			
.65 + .80 = 6.05 X 1.09 X 1.12 = 7.39 X 651 =	4811	90%	4330
66-2 3" ASPHALT PAVING 43,451 ⌗ @ .41 X			
1.09 X 1.12 = .50 X 43,451	21,726	85%	18,46
			36,09
TOTAL			

LABEL CORRECTION

230

001 SWIS CODE	01	
002 SECTION NUMBER	05	.
003 BLOCK NUMBER	11	
004 LOT NUMBER	13	
005 SUB-LOT NUMBER	16	
006 SUFFIX NUMBER	19	
007 VALUATION UNIT	21	01
008 TRANSACTION CODE	23	1
*** CARD CODE	24	0 1
009 PROPERTY CLASSIFICATION	26	
010 PROPERTY ADDRESS	29 45 61	
011 PROPERTY OWNER		COVERALL SERVICE + SUPPLY CO

122.270-01-004.000 710
1-0767 0010007670 140201
1-763 1-766
1-765
AMERICAN LINEN SUPPLY CO

N 4-822 SENECA

551 SMITH ST
BUFFALO N Y 14210

10AM 4-5 AC- -2.90
ANTHONY OSZUST

SALES VERIFICATION

*** CARD CODE	24	0 3
101 VALID SALE 0 = No 1 = Yes	26	
102 SALE PRICE	27	
103 SOURCE 1 = Buyer 2 = Seller 3 = Fee 4 = Agent	34	
104 SALE TYPE 1 = Land 2 = Building 3 = Land & Building	35	
105 SALE YEAR	36	
106 SALE MONTH	38	

HOUSING UNITS DATA

*** CARD CODE	401 APT TYPE	402 NO. OF BEDROOMS	403 NO. OF BATHROOMS	404 TOTAL ROOMS	405 TOTAL NO. OF UNITS
24 0 5	26	27	28 .	30	31
		34	35 .	37	38
		41	42 .	44	45
		48	49 .	51	52
		55	56 .	58	59
		62	63 .	65	66
		69	70 .	72	73

APT. TYPES 1 = Garden 2 = Townhouse 3 = Other

SITE CHARACTERISTICS

107 NEIGHBORHOOD TYPE 1 = Rural 2 = Crossroads 3 = Suburb 4 = Urban 5 = Subdivision 6 = Commercial	40	6
108 NEIGHBORHOOD CODE	41	
109 ROAD TYPE 0 = None 1 = Dirt 2 = Gravel 3 = Paved 4 = State	46	4
110 TRAFFIC 1 = Light 2 = Medium 3 = Heavy	47	3
111 ZONING	48	m1
112 WATER 0 = None 1 = Private 2 = Comm'l 3 = Public	52	3
113 SEWER 0 = None 1 = Private 2 = Comm'l 3 = Public	53	3
114 OTHER UTILITIES 0 = None 1 = Gas 2 = Elec 3 = Gas & Elec	54	3
115 SITE COMPARABILITY 1 = Inferior 2 = Typical 3 = Superior	55	2

AUDIT CONTROL

*** CARD CODE	24	0 0
501 FORM NUMBER	26	1
502 TOTAL FORMS	27	1
503 DATE LISTED	28	040679
504 LISTED BY	34	2312
505 DATE MEASURED	37	
506 MEASURED BY	43	
507 NUMBER OF VISITS 1 2 3	46	1
508 SOURCE 1 = Owner 2 = Spouse 3 = Tenant 4 = Other 5 = Estimate 6 = Refusal	47	4

INCOME INFORMATION

*** CARD CODE	24	0 4
201 ECONOMIC RENT	26	
202 ACTUAL RENT	32	
203 ADDITIONAL INCOME	38	
204 TOTAL EXPENSES	44	
205 VACANCY RATE	50	
206 TOTAL PROPERTY TAXES	52	
207 MORTGAGE-PERCENT FINANCED	58	
208 MORTGAGE TERM IN YEARS	60	
209 MORTGAGE INTEREST RATE	62	.
210 EQUITY YIELD	66	
211 INVESTMENT PERIOD	68	
212 APPRECIATION	70	
213 DEPRECIATION	72	
214 REMAINING LIFE IN YEARS	74	

MEMORANDA

508/ CHIEF ENGINEER
011/ DIVISION OF AMERICAN LINEN
101-1 102 - 274,800 103-1 104-3
105-77 106-02

Signature by Owner or Agent below indicates data on this form was collected in your presence. It does not mean that you have verified the information hereon.

X Anthony E. Oszust 4/5/79
SIGNATURE DATE

COMMERCIAL/INDUSTRIAL

DATA COLLECTION FORM
ERIE COUNTY, NEW YORK
P.R.C. JACOBS CO., INC. 1976

LAND DESCRIPTION

*** CARD TYPE	301 MS-CD	302 SITE CODE	303 ADJ FRONT	304 ADJ DEPTH	305 AREA (Decimal if acres)	306 UNIT PRICE (Always Decimal)	307 DEPTH FACTOR	308 INFLUENCE CODE	O/O	+/−	309 LAND VALUE (Manual)
24-25	26	27-28	29-31	32-34	35-40	41-46	47-49	50	51-52	53	54-60
06	A	61			290	.	.				, ,
					.	.	.				, ,
					.	.	.				, ,
					.	.	.				, ,
					.	.	.				, ,
					.	.	.				, ,

PROPERTY IDENTIFICATION

001 SWIS CODE	01	
002 SECTION NUMBER	05	
003 BLOCK NUMBER	11	
004 LOT NUMBER	13	
005 SUB-LOT NUMBER	16	
006 SUFFIX NUMBER	19	
007 VALUATION UNIT	21	
008 TRANSACTION CODE	23	
009 BUILDING NUMBER	24	1 1
010 BUILDING SECTION NUMBER	26	1

YARD IMPROVEMENTS

*** CARD CODE	601 STRUCTURE CODE	602 MEASURE ONE	603 MEASURE TWO	604 NO. OF UNITS	605 CON DTN	606 FNC UTL	607 YR. BLT/ INSTL'D	608 INT EXT	609 COST NEW	610 PERCENT GOOD	611 DEPRECIATED VALUE
24-25	26-30	31-36	37-41	42-44	45	46	47-49	50	51-55	56-58	59-63
9 1											
9 2											
9 3											
9 4											
9 5											
9 6											

BUILDING-SECTION GENERAL DESCRIPTION

*** CARD CODE	27	1 0
701 YEAR BUILT	29	920
702 BUILT AS (Property Classification)	32	710
703 EXTERIOR CONDITION 1 = Poor 2 = Fair 3 = Normal 4 = Good 5 = Renovated	35	5
704 FUNCTIONAL UTILITY 0 = None 1 = Poor 2 = Fair 3 = Normal 4 = Good	36	3
705 ROOF TYPE 00 = No Roof 01 = Flat 02 = Irregular 03 = Gable 04 = Industrial 05 = Shed 06 = Arch 07 = A-Frame	37	04
706 ROOF MATERIAL 00 = Undetermined 01 = Built-Up 02 = Shingles 03 = Rolled Compos 04 = Metal 05 = Fibreglass/Plastic 06 = Slate/Tile	39	03
707 FRAME TYPE 00 = None 01 = Fireprf Steel 02 = Reinforced Concrete 03 = Non-Fireproof Steel 04 = Masonry 05 = Wood 06 = Light Metal	41	02
708 SECTION PERIMETER	43	1226
709 BASEMENT PERIMETER CONC.	47	1476

EXTERIOR WALL DESCRIPTION

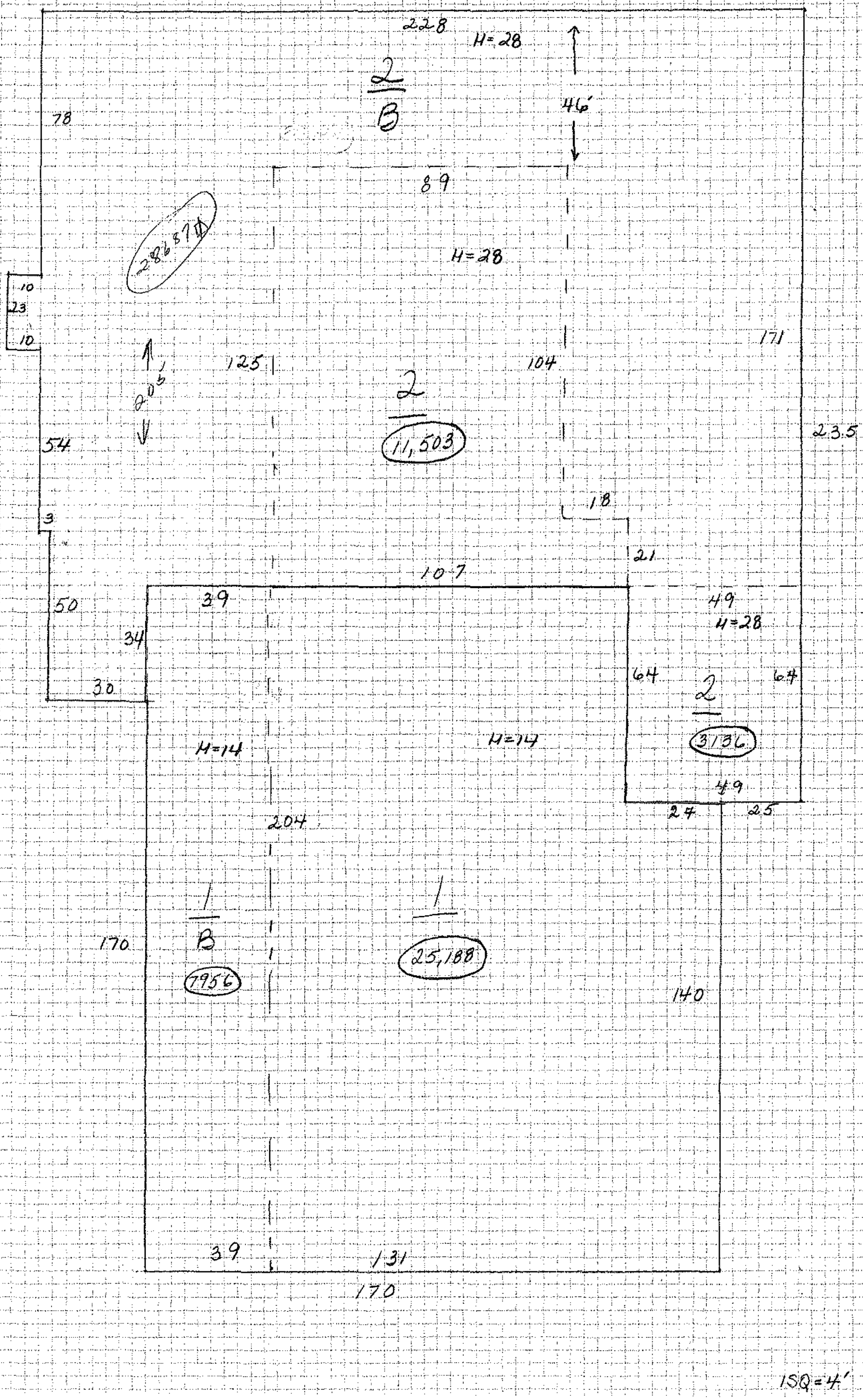
*** CARD CODE	801 BASIC EXTERIOR WALLS MAT'L	LINEAL FT.	HEIGHT	802 EXTERIOR WALL FACING MAT'L	LINEAL FT.	HEIGHT
27-28	29-30	31-34	35-37	38-39	40-43	44-46
1 1						
1 2						
1 3						
1 4						
1 5						
1 6						

NOTES: 1977 - INTERIOR RENOVATED -
$3,000,000 - $2,500,000 EQUIPMENT
+ ADDED ELECTRICITY + GAS + SEWAGE
LINES FOR EQUIPMENT. $500,000
STRUCTURAL CHANGES.
* FINANCED THROUGH · ERIE COUNTY
INDUSTRIAL DEVELOPMENT AGENCY
705 · MONITOR

SEE GRAPH PAPER

BUILDING - SECTION INTERIOR DESCRIPTION

*** CARD CODE	901 SIMILAR STORIES FROM	TO	902 USED AS CODE	903 HGHT OF STOR	904 SHAPE	905 WIDTH	906 LENGTH	907 AREA (Square Feet)	908 INTERIOR CONDITION	909 FUNCTNL UTILITY	910 PERCENT INTERIOR FINISHED	911 EXTENT OF PARTITIONS	912 FLOOR CONST.	913 PERCENT LIGHTED	914 PLUMBING	915 HEATING SYSTEM PERCENT	TYPE	916 AIR CONDITIONING PERCENT	TYPE	917 SPRINKLER SYSTEM PERCENT	TYPE
27-28	29-30	31-32	33-34	35-36	37	38-40	41-43	44-49	50	51	52-54	55	56	57-59	60	61-63	64	65-67	68	69-71	72
2 1																					
2 2																					
2 3																					
2 4																					
2 5																					
2 6																					
2 7																					
2 8																					
2 9																					


228
H=28
2
B
46'
78
89
28687
H=28
10
23
10
125
104
171
2
11,503
20'
54
23.5
18
3
21
107
49
H=28
39
50
34
64
2
64
30
3136
H=14
H=14
49
27
25
204
1
B
1
170
7956
25,188
140
39
131
170
1SQ=4'

32 50
63 55
60
65
0
10.0
310.105

1915 TAXING DISTRICT No. PART PAGE

DESCRIPTION OF PROPERTY 275

195 X 370 E- to Se

HOUSE NO.	Assessors' Maps and Survey District	Part	Page	NAME OF STREET	Side of Street	DISTANCE FROM WHAT STREET Feet	Course	STREET	Feet Front	DEPTH 376.05 Feet	Course	Line
864/890	1	1	19	SENECA	n	N	Cor	Lord	275			

OWNER J. W. Clement Co.

ADDRESS Seneca + Ford

Constructed or Moved on Lot in

Remodeled or Repaired in

Occupied Vacant

Permit No. X 8-1

~~(Phillip J Kuhn - Wa. 2505)~~

ASSESSED

Unit value of Land per foot American Iron Supply Co.

Value of Land Erie County Ind. Dev. Ag. 13470

Value of Improvements 100000

Total Valuation

	Unit	Land	Improvements
1916		13420	125
1917		13925	220
1918		13925	135
1919		✓	1776
		13930	1404

BUILDING IN CLASS

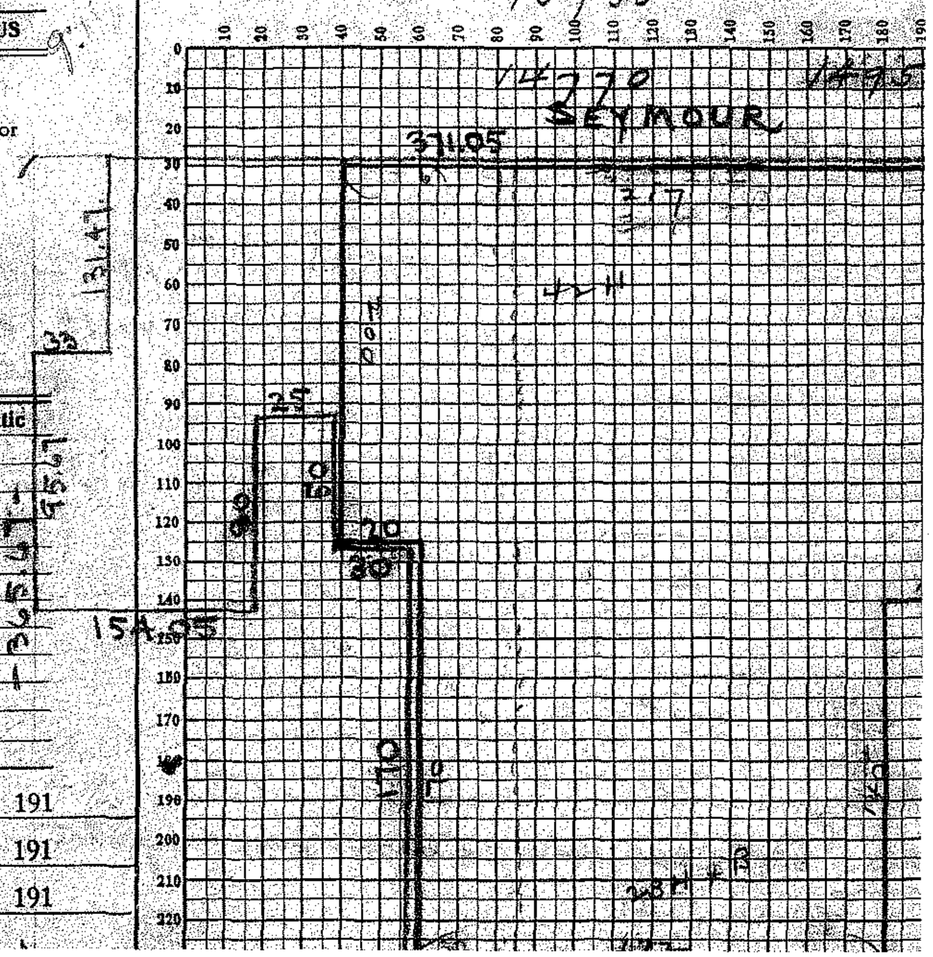
CLASS	CONSTRUCTION	O. S. TRIM	PLUMBING	MISCELLANEOUS
Single Dwlg.	Frame	Wood	Open	Sideboard
Double "	Brick ✓	Galv. Iron	Old Style	Refrigerator
Duplex "	Tile	Stone	City Water	Power Elevator
Bungalow	Blocks	Terra Cotta	Well "	Hand "
Flat Building	Re-Conc.	Concrete	Sewer	Sprinklers
Apartment	Mill		Cesspool	Fire Escapes
Apartment Ho.	Steel Frame	**HEATING**	**LIGHT**	Skylight
Store Bldg.	**EXTERIOR**	Stove	Gas	Glass { Com.
Office "	Siding	Furnace	Electric ✓	Plate
Hotel "	Shingles	Hot Water	**REPAIR**	Lead
Shop "	Stucco	Steam ✓	Good ✓	
Factory " ✓	Com. Brick ✓	Cen. Sta.	Fair	
Church "	Press "	Fireplace	Bad	
Barn "	Paper			
Garage "				
Warehouse				

FOUNDATION	ROOF
Stone	Shingle
Concrete ✓	Slate
Brick	Tile
Posts	Gravel ✓
	Prepared
	Board
	Iron
	Asbestos

BASEMENT	ROOF
Full ✓	Flat ✓
Half	Hip
Quarter	Gable
Cement fl.	Gambrel
Laundry	Dormers

ROOMS	Bs't	STORIES 1	2	3	to	Attic
Living Rooms						
Bed "						
Bath "						
Toilet "						
Office "						
Storage "						
Stores						
Unfinished						
Hardwood Fin.						
Paint "						
Hardwood Fl.						
Tile						

BUILDING RECAP.



Examined by District Assessor 11-10-60 Korber 191

Complaint No. 1090 Filed 191

Reviewed 1-1707-76 191 1-1736-77 Adjusted 191 ad 40

$\frac{370 + 365.47}{2}$ x 404.05 = 148,625
− 36,505
112,120 x 404 = 44,850 ← not used

804/820

Minus 33 x 131.47 = 4338
154.05 x 140 = 21567
25 x 220 = 5500
30 x 170 = 5100
36,505

[illegible] - Price - Value

Seneca	262 -	135	60	67.20	17606
Seymour	262 -	135	25	28.00	7336
Lord	100 -	250	25	31.50	3150

28092
− 9100
18992
3000 ← Vault
21992

265,330.

except { Room 1860
" 2130
Brad 2690
Chg. 2420
9100 }

Vault - 105 x 8'9" x 10' deep - Eighmey

land 80250

21992
Brad. 2690
24682

1941 Land
vault 850
27050
27900

254530 — 27120
710 Koepp
27830
2220 141 Seymour St
30050

1931 - 275 to Seymour Street noon + Klein lots
also 63.5 x 228 and pa 65 x 95 near Gropp lot
on Seymour St

YEAR	UNIT	LAND	IMP.
1922		14770	249530
1923		15670	151530
1924		22000	270000
1925		24700	229050
1926		24700	251950
1927		24700	251950
1928		27120	255660
1929		27120	254530
1930		30050	253710
1931		30050	253710

40x200 ad
addition
'Bradney' [illegible]
- See Exh
*82
add cor
May 11 19
82nd Citt

YEAR	UNIT	LAND	IMP.
1932		30050	253710
1933		30050	228340
1934	-10	27050	205510
1935		27050	205510
1936	69%	27050	203510
1937		27050	203510
1938		27050	203510
1939	24.13¢	27050	203510
1940		27050	203510
1941	✓	27900	203510

253710
-10 25371
228340
-10 22834
205506
cube o
82 Sen

ate							eet	urse	reet	
1 10 A	~~EDWARD I. SEEBERG~~ American Linen Supply Co.	195	370 TO SEYMOUR 371.05 ON IRREG W.	804- 22	SENECA	N	WEST COR LORD			710

dress

it Full Value of Land | F.F. | S.F.

Constructed or Moved on Lot in

Remodeled or Repaired in

WIDTH	DEPTH	DPTH. FACTOR	EFF. F.F.	AREA	UNIT VALUE	FULL VALUE
250	300	1.5811	395.28	466.44	58 50	27290
121	300 140	1.5811 -1.0801 } .5010	60.62	"		
33	235 140	1.3994 -1.0801 } .3193	10.54			
371.05	70					9450
					FULL LAND VALUE	36740
					ASSESSED LAND VALUE	18370

SALES RECORD

YEAR	AMOUNT	REMARKS
5-28-64	165 00	150,000 (USR)
2-8-77	302 50 (W)	includes #s 794, 800, 8 + 804-22 Senec

NTS:

BUILDING DESCRIPTION

ILDING CLASS: Cheap, Average, Good, Expensive

TYPE
- ch Dwelling
- gle Dwelling
- ble Dwelling
- lex Dwelling
- galow
- Station
- rtment House
- e Building
- ce Building
- el Building
- o Building
- tory Building ✓
- rch Building
- age Building
- ehouse

OUNDATION
- e
- crete ✓
- k
- s

BASEMENT
- ✓
- rter
- ent Floor
- ndry
- r Heater

CONSTRUCTION
- Frame
- Brick ✓
- Tile
- Blocks
- Re-Conc.
- Mill
- Steel Frame

EXTERIOR
- Siding
- Shingles
- Stucco
- Com. Brick ✓
- Face Brick
- Compos.

ROOF
- Wood Shingle
- Compos. Shingle
- Slate
- Tile
- Gravel ✓
- Prepared
- Metal
- Asbestos
- Flat ✓
- Hip
- Gable
- Gambrel
- Dormers

O. S. TRIM
- Wood
- Metal
- Stone
- Terra Cotta
- Concrete

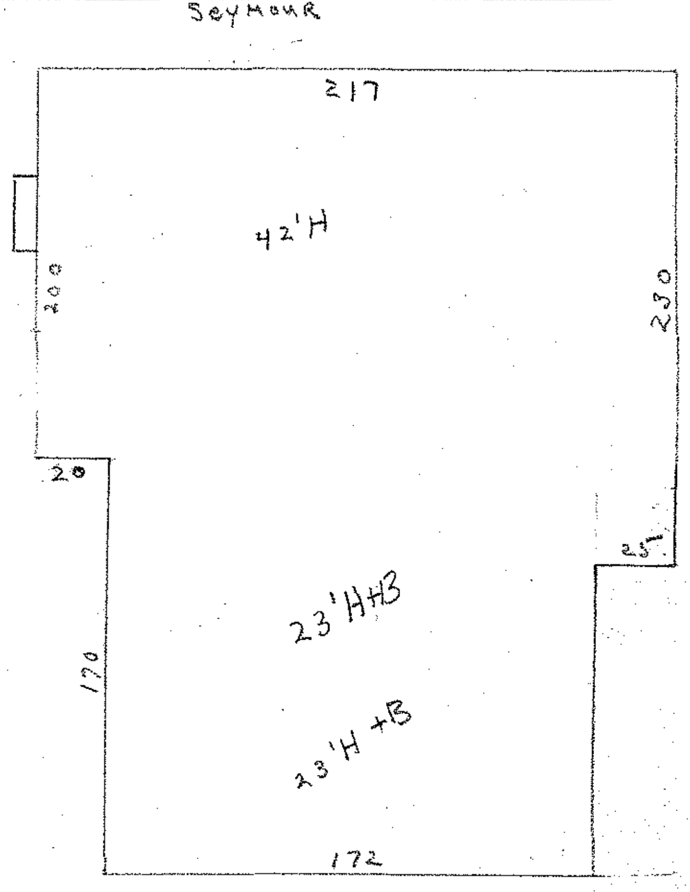
HEATING
- Unit
- Hot Air
- Hot Water
- Steam ✓
- Cen. Sta.
- Fireplace

MISCELLANEOUS
- Incinerator
- Kitchen Cabinets
- Pass. Elevator
- Frt. Elevator
- Fire Escape
- Sprinklers
- Air Conditioners
- Vault

CONDITION
- Good ✓
- Normal
- Poor

EXTRAS

ROOMS	STORIES				INTERIOR FINISH		
	B	1	2	3	Floors	Trim	Walls
Living							
Dining							
Kitchen							
Bedroom							
Bathroom							
Lavatory							
Family							
Utility							
Recreation							
Office							
Storage							
Stores							



104 2

IMPROVEMENT COMPUTATION													ASSESSED VALUE			
ITEM	DIMENSIONS	HEIGHT	AREA OR CONTENT	BASE RATE	PAGE	COST AT INDEX 100	LOCAL INDEX	REPL. COST	% COND.	SOUND VALUE	%	ASSESSED VALUE	YEAR	LAND	IMPROVE-MENTS	T
													1959	28950	229840	
													1960	16330	304000	
													1961	16330	293040	
													1964	16330	193040	
													1975	16330	193040	
													1976	16330	183040	
													1977	16330	163040	

NYS- Real Property System
County of Erie county
City of Buffalo
SWIS Code - 140200

Subject Property Inventory Summary
For Current Year File 2005
Parcel ID: 111.83-9-7.1
Active

RPS030/V04/L001
Date: 10/26/2004
Sheet 1 of 1

Parcel Information

Curr Owner: American Linen Supply Co
Location: E
7 Lord
Buffalo, NY 14210

Acct #: 00030450
School Cd: 140200 Buffalo School
Roll Sect: 1 Taxable **RS/S:** A
Prop Class: 340 Vacant indus

Parcel Land Size

Front: 21.10 **Acres:** 0.00
Depth: 0.00 **Sq Ft:** 0

Grid Coordinates

East: 429728 **North:** 1048079

File Maintenance Info

Created: 02/05/1982
Modified: 07/16/2002 12:00 AM
By: AFM
Folder: PARCEL

Site Characteristics

Site No: 1
Site Type: C Commercial
Prop Class: 340 Vacant indus
Route No: 000001791

Nbhd Cd: 4000
Sewer Type: 3 Comm/public
Water Supply: 3 Comm/public
Utilities: 4 Gas & elec

Used As: Z98 Non-contrib
Overall Eff Yr: 0
Overall Desire: 3 Normal
Overall Cond: 0

DC Entry Type:
Zoning Cd:
Valuation Dist: 5
Overall Grade:

Laser Disk No:
Data Mailer:
Last Phy Insp:
Reappraisal: 12/01/2001

Land Breakdowns

Land Type	Front	Depth	Acres	Sq Ft	Soil Rating	Wtrfrt Type	Depth Factor	Infl Pct	Infl Cd 1	Infl Cd 2	Infl Cd 3	Land Value	Unit Price	Dim Code
01 Primary	0.00	0.00	0.00	24,698			0	0				0	0	

LABEL CORRECTION

230

001 SWIS CODE	01	
002 SECTION NUMBER	05	
003 BLOCK NUMBER	11	
004 LOT NUMBER	13	
005 SUB-LOT NUMBER	16	
006 SUFFIX NUMBER	19	
007 VALUATION UNIT	21	01
008 TRANSACTION CODE	23	1
*** CARD CODE	24	0 1
009 PROPERTY CLASSIFICATION	26	438
010 PROPERTY ADDRESS	29 45 61	
011 PROPERTY OWNER		

111.830-09-007.000 340
1-0900 0010009000 140201

AMERICAN LINEN SUPPLY

W 526 SMITH M LORD

551 SMITH ST
BUFFALO N Y 14210

AC- -2.70

SALES VERIFICATION

*** CARD CODE	24	0 3
101 VALID SALE 0 = No 1 = Yes	26	
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N.P.		34	35	37	38
		41	42	44	45
		48	49	51	52
		55	56	58	59
		62	63	65	66
		69	70	72	73

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SITE CHARACTERISTICS

107 NEIGHBORHOOD TYPE 1 = Rural 2 = Crossroads 3 = Suburb 4 = Urban 5 = Subdivision 6 = Commercial	40	6
108 NEIGHBORHOOD CODE	41	
109 ROAD TYPE 0 = None 1 = Dirt 2 = Gravel 3 = Paved 4 = State	46	3
110 TRAFFIC 1 = Light 2 = Medium 3 = Heavy	47	2
111 ZONING	48	
112 WATER 0 = None 1 = Private 2 = Comm'l 3 = Public	52	3
113 SEWER 0 = None 1 = Private 2 = Comm'l 3 = Public	53	3
114 OTHER UTILITIES 0 = None 1 = Gas 2 = Elec 3 = Gas & Elec	54	3
115 SITE COMPARABILITY 1 = Inferior 2 = Typical 3 = Superior	55	2

AUDIT CONTROL

*** CARD CODE	24	0 0
501 FORM NUMBER	26	1
502 TOTAL FORMS	27	1
503 DATE LISTED	28	040279
504 LISTED BY	34	562
505 DATE MEASURED	37	
506 MEASURED BY	43	
507 NUMBER OF VISITS [✓ 1] 2 3	46	1
508 SOURCE 1 = Owner 2 = Spouse 3 = Tenant 4 = Other 5 = Estimate 6 = Refusal	47	5

INCOME INFORMATION

*** CARD CODE	24	0 4
201 ECONOMIC RENT	26	
202 ACTUAL RENT	32	
203 ADDITIONAL INCOME	38	
204 TOTAL EXPENSES	44	
205 VACANCY RATE	50	
206 TOTAL PROPERTY TAXES	52	
207 MORTGAGE-PERCENT FINANCED	58	
208 MORTGAGE TERM IN YEARS	60	
209 MORTGAGE INTEREST RATE	62	
210 EQUITY YIELD	66	
211 INVESTMENT PERIOD	68	
212 APPRECIATION	70	
213 DEPRECIATION	72	
214 REMAINING LIFE IN YEARS	74	

MEMORANDA

IMPROVEMENTS ONLY

-*BILLBOARDS PRESENT - 3 - WHITMIER+FERRIS,
12x24 ON LIGHT METAL FRAMES

Signature by Owner or Agent below indicates data on this form was collected in your presence. It does not mean that you have verified the information hereon.

SIGNATURE DATE

COMMERCIAL/INDUSTRIAL
DATA COLLECTION FORM
ERIE COUNTY, NEW YORK
P.R.C. JACOBS CO., INC. 1976

LAND DESCRIPTION

*** CARD TYPE	301 MS-CO	302 SITE CODE	303 ADJ FRONT	304 ADJ DEPTH	305 AREA (Decimal if acres)	306 UNIT PRICE (Always Decimal)	307 DEPTH FACTOR	308 INFLUENCE CODE	O/O	+/−	309 LAND VALUE (Manual)
24-25	26	27-28	29-31	32-34	35-40	41-46	47-49	50	51-52	53	54-60
06	A	01			2.710						

PROPERTY IDENTIFICATION

001 SWIS CODE	01	02011
002 SECTION NUMBER	05	111.830
003 BLOCK NUMBER	11	09
004 LOT NUMBER	13	007
005 SUB-LOT NUMBER	16	000
006 SUFFIX NUMBER	19	
007 VALUATION UNIT	21	01
008 TRANSACTION CODE	23	1
009 BUILDING NUMBER	24	
010 BUILDING SECTION NUMBER	26	

YARD IMPROVEMENTS

*** CARD CODE	601 STRUCTURE CODE	602 MEASURE ONE	603 MEASURE TWO	604 NO. OF UNITS	605 CON DTN	606 FNC UTL	607 YR. BLT/ INSTL'D	608 INT EXT	609 COST NEW	610 PERCENT GOOD	611 DEPRECIATED VALUE
24-25	26-30	31-36	37-41	42-44	45	46	47-49	50	51-55	56-58	59-63
9 1	AP1	910	6		3	3	950	0			
9 2	LP4	17860	4		2	3	965	0			
9 3	MS1										3000
9 4											
9 5											
9 6											

BUILDING-SECTION GENERAL DESCRIPTION

*** CARD CODE	27	10
701 YEAR BUILT	29	
702 BUILT AS (Property Classification)	32	
703 EXTERIOR CONDITION 1 = Poor 2 = Fair 3 = Normal 4 = Good 5 = Renovated	35	
704 FUNCTIONAL UTILITY 0 = None 1 = Poor 2 = Fair 3 = Normal 4 = Good	36	
705 ROOF TYPE 00 = No Roof 01 = Flat 02 = Irregular 03 = Gable 04 = Industrial 05 = Shed 06 = Arch 07 = A-Frame	37	
706 ROOF MATERIAL 00 = Undetermined 01 = Built-Up 02 = Shingles 03 = Rolled Compos 04 = Metal 05 = Fibreglass/Plastic 06 = Slate/Tile	39	
707 FRAME TYPE 00 = None 01 = Fireprf Steel 02 = Reinforced Concrete 03 = Non-Fireproof Steel 04 = Masonry 05 = Wood 06 = Light Metal	41	
708 SECTION PERIMETER	43	
709 BASEMENT PERIMETER	47	

EXTERIOR WALL DESCRIPTION

*** CARD CODE	801 BASIC EXTERIOR WALLS MAT'L	LINEAL FT.	HEIGHT	802 EXTERIOR WALL FACING MAT'L	LINEAL FT.	HEIGHT
27-28	29-30	31-34	35-37	38-39	40-43	44-46
1 1						
1 2						
1 3						
1 4						
1 5						
1 6						

NOTES: MS1 – 3 BILLBOARDS 12×24
WHITMIRE & FERRIS

BUILDING - SECTION INTERIOR DESCRIPTION

*** CARD CODE	901 SIMILAR STORIES FROM	TO	902 USED AS CODE	903 HGHT OF STOR	904 SHAPE	905 WIDTH	906 LENGTH	907 AREA (Square Feet)	908 INTERIOR CONDIT ION	909 FUNCT'NL UTILITY	910 PERCENT INTERIOR FINISHED	911 EXTENT OF PARTIT IONS	912 FLOOR CONST.	913 PERCENT LIGHTED	914 PLUMBING	915 HEATING SYSTEM PERCENT	TYPE	916 AIR CONDITIONING PERCENT	TYPE	917 SPRINKLER SYSTEM PERCENT	TYPE
27-28	29-30	31-32	33-34	35-36	37	38-40	41-43	44-49	50	51	52-54	55	56	57-59	60	61-63	64	65-67	68	69-71	72
2 1																					
2 2																					
2 3																					
2 4																					
2 5																					
2 6																					
2 7																					
2 8																					
2 9																					

Owner: AMERICAN LINEN SUPPLY CO		Tax Acct: 111.830-0009-007.1000000	Acct#: 00030450
Owner 2: C/O AMERIPRIDE SERVI		Printkey:111.83-9-7.1	Rentable SF: 0
Prop Addr #: 7	Use: 340 VAC INDUSTRIAL SITE	Bldg Sq Foot: 0	Swis Code: 140200
Prop Street: LORD	East: 0429728 / Longitude: -78.845494	North: 1048079 / Latitude: 42.876279	1st Floor Footage: 0
Mail Addr 1: PO BOX 1067		Phone:	2nd Floor Footage: 0
Mail Addr 2: BUFFALO NY		Misc1:	Number Fireplaces: 0
Area : CITY OF BUFFALO		Subdiv: 350.60 S 0F SO. DIVISION	Story Height: 0
Zip Code : 14240-		Misc2: IRR S.L.	Number Res Units: 0
Lot Size (acres): 0.00	Lot Size: 0021.11x0000.00	Deed Book-Deed Page: 07878-00285	Number 1 Bdrm.:
House Type:	Heat:		Number 2 Bdrm:
Basement:	Fuel:	Number Bedrm: 0.0	Number 3 Bdrm:
Basement SF: 0	Water: PUBLIC	Number Baths: 0.0	Used As1:
Exterior:	Sewer: NONE	Number Stories: 0.0	Used As2:
Garage: 0	Util: GAS & ELEC	Number Bldgs: 0	School Code: 140200
Year Built: 0		Assess Total: $ 12300	County Tax: $ 55.68
Improvmt1:	Size: 0 X 0	Land Assessment: $ 12300	City Tax: $ 224.97
Improvmt2:	Size: 0 X 0	Old Assessment: $ 12300	School Dist: BUF CITY
Improvmt3:	Size: 0 X 0	Sales Price: $0.00	School Tax: $155.96
Improvmt4:	Size: 0 X 0	Sale Date: N/A	Exempt:
		Arms Length Sale:	

Close Window

Owner: AMERICAN LINEN SUPPLY		Tax Acct: 122.270-0001-004.0000000	Acct#: 00085400
Owner 2:		Printkey:122.27-1-4	Rentable SF: 156439
Prop Addr #: 822	Use: 710 MANUFACTURING	Bldg Sq Foot: 156439	Swis Code: 140200
Prop Street: SENECA	East: 0429305 / Longitude: -78.847072	North: 1048027 / Latitude: 42.876133	1st Floor Footage: 0
Mail Addr 1: 8 LORD ST		Phone:	2nd Floor Footage: 0
Mail Addr 2: BUFFALO NY		Misc1:	Number Fireplaces: 0
Area : CITY OF BUFFALO		Subdiv: WEST COR LORD	Story Height: 14
Zip Code : 14210-		Misc2: EXCEPT *798 SENECA	Number Res Units: 1
Lot Size (acres): 0.00	Lot Size: 0275.50x0370.00	Deed Book-Deed Page: 10718-376	Number 1 Bdrm.:
House Type:	Heat:		Number 2 Bdrm:
Basement:	Fuel:	Number Bedrm: 0.0	Number 3 Bdrm:
Basement SF: 36643	Water: PUBLIC	Number Baths: 0.0	Used As1: LT. MANUFACT.
Exterior:	Sewer: NONE	Number Stories: 2.0	Used As2: Z98
Garage: 0	Util: GAS & ELEC	Number Bldgs: 1	School Code: 140200
Year Built: 1920		Assess Total: $ 840000	County Tax: $ 3802.69
Improvmt1: PAVNG,ASPHLT	Size: 43 X 0	Land Assessment: $ 46800	City Tax: $ 15363.60
Improvmt2: PAVNG,ASPHLT	Size: 43 X 0	Old Assessment: $ 840000	School Dist: BUF CITY
Improvmt3:	Size: 0 X 0	Sales Price: $0.00	School Tax: $10,651.20
Improvmt4:	Size: 0 X 0	Sale Date: N/A	Exempt:
		Arms Length Sale:	

* HISTORICAL SALE *

Sale Price: $1.00	Sale Date: 8/ 2/ 1993	Grantor: ERIE COUNTY INDUS	Deed: 10718-376	Deed Type: Q	Deed Valid: 0	Arms Length: Y

Close Window

LAW OFFICES OF
MILTON H. FRIEDMAN
ERIE COUNTY BANK BUILDING
ONE MAIN PLACE
BUFFALO, NEW YORK 14202

May 16, 1977

B. P. Berry, Jr., Esq.
47 South Ninth Street
Minneapolis, Minnesota 55402

Re: 8 Lord Street
Buffalo, New York

Dear Bernie:

Complying with your request, I hand you herewith copy of Purchase Agreement in the above matter.

Regards.

Very truly yours,

MHF:gb
enclosure

RECEIVED
NATIONAL OFFICE
MAY 18 1977
REFERRED TO Edith
ANSWERED
N. A. [illegible]

AGREEMENT

THIS AGREEMENT, made this 31st day of January, 1977, by and between EDWARD SEEBERG, residing at Innisbrook Country Club, Tarpon Springs, Florida, herein called "SELLER", and AMERICAN LINEN SUPPLY CO., 551 Smith Street, Buffalo, New York, herein called "PURCHASER".

WITNESSETH:

1. Seller hereby agrees to sell to Purchaser and Purchaser hereby agrees to purchase from Seller all the premises owned by Seller fronting on and lying between Seneca Street, Lord Street and Seymour Street in the City of Buffalo, New York, all heating, plumbing and lighting fixtures and all other personalty, whatever and if any, belonging to or on the said premises, together with and including all buildings and improvements thereon, all fixtures, building service equipment, such as, but not limited to, boilers, air-conditioners, elevators, and all the rights of the Seller in and to any and all streets, roads, highways, alleys, driveways, easements and rights-of-way appurtenant thereto.

2. The said premises are approximately 370 feet on Seymour Street, approximately 374 feet on Lord Street, and approximately 250 feet on Seneca Street.

3. Purchaser shall pay to Seller for the premises the sum of Two Hundred Seventy-five Thousand ($275,000) Dollars, as follows:

Land	$25,000
Improvements	$250,000

4. There shall be pro-rated and adjusted as of the date of the delivery of the deed, rentals, City of Buffalo and County of Erie taxes, sewer and water rent, electricity, gas and fuel charges, and any other charges attributable to the premises.

5. Seller represents and warrants, which representations and warranties shall survive the closing, that the premises are subject to the following tenancy:

a) Lease, dated January 16, 1965, between Seller and Thorner-Sidney Press, Inc., covering the entire second floor of the premises together with 2,500 square feet of space in the basement.

Copy of the said lease is attached hereto and made a part hereof. Seller shall assign said lease to Purchaser.

No actions or proceedings are pending with respect to the premises except a proceeding to reduce the tax assessment now pending before the Assessors of the City of Buffalo, New York. Seller shall hold harmless the Purchaser from any claim by Thorner-Sidney Press, Inc. arising under its lease up to and including the date of closing.

6. The said premises are sold subject to the following, provided that they do not render the title unmarketable:

a) Zoning regulations and ordinances of the City of Buffalo, New York.

b) Any state of facts which an accurate survey shall show.

c) Covenants and restrictions of record, if any.

d) Easements or rights-of-way now or hereafter existing of record.

7. Seller, at his own cost and expense, shall provide Purchaser with a policy of title insurance acceptable to the Purchaser, covering the title to the premises.

8. Seller shall pay the Purchaser at the time of closing the additional sum of $5,600 in lieu of repairs to the premises. Seller shall have no obligation to repair or alter the premises and Purchaser agrees to take the premises "as is", except as to repairs that may be required under paragraph nine hereof and as to warranties of title.

9. At the closing, Seller agrees that the boilers, elevators and sprinkling system on the premises shall be in good working order.

10. At his own expense, Seller shall furnish and deliver to the attorney for Purchaser, at least five (5) days prior to the date of closing, a fully guaranteed up-to-date tax and title search and an up-to-date survey, showing the premises above described and the location of all the buildings and improvements and other structures affecting the same.

11. At the time of closing herein, Seller shall tender to Purchaser a warranty deed with lien covenant conveying good and marketable title in fee simple to said premises, free and clear from all liens and encumbrances except as otherwise provided herein.

Seller shall pay for the continuation of the tax and title search to the time of closing and for the required revenue stamps to be attached to the deed; Purchaser shall pay the fee for recording the deed.

12. In the event that the premises described herein are totally or substantially destroyed by fire or other casualty or taken by eminent domain, then, in such event, either party may, by written notice to the other, delivered in person or sent by registered mail to their respective addresses written above within thirty (30) days from the date of such occurrence, elect to cancel this agreement which upon such election shall cease and determine and neither party shall have any claim against the other except for breach of this agreement prior to such occurrence and all monies paid by Purchaser to Seller shall be returned

In the event that less than all or a substantial part of the premises are damaged by fire or other casualty or taken by eminent domain, then, in such event, Seller shall repair such damage, or in the alternative, shall pay to Purchaser an amount equal to the cost of repairing the premises. Alternatively, Purchaser shall have the right to insure the premises at its expense in such amount and upon such terms and conditions as Purchaser may desire, and if there shall be a fire or other casualty as described in this subparagraph , then the Seller shall cooperate with the Purchaser in helping the Purchaser to establish its rights to an insurance settlement by reason of such loss in preference to any settlement which the Seller might otherwise make by reason of its own insurance, and in lieu of such settlement, and if the Seller shall have such insurance and shall receive the settlement proceeds arising by reason of such loss, then this contract shall close as provided herein.

Any dispute arising under this paragraph shall be determined pursuant to the rules of the American Arbitration Association.

13. The payments herein provided shall be made and the deed delivered at the Office of the Clerk of the County of Erie at 10 a.m. on January 31, 1977, or such other time as shall be mutually agreed upon.

14. This agreement constitutes the entire understanding between the parties hereto and may not be modified, changed or terminated, except in writing, signed by the parties hereto.

15. All the terms, covenants, provisions, conditions and agreements herein above set forth shall be binding and inure to the benefit of the respective parties hereto and to their administrators, executors, successors and assigns.

IN WITNESS WHEREOF, this agreement has been duly executed by the parties hereto.

Edward Seeberg

, his attorney-in-fact

AMERICAN LINEN SUPPLY CO.

by B P Berry Secretary

his attorney-in-fact, residing at 1404 Main Place
Tower, Buffalo, New York

party of the first part, and

AMERICAN LINEN SUPPLY CO., a Delaware corporation,
maintaining an office at 551 Smith Street, Buffalo,
New York

party of the second part,

Witnesseth *that the party of the first part, in consideration of* *Dollar* ($ 1.00 & more) *lawful money of the United States, paid by the party of the second part, does hereby grant and release unto the party of the second part,* its sucessors and assigns [illegible] *forever, all*

that tract or parcel of land, situate in the City of Buffalo, County of Erie and State of New York, being part of Lot No. 17, Township 11, Range 8 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING, at the intersection of the west line of Lord Street and the south line of Seymour Street; thence running westerly along the south line of Seymour Street 370.89 feet to the northwest corner of lands conveyed to J. W. Clement Company by deed recorded in Erie County Clerk's Office in Liber 2174 of Deeds at page 486; thence southerly along the west line of said lands 130.61 feet to the southwest corner thereof; thence westerly 33.2 feet to a northwest corner of lands conveyed to J. W. Clement Company by deed recorded in Erie County Clerk's Office in Liber 1654 of Deeds at page 292; thence southerly along the west line of said lands 95.67 feet to the southwest corner thereof; thence easterly parallel with Seneca Street 104.05 feet to the northwest corner of lands conveyed to J. W. Clement Company by deed recorded in Erie County Clerk's Office in Liber 4860 of Deeds at page 501; thence southerly along the west line of said lands 140 feet to the north line of Seneca Street; thence easterly along the north line of Seneca Street 300.22 feet to the west line of Lord Street; and thence northerly along the west line of Lord Street 374.42 feet to the point of beginning.

EXCEPTING therefrom a parcel of land conveyed to Frank W. Dengos and wife by deed recorded in Erie County Clerk's Office in Liber 6924 of Deeds at page 133.

(1)

RECEIVED
$ 302.50
REAL ESTATE
FEB 0 1977
TRANSFER TAX
ERIE
13049 COUNTY

APPENDIX D

Environmental Database Report

FirstSearch Technology Corporation

Environmental FirstSearch™ Report

TARGET PROPERTY:

8 LORD ST

BUFFALO NY 14210

Job Number: 04.9629

PREPARED FOR:

C.T. Male Associates, PC
50 Century Hill Drive
Latham, NY 12110

09-20-04

Tel: (781) 551-0470 *Fax: (781) 551-0471*

Environmental FirstSearch
Search Summary Report

Target Site: 8 LORD ST
BUFFALO NY 14210

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	06-15-04	1.00	0	0	0	0	0	0	0
CERCLIS	Y	06-23-04	0.50	0	0	0	2	-	0	2
NFRAP	Y	06-23-04	0.25	0	0	0	-	-	0	0
RCRA TSD	Y	07-12-04	1.00	0	0	0	0	3	0	3
RCRA COR	Y	07-12-04	1.00	0	0	0	0	4	0	4
RCRA GEN	Y	07-12-04	0.15	0	1	0	-	-	0	1
RCRA NLR	Y	07-12-04	0.15	1	2	0	-	-	0	3
ERNS	Y	12-31-03	0.15	0	0	0	-	-	0	0
State Sites	Y	07-01-04	1.00	0	0	0	2	9	0	11
Spills-1990	Y	08-27-04	0.15	0	3	0	-	-	0	3
Spills-1980	Y	10-18-00	0.15	0	1	0	-	-	0	1
SWL	Y	01-01-04	0.50	0	0	0	1	-	0	1
REG UST/AST	Y	01-01-02	0.15	0	2	0	-	-	0	2
Leaking UST	Y	08-27-04	0.50	0	2	4	4	-	0	10
- TOTALS -				1	11	4	9	16	0	41

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to FirstSearch Technology Corp., certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in FirstSearch Technology Corp.'s databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although FirstSearch Technology Corp. uses its best efforts to research the actual location of each site, FirstSearch Technology Corp. does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of FirstSearch Technology Corp.'s services proceeding are signifying an understanding of FirstSearch Technology Corp.'s searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch
Site Information Report

Request Date:	09-20-04	**Search Type:**	COORD
Requestor Name:	Aimee Gates	**Job Number:**	04.9629
Standard:	ASTM		Filtered Report

TARGET ADDRESS: 8 LORD ST
BUFFALO NY 14210

Demographics

Sites: 41 **Non-Geocoded:** 0 **Population:** NA

Radon: OF THE 14 HOMES TESTED, THE AVG. PCI/L LEVEL WAS .9

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)		UTMs
Longitude:	-78.846112	-78:50:46	**Easting:**	675921.208
Latitude:	42.875776	42:52:33	**Northing:**	4749055.707
			Zone:	17

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 1 Mile(s)

ZIP Code	City Name	ST	Dist/Dir	Sel
14204	BUFFALO	NY	0.35 NW	Y
14206	BUFFALO	NY	0.31 NE	Y
14212	BUFFALO	NY	0.83 NW	Y
14220	BUFFALO	NY	0.86 SE	Y

Services:

	Requested?	Date
Sanborns	No	
Aerial Photographs	No	
Topographical Maps	No	
City Directories	No	
Title Search	No	
Municipal Reports	No	
Online Topos	No	

Environmental FirstSearch
Sites Summary Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

TOTAL: 41 **GEOCODED:** 41 **NON GEOCODED:** 0 **SELECTED:** 8

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	CERCLIS	BERN METALS NYD013703632/NOT PROPOSED	22 BENDER STREET BUFFALO NY 14206	0.44 NE	1
2	CERCLIS	UNIVERSAL IRONS & METAL NYD986910206/NOT PROPOSED	993 CLINTON ST BUFFALO NY 14206	0.49 NE	2
3	RCRA	BUFFALO COLOR NYD080335052/TSD	340 ELK ST BUFFALO NY 14210	0.62 SE	3
4	RCRA	HONEYWELL INC - BUFFALO RESEARCH NYD000632315/TSD	20 PEABODY ST BUFFALO NY 14210	0.62 SE	4
5	RCRA	P V S CHEMICAL INC NEW YORK NYD980534390/TSD	55 LEE ST BUFFALO NY 14210	0.78 SE	5
6	RCRACOR	ALLIED CHEMICAL CORP-BUFFALO CHEM NYD001863372/CA	35 LEE ST BUFFALO NY 14210	0.68 SE	6
7	RCRACOR	BUFFALO COLOR CORPORATION NYD080335052/CA	100 LEE ST BUFFALO NY 14210	0.62 SE	3
8	RCRACOR	HONEYWELL INTERNATIONAL INC. NYD000632315/CA	20 PEABODY STREET BUFFALO NY 14210	0.62 SE	4
9	RCRACOR	P V S CHEMICAL INC NEW YORK NYD980534390/CA	55 LEE ST BUFFALO NY 14210	0.78 SE	5
10	***RCRAGN***	***AMERIPRIDE*** ***NYD000829622/SGN***	***8 LORD ST*** ***BUFFALO NY 14210***	***0.05 NE***	***7***
11	***RCRANLR***	***COVERALL SERVICE & SUPPLY CO*** ***NYD058655705/NLR***	***8 LORD ST*** ***BUFFALO NY 14210***	***0.05 NE***	***7***
12	***RCRANLR***	***THORNER SIDNEY PRESS INC*** ***NYD002108256/NLR***	***808 SENECA ST*** ***BUFFALO NY 14210***	***0.04 SW***	***11***
13	RCRANLR	UNILOCK INC NYD986972768/NLR	510 SMITH ST BUFFALO NY 14210	0.12 SE	12
14	STATE	ALLIED CHEMICAL IND. CHEM. DIV. 915004	55 LEE STREET BUFFALO NY 14210	0.90 SE	13
15	STATE	ALLIED CHEMICAL, R & D FACILITY 915002	20 PEABODY STREET BUFFALO NY 14210	0.62 SE	4
16	STATE	BEHRINGER PROPERTY (IMSON STREET) 915155	181 IMSON STREET BUFFALO NY 14210	0.78 SE	14
17	STATE	BENGART AND MEMEL, INC. 915115	1091 CLINTON STREET BUFFALO NY 14206	0.61 NE	15
18	STATE	BERN METAL CORP./UNIVERSAL IRON M 915135	22 BENDER STREET/993 CLINTO BUFFALO NY 14206	0.44 NE	1
19	STATE	BRISTOL STREET 915170	204 & 208 BRISTOL STREET BUFFALO NY 14206	0.44 NW	16
20	STATE	C&D POWER SYSTEMS 915134	45 SCOVILLE AVENUE BUFFALO NY 14206	0.95 SE	17
21	STATE	GCF INDUSTRIES HS9023/HAZ SUBST WASTE DISP	105 DOROTHY ST BUFFALO NY 14206	0.99 SE	18

Environmental FirstSearch
Sites Summary Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

TOTAL: 41 **GEOCODED:** 41 **NON GEOCODED:** 0 **SELECTED:** 8

ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
22	STATE	HOUDAILLE INDUSTRIES - MANZEL DIVI 915037	315 BABCOCK STREET BUFFALO NY 14202	0.72 SE	19
23	STATE	MOLLENBERG-BETZ 915041	300 SCOTT STREET BUFFALO NY 14204	0.94 SW	20
24	STATE	WL MCDOUGALL CO. HS9070/HAZ SUBST WASTE DISP	ELK AND PRENATT STREETS BUFFALO NY 14210	0.56 SE	21
25	***SPILLS***	***AMERICAN LINEN*** ***9601734/CLOSED 05/20/1996***	***8 LORD STREET*** ***BUFFALO NY 14210***	***0.05 NE***	*7*
26	***SPILLS***	***AMERIPRIDE LINEN SVCS*** ***0175474/CLOSED***	***8 LORD STREET*** ***BUFFALO NY 14210***	***0.05 NE***	*7*
27	***SPILLS***	***COVERALL AMERICAN LINEN*** ***9207422/CLOSED 10/02/1992***	***SENECA STREET*** ***BUFFALO NY 14210***	***0.05 NE***	*7*
28	SPILLS80	AUTOMOBILE ACCIDENT 8710236/CLOSED	797 SENECA STREET BUFFALO NY 14210	0.07 SW	27
29	SWL	CTS CRUSHING & RECYCLING 9-15W33/ACTIVE	1070 SENECA STREET BUFFALO NY	0.43 SE	28
30	***UST***	***AMERICAN LINEN SUPPLY CO*** ***PBS9-013773/UNREGULATED BY PBS***	***8 LORD ST*** ***BUFFALO NY 14210***	***0.05 NE***	*7*
31	***UST***	***AMERICAN LINEN SUPPLY CO.*** ***CBS9-000151/ACTIVE FACILITY***	***8 LORD ST. P.O. BOX 1067*** ***BUFFALO NY 14210***	***0.05 NE***	*7*
32	LUST	BISHOP CHEMICALS & EQUIP. 9200249/CLOSED 04/29/1993	160 VAN RENSSELAER STREET BUFFALO NY 14210	0.28 SW	22
33	LUST	BUFFALO FIRE HOUSE #32 9910189/CLOSED 11/23/1999	SENECA AND SWAN STREETS BUFFALO NY 14210	0.18 NW	8
34	LUST	BUFFALO PLUMBING SUPPLY 9308488/CLOSED 12/29/1993	840 SENECA STREET BUFFALO NY 14210	0.07 SE	23
35	LUST	ENGINE 32 FIRE STATION 9910197/CLOSED 01/05/2000	SENECA AND SWAN STREETS BUFFALO NY 14210	0.18 NW	8
36	LUST	GRAPHIC CONTROLS 9009691/CLOSED 08/26/1991	189 VAN RENSSELAER STREET BUFFALO NY 14210	0.23 SW	9
37	LUST	L.C.O.BUILDING 0475260/ACTIVE	726 EXCHANGE ST. BUFFALO NY 14210	0.27 SW	24
38	LUST	NYS THRUWAY AUTHORITY 9400832/CLOSED 06/13/1994	131 ROSEVILLE STREET BUFFALO NY 14210	0.26 SW	10
39	LUST	SAINT PATRICK VILLAGE 9509352/CLOSED 11/09/1995	39 EMSLIE STREET BUFFALO NY 14210	0.17 NW	25
40	LUST	SCHOOL 40 0375440/ACTIVE	89 CLARE STREET BUFFALO NY 14206	0.44 NE	26
41	LUST	UNILOCK INC. 9105743/CLOSED 11/15/1991	510 SMITH STREET BUFFALO NY 14210	0.12 SE	12

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

CERCLIS SITE

SEARCH ID: 1 **DIST/DIR:** 0.44 NE **MAP ID:** 1

NAME: BERN METALS
ADDRESS: 22 BENDER STREET
BUFFALO NY 14201
ERIE
CONTACT: KEVIN MATHEIS

REV: 6/23/04
ID1: NYD013703632
ID2: 0202697
STATUS: NOT PROPOSED
PHONE: 9083216789

DESCRIPTION:
ABANDONED METAL-WASTE REPROCESSING AND RECYCLING INDUSTRY.ABANDONED METAL-WASTE REPROCESSING AND RECYCLING INDUSTRY.

ACTION/QUALITY	AGENCY/RPS	START/RAA	END
RE Stabilized	EPA Fund-Financed Primary	04-21-1988	07-08-1988
Lo	Federal Enforcement		02-07-2002
NO	Federal Enforcement	08-14-1990	07-18-1991
RE Stabilized	EPA Fund-Financed Primary	06-27-1990	06-29-1990
PR NFRAP (No Futher Remedial Action Planned	State, Fund Financed		02-28-1990
RE Stabilized	EPA Fund-Financed Primary	11-26-1990	08-22-1991
RE Stabilized	EPA Fund-Financed Primary	09-28-1990	10-23-1990
RE Stabilized	EPA Fund-Financed Primary	01-09-1989	03-15-1989
UN	Federal Enforcement		09-29-1992
SI NFRAP (No Futher Remedial Action Planned	EPA Fund-Financed	06-30-1989	09-27-1989
Lo	Federal Enforcement		02-07-2002
AD	Federal Enforcement		09-29-1995
CO	Federal Enforcement		01-15-2003
CO	Federal Enforcement		01-15-2003
RE Stabilized	EPA Fund-Financed Primary	10-15-1991	01-08-1992

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

CERCLIS SITE

SEARCH ID: 1 **DIST/DIR:** 0.44 NE **MAP ID:** 1

NAME: BERN METALS
ADDRESS: 22 BENDER STREET
BUFFALO NY 14201
ERIE
CONTACT: KEVIN MATHEIS

REV: 6/23/04
ID1: NYD013703632
ID2: 0202697
STATUS: NOT PROPOSED
PHONE: 9083216789

PR Cleaned up	Responsible Party Primary	09-29-1992	03-11-1994

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

CERCLIS SITE

SEARCH ID: 2 **DIST/DIR:** 0.49 NE **MAP ID:** 2

NAME:	UNIVERSAL IRONS & METAL	**REV:**	6/23/04
ADDRESS:	993 CLINTON ST	**ID1:**	NYD986910206
	BUFFALO NY 14201	**ID2:**	0203413
	ERIE	**STATUS:**	NOT PROPOSED
CONTACT:	KEVIN MATHEIS	**PHONE:**	9083216789

DESCRIPTION:
ABANDONED SCRAP METAL REPROCESSING & RECYCLING FACILITY, WITHIN A MIXED INDUSTRIAL COMMERCIAL RESIDENTAL AREA. SITE HAS PCB/LEAD SOIL CONTAMINATION, SEVERAL TRANSFORMERS W/PCB- CONTAMINATED OIL & SEVERAL SMALL CONTAINERS WITH VARIOUS PTR PD

ACTION/QUALITY	**AGENCY/RPS**	**START/RAA**	**END**
SE	Federal Enforcement	09-29-1995	01-07-2003
RE Cleaned up	EPA Fund-Financed Primary	11-25-1991	02-24-1992
SI NFRAP (No Futher Remedial Action Planned	EPA Fund-Financed	01-21-1993	06-30-1993
NO Viable PRPs - Cannot Do Work	Federal Enforcement Primary	08-14-1990	07-18-1991
PR High	EPA Fund-Financed		12-16-1991
RE	Federal Enforcement	01-26-1995	09-29-1995
Lo	Federal Enforcement		02-07-2002
RE Stabilized	EPA Fund-Financed Primary	10-15-1990	04-26-1991
CO	Federal Enforcement		01-07-2003
RE	EPA Fund-Financed	11-26-1990	09-30-1991

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA TSD SITE

SEARCH ID: 3 **DIST/DIR:** 0.62 SE **MAP ID:** 3

NAME:	BUFFALO COLOR	**REV:**	12/9/02
ADDRESS:	340 ELK ST	**ID1:**	NYD080335052
	BUFFALO NY 14210	**ID2:**	
	ERIE	**STATUS:**	TSD
CONTACT:		**PHONE:**	

SITE INFORMATION

CONTACT INFORMATION:
TJ WLODARCZAK
MGR ENV SERV
340 ELK ST
BUFFALO NY 14210

PHONE: 7168274648

UNIVERSE NAME:

SUBJECT TO CEI
INCINERATOR
SUBJECT TO CORRECTIVE ACTION
DF: LAND DISPOSAL FACILITY
ST: STORAGE AND TREATMENT
TSDS SUBJECT TO CORRECTIVE ACT

SIC INFORMATION:

2865 - MANUFACTURING - CYCLIC CRUDES AND INTERMEDIATES
2819 - MANUFACTURING - INDUSTRIAL INORGANIC CHEMICALS, NE
2818 - DISCONTINUED, CHANGED, OR UNKNOWN
2869 - MANUFACTURING - INDUSTRIAL ORGANIC CHEMICALS, NEC

RAATS INFORMATION:

DOCKET NUMBER:	II RCRA-86-0210	**INITIAL DATE:**	6271986
DATE RECEIVED:	2071989	**AMOUNT:**	3000.00
ORDER TYPE:	3008(A)	**FACILITY:**	PRIVATELY HELD FACILITY
COMMENTS:	COMPLAINT OF 6/27/86 NOT ON FILE DATE OF COMPLAINT REFERENCED IN CAFO.		

RAATS INFORMATION:

DOCKET NUMBER:	84-0222	**INITIAL DATE:**	3221984
DATE RECEIVED:	9301985	**AMOUNT:**	6000.00
ORDER TYPE:	3008(A)	**FACILITY:**	PRIVATELY HELD FACILITY
COMMENTS:			

ENFORCEMENT INFORMATION:

AGENCY:	E - EPA	**DATE:**	12-MAR-91
TYPE:	310 - FINAL 3008(A) COMPLIANCE ORDER		
AGENCY:	S - STATE	**DATE:**	27-JUN-86

- Continued on next page -

RCRA TSD SITE

SEARCH ID: 3 **DIST/DIR:** 0.62 SE **MAP ID:** 3

NAME: BUFFALO COLOR
ADDRESS: 340 ELK ST
BUFFALO NY 14210
ERIE
CONTACT:

REV: 12/9/02
ID1: NYD080335052
ID2:
STATUS: TSD
PHONE:

TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 16-SEP-85
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 28-APR-95
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 30-DEC-91
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 31-JAN-95
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 14-APR-86
TYPE: 120 - WRITTEN INFORMAL

AGENCY: E - EPA **DATE:** 07-MAR-84
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 18-SEP-84
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 16-JAN-85
TYPE: 120 - WRITTEN INFORMAL

AGENCY: E - EPA **DATE:** 30-SEP-85
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: X - EPA OVERSIGHT **DATE:** 30-SEP-85
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 21-OCT-85
TYPE: 120 - WRITTEN INFORMAL

AGENCY: E - EPA **DATE:** 27-JUN-86
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 26-OCT-87
TYPE: 120 - WRITTEN INFORMAL

AGENCY: E - EPA **DATE:** 07-FEB-89
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 11-MAR-85
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001 **RESPONSIBLE:** S - STATE

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA TSD SITE

SEARCH ID: 3 **DIST/DIR:** 0.62 SE **MAP ID:** 3

NAME: BUFFALO COLOR
ADDRESS: 340 ELK ST
BUFFALO NY 14210
ERIE
CONTACT:

REV: 12/9/02
ID1: NYD080335052
ID2:
STATUS: TSD
PHONE:

DETERMINED: 17-NOV-83 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 03/15/1985
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0002 **RESPONSIBLE:** C - EPA CONTRACTOR
DETERMINED: 08-SEP-83 **DETERMINED BY:** C - EPA CONTRACTOR
CITATION: **RESOLVED:** 03/12/1991
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0003 **RESPONSIBLE:** C - EPA CONTRACTOR
DETERMINED: 08-SEP-83 **DETERMINED BY:** C - EPA CONTRACTOR
CITATION: **RESOLVED:** 03/12/1991
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0004 **RESPONSIBLE:** S - STATE
DETERMINED: 18-JUL-84 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 03/15/1985
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0005 **RESPONSIBLE:** S - STATE
DETERMINED: 18-DEC-84 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 11/12/1985
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0006 **RESPONSIBLE:** S - STATE
DETERMINED: 19-OCT-84 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 12/04/1985
TYPE: DCL - TSD CLOSURE/POST CLOSURE REQUIREMENTS

VIOLATION NUMBER: 0007 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 01-SEP-85 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 03/12/1991
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0008 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 16-DEC-85 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 04/30/1986
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0009 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 16-DEC-85 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:**
TYPE: DCL - TSD CLOSURE/POST CLOSURE REQUIREMENTS

VIOLATION NUMBER: 0010 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 16-DEC-85 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:**
TYPE: DFR - TSD FINANCIAL RESPONSIBILITY REQUIREMENTS

VIOLATION NUMBER: 0011 **RESPONSIBLE:** S - STATE
DETERMINED: 30-MAY-84 **DETERMINED BY:** S - STATE

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA TSD SITE

SEARCH ID: 4 **DIST/DIR:** 0.62 SE **MAP ID:** 4

NAME: HONEYWELL INC - BUFFALO RESEARCH
ADDRESS: 20 PEABODY ST
BUFFALO NY 14210
ERIE
CONTACT:

REV: 12/9/02
ID1: NYD000632315
ID2:
STATUS: TSD
PHONE:

SITE INFORMATION

CONTACT INFORMATION:
JAY HOESTERMANN
ENVIRON MGR
20 PEABODY ST
BUFFALO NY 142101523

PHONE: 7168276318

CONTACT INFORMATION:
WILLIAM HANAVAN
MGR ENVIRO.
20 PEABODY ST
BUFFALO NY 14210

PHONE: 7168276318

UNIVERSE NAME:

DF: LAND DISPOSAL FACILITY
INCINERATOR
TSDS SUBJECT TO CORRECTIVE ACT
SUBJECT TO CEI
ST: STORAGE AND TREATMENT
SUBJECT TO CORRECTIVE ACTION

SIC INFORMATION:

2869 - MANUFACTURING - INDUSTRIAL ORGANIC CHEMICALS, NEC

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 09-NOV-94
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 30-MAR-90
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 23-JUL-86
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 17-APR-96
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 12-FEB-97
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

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TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA TSD SITE

SEARCH ID: 4 **DIST/DIR:** 0.62 SE **MAP ID:** 4

NAME:	HONEYWELL INC - BUFFALO RESEARCH	**REV:**	12/9/02
ADDRESS:	20 PEABODY ST	**ID1:**	NYD000632315
	BUFFALO NY 14210	**ID2:**	
	ERIE	**STATUS:**	TSD
CONTACT:		**PHONE:**	

AGENCY:	S - STATE	**DATE:**	24-JAN-01
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	17-JAN-96
TYPE:	310 - FINAL 3008(A) COMPLIANCE ORDER		

VIOLATION INFORMATION:

VIOLATION NUMBER:	0001	**RESPONSIBLE:**	S - STATE
DETERMINED:	23-JUL-86	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	04/24/1989
TYPE:	DFR - TSD FINANCIAL RESPONSIBILITY REQUIREMENTS		
VIOLATION NUMBER:	0002	**RESPONSIBLE:**	S - STATE
DETERMINED:	27-MAR-90	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	05/03/1990
TYPE:	DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)		
VIOLATION NUMBER:	0003	**RESPONSIBLE:**	S - STATE
DETERMINED:	21-APR-94	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	03/14/1996
TYPE:	DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)		
VIOLATION NUMBER:	0004	**RESPONSIBLE:**	S - STATE
DETERMINED:	17-APR-96	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	02/12/1997
TYPE:	DLB - TSD LAND BAN REQUIREMENTS		
VIOLATION NUMBER:	0005	**RESPONSIBLE:**	S - STATE
DETERMINED:	10-NOV-00	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	02/26/2001
TYPE:	DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)		

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA TSD SITE

SEARCH ID: 5 **DIST/DIR:** 0.78 SE **MAP ID:** 5

NAME:	P V S CHEMICAL INC NEW YORK	**REV:**	12/9/02
ADDRESS:	55 LEE ST	**ID1:**	NYD980534390
	BUFFALO NY 14210	**ID2:**	
	Erie	**STATUS:**	TSD
CONTACT:		**PHONE:**	

SITE INFORMATION

CONTACT INFORMATION:
WILLIAM DECKER
PLANT MANAGER
55 LEE ST
BUFFALO NY 14210

PHONE: 7168255762

CONTACT INFORMATION:
CHRIS CANCILLA
PLANT MANAGER
55 LEE ST
BUFFALO NY 14210

PHONE: 7168255762

UNIVERSE NAME:

ST: STORAGE AND TREATMENT
SUBJECT TO CEI
DF: LAND DISPOSAL FACILITY
TSDS SUBJECT TO CORRECTIVE ACT
SUBJECT TO CORRECTIVE ACTION
INCINERATOR

SIC INFORMATION:

2819 - MANUFACTURING - INDUSTRIAL INORGANIC CHEMICALS, NE

RAATS INFORMATION:

DOCKET NUMBER:	84-0234	**INITIAL DATE:**	4301984
DATE RECEIVED:		**AMOUNT:**	
ORDER TYPE:	3008(A)	**FACILITY:**	PRIVATELY HELD FACILITY
COMMENTS:	C TYPE VIOLATIONS DELETE 40 CFR.		

ENFORCEMENT INFORMATION:

AGENCY:	E - EPA	**DATE:**	17-NOV-83
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	03-JUL-86
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	16-MAR-98

- Continued on next page -

RCRA TSD SITE

SEARCH ID: 5 **DIST/DIR:** 0.78 SE **MAP ID:** 5

NAME: P V S CHEMICAL INC NEW YORK
ADDRESS: 55 LEE ST
BUFFALO NY 14210
Erie
CONTACT:

REV: 12/9/02
ID1: NYD980534390
ID2:
STATUS: TSD
PHONE:

TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0004 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 10/21/1986
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0005 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 10/21/1986
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0006 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 10/21/1986
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0007 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 10/21/1986
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0008 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 10/21/1986
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0009 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 10/21/1986
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0010 **RESPONSIBLE:** S - STATE
DETERMINED: 03-JUL-86 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 10/21/1986
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0011 **RESPONSIBLE:** S - STATE
DETERMINED: 03-JUL-86 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 10/21/1986
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0012 **RESPONSIBLE:** S - STATE
DETERMINED: 15-OCT-87 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 11/26/1991
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0013 **RESPONSIBLE:** E - EPA

- Continued on next page -

RCRA TSD SITE

SEARCH ID: 5 **DIST/DIR:** 0.78 SE **MAP ID:** 5

NAME: P V S CHEMICAL INC NEW YORK
ADDRESS: 55 LEE ST
BUFFALO NY 14210
Erie
CONTACT:

REV: 12/9/02
ID1: NYD980534390
ID2:
STATUS: TSD
PHONE:

DETERMINED: 30-NOV-90 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 11/26/1991
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0015 **RESPONSIBLE:** S - STATE
DETERMINED: 17-OCT-91 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 11/26/1991
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0016 **RESPONSIBLE:** S - STATE
DETERMINED: 02-JAN-92 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:**
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0017 **RESPONSIBLE:** S - STATE
DETERMINED: 16-APR-92 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:**
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0018 **RESPONSIBLE:** S - STATE
DETERMINED: 16-MAR-98 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 05/06/1998
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA COR SITE

SEARCH ID: 6 **DIST/DIR:** 0.68 SE **MAP ID:** 6

NAME: ALLIED CHEMICAL CORP-BUFFALO CHEM
ADDRESS: 35 LEE ST
BUFFALO NY 14210
ERIE
CONTACT:

REV: 7/12/04
ID1: NYD001863372
ID2:
STATUS: CA
PHONE:

SITE INFORMATION

CONTACT INFORMATION: LEON MATTIOLI
MGR POLL CNTL
35 LEE ST
BUFFALO NY 14210

PHONE: 7168248424

UNIVERSE NAME:

NO LONGER REGULATED

SIC INFORMATION:

2819 - MANUFACTURING - INDUSTRIAL INORGANIC CHEMICALS, NE
2865 - MANUFACTURING - CYCLIC CRUDES AND INTERMEDIATES
2869 - MANUFACTURING - INDUSTRIAL ORGANIC CHEMICALS, NEC

RAATS INFORMATION:

DOCKET NUMBER:	84-0235	**INITIAL DATE:**	4271984
DATE RECEIVED:	3221985	**AMOUNT:**	6000.00
ORDER TYPE:	3008(A)	**FACILITY:**	PRIVATELY HELD FACILITY
COMMENTS:	VIOLATION 2 DELETES 40 CFR.		

ENFORCEMENT INFORMATION:

AGENCY:	X - EPA OVERSIGHT	**DATE:**	27-APR-84
TYPE:	310 - FINAL 3008(A) COMPLIANCE ORDER		
AGENCY:	S - STATE	**DATE:**	23-JUL-86
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	E - EPA	**DATE:**	30-APR-84
TYPE:	210 - INITIAL 3008(A) COMPLIANCE ORDER		

VIOLATION INFORMATION:

VIOLATION NUMBER:	0001	**RESPONSIBLE:**	X - EPA OVERSIGHT
DETERMINED:	06-MAY-82	**DETERMINED BY:**	X - EPA OVERSIGHT
CITATION:		**RESOLVED:**	23-JUL-87
TYPE:	GER - GENERATOR ALL REQUIREMENTS		
VIOLATION NUMBER:	0002	**RESPONSIBLE:**	S - STATE

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA COR SITE

SEARCH ID: 6 **DIST/DIR:** 0.68 SE **MAP ID:** 6

NAME:	ALLIED CHEMICAL CORP-BUFFALO CHEM	**REV:**	7/12/04
ADDRESS:	35 LEE ST	**ID1:**	NYD001863372
	BUFFALO NY 14210	**ID2:**	
	ERIE	**STATUS:**	CA
CONTACT:		**PHONE:**	

DETERMINED:	23-JUL-86	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	21-DEC-86
TYPE:	GER - GENERATOR ALL REQUIREMENTS		

RCRA COR SITE

SEARCH ID: 7 **DIST/DIR:** 0.62 SE **MAP ID:** 3

NAME: BUFFALO COLOR CORPORATION
ADDRESS: 100 LEE ST
BUFFALO NY 14210
ERIE
CONTACT: LANA L DOLE

REV: 7/12/04
ID1: NYD080335052
ID2:
STATUS: CA
PHONE: 7168274525

SITE INFORMATION

CONTACT INFORMATION:
TJ WLODARCZAK
MGR ENV SERV
340 ELK ST
BUFFALO NY 14210

PHONE: 7168274648

UNIVERSE NAME:

ST: STORAGE AND TREATMENT
SUBJECT TO CEI
DF: LAND DISPOSAL FACILITY
TSDS SUBJECT TO CORRECTIVE ACT
SUBJECT TO CORRECTIVE ACTION
INCINERATOR

SIC INFORMATION:

2819 - MANUFACTURING - INDUSTRIAL INORGANIC CHEMICALS, NE
2818 - DISCONTINUED, CHANGED, OR UNKNOWN
2869 - MANUFACTURING - INDUSTRIAL ORGANIC CHEMICALS, NEC
2865 - MANUFACTURING - CYCLIC CRUDES AND INTERMEDIATES

RAATS INFORMATION:

DOCKET NUMBER:	II RCRA-86-0210	**INITIAL DATE:**	6271986
DATE RECEIVED:	2071989	**AMOUNT:**	3000.00
ORDER TYPE:	3008(A)	**FACILITY:**	PRIVATELY HELD FACILITY

COMMENTS: COMPLAINT OF 6/27/86 NOT ON FILE DATE OF COMPLAINT REFERENCED IN CAFO.

RAATS INFORMATION:

DOCKET NUMBER:	84-0222	**INITIAL DATE:**	3221984
DATE RECEIVED:	9301985	**AMOUNT:**	6000.00
ORDER TYPE:	3008(A)	**FACILITY:**	PRIVATELY HELD FACILITY

COMMENTS:

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 16-JAN-85
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 28-APR-95

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA COR SITE

SEARCH ID: 7 **DIST/DIR:** 0.62 SE **MAP ID:** 3

NAME: BUFFALO COLOR CORPORATION
ADDRESS: 100 LEE ST
BUFFALO NY 14210
ERIE
CONTACT: LANA L DOLE

REV: 7/12/04
ID1: NYD080335052
ID2:
STATUS: CA
PHONE: 7168274525

TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: X - EPA OVERSIGHT **DATE:** 30-SEP-85
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 31-JAN-95
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 30-DEC-91
TYPE: 120 - WRITTEN INFORMAL

AGENCY: E - EPA **DATE:** 12-MAR-91
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: E - EPA **DATE:** 07-FEB-89
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: E - EPA **DATE:** 07-MAR-84
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 21-OCT-85
TYPE: 120 - WRITTEN INFORMAL

AGENCY: E - EPA **DATE:** 27-JUN-86
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: E - EPA **DATE:** 30-SEP-85
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 18-SEP-84
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 27-JUN-86
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 11-MAR-85
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 14-APR-86
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 16-SEP-85
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 26-OCT-87
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001 **RESPONSIBLE:** S - STATE

- Continued on next page -

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA COR SITE

SEARCH ID: 7 **DIST/DIR:** 0.62 SE **MAP ID:** 3

NAME: BUFFALO COLOR CORPORATION
ADDRESS: 100 LEE ST
BUFFALO NY 14210
ERIE
CONTACT: LANA L DOLE

REV: 7/12/04
ID1: NYD080335052
ID2:
STATUS: CA
PHONE: 7168274525

DETERMINED: 17-NOV-83 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 15-MAR-85
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0002 **RESPONSIBLE:** C - EPA CONTRACTOR
DETERMINED: 08-SEP-83 **DETERMINED BY:** C - EPA CONTRACTOR
CITATION: **RESOLVED:** 12-MAR-91
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0003 **RESPONSIBLE:** C - EPA CONTRACTOR
DETERMINED: 08-SEP-83 **DETERMINED BY:** C - EPA CONTRACTOR
CITATION: **RESOLVED:** 12-MAR-91
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0004 **RESPONSIBLE:** S - STATE
DETERMINED: 18-JUL-84 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 15-MAR-85
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0005 **RESPONSIBLE:** S - STATE
DETERMINED: 18-DEC-84 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 12-NOV-85
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0006 **RESPONSIBLE:** S - STATE
DETERMINED: 19-OCT-84 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 04-DEC-85
TYPE: DCL - TSD CLOSURE/POST CLOSURE REQUIREMENTS

VIOLATION NUMBER: 0007 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 01-SEP-85 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 12-MAR-91
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0008 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 16-DEC-85 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 30-APR-86
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0009 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 16-DEC-85 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 31-OCT-86
TYPE: DCL - TSD CLOSURE/POST CLOSURE REQUIREMENTS

VIOLATION NUMBER: 0010 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 16-DEC-85 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 31-OCT-86
TYPE: DFR - TSD FINANCIAL RESPONSIBILITY REQUIREMENTS

VIOLATION NUMBER: 0011 **RESPONSIBLE:** S - STATE
DETERMINED: 30-MAY-84 **DETERMINED BY:** S - STATE

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA COR SITE

SEARCH ID: 8 **DIST/DIR:** 0.62 SE **MAP ID:** 4

NAME:	HONEYWELL INTERNATIONAL INC.	**REV:**	7/12/04
ADDRESS:	20 PEABODY STREET	**ID1:**	NYD000632315
	BUFFALO NY 14210	**ID2:**	
	ERIE	**STATUS:**	CA
CONTACT:	ROBERT S PENDRYS	**PHONE:**	7168276249 249

SITE INFORMATION

CONTACT INFORMATION:
JAY HOESTERMANN
ENVIRON MGR
20 PEABODY ST
BUFFALO NY 142101523

PHONE: 7168276318

CONTACT INFORMATION:
WILLIAM HANAVAN
MGR ENVIRO.
20 PEABODY ST
BUFFALO NY 14210

PHONE: 7168276318

UNIVERSE NAME:

DF: LAND DISPOSAL FACILITY
INCINERATOR
TSDS SUBJECT TO CORRECTIVE ACT
ST: STORAGE AND TREATMENT
SUBJECT TO CORRECTIVE ACTION
SUBJECT TO CEI

SIC INFORMATION:

2869 - MANUFACTURING - INDUSTRIAL ORGANIC CHEMICALS, NEC

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 17-APR-96
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATE **DATE:** 24-JAN-01
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 23-JUL-86
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 30-MAR-90
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 17-JAN-96
TYPE: 310 - FINAL 3008(A) COMPLIANCE ORDER

- Continued on next page -

RCRA COR SITE

SEARCH ID: 8 **DIST/DIR:** 0.62 SE **MAP ID:** 4

NAME:	HONEYWELL INTERNATIONAL INC.	**REV:**	7/12/04
ADDRESS:	20 PEABODY STREET	**ID1:**	NYD000632315
	BUFFALO NY 14210	**ID2:**	
	ERIE	**STATUS:**	CA
CONTACT:	ROBERT S PENDRYS	**PHONE:**	7168276249 249

AGENCY:	S - STATE	**DATE:**	12-FEB-97
TYPE:	310 - FINAL 3008(A) COMPLIANCE ORDER		
AGENCY:	S - STATE	**DATE:**	09-NOV-94
TYPE:	210 - INITIAL 3008(A) COMPLIANCE ORDER		

VIOLATION INFORMATION:

VIOLATION NUMBER:	0001	**RESPONSIBLE:**	S - STATE
DETERMINED:	23-JUL-86	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	24-APR-89
TYPE:	DFR - TSD FINANCIAL RESPONSIBILITY REQUIREMENTS		
VIOLATION NUMBER:	0002	**RESPONSIBLE:**	S - STATE
DETERMINED:	27-MAR-90	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	03-MAY-90
TYPE:	DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)		
VIOLATION NUMBER:	0003	**RESPONSIBLE:**	S - STATE
DETERMINED:	21-APR-94	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	14-MAR-96
TYPE:	DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)		
VIOLATION NUMBER:	0004	**RESPONSIBLE:**	S - STATE
DETERMINED:	17-APR-96	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	12-FEB-97
TYPE:	DLB - TSD LAND BAN REQUIREMENTS		
VIOLATION NUMBER:	0005	**RESPONSIBLE:**	S - STATE
DETERMINED:	10-NOV-00	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	26-FEB-01
TYPE:	DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)		

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA COR SITE

SEARCH ID: 9 **DIST/DIR:** 0.78 SE **MAP ID:** 5

NAME:	P V S CHEMICAL INC NEW YORK	**REV:**	7/12/04
ADDRESS:	55 LEE ST	**ID1:**	NYD980534390
	BUFFALO NY 14210	**ID2:**	
	ERIE	**STATUS:**	CA
CONTACT:		**PHONE:**	

SITE INFORMATION

CONTACT INFORMATION:
CHRIS CANCILLA
PLANT MANAGER
55 LEE ST
BUFFALO NY 14210

PHONE: 7168255762

CONTACT INFORMATION:
WILLIAM DECKER
PLANT MANAGER
55 LEE ST
BUFFALO NY 14210

PHONE: 7168255762

UNIVERSE NAME:

TSDS SUBJECT TO CORRECTIVE ACT
SUBJECT TO CORRECTIVE ACTION
INCINERATOR
DF: LAND DISPOSAL FACILITY
ST: STORAGE AND TREATMENT
SUBJECT TO CEI

SIC INFORMATION:

2819 - MANUFACTURING - INDUSTRIAL INORGANIC CHEMICALS, NE

RAATS INFORMATION:

DOCKET NUMBER:	84-0234	**INITIAL DATE:**	4301984
DATE RECEIVED:		**AMOUNT:**	
ORDER TYPE:	3008(A)	**FACILITY:**	PRIVATELY HELD FACILITY

COMMENTS: C TYPE VIOLATIONS DELETE 40 CFR.

ENFORCEMENT INFORMATION:

AGENCY:	S - STATE	**DATE:**	16-MAR-98
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	03-JUL-86
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	E - EPA	**DATE:**	17-NOV-83

- Continued on next page -

RCRA COR SITE

SEARCH ID: 9 **DIST/DIR:** 0.78 SE **MAP ID:** 5

NAME: P V S CHEMICAL INC NEW YORK
ADDRESS: 55 LEE ST
BUFFALO NY 14210
ERIE
CONTACT:

REV: 7/12/04
ID1: NYD980534390
ID2:
STATUS: CA
PHONE:

TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0004 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 21-OCT-86
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0005 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 21-OCT-86
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0006 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 21-OCT-86
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0007 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 21-OCT-86
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0008 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 21-OCT-86
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0009 **RESPONSIBLE:** X - EPA OVERSIGHT
DETERMINED: 10-JUN-86 **DETERMINED BY:** X - EPA OVERSIGHT
CITATION: **RESOLVED:** 21-OCT-86
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0010 **RESPONSIBLE:** S - STATE
DETERMINED: 03-JUL-86 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 21-OCT-86
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0011 **RESPONSIBLE:** S - STATE
DETERMINED: 03-JUL-86 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 21-OCT-86
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0012 **RESPONSIBLE:** S - STATE
DETERMINED: 15-OCT-87 **DETERMINED BY:** S - STATE
CITATION: **RESOLVED:** 26-NOV-91
TYPE: DGW - TSD GROUNDWATER MONITORING REQUIREMENTS

VIOLATION NUMBER: 0013 **RESPONSIBLE:** E - EPA

- Continued on next page -

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA COR SITE

SEARCH ID: 9 **DIST/DIR:** 0.78 SE **MAP ID:** 5

NAME: P V S CHEMICAL INC NEW YORK
ADDRESS: 55 LEE ST
BUFFALO NY 14210
ERIE
CONTACT:

REV: 7/12/04
ID1: NYD980534390
ID2:
STATUS: CA
PHONE:

DETERMINED:	30-NOV-90	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	26-NOV-91
TYPE:	DGW - TSD GROUNDWATER MONITORING REQUIREMENTS		
VIOLATION NUMBER:	0015	**RESPONSIBLE:**	S - STATE
DETERMINED:	17-OCT-91	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	26-NOV-91
TYPE:	DGW - TSD GROUNDWATER MONITORING REQUIREMENTS		
VIOLATION NUMBER:	0016	**RESPONSIBLE:**	S - STATE
DETERMINED:	02-JAN-92	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	18-APR-02
TYPE:	DGW - TSD GROUNDWATER MONITORING REQUIREMENTS		
VIOLATION NUMBER:	0017	**RESPONSIBLE:**	S - STATE
DETERMINED:	16-APR-92	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	18-APR-02
TYPE:	DGW - TSD GROUNDWATER MONITORING REQUIREMENTS		
VIOLATION NUMBER:	0018	**RESPONSIBLE:**	S - STATE
DETERMINED:	16-MAR-98	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	06-MAY-98
TYPE:	DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)		

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA GENERATOR SITE

SEARCH ID: 10 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME: AMERIPRIDE
ADDRESS: 8 LORD ST
BUFFALO NY 14240
ERIE
CONTACT: BRUCE BEDNARZ

REV: 7/12/04
ID1: NYD000829622
ID2:
STATUS: SGN
PHONE: 7168562727

SITE INFORMATION

CONTACT INFORMATION:
BRUCE BEDNARZ
MGR
8 LORD ST
BUFFALO NY 14240

PHONE: 7168562727

UNIVERSE TYPE:

SQG - SMALL QUANTITY GENERATOR: GENERATES 100 - 1000 KG/MONTH OF HAZARDOUS WASTE

SIC INFORMATION:

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA NLR SITE

SEARCH ID: 11 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME: COVERALL SERVICE & SUPPLY CO
ADDRESS: 8 LORD ST
BUFFALO NY 14210
ERIE
CONTACT:

REV: 7/12/04
ID1: NYD058655705
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION:
JOSEPH RAUCCI
GENERAL MANAGER
8 LORD ST
BUFFALO NY 14240

PHONE: 7168562727

UNIVERSE TYPE:

SIC INFORMATION:

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA NLR SITE

SEARCH ID: 12 **DIST/DIR:** 0.04 SW **MAP ID:** 11

NAME: THORNER SIDNEY PRESS INC
ADDRESS: 808 SENECA ST
BUFFALO NY 14210
ERIE
CONTACT:

REV: 7/12/04
ID1: NYD002108256
ID2:
STATUS: NLR
PHONE:

SITE INFORMATION

CONTACT INFORMATION: CHRISTINE TARABULA

808 SENECA ST
BUFFALO NY 14210

PHONE: 7168564500

UNIVERSE TYPE:

SIC INFORMATION:

ENFORCEMENT INFORMATION:

AGENCY:	S - STATE	**DATE:**	08-JUN-95
TYPE:	120 - WRITTEN INFORMAL		

VIOLATION INFORMATION:

VIOLATION NUMBER:	0001	**RESPONSIBLE:**	S - STATE
DETERMINED:	08-JUN-95	**DETERMINED BY:**	S - STATE
CITATION:		**RESOLVED:**	21-JUN-95
TYPE:	GER - GENERATOR ALL REQUIREMENTS		

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

RCRA NLR SITE

SEARCH ID: 13 **DIST/DIR:** 0.12 SE **MAP ID:** 12

NAME:	UNILOCK INC	**REV:**	7/12/04
ADDRESS:	510 SMITH ST	**ID1:**	NYD986972768
	BUFFALO NY 14210	**ID2:**	
	ERIE	**STATUS:**	NLR
CONTACT:		**PHONE:**	

SITE INFORMATION

CONTACT INFORMATION:
DAVID MCINTYNE
GEN MGR
510 SMITH ST
BUFFALO NY 14210

PHONE: 7168226074

UNIVERSE TYPE:

SIC INFORMATION:

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 14 **DIST/DIR:** 0.90 SE **MAP ID:** 13

NAME: ALLIED CHEMICAL IND. CHEM. DIV.
ADDRESS: 55 LEE STREET
BUFFALO NY 14210
ERIE
CONTACT:

REV: 05/20/99
ID1: 915004
ID2: NYD001863372
STATUS:
PHONE:

CLASS CODE: D1 **REGION:** 9 **ESTIMATED SIZE:** 1 ACRES

SITE TYPE:
OPEN DUMP:
LAGOON: X
POND:
STRUCTURE:
LANDFILL:

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: PVS Chemicals, Inc.
CURRENT OWNER(S) ADDRESS: 55 Lee St.
Buffalo NY 14210

OPERATOR(S) DURING DISPOSAL:
OPERATOR(S) ADDRESS:
NY

HAZARDOUS WASTE DISPOSAL PERIOD: 1930 TO: 1977

SITE DESCRIPTION:
A sludge lagoon was used for about 47 years for the disposal of various wastes. This lagoon was excavated in 1977. The excavated material was transported to the Land Reclamation site in Cheektowaga. The excavation was backfilled with earth taken fr om the plant grounds. Three groundwater monitoring wells have been installed between the lagoon site and the Buffalo River. The wells were sampled by the U.S. Geological Survey in July of 1982. The samples were analyzed for chromium, coppe r, iron, lead, nickel, vanadium, and sulfide. In 1984 two bedrock wells were installed to allow PVS Chemicals to monitor the two RCRA regulated lagoons on the property. A Phase I Investigation has been completed. A Phase II Investigation repor t was completed in October 1989. As part of the Phase II Investigation four additional monitoring wells were installed and sampled, the two bedrock wells were also sampled. There are also two RCRA-regulated lagoons on the property that were used from 1977 to 1984 for the collection of the same waste streams. These two lagoons are the subject of ongoing enforcement activities by USEPA Region II w ith the current owner.

CONFIRMED HAZARDOUS WASTE DISPOSAL: **QUANTITY:**

ANALYTICAL DATA AVAILABLE FOR:
GROUNDWATER: X
AIR:
SOIL:
SURFACE WATER:
SEDIMENT:

APPLICABLE STANDARDS EXCEEDED FOR:
GROUNDWATER: X
AIR:
SURFACE WATER:
DRINKING WATER:

- Continued on next page -

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 14 **DIST/DIR:** 0.90 SE **MAP ID:** 13

NAME: ALLIED CHEMICAL IND. CHEM. DIV.
ADDRESS: 55 LEE STREET
BUFFALO NY 14210
ERIE
CONTACT:

REV: 05/20/99
ID1: 915004
ID2: NYD001863372
STATUS:
PHONE:

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Unknown
DEPTH TO GROUNDWATER: 14 to 15 feet

LEGAL ACTION:
TYPE:
STATUS:

REMEDIATION:
PROPOSED:
ACTIVE:
DESIGN:
COMPLETE: X

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Groundwater standards for iron, lead and pH were contravened in the July1982 samples. Groundwater is discharging to the Buffalo River. Groundwater samples collected in 1987 revealed several contraventions of groundwater standards for metals. These contraventions were mainly in the upgradient samples. PH values ranged between 5.7 and 8.2.

ASSESSMENT OF HEALTH PROBLEMS:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 15 **DIST/DIR:** 0.62 SE **MAP ID:** 4

NAME: ALLIED CHEMICAL, R & D FACILITY
ADDRESS: 20 PEABODY STREET
BUFFALO NY
ERIE
CONTACT:

REV: 05/20/99
ID1: 915002
ID2: NYD980532402
STATUS:
PHONE:

CLASS CODE: D1 **REGION:** 9 **ESTIMATED SIZE:** ACRES

SITE TYPE:
OPEN DUMP: X
LAGOON:
POND:
STRUCTURE:
LANDFILL:

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME:
CURRENT OWNER(S) ADDRESS:
NY

OPERATOR(S) DURING DISPOSAL: Ernst Steel Corporation
OPERATOR(S) ADDRESS:
NY

HAZARDOUS WASTE DISPOSAL PERIOD: TO:

SITE DESCRIPTION:
This facility was not used as a disposal site. Wastes generated on site were incinerated or hauled away for disposal off site.

CONFIRMED HAZARDOUS WASTE DISPOSAL: **QUANTITY:**
Unknown

ANALYTICAL DATA AVAILABLE FOR:
GROUNDWATER:
AIR:
SOIL:
SURFACE WATER:
SEDIMENT:

APPLICABLE STANDARDS EXCEEDED FOR:
GROUNDWATER:
AIR:
SURFACE WATER:
DRINKING WATER:

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Unknown
DEPTH TO GROUNDWATER: Unknown

LEGAL ACTION:
TYPE:
STATUS:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 15 **DIST/DIR:** 0.62 SE **MAP ID:** 4

NAME:	ALLIED CHEMICAL, R & D FACILITY	**REV:**	05/20/99
ADDRESS:	20 PEABODY STREET	**ID1:**	915002
	BUFFALO NY	**ID2:**	NYD980532402
	ERIE	**STATUS:**	
CONTACT:		**PHONE:**	

REMEDIATION:

PROPOSED: **DESIGN:**
ACTIVE: **COMPLETE:**

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
No known threat to the environment since wastes were not disposed on site.

ASSESSMENT OF HEALTH PROBLEMS:

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 16 **DIST/DIR:** 0.78 SE **MAP ID:** 14

NAME: BEHRINGER PROPERTY (IMSON STREET)
ADDRESS: 181 IMSON STREET
BUFFALO NY 14210
ERIE
CONTACT:

REV: 05/20/99
ID1: 915155
ID2:
STATUS:
PHONE:

CLASS CODE: D2 **REGION:** 9 **ESTIMATED SIZE:** 0.2 ACRES

SITE TYPE:
OPEN DUMP: X **STRUCTURE:**
LAGOON: **LANDFILL:**
POND:

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: Samuel Delmonte
CURRENT OWNER(S) ADDRESS: 1115 Senecca St.
Buffalo NY 14210

OPERATOR(S) DURING DISPOSAL: Behringer Brothers, Inc.
OPERATOR(S) ADDRESS: 181 Imson St.
Buffalo NY 14210

HAZARDOUS WASTE DISPOSAL PERIOD: unknown TO:

SITE DESCRIPTION:
The site is a yard located behind a building used for a planning operation, all of which is owned by the Behringer s. The samples, shown to be characteristic hazardous waste (lead from 5.57 ppm to 250 ppm), were taken from the yard near the corner of a shed located in the yard behind the building. The soil consists of mixed fill. Clay is encountered at a shallow depth (less than 5 feet). The shallow aquifer is perched and seasonal. The clay layer is acting as an aquitard for vertical migration of groundwater. The site is located in South Buffalo in an industrial/residential area. The groundwater below the site is not used as a potable water supply, however, there is potential for exposure via direct contact and wind erosion of the contaminated soil. A routine site inspection by DEC Staff, noted that the owner had excavated high level lead contaminated soil. Children were documented playing in the soil. The owner refused to address the issue citing insufficient financial capability. The DEC removed the contaminated soil under an Emergency Removal Contract. A Record of Decision (ROD) is expected in April 1996.

CONFIRMED HAZARDOUS WASTE DISPOSAL:	QUANTITY:
EP Tox Lead (250 ppm)	approx. 50 cu/yd

ANALYTICAL DATA AVAILABLE FOR:
GROUNDWATER: **SURFACE WATER:**
AIR: **SEDIMENT:**
SOIL: X

APPLICABLE STANDARDS EXCEEDED FOR:
GROUNDWATER: **SURFACE WATER:**
AIR: **DRINKING WATER:**

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 16 **DIST/DIR:** 0.78 SE **MAP ID:** 14

NAME: BEHRINGER PROPERTY (IMSON STREET)
ADDRESS: 181 IMSON STREET
BUFFALO NY 14210
ERIE
CONTACT:

REV: 05/20/99
ID1: 915155
ID2:
STATUS:
PHONE:

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Mixed permeable fill
DEPTH TO GROUNDWATER: 2 feet

LEGAL ACTION:
TYPE: Consent Order
STATUS: OS

REMEDIATION:
PROPOSED:
DESIGN:
ACTIVE:
COMPLETE:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
High levels of lead were found in site soils. Soils do not support vegetative growth and is mostly uncovered. There is potential for direct contact with contaminated soil and potential for dust generation.

ASSESSMENT OF HEALTH PROBLEMS:
A completed interim remedial measure which included the excavation and off-site disposal of approximately 1,000 cubic yards of lead contaminated soil and the backfilling and covering of the excavation with at least two feet of clean earth cover material should prevent exposures from occurring. Public water serves the area which eliminates potential exposures via drinking water.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 17 **DIST/DIR:** 0.61 NE **MAP ID:** 15

NAME:	BENGART AND MEMEL, INC.	**REV:**	7/1/04
ADDRESS:	1091 CLINTON STREET	**ID1:**	915115
	BUFFALO NY 14201	**ID2:**	NYD013703319
	ERIE	**STATUS:**	
CONTACT:		**PHONE:**	

SITE INFORMATION

CLASS CODE:	4	**REGION:**	9
SIZE (ACRES):	1		

SITE TYPE:

OPEN DUMP:	X	**STRUCTURE:**	
LAGOON:		**LANDFILL:**	
POND:			

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER(S) NAME: BENGART AND MEMEL, INC.
CURRENT OWNER(S) ADDRESS: 1091 CLINTON STREET
BUFFALO NY 14201

OPERATOR(S) DURING DISPOSAL: BENGART AND MEMEL, INC.
OPERATOR(S) ADDRESS: 1091 CLINTON STREET
BUFFALO NY 14201

HAZARDOUS WASTE DISPOSAL PERIOD: 1950 TO 1978

SITE DESCRIPTION:

This site is a scrap metal yard which received transformers and capacitors containing PCB oils. The oil was spilled on the site contaminating the soil. Spills of oil also drained off the site reached the Buffalo Sewer Authority Collection System on Clinton Street. In January 1982, a Consent Order was executed which required remediation of the site. Remedial actions included excavation of contaminated soil, installation of a groundwater collection and treatment system, and chemical treatment of contaminated soils. During the summer of 1985, the contaminated soil was excavated and placed in drums. Several of the drums were then chemically treated to destroy the PCBs. This test was very successful, achieving over 90% destruction. The remaining drums have been sampled and those with over 50 ppm of PCB were chemically treated. Treatment of the contaminated soils was completed during October 1986. The leachate in the leachate collection system is being collected for treatment and disposal. The paving of the whole area has greatly reduced the leachate generation in the collection system.

CONFIRMED HAZARDOUS WASTE DISPOSAL:	**QUANTITY:**
PCB contaminated oils	not known

ANALYTICAL DATA AVAILABLE FOR

GROUNDWATER:	X	**SURFACE WATER:**	X
AIR:		**SEDIMENT:**	
SOIL:	X		

- Continued on next page -

STATE SITE

SEARCH ID: 17 **DIST/DIR:** 0.61 NE **MAP ID:** 15

NAME: BENGART AND MEMEL, INC.
ADDRESS: 1091 CLINTON STREET
BUFFALO NY 14201
ERIE
CONTACT:

REV: 7/1/04
ID1: 915115
ID2: NYD013703319
STATUS:
PHONE:

APPLICABLE STANDARDS EXCEEDED FOR
GROUNDWATER:
AIR:
SURFACE WATER:
DRINKING WATER:

GEOTECHNICAL INFORMATION
SOIL/ROCK TYPE: CLAY.
DEPTH TO GROUNDWATER: RANGE: 1 TO 5 FEET.

LEGAL ACTION
TYPE: CONSENT ORDER
STATUS: OS

REMEDIATION
PROPOSED:
ACTIVE: X
DESIGN
COMPLETE

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Environmental problems have been addressed by a remedial program.

ASSESSMENT OF HEALTH PROBLEMS:
Contaminated soils were excavated and treated. A groundwater collection and treatment system is in operation. These remedial actions have eliminated the potential for contact exposures to contaminants. Exposures via drinking water are not expected because public water serves the area. Public access to the site is controlled.

STATE SITE

SEARCH ID: 18 **DIST/DIR:** 0.44 NE **MAP ID:** 1

NAME: BERN METAL CORP./UNIVERSAL IRON METAL
ADDRESS: 22 BENDER STREET/993 CLINTON STREET
BUFFALO NY 14206
ERIE
CONTACT:

REV: 7/1/04
ID1: 915135
ID2: NYD013703632
STATUS:
PHONE:

SITE INFORMATION

CLASS CODE: 2
SIZE (ACRES): 6
REGION: 9

SITE TYPE:
OPEN DUMP:
LAGOON:
POND:
STRUCTURE:
LANDFILL:

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: GERALD ARWITZ, EXECUTOR OF ESTATE
CURRENT OWNER(S) ADDRESS: 100 CLAREMONT AVENUE
KENMORE NY 14223

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: O.ROBERT KOLSKY
CURRENT OWNER(S) ADDRESS: 56 TRISTAN LANE
WILLIAMSVILLE NY

OPERATOR(S) DURING DISPOSAL: BERN METAL CORP./UNIVERSAL IRON & METAL
OPERATOR(S) ADDRESS: 22 BENDER STREET/993 CLINTON STREET
BUFFALO NY 14206

HAZARDOUS WASTE DISPOSAL PERIOD: 1956 TO 1983

SITE DESCRIPTION:

The site is an abandoned scrap reprocessor. In 1987 an estimated 200 55 gallon drums were found on site, along with metal turnings, waste chemicals, sludges, battery cases, etc. Previous complaint investigations documented copper sulfate sludge, spilled battery acids and sludges 25% lead in soil, chromium leather fines, etc. All wastes were part of recycling operation prior to property abandonment. A Phase I Investigation on this site was completed in 1987. EPA erected a chain link fence around the site in 1988. A June 1990 inspection of the Universal Metals property which is contiguous to the Bern Metals property, revealed about 25 leaking transformers. The oil from one of the transformers was tested. Analysis indicated elevated levels of PCBs. Due to contamination on these contiguous properties, they have been combined to form a single hazardous waste site. Under the emergency removal plan, EPA removed drums, gas cylinders, transformers, and contaminated soil during the summer of 1990. The Responsible Parties (PRPs) cleaned up the neighboring residential properties and some homes. This was completed in 1994. A Consent Order to perform a Remedial Investigation / Feasibility Study (RI/ FS) at this site was signed with the NYSDEC on February 2, 1994. The RI/FS has been completed. A Record of Decision (ROD) was completed in March 1996 which required the consolidation of off site soil and sediment at the site as well as capping the site. The Remedial Action also includes the long term monitoring of groundwater and the long term maintenance of the cap. A consent order was signed in 1997. The Design Plan was approved by NYSDEC in October 1998. A consent order to require the start of remedial action was referred to the Attorney General in 1999. Eight homes impacted by contamination from the site were demolished in 2000. The remedial action is expected to begin in 2002.

CONFIRMED HAZARDOUS WASTE DISPOSAL:	QUANTITY:
Battery Acids	unknown
Lead	unknown
Chromium leather fines	unknown
Metal sludges	unknown
PCB oil	25 gallons
PCB soil	30 tons

- Continued on next page -

STATE SITE

SEARCH ID: 18 **DIST/DIR:** 0.44 NE **MAP ID:** 1

NAME: BERN METAL CORP./UNIVERSAL IRON METAL
ADDRESS: 22 BENDER STREET/993 CLINTON STREET
BUFFALO NY 14206
ERIE
CONTACT:

REV: 7/1/04
ID1: 915135
ID2: NYD013703632
STATUS:
PHONE:

gas cylinders	16

ANALYTICAL DATA AVAILABLE FOR

GROUNDWATER:	X	**SURFACE WATER:**	
AIR:		**SEDIMENT:**	X
SOIL:	X		

APPLICABLE STANDARDS EXCEEDED FOR

GROUNDWATER:	X	**SURFACE WATER:**	
AIR:		**DRINKING WATER:**	

GEOTECHNICAL INFORMATION
SOIL/ROCK TYPE: FILL AND CLAY.
DEPTH TO GROUNDWATER: RANGE: 1 TO 5 FEET.

LEGAL ACTION
TYPE: CONSENT ORDER RA
STATUS: NE

REMEDIATION

PROPOSED:		**DESIGN**
ACTIVE:	X	**COMPLETE**

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
With remediation of site, the wastes are contained. The environmental impacts have been mitigated and environmental threats have been removed .The site will be monitored and maintained under a long term O&M Plan.

ASSESSMENT OF HEALTH PROBLEMS:
This site is located in a mixed industrial/residential area in the City of Buffalo that is served by public water. There are no known private wells in the immediate area. Therefore, human exposures to site related contaminants via drinking water are not expected. Elevated levels of lead, up to 176,000 milligram per kilogram, are present on site in subsurface soil. NYSDOH coordinated blood lead testing of nearby residents in 1991 and no elevated blood lead levels attributable to the site were found. The USEPA is working with the responsible parties to purchase the homes adjacent to the site. Once the agreement has been completed, the homes will be demolished and disposed of either on site or off site. The site is fenced to restrict public access but is not covered or capped. The USEPA replaced nearby residential yard soils with clean soil in 1992 and 1993. The selected remedy of consolidation and capping along with institutional controls and fence maintenance will be protective of public health.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 19 **DIST/DIR:** 0.44 NW **MAP ID:** 16

NAME: BRISTOL STREET
ADDRESS: 204 & 208 BRISTOL STREET
BUFFALO NY 14206
ERIE
CONTACT:

REV: 05/20/99
ID1: 915170
ID2:
STATUS:
PHONE:

CLASS CODE: D2 **REGION:** 9 **ESTIMATED SIZE:** 0.1 ACRES

SITE TYPE:
OPEN DUMP:
LAGOON:
POND:
STRUCTURE: X
LANDFILL: X

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: Ms. Louise May Ross
CURRENT OWNER(S) ADDRESS: 204 Bristol Street
Buffalo NY 14206

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: City of Buffalo
CURRENT OWNER(S) ADDRESS: 1308 City Hall
Buffalo NY 14202

OPERATOR(S) DURING DISPOSAL: Ms. Louise May Ross
OPERATOR(S) ADDRESS: 204 Bristol St.
Buffalo NY 14206

HAZARDOUS WASTE DISPOSAL PERIOD: unknown TO: 1997

SITE DESCRIPTION:
This site is located in a residential area of the City of Buffalo. The property at 204 Bristol Street is the location of a residential home which reportedly had a long term history of reclaiming electrical transformers at the rear of the property. An adjacent empty lot, owned by the City of Buffalo, was also used as part of the reclaiming operation as a location for crude burning activities. The exact method of reclaiming is not known but it is deduced that copper taken from the transformers was cleaned by burning it in a open drum on-site. Samples of on-site soils showed PCB levels of 650 ppm to 941 ppm. Off-site sampling results varied from 255 ppm to non-detect. The City of Buffalo conducted a preliminary sampling program and initiated removal of approximately 80 cubic yards of soil on adjacent property at 208 Bristol Street in September 1997. In January 1998 the NYSDEC referred the site to the USEPA to perform a an Emergency Removal Action (ERA) at the site due to the exposure of the contaminants to the public. The EPA remediated the site during the summer of 1998. All contaminated soil and debris was removed from the site and properly disposed of. Confirmatory samples documented the removal of all waste. The home at 204 Bristol Street was also cleaned, and contaminated material removed and properly disposed of. A Record of Decision was prepared that documented the removal action.

CONFIRMED HAZARDOUS WASTE DISPOSAL:	**QUANTITY:**
PCBs (Aroclor 1232,1248,1254,1260)	unknown

ANALYTICAL DATA AVAILABLE FOR:
GROUNDWATER: **SURFACE WATER:**

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 19 **DIST/DIR:** 0.44 NW **MAP ID:** 16

NAME:	BRISTOL STREET	**REV:**	05/20/99
ADDRESS:	204 & 208 BRISTOL STREET BUFFALO NY 14206 ERIE	**ID1:**	915170
		ID2:	
		STATUS:	
CONTACT:		**PHONE:**	

AIR:		**SEDIMENT:**	
SOIL:	X		

APPLICABLE STANDARDS EXCEEDED FOR:

GROUNDWATER:	**SURFACE WATER:**
AIR:	**DRINKING WATER:**

GEOTECHNICAL INFORMATION:

SOIL/ROCK TYPE: fill/top soil, native clay

DEPTH TO GROUNDWATER:

LEGAL ACTION:

TYPE:

STATUS:

REMEDIATION:

PROPOSED:		**DESIGN:**	
ACTIVE:		**COMPLETE:**	X

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

The site has been remediated, no further action is necessary. There are no remaining environmental problems associated with the disposal of hazardous waste at this site.

ASSESSMENT OF HEALTH PROBLEMS:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 20 **DIST/DIR:** 0.95 SE **MAP ID:** 17

NAME: C&D POWER SYSTEMS
ADDRESS: 45 SCOVILLE AVENUE
BUFFALO NY
ERIE
CONTACT:

REV: 05/20/99
ID1: 915134
ID2: NYD085686426
STATUS:
PHONE:

CLASS CODE: D2 **REGION:** 9 **ESTIMATED SIZE:** 0.25 ACRES

SITE TYPE:
OPEN DUMP: X
LAGOON:
POND:
STRUCTURE:
LANDFILL:

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: Allied Signal Corp.
CURRENT OWNER(S) ADDRESS: Columbia Rd. and Park Ave.
Morristown NY 07960

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: C & D Power Systems
CURRENT OWNER(S) ADDRESS: 3043 Walton Rd.
Plymouth Meeting NY 19462

OPERATOR(S) DURING DISPOSAL: C&D Power Systems
OPERATOR(S) ADDRESS: 3043 Walton Road
Plymouth Meeting NY

HAZARDOUS WASTE DISPOSAL PERIOD: 1969 TO: 1985

SITE DESCRIPTION:
The site was used for storage and refurbishing of industrial batteries. Past plant operating practices included washing of batteries on an out- door and unbermed concrete pad at the rear of the facility. During 1985 , C&D Power in vestigated the site for lead contamination. Surface soil samples collected between the pad and adjacent properties are also affected. Soil samples from these properties indicated presence of lead over 5000 parts per million. Additional studies were done in 1987-88 to further determine the extent of contamination. Groundwater samples were found not contaminated. The DEC approved the interim remediation plan submitted by the PRP which required the re moval of all contaminated soil and its replacement by clean soil. An order on consent was issued. The contaminated soil has been removed and replaced by clean soil. A groundwater investigation was completed in 1989, no significant contamination was found. Remediation of this site is complete.

CONFIRMED HAZARDOUS WASTE DISPOSAL:	**QUANTITY:**
Washings from industrial batteries, mainly lead and possibly other metals	Unknown

ANALYTICAL DATA AVAILABLE FOR:
GROUNDWATER: X
AIR:
SOIL: X
SURFACE WATER:
SEDIMENT:

- Continued on next page -

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 20 **DIST/DIR:** 0.95 SE **MAP ID:** 17

NAME: C&D POWER SYSTEMS
ADDRESS: 45 SCOVILLE AVENUE
BUFFALO NY
ERIE
CONTACT:

REV: 05/20/99
ID1: 915134
ID2: NYD085686426
STATUS:
PHONE:

APPLICABLE STANDARDS EXCEEDED FOR:
GROUNDWATER: X
SURFACE WATER:
AIR:
DRINKING WATER:

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Sand, Sandy Silt, and Clay, 8.5 Ft. to bedrock
DEPTH TO GROUNDWATER: 5 Feet

LEGAL ACTION:
TYPE: Consent Order
STATUS: OS

REMEDIATION:
PROPOSED:
DESIGN:
ACTIVE:
COMPLETE: X

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Removal of contaminated soil has addressed the environmental problems atthis site. No further action is necessary.

ASSESSMENT OF HEALTH PROBLEMS:

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 21 **DIST/DIR:** 0.99 SE **MAP ID:** 18

NAME:	GCF INDUSTRIES	**REV:**	10/16/01
ADDRESS:	105 DOROTHY ST	**ID1:**	HS9023
	BUFFALO NY 14206	**ID2:**	NONE
	Erie	**STATUS:**	HAZ SUBST WASTE DISP
CONTACT:		**PHONE:**	

SITE INFORMATION

SITE TYPE: 1 - INDUSTRIAL SITE

OPENED:	U - UNKNOWN	**CLOSED:**	U - UNKNOWN
REGION:	9	**COMPLETED:**	
REGISTRY:	N - NO	**REG SITE ID:**	N - NO
HRS SCORE:		**HRS DATE:**	
RCRA:	N - NO	**ACRES:**	0
QUADRANGLE:	BUFFALO SE/NE		

OWNER: P - PRIVATE OR PUBLIC HEALTH
GARY GREENFIELD, PRES.
105 DOROTHY ST BUFFALO, NY 14206

PHONE: (716)823-9900

OPERATOR: P - PRIVATE OR PUBLIC HEALTH
U - UNKNOWN
U - UNKNOWN

PHONE:

DOES A THREAT TO THE ENVIRONMENT OR PUBLIC HEALTH EXIST:

P - PRIVATE OR PUBLIC HEALTH

DESCRIBE THE THREAT POSED BY THE DISPOSED HAZARDOUS SUBSTANCE:

Nearby residents could be exposed to contaminants in air via inhalation of particulates or volatilized metals, and/or PCB s or inorganic contaminants in soil via contact, inhalation or ingestion.

DESCRIBE THE SITE:

GCF (also known as Greenfield Chapin and Fagan) Industries is a metal recycling plant which also had an incinerator and conducted smelting operations. Sampling of surface soils conducted by NYSDOH in 1989 adjacent to the site showed elevated levels of lead, chromium, mercury, titanium, cadmium and PCB s.

HAZARDOUS SUBSTANCE DISPOSED:

Lead 7439-92-1 Cadmium 7440-43-9 Mercury 7439-97-6 Chromium 7440-47-3 Titanium 7550-45-0 PCB s 11097-69-1 Nitric Acid 7697-37-2 Hydrogen Fluoride 7664-39-3 Sodium Hydroxide 1310-73-2

VOCS:	U - UNKNOWN	**SEMI VOCS:**	U - UNKNOWN
PCBS:	Y - YES	**PESTICIDES:**	N - NO
METALS:	Y - YES	**ASBESTOS:**	N - NO

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 21 **DIST/DIR:** 0.99 SE **MAP ID:** 18

NAME:	GCF INDUSTRIES	**REV:**	10/16/01
ADDRESS:	105 DOROTHY ST	**ID1:**	HS9023
	BUFFALO NY 14206	**ID2:**	NONE
	Erie	**STATUS:**	HAZ SUBST WASTE DISP
CONTACT:		**PHONE:**	

SELECTED ANALYTICAL INFORMATION

AIR:

GROUNDWATER:

SURFACE WATER:

SEDIMENT:

SURFACE SOIL: Lead 1350 mcg/g Cadmium 41 mcg/g Mercury 6.4 mcg/g Chromium 2510 mcg/g Titanium 4260 mcg/g PCB s 8.4 mcg/g

SUBSURFACE SOIL:

WASTE:

LEACHATE:

EPTOXICITY:

TCLP:

SITE IMPACT DATA- AFFECTED MEDIA

SURFACE WATER:	U - UNKNOWN	**SURFACE WATER CLASS:**	
GROUNDWATER:	U - UNKNOWN	**GROUNDWATER CLASS:**	
DRINKING WATER:	N - NO	**ACTIVE DW SUPPLY:**	Y - YES
HAZ SUBSTANCE EXPOSED:	Y - YES	**AMBIENT AIR CONTAM:**	Y - YES
CONTROLLED SITE ACCESS:	N - NO	**FISH/WILD MORTALITY:**	U - UNKNOWN
THREAT OF DIRECT CONTACT:	Y - YES		

SITE IMPACT DATA

SURFACE WATER: 2500 feet; southeast

GROUNDWATER:

DRINKING WATER: 3 miles; west

FISH OR WILD LIFE MORTALITY:
BUILDING: 0 feet; on-site industrial area

REG AGENCIES INVOLVED: NYSDEC NYSDOH

PREPARER: LANI RAFFERTY(PMB) NYSDOH EHS II JULY 26, 1994

STATE SITE

SEARCH ID: 22 **DIST/DIR:** 0.72 SE **MAP ID:** 19

NAME: HOUDAILLE INDUSTRIES - MANZEL DIVISION
ADDRESS: 315 BABCOCK STREET
BUFFALO NY 14202
ERIE
CONTACT:

REV: 05/20/99
ID1: 915037
ID2: NYD980534788
STATUS:
PHONE:

CLASS CODE: D1 **REGION:** 9 **ESTIMATED SIZE:** 1 ACRES

SITE TYPE:
OPEN DUMP: X
LAGOON:
POND:
STRUCTURE:
LANDFILL:

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: Industrial Realty Funding, Inc.
CURRENT OWNER(S) ADDRESS: PO Box 1011
Buffalo NY 14240

OPERATOR(S) DURING DISPOSAL: Houdaille-Manzel Division
OPERATOR(S) ADDRESS: Babcock Street
Buffalo NY

HAZARDOUS WASTE DISPOSAL PERIOD: Unknown TO: 1978

SITE DESCRIPTION:
The Manzel Division of Houdaille Ind., reportedly disposed of waste oil, benzene, toluene, xylene and carbon tetrachloride in an area under the Babcock Street Bridge. An initial round of sampling performed in June of 1981 revealed the presence of PCBs and chloroform in the soils beneath the bridge. A more extensive testing of subsurface soils was conducted by the DEC in May of 1983. Analysis of the samples did not show significant concentrations of the contam inants noted. The presence of certain chlorinated organics was confirmed. In August 1982 and May 1983, the U.S.G.S. collected 4 soil samples. Each sample was analyzed for heavy metals and semi-volatile organics. There were 22 organic priority pollutants detected with some as highas 30 ppm. In 1984, four subsurface soil samples were collected for EP TOX Analysis. One soil sample exhibited the characteristics of EP Toxicity. The RI field work was completed in August 1990. The 199 0 analytical findings could not be confirmed during the RI. The RI/FS Report was finalized in November 1991. The Report indicates that hazardous waste disposal could not be documented. The No Action alter native was selected.

CONFIRMED HAZARDOUS WASTE DISPOSAL: **QUANTITY:**

ANALYTICAL DATA AVAILABLE FOR:
GROUNDWATER: X
AIR:
SOIL: X
SURFACE WATER:
SEDIMENT:

APPLICABLE STANDARDS EXCEEDED FOR:
GROUNDWATER: X
AIR:
SURFACE WATER:
DRINKING WATER:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 22 **DIST/DIR:** 0.72 SE **MAP ID:** 19

NAME:	HOUDAILLE INDUSTRIES - MANZEL DIVISION	**REV:**	05/20/99
ADDRESS:	315 BABCOCK STREET	**ID1:**	915037
	BUFFALO NY 14202	**ID2:**	NYD980534788
	ERIE	**STATUS:**	
CONTACT:		**PHONE:**	

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Urban land/clay with traces of sand
DEPTH TO GROUNDWATER: Unknown

LEGAL ACTION:
TYPE:
STATUS:

REMEDIATION:
PROPOSED: **DESIGN:**
ACTIVE: **COMPLETE:**

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Existing data does not indicate presence of a significant environmental problem at the site. No hazardous waste could be found atthis site.

ASSESSMENT OF HEALTH PROBLEMS:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 23 **DIST/DIR:** 0.94 SW **MAP ID:** 20

NAME: MOLLENBERG-BETZ
ADDRESS: 300 SCOTT STREET
BUFFALO NY 14204
ERIE
CONTACT:

REV: 05/20/99
ID1: 915041
ID2: NYD002109981
STATUS:
PHONE:

CLASS CODE: D1 **REGION:** 9 **ESTIMATED SIZE:** ACRES

SITE TYPE:
OPEN DUMP: X
LAGOON:
POND:
STRUCTURE:
LANDFILL:

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER(S) NAME: Mollenberg-Betz
CURRENT OWNER(S) ADDRESS: 300 Scott St.
Buffalo NY 14204

OPERATOR(S) DURING DISPOSAL: Mollenberg-Betz
OPERATOR(S) ADDRESS: 300 Scott St.
Buffalo NY 14204

HAZARDOUS WASTE DISPOSAL PERIOD: Unknown TO: 1978

SITE DESCRIPTION:
Mollenberg-Betz used this site to steam clean commercial refrigeration equipment. The washings, consisting of oil, grease and dirt, were permitted to flow directly into the ground. Waste oil was also spread on a parking lot for dust control. The company abandoned the steam cleaning operation by September 1978. Erie County prepared a site profile report in May 1982. A Phase I Investigation has been compl eted. Soil samples were taken at this site by NYSDEC in October of 1989. Analysis revealed only the presence of ver y low levels of PAH s and metals. The disposal of hazardous waste can not be documented at this site.

CONFIRMED HAZARDOUS WASTE DISPOSAL: **QUANTITY:**

ANALYTICAL DATA AVAILABLE FOR:
GROUNDWATER:
AIR:
SOIL: X
SURFACE WATER:
SEDIMENT:

APPLICABLE STANDARDS EXCEEDED FOR:
GROUNDWATER:
AIR:
SURFACE WATER:
DRINKING WATER:

GEOTECHNICAL INFORMATION:
SOIL/ROCK TYPE: Not known
DEPTH TO GROUNDWATER: Not Known

- Continued on next page -

STATE SITE

SEARCH ID: 23 **DIST/DIR:** 0.94 SW **MAP ID:** 20

NAME:	MOLLENBERG-BETZ	**REV:**	05/20/99
ADDRESS:	300 SCOTT STREET	**ID1:**	915041
	BUFFALO NY 14204	**ID2:**	NYD002109981
	ERIE	**STATUS:**	
CONTACT:		**PHONE:**	

LEGAL ACTION:
TYPE:
STATUS:

REMEDIATION:
PROPOSED: **DESIGN:**
ACTIVE: **COMPLETE:**

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
No environmental problems have been noted at this site.

ASSESSMENT OF HEALTH PROBLEMS:

STATE SITE

SEARCH ID: 24 **DIST/DIR:** 0.56 SE **MAP ID:** 21

NAME: WL MCDOUGALL CO.
ADDRESS: ELK AND PRENATT STREETS
BUFFALO NY 14210
Erie
CONTACT:

REV: 10/16/01
ID1: HS9070
ID2: NYD980531693
STATUS: HAZ SUBST WASTE DISP
PHONE:

SITE INFORMATION

SITE TYPE: IB - LEAKING TANKS, DRUMS, LAGOONS, OTHER CONTAINERS

OPENED:	1906	**CLOSED:**	1985
REGION:	9	**COMPLETED:**	PA
REGISTRY:	N - NO	**REG SITE ID:**	U - UNKNOWN
HRS SCORE:	U - UNKNOWN	**HRS DATE:**	U - UNKNOWN
RCRA:	U - UNKNOWN	**ACRES:**	2
QUADRANGLE:	BUFFALO SOUTHEAST		

OWNER: P - PRIVATE OR PUBLIC HEALTH
SAMUEL KLINER
254 ELK STREET BUFFALO

PHONE: U - UNKNOWN

OPERATOR: P - PRIVATE OR PUBLIC HEALTH
WORLD AUTO PARTS
U - UNKNOWN

PHONE: U - UNKNOWN

DOES A THREAT TO THE ENVIRONMENT OR PUBLIC HEALTH EXIST:

E/P - ENVIRONMENT AND PUBLIC HEALTH

DESCRIBE THE THREAT POSED BY THE DISPOSED HAZARDOUS SUBSTANCE:

It could not be determined by the off-site reconnaissance if there were any lead-bearing materials disposed of or stored on site. The potential for human exposure exists if the lead is in the form of dust and becomes windblown.

DESCRIBE THE SITE:

The WL McDougall Co. was an industrial lead products manufacturer. Beginning 12/31/85 the site has been occupied by World Auto Parts. The site contains more than 150 drums that appear to be empty and corroded.

HAZARDOUS SUBSTANCE DISPOSED:

lead 7439-92-1

VOCS:	N - NO	**SEMI VOCS:**	N - NO
PCBS:	N - NO	**PESTICIDES:**	N - NO
METALS:	Y - YES	**ASBESTOS:**	N - NO

SELECTED ANALYTICAL INFORMATION

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SITE

SEARCH ID: 24 **DIST/DIR:** 0.56 SE **MAP ID:** 21

NAME: WL MCDOUGALL CO.
ADDRESS: ELK AND PRENATT STREETS
BUFFALO NY 14210
Erie
CONTACT:

REV: 10/16/01
ID1: HS9070
ID2: NYD980531693
STATUS: HAZ SUBST WASTE DISP
PHONE:

AIR:

GROUNDWATER:

SURFACE WATER:

SEDIMENT:

SURFACE SOIL:

SUBSURFACE SOIL:

WASTE:

LEACHATE:

EPTOXICITY:

TCLP:

SITE IMPACT DATA- AFFECTED MEDIA

SURFACE WATER:	U - UNKNOWN	**SURFACE WATER CLASS:**	U - UNKNOWN
GROUNDWATER:	U - UNKNOWN	**GROUNDWATER CLASS:**	U - UNKNOWN
DRINKING WATER:	U - UNKNOWN	**ACTIVE DW SUPPLY:**	U - UNKNOWN
HAZ SUBSTANCE EXPOSED:	Y - YES	**AMBIENT AIR CONTAM:**	U - UNKNOWN
CONTROLLED SITE ACCESS:	N - NO	**FISH/WILD MORTALITY:**	N - NO
THREAT OF DIRECT CONTACT:	Y - YES		

SITE IMPACT DATA

SURFACE WATER:

GROUNDWATER:

DRINKING WATER:

FISH OR WILD LIFE MORTALITY:
BUILDING: nearest building: west, residential

REG AGENCIES INVOLVED: USEPA

PREPARER: JULIA SLACK ENGINEERING AIDE NYSDEC MAY 19, 1994

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SPILLS SITE

SEARCH ID: 25 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME: AMERICAN LINEN
ADDRESS: 8 LORD STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9601734
ID2:
STATUS: CLOSED 05/20/1996
PHONE:

SPILL DATE: 05/02/96
SPILL TIME: 12:05

DATE REPORTED: 05/02/96
TIME REPORTED: 12:45

MATERIAL SPILLED: HYDRAULIC OIL
MATERIAL CLASS: PETROLEUM

AMOUNT SPILLED: 5 G
AMOUNT RECOVERED: 5 G

CAUSE OF SPILL: EQUIPMENT FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL VEHICLE
REPORTED BY: RESPONSIBLE PARTY
CALLER REMARKS:
HYDRAULIC LINE FAILURE ON REFUSE TRUCK

REGION: 9 **UST TRUST?** F

SPILL INVESTIGATOR: RMC
SPILL CONTACT: **TELEPHONE:**

SPILLER: CID REFUSE
ADDRESS: 100 RANSIER ROAD
WEST SENECA , NY 14030-
SPILLER CONTACT: **TELEPHONE:** ( ) -

CALLER:
AGENCY:
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 05/22/96
DOES CLEAN UP MEET STANDARDS? T

CLOSE DATE: 05/20/96
PENALTY RECOMMENDED? F

DEC REMARKS:
05/20/96 RMC/FILE MINOR SPILL, CLEANED UP IMMEDIATELY BY RP, NO ACTION REQUIRED, CLOSE OUT

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SPILLS SITE

SEARCH ID: 26 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME:	AMERIPRIDE LINEN SVCS	**REV:**	8/27/04
ADDRESS:	8 LORD STREET	**ID1:**	0175474
	BUFFALO NY	**ID2:**	
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	

SITE INFORMATION:

SPILL DATE:	01/10/2002
DATE REPORTED:	01/10/2002
SPILL TIME:	02:45 PM
TIME REPORTED:	02:45 PM
SPILLED MATERIAL:	SULFURIC ACID
SPILLED AMOUNT:	1000 GAL.
SPILL CAUSE:	EQUIPMENT FAILURE
SPILL SOURCE:	OTHER COMM/INDUSTRIAL
RESOURCE AFFECTED:	ON LAND
WATERBODY:	
REGION CLOSED DATE:	04/10/2002

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SPILLS SITE

SEARCH ID: 27 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME: COVERALL AMERICAN LINEN
ADDRESS: SENECA STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9207422
ID2:
STATUS: CLOSED 10/02/1992
PHONE:

SPILL DATE: 09/26/92
SPILL TIME: 11:00

DATE REPORTED: 09/26/92
TIME REPORTED: 19:35

MATERIAL SPILLED: UNKNOWN PETROLEUM
MATERIAL CLASS: PETROLEUM

AMOUNT SPILLED: 0 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: DELIBERATE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: CITIZEN
CALLER REMARKS:
PIT ON COVERALL S PROPERTY. THEY HAVE BEEN DUMPING THIS BLACK STUFF INTO BARRELS

REGION: 9 **UST TRUST?** F

SPILL INVESTIGATOR: RMC
SPILL CONTACT:
TELEPHONE:

SPILLER: COVERALL AMERICAN LINEN
ADDRESS: SENECA STREET
BUFFALO , NY
SPILLER CONTACT:
TELEPHONE: (716) 856-2727

CALLER:
AGENCY:
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 10/19/92
DOES CLEAN UP MEET STANDARDS? T

CLOSE DATE: 10/02/92
PENALTY RECOMMENDED? F

DEC REMARKS:
09/26/92: H.S. SAYS 40 BARRELS ON PROPERTY ALONG PROPERTY LINE. NOT LEAKING, BUT THEY SMELL. 10/02/92: RMC/DICK TEAL/SITE COMPANY HAS SNOW PIT WHERE WASTE WATER IS CIRCULATED TO MELT SNOW. BSA OKED DISCHARGE TO SANITARY SEWER, THEY HAVE PRETREATMENT....CLOSE OUT. 09/29/95: THIS IS ADDITIONAL INFORMATION ABOUT MATERIAL SPILLED FROM THE TRANSLATION OF THE OLD SPILL FILE: BLACK SLUSH.

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

STATE SPILLS 80's SITE

SEARCH ID: 28 **DIST/DIR:** 0.07 SW **MAP ID:** 27

NAME: AUTOMOBILE ACCIDENT
ADDRESS: 797 SENECA STREET
BUFFALO NY
ERIE
CONTACT:

REV: 10/18/00
ID1: 8710236
ID2:
STATUS: CLOSED
PHONE:

SPILL DATE: 03/02/88
SPILL TIME: 11:40
DATE REPORTED: 03/02/88
TIME REPORTED: 16:00

MATERIAL SPILLED: GASOLINE
MATERIAL CLASS: PETROLEUM
AMOUNT SPILLED: 20 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TRAFFIC ACCIDENT
RESOURCE AFFECTED: IN SEWER
WATERBODY AFFECTED: SANITARY SEWERS
SOURCE OF SPILL: PASSENGER VEHICLE
REPORTED BY: FIRE DEPARTMENT
CALLER REMARKS:
SPILL FROM AUTOMOBILE ACCIDENT FLUSHED TO SEWER BY FIRE DEPT.

REGION: 9 **UST TRUST?** NO

SPILL INVESTIGATOR: RNL
SPILL CONTACT:
TELEPHONE:

SPILLER: UNKNOWN
ADDRESS:

SPILLER CONTACT:
TELEPHONE:

CALLER: PALMER
AGENCY: BUFFALO FIRE DEPT
TELEPHONE: (716) 851-5510

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 03/09/88
DOES CLEAN UP MEET STANDARDS? YES
CLOSE DATE: 03/02/88
PENALTY RECOMMENDED? NO
DEC REMARKS:
03/07/88: SPILL FLUSHED TO SEWER BY FIRE DEPT NO CLEANUP POSSIBLE.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

SOLID WASTE LANDFILL SITE

SEARCH ID: 29 **DIST/DIR:** 0.43 SE **MAP ID:** 28

NAME: CTS CRUSHING & RECYCLING
ADDRESS: 1070 SENECA STREET
BUFFALO NY
ERIE
CONTACT: MICHAEL FRONCKOWIAK

REV: 1/1/04
ID1: 9-15W33
ID2:
STATUS: ACTIVE
PHONE: 7166684444

SITE INFORMATION

OWNER INFORMATION

NAME:	CTS CRUSHING & RECYCLING
TYPE:	PRIVATE
ADDRESS:	320 CRABAPPLE LANE CHEEKTOWAGA , NY 14227
EMAIL:	
PHONE:	7166684444

CONTACT INFORMATION

NAME:	MICHAEL FRONCKOWIAK
ADDRESS:	320 CRABAPPLE LANE CHEEKTOWAGA , NY 14227
EMAIL:	
PHONE:	7166684444
ACTIVITY DESC:	C&D PROCESSING - REGISTERED
REG STATUS:	REGISTRATION
WASTE TYPE:	
AUTH NUMBER:	15W33
AUTH ISSUE DATE:	02/23/2001
EXPIRATION DATE:	

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 30 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME:	AMERICAN LINEN SUPPLY CO	**REV:**	1/1/02
ADDRESS:	8 LORD ST BUFFALO NY 14240 ERIE	**ID1:**	PBS9-013773
		ID2:	
		STATUS:	UNREGULATED BY PBS
CONTACT:	AMERICAN LINEN SUPPLY CO	**PHONE:**	(716) 856-2727

PETROLEUM BULK STORAGE FACILITY INFORMATION

TYPE OF SITE: OTHER
TOTAL ACTIVE TANKS ON SITE: 0
TOTAL FACILITY CAPACITY: 0 GALLONS
OLD PBS NUMBER: **CBS NUMBER:** 9-000151 **SPDES NUMBER:**
ADDITIONAL ADDRESS INFO: P.O. BOX 1067

TYPE OF OWNER: CORPORATE/COMMERCIAL
OWNER SUB TYPE:
OWNER ADDRESS: 47 SOUTH NINTH ST
MINNEAPOLIS MN 55440
PHONE: (612) 371-4200

EMERGENCY CONTACT: WILLIAM BAMBERG
PHONE: (716) 872-4067

MAILING NAME: AMERICAN LINEN SUPPLY CO
ADDRESS: 47 SOUTH NINTH ST
MINNEAPOLIS MN 55440
ATTENTION:
PHONE: (612) 371-4200

CERTIFICATE DATE: 7/15/97 **EXP. DATE:** 5/7/02
RENEWAL DATE: 3/20/92

TANK INFORMATION

TANK NUMBER: 1 **TANK STATUS:** CLOSED - IN PLACE
INSTALLED: 3/1/78 **CLOSED:** 10/1/98
TANK CAPACITY: 20000 GALLONS
PRODUCT: # 5 OR 6 FUEL OIL

TANK TYPE: STEEL/CARBON STEEL
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
PIPE TYPE: STEEL/IRON
PIPE LOCATION: UNDERGROUND
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
SECONDARY CONTAINMENT: NONE
LEAK DETECTION: NONE
OVERFILL PROTECTION: PRODUCT LEVEL GAUGE
DISPENSER: SUCTION
DATE TESTED:
NEXT TEST:
TEST METHOD:

TANK NUMBER: 2 **TANK STATUS:** CLOSED PRIOR TO 04/91 (IT IS EITHER IN

- Continued on next page -

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 30 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME: AMERICAN LINEN SUPPLY CO
ADDRESS: 8 LORD ST
BUFFALO NY 14240
ERIE
CONTACT: AMERICAN LINEN SUPPLY CO

REV: 1/1/02
ID1: PBS9-013773
ID2:
STATUS: UNREGULATED BY PBS
PHONE: (716) 856-2727

PLACE OR REMOVED)
INSTALLED: 3/1/78 **CLOSED:**
TANK CAPACITY: 20000 GALLONS
PRODUCT: DIESEL

TANK TYPE: STEEL/CARBON STEEL
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
PIPE TYPE: STEEL/IRON
PIPE LOCATION:
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
SECONDARY CONTAINMENT: NONE
LEAK DETECTION: NONE
OVERFILL PROTECTION:
DISPENSER: SUCTION
DATE TESTED:
NEXT TEST:
TEST METHOD:

TANK NUMBER: 3 **TANK STATUS:** CLOSED PRIOR TO 04/91 (IT IS EITHER IN
PLACE OR REMOVED)
INSTALLED: 3/1/78 **CLOSED:**
TANK CAPACITY: 1500 GALLONS
PRODUCT: OTHER

TANK TYPE: STEEL/CARBON STEEL
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
PIPE TYPE: STEEL/IRON
PIPE LOCATION:
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
SECONDARY CONTAINMENT: NONE
LEAK DETECTION: NONE
OVERFILL PROTECTION:
DISPENSER: SUCTION
DATE TESTED:
NEXT TEST:
TEST METHOD:

TANK NUMBER: 4 **TANK STATUS:** CLOSED PRIOR TO 04/91 (IT IS EITHER IN
PLACE OR REMOVED)
INSTALLED: 3/1/78 **CLOSED:**
TANK CAPACITY: 10000 GALLONS
PRODUCT: UNLEADED GASOLINE

TANK TYPE: STEEL/CARBON STEEL
TANK LOCATION: UNDERGROUND

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 30 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME: AMERICAN LINEN SUPPLY CO
ADDRESS: 8 LORD ST
BUFFALO NY 14240
ERIE
CONTACT: AMERICAN LINEN SUPPLY CO

REV: 1/1/02
ID1: PBS9-013773
ID2:
STATUS: UNREGULATED BY PBS
PHONE: (716) 856-2727

INTERNAL PROTECTION:
EXTERNAL PROTECTION:
PIPE TYPE: STEEL/IRON
PIPE LOCATION:
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
SECONDARY CONTAINMENT: NONE
LEAK DETECTION: NONE
OVERFILL PROTECTION: PRODUCT LEVEL GAUGE
DISPENSER: SUCTION
DATE TESTED:
NEXT TEST:
TEST METHOD:

TANK NUMBER: 5 **TANK STATUS:** CLOSED PRIOR TO 04/91 (IT IS EITHER IN PLACE OR REMOVED)
INSTALLED: **CLOSED:**
TANK CAPACITY: 5000 GALLONS
PRODUCT: OTHER

TANK TYPE: STEEL/CARBON STEEL
TANK LOCATION: UNDERGROUND, VAULTED, WITH ACCESS
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
PIPE TYPE: STEEL/IRON
PIPE LOCATION:
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
SECONDARY CONTAINMENT: VAULT
LEAK DETECTION: NONE
OVERFILL PROTECTION:
DISPENSER: SUCTION
DATE TESTED:
NEXT TEST:
TEST METHOD:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 31 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME: AMERICAN LINEN SUPPLY CO.
ADDRESS: 8 LORD ST. P.O. BOX 1067
BUFFALO NY 14240
ERIE
CONTACT: K. TOBIN

REV: 1/1/02
ID1: CBS9-000151
ID2:
STATUS: ACTIVE FACILITY
PHONE: (716) 856-2727

CHEMICAL BULK STORAGE FACILITY INFORMATION

TYPE OF SITE: OTHER
TOTAL ACTIVE TANKS ON SITE: 3
TOTAL FACILITY CAPACITY: 2200 GALLONS
PBS NUMBER: 9-013773 **ICS NUMBER:** 9-178232 **MOSF NUMBER:**
ADDITIONAL ADDRESS INFO:

TYPE OF OWNER: CORPORATE/COMMERCIAL
OWNER SUB TYPE:
OWNER ADDRESS: 47 SOUTH NINTH ST.
MINNEAPOLIS MN 55440
PHONE: (612) 371-4200

EMERGENCY CONTACT: K. TOBIN
PHONE: (716) 646-6958

MAILING NAME: AMERICAN LINEN SUPPLY CO.
ADDRESS: 8 LORD ST
BUFFALO NY 14240
ATTENTION: KEVIN P. TOBIN
PHONE: (716) 856-2727

CERTIFICATE DATE: 4/5/01 **EXP. DATE:** 6/27/03
RENEWAL DATE: 3/12/01

TANK INFORMATION

TANK NUMBER: 0011 **STATUS:** IN SERVICE
INSTALLED: 12/90 **CLOSED:**
TANK CAPACITY: 200 GALLONS
SUBSTANCE STORED: SULFURIC ACID
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 100

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: OTHER

PIPE TYPE: 6
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

LEAK DETECTION: NONE
OVERFILL PROTECTION: PRODUCT LEVEL GAUGE

- Continued on next page -

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 31 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME: AMERICAN LINEN SUPPLY CO.
ADDRESS: 8 LORD ST. P.O. BOX 1067
BUFFALO NY 14240
ERIE
CONTACT: K. TOBIN

REV: 1/1/02
ID1: CBS9-000151
ID2:
STATUS: ACTIVE FACILITY
PHONE: (716) 856-2727

TANK NUMBER: 005 **STATUS:** CLOSED - REMOVED
INSTALLED: 06/86 **CLOSED:** 01/99
TANK CAPACITY: 200 GALLONS
SUBSTANCE STORED: SODIUM HYPOCHLORITE
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 2

TANK TYPE: FIBERGLASS COATED STEEL
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

PIPE TYPE: 5
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

LEAK DETECTION: NONE
OVERFILL PROTECTION: NONE

TANK NUMBER: 006 **STATUS:** CLOSED - REMOVED
INSTALLED: 06/86 **CLOSED:** 01/99
TANK CAPACITY: 215 GALLONS
SUBSTANCE STORED: SODIUM HYPOCHLORITE
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 15

TANK TYPE: FIBERGLASS COATED STEEL
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

PIPE TYPE: 5
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

LEAK DETECTION: NONE
OVERFILL PROTECTION: PRODUCT LEVEL GAUGE

TANK NUMBER: 007 **STATUS:** IN SERVICE
INSTALLED: 11/90 **CLOSED:**
TANK CAPACITY: 1000 GALLONS

- Continued on next page -

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 31 **DIST/DIR:** 0.05 NE **MAP ID:** 7

NAME:	AMERICAN LINEN SUPPLY CO.	**REV:**	1/1/02
ADDRESS:	8 LORD ST. P.O. BOX 1067	**ID1:**	CBS9-000151
	BUFFALO NY 14240	**ID2:**	
	ERIE	**STATUS:**	ACTIVE FACILITY
CONTACT:	K. TOBIN	**PHONE:**	(716) 856-2727

SUBSTANCE STORED: SULFURIC ACID
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 100

TANK TYPE: FIBERGLASS COATED STEEL
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: VAULT WITH ACCESS

PIPE TYPE: 6
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

LEAK DETECTION: NONE
OVERFILL PROTECTION: PRODUCT LEVEL GAUGE

TANK NUMBER: 008 **STATUS:** IN SERVICE
INSTALLED: 11/90 **CLOSED:**
TANK CAPACITY: 1000 GALLONS
SUBSTANCE STORED: SULFURIC ACID
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 100

TANK TYPE: FIBERGLASS COATED STEEL
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: VAULT WITH ACCESS

PIPE TYPE: 6
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

LEAK DETECTION: NONE
OVERFILL PROTECTION: PRODUCT LEVEL GAUGE

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 32 **DIST/DIR:** 0.28 SW **MAP ID:** 22

NAME: BISHOP CHEMICALS & EQUIP.
ADDRESS: 160 VAN RENSSELAER STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9200249
ID2:
STATUS: CLOSED 04/29/1993
PHONE:

SPILL DATE: 04/01/92
SPILL TIME: 16:04
DATE REPORTED: 04/01/92
TIME REPORTED: 09:53

MATERIAL SPILLED: #6 FUEL OIL
MATERIAL CLASS: PETROLEUM
AMOUNT SPILLED: 0
AMOUNT RECOVERED: 0

CAUSE OF SPILL: TANK FAILURE
RESOURCE AFFECTED: GROUNDWATER
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: OTHER
CALLER REMARKS:
TANK REMOVAL CONTRACTOR REPORTED SOIL & GROUNDWATER CONTAMINATION FROM #6 OIL TANK BEING CLOSED IN PLACE.

REGION: 9 **UST TRUST?** T

SPILL INVESTIGATOR: MNP
SPILL CONTACT:
TELEPHONE:

SPILLER: BISHOP CHEMICALS & EQUIP.
ADDRESS: 160 VAN RENSSELAER STREET
BUFFALO , NY 14210
SPILLER CONTACT:
TELEPHONE: (716) 854-4882

CALLER:
AGENCY:
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 01/31/94
CLOSE DATE: 04/29/93
DOES CLEAN UP MEET STANDARDS? T
PENALTY RECOMMENDED? F
DEC REMARKS:
04/02/92: 4/2/92 MNP INSP. MORE CONTAM. SOIL REMOVED. OIL SEEPAGE UNDER TANK. MW TO BE INSTALLED IN EXCACVATION & SAMPLED. 02/23/93: 2/23/93 MNP TELECON W/ STIRLING -BISHOP CHEMICAL. SETUP INSP. & HE WILL ARRANGE FOR MW SAMPLING. IF NO SHEEN, ODOR OR BTEX, WE WILL CLOSE SPILL FILE. 02/25/93: 2/25/93 MNP INSP. & MEETING W/ BISHOP & EP&S. SLIGHT SHEEN & ODOR NOTED. REQUESTED ONE ROUND OF SAMPLING. 04/22/93: 4/22//93 MNP REVIEWED SAMPLE RESULTS RECEIVED 3/15/93. TCE & NON-ETRO. COMPOUNDS EXCEEDING CLASS GA GW STANDARDS. TO CONTACT CONTRACTOR. 04/29/93: 4/29//93 REFERRAL MEMO TO BEUCHI, DHWR. NO PETRO. CONTAM. IN FOLLOWUP SAMPLE RESULTS. HOWEVER, TCE ETC. FOUND. NO SPILL UNIT INVOLVEMENT NEEDED, COMPLETE.

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 33 **DIST/DIR:** 0.18 NW **MAP ID:** 8

NAME: BUFFALO FIRE HOUSE #32
ADDRESS: SENECA AND SWAN STREETS
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9910189
ID2:
STATUS: CLOSED 11/23/1999
PHONE:

SPILL DATE: 11/22/99
SPILL TIME: 19:07
DATE REPORTED: 11/22/99
TIME REPORTED: 21:15

MATERIAL SPILLED: DIESEL
MATERIAL CLASS: PETROLEUM
AMOUNT SPILLED: 0 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: TANK TESTER
CALLER REMARKS:
CALLER REPORTING A FAILED TANK TEST FROM A TANK NO RELEASE TO THE ENVIRONMENT TANK WAS NOT NOT PUMPED DRY WILL BE REMOVING THE TANK TO REPLACE NO CALLBACK NECESSARY

REGION: 9 **UST TRUST?** T

SPILL INVESTIGATOR: FG
SPILL CONTACT: **TELEPHONE:** ( ) -

SPILLER: BUFFALO FIRE DEPARTMENT
ADDRESS: CITY HALL
BUFFALO , NY -
SPILLER CONTACT: DANIEL CULKMAN **TELEPHONE:** (716) 856-2142

CALLER:
AGENCY:
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 01/05/00
DOES CLEAN UP MEET STANDARDS? F
CLOSE DATE: 11/23/99
PENALTY RECOMMENDED? F
DEC REMARKS:
11/23/99 THIS IS A DUPLICATE OF SPILL 9910197 AND 9910703. PLEASE REFER TO 9910197 AND 9910703 FOR ALL FUTURE INFORMATION. CLOSEOUT THIS SPILL

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 34 **DIST/DIR:** 0.07 SE **MAP ID:** 23

NAME: BUFFALO PLUMBING SUPPLY
ADDRESS: 840 SENECA STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9308488
ID2:
STATUS: CLOSED 12/29/1993
PHONE:

SPILL DATE: 10/08/93
SPILL TIME: 12:01
DATE REPORTED: 10/08/93
TIME REPORTED: 13:40

MATERIAL SPILLED: GASOLINE
MATERIAL CLASS: PETROLEUM
AMOUNT SPILLED: 0
AMOUNT RECOVERED: 0

CAUSE OF SPILL: TANK FAILURE
RESOURCE AFFECTED: GROUNDWATER
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: OTHER
CALLER REMARKS:
CONTRACTOR DISCOVERED CONTAMINATED SOIL WHILE DIGGING FOR POSSIBLE UST S.

REGION: 9 **UST TRUST?** T

SPILL INVESTIGATOR: MJS
SPILL CONTACT: **TELEPHONE:**

SPILLER: BUFFALO PLUMBING SUPPLY
ADDRESS: 840 SENECA STREET
BUFFALO , NY 14210
SPILLER CONTACT: **TELEPHONE:** (716) 856-0876

CALLER:
AGENCY:
TELEPHONE:
NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 01/11/94
DOES CLEAN UP MEET STANDARDS? F
CLOSE DATE: 12/29/93
PENALTY RECOMMENDED? F
DEC REMARKS:
10/08/93: MJS/TERRY PAQUIN/SITE - CONTAMINATED SOIL EXCAVATED AND STAGED ON PLASTIC. ADDITIONAL EXCAVATION NECESSARY. WILL HAVE THAT EXCAVATION DONE & SAMPLES TAKEN. WILL FORWARD PHASE I SITE ASSESSMENT. 10/25/93: MJS RECEIVED SITE ASSESSMENT AND MAGNETROMETER SURVEY. SURVEY INDICATES 5 LOCATIONS OF POSSIBLE UST S. 1 LOCATION IS WHERE SOIL CONTAMINATION WAS. 11/08/93: MJS RECEIVED ANALYTICAL RESULTS ON EXCAVATION. 8021-NOTHING FOUND; 8270-BENZO(A)PYRENE AT 1300 PPB. ALL OTHER PARAMETERS NON-DETECT. 11/15/93: MJS TELECON TO CONSULTANT. NO FURTHER EXCAVATION NECESSARY. DEC NEEDS DISPOSAL RECEIPTS. MS PAQUIN FAXED ANALYTICAL FOR SOIL PILE. LETTER TO RP. 11/17/93: RECEIVED PHASE 3 ASSESSMENT FROM CONSULTANT. FILE WILL BE GIVEN I STATUS WHEN DISPOSAL RECEIPTS RECEIVED. 12/29/93: MJS RECEIVED DISPOSAL RECEIPT FOR CONTAMINATED SOIL. NO FURTHER ACTION REQUIRED. SITE IS INACTIVE .

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 35 **DIST/DIR:** 0.18 NW **MAP ID:** 8

NAME: ENGINE 32 FIRE STATION
ADDRESS: SENECA AND SWAN STREETS
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9910197
ID2:
STATUS: CLOSED 01/05/2000
PHONE:

SPILL DATE: 11/23/99
SPILL TIME: 09:29

DATE REPORTED: 11/23/99
TIME REPORTED: 09:29

MATERIAL SPILLED: DIESEL
MATERIAL CLASS: PETROLEUM

AMOUNT SPILLED: 0 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: NON-COMMERCIAL/INSTITUTIONAL
REPORTED BY: TANK TESTER
CALLER REMARKS:
TANK FAILED TEST NO PRODUCT SPILLAGE

REGION: 9 **UST TRUST?** T

SPILL INVESTIGATOR: FG
SPILL CONTACT: **TELEPHONE:** ( ) -

SPILLER: BUFFALO FIRE DEPARTMENT
ADDRESS: 1100 CITY HALL
BUFFALO , NY 14202-
SPILLER CONTACT: DANIEL CULKMAN **TELEPHONE:** (716) 856-2142

CALLER:
AGENCY:
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 08/11/00
DOES CLEAN UP MEET STANDARDS? T

CLOSE DATE: 01/05/00
PENALTY RECOMMENDED? F

DEC REMARKS:
11/23/99: FG NOTE TO FILE, THIS SITE IS PART OF A CONSENT ORDER BETWEEN DEC & THE CITY OF BUFFALO TO UPGRADE ALL UST S. THE UST WAS TESTED AND FAILED. THEY PLAN ON REMOVING IT. 11/24/99: FG TELECON TO PETER MARLOWE (851-2142) WITH R&D ENGINEERING. HE SAID HE WILL GET BACK TO THIS OFFICE WITHIN ONE WEEK AND LET US KNOW WHEN THE UST WILL BE REMOVED. HE IS WORKING WITH ROBERT OHARA, THE CITY OF BUFFALO ARCHITECT 01/05/00: FG NOTE TO FILE, THIS SPILL FILE 9910197 CAN BE CLOSED BECAUSE IT IS A DUPLICATE OF 9910703. ALL FURTHER ACTION WILL BE HANDLED UNDER SPILL 9910703.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 36 **DIST/DIR:** 0.23 SW **MAP ID:** 9

NAME: GRAPHIC CONTROLS
ADDRESS: 189 VAN RENSSELAER STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9009691
ID2:
STATUS: CLOSED 08/26/1991
PHONE:

SPILL DATE: 12/06/90
SPILL TIME: 14:15
DATE REPORTED: 12/06/90
TIME REPORTED: 14:26

MATERIAL SPILLED: DIESEL
MATERIAL CLASS: PETROLEUM
AMOUNT SPILLED: 0 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: RESPONSIBLE PARTY
CALLER REMARKS:
CONTAMINATION FOUND WHEN ABANDONED DIESEL TANK REMOVED

REGION: 9 **UST TRUST?** T

SPILL INVESTIGATOR: RNL
SPILL CONTACT: **TELEPHONE:**

SPILLER: GRAPHIC CONTROLS
ADDRESS: 189 VAN RENSSELAER STREET
BUFFALO , NY 14240
SPILLER CONTACT: **TELEPHONE:** (716) 853-7500

CALLER:
AGENCY:
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 08/29/91
DOES CLEAN UP MEET STANDARDS? T
CLOSE DATE: 08/26/91
PENALTY RECOMMENDED? F
DEC REMARKS:
12/07/90: RNL INSP. 12/06/90, CONTAIMINATED SOIL AND WATER FOUND, TANK TO BE SAMPLED AND EMPTIED, THEN REMOVED, OK; RNL LETTER 12/07/90 TO GRAPHIC CONTROLS. 12/10/90: RNL INSP. 12/10/90, CONTAIMINATED SOIL STOCKPILED, TANK EMPTIED AND TO BE REMOVED TODAY, IN CLAY SOIL, MW TO BE INSTALLED. 12/11/90: RNL INSP. 12/10190, CONTAMINATED SOIL STOCKPILED, TWO TANKS REMOVED AND CLEAN, MW TO BE INSTALLED. 01/04/91: RNL INSP. 01/04/91, CONTAMINATED SOIL STOCKPILED, TANKS GONE, MW FROZEN, CHECK AGAIN. 03/06/91: RNL TELECONS WITH ROBERT DUKE OF GRAPHICS CONTROL 01/16/91 AND 03/06/91, HE WILL HAVE WASTESTREAM CLEAN SOIL AND CHECK WELL, IN 3/91, HE WILL CALL ME FOR DATE IN MARCH. 03/19/91: RNL ON SITE MEETING 03/19/91, SHEEN FOUND IN MW, DUKE AGREED TO REMEDIATE, WILL SEND PROPOSAL WITH WASTESTREAM. 06/24/91: RNL INSP. 06/24/91, SOIL BEING BIOREMEDIATED, ON PLASTIC AND BERMED, WELL NOT CHECKED, SITE OK. 08/26/91: RNL INSP. 07/29/91, MET DUKE AND WASTESTREAM, SOIL OK, HOLD FOR SAMPLE RESULTS, MW OK; RNL RECEIVED SAMPLE RESULTS 08/15/91, OK, CLOSEOUT LETTER TO GRAPHIC CONTROLS 08/26/91.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 37 **DIST/DIR:** 0.27 SW **MAP ID:** 24

NAME: L.C.O.BUILDING
ADDRESS: 726 EXCHANGE ST.
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 0475260
ID2:
STATUS: ACTIVE
PHONE:

SITE INFORMATION:

SPILL DATE: 08/25/2004
DATE REPORTED: 08/25/2004
SPILL TIME: 09:20 AM
TIME REPORTED: 09:20 AM
SPILLED MATERIAL: #6 FUEL OIL

SPILLED AMOUNT: UNKNOWN GAL.
SPILL CAUSE: TANK FAILURE
SPILL SOURCE: OTHER COMM/INDUSTRIAL
RESOURCE AFFECTED: ON LAND
WATERBODY:

REGION CLOSED DATE: NOT CLOSED

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 38 **DIST/DIR:** 0.26 SW **MAP ID:** 10

NAME: NYS THRUWAY AUTHORITY
ADDRESS: 131 ROSEVILLE STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9400832
ID2:
STATUS: CLOSED 06/13/1994
PHONE:

SPILL DATE: 04/01/94
SPILL TIME: 12:00
DATE REPORTED: 04/15/94
TIME REPORTED: 16:15

MATERIAL SPILLED: GASOLINE
MATERIAL CLASS: PETROLEUM
AMOUNT SPILLED: 0 L
AMOUNT RECOVERED: 0 L

CAUSE OF SPILL: TANK FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: NON-COMMERCIAL/INSTITUTIONAL
REPORTED BY: RESPONSIBLE PARTY
CALLER REMARKS:
UST REMOVAL AT NYS THRUWAY AUTHORITY. CONTAMINATED SOIL DISCOVERED.

REGION: 9 **UST TRUST?** T

SPILL INVESTIGATOR: FG
SPILL CONTACT:
TELEPHONE:

SPILLER: NYS THRUWAY AUTHORITY
ADDRESS: 3901 GENESEE STREET
BUFFALO , NY 14225-0121
SPILLER CONTACT:
TELEPHONE: (716) 635-6245

CALLER:
AGENCY:
TELEPHONE:

NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 10/08/99
DOES CLEAN UP MEET STANDARDS? T
CLOSE DATE: 06/13/94
PENALTY RECOMMENDED? F
DEC REMARKS:
05/19/94: SENT LTR REQUIRING ADDL SAMPLING AND ANALYSIS BY 6/10/94. 06/13/94: NYSTA SUBMITTED 8270 ANALYSIS. LEVELS BELOW STARS GUIDANCE MEMO. SITE CAN BE CLOSED.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 39 **DIST/DIR:** 0.17 NW **MAP ID:** 25

NAME: SAINT PATRICK VILLAGE
ADDRESS: 39 EMSLIE STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9509352
ID2:
STATUS: CLOSED 11/09/1995
PHONE:

SPILL DATE: 10/26/95
SPILL TIME: 12:30
DATE REPORTED: 10/26/95
TIME REPORTED: 14:10

MATERIAL SPILLED: #2 FUEL OIL
MATERIAL CLASS: PETROLEUM
AMOUNT SPILLED: 0 G
AMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK FAILURE
RESOURCE AFFECTED: ON LAND
WATERBODY AFFECTED:
SOURCE OF SPILL: NON-COMMERCIAL/INSTITUTIONAL
REPORTED BY: OTHER
CALLER REMARKS:
CONTRACTOR DISCOVERED TWO HEATING FUEL OIL TANKS WHILE EXCAVATING BASEMENTS FOR TOWNHOUSE CONSTRUCTION. RECEIVED SOIL ANALYSIS RESULTS, EXCEED DEC GUIDANCE VALUES.

REGION: 9 **UST TRUST?** F

SPILL INVESTIGATOR: MNP
SPILL CONTACT: JANET MEISELMAN **TELEPHONE:** (716) 856-4494

SPILLER: SAINT PATRICK VILLAGE,L.P
ADDRESS: 525 WASHINGTON STREET
BUFFALO , NY 14203-
SPILLER CONTACT: JANET MEISELMAN **TELEPHONE:** (716) 856-4494

CALLER:
AGENCY:
TELEPHONE:
NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 11/17/95
DOES CLEAN UP MEET STANDARDS? T
CLOSE DATE: 11/09/95
PENALTY RECOMMENDED? F
DEC REMARKS:
10/26/95: MNP TELECON W/ TOM SZUSTAKOWSKI - ADF CONSTRUCTION. (PH # 849-2706 OR MOBILE PH # 866-6637). ADF CONSTRUCTION, 455 COMMERCE, AMHERST, NY 14228-2388. SAMPLE RESULTS NOT IN YET ONLY HAVE VERBAL. ASKED HIM TO FAX RESULTS WHEN AVAILABLE & THEN WE LL DISCUSS & THEN CHECK SITE. 10/27/95: MNP TELECON W/ TOM SZUSTAKOWSKI - ADF CONSTRUCTION. . SETUP SITE MEETING FOR 10/30/95 AT 10:30AM. 10/30/95: MNP INSP. & MEETING W/ TOM SZUSTAKOWSKI - ADF CONSTRUCTION & EVAN CASEY GREAT LAKES ENV. 2 UST ON SITE FILLED W/ CONCRETE. REVIEWED SAMPLE RESULTS, UST #1 OK, UST #2 EXCEEDS EPA METHOD 8270 STARS MEMO #1 FOR DIRECT METHOD. CHECKED UST #2 LOCATION, BASEMENT FOOTERS & WALLS ALREADY BUILT AROUND & OVER AREA. ALSO, THEY HAVE EXCAVATED AN ADDITIONAL 2 FT. BELOW ORIGINAL TANK PIT BOTTOM. NO VISIBLE SHEEN OR CONTAMINATION. TO COLLECT SAMPLE FROM AREA & ANALYZE FOR TCLP EPA METHOD 8270 STARS MEMO #1. IF SAMPLE RESULTS ARE BELOW GUIDANCE VALUES, SITE WILL BE BE CLOSED & CONSTRUCTION MAY CONTINUE. OTHERWISE ADDITIONAL WORK MAY BE REQUIRED. EVAN CASEY GAVE ME COPY OF SAMPLE REPORT & PICTURES. TOM S. TO SEND ME SITE DRAWING W/ TANK LOCATION. 11/02/95: RECEIVED FAX SITE DRAWING SHOWING UST #2 LOCATION. 11/07/95: GREAT LAKES ENV. FAX OF ACTS SAMPLE RESULTS. NON-DETECT FOR TCLP EPA METHOD 8272 STARS MEMO #1. 11/09/95 MNP TELECON W/ TOM SZUSTAKOWSKI - ADF CONSTRUCTION. SAMPLE RESULT MEET NYSDEC GUIDANCE VALUES. OK TO PROCEED W/ CONSTRUCTION. TO DISPOSE OF TANK AS SCRAP & CONCRETE AS C & D MATERIAL, I AGREED. SENDING CLOSURE LETTER TO ST. PATRICK S VILLAGE. NO FURTHER ACTION COMPLETE.

TARGET SITE: 8 LORD ST
BUFFALO NY 14210

JOB: 04.9629

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 40 **DIST/DIR:** 0.44 NE **MAP ID:** 26

NAME: SCHOOL 40
ADDRESS: 89 CLARE STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 0375440
ID2:
STATUS: ACTIVE
PHONE:

SITE INFORMATION:

SPILL DATE:	01/05/2004
DATE REPORTED:	01/05/2004
SPILL TIME:	03:05 PM
TIME REPORTED:	03:05 PM
SPILLED MATERIAL:	#2 FUEL OIL
SPILLED AMOUNT:	UNKNOWN GAL.
SPILL CAUSE:	TANK TEST FAILURE
SPILL SOURCE:	OTHER NON COMM/INSTITUTIONAL
RESOURCE AFFECTED:	ON LAND
WATERBODY:	
REGION CLOSED DATE:	NOT CLOSED

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 41 **DIST/DIR:** 0.12 SE **MAP ID:** 12

NAME: UNILOCK INC.
ADDRESS: 510 SMITH STREET
BUFFALO NY
ERIE
CONTACT:

REV: 5/10/04
ID1: 9105743
ID2:
STATUS: CLOSED 11/15/1991
PHONE:

SPILL DATE: 08/01/91
SPILL TIME: 12:00
DATE REPORTED: 08/27/91
TIME REPORTED: 10:05

MATERIAL SPILLED: WASTE OIL
MATERIAL CLASS: PETROLEUM
AMOUNT SPILLED: 0
AMOUNT RECOVERED: 0

CAUSE OF SPILL: TANK FAILURE
RESOURCE AFFECTED: GROUNDWATER
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: OTHER
CALLER REMARKS:
ABANDONED TANKS AT UNILOCK

REGION: 9 **UST TRUST?** F

SPILL INVESTIGATOR: MF
SPILL CONTACT: **TELEPHONE:**

SPILLER: UNILOCK INC.
ADDRESS: 510 SMITH STREET
BUFFALO , NY 14210
SPILLER CONTACT: **TELEPHONE:** (716) 822-6074

CALLER:
AGENCY:
TELEPHONE:
NOTIFIER:
AGENCY:
TELEPHONE:

LAST DEC UPDATE: 01/30/92 **CLOSE DATE:** 11/15/91
DOES CLEAN UP MEET STANDARDS? T **PENALTY RECOMMENDED?** F
DEC REMARKS:
08/27/91: MEL. RNL SENT MEMO TO PETER BEUCHI H/SW, WAITING FOR RESPONSE. 11/15/91: MF 11/15/91 RECEIVED SAMPLE RESULTS, NOTHING DETECTED. LETTER SENT TO SPILLER. NO FURTHER ACTION NECESSARY.

Environmental FirstSearch
Federal Databases and Sources

ASTM Databases:

CERCLIS: ***Comprehensive Environmental Response Compensation and Liability Information System.*** The EPA's database of current and potential Superfund sites currently or previously under investigation. Source: Environmental Protection Agency.

Updated quarterly.

CERCLIS-NFRAP (Archive): ***Comprehensive Environmental Response Compensation and Liability Information System Archived Sites.*** The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Updated quarterly.

ERNS: ***Emergency Response Notification System.*** The EPA's database of emergency response actions. Source: Environmental Protection Agency. Data since January, 2001, has been received from the National Response Center as the EPA no longer maintains this data.

Updated quarterly.

FINDS: ***The Facility Index System.*** The EPA's Index of identification numbers associated with a property or facility which the EPA has investigated or has been made aware of in conjunction with various regulatory programs. Each record indicates the EPA office that may have files on the site or facility. Source: Environmental Protection Agency.

Updated semi-annually.

NPL: ***National Priority List.*** The EPA's list of confirmed or proposed Superfund sites. Source: Environmental Protection Agency.

Updated quarterly.

RCRIS: ***Resource Conservation and Recovery Information System.*** The EPA's database of registered hazardous waste generators and treatment, storage and disposal facilities. Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List). Source: Environmental Protection Agency.

> **RCRA TSD:** ***Resource Conservation and Recovery Information System Treatment, Storage, and Disposal Facilities.*** The EPA's database of RCRIS sites which treat, store, dispose, or incinerate hazardous waste. This information is also reported in the standard RCRIS detailed data.

ASTM Databases (continued):

RCRA COR: ***Resource Conservation and Recovery Information System Corrective Action Sites.*** The EPA's database of RCRIS sites with reported corrective action. This information is also reported in the standard RCRIS detailed data.

RCRA GEN: ***Resource Conservation and Recovery Information System Large and Small Quantity Generators.*** The EPA's database of RCRIS sites that create more than 100kg of hazardous waste per month or meet other RCRA requirements. Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List).

RCRA NLR: ***Resource Conservation and Recovery Information System sites No Longer Regulated.*** The EPA's database of RCRIS sites that create less than 100kg of hazardous waste per month or do not meet other RCRA requirements.

All RCRA databases are Updated quarterly

Environmental FirstSearch
Federal Databases and Sources

Non-ASTM Databases:

HMIRS: ***Hazardous Materials Incident Response System.*** This database contains information from the US Department of Transportation regarding materials, packaging, and a description of events for tracked incidents.

Updated quarterly.

NCDB: ***National Compliance Database.*** The National Compliance Data Base System (NCDB) tracks regional compliance and enforcement activity and manages the Pesticides and Toxic Substances Compliance and Enforcement program at a national level. The system tracks all compliance monitoring and enforcement activities from the time an inspector conducts and inspection until the time the inspector closes or the case settles the enforcement action. NCDB is the national repository of the 10 regional and Headquarters FIFRA/TSCA Tracking System (FTTS). Data collected in the regional FTTS is transferred to NCDB to support the need for monitoring national performance of regional programs.

Updated quarterly

NPDES: ***National Pollution Discharge Elimination System.*** The EPA's database of all permitted facilities receiving and discharging effluents. Source: Environmental Protection Agency.

Updated semi-annually.

NRDB: ***National Radon Database.*** The NRDB was created by the EPA to distribute information regarding the EPA/State Residential Radon Surveys and the National Residential Radon Survey. The data is presented by zipcode in Environmental FirstSearch Reports. Source: National Technical Information Service (NTIS)

Updated Periodically

Nuclear: The Nuclear Regulatory Commission□s (NRC) list of permitted nuclear facilities.

Updated Periodically

PADS: PCB Activity Database System
The EPA's database PCB handlers (generators, transporters, storers and/or disposers) that are required to notify the EPA, the rules being similar to RCRA. This database indicates the type of handler and registration number. Also included is the PCB Transformer Registration Database.

Updated semi-annually.

Receptors: 1995 TIGER census listing of schools and hospitals that may house individuals deemed sensitive to environmental discharges due to their fragile immune systems.

Updated Periodically

Non-ASTM Databases (continued):

RELEASES: ***Air and Surface Water Releases.*** A subset of the EPA's ERNS database which have impacted only air or surface water.

Updated semi-annually.

Soils: This database includes the State Soil Geographic (STATSGO) data for the conterminous United States. It contains information regarding soil characteristics such as water capacity, percent clay, organic material, permeability, thickness of layers, hydrological characteristics, quality of drainage, surface, slope, liquid limit, and the annual frequency of flooding. Source: United States Geographical Survey (USGS).

Updated quarterly

TRIS: ***Toxic Release Inventory System.*** The EPA's database of all facilities that have had or may be prone to toxic material releases. Source: Environmental Protection Agency.

Updated semi-annually.

Environmental FirstSearch
New York Databases and Sources

1. **State Sites:** The New York State Department of Environmental Conservation's Registry of Inactive Hazardous Waste Disposal Sites. The database contains information on all Class 1, Class 2, Class 2a, Class 3, Class 4, and Class 5 locations maintained by the Division of Hazardous Waste Remediation.

   Updated quarterly.

   The Hazardous Substance Waste Disposal Site Study list maintained by the New York State Department of Environmental Conservation is also included within the State Sites database.

   Updated as available.

2. **Spills:** The New York State Department of Environmental Conservation's database of emergency response actions and spill releases maintained by the Division of Spills Management.

   Updated quarterly.

3. **Landfills:** The New York State Department of Environmental Conservation's Active Facilities Registry maintained by the Division of Solid and Hazardous Materials.

   Updated annually.

4. **UST:** The New York State Department of Environmental Conservation 's database of Petroleum Bulk Storage (PBS) facilities, Major Oil Storage Facilities (MOSF), and Chemical Bulk Storage (CBS) facilities maintained by the Division of Spills Management and delegated Counties (Nassau, Suffolk, Rockland, and Cortland Counties).

   Updated quarterly.

5. **PWS:** The State of New York Department of Health database of Public Water Supply (PWS) wells maintained by the Bureau of Public Water Supply.

   Updated annually.

6. **LUST:** The New York State Department of Environmental Conservation's database of Leaking Underground Storage Tanks (LUSTs) maintained by the Division of Spills Management. The database is derived from the Spills database.

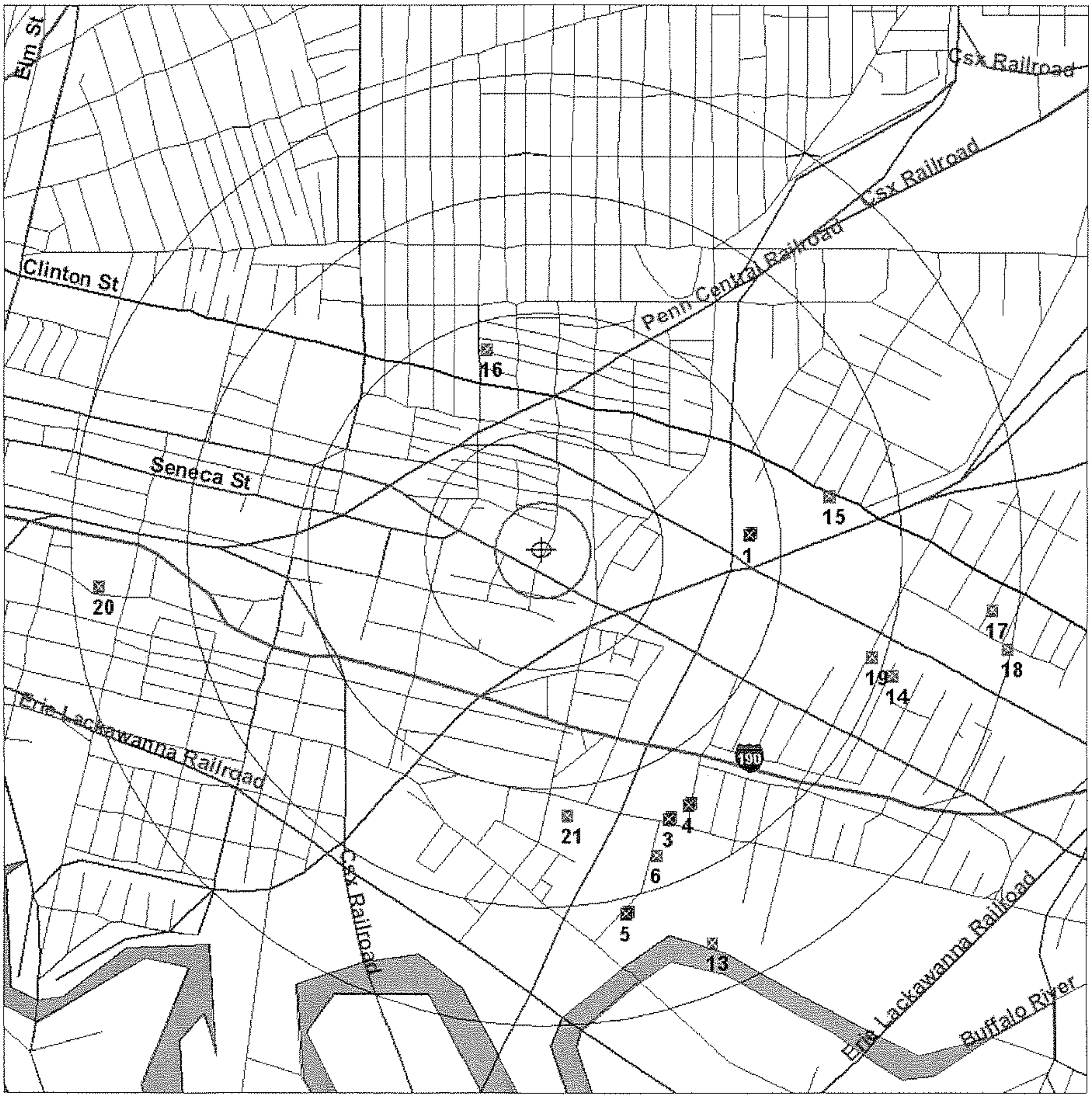
   Updated quarterly.

Environmental FirstSearch

1 Mile Radius

ASTM Map: NPL, RCRACOR, STATE Sites

8 LORD ST, BUFFALO NY 14210



Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 42.875776 Longitude: -78.846112) .... ⊕

Identified Site, Multiple Sites, Receptor .... ▨ ▩ ⚑

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .... ▨

Railroads ....

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.5 Mile Radius
ASTM Map: CERCLIS, RCRATSD, LUST, SWL

8 LORD ST, BUFFALO NY 14210

Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 42.875776 Longitude: -78.846112) .... ⌖

Identified Site, Multiple Sites, Receptor .... ☒ ☒ ▪

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .... ▨

Railroads .... —

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.25 Mile Radius

ASTM Map: RCRAGEN, ERNS, UST

8 LORD ST, BUFFALO NY 14210

Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 42.875776 Longitude: -78.846112) .... ⌖

Identified Site, Multiple Sites, Receptor .... ☒ ▩ ⛫

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .... ▨

Railroads .... —

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.15 Mile Radius

Non-ASTM Map: RCRANLR, Spills 90, Spills 80

8 LORD ST, BUFFALO NY 14210

Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 42.875776 Longitude: -78.846112) .... ⊕

Identified Site, Multiple Sites, Receptor .... ☒ ☒ ⚑

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .... ▨

National Historic Sites and Landmark Sites .... H ▨

Soil Sites .... ☐

Railroads .... —

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

APPENDIX E

Tank Closure Documentation

Notification for Underground Storage Tanks

FORM APPROVED
OMB NO. 2050-0049
APPROVAL EXPIRES 6-30-88

FOR TANKS IN NY

RETURN COMPLETED FORM TO

Bulk Storage Section, Division of Water
Dept. of Environmental Conservation
50 Wolf Road, Room 326
Albany, NY 12233-0001 (518) 457-4351

STATE USE ONLY

I.D. Number

Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;
4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. **This form must by completed for each location containing underground storage tanks.** If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached ☐

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)
American Linen Supply Co.

Street Address
47 South Ninth Street

County

City Minneapolis, MN State ZIP Code 55440

Area Code Phone Number

Type of Owner *(Mark all that apply ☒)*

☒ Current ☐ State or Local Gov't ☒ Private or Corporate

☐ Former ☐ Federal Gov't (GSA facility I.D. no. ________) ☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section 1, mark box here ☐)

Facility Name or Company Site Identifier, as applicable
American Linen Supply Co.

Street Address or State Road, as applicable
8 Lord Street

County
Erie County

City (nearest) Buffalo State NY ZIP Code 14210

Indicate number of tanks at this location: 5

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐) Richard P. Teal

Job Title Facilities Manager

Area Code 716

Phone Number 741-3756

IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative
Joseph J. Raucci District Manager

Signature

Date Signed 4/24/86

CONTINUE ON REVERSE SIDE

Owner Name (from Section I) [illegible] Location (from Section II) [illegible] Page No. [illegible] of [illegible]

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS *(Complete for each tank at this location.)*

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 1	Tank No. 2	Tank No. 3	Tank No. 4	Tank No 5
1. Status of Tank *(Mark all that apply ☒)*					
Currently in Use	☒	☒	☒	☒	☐
Temporarily Out of Use	☐	☐	☐	☐	☐
Permanently Out of Use	☐	☐	☐	☐	☒
Brought into Use after 5/8/86	☐	☐	☐	☐	☐
	[illegible]				
2. Estimated Age (Years)	12-20-97	9	9	5	Unknown
3. Estimated Total Capacity (Gallons)	20,000	20,000	1,500	10,000	5,000
4. Material of Construction *(Mark one ☒)*					
Steel	☒	☒	☒	☒	☒
Concrete	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
5. Internal Protection *(Mark all that apply ☒)*					
Cathodic Protection	☐	☐	☐	☐	☐
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
None	☒	☒	☒	☒	☒
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
6. External Protection *(Mark all that apply ☒)*					
Cathodic Protection	☐	☐	☐	☐	☐
Painted (e.g., asphaltic)	☒	☒	☒	☒	☐
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
None	☐	☐	☐	☐	☒
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
7. Piping *(Mark all that apply ☒)*					
Bare Steel	☒	☒	☒	☒	☒
Galvanized Steel	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume *(Mark all that apply ☒)*					
a. Empty	☐	☐	☐	☐	☐
b. Petroleum					
Diesel	☐	☒	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline (including alcohol blends)	☐	☐	☐	☒	☐
Automotive Used Oil	☐	☐	☒	☐	☐
Other, Please Specify	#6 Fuel Oil				
c. Hazardous Substance	☐	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No.					
Mark box ☒ if tank stores a mixture of substances	☐	☐	☐	☐	☐
d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service)					
a. Estimated date last used (mo/yr)	/	/	/	/	/
b. Estimated quantity of substance remaining (gal.)					
c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☒

☆ U.S. Government Printing Office: 1986—498-735

3-09-001 (4/85)

REMINDER

1. Enclose registration fee.

Facility Size	Fee
1,101 – 4,999 gallons	$ 50/facility
5,000 – 10,000 gallons	150/facility
10,001 – 399,999 gallons	250/facility

2. Make check or money order payable to NYS Department of Environmental Conservation.
3. Please return all 4 copies of this application to the DEC Regional Office.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PETROLEUM BULK STORAGE APPLICATION

SECTION A—Instructions on Back

APPLICATION NUMBER 07632

TRANSACTION TYPE
Check one

1 ☑ Registration

2 ☐ Transfer

If Transfer, Existing PBS Number

3 ☐ Substantial Facility Modification

4 ☐ Information Correction

PBS Number

OFFICIAL USE ONLY

Date Received

Amount Received

Received By

1. NAME OF FACILITY: American Linen Supply Co.
2. ADDRESS (Number and Street): P.O. Box 1067, 8 Lord St.
3. CITY, TOWN, VILLAGE: Buffalo
4. STATE: NY
5. ZIP CODE+4: 14240
6. COUNTY: Erie
7. TELEPHONE: (716) 856-2727

1. NAME OF OWNER: American Linen Supply Co.
2. ADDRESS (Number and Street): 47 South Ninth St.
3. CITY, TOWN, VILLAGE: Minneapolis
4. STATE: MN
5. ZIP CODE+4: 55440
7. TELEPHONE: (612) 371-4200

1. NAME OF OPERATOR: American Linen Supply Co.
2. ADDRESS (Number and Street): P.O. Box 1067, 8 Lord St.
3. CITY, TOWN, VILLAGE: Buffalo
4. STATE: NY
5. ZIP CODE+4: 14240
7. TELEPHONE: (716) 856-2727

1. NAME OF EMERGENCY CONTACT: Richard P. Teal
2. ADDRESS (Number and Street): 8315 Clarnew Dr.
3. CITY, TOWN, VILLAGE: East Amherst
4. STATE: NY
5. ZIP CODE+4: 14051
7. TELEPHONE: (716) 741-3756

I hereby affirm under penalty of perjury, that information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

8 NAME/TITLE OF REPRESENTATIVE: Joseph J. Raucci, District Manager

9 SIGNATURE: J. Raucci

DATE: 4/24/86

SECTION B—Instructions on Back

Action	Tank Number	Location	Capacity	Tank Type	Product Stored	Status	Installation Date	Leak Detection	Secondary Containment	Product Gauge	Piping Type	Dispenser	Test Certificate Enclosed	Official Use Only
1	1	1	20000	1	4	1	0378	6	6	1	1	2		
1	2	1	20000	1	6	1	0378	6	6	0	1	2		
1	3	1	1500	1	7*	1	0378	6	6	0	1	2		
1	4	1	10000	1	2	1	0378	6	6	1	1	2		
3	5	2	5000	2		3	0000	6	2	0	1			

KEY FOR SECTION B (instructions on back) * Automotive waste oil

ACTION
1 Register existing tank
2 Add Tank
3 Close/Remove Tank
4 Modify Tank

LOCATION
1 Underground
2 Underground vaulted, with access
3 Underground vaulted, no access
4 Aboveground
5 Aboveground on crib, etc.
6 Aboveground—10% or more below ground

TANK TYPE
1 Bare steel or steel with black asphalt coating
2 Steel in vault
3 Steel with interior epoxy lining
4 Steel retrofitted with cathodic protection
5 Steel with cathodic protection
6 Fiberglass coated steel
7 Fiberglass reinforced plastic
8 Double walled

PRODUCT STORED
1 Leaded gasoline
2 Unleaded gasoline
3 Nos. 1, 2 or 4 fuel oil
4 Nos. 5 or 6 fuel oil
5 Kerosene
6 Diesel
7 Other

STATUS
1 In service
2 Temporarily out
3 Permanently out

INSTALLATION DATE
This location
Month/year (mm/yy)

LEAK DETECTION SYSTEM
1 Electronic
2 Vapor well
3 Sampling well
4 In-tank system
5 Other
6 None

SECONDARY CONTAINMENT
1 Diking
2 Vault
3 Double wall tank
4 Underground liner
5 Other
6 None

PRODUCT GAUGE
0 None
1 Gauge

PIPING TYPE
1 Steel/Iron
2 Galvanized Steel
3 Wrapped Steel
4 Fiberglass
5 Cathodically protected
6 Double walled
7 Unknown

DISPENSER METHOD
1 Submersible
2 Suction
3 Gravity
4 Loading rack

REGION

AMERICAN LINEN SUPPLY CO.

INTER BRANCH CORRESPONDENCE

FROM: R. P. Teal

DATE July 17, 1987

TO: James Burlingame

BRANCH

SUBJECT: Waste Water Sludge

Dear Mr. Burlingame:

We discontinued dry cleaning in October, 1985. Since that time we have installed a new wash aisle with new trenches.

Need SAMPLE

Our waste water pits are thoroughly cleaned once a month.

Our problem with Perc is in our 1500 gallon waste oil tank which is buried under our rear driveway. Small amounts of Perc were pumped into the tank as residue during the reclamation process. — will empty, purge and [illegible] fill if can get ok

Will
[illegible]
talk to
Raucci 7-20

This tank along with the other underground tanks will have to be tested next March. Considering the cost of testing compared to how seldom we now use it, we have given thought to having it pumped out and the contents legally disposed of and then take the tank out of service. We would then empty our used motor oil into 55 gallon drums and pay a smaller amount to dispose of it.

We should make a decision and take some action before Winter arrives.

Your thoughts and advice will be appreciated.

Called 7-24
he will take sludge sample

Sincerely,

Dick Teal

Dick Teal

bl

cc: J.J. Raucci

Use #6 oil [illegible] no testing requirements
no retrofit [illegible]
someday – (5 yrs ?) will
require monitoring wells
or something similar

RECEIVED
NATIONAL OFFICE
JUL 20 1987
REFERRED TO
ANSWERED
N. A.

RECEIVED
NATIONAL OFFICE
APR 14 1988
REFERRED
ANSWERED
N. A.

AMERICAN LINEN

INTER-BRANCH CORRESPONDENCE

DATE: April 8, 1988

FROM: R. Teal
BRANCH: Buffalo

TO: J. Raucci
BRANCH: Buffalo

SUBJECT:

Our project of closing or removing our underground tanks has been completed.

This memo will bring you up to date on what has been done and the cost.

Envirosure Special Services Corp., 333 Ganson Street did all of the work.

1. 20,000 gallon tank used for diesel fuel:
The remaining fuel was transferred to our #6 fuel oil tank. The tank was cleaned, the cleaning agent removed and transported. The tank was then filled with 97 cubic yards of slurry concrete.

2. 1500 gallon waste oil tank:
A sample of the sludge from the tank was taken. This sample was tested and found to contain hazardous properties (chlorinated solvents - perc) falling into classification F-001.

The material, amounting to 750 gallons, was pumped out and the tank cleaned. We filled the tank with 8 cubic yards of concrete.

3. 10,000 gallon gasoline tank:
This tank was pumped out, cleaned and then removed.

The D. E. C. and the Buffalo Fire Department require that all vent pipes and fuel dispensing pumps be removed. Suction lines to the pumps must also be removed or filled with concrete. This was done as well as filling the holes in the pump house where the pumps were secured to the concrete floor.

Lt. Paul J. Alico from the Fire Prevention Bureau of the Buffalo Fire Department witnessed both the removal of the gasoline tank and the filling of the other two tanks.

I spoke to Mr. Robert Lowsey of the D. E. C. requesting an inspection. I was told that an inspection was not required and that I should fill the tanks at our convenience.

COST OF THE PROJECT;

The final cost was less than originally proposed. The cleaning of the diesel tank wasn't as time consuming as Envirosure thought it might be. They reduced the cost by $100.00.

We saved $607.00 on the concrete by not having strict requirements on its structual strength.

1.	Diesel tank (20,000 gallons):	
	Transfer oil and clean	$ 500.00
	97 yards of concrete	4451.38
	Total	$4951.38
2.	Waste oil tank (1500 gallons):	
	Lab work on sludge sample	$ 477.36
	Clean tank	1000.00
	Transportation & disposal of waste	2062.00
	Niagara Falls City tax (transportation & disposal only) 5%	103.10
	Sales tax	284.96
	8 yds. concrete	367.12
	Total	$4294.54
3.	Gasoline tank (10,000 gallons):	
	Pumping out gasoline, cleaning, transportation & removal of tank as well as backfill and blacktop.	$5255.00
	In addition, we lost 260 gallons of gasoline that could not be pumped. It had to be removed as waste.	217.00
	Total	$5472.00

The blacktop will be replaced when the backfill has been sufficiently compacted.

Grand Total $14,717.92

1977 - AGE

The only underground tank remaining in service is the 20,000 gallon tank containing #6 fuel oil. This tank is registered with the D. E. C. but is not required to be tested at this time.

The analytical report and hazardous waste manifest are both on file. To the best of my knowledge, all of the work done for us was performed in accordance with City, State and Federal Regulations.

Dick

Dick

600 DELAWARE AVENUE
BUFFALO, NY 14202 (716) 847-4590

NEW Y ATE DI ENT O ONME ONSER

PETROLEUM BULK STORAGE REGISTRATION CERTIFICATE

FEE PAID 250

TANK NUMBER	TESTING DUE DATE	DATE LAST TESTED	TANK TYPE	CAPACITY	DATE INSTALLED
001			BARE STEEL	20,000	03/72

* Aboveground tanks require monthly visual inspections and documented internal inspections every ten years as described in 6 NYCRR Part 613.

ISSUED BY:
COMMISSIONER THOMAS C. JORLING

PETROLEUM BULK STORAGE ID NUMBER 013773

DATE ISSUED 02/13/89

EXPIRATION DATE 05/07/92

OPERATOR
AMERICAN LINEN SUPPLY CO
PO BOX 1067 8 LORD ST
BUFFALO NY
14240

As authorized representative of the above named facility, I affirm under penalty of perjury that the information displayed on this form is correct to the best of my knowledge. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of 6 NYCRR Parts 612, 613 and 614, not just those cited below:

- The facility must be reregistered if there is a transfer of ownership.
- The Department must be notified within 30 days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
- The facility must be operated in accordance with the Code for Storing Petroleum, 6 NYCRR Part 613.
- Any new facility or substantially modified facility must comply with the Code for New and Substantially Modified Facilities, 6 NYCRR Part 614.
- **This certificate must be displayed on the premises at all times.**

Signature of Representative/Owner Date

FACILITY
AMERICAN LINEN SUPPLY CO
PO BOX 1067 8 LORD ST
BUFFALO NY
14240

OWNER
AMERICAN LINEN SUPPLY CO
47 SOUTH NINTH ST
MINNEAPOLIS MN
55440

EMERGENCY CONTACT
RICHARD P TEAL
8315 CLARNEW DR
EAST AMHERST NY 14051
(716) 741-3756

OWNER COPY

CN-171A

AMERICAN LINEN SUPPLY CO.

INTER BRANCH CORRESPONDENCE

DATE August 22, 1990

FROM: [redacted]

BRANCH N.O.

TO: J. Raucci

BRANCH Buffalo

SUBJECT: Pit Sludge and Underground Tank

Dear Joe:

From Dick Teal's letter of August 14, I understand you have approximately 150 drums of pit sludge to dispose of that has been tested as non-hazardous. I think it would be best to dispose of them before the September 5 deadline when the new rules go into place changing the definition of hazardous waste which most certainly will result in higher disposal costs of all wastes, hazardous and non-hazardous.

I did some calculations and the 150 drums is the equivalent of 44 tons, and a cost of $7500 to $8000 to dispose of it seems high. Jim Bucki of Rail Transfer Corporation gave me prices of $80 to $95 per ton for non-hazardous wastes, which would be about half as much.

I also did some checking on your #6 fuel oil underground tank. As we found out previously, there is no periodic tightness testing required for this type of tank, but there are some requirements we will have to meet. By December 1992 the tank and piping must have some type of monitoring for leak detection. This would probably amount to the installation of sampling wells around the tank and piping to detect organics. By December 1998 the tank must have corrosion protection and since it does not have it now, we will probably have to remove it and install a new one that has.

Sincerely,

Jim Burlingame

James O. Burlingame

JOB:jgs

cc: J. E. Johnson

/S IRO NT/ ION VAT P 1 1
600 DELAWARE AVENUE
BUFFALO, NY 14202
(716) 847-4590

93-1 4/8

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PETROLEUM BULK STORAGE NOTICE

Required Test Schedule for Underground Storage Tanks

PETROLEUM BULK STORAGE NUMBER

013773

Tests must be completed by the last day of the month indicated.
Reporting requirements are indicated on the back of this form.

INDICATE TEST RESULTS (P-pass; F-fail)

PLEASE DISREGARD THIS NOTICE FOR RESULTS ALREADY SENT TO DEC

Test Date(s)	Method(s)	TANK NUMBER	DUE DATE	TANK TYPE	CAPACITY	PRODUCT	Tank P	Tank F	Piping P	Piping F	Unable To Test
		002	03/88	BARE STEEL	20,000	DIESEL					
		003	03/88	BARE STEEL	1,500	OTHER					
		004	03/88	BARE STEEL	10,000	UNLEADED GAS					

This notice and a copy of the underground test report should be returned to DEC with the following information:

Tester's Name________________________

Tester's Address________________________

NAME OF FACILITY

AMERICAN LINER SUPPLY CO
PO BOX 1067 & LORD ST
BUFFALO NY
14240

I affirm that:

1. I am trained in performance of the test and have an understanding of the variables which affect the test.
2. The test methods used meet the Department's criteria.

Tester's Signature________________________

Owner's [illegible]nature________________________

NAME OF OWNER

AMERICAN LINEN SUPPLY CO
47 SOUTH NINTH ST
MINNEAPOLIS MN
55440

DEC DISPOSITION:

DEPARTMENT COPY

93-06-5 (6/88)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD • ALBANY, NEW YORK 12233-3530
TELEPHONE NUMBER (518) 457-4351 OR 1-800-242-4351

HAZARDOUS SUBSTANCE BULK STORAGE REGISTRATION CERTIFICATE

Region Number 9

Page 1 of 1

FEE PAID $ 100

TANK NUMBER	DATE INSTALLED	TANK TYPE	CAPACITY	PRODUCT
005	06/86	FRP	200	07681-52-9
006	06/86	FRP	215	07681-52-9
007	11/90	FRP	1000	07664-93-9
008	11/90	FRP	1000	07664-93-9

SITE
AMERICAN LINEN SUPPLY CO.
8 LORD ST. P.O. BOX 1067
BUFFALO, NY 14240

OPERATOR (Name and Telephone Number)
J.J. RAUCCI
(716) 856-2727

EMERGENCY CONTACT (Name and Telephone No.)
R. TEAL
(716) 741-3756

As authorized representative of the above named facility(s), I affirm under penalty of perjury that the information displayed on this form is correct to the best of my knowledge. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of ECL, Article 40.

- The facility must be re-registered if there is a transfer of ownership.
- The Department must be notified within 3 business days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
- This certificate must be posted at all times. Posting must be at the tank, at the entrance of the site or the main office at the site where the storage tanks are located.
- Any unauthorized discharge or release of a reportable quantity of a hazardous substance(s) shall be reported on the DEC Hot-Line within two hours. (1-800-457-7362)

ISSUED BY:
Commissioner Thomas C. Jorling

HAZARDOUS SUBSTANCE BULK STORAGE ID NUMBER
9-000151

EXPIRATION DATE
06/27/91

OWNER
AMERICAN LINEN SUPPLY CO.
47 SOUTH NINTH ST.
MINNEAPOLIS, MN 55440

Signature of Representative Date

Name of Representative (Please print)

Title of Representative

12/07/90

93-06-5 (6/88)—9c

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD • ALBANY, NEW YORK 12233-3530
TELEPHONE NUMBER (518) 457-4351 OR 1-800-242-4351

HAZARDOUS SUBSTANCE BULK STORAGE REGISTRATION CERTIFICATE

Region Number 9

Page 1 of 1

FEE PAID $ 100

TANK NUMBER	DATE INSTALLED	TANK TYPE	CAPACITY	PRODUCT
005	06/86	FRP	200	07681-52-9
006	06/86	FRP	215	07681-52-9
007	11/90	FRP	1000	07664-93-9
008	11/90	FRP	1000	07664-93-9
0011	12/90	FRP	200	07664-93-9

SITE
AMERICAN LINEN SUPPLY CO.
8 LORD ST. P.O. BOX 1067
BUFFALO, NY 14240

OPERATOR (Name and Telephone Number)
J.J. RAUCCI
(716) 856-2727

EMERGENCY CONTACT (Name and Telephone No.)
R. TEAL
(716) 741-3756

As authorized representative of the above named facility(s), I affirm under penalty of perjury that the information displayed on this form is correct to the best of my knowledge. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of ECL, Article 40.

- The facility must be re-registered if there is a transfer of ownership.
- The Department must be notified within 3 business days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
- This certificate must be posted at all times. Posting must be at the tank, at the entrance of the site or the main office at the site where the storage tanks are located.
- Any unauthorized discharge or release of a reportable quantity of a hazardous substance(s) shall be reported on the DEC Hot-Line within two hours. (1-800-457-7362)

Signature of Representative ______ Date ______

Name of Representative (Please print) ______

Title of Representative ______

ISSUED BY:
Commissioner Thomas C. Jorling

HAZARDOUS SUBSTANCE BULK STORAGE ID NUMBER
9-000151

EXPIRATION DATE
06/27/91

OWNER
AMERICAN LINEN SUPPLY CO.
47 SOUTH NINTH ST.
MINNEAPOLIS, MN 55440

02/07/91

93-19-1 (12/90)—26c

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER • BUREAU OF SPILL PREVENTION AND RESPONSE

PETROLEUM BULK STORAGE APPLICATION

Pursuant to the Petroleum Bulk Storage Law,
Article 17, Title 10 of ECL; and 6 NYCRR 612-614.
(Continued on Reverse Side—Please Be Sure to Complete Section B)

RETURN COMPLETED FORM & FEE TO:

NYS DEC - REGION 9
270 MICHIGAN AVENUE
BUFFALO, NY 14203-2999
(716) 851-7220

Please Type or Print Clearly and Complete All Items

SECTION A—See Instructions on Cover Sheet

PBS NUMBER 9-013773

Indicate Other Existing DEC Numbers, If any, for this Facility:

CBS Number:

SPDES Number:

FACILITY

NAME AMERICAN LINEN SUPPLY CO

LOCATION (Not P.O. Boxes) PO BOX 1067 8 LORD ST

LOCATION (Continued)

CITY/TOWN/VILLAGE BUFFALO

STATE NY

ZIP CODE 14240

COUNTY ERIE

TOWNSHIP OR CITY BUFFALO (C)

NAME OF OPERATOR AT FACILITY AMERICAN LINEN

FACILITY TELEPHONE NUMBER (716) 856-2727

EMERGENCY CONTACT NAME RICHARD P TEAL

EMERGENCY CONTACT PHONE NO. (716) 741-3756

OWNER

NAME AMERICAN LINEN SUPPLY CO

ADDRESS (Street and/or P.O. Box) 47 SOUTH NINTH ST

CITY MINNEAPOLIS

STATE MN

ZIP CODE 55440

FEDERAL TAX ID NO.

OWNER TELEPHONE NUMBER (612) 371-4200

TYPE OF OWNER (Check only one)

1 ☐ Private Resident 2 ☐ State Government 3 ☐ Local Government
4 ☐ Federal Government 5 ☐ Corporate/Commercial

TRANSACTION TYPE
(Check all that apply)
NOTE: Transaction Types 1, 2 and 5 require a fee.

1. ☐ Initial/ New Facility
2. ☐ Change of Ownership
3. ☐ Substantial Tank Modification
4. ☐ Information Correction
5. ☒ Renewal

TYPE OF PETROLEUM FACILITY:

(Check all that apply)

A. ☐ Storage Terminal/Petroleum Distributor
B. ☐ Retail Gasoline Sales
C. ☐ Other Retail Sales
D. ☐ Manufacturing
E. ☐ Utility
F. ☐ Trucking/Transportation
G. ☐ Apartment Building
H. ☐ School
I. ☐ Farm
J. ☐ Private Residence
K. ☐ Airline (Air Taxi)
L. ☐ Other (Specify)

I hereby certify under penalty of perjury that the information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

NAME OF OWNER OR AUTHORIZED REPRESENTATIVE

AMOUNT ENCLOSED $

TITLE

SIGNATURE

DATE

Geographical Locator for this Facility: (If known)

LATITUDE: DEG MIN SEC

LONGITUDE: DEG MIN SEC

MAILING CORRESPONDENCE

ATTENTION

NAME OF COMPANY AMERICAN LINEN SUPPLY CO

ADDRESS 47 SOUTH NINTH ST

ADDRESS

CITY/STATE/ZIP CODE MINNEAPOLIS, MN 55440

TELEPHONE NUMBER (612) 371-4200

OFFICIAL USE ONLY

Page ______ of ______

Date Received: ____/____/____

Date Processed: ____/____/____

Amount Received $ ________

Reviewed By: ________

PBS NUMBER: 9-013773

Tank Information for Petr[illegible]um Bulk Storage Facility

SECTION B—See Instructions on Cover Sheet

EXPIRATION DAT 05/07/92

Page 1 of 1

Action	Tank Number	Tank Location	Status	Installation or Permanent Closure Date (MO)		(YR)		Capacity (Gallons)	Product Stored	Tank Type	Tank Internal Prot.	Tank External Protection		Piping Location	Piping Type	Piping Internal Prot.	Piping External Protection		Secondary Containment		Leak Detection		Spill/ Overfill Prevention		Dispenser	Last Test Date (underground Tanks (MO)		(YR)	
1	1	4	1	0	3	7	8	20,000	4	1					1				0		0		4		2				

KEY FOR SECTION B

ACTION
1 Initial Listing
2 Add Tank
3 Close/Remove Tank
4 Information Correction
5 Recondition/Repair/ Reline Tank

TANK LOCATION
1 Aboveground
2 Aboveground on saddles legs, stilts, rack, or cradle
3 Aboveground: 10% or more below ground
4 Underground
5 Underground, vaulted, with access

STATUS
1 In-service
2 Temporarily out-of-service
3 Closed—Removed
4 Closed—In Place
5 Tank Converted to Non-Regulated Use

PRODUCT STORED
0 Empty
1 Leaded Gasoline
2 Unleaded Gasoline
3 Nos. 1, 2, or 4 Fuel Oil
4 Nos. 5 or 6 Fuel Oil
5 Kerosene
6 Diesel
A Lube Oil
9 Other*

TANK TYPE
1 Steel/Carbon Steel
2 Stainless Steel Alloy
3 Concrete
4 Fiberglass Coated Steel
5 Fiberglass Reinforced Plastic (FRP)
6 Equivalent Technology
9 Other*

PIPING TYPE
0 None
1 Steel/Iron
2 Galvanized Steel
3 Fiberglass (FRP)
4 Copper
9 Other*

INTERNAL PROTECTION: Tank/Piping
0 None
1 Epoxy Liner
2 Rubber Liner
3 Fiberglass Liner (FRP)
4 Glass Liner
9 Other*

EXTERNAL PROTECTION: Tank/Piping
0 None
1 Painted/Asphalt Coating
2 Sacrificial Anode
3 Impressed Current
4 Fiberglass
5 Jacketed
6 Wrapped (Piping)
9 Other*

PIPING LOCATION
0 None
1 Aboveground
2 Underground
3 Aboveground/Underground Combination

SECONDARY CONTAINMENT
0 None
1 Vault
2 Double-Walled Tank
3 Excavation Liner
4 Cut-off Walls
5 Impervious Underlayment
6 Earthen Dike
7 Prefabicated Steel Dike
8 Concrete Dike
A Synthetic Liner
B Natural Liner
9 Other*

LEAK DETECTION
0 None
1 Interstitial Monitoring
2 Vapor Well
3 Groundwater Well
4 In-tank System
5 Concrete Pad w/channels
6 Double Bottom
9 Other*

SPILL/OVERFILL PREVENTION
0 None
1 Float Vent Valve
2 High Level Alarm
3 Automatic Shut-off
4 Product Level Gaug
5 Catch Basin
6 Vent Whistle
9 Other*

DISPENSER
1 Submersible
2 Suction
3 Gravity

* If Other, please list on separate sheet including the Tank Number

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PETROLEUM BULK STORAGE REGISTRATION CERTIFICATE

NYS DEC - REGION 9
270 MICHIGAN AVE
BUFFALO, NY 14203-2999
(716) 851-7220

Page 1 of 1

TANK NUMBER	DATE INSTALLED	TANK TYPE	CAPACITY (GALLONS)	DATE LAST TESTED	TESTING DUE DATE
1	03/78	Steel/Carbon Steel	20,000		

OWNER
AMERICAN LINEN SUPPLY CO
47 SOUTH NINTH ST
MINNEAPOLIS, MN 55440

SITE
AMERICAN LINEN SUPPLY CO
PO BOX 1067 8 LORD ST
BUFFALO, NY 14240

OPERATOR (Name and Telephone Number)
AMERICAN LINEN SUPPLY CO
(716) 856-2727

EMERGENCY CONTACT (Name and Telephone Number)
RICHARD P TEAL
(716) 741-3756

RECEIVED
NATIONAL OFFICE
APR 17 1992
ORIGINAL TO DICK TEAL

As an authorized representative of the above named facility, I affirm under penalty of perjury that the information displayed on this form is correct to the best of my knowledge. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of 6 NYCRR Parts 612, 613 and 614, not just those cited below:

- The facility must be re-registered if there is a transfer of ownership.
- The Department must be notified within 30 days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
- The facility must be operated in accordance with the code for storing petroleum, 6 NYCRR Part 613.
- Any new facility or substantially modified facility must comply with the code for new and substantially modified facilities, 6 NYCRR Part 614.
- **This certificate must be posted on the premises at all times.** Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located.
- Any person with knowledge of a spill, leak or discharge must report the incident to DEC within two hours **(1-800-457-7362).**

Signature of Authorized Representative/Owner Date

Name of Authorized Representative/Owner (Please Print)

Title

ISSUED BY:
Commissioner Thomas C. Jorling

PETROLEUM BULK STORAGE ID NUMBER
9-013773

DATE ISSUED
04/13/92

EXPIRATION DATE
05/07/97

FEE PAID
$ 250

MAILING CORRESPONDENCE
AMERICAN LINEN SUPPLY CO
47 SOUTH NINTH ST
MINNEAPOLIS, MN 55440

THIS REGISTRATION CERTIFICATE IS NON-TRANSFERABLE

New York State Department of Environmental Conservation
270 Michigan Avenue, Buffalo, New York 14203-2999
(716) 851-7220

Langdon Marsh
Commissioner

January 30, 1995

RECEIVED
NATIONAL OFFICE
FEB 7 1995
REFERRED TO
ANSWERED
N.A.

American Linen Supply Company
47 South Ninth Street
Minneapolis, MN 55440

Dear Sirs:

Petroleum Bulk Storage #9-013773

On January 30, 1995, I inspected your facility at 8 Lord Street, Buffalo, NY for compliance with the Petroleum Bulk Storage (PBS) regulations (6NYCRR Parts 612, 613 and 614).

The result of the inspection is your facility was found to be in compliance with the PBS regulations.

If you have any questions, please call me at (716) 851-7220.

Sincerely,

James Stack

James Stack
Environmental Chemist I

JES/ad

INTER-BRANCH MEMO

To: Jim Burlingame

From: Kevin Tobin, Buffalo

Date: December 23, 1998

Re: Fuel Oil Storage

Jim,

As per our discussion, here are the signed information sheets on the Underground Fuel Oil Storage Tank in Buffalo NY. If I may be any further assistance, please don't hesitate to call me at (716) 856-2727 ext. 125.

Kevin

Kevin tobin

(BA)

SLC
Constructors, Inc.

December 16, 1998

Via US Mail

Mr. Kevin Tobin
Ameripride Linen Apparel Service
8 Lord Street
Buffalo, New York 14210

RE: Closure Letter

Dear Mr. Tobin:

This letter will serve as notice regarding the in-place closure of one (1) 20,000 gallon underground storage tank containing #6 fuel, completed November 1998.

SLC provided tank closure services which included waste disposal at Chemtron Corp. located in Avon, Ohio, and filling of the tank with approximately 125 cubic yards of flowable fill.

Please find attached a hard copy of all analytical performed and provided to the NYSDEC prior to closure.

If you have any questions or comments, please contact me at 716-433-0776, extension 227 or use my digital pager 716-459-1524.

Sincerely,
SLC Constructors, Inc.

John C. Kuhn

John C. Kuhn
Vice President

/lac
Attachment
A:TOBIN2.DOC (JCK #3 DISK)

295 Mill Street ▪ Lockport, New York 14094
▪ Tel 716-433-0776 ▪ Fax 716-433-0802 ▪ E-Mail: SLC@BUFFNET.NET ▪

EXPRESSLAB *PO Box 40 5611 Water Street Middlesex NY 14507*

Tel: (716) 554-5347 *Tel: (800) THE LABS* *Tel: (800) 843-5227* *FAX: (716) 554-4114*

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS
NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 8270

Cust SLC CONST.
Address 295 MILL ST.
LOCKPORT, NY 14094
Attn: JOHN KUHN

Phone 433-0776
FAX 433-0802

PO Number: 980
Project Number:
Project Cust: A.L.S.
Project Site: BUFFALO, NY
Date FAXED:
Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print
Detection Limits* = Soil=mg/kg ppm
*See Individual Limit

Results shown are: **PAH COMPOUNDS**
Extraction Method: **EPA 3550 Sonication**
Analysis Method: **EPA 8270 GC/MS**

Sample ID (LAB)	21340	
Sample ID#1(CUST)	SOIL SAMPLE AROUND	
Sample ID#2(CUST)	TANK	
Matrix	SOIL	
Sampled By	J.C.K.	
Date Sampled	10/07/98	09:00
Date Received	10/12/98	08:45
Date Analyzed	10/13/98	
Date Reported	10/14/98	

		Det Limit*(ppm)
Naphthalene	**< DL**	0.17
Acenaphthylene	**< DL**	0.17
Acenaphthene	**< DL**	0.17
Fluorene	**< DL**	0.17
Phenanthrene	**< DL**	0.17
Anthracene	**< DL**	0.17
Fluoranthene	**< DL**	0.17
Pyrene	**< DL**	0.17
Benzo(a)anthracene	**< DL**	0.17
Chrysene	**< DL**	0.17
Benzo(b)fluoranthene	**< DL**	0.17
Benzo(k)fluoranthene	**< DL**	0.17
Benzo(a)pyrene	**< DL**	0.17
Indeno(1,2,3-c,d)pyrene	**< DL**	0.17
Dibenz(a,h)anthracene	**< DL**	0.17
Benzo(g,h,i)perylene	**< DL**	0.17

J=Detected above MDL, but below PQL

EXPRESSLAB *PO Box 40 5611 Water Street Middlesex NY 14507*
Tel: (716) 554-5347 Tel: (800) THE LABS Tel: (800) 843-5227 FAX: (716) 554-4114

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS
NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 8270

Cust SLC CONST.
Address 295 MILL ST.
LOCKPORT, NY 14094
Attn: JOHN KUHN

Phone 433-0776
FAX 433-0802

PO Number: 980
Project Number:
Project Cust: A.L.S.
Project Site: BUFFALO, NY
Date FAXED:
Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print
Detection Limits* = Soil=mg/kg ppm
*See Individual Limit

Results shown are: PAH COMPOUNDS
Extraction Method: EPA 3550 Sonication
Analysis Method: EPA 8270 GC/MS

Sample ID (LAB)	21341	
Sample ID#1(CUST)	SOIL SAMPLE AROUND	
Sample ID#2(CUST)	TANK LOW	
Matrix	SOIL	
Sampled By	J.C.K.	
Date Sampled	10/07/98	09:40
Date Received	10/12/98	08:45
Date Analyzed	10/13/98	
Date Reported	10/14/98	

		Det Limit*(ppm)
Naphthalene	< DL	0.17
Acenaphthylene	< DL	0.17
Acenaphthene	< DL	0.17
Fluorene	< DL	0.17
Phenanthrene	< DL	0.17
Anthracene	< DL	0.17
Fluoranthene	< DL	0.17
Pyrene	< DL	0.17
Benzo(a)anthracene	< DL	0.17
Chrysene	< DL	0.17
Benzo(b)fluoranthene	< DL	0.17
Benzo(k)fluoranthene	< DL	0.17
Benzo(a)pyrene	< DL	0.17
Indeno(1,2,3-c,d)pyrene	< DL	0.17
Dibenz(a,h)anthracene	< DL	0.17
Benzo(g,h,i)perylene	< DL	0.17

J=Detected above MDL, but below PQL

EXPRESSLAB

PO Box 40 5611 Water Street Middlesex NY 14507

Tel: (716) 554-5347 *Tel: (800) THE LABS* *Tel: (800) 843-5227* *FAX: (716) 554-4114*

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS

NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 8021

Cust SLC CONST.
Address: 295 MILL ST.
LOCKPORT, NY 14094
Attn: JOHN KUHN

Phone 433-0776
FAX 433-0802

PO Number: 980
Project Number:
Project Cust: A.L.S.
Project Site: BUFFALO, NY
Date FAXED:
Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print
Detection Limits* = Soil=ug/kg ppb
*See Individual Limit Water=ug/L ppb

Results shown are: **Volatile Organics**
Extraction Method: **EPA 5030 Purge & Trap**
Analysis Method: **EPA 8021 GC PID/FID**

Sample ID (LAB)	21340	
Sample ID#1(CUST)	SOIL SAMPLE AROUND	
Sample ID#2(CUST)	TANK	
Matrix	SOIL	
Sampled By	J.C.K.	
Date Sampled	10/7/98	9:00
Date Received	10/12/98	8:45
Date Analyzed	10/13/98	
Date Reported	10/13/98	

	Results	Det Limit (PPB)
MTBE	< DL(U)	0.9
Benzene	< DL(U)	0.9
Toluene	< DL(U)	0.9
Ethylbenzene	< DL(U)	0.9
m&p-Xylene	< DL(U)	1.9
o-Xylene	< DL(U)	0.9
Isopropylbenzene	< DL(U)	0.9
n-Propylbenzene	< DL(U)	0.9
1,3,5-Trimethylbenzene	< DL(U)	0.9
tert-Butylbenzene	< DL(U)	0.9
1,2,4-Trimethylbenzene	< DL(U)	0.9
sec-Butylbenzene&1,3-Dichlorobenzene	< DL(U)	1.9
Isopropyltoluene	< DL(U)	0.9
n-Butylbenzene	< DL(U)	0.9
Naphthalene	6.5	0.9

< DL (U) = compound analyzed but not detected
B = analyte found in blank
L = estimated value
E = exceed calibration range

EXPRESSLAB *PO Box 40 5611 Water Street Middlesex NY 14507*

Tel: (716) 554-5347 *Tel: (800) THE LABS* *Tel: (800) 843-5227* *FAX: (716) 554-4114*

SPECIALIZING IN ENVIRONMENTAL SOIL TESTS
NEW YORK STATE LABORATORY #11369

LABORATORY REPORT - METHOD 8021

Cust SLC CONST.
Address: 295 MILL ST.
LOCKPORT, NY 14094
Attn: JOHN KUHN

Phone 433-0776
FAX 433-0802

PO Number: 980
Project Number:
Project Cust: A.L.S.
Project Site: BUFFALO, NY
Date FAXED:
Lab Director

SAMPLE DEMOGRAPHICS AND TEST RESULTS

Results in bold type; Detection Limits in small print
Detection Limits* = Soil=ug/kg ppb
*See Individual Limit Water=ug/L ppb

Results shown are: **Volatile Organics**
Extraction Method: **EPA 5030 Purge & Trap**
Analysis Method: **EPA 8021 GC PID/FID**

Sample ID (LAB)	21341	
Sample ID#1(CUST)	SOIL SAMPLE AROUND	
Sample ID#2(CUST)	TANK LOW	
Matrix	SOIL	
Sampled By	J.C.K.	
Date Sampled	10/7/98	9:40
Date Received	10/12/98	8:45
Date Analyzed	10/13/98	
Date Reported	10/13/98	

	Results	Det Limit (PPB)
MTBE	1.2	0.9
Benzene	< DL(U)	0.9
Toluene	< DL(U)	0.9
Ethylbenzene	< DL(U)	0.9
m&p-Xylene	< DL(U)	1.9
o-Xylene	< DL(U)	0.9
Isopropylbenzene	< DL(U)	0.9
n-Propylbenzene	< DL(U)	0.9
1,3,5-Trimethylbenzene	< DL(U)	0.9
tert-Butylbenzene	1.0	0.9
1,2,4-Trimethylbenzene	< DL(U)	0.9
sec-Butylbenzene&1,3-Dichlorobenzene	< DL(U)	1.9
Isopropyltoluene	< DL(U)	0.9
n-Butylbenzene	< DL(U)	0.9
Naphthalene	1.0	0.9

< DL (U) = compound analyzed but not detected B = analyte found in blank
L = estimated value E = exceed calibration range

21340 21341 MANILLA COPY

Box 40 5611 Water Street Middlesex NY 14507

3S Tel: 1-800-843-5227 FAX 1-716-554-4114

WORKORDER

SPECIALIZING IN ENVIRONMENTAL SOILS TESTS
NY # 11369 NJ # 73744 CA # 2055 SC # 91011

3 Day 10/14

CUSTOMER: SLC Constructions Inc
ADDRESS: 295 Mill St.
CITY: Lockport NY
STATE/ZIP: NY 14094
PHONE: 716 433 0776 x 227
FAX: 0802
CONTACT: John Kuhn

PO NUMBER: 980
PROJECT NO: —
PROJECT CUST: A.C.K.
PROJECT SITE: Buffalo NY
SEND RESULTS: ☒FAX ☐EXPR MAIL
PHONE RESULTS: ☐ YES ☐ NO

SAMPLE DEMOGRAPHICS AND TESTS REQUIRED

8020 BTEX + MTBE
8021 + MTBE
503.1
TPH GASOLINE
TPH DIESEL
8240
8260 (Stars)
8260
8 RCRA METALS (DIRECT)

8270 (Stars)
625
PCB'S
602
624
TOX
LEAD ONLY

FULL TCLP
TCLP LESS HERBS & PESTS
TCLP VOLATILES
TCLP SEMI-VOLATILES
8 RCRA METALS (TCLP)
HERBICIDES
PESTICIDES
REACTIVITY
CORROSIVITY
FLASH POINT

(DIESEL)
(GAS OR [✓ OIL])
SUSPECT : ________

LIST ANALYSIS REQUIRED

SPECIAL INSTRUCTIONS:

DATE	TIME	SAMPLE DESCRIPTION / LOCATION / MATRIX	8021	8270 STARS				
10/7	7am	Soil Sample Around Tank	X	X				
10/7	9:10 AM	Soil Sample Around Tank - Low	X	X				

CHAIN OF CUSTODY RECORD

of SAMPLES 2 # of CONTAINERS 2
SAMPLED BY: JCK
SIGNATURE: John Kuhn
NAME: John Kuhn
DATED: 10/7/97 TIME: 11:00
HOW SENT: ☒EXP MAIL ☐HAND CARRY
SIGNATURE 2:
NAME 2:
DATED 2: / / TIME: :
HOW SENT 2: ☐EXP MAIL ☐HAND CARRY

SAMPLES RECEIVED BY: [illegible] Lab
SIGNATURE: [illegible]
NAME: [illegible]
DATE: 10/15/97 TIME: 8:45
HOW RECD: ☒EXP MAIL ☐HAND CARRY
FREIGHT IN: $ [illegible]
LOGGED IN: 10/12/97 TIME: 3:45
SAMPLE COND: Good SAMPLE TEMP: 35
LAB NOTES:

White-Lab, Yellow-Customer, Hard-Lab

RESULTS WHEN YOU WANT THEM

expwo20doc

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 11789

2. Page 1 of 1

3. Generator's Name and Mailing Address
Ameripride Linen
8 Lord St.; Buffalo, NY 14210

Same

4. Generator's Phone (716) 856-2727

5. Transporter 1 Company Name: S J Transportation, CO.

6. US EPA ID Number: NJD071629976

A. Transporter's Phone: 609 769-2741

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
Chemtron Corporation
35850 Schneider Ct.
Avon, OH 44011-1232

10. US EPA ID Number: OHD066060609

C. Facility's Phone: 800 676-5091

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Non-RCRA, Non DOT Regulated Material (#6 Oil) V19981119A08	X10	DM	XX500	G
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Approval # Q19981119A07
Emergency Contact: Capitol Environmental Services (800) 560-2374

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Kevin Tobin	Kevin Tobin	11	18	98

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
PAUL GANDY	Paul Gandy	11	18	98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACIL.

19. Discrepancy Indication Space

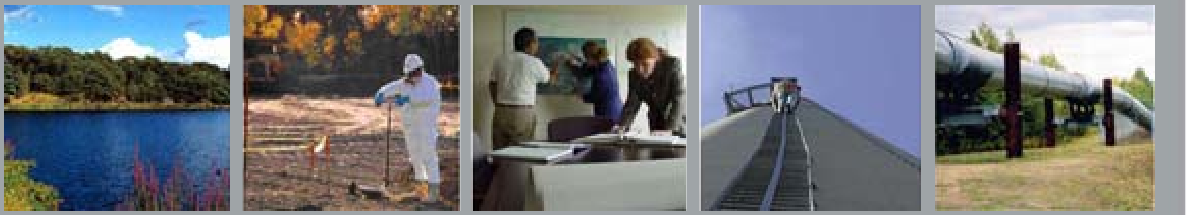
20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
William [illegible]		11	19	98

Printed by J.J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

ORIGINAL – RETURN TO GENERATOR

Prepared for: AmeriPride Services Incorporated
10801 Wayzata Boulevard
Minnetonka, MN 55305



Supplemental Phase II Investigation Report

Final Report

AmeriPride Services Incorporated

8 Lord Street, Buffalo, New York 14210-1118

ATTORNEY-CLIENT PRIVLEGED

ENSR Corporation
March 21, 2007
Project No.: 10770-001

ENSR | AECOM

Prepared for: AmeriPride Services Incorporated
10801 Wayzata Boulevard
Minnetonka, MN 55305

Supplemental Phase II Investigation Report

Final Report

AmeriPride Services Incorporated

8 Lord Street, Buffalo, New York 14210-1118

ATTORNEY-CLIENT PRIVLEGED

Prepared by Ray Smith

Reviewed by Luke P. McKenney

This ENSR document is privileged and confidential, prepared at the request of AmeriPride Corporation counsel. It includes proprietary data that shall not be duplicated, used, or disclosed outside AmeriPride Corporation for any purpose other than to evaluate this document. This restriction does not limit AmeriPride Corporation's right to use information contained in this document if it is obtained from another source without restriction.

ENSR Corporation
March 21, 2007
Project No.: 10770-001

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ATTORNEY-CLIENT PRIVLEGED

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1.0 Introduction

1.1 Purpose

ENSR was retained by AmeriPride Services Incorporated (AmeriPride) to conduct a comprehensive investigation of the property located at 8 Lord Street, Buffalo, New York (the Site). Figure 1 provides a topographic map depicting the Site location. The purpose of the investigation was to identify soil or groundwater impacts that could adversely impact the property value and/or limit the existing or potential Site use. ENSR completed the first phase of the site investigation in the fall of 2005 and submitted a technical memorandum summarizing the results from this first phase (Appendix A). Consequently, the purpose of this report is to provide an overview of the supplemental investigation performed in late November and December, 2005 and provide findings and recommendations regarding the environmental condition of the property.

1.2 Organization of Report

This report has been organized into six substantive sections, as follows:

1. INTRODUCTION – Includes purpose of this comprehensive investigation and organization of the report;

2. BACKGROUND – Includes site history, scope of investigation and description of the local geology/hydrogeology;

3. SUPPLEMENTAL INVESTIGATION ACTIVITIES – Summarizes the supplemental investigation activities completed at the Site;

4. ANALYTICAL RESULTS – Discusses laboratory results for supplemental investigation soil and groundwater samples;

5. DISCUSSION – Presents a discussion of investigation findings; and,

6. RECOMMENDATIONS AND PATH FORWARD – Presents recommendations for future investigation activities if required for site closure.

2.0 Background

2.1 Site History

AmeriPride has owned this property since approximately 1978, and since 2005, the Site has been unoccupied. The property lies in a commercial area of Buffalo approximately one mile north of the Buffalo River. Information provided by AmeriPride included a Phase I Environmental Site Assessment (ESA) conducted by C.T. Male, dated December 2004. A review of the Phase I ESA and historical information provided by AmeriPride suggested that potential recognized environmental conditions (RECs) at the Site included: several underground storage tanks (UST) or suspected tank locations; sumps, drains and trough-type floor drains; and concrete cistern-like disposal features in the basement, identified as Pit-1 and Pit-2. Reportedly, floor drains and sumps on the main floor of the facility empty into the trough-type floor drain in the washroom, which discharges to Pit-1. AmeriPride has also indicated that between 1978 and 1985, the facility used tetrachloroethylene (PCE) for dry cleaning operations.

2.2 Phase II Investigation Results

Based on the information provided and a site visit conducted in July 2005, ENSR conducted an initial Phase II investigation (Technical Memorandum dated October 19, 2005, Appendix A) that included the installation of 28 soil borings and the collection of soil samples for off-site laboratory analysis. The results of the initial investigation identified four general areas of concern (AOC) as follows:

- AOC-1 – Polycyclic aromatic hydrocarbons (PAHs) were detected in the soils in the vicinity of the west end of the former (removed) 10,000 gallon gasoline UST;
- AOC-2 - PCE, trichloroethylene (TCE) and chromium were detected in the soil adjacent to a large catch basin near Seneca Street;
- AOC-3 - PCE, TCE, PAHs, and mercury were identified in soil adjacent to the former (filled in-place) 1,500 gallon waste oil UST area; and
- AOC-4 - General area underlying the southwestern half of the building. Impacts identified in the soils underlying the on-slab (central) portion of the building include volatile organic compounds (VOCs), PAHs and metals. VOCs and/or metals were also identified in soils underlying the western portion of the basement. Impacts identified under the building may be attributable to a single general source, such as the drainage system of troughs, floor drains, sumps and collection pits (Pit-1 and Pit-2), or may be the result of more than one source.

2.3 Scope of Supplemental Investigation

To address these potential AOCs, the supplemental Phase II Investigation was designed to evaluate the nature and extent of soil impacts and assess the potential for adverse impact on groundwater quality. Specifically, the principal constituents of concern (COCs) identified in the various AOCs include chlorinated VOCs, PAHs, and the metals arsenic, cadmium, chromium, and mercury. Based on evaluation of available data, ENSR proceeded with the following supplemental investigation activities:

- Performed additional soil investigation at each of the four identified AOCs to confirm levels of COCs identified at those AOCs;
- Collected soil samples from locations up-gradient of the AOCs that can be used (if necessary) as a benchmark for “background” concentrations of COCs in the Site soils; and,

- Conducted a groundwater investigation at the Site to identify depth to groundwater and determine whether groundwater has been impacted by the detected COCs.

2.4 Local Geology and Hydrogeology

The Site is generally flat and is situated approximately one mile north of the Buffalo River. The unconsolidated geologic materials (soil) encountered at the Site range in thickness from approximately 15 to greater than 20 feet thick. The thickest soil sequences appear to be those under the on-slab portion (central) of the building.

Soils observed during investigation activities consist of fill materials overlying native soil. The fill materials include gravel, sand, silt, and clay, and often included anthropogenic materials such as brick fragments, wood fragments, clinker, glass, plastic, etc. Under the fill, the native soils consist of silty clay/clay rich silt that is mapped as lacustrine silt and clay that was deposited in proglacial lakes during late Wisconsinan glaciation. At many locations (i.e., SB-31, SB-32, SB-38, SB-47, SB-48, SB-49 and SB-50), a basal unit of fine to medium sand was observed that may represent a basal till or lacustrine sand.

The Site is situated in the Central Lowlands Physiographic Province, characterized by nearly flat-lying rocks of Devonian, Silurian and Ordovician Age. Bedrock underlying the Site is mapped as middle Devonian Onondaga Limestone.

Subsurface investigation activities conducted at the Site (described herein) identified that the uppermost groundwater bearing unit is situated at/near the interface between the soil and bedrock. Groundwater is interpreted to flow toward the south suggesting that the Buffalo River may control the local hydrogeology. Additional discussion regarding the groundwater investigation conducted at the Site is presented in Section 3.2.

3.0 Supplemental Investigation Activities

3.1 Soil Investigation

Between November 30 and December 8, 2005, ENSR supervised the advancement of 19 supplemental soil borings at the locations depicted on Figure 2. The rationale for specific soil boring locations and samples collected at those locations is presented in Table 1. Soil borings were advanced to depths ranging from 14 feet (ft) to 20 ft below ground surface (bgs). Soil borings were advanced via track-mounted Geoprobe^{TM} direct-push drill rig. Soils were continuously sampled using 2-inch diameter by 4-foot long MacroCore samplers. Soils were logged in the field, and screened with a photoionization detector (PID) for the presence of volatile organic compounds. Soil classifications, PID responses and additional subsurface information were recorded on soil boring logs, which are presented as Appendix B.

One or more soil samples were collected from each soil boring location, based on field observations and/or PID responses, and submitted to Severn Trent Laboratories of Buffalo, New York for laboratory analysis. The laboratory program for the project included analysis for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), and 8 Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, selenium, silver and mercury). The depth interval for the sample(s) collected from each soil boring, and the specific analyses requested for each sample are summarized on Table 1.

3.2 Groundwater Investigation

In order to evaluate groundwater quality across the Site, six soil borings were completed as groundwater monitoring wells (see Figure 2 for locations). Monitoring wells were constructed of 2-inch diameter schedule 40 PVC screens and risers. Wells were installed into the uppermost water bearing zone, which has been defined as the overburden-bedrock interface. Well construction diagrams are presented as Appendix C.

Monitoring well development was conducted on December 6, 2005 (monitoring wells MW-1, MW-3 and MW-6) and December 9, 2005 (monitoring wells MW-2, MW-4 and MW-5). The top of PVC casing at each well was surveyed for elevation relative to an on-site benchmark (arbitrarily established at 100 feet) so that groundwater elevations could be calculated.

Groundwater sampling was conducted December 14, 2005. Prior to sampling activities, groundwater levels were gauged at all monitoring well locations so that groundwater flow direction could be interpreted. As depicted on Figure 3, the December 14, 2005 groundwater elevation data suggest that groundwater flows toward the south with an interpreted (because scale of map is approximated) hydraulic gradient of 0.05 feet per foot (ft/ft) . This southward flow direction is consistent with expectations that groundwater may be locally controlled by the Buffalo River, which is located less than one mile south of the Site.

Disposable bailers were used to purge a minimum of three calculated well volumes from each well prior to sample collection, after which the wells were allowed to recover for approximately one hour. A peristaltic pump was used to collect groundwater samples from each well, at a low flow rate to minimize sample turbidity and turbulence. Groundwater samples were delivered to Severn Trent Laboratories for analysis of TCL VOCs, TCL SVOCs and RCRA Metals.

4.0 Analytical Results

4.1 Soil Investigation

The rationale for specific supplemental soil boring locations and samples collected at those locations is presented in Table 1. The analytical results for those soil samples collected during the supplemental investigation are summarized on Table 2 (VOCs), Table 3 (SVOCs) and Table 4 (Metals). Analytical results have been compared to Soil Cleanup Objectives (SCOs) presented in 6 NYCRR Part 375 Environmental Remediation Program (December 2006) for restricted-commercial land use and/or protection of groundwater. See the Discussion section below for additional information regarding these cleanup objectives.

4.1.1 Volatile Organic Compounds

Concentrations of one or more VOCs were detected in many of the soil samples submitted for analysis (see Table 2). In most samples, the VOCs detected were at concentrations below their respective SCOs. Analysis of samples SB-40 (12-14'), SB-40 (14-16'), and SB-46 (2-3') detected concentrations of chlorinated VOCs at concentrations well above their respective SCOs (protection of groundwater). In addition, acetone was detected in sample SB-48 (1.5-2') at a concentration that slightly exceeded its SCO.

4.1.2 Semivolatile Organic Compounds

As presented on Table 3, SVOCs were detected in many of the soil samples submitted for analysis. Most of the SVOCs detected fall into the suite of polynuclear aromatic hydrocarbons (PAH). PAHs were detected at concentrations exceeding SCOs in two samples. PAH concentrations reported in SB-48 (1.5-2') represented slight exceedances (i.e., <2 times the SCO), while concentrations reported in SB-46 (2-3') were several to tens of times greater than their respective SCOs. Dibenzofuran was identified in two of the samples submitted for analysis; however an SCO for this compound has not been established.

Phthalates were detected at low concentrations, typically below the limits of quantitation, in many of the soil samples. In most instances, the phthalates were also detected in the method blanks associated with the samples, and are likely laboratory artifacts.

4.1.3 Metals

As presented on Table 4, one or more RCRA metals including arsenic, barium, cadmium, chromium, lead and nickel were detected in each of the supplemental soil samples analyzed. Concentrations of metals detected did not exceed SCOs. It is noted that chromium has dual SCOs; one for trivalent chromium (insoluble form) and one for hexavalent chromium (soluble form). The SCOs for hexavalent chromium are more stringent than those for trivalent chromium (there is no groundwater SCO for trivalent chromium). Because concentrations of chromium detected in groundwater samples collected from the Site were substantially lower than its groundwater quality standard (see Section 4.2.3), the chromium detected in the soil samples appears to be non-soluble and therefore the trivalent chromium SCO (public health) has been used as basis of comparison. Chromium concentrations reported in soil samples collected during the supplemental investigation were generally two orders of magnitude lower than this SCO.

4.2 Groundwater Investigation

The analytical results for groundwater samples collected during the supplemental investigation are summarized on Table 5. Groundwater analytical results have been compared to water quality standards presented in the NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998). Exceedances of the TOGS water quality standards in groundwater samples collected from the Site are presented on Figure 6.

4.2.1 Volatile Organic Compounds

As presented in Table 5, VOCs were detected in the groundwater samples collected from monitoring wells at the Site. Chlorinated VOCs including PCE, TCE, cis-1,2-dichloroethylene (cis-1,2-DCE) and/or vinyl chloride (VC) were reported in groundwater samples collected from monitoring wells MW-3 and MW-4 at concentrations that exceeded groundwater quality standards established for these compounds. Concentrations (or estimated concentrations) of other VOCs detected during the groundwater investigation were below their respective water quality standards.

4.2.2 Semivolatile Organic Compounds

Bis(2-ethylhexyl)phthalate was reported at an estimated concentration (5 ug/L) equal to its groundwater quality standard. This compound may be a laboratory artifact (compound was detected in blanks associated with many soil samples collected during the supplemental investigation). Phenanthrene, detected at estimated concentrations in groundwater samples collected from MW-2 and MW-5 was the only other SVOC detected in groundwater samples collected from the Site. These phenanthrene concentrations were significantly lower than the water quality standard established for this compound.

4.2.3 Metals

As presented on Table 5, levels of barium were reported in groundwater samples collected from all wells at the Site, at levels well below the water quality standard for this metal. Chromium and lead were also detected in the groundwater sample collected from MW-4 at concentrations below their respective water quality standards. Other RCRA metals were not detected in groundwater samples collected from the Site.

5.0 Discussion

In December 2006, NYSDEC's Division of Environmental Remediation issued the final 6 NYCRR Part 375 Environmental Remediation Program which outlines a standardized approach for site closure. Previously, such approaches for site closure were not available in New York State, and the use of risk evaluation in site closure was not recognized by the NYSDEC. The new regulation provides structured guidance in site remediation and closure processes, and provides soil cleanup objectives (SCOs) that are dependent upon the current and/or anticipated future land use (i.e. unrestricted, restricted–residential (residential), restricted–commercial (commercial), restricted–industrial (industrial)), as well as SCOs for the protection of groundwater and ecological resources.

Figure 4 and Figure 5 present soil analytical results for soil samples collected during the initial and supplemental investigations that exceeded the most stringent of either the commercial SCO or the SCO for the protection of groundwater. In *most* cases, the SCO for protection of groundwater is more stringent than the SCO considered protective of public health.

Chlorinated VOCs detected at exceedance concentrations in soil and groundwater are the most significant environmental concern at the Site. Concentrations of PCE and likely degradation products, including TCE, cis-1,2-DCE, and VC, have been detected at concentrations exceeding SCOs in soil samples collected from each of AOC-1, AOC-2 and AOC-3.

As depicted on Figures 4 and 5, the highest concentrations of PCE have been detected in samples collected from soil borings SB-13 and SB-40 (AOC-2), soil boring SB-7 (AOC-3) and soil borings SB-21, SB-24, SB-28, and SB-46 (AOC-4). The distribution of soil borings and sample results suggest multiple source areas, including the Site Catch Basin near Seneca Street in AOC-2, and the former 1,500-gallon waste oil UST in AOC-3. In AOC-4, sources of soil impact by chlorinated VOCs appear to include the trough drain in the former washroom area on the main floor and the cistern-type structures (Pit-2 and Pit-1) in the basement.

Concentrations of PCE, TCE, cis-1,2-DCE and/or VC exceeding water quality standards, have been detected in groundwater samples collected from monitoring wells MW-3 and MW-4 (see Figure 6). Trace (estimated) concentrations of PCE were also detected in the groundwater sample collected from monitoring well MW-5. Additional groundwater investigation will be necessary to confirm concentrations of COCs detected, and to define the vertical and horizontal extent of groundwater impacts both on and off-Site.

ENSR has prepared the following summary of potential environmental concerns for the previously identified AOCs.

AOC-1

As depicted on Figure 4, four SVOCs have been reported in soil sample SB-2 (0.5-1.5') at estimated concentrations that exceed SCOs. The presence of these compounds in the soil is considered a minor concern because the concentrations represent only slight exceedances of the groundwater SCOs and do not exceed commercial SCOs that are considered protective of public health. No further action is recommended in this AOC.

AOC-2

Chlorinated VOCs in soil (SB-13 and SB-40) and groundwater (MW-3), as previously discussed, represent the primary environmental concern in this AOC.

AOC-3

Chlorinated VOCs in soil (SB-7) and groundwater (MW-4), as previously indicated, represent the primary environmental concern in this AOC.

AOC-4

In addition to chlorinated VOCs detected in soil and groundwater samples collected from AOC-4, elevated concentrations of mercury and PAHs were also identified in some of the soil samples collected from the area. Total mercury was detected at concentrations exceeding the SCOs in samples collected from soil borings SB-20, SB-22 and SB-23 (see Figure 4). The concentrations detected in these samples exceed the SCO for mercury by less than 15% and therefore are not considered a significant concern.

One or more PAHs were detected at exceedance concentrations in several of the AOC-4 soil borings. In some cases, the exceedances were relatively slight (i.e., less than 2 times the SCO), while in other samples, exceedances were of greater magnitude. Concentrations of specific PAHs reported in samples collected from soil borings SB-24 and SB-46 were generally 1 to 2 orders of magnitude greater than their respective SCOs. Field observations and analytical data suggest that impact by PAHs may be limited to the uppermost 3-4 feet. Sample SB-46 (2-3') had the highest PAH concentration reported at the Site, however odors and/or staining was not observed below 4 feet. Additionally, PAHs were not detected in the deeper sample SB-46 (16-17') (see Table 3) collected at that location.

The concrete floor (footprint of the building) is currently acting as an engineered barrier, preventing direct contact with potentially impacted sub-floor soils and minimizing the infiltration of precipitation that might transport impacts and degrade groundwater. If the building was demolished in the future and the concrete flooring removed, installation and maintenance of a suitable engineered barrier or other remedial action would likely be required, or other remedial action implemented , to mitigate the potential for exposure to the impacts by the general population.

It is noted that the trough drain in the washroom, and some of the rectangular "sumps" located inside the building are partially filled with sediment and/or debris. These materials may be impacted by Site COCs and may pose a direct-contact risk.

6.0 Recommendations and Path Forward

As discussed previously, subsurface investigations have identified four potential AOCs at the Site in which soil and/or groundwater impacts have been identified at concentrations that exceed SCOs or water quality criteria. Some of the potential concerns are relatively minor, while the exceedance concentrations of chlorinated VOCs in soil and groundwater are a more substantial concern.

The Environmental Remediation Program regulations (6 NYCRR Part 375) may be a useful tool in attaining closure of the Site. In order to formalize attainment of remedial goals and to limit AmeriPride's future liability associated with the Site, ENSR suggests that AmeriPride consider entering into the Brownfields Cleanup Program (BCP). It is likely that the NYSDEC will require participation in the BCP before formal closure of eligible sites will be entertained.

6.1 Brownfield Cleanup Program

Under the BCP, an applicant signs a Brownfield Cleanup Agreement (BCA), agreeing to undertake certain remedial activities under NYSDEC oversight. Work plans, investigation reports, remedial work plans, etc are reviewed and approved by the NYSDEC. Upon completion of the remedial activities agreed to in the approved work plan(s), the NYSDEC issues a Certificate of Completion. Under issuance of the Certificate of Completion, the applicant:

- has no liability to the State for hazardous waste or petroleum at or emanating from the Site (with certain limitations); and
- is eligible for tax credits (a Certificate of Completion is referred to as a Remediation Certificate in the Tax Law).

The limitation of liability extends to the applicant's successors/future property owners, developers, and occupants who are not responsible for the disposal or discharge of hazardous waste or petroleum and who act with due care and in good faith to adhere to the requirements of the BCA.

Brownfield redevelopment tax credits may be available (as high as 22% for businesses), which include the following components:

- Site preparation credit for investigation and remediation costs;
- Tangible property credit for costs associated with the development or redevelopment of the site, including buildings and structural components; and
- On-site groundwater remediation credit.

Prior to entering into the BCP, a pre-application meeting with the NYSDEC and New York State Department of Health is recommended in order to discuss the benefits, requirements, and procedures for completing a project in the BCP. The pre-application meeting would provide a forum to present the investigation activities already completed at the Site and to solicit buy in from the NYSDEC for proposed remedial actions. After the pre-application meeting, the application for entry into the BCP would be filed.

6.2 Next Steps

The primary environmental concern at the Site is the presence of chlorinated VOCs including PCE, TCE, cis-1,2-DCE and VC in AOC-2, AOC-3 and AOC-4. Impacts by other constituents of potential concern including PAHs (AOC-1 and AOC-4) and mercury (AOC-4) do exist, however exceedances of these constituents are relatively minor and/or exposure to the impacts by the general public (and to infiltrating precipitation) is limited by a surface barrier (concrete flooring). It is likely that a deed notation, assuring maintenance of such an engineered-barrier would satisfy closure requirements for these areas. The trough drain in the washroom, and some of the rectangular “sumps” located inside the building (AOC-4) are partially filled with sediment, soil, and/or debris. These materials may be impacted by Site COCs and may pose a direct-contact risk. ENSR recommends that the sumps and trough drains be cleaned and that the contents characterized and properly disposed.

Because AmeriPride’s Phase II Environmental Site Assessment activities are not currently being performed to satisfy regulatory requirements or consent order, the determination whether to pursue formal “closure” of the Site is currently at AmeriPride’s discretion. If AmeriPride chooses to pursue site closure, ENSR strongly recommends that AmeriPride consider entering the BCP.

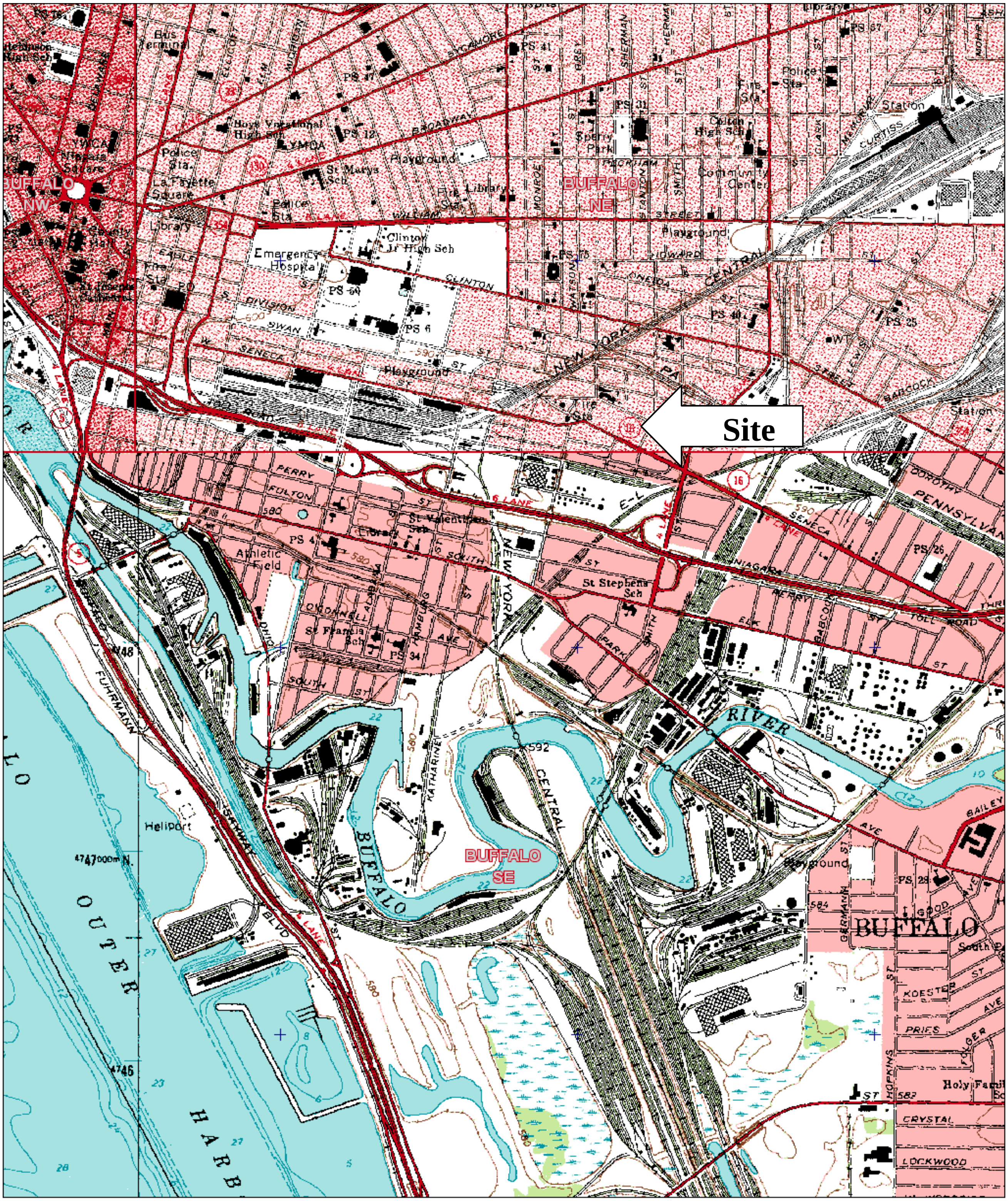
Under the BCP, next steps would involve arranging a pre-application meeting with the NYSDEC. After the pre-application meeting, assuming that AmeriPride decides to participate in the program, the application would be filed. Under the BCP, the Phase I ESA (C.T. Male, 2004) may need to be updated to document that conditions have not changed substantially since the time that report was completed. The updated (if necessary) Phase I ESA coupled with this Supplemental Phase II Investigation Report would form the foundation for future investigation and remedial action at the Site. Future work would involve the preparation of an investigation work plan that would address outstanding AOCs at the Site. The work plan would include:

- Confirmatory round of groundwater sampling;
- Installation of additional overburden and bedrock wells to assess extent groundwater impact;
- Collection of hydrogeologic data (i.e., slug/pumping tests) from select wells;
- Vapor intrusion investigation in the basement of the AmeriPride building and along portions of the property line that abut residential properties; and,
- Cleaning of internal drainage structures (trough drains and sumps in former wash room and basement of the building.

While these investigation/remedial activities may be performed without entering the BCP, achieving consent from the NYSDEC on proposed activities prior to implementation will likely reduce the level of effort necessary to satisfy closure requirements and the associated long-term costs for Site closure.

If AmeriPride decides not to participate in the BCP at this time, ENSR will prepare a proposal/remedial action plan to address the above-listed items. A decision to participate in the BCP could be made after additional data have been gathered. As discussed previously, however, formal closure of the Site may not be considered by the NYSDEC without participation in the BCP. Without a Certificate of Completion, granted under the provisions of the BCP, environmental liability associated with the Site will remain a future concern.

Figures



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

700 ft Scale: 1 : 24,000 Detail: 13-4 Datum: WGS84

USGS Topographic Quadrangle
Buffalo, NY

SCALE: **1:24,000**

Site Location

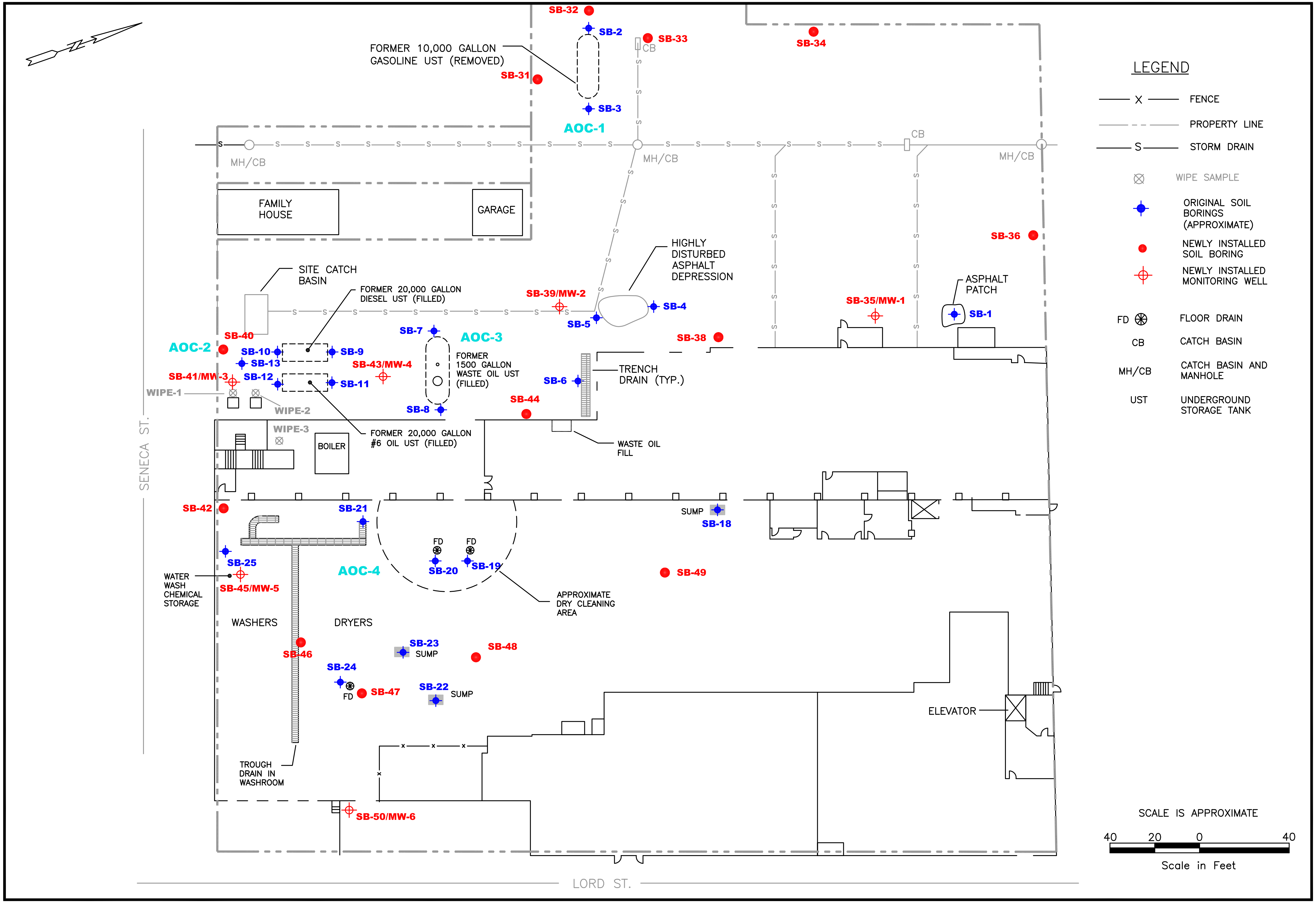
AmeriPride Services, Inc.
8 Lord Street
Buffalo, New York

March 2007 Job No. 10770-001-300

Figure 1

ENSR | AECOM

J:\LANSTAND\120\Projects\10770001 AmeriPride-Buffalo\DRAWINGS\SUPP. INVEST\FIG.2.dwg



REVISIONS

NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

ENSR | AECOM

ENSR CORPORATION
5015 CAMPUSWOOD DRIVE, SUITE 104
E. SYRACUSE, NEW YORK 13057
PHONE: (315) 432-0506
FAX: (315) 437-0509
WEB: HTTP://WWW.ENSR.AECOM.COM

SITE MAP
SOIL BORING AND MONITORING WELL LOCATIONS

AMERIPRIDE SERVICES Inc.
BUFFALO, NEW YORK

PROJECT NUMBER: 10770-001

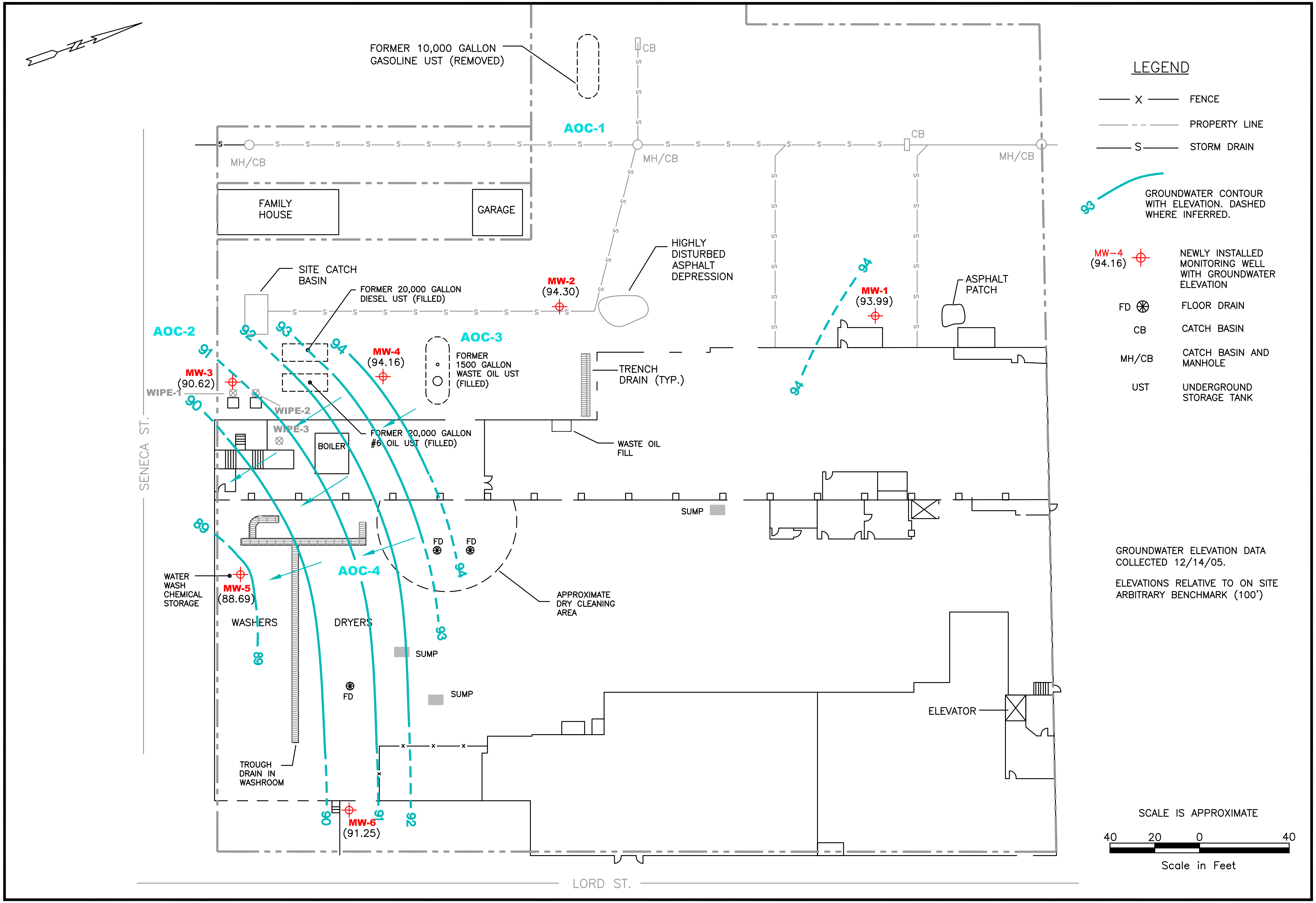
DATE: 1/18/07

SCALE: AS NOTED

FIGURE NUMBER:
2

SHEET NUMBER:
1 OF 1

J:\LANSTAND\120\Projects\10770001 AmeriPride-Buffalo\DRAWINGS\SUPP. INVEST\FIG.3.dwg



GROUNDWATER ELEVATION DATA COLLECTED 12/14/05.

ELEVATIONS RELATIVE TO ON SITE ARBITRARY BENCHMARK (100')

REVISIONS
NO.:
DESCRIPTION:
DATE:
BY:

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

ENSR | AECOM

ENSR CORPORATION
5015 CAMPUSWOOD DRIVE, SUITE 104
E. SYRACUSE, NEW YORK 13057
PHONE: (315) 432-0506
FAX: (315) 437-0509
WEB: HTTP://WWW.ENSR.AECOM.COM

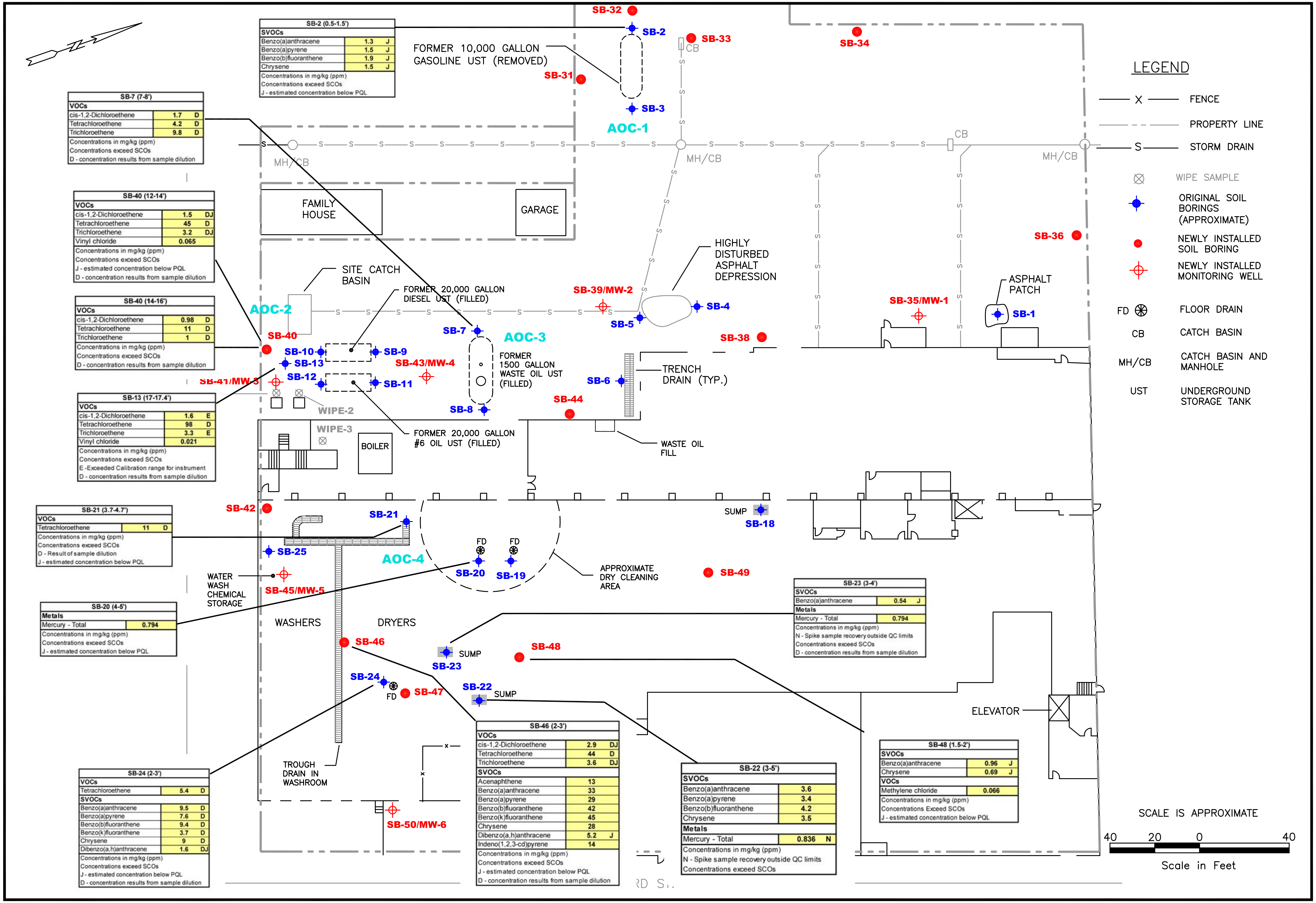
INTERPRETED GROUNDWATER FLOW MAP

AMERIPRIDE SERVICES Inc.
BUFFALO, NEW YORK

PROJECT NUMBER: 10770-001
DATE: 1/18/07
SCALE: AS NOTED

FIGURE NUMBER:
3

SHEET NUMBER:
1 OF 1



SB-2 (0.5-1.5')		
SVOCs		
Benzo(a)anthracene	1.3	J
Benzo(a)pyrene	1.5	J
Benzo(b)fluoranthene	1.9	J
Chrysene	1.5	J

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
J - estimated concentration below PQL

SB-7 (7-8')		
VOCs		
cis-1,2-Dichloroethene	1.7	D
Tetrachloroethene	4.2	D
Trichloroethene	9.8	D

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
D - concentration results from sample dilution

SB-40 (12-14')		
VOCs		
cis-1,2-Dichloroethene	1.5	DJ
Tetrachloroethene	45	D
Trichloroethene	3.2	DJ
Vinyl chloride	0.065	

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
J - estimated concentration below PQL
D - concentration results from sample dilution

SB-40 (14-16')		
VOCs		
cis-1,2-Dichloroethene	0.98	D
Tetrachloroethene	11	D
Trichloroethene	1	D

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
D - concentration results from sample dilution

SB-13 (17-17.4')		
VOCs		
cis-1,2-Dichloroethene	1.6	E
Tetrachloroethene	98	D
Trichloroethene	3.3	E
Vinyl chloride	0.021	

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
E -Exceeded Calibration range for instrument
D - concentration results from sample dilution

SB-21 (3.7-4.7')		
VOCs		
Tetrachloroethene	11	D

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
D - Result of sample dilution
J - estimated concentration below PQL

SB-20 (4-5')		
Metals		
Mercury - Total	0.794	

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
J - estimated concentration below PQL

SB-24 (2-3')		
VOCs		
Tetrachloroethene	5.4	D
SVOCs		
Benzo(a)anthracene	9.5	D
Benzo(a)pyrene	7.6	D
Benzo(b)fluoranthene	9.4	D
Benzo(k)fluoranthene	3.7	D
Chrysene	9	D
Dibenzo(a,h)anthracene	1.6	DJ

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
J - estimated concentration below PQL
D - concentration results from sample dilution

SB-46 (2-3')		
VOCs		
cis-1,2-Dichloroethene	2.9	DJ
Tetrachloroethene	44	D
Trichloroethene	3.6	DJ
SVOCs		
Acenaphthene	13	
Benzo(a)anthracene	33	
Benzo(a)pyrene	29	
Benzo(b)fluoranthene	42	
Benzo(k)fluoranthene	45	
Chrysene	28	
Dibenzo(a,h)anthracene	5.2	J
Indeno(1,2,3-cd)pyrene	14	

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
J - estimated concentration below PQL
D - concentration results from sample dilution

SB-22 (3-5')		
SVOCs		
Benzo(a)anthracene	3.6	
Benzo(a)pyrene	3.4	
Benzo(b)fluoranthene	4.2	
Chrysene	3.5	
Metals		
Mercury - Total	0.836	N

Concentrations in mg/kg (ppm)
N - Spike sample recovery outside QC limits
Concentrations exceed SCOs

SB-23 (3-4')		
SVOCs		
Benzo(a)anthracene	0.54	J
Metals		
Mercury - Total	0.794	

Concentrations in mg/kg (ppm)
N - Spike sample recovery outside QC limits
Concentrations exceed SCOs
D - concentration results from sample dilution

SB-48 (1.5-2')		
SVOCs		
Benzo(a)anthracene	0.96	J
Chrysene	0.69	J
VOCs		
Methylene chloride	0.066	

Concentrations in mg/kg (ppm)
Concentrations Exceed SCOs
J - estimated concentration below PQL

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

ENSR | AECOM

ENSR CORPORATION
5015 CAMPUSWOOD DRIVE, SUITE 104
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SOIL COC CONCENTRATIONS EXCEEDING SCOs

AMERIPRIDE SERVICES Inc.
BUFFALO, NEW YORK

PROJECT NUMBER: 10770-001
DATE: 1/18/07
SCALE: AS NOTED

FIGURE NUMBER:
4

SHEET NUMBER:
1 OF 1

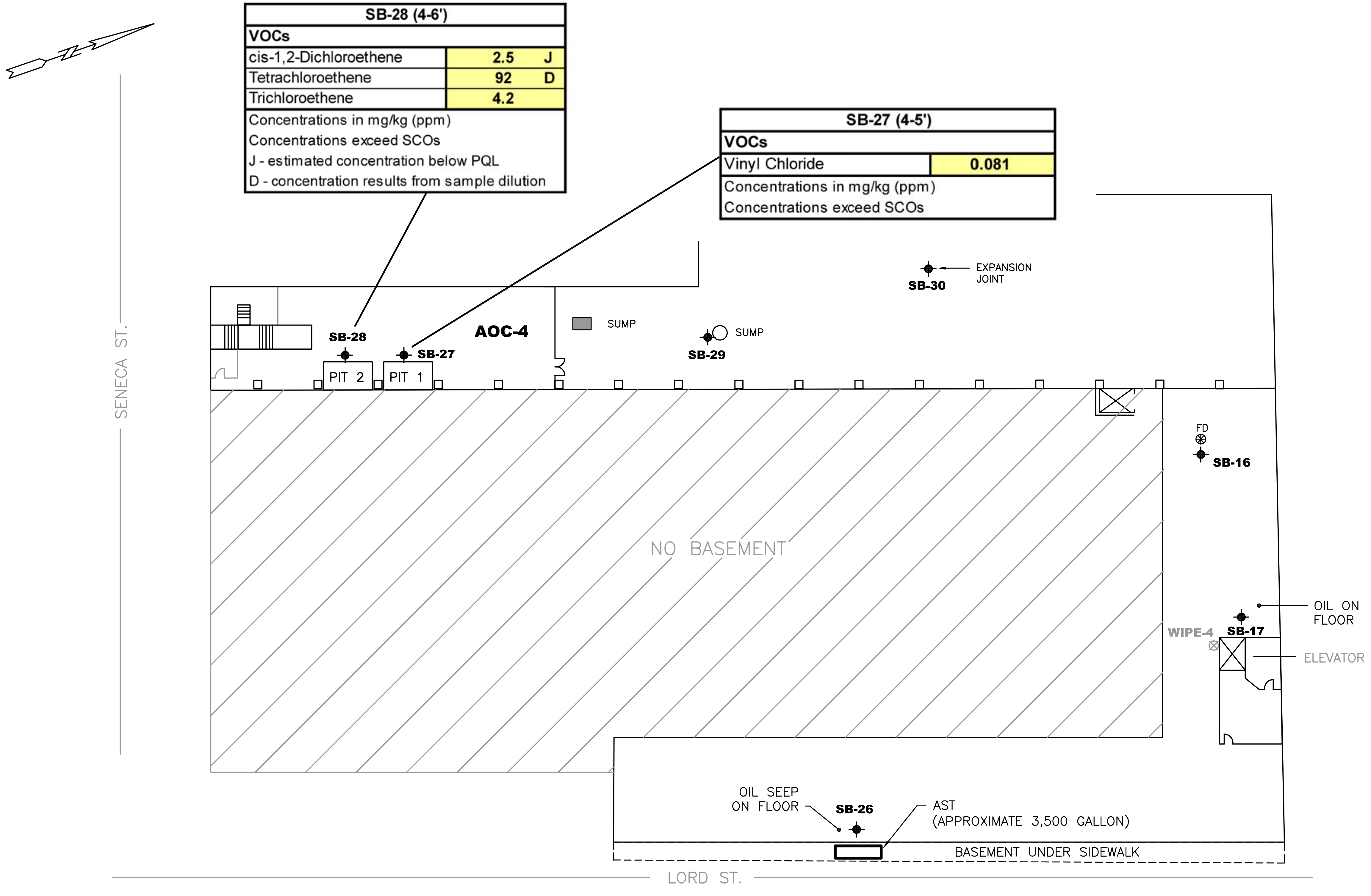
J:\LANSTAND\120\Projects\10770001 AmeriPride-Buffalo\DRAWINGS\SUPP. INVEST\FIG.4.dwg

SB-28 (4-6')		
VOCs		
cis-1,2-Dichloroethene	2.5	J
Tetrachloroethene	92	D
Trichloroethene	4.2	

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs
J - estimated concentration below PQL
D - concentration results from sample dilution

SB-27 (4-5')	
VOCs	
Vinyl Chloride	0.081

Concentrations in mg/kg (ppm)
Concentrations exceed SCOs



LEGEND

⊗	WIPE SAMPLE
⯌	ORIGINAL SOIL BORINGS (APPROXIMATE)
AST	ABOVE GROUND STORAGE TANK

SCALE IS APPROXIMATE

40 20 0 40

Scale in Feet

REVISIONS			
NO.:	DESCRIPTION:	DATE:	BY:

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

ENSR | AECOM

ENSR CORPORATION
5015 CAMPUSWOOD DRIVE, SUITE 104
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SOIL COC CONCENTRATIONS EXCEEDING SCOs (BASEMENT AREA)

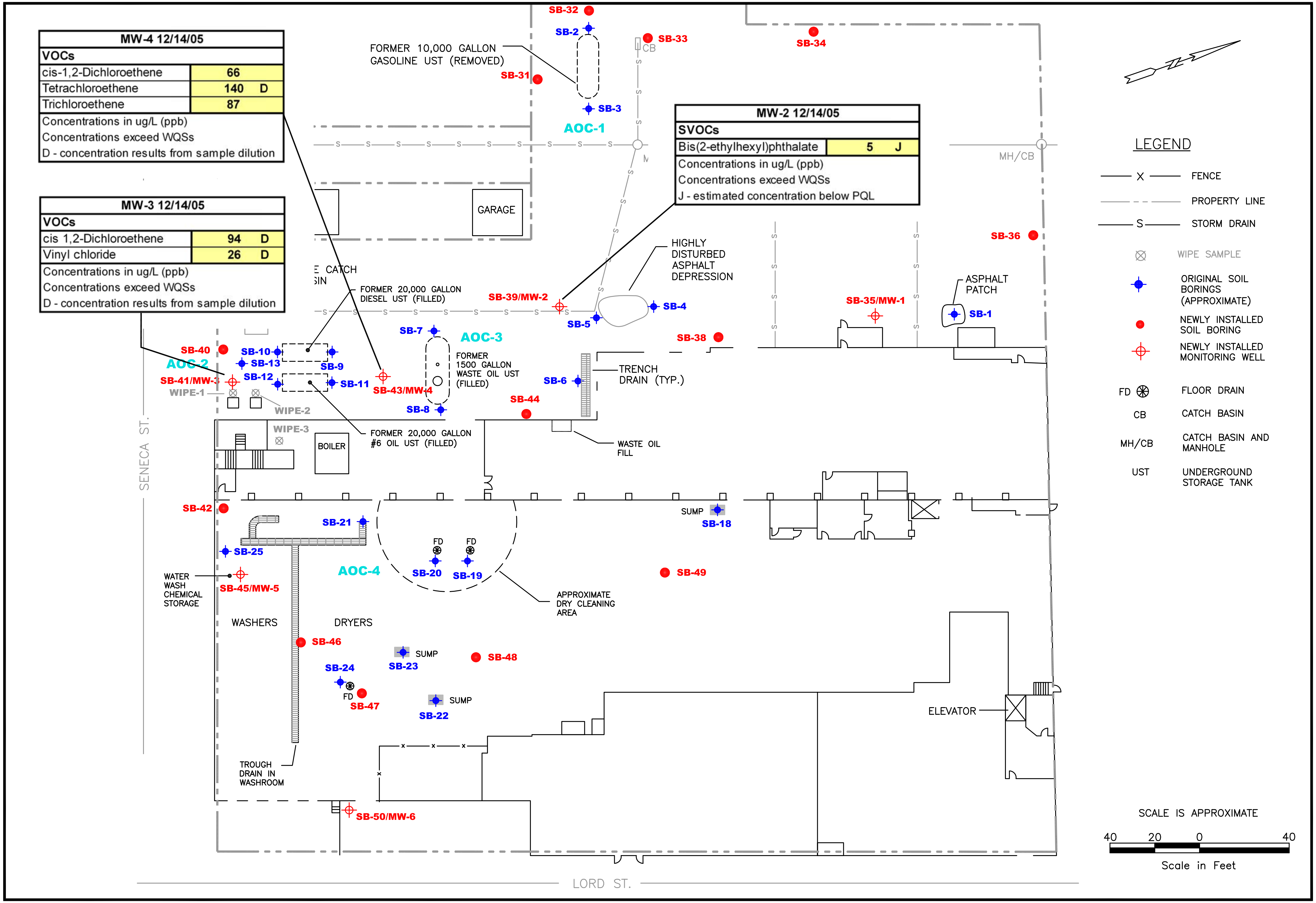
AMERIPRIDE SERVICES Inc.
BUFFALO, NEW YORK

PROJECT NUMBER: 10770-001
DATE: 1/18/07
SCALE: AS NOTED

FIGURE NUMBER:
5

SHEET NUMBER:
1 OF 1

J:\LANSTAND\120\Projects\10770001 AmeriPride-Buffalo\DRAWINGS\SUPP. INVEST\FIG.5.dwg



MW-4 12/14/05		
VOCs		
cis-1,2-Dichloroethene	66	
Tetrachloroethene	140	D
Trichloroethene	87	

Concentrations in ug/L (ppb)
Concentrations exceed WQSs
D - concentration results from sample dilution

MW-3 12/14/05		
VOCs		
cis 1,2-Dichloroethene	94	D
Vinyl chloride	26	D

Concentrations in ug/L (ppb)
Concentrations exceed WQSs
D - concentration results from sample dilution

MW-2 12/14/05		
SVOCs		
Bis(2-ethylhexyl)phthalate	5	J

Concentrations in ug/L (ppb)
Concentrations exceed WQSs
J - estimated concentration below PQL

NO.:	DESCRIPTION:	DATE:	BY:

REVISIONS

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

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GROUNDWATER COC CONCENTRATIONS EXCEEDING WATER QUALITY STANDARDS

AMERIPRIDE SERVICES Inc.
BUFFALO, NEW YORK

PROJECT NUMBER: 10770-001
DATE: 1/18/07
SCALE: AS NOTED

FIGURE NUMBER: 6

SHEET NUMBER: 1 OF 1

J:\LANSTAND\120\Projects\10770001 AmeriPride-Buffalo\DRAWINGS\SUPP. INVEST\FIG.6.dwg

Tables

Table 1

Supplemental Investigation
Soil Boring Rationale Sample Depths and Analyses Requested
AmeriPride Buffalo, NY

Soil Boring	Rationale for Advancement of Soil Boring	Sample Intervals (feet bgs)	Analyses Requested
SB-31	Further define extent and magnitude of PAH concentrations reported in AOC-1	13-16', 16-18.5'	SVOCs
SB-32	Further define extent and magnitude of PAH concentrations reported in AOC-1	12.5-13', 17'	SVOCs
SB-33	Further define extent and magnitude of PAH concentrations reported in AOC-1	13-14', 16-17'	SVOCs
SB-34	Allow for evaluation of background soil quality.	17-17.5'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-35	Allow for evaluation of background soil quality.	15-16'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-36	Allow for evaluation of background soil quality.	13-14'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-38	Further define the extent of impacts identified in the vicinity AOC-3 and aid in defining the extent of impacts identified in AOC-4.	18-19'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-39	Further define the extent of impacts identified in the vicinity AOC-3	13-14', 18.5-19'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-40	Further evaluate the extent of impacts identified in a soil sample collected from AOC-2	12-14', 14-16'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-41	Further evaluate the extent of impacts identified in a soil sample collected from AOC-2	5-7', 17-18'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-42	Further evaluate the extent of impacts identified in a soil sample collected from AOC-2 and aid in defining the extent of impacts identified in AOC-4.	16-16.5', 19-20'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-43	Further evaluate the extent of impacts identified in a soil sample collected from AOC-2	7.5-8', 8-8.5'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-44	Further define the extent of impacts identified in the vicinity AOC-3 and aid in defining the extent of impacts identified in AOC-4.	11-12'-17-17.5'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-45	Further delineation of the extent of impacts identified in AOC-4.	12.5-14', 18-20'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-46	Further delineation of the extent of impacts identified in AOC-4.	2-3', 16-17'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-47	Further delineation of the extent of impacts identified in AOC-4.	16-17', 19-20'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-48	Further delineation of the extent of impacts identified in AOC-4.	1.5-2', 14-15'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-49	Further delineation of the extent of impacts identified in AOC-4.	12.5-13', 16-17'	TCL VOCs, TCL SVOCs, RCRA Metals
SB-50	Further delineation of the extent of impacts identified in AOC-4.	12-16', 17-19'	TCL VOCs, TCL SVOCs, RCRA Metals

Notes:
TCL VOCs - Target Compound List Volatile Organic Compounds
TCL SVOCs - Target Compound List Semivolatile Organic Compounds
PAHs - Polycyclic Aromatic Hydrocarbons
bgs - below ground surface

TABLE 2

Supplemental Investigation
Analytical Results - Soil VOCs
AmeriPride Buffalo, NY

Compound	CAS	SCO							
		Protection of Human Health	Protection of Groundwater	**SB-34 17-17.5 12/1/2005**	**SB-35 15-16 11/30/2005**	**SB-36 13-14 12/1/2005**	**SB-38 18-19 12/1/2005**	**SB-39 13-14 12/7/2005**	**SB-39 18.5-19 12/7/2005**
1,1-Dichloroethene	75-35-4	500	0.33	< 0.006	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
2-Butanone	78-93-3	500	0.12	< 0.029	< 0.028	< 0.029	< 0.027	< 0.031	< 0.032
Acetone	67-64-1	500	0.05	< 0.029	< 0.028	< 0.029	< 0.027	< 0.031	< 0.032
Carbon Disulfide	75-15-0	NS	NS	< 0.006	< 0.006	< 0.006	< 0.005	**0.002 J**	< 0.006
cis-1,2-Dichloroethene	156-59-2	500	0.25	< 0.006	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
Dichlorodifluoromethane	75-71-8	NS	NS	< 0.006	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
Ethylbenzene	100-41-4	390	1.0	**0.002 J**	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
Isopropylbenzene	98-82-8	NS	NS	< 0.006	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
Methylcyclohexane	108-87-2	NS	NS	< 0.006	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
Methylene chloride	75-09-2	500	0.05	**0.007**	**0.01**	< 0.006	< 0.005	**0.006**	**0.01**
Tetrachloroethene	127-18-4	25	1.3	< 0.006	< 0.006	< 0.006	< 0.005	**0.002 J**	**0.002 J**
Toluene	108-88-3	500	0.7	**0.002 J**	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
Total Xylenes	1330-20-7	500	1.6	**0.013 J**	< 0.017	**0.003 J**	< 0.016	< 0.019	< 0.019
trans-1,2-Dichloroethene	156-60-5	500	0.19	< 0.006	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
Trichloroethene	79-01-6	200	0.47	< 0.006	< 0.006	< 0.006	< 0.005	< 0.006	< 0.006
Vinyl chloride	75-01-4	13	0.02	< 0.012	< 0.011	< 0.012	< 0.011	< 0.012	< 0.013

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program
December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other TAL VOCs not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - No Standard Available

TABLE 2

Supplemental Investigation
Analytical Results - Soil VOCs
AmeriPride Buffalo, NY

		SCO							
Compound	**CAS**	**Protection of Human Health**	**Protection of Groundwater**	**SB-40 12-14 12/7/2005**	**SB-40 14-16 12/7/2005**	**SB-41 17-18 11/30/2005**	**SB-41 5-7 5-7 11/30/2005**	**SB-42 16-16.5 12/8/2005**	**SB-42 19-20 12/8/2005**
1,1-Dichloroethene	75-35-4	500	0.33	**0.003 J**	**0.002 J**	< 0.006	< 0.006	< 0.006	< 0.007
2-Butanone	78-93-3	500	0.12	< 0.032	< 0.029	< 0.03	< 0.03	< 0.032	< 0.033
Acetone	67-64-1	500	0.05	< 0.032	**0.033**	< 0.03	< 0.03	< 0.032	< 0.033
Carbon Disulfide	75-15-0	NS	NS	< 0.006	**0.003 J**	< 0.006	< 0.006	< 0.006	< 0.007
cis-1,2-Dichloroethene	156-59-2	500	0.25	**1.5 DJ**	**0.98 D**	**0.009**	< 0.006	< 0.006	< 0.007
Dichlorodifluoromethane	75-71-8	NS	NS	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.007
Ethylbenzene	100-41-4	390	1.0	**0.007**	**0.001 J**	< 0.006	< 0.006	< 0.006	< 0.007
Isopropylbenzene	98-82-8	NS	NS	< 0.006	**0.006**	< 0.006	< 0.006	< 0.006	< 0.007
Methylcyclohexane	108-87-2	NS	NS	< 0.006	**0.001 J**	< 0.006	< 0.006	< 0.006	< 0.007
Methylene chloride	75-09-2	500	0.05	**0.008**	**0.01**	**0.008**	< 0.006	**0.01**	**0.025**
Tetrachloroethene	127-18-4	25	1.3	**45 D**	**11 D**	< 0.006	< 0.006	< 0.006	< 0.007
Toluene	108-88-3	500	0.7	**0.003 J**	< 0.006	< 0.006	< 0.006	< 0.006	< 0.007
Total Xylenes	1330-20-7	500	1.6	**0.022**	**0.005 J**	< 0.018	< 0.018	< 0.019	< 0.02
trans-1,2-Dichloroethene	156-60-5	500	0.19	**0.019**	**0.008**	< 0.006	< 0.006	< 0.006	< 0.007
Trichloroethene	79-01-6	200	0.47	**3.2 DJ**	**1 D**	< 0.006	< 0.006	< 0.006	< 0.007
Vinyl chloride	75-01-4	13	0.02	**0.065**	**0.01 J**	< 0.012	< 0.012	< 0.013	< 0.013

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program
December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other TAL VOCs not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - No Standard Available

TABLE 2

Supplemental Investigation
Analytical Results - Soil VOCs
AmeriPride Buffalo, NY

Compound	CAS	SCO		SB-100* 19.5-20 12/8/2005	SB-43 7.5-8 12/7/2005	SB-43 8-8.5 12/7/2005	SB-44 11-12 12/7/2005	SB-44 17-17.5 12/7/2005	SB-45 12.5-14 12/8/2005
		Protection of Human Health	Protection of Groundwater						
1,1-Dichloroethene	75-35-4	500	0.33	< 0.006	< 0.005	< 0.006	< 0.007	< 0.006	< 0.006
2-Butanone	78-93-3	500	0.12	< 0.033	< 0.027	< 0.028	< 0.033	< 0.028	< 0.03
Acetone	67-64-1	500	0.05	< 0.033	< 0.027	< 0.028	< 0.033	< 0.028	**0.034**
Carbon Disulfide	75-15-0	NS	NS	< 0.006	< 0.005	< 0.006	< 0.007	< 0.006	< 0.006
cis-1,2-Dichloroethene	156-59-2	500	0.25	< 0.006	**0.009**	**0.048**	< 0.007	< 0.006	< 0.006
Dichlorodifluoromethane	75-71-8	NS	NS	< 0.006	< 0.005	< 0.006	< 0.007	< 0.006	< 0.006
Ethylbenzene	100-41-4	390	1.0	< 0.006	< 0.005	< 0.006	< 0.007	< 0.006	< 0.006
Isopropylbenzene	98-82-8	NS	NS	< 0.006	< 0.005	< 0.006	< 0.007	< 0.006	< 0.006
Methylcyclohexane	108-87-2	NS	NS	< 0.006	< 0.005	< 0.006	< 0.007	< 0.006	< 0.006
Methylene chloride	75-09-2	500	0.05	**0.025**	**0.006**	**0.005 J**	**0.007**	**0.005 J**	**0.017**
Tetrachloroethene	127-18-4	25	1.3	< 0.006	**0.33 D**	**0.21**	**0.001 J**	< 0.006	< 0.006
Toluene	108-88-3	500	0.7	< 0.006	< 0.005	< 0.006	< 0.007	< 0.006	< 0.006
Total Xylenes	1330-20-7	500	1.6	< 0.02	< 0.016	< 0.017	< 0.02	< 0.017	< 0.018
trans-1,2-Dichloroethene	156-60-5	500	0.19	< 0.006	< 0.005	< 0.006	< 0.007	< 0.006	< 0.006
Trichloroethene	79-01-6	200	0.47	< 0.006	**0.018**	**0.12**	< 0.007	< 0.006	< 0.006
Vinyl chloride	75-01-4	13	0.02	< 0.013	< 0.011	< 0.011	< 0.013	< 0.011	< 0.012

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program
December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other TAL VOCs not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - No Standard Available

TABLE 2

Supplemental Investigation
Analytical Results - Soil VOCs
AmeriPride Buffalo, NY

		SCO							
Compound	**CAS**	**Protection of Human Health**	**Protection of Groundwater**	**SB-45 18-20 12/8/2005**	**SB-46 16-17 12/2/2005**	**SB-46 2-3 12/2/2005**	**SB-47 16-17 12/2/2005**	**SB-47 19-20 12/2/2005**	**SB-48 1.5-2 12/2/2005**
1,1-Dichloroethene	75-35-4	500	0.33	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
2-Butanone	78-93-3	500	0.12	< 0.032	< 0.032	< 0.03	< 0.03	< 0.028	**0.01 J**
Acetone	67-64-1	500	0.05	< 0.032	**0.033**	< 0.03	< 0.03	< 0.028	**0.066**
Carbon Disulfide	75-15-0	NS	NS	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
cis-1,2-Dichloroethene	156-59-2	500	0.25	< 0.006	**0.011**	**2.9 DJ**	< 0.006	< 0.006	**0.002 J**
Dichlorodifluoromethane	75-71-8	NS	NS	< 0.006	**0.002 J**	**0.002 J**	**0.002 J**	< 0.006	< 0.006
Ethylbenzene	100-41-4	390	1.0	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Isopropylbenzene	98-82-8	NS	NS	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Methylcyclohexane	108-87-2	NS	NS	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Methylene chloride	75-09-2	500	0.05	0.006	**0.006**	**0.006**	**0.006**	< 0.006	**0.007**
Tetrachloroethene	127-18-4	25	1.3	< 0.006	**0.002 J**	**44 D**	< 0.006	< 0.006	< 0.006
Toluene	108-88-3	500	0.7	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Total Xylenes	1330-20-7	500	1.6	< 0.02	< 0.019	< 0.018	< 0.018	< 0.017	< 0.018
trans-1,2-Dichloroethene	156-60-5	500	0.19	< 0.006	< 0.006	**0.006**	< 0.006	< 0.006	< 0.006
Trichloroethene	79-01-6	200	0.47	< 0.006	< 0.006	**3.6 DJ**	< 0.006	< 0.006	< 0.006
Vinyl chloride	75-01-4	13	0.02	< 0.013	**0.013**	< 0.012	< 0.012	< 0.011	< 0.012

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program
December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other TAL VOCs not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - No Standard Available

TABLE 2

Supplemental Investigation
Analytical Results - Soil VOCs
AmeriPride Buffalo, NY

		SCO						
Compound	**CAS**	**Protection of Human Health**	**Protection of Groundwater**	**SB-48 14-15 12/2/2005**	**SB-49 12.5-13 12/2/2005**	**SB-49 16-17 12/2/2005**	**SB-50 12-16 12/1/2005**	**SB-50 17-19 12/1/2005**
1,1-Dichloroethene	75-35-4	500	0.33	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
2-Butanone	78-93-3	500	0.12	< 0.031	< 0.032	< 0.032	< 0.03	< 0.028
Acetone	67-64-1	500	0.05	< 0.031	< 0.032	< 0.032	< 0.03	< 0.028
Carbon Disulfide	75-15-0	NS	NS	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
cis-1,2-Dichloroethene	156-59-2	500	0.25	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Dichlorodifluoromethane	75-71-8	NS	NS	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Ethylbenzene	100-41-4	390	1.0	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Isopropylbenzene	98-82-8	NS	NS	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Methylcyclohexane	108-87-2	NS	NS	< 0.006	< 0.006	< 0.006	< 0.006	**0.001 J**
Methylene chloride	75-09-2	500	0.05	**0.006**	< 0.006	< 0.006	**0.007**	**0.008**
Tetrachloroethene	127-18-4	25	1.3	< 0.006	**0.002 J**	< 0.006	< 0.006	< 0.006
Toluene	108-88-3	500	0.7	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Total Xylenes	1330-20-7	500	1.6	< 0.018	< 0.019	< 0.019	**0.004 J**	< 0.017
trans-1,2-Dichloroethene	156-60-5	500	0.19	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Trichloroethene	79-01-6	200	0.47	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Vinyl chloride	75-01-4	13	0.02	< 0.012	< 0.013	< 0.013	< 0.012	< 0.011

Notes:

All results reported in miligrams per kilogram (ppm)

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December 2006 : Restricted-Commercial Land Use

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J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other TAL VOCs not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - No Standard Available

TABLE 3
Supplemental Investigation
Analytical Results - Soil SVOCs
AmeriPride Buffalo, NY

Analyte	CAS	Protection of Human Health	Protection of Groundwater	SB-31 13-16 12/1/2005	SB-31 16-18.5 12/1/2005	SB-32 12.5-13.0 12/1/2005	SB-32 17 12/1/2005	SB-33 13-14 12/1/2005	SB-33 16-17 12/1/2005
2-Methylnaphthalene	91-57-6	NS	NS	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Acenaphthene	83-32-9	500	9.8	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Acenaphthylene	208-96-8	500	107	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Anthracene	120-12-7	500	1000	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Benzo(a)anthracene	56-55-3	5.6	0.52	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Benzo(a)pyrene	50-32-8	1	22	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Benzo(b)fluoranthene	205-99-2	6	1.7	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Benzo(ghi)perylene	191-24-2	500	1000	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Benzo(k)fluoranthene	207-08-9	56	1.7	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Bis(2-ethylhexyl) phthalate	117-81-7	NS	NS	**0.12 BJ**	**0.035 BJ**	**0.044 BJ**	< 0.35	**0.029 BJ**	< 0.36
Butyl benzyl phthalate	85-68-7	NS	NS	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Chrysene	218-01-9	56	0.59	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Dibenzo(a,h)anthracene	53-70-3	0.56	1000	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Dibenzofuran	132-64-9	NS	NS	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Di-n-butyl phthalate	84-74-2	NS	NS	**0.045 BJ**	**0.031 BJ**	**0.03 BJ**	< 0.35	**0.025 BJ**	< 0.36
Di-n-octyl phthalate	117-84-0	NS	NS	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Fluoranthene	206-44-0	500	1000	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Fluorene	86-73-7	500	386	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Indeno(1,2,3-cd)pyrene	193-39-5	5.6	8.2	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Naphthalene	91-20-3	500	12	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Phenanthrene	85-01-8	500	1000	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36
Pyrene	129-00-0	500	1000	< 0.37	< 0.34	< 0.38	< 0.35	< 0.39	< 0.36

Notes:

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TABLE 3

Supplemental Investigation
Analytical Results - Soil SVOCs
AmeriPride Buffalo, NY

Analyte	CAS	Protection of Human Health	Protection of Groundwater	SB-34 17-17.5 12/1/2005	SB-35 15-16 11/30/2005	SB-36 13-14 12/1/2005	SB-38 18-19 12/1/2005	SB-39 13-14 12/7/2005	SB39 18.5-19 12/7/2005
2-Methylnaphthalene	91-57-6	NS	NS	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Acenaphthene	83-32-9	500	9.8	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Acenaphthylene	208-96-8	500	107	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Anthracene	120-12-7	500	1000	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Benzo(a)anthracene	56-55-3	5.6	0.52	< 0.38	< 0.44	< 0.4	**0.033 J**	< 0.42	< 0.43
Benzo(a)pyrene	50-32-8	1	22	< 0.38	< 0.44	< 0.4	**0.023 J**	< 0.42	< 0.43
Benzo(b)fluoranthene	205-99-2	6	1.7	< 0.38	< 0.44	< 0.4	**0.028 J**	< 0.42	< 0.43
Benzo(ghi)perylene	191-24-2	500	1000	< 0.38	< 0.44	< 0.4	**0.023 J**	< 0.42	< 0.43
Benzo(k)fluoranthene	207-08-9	56	1.7	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Bis(2-ethylhexyl) phthalate	117-81-7	NS	NS	**0.029 BJ**	**0.062 BJ**	< 0.4	< 0.35	**0.36 BJ**	**0.42 BJ**
Butyl benzyl phthalate	85-68-7	NS	NS	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Chrysene	218-01-9	56	0.59	< 0.38	< 0.44	< 0.4	**0.028 J**	< 0.42	< 0.43
Dibenzo(a,h)anthracene	53-70-3	0.56	1000	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Dibenzofuran	132-64-9	NS	NS	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Di-n-butyl phthalate	84-74-2	NS	NS	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Di-n-octyl phthalate	117-84-0	NS	NS	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Fluoranthene	206-44-0	500	1000	< 0.38	< 0.44	< 0.4	**0.063 J**	< 0.42	< 0.43
Fluorene	86-73-7	500	386	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Indeno(1,2,3-cd)pyrene	193-39-5	5.6	8.2	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Naphthalene	91-20-3	500	12	< 0.38	< 0.44	< 0.4	< 0.35	< 0.42	< 0.43
Phenanthrene	85-01-8	500	1000	< 0.38	< 0.44	< 0.4	**0.055 J**	< 0.42	< 0.43
Pyrene	129-00-0	500	1000	< 0.38	< 0.44	< 0.4	**0.056 J**	< 0.42	< 0.43

Notes:

All results reported in miligrams per kilogram (ppm)

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TABLE 3

Supplemental Investigation
Analytical Results - Soil SVOCs
AmeriPride Buffalo, NY

Analyte	CAS	Protection of Human Health	Protection of Groundwater	SB-40 12.0-14.0 12/7/2005	SB-40 14-16 12/7/2005	SB-41 17-18 11/30/2005	SB-41 5.0-7.0 11/30/2005	SB-42 16-16.5 12/8/2005	SB-42 19-20 12/8/2005
2-Methylnaphthalene	91-57-6	NS	NS	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Acenaphthene	83-32-9	500	9.8	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Acenaphthylene	208-96-8	500	107	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Anthracene	120-12-7	500	1000	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Benzo(a)anthracene	56-55-3	5.6	0.52	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Benzo(a)pyrene	50-32-8	1	22	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Benzo(b)fluoranthene	205-99-2	6	1.7	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Benzo(ghi)perylene	191-24-2	500	1000	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Benzo(k)fluoranthene	207-08-9	56	1.7	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Bis(2-ethylhexyl) phthalate	117-81-7	NS	NS	< 0.42	**0.11 BJ**	**0.11 BJ**	**0.066 BJ**	**0.031 BJ**	**0.18 J**
Butyl benzyl phthalate	85-68-7	NS	NS	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Chrysene	218-01-9	56	0.59	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Dibenzo(a,h)anthracene	53-70-3	0.56	1000	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Dibenzofuran	132-64-9	NS	NS	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Di-n-butyl phthalate	84-74-2	NS	NS	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Di-n-octyl phthalate	117-84-0	NS	NS	**0.37 J**	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Fluoranthene	206-44-0	500	1000	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Fluorene	86-73-7	500	386	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Indeno(1,2,3-cd)pyrene	193-39-5	5.6	8.2	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Naphthalene	91-20-3	500	12	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Phenanthrene	85-01-8	500	1000	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43
Pyrene	129-00-0	500	1000	< 0.42	< 0.39	< 0.37	< 0.43	< 0.42	< 0.43

Notes:

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TABLE 3

Supplemental Investigation
Analytical Results - Soil SVOCs
AmeriPride Buffalo, NY

Analyte	**CAS**	**Protection of Human Health**	**Protection of Groundwater**	**SB-43 7.5-8 12/7/2005**	**SB-43 8-8.5 12/7/2005**	**SB-44 11.0-12.0 12/7/2005**	**SB-44 17-17.5 12/7/2005**	**SB-45 12.5-14 12/8/2005**	**SB-45 18-20 12/8/2005**
2-Methylnaphthalene	91-57-6	NS	NS	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Acenaphthene	83-32-9	500	9.8	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Acenaphthylene	208-96-8	500	107	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Anthracene	120-12-7	500	1000	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Benzo(a)anthracene	56-55-3	5.6	0.52	**0.049 J**	**0.022 J**	< 0.43	< 0.37	< 0.39	< 0.44
Benzo(a)pyrene	50-32-8	1	22	**0.042 J**	**0.022 J**	< 0.43	< 0.37	< 0.39	< 0.44
Benzo(b)fluoranthene	205-99-2	6	1.7	**0.055 J**	**0.026 J**	< 0.43	< 0.37	< 0.39	< 0.44
Benzo(ghi)perylene	191-24-2	500	1000	**0.031 J**	**0.026 J**	< 0.43	< 0.37	< 0.39	< 0.44
Benzo(k)fluoranthene	207-08-9	56	1.7	**0.021 J**	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Bis(2-ethylhexyl) phthalate	117-81-7	NS	NS	**0.13 BJ**	**0.18 BJ**	**0.16 BJ**	**0.14 BJ**	**0.059 J**	**0.083 J**
Butyl benzyl phthalate	85-68-7	NS	NS	**0.021 J**	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Chrysene	218-01-9	56	0.59	**0.046 J**	**0.026 J**	< 0.43	< 0.37	< 0.39	< 0.44
Dibenzo(a,h)anthracene	53-70-3	0.56	1000	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Dibenzofuran	132-64-9	NS	NS	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Di-n-butyl phthalate	84-74-2	NS	NS	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Di-n-octyl phthalate	117-84-0	NS	NS	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Fluoranthene	206-44-0	500	1000	**0.077 J**	**0.049 J**	< 0.43	< 0.37	< 0.39	< 0.44
Fluorene	86-73-7	500	386	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Indeno(1,2,3-cd)pyrene	193-39-5	5.6	8.2	**0.032 J**	**0.02 J**	< 0.43	< 0.37	< 0.39	< 0.44
Naphthalene	91-20-3	500	12	< 0.35	< 0.4	< 0.43	< 0.37	< 0.39	< 0.44
Phenanthrene	85-01-8	500	1000	< 0.35	**0.032 J**	< 0.43	< 0.37	< 0.39	< 0.44
Pyrene	129-00-0	500	1000	**0.065 J**	**0.048 J**	< 0.43	< 0.37	< 0.39	< 0.44

Notes:

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TABLE 3
Supplemental Investigation
Analytical Results - Soil SVOCs
AmeriPride Buffalo, NY

Analyte	CAS	Protection of Human Health	Protection of Groundwater	SB-46 16-17 12/2/2005	SB-46 2.0-3.0 12/2/2005	SB-47 16-17 12/2/2005	SB-47 19-20 12/2/2005	SB-48 1.5-2 12/2/2005	SB-48 14-15 12/2/2005
2-Methylnaphthalene	91-57-6	NS	NS	< 0.44	**5.1 J**	< 0.43	< 0.36	**0.24 J**	< 0.41
Acenaphthene	83-32-9	500	9.8	< 0.44	**13**	< 0.43	< 0.36	**0.44 J**	< 0.41
Acenaphthylene	208-96-8	500	107	< 0.44	**2.7 J**	< 0.43	< 0.36	< 2	< 0.41
Anthracene	120-12-7	500	1000	< 0.44	**28**	< 0.43	< 0.36	**0.73 J**	< 0.41
Benzo(a)anthracene	56-55-3	5.6	0.52	< 0.44	**33**	< 0.43	< 0.36	**0.96 J**	< 0.41
Benzo(a)pyrene	50-32-8	1	22	< 0.44	**29**	< 0.43	< 0.36	**0.63 J**	< 0.41
Benzo(b)fluoranthene	205-99-2	6	1.7	< 0.44	**42**	< 0.43	< 0.36	**0.76 J**	< 0.41
Benzo(ghi)perylene	191-24-2	500	1000	< 0.44	**18**	< 0.43	< 0.36	**0.39 J**	< 0.41
Benzo(k)fluoranthene	207-08-9	56	1.7	< 0.44	**45**	< 0.43	< 0.36	**0.28 J**	< 0.41
Bis(2-ethylhexyl) phthalate	117-81-7	NS	NS	< 0.44	< 8.2	**0.04 BJ**	**0.025 BJ**	< 2	**0.052 BJ**
Butyl benzyl phthalate	85-68-7	NS	NS	< 0.44	< 8.2	< 0.43	< 0.36	< 2	< 0.41
Chrysene	218-01-9	56	0.59	< 0.44	**28**	< 0.43	< 0.36	**0.69 J**	< 0.41
Dibenzo(a,h)anthracene	53-70-3	0.56	1000	< 0.44	**5.2 J**	< 0.43	< 0.36	< 2	< 0.41
Dibenzofuran	132-64-9	NS	NS	< 0.44	**13**	< 0.43	< 0.36	**0.29 J**	< 0.41
Di-n-butyl phthalate	84-74-2	NS	NS	< 0.44	< 8.2	< 0.43	< 0.36	< 2	< 0.41
Di-n-octyl phthalate	117-84-0	NS	NS	< 0.44	< 8.2	< 0.43	< 0.36	< 2	< 0.41
Fluoranthene	206-44-0	500	1000	< 0.44	**94**	< 0.43	< 0.36	**2.7**	< 0.41
Fluorene	86-73-7	500	386	< 0.44	**19**	< 0.43	< 0.36	**0.63 J**	< 0.41
Indeno(1,2,3-cd)pyrene	193-39-5	5.6	8.2	< 0.44	**14**	< 0.43	< 0.36	**0.31 J**	< 0.41
Naphthalene	91-20-3	500	12	< 0.44	**10**	< 0.43	< 0.36	**0.29 J**	< 0.41
Phenanthrene	85-01-8	500	1000	< 0.44	**110**	< 0.43	< 0.36	**3.9**	< 0.41
Pyrene	129-00-0	500	1000	< 0.44	**66**	< 0.43	< 0.36	**2.1**	< 0.41

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TABLE 3
Supplemental Investigation
Analytical Results - Soil SVOCs
AmeriPride Buffalo, NY

Analyte	CAS	Protection of Human Health	Protection of Groundwater	SB-49 12.5-13 12/2/2005	SB-49 16-17 12/2/2005	SB-50 12.0-16-0 12/1/2005	SB-50 17-19 12/1/2004
2-Methylnaphthalene	91-57-6	NS	NS	< 0.43	< 0.42	< 0.42	< 0.38
Acenaphthene	83-32-9	500	9.8	< 0.43	< 0.42	**0.028 J**	**0.022 J**
Acenaphthylene	208-96-8	500	107	< 0.43	< 0.42	< 0.42	< 0.38
Anthracene	120-12-7	500	1000	< 0.43	< 0.42	**0.053 J**	**0.042 J**
Benzo(a)anthracene	56-55-3	5.6	0.52	< 0.43	< 0.42	**0.12 J**	**0.12 J**
Benzo(a)pyrene	50-32-8	1	22	< 0.43	< 0.42	**0.098 J**	**0.09 J**
Benzo(b)fluoranthene	205-99-2	6	1.7	< 0.43	< 0.42	**0.11 J**	**0.11 J**
Benzo(ghi)perylene	191-24-2	500	1000	< 0.43	< 0.42	**0.073 J**	**0.064 J**
Benzo(k)fluoranthene	207-08-9	56	1.7	< 0.43	< 0.42	**0.051 J**	**0.05 J**
Bis(2-ethylhexyl) phthalate	117-81-7	NS	NS	< 0.43	**0.2 BJ**	**0.37 BJ**	< 0.38
Butyl benzyl phthalate	85-68-7	NS	NS	< 0.43	< 0.42	**0.052 J**	< 0.38
Chrysene	218-01-9	56	0.59	< 0.43	< 0.42	**0.11 J**	**0.094 J**
Dibenzo(a,h)anthracene	53-70-3	0.56	1000	< 0.43	< 0.42	**0.022 J**	< 0.38
Dibenzofuran	132-64-9	NS	NS	< 0.43	< 0.42	< 0.42	< 0.38
Di-n-butyl phthalate	84-74-2	NS	NS	< 0.43	< 0.42	**0.14 BJ**	**0.029 BJ**
Di-n-octyl phthalate	117-84-0	NS	NS	< 0.43	< 0.42	< 0.42	< 0.38
Fluoranthene	206-44-0	500	1000	< 0.43	< 0.42	**0.29 J**	**0.24 J**
Fluorene	86-73-7	500	386	< 0.43	< 0.42	< 0.42	< 0.38
Indeno(1,2,3-cd)pyrene	193-39-5	5.6	8.2	< 0.43	< 0.42	**0.052 J**	**0.052 J**
Naphthalene	91-20-3	500	12	< 0.43	< 0.42	< 0.42	< 0.38
Phenanthrene	85-01-8	500	1000	< 0.43	< 0.42	**0.25 J**	**0.2 J**
Pyrene	129-00-0	500	1000	**0.023 J**	< 0.42	**0.26 J**	**0.21 J**

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation
Program December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below practical quantitation limits.

NS - No Standard Available

TABLE 4

Supplemental Investigation
Analytical Results - Soil Metals
AmeriPride Buffalo, NY

	SCO							
Analyte	**Protection of Public Health**	**Protection of Groundwater**	**SB-34 17-17.5 12/1/2005**	**SB-35 15-16 11/30/2005**	**SB-36 13-14 12/1/2005**	**SB-38 18-19 12/1/2005**	**SB-39 13-14 12/7/2005**	**SB-39 18.5-19 12/7/2005**
Arsenic - Total	16	16	< 2.5	< 2.2	**2.8**	< 1.8	**3.2**	< 2.3
Barium - Total	400	820	**41.7 E**	**51 E**	**75.9 E**	**30 E**	**113**	**69.2**
Cadmium - Total	9.3	7.5	< 0.25	< 0.22	< 0.22	< 0.18	< 0.27	< 0.23
Chromium - Total	1500	NS	**8.2**	**8.6**	**12.4**	**5**	**20.5**	**14.5**
Lead - Total	1000	450	**5.3**	**8.5**	**8.3**	**6.3**	**15.3**	**8.9**
Mercury - Total	2.8	0.73	< 0.018	< 0.022	< 0.019	< 0.018	**0.047**	< 0.022

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other RCRA metals not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - Not specified

TABLE 4
Supplemental Investigation
Analytical Results - Soil Metals
AmeriPride Buffalo, NY

Analyte	SCO		SB-40 12-14 12/7/2005	SB-40 14-16 12/7/2005	SB-41 17-18 11/30/2005	SB-41 5-7 5-7 11/30/2005	SB-42 16-16.5 12/8/2005	SB-42 19-20 12/8/2005
	Protection of Public Health	**Protection of Groundwater**						
Arsenic - Total	16	16	**7.3**	**2.7**	**2.5**	**4.2**	**3.8**	**4.8**
Barium - Total	400	820	**93.1**	**46.5**	**52 E**	**117 E**	**94.8 E**	**83.1 E**
Cadmium - Total	9.3	7.5	< 0.25	< 0.24	**0.27**	**0.55**	< 0.25	< 0.26
Chromium - Total	1500	NS	**21.1**	**7.5**	**8.7**	**20**	**21.7**	**18.1**
Lead - Total	1000	450	**14.3**	**6.4**	**14**	**19.6**	**12 N***	**10.9 N***
Mercury - Total	2.8	0.73	< 0.02	< 0.02	< 0.021	**0.022**	< 0.02	< 0.022

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other RCRA metals not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - Not specified

TABLE 4

Supplemental Investigation
Analytical Results - Soil Metals
AmeriPride Buffalo, NY

	SCO							
Analyte	**Protection of Public Health**	**Protection of Groundwater**	**SB-100* 19.5-20 12/8/2005**	**SB-43 7.5-8 12/7/2005**	**SB-43 8-8.5 12/7/2005**	**SB-44 11-12 12/7/2005**	**SB-44 17-17.5 12/7/2005**	**SB-45 12.5-14 12/8/2005**
Arsenic - Total	16	16	**3.9**	**5.4**	**4.8**	**3**	< 2.3	**7.1**
Barium - Total	400	820	**80.5 E**	**24.1**	**22.2**	**116**	**60.1**	**101 E**
Cadmium - Total	9.3	7.5	< 0.25	< 0.21	< 0.23	< 0.24	< 0.23	< 0.22
Chromium - Total	1500	NS	**15.3**	**7.4**	**6.5**	**21**	**6.8**	**15.4**
Lead - Total	1000	450	**8.9 N***	**9.9**	**7.2**	**14**	**6.3**	**13.5 N***
Mercury - Total	2.8	0.73	< 0.023	< 0.017	< 0.02	< 0.022	< 0.019	< 0.021

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other RCRA metals not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - Not specified

TABLE 4

Supplemental Investigation
Analytical Results - Soil Metals
AmeriPride Buffalo, NY

	SCO							
Analyte	**Protection of Public Health**	**Protection of Groundwater**	**SB-45 18-20 12/8/2005**	**SB-46 16-17 12/2/2005**	**SB-46 2-3 12/2/2005**	**SB-47 16-17 12/2/2005**	**SB-47 19-20 12/2/2005**	**SB-48 1.5-2 12/2/2005**
Arsenic - Total	16	16	**3.7**	**11**	**9.3**	**4.1**	< 2.3	**5.6**
Barium - Total	400	820	**124 E**	**153 E**	**397 E**	**126 E**	**75.7 E**	**112 E**
Cadmium - Total	9.3	7.5	< 0.28	**0.75**	**0.61**	**0.6**	**0.27**	**0.65**
Chromium - Total	1500	NS	**17.3**	**22.3**	**19.6**	**16.6**	**6.4**	**17.1**
Lead - Total	1000	450	**13.9 N***	**13.5**	**381**	**14.9**	**5**	**15.1**
Mercury - Total	2.8	0.73	< 0.021	< 0.024	**0.164**	< 0.02	< 0.018	**0.23**

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other RCRA metals not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - Not specified

TABLE 4
Supplemental Investigation
Analytical Results - Soil Metals
AmeriPride Buffalo, NY

Analyte	SCO Protection of Public Health	SCO Protection of Groundwater	SB-48 14-15 12/2/2005	SB-49 12.5-13 12/2/2005	SB-49 16-17 12/2/2005	SB-50 12-16 12/1/2005	SB-50 17-19 12/1/2005
Arsenic - Total	16	16	**4.9**	**3.3**	**3.3**	**5.1**	< 2.3
Barium - Total	400	820	**85.9 E**	**101 E**	**106 E**	**83.1 E**	**61.4 E**
Cadmium - Total	9.3	7.5	**0.48**	**0.59**	**0.5**	**0.64**	< 0.23
Chromium - Total	1500	NS	**17.9**	**18.5**	**16.3**	**17.3**	**8.3**
Lead - Total	1000	450	**13.1**	**14.5**	**11.5**	**17.3**	**11**
Mercury - Total	2.8	0.73	< 0.022	< 0.021	< 0.021	**0.026**	**0.021**

Notes:

All results reported in miligrams per kilogram (ppm)

SCO: Soil Cleanup Objectives per 6 NYCRR Part 375 Environmental Remediation Program December 2006 : Restricted-Commercial Land Use

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below the practical quantitation limits.

Table presents a summary of analytical detections only. Other RCRA metals not detected.

* SB-100 is duplicate of SB-42 (19-20)

NS - Not specified

TABLE 5

Supplemental Investigation
Analytical Results - Groundwater
AmeriPride Buffalo, NY

Analyte	CAS	Standard/ Guidance Value	MW-1 12/14/2005	MW-2 12/14/2005	MW-3 12/14/2005	MW-4 12/14/2005	MW-99 12/14/2005 Dup of MW-4	MW-5 12/14/2005	MW-6 12/14/2005	Trip Blank
Metals										
Barium		1,000	**52.2**	**85.1**	**51**	**106**	**109**	**216**	**104**	NA
Chromium		50	< 4	< 4	< 4	**6.5**	**6.6**	< 4	< 4	NA
Lead		25	< 5	< 5	< 5	**9.6**	**9.4**	< 5	< 5	NA
Volatile Organic Compounds										
1,2,4-Trichlorobenzene	120-82-1	5	< 5	< 5	< 5	< 5	**2.2 DJ**	< 5	< 5	< 5
Acetone	67-64-1	50	**2.9 J**	**11 J**	< 25	< 25	< 25	**10 J**	< 25	< 25
Carbon Disulfide	75-15-0	NS	**0.65 J**	**1.3 J**	< 5	< 5	< 5	**1.2 J**	< 5	< 5
cis-1,2-Dichloroethene	156-59-2	5	< 5	< 5	**94 D**	**66**	**59**	< 5	< 5	< 5
Dichlorodifluoromethane	75-71-8	5	< 5	< 5	**0.68 J**	< 5	< 5	< 5	< 5	< 5
Methyl-t-Butyl Ether (MTBE)	1634-04-4	10	**2.2 J**	< 5	**0.52 J**	**0.88 J**	**0.84 J**	< 5	< 5	< 5
Tetrachloroethene	127-18-4	5	< 5	< 5	< 5	**140 D**	**130 D**	**0.91 J**	< 5	< 5
trans-1,2-Dichloroethene	156-60-5	5	< 5	< 5	**3.6 DJ**	**0.9 J**	**0.77 J**	< 5	< 5	< 5
Trichloroethene	79-01-6	5	< 5	< 5	**0.73 J**	**87**	**85**	< 5	< 5	< 5
Vinyl chloride	75-01-4	2	< 5	< 5	**26 D**	< 5	< 5	< 5	< 5	< 5
Semivolatile Organic Compounds										
Bis(2-ethylhexyl)phthalate	117-81-7	5	< 9	**5 J**	< 10	< 10	< 9	< 9	< 10	NA
Phenanthrene	85-01-8	50	< 9	**0.5 J**	< 10	< 10	< 9	**1 J**	< 10	NA

Notes:

All results reported in micrograms per liter (ppb)

Standard/Guidance Values: New York State Department of Environmental Conservation Division of Water Technical and Operational Guidance Series 1.1.1- New York State Ambient Water Quality Standards and Guidance Values.

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

J Indicates an estimated value below practical quantitation limits.

NA - Parameter not analyzed for this sample.

NS - No Standard Available

D - indicates that value is result of sample dilution

Appendix A

Phase II Technical Memorandum dated October 19, 2005

October 19, 2005

Mr. Joseph E. Peter
Environmental Manager
AmeriPride Services, Inc.
10801 Wayzata Boulevard
Minnetonka, Minnesota 55305

Re: FINAL Phase II Technical Memorandum
AmeriPride Services Inc. Buffalo, New York
ENSR Project Number 10770-001

Dear Mr. Peter;

ENSR Corporation (ENSR) is pleased to provide this technical memorandum documenting the field activities, and results of the initial Phase II Environmental Site Assessment conducted at the AmeriPride Services, Inc. (AmeriPride) facility, located at 8 Lord Street in Buffalo, New York (the Site). The field activities described in this report were conducted between August 22, 2005 and August 29, 2005. As part of the scope of work, ENSR conducted a Site visit with AmeriPride on July 28 and 29, 2005 to observe potential areas of concern and mark out proposed sampling locations.

INTRODUCTION

According to documents provided by AmeriPride, including an AmeriPride summary sheet, a Phase I Environmental Site Assessment (ESA) Report completed for the Site by CT Male Associates, dated December 8, 2004, and site photographs, the building at the Site dates to 1910 and was “apparently built as a book-binding and printing facility”. American Linen Supply Co., which operated under the name Coverall Service and Supply Co., a uniform cleaning facility, reportedly occupied the Site in 1978. The company name changed to AmeriPride Services Inc. in 1997.

AmeriPride has indicated that between 1978 and 1985, the facility used tetrachloroethylene (PCE) for dry cleaning operations. Between 1985 and April 2004, the plant was used as a water-wash only laundry. Between April 2004 and Spring 2005, the site was used as a laundry depot. A fleet maintenance shop was active at the building until it was relocated to new premises at the end of July 2005. The Site is currently vacant.

AmeriPride’s purpose for the assessment is to complete a comprehensive environmental assessment of the Buffalo, New York facility. The intent of this assessment is to identify environmental contamination on the site that could adversely impact the property value and/or limit the existing or potential site use.

In order to meet AmeriPride's expectation that this assessment is comprehensive, ENSR proposed a phased approach to this investigation, with the initial phase (the subject of this Technical Memorandum) designed to identify/confirm whether environmental impacts are present at the Site. ENSR would recommend subsequent additional phase II work, if warranted, that would focus on groundwater investigation and further delineation of areas of soil impact identified during the initial phase. The intent of the phase II investigative program will be to sufficiently characterize the nature and extent of site impacts to determine the scope and costs for potential remediation activities.

A review of the CT Male Phase I ESA report and documents provided by AmeriPride suggested that potential recognized environmental conditions (RECs) at the site included: several underground storage tanks or suspected tank locations; sumps, drains and trough-type floor drains; and concrete cistern-like disposal features in the basement, identified as Pit-1 and Pit-2. Reportedly, floor drains and sumps on the main floor of the facility empty into the trough-type floor drain in the washroom, which discharges to Pit-1. Due to the historic use of PCE at the site these drainage features represent a REC.

INVESTIGATION ACTIVITES

Between August 22 and August 29, 2005, an ENSR Geologist supervised the advancement of 28 soil borings and collected solid surface wipe samples for PCBs at the sampling locations presented on Figures 1 and 2. The rationale for sample collection at a given sample location is presented in Table 1. Soil borings were advanced to depths ranging from 6 feet (ft) to 20 ft below ground surface (bgs). At locations that were accessible to vehicles, soil borings were advanced using 2-inch diameter by 5-foot long MacroCore samplers, driven by a track-mounted direct-push rig (i.e., Geoprobe). In the basement of the building (Figure 2) soil borings were advanced using 1-inch diameter by 2-foot long samplers, driven with hammer-drill type equipment. Soils were continuously logged in the field, and screened with a photoionization detector (PID) for the presence of volatile organic compounds. Soil classifications, PID responses and additional subsurface information were recorded on soil boring logs, which are presented as Attachment A.

Soil samples were collected from each soil boring location, based on field observations and/or PID responses, and submitted to Severn Trent Laboratories of Buffalo, New York for laboratory analysis. The laboratory program for the project included analysis for Target Compound List (TCL) volatile organic compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), 8 Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, selenium, silver and mercury), and polychlorinated biphenyls (PCBs). The depth interval for the sample collected from each soil boring, and the specific analyses requested for each sample are presented on Table 1.

In addition to subsurface soil investigation activities, wipe sampling for PCBs was also conducted at the four locations depicted on Figure 1 and Figure 2. The locations represent transformer pads (2), the floor adjacent to a bank of PCB capacitors, and an area in the basement where a pool of oil was observed adjacent to an elevator shaft. Wipe sampling consisted of wiping a 100 cm^2 area, defined with a disposable template, with a hexane saturated gauze pad and submitting the gauze for PCB analysis.

ANALYTICAL RESULTS

The analytical results for the soil samples collected during the subsurface investigation are summarized on Table 2 (VOCs), Table 3 (PAHs) and Table 4 (Metals) and Table 5 (PCBs). In order to evaluate soil quality with respect to the concentrations reported, the analytical results have been compared to Recommended Soil Cleanup Objectives (RSCO) presented in the New York State Department of Environmental Conservation's (NYSDEC's) Technical & Administrative Guidance Memorandum # 4046 (TAGM 4046). See the Discussion section below for additional information regarding these cleanup objectives.

Volatile Organic Compounds

VOCs were reported in all but 3 of the samples submitted for analysis (see Table 2). Most of the compounds detected were reported at concentrations below the practical quantitation limits (PQLs), which did not exceed their respective RSCOs. However, concentrations of tetrachloroethene (PCE) and trichloroethene (TCE) were reported in several soil samples at concentrations that were significantly higher than their RSCOs. The areas where PCE and/or TCE exceeded their RSCOs included:

- SB-7 (west end of former 1,500 gallon waste oil tank on west side of building),
- SB-13 (east side of Site catch-basin near Seneca Street),
- SB-21 (west end of trench drain in washroom area),
- SB-24 (adjacent to a floor drain in the dryer area), and
- SB-28 (adjacent to Pit-2 in basement).

Polycyclic Aromatic Hydrocarbons

PAHs were detected in 15 of the 28 samples submitted for analysis (see Table 3). Concentrations (or J-qualified estimated concentrations) of one or more of the following PAHS were reported in 9 of these samples at concentrations exceeding RSCOs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)-anthracene, and indeno(1,2,3-cd)pyrene. The areas where one or more PAHS exceeded the RSCOs included:

- SB-2 (west end of former 10,000 gallon gasoline UST location),
- SB-4 (highly disturbed asphalt area west of building),
- SB-8 (east end of former 1,500 gallon waste oil UST location),
- SB-18 (sump location on main floor of building),
- SB-20 (adjacent to floor drain in reported former dry cleaning area on main floor of building),
- SB-21 (west end of trough drain in washroom area),
- SB-22 (sump on main floor of building),
- SB-23 (sump on main floor of building), and
- SB-24 (adjacent to a floor drain in the dryer area).

PAH concentrations, or estimated (J-qualified concentrations) reported in other samples were below their applicable RSCOs.

Metals

As presented on Table 4, 19 samples were submitted for RCRA metals analysis. One or more of the metals were reported in each of the samples above detection limits. This is not uncommon because some trace metals (e.g., lead and arsenic) may occur in soils at detectable background concentrations. Concentrations of one or more of the following metals were reported in 14 of these samples at concentrations exceeding RSCOs: arsenic, cadmium, chromium, and mercury. The areas where one or more of these metals exceeded their respective RSCO's included:

- SB-6 (trench drain in truck dock on west side of building),
- SB-8 (east end of former 1,500 gallon waste oil UST location),
- SB-13 (Site catch basin adjacent to Seneca Street),
- SB-18 (sump location on main floor of building),
- SB-19 (floor drain in reported former dry cleaning area),
- SB-20 (adjacent to floor drain in reported former dry cleaning area on main floor of building),
- SB-21 (west end of trough drain in washroom),
- SB-22 (sump on main floor of building),
- SB-23 (sump on main floor of building),
- SB-24 (adjacent to a floor drain in the dryer area),
- SB-25 (water wash chemical storage area),
- SB-27 (adjacent to Pit-1),

- SB-28 (adjacent to Pit-2),
- SB-29 (adjacent to sump in basement), and
- SB-30 (located on expansion joint in western portion of basement)

Chromium was detected in every sample, with RSCO exceedances in 13 of the 19 samples analyzed. The elevated concentrations may be due to elevated background levels of the metal, or may result from previous printing and bookbinding operations conducted at the Site.

The RSCO for silver is defined as “site background”. Silver was detected in one sample, SB-23 (vicinity of a sump on the main floor of the building), at a concentration of 2.7 ppm. Because other samples, in which silver was not-detected, had detection limits well below this concentration, it is probable that SB-23 exceeds the site background concentration for this metal.

Total lead was reported in each of the samples submitted for lead analysis, with concentrations ranging from 3.1 ppm to 422 ppm. The RSCO for lead is defined as “site background”. Background samples for lead were not collected during the program; however, the NYSDEC indicates in their RSCO tables that “background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4 to 61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200 to 500 ppm”. Concentrations above 100 ppm were reported in samples collected from soil borings SB-22 (sump in main floor of building), SB-8 (east end of former 1,500 gallon waste oil UST location) and SB-25 (water wash chemical storage area). Other samples had lead concentrations that were below 100 ppm, with more than half (11 of the 19) having concentrations less than 20 ppm.

Other metals reported in samples collected during the Phase II investigation did not exceed their respective RSCOs.

Polychlorinated Biphenyls

PCBs were detected in two of the four soil samples submitted for PCB analysis (see Table 5). The samples (SB-7 and SB-8) were collected from the vicinity of the former 1,500 gallon waste oil UST on the west side of the building, however, concentrations reported were well below the RSCO of 10 ppm established for subsurface soils.

PCB wipe sampling analytical results are presented in Table 6. PCBs were detected in one of the solid surface wipe samples (Wipe-4; see Figure 2) collected from an area where an oil seep was observed on the basement floor adjacent to an elevator. The total PCB concentration at the location was reported at 4.1 micrograms per 100 cm^2 ($ug/100cm^2$), which is below the standard of 10 ug/100 cm^2 established by the Toxic Substance Control Act (TSCA).

DISCUSSION

As stated previously, the concentrations of constituents of concern (COCs) detected in soil samples were compared to TAGM RSCO standards. The current TAGM standards do not provide for the use of less stringent industrial/commercial risk scenarios that are used by some other states. Although the NYSDEC does not allow risk assessments to demonstrate reduced risk scenarios and/or less stringent cleanup standards, the state will allow technical impracticability arguments to be used to justify the use of engineered barriers and/or institutional controls.

Based on data collected during the initial phase of investigation, Site soils appear to have been impacted with chlorinated VOCs, PAHs and heavy metals. The principal environmental concerns with respect to soils at the Site appears to be related to the VOCs PCE and TCE, several PAHs and the metals, arsenic, cadmium, chromium, lead, silver and mercury.

Based on elevated VOC, PAH and/or metals concentrations reported in samples collected during phase II investigation activities, or on evidence of impact observed while in the field, the following four potential areas of concern (AOCs) have been identified:

- AOC-1 - vicinity of SB-2 (PAHs) located at the west end of the former (removed) 10,000 gallon gasoline UST,
- AOC-2 – vicinity of SB-13 (PCE, TCE, chromium) adjacent to the Site catch basin near Seneca Street,
- AOC-3 – vicinity of SB-7 and SB-8 (PCE, TCE, PAHs, mercury) adjacent to the former 1,500 gallon waste oil UST area, and
- AOC-4 – General area underlying the southwestern half of the building. Impacts identified in the soils underlying the on-slab (central) portion of the building include VOCs, PAHs and metals. VOCs and/or metals were also identified in soils underlying the western portion of the basement. Impacts identified under the building may be attributable to a single general source, such as the drainage system of troughs, floor drains, sumps and collection pits (Pit-1 and Pit-2), or may be the result of more than one source.

The areas listed above have been identified as potential AOCs. Additional sampling in and around these AOCs will be necessary to evaluate whether the constituents of concern identified during the preliminary phase II investigation are typical of the area, or if higher concentrations of the compounds/analytes may present, and to broadly define the extent of observed impacts.

RECOMMENDATIONS

In order to meet AmeriPride's objectives for the Site, ENSR recommends additional investigation to further delineate potential impacts. Four general AOCs have been identified, based on data collected during the preliminary investigation. The results of the preliminary investigation indicate that a supplemental soil and groundwater investigation is warranted. The additional investigation is necessary in order for ENSR to provide AmeriPride estimated costs associated with remediation of the site. The principal COCs identified in the various AOCs include PCE, TCE, PAHs and RCRA metals. Based on evaluation of available data, ENSR recommends the following supplemental investigation activities:

- Conduct additional soil investigation in and around the identified AOCs in order to broadly delineate the extent of identified impacts and to confirm levels of COCs identified at those AOCs;
- Collect three soil samples from locations up-gradient of the AOCs that can be used as a benchmark for "background' concentrations of metals in the Site soils; and,
- Conduct a groundwater investigation at the Site to determine whether groundwater has been impacted by the COCs identified in the soils.

Proposed Soil Investigation Activities

ENSR recommends additional soil investigation at the site to aid in broadly defining the extent of observed impacts and evaluating whether COCs identified in a given AOC are typical of the area, or whether more substantial concentrations may be present. Twenty soil borings are proposed at the locations presented on Figure 3. Up to two soil samples will be collected from each soil boring and submitted for laboratory analysis. The laboratory analytical program will include VOCs, RCRA metals and for base, neutral and acid extractible compounds (BNA) to confirm that semivolatile organic compounds other than PAHs do not exceed RSCOs. The rationale for proposed additional sampling locations is presented as follows:

- AOC-1 – Three soil borings (SB-31, SB-32 and SB-33) will be installed in the vicinity of SB-2 to further evaluate PAH concentrations reported at this location,
- AOC-2 – Four soil borings (SB-40, SB-41, SB-42 and SB-43) will be advanced to further evaluate the extent of impacts identified in a soil sample collected from SB-13,
- AOC-3 – Three soil borings (SB-38, SB-39 and SB-44) would be advanced to further define the extent of impacts identified in the vicinity of the former 1,500 gallon waste oil tank,
- AOC-4 – Proposed soil borings SB-42, SB-44, SB-38 and SB-37 will aid in defining the northern and western extent of impacts identified in the western portion of the basement and on the main floor of the building. Proposed borings SB-45, SB-46, SB-47, SB-48,

SB-49 and SB-50 would similarly aid in defining the extent of impacts to the south and east, and

- Soil borings SB-34, SB-35 and SB-36 will be advanced in the northeastern portion of the property, at some distance from known areas of concern, in order to evaluate soil quality in this area and establish baseline or "background" concentrations for the Site.

Groundwater Investigation

Because elevated concentrations of PCE, TCE, PAHs and select metals have been identified in the soils at the Site, a groundwater investigation is needed to determine whether constituents of concern have impacted groundwater. Due to the nature of the impacts observed and the fact that some impacted soil samples were collected from depths close to the inferred bedrock interface (where saturated soils were noted at several locations), there is potential for groundwater impact at the site.

Saturated soils were encountered in several of the soil borings advanced during the preliminary phase II investigation. The depth to water was variable and ranged from less than 5-ft bgs to more than 14-ft bgs. The direction of groundwater flow is uncertain, however, the Buffalo River is located approximately one mile south of the Site, and groundwater flow is anticipated to flow toward the river.

ENSR proposes a groundwater investigation involving the completion of six of the soil borings, advanced during the supplemental soil investigation, as overburden monitoring wells (see Figure 3). Bedrock monitoring wells are not proposed at this time but may be required once overburden groundwater quality has been characterized. The overburden monitoring wells will allow for the determination of groundwater flow direction, and will aid in assessing groundwater quality. Because groundwater flow direction is uncertain, ENSR proposes to install three monitoring wells (MW-1, MW-3 and MW-6) at the start of the field program, and then following development and stabilization, determine water levels and ultimately hydraulic gradient in the shallow water bearing zone. Once the hydraulic gradient has been established we will make any necessary adjustments to the proposed locations for the three additional monitoring wells. The locations and rationale for monitoring wells is presented as follows:

- Monitoring well MW-1 will be installed to aid in determining groundwater flow direction and to allow for the evaluation of groundwater quality upgradient (presumed) of the site,
- Monitoring wells MW-2, MW-3 and MW-4 are proposed to evaluate and define potential groundwater impacts in the vicinity of AOC 2, AOC-3 and west of AOC-4,
- Monitoring wells MW-5 will be installed to evaluate groundwater quality under the building where elevated PCE, TCE, PAH and metals concentrations have been identified in subsurface soils, and

- MW-6 will be installed near the southeast corner of the building, to assist in groundwater flow direction determination and for the evaluation of groundwater quality in this vicinity.

Following installation, groundwater monitoring wells would be properly developed and sampled for VOCs, BNAs, and RCRA metals to enable a comprehensive evaluation of groundwater quality.

Upon completion of the additional investigation activities, ENSR will prepare an update to this technical memorandum that will outline the need for remedial actions at the site (if necessary) and will provide order of magnitude cost estimates for such remedial actions.

ENSR proposes to perform the additional investigation on a Time & Materials basis as a change order to, and in accordance with the terms and conditions established for, this project. We estimate the budget necessary to complete the additional investigation at the Site to be
$ 55,500 as outlined below.

Task	Hours	Labor	ODCs	Subs	Subtotal
1. Project Management	10	1,228	74		1,302
2. Field Investigation	153	14,218	3,932	28,951	47,101
3. Technical Memorandum	69	6,692	402		7,094
Project Total (3 Tasks)	**232**	**22,138**	**4,408**	**28,951**	**55,497**

We will not exceed this budget without your written authorization.

ENSR can initiate additional investigation activities at the Site within 2 to 3 weeks of authorization to proceed, depending upon subcontractor availability. Laboratory analyses will be completed on a standard 15 business-day turnaround time. Expedited laboratory analysis may be possible, but will require payment of associated surcharges for the expedited turn around time. ENSR will provide two copies of the draft technical memorandum within 2 weeks of receipt of final laboratory results.

Thank you for the opportunity to assist AmeriPride with their environmental service needs. If you have questions or comments, please feel free to call me or Joseph Campisi at (315) 432-0506 at your convenience.

Sincerely,
ENSR Corporation

John T. Imhoff

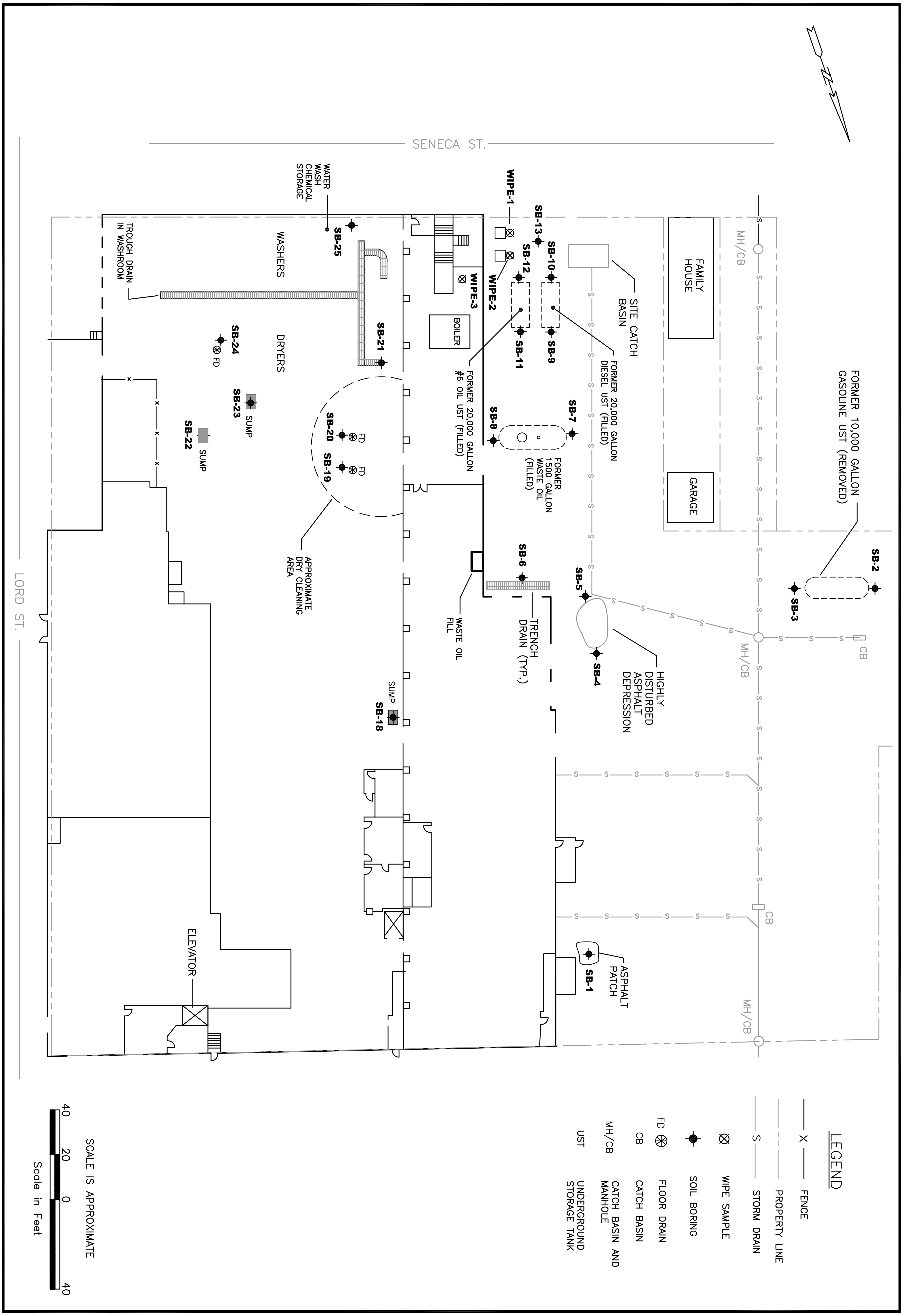
Joseph S. Campisi

John T. Imhoff	Joseph S. Campisi
Project Hydrogeologist	Project Manager

Enclosures:
Figures
Tables
Attachment A

FIGURES

J:\LANSTAND\120\Projects\10770001 AmeriPride–Buffalo\DRAWINGS\FIG.1.dwg



SHEET NUMBER:
1 OF 1

FIGURE NUMBER:
1

FLOOR PLAN
SOIL BORING LOCATIONS

AMERIPRIDE SERVICES Inc.
BUFFALO, NEW YORK

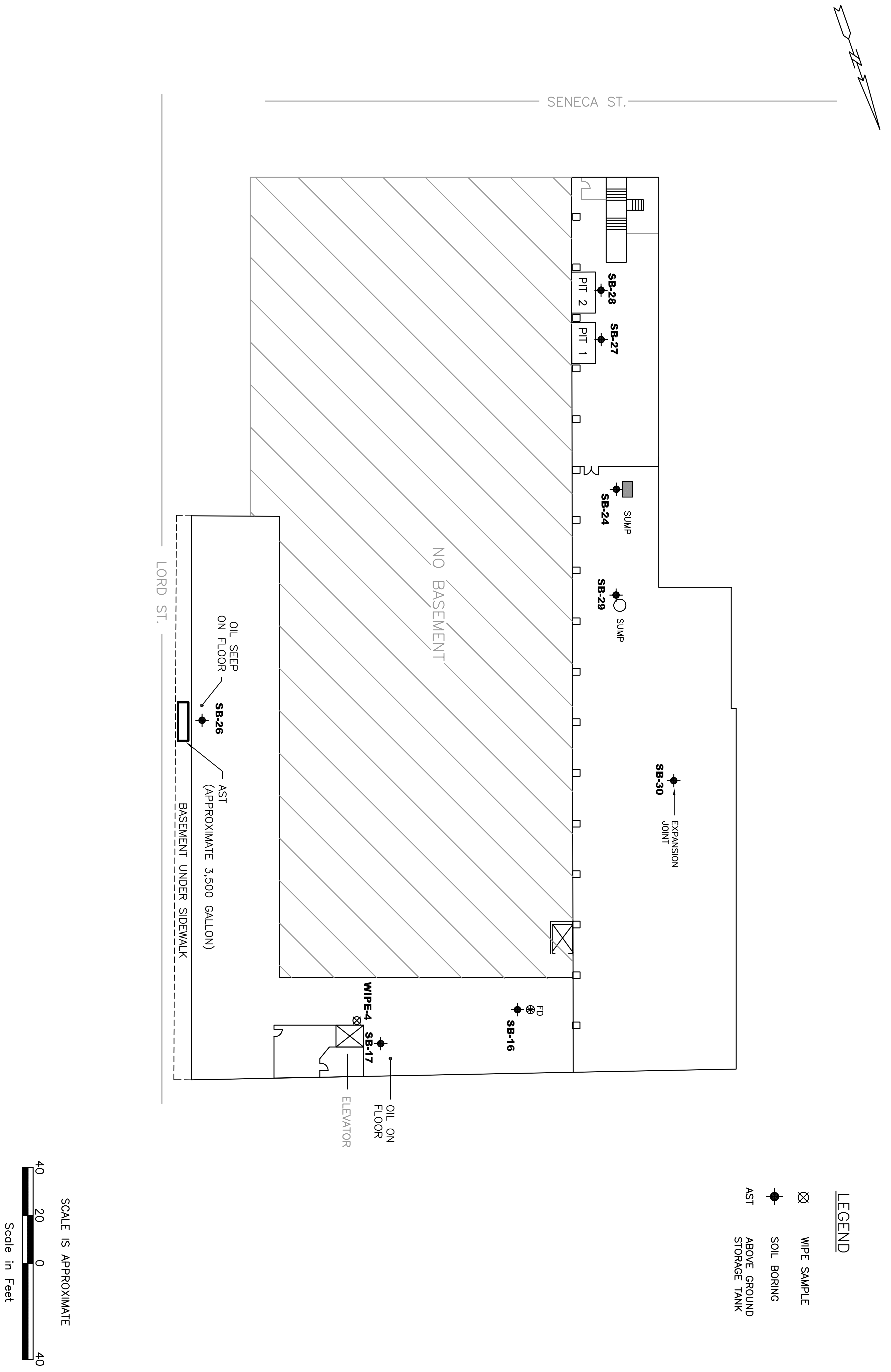
SCALE:	DATE:	PROJECT NUMBER:
AS NOTED	10/7/05	10770-002

ENSR INTERNATIONAL

6601 KIRKVILLE ROAD
E. SYRACUSE, NEW YORK 13057
PHONE: (315) 432-0506
FAX: (315) 437-0509
WEB: HTTP://WWW.ENSR.COM

DESIGNED BY:	REVISIONS			
	NO.:	DESCRIPTION:	DATE:	BY:
DRAWN BY:				
CHECKED BY:				
APPROVED BY:				

J:\LANSTAND\120\Projects\10770001 AmeriPride–Buffalo\DRAWINGS\FIG.2.dwg



BASEMENT PLAN
SOIL BORING LOCATIONS

AMERIPRIDE SERVICES Inc.
BUFFALO, NEW YORK

SCALE:	DATE:	PROJECT NUMBER:
AS NOTED	10/7/05	10770–002

FIGURE NUMBER: 2

SHEET NUMBER: 1 OF 1

ENSR INTERNATIONAL

6601 KIRKVILLE ROAD
E. SYRACUSE, NEW YORK 13057
PHONE: (315) 432–0506
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DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

REVISIONS

NO.:	DESCRIPTION:	DATE:	BY:

J:\LANSTAND\120\Projects\10770001 AmeriPride—Buffalo\DRAWINGS\FIG.3.dwg

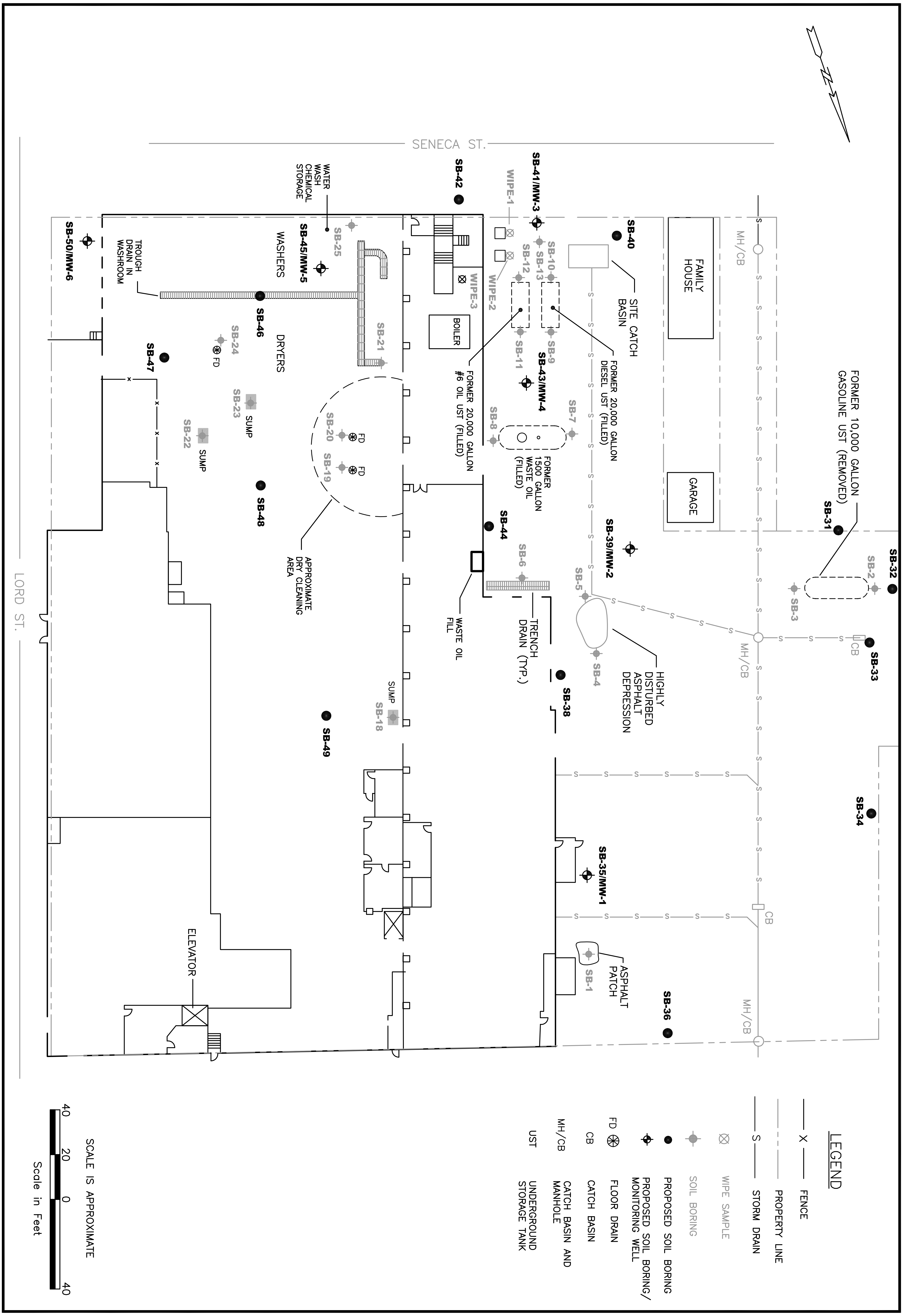

FIGURE NUMBER:
3

SHEET NUMBER:
1 OF 1

PROPOSED SOIL BORING LOCATIONS

AMERIPRIDE SERVICES Inc.
BUFFALO, NEW YORK

SCALE:	DATE:	PROJECT NUMBER:
AS NOTED	10/7/05	10770-002

ENSR INTERNATIONAL
6601 KIRKVILLE ROAD
E. SYRACUSE, NEW YORK 13057
PHONE: (315) 432-0506
FAX: (315) 437-0509
WEB: HTTP://WWW.ENSR.COM

DESIGNED BY:	REVISIONS			
	NO.:	DESCRIPTION:	DATE:	BY:
DRAWN BY:				
CHECKED BY:				
APPROVED BY:				

TABLES

TABLE 1
Sampling Rationale, Depths and Analyses Requested
AmeriPride - Buffalo

Location	Rationale for Sample Collection	Sample Interval (feet bgs)	Analyses Requested
SB-1	Patched asphalt area near north corner of building	7.5-8.5	VOCs, PAHs
SB-2	Former 10,000 gallon gasoline UST location	0.5-1.5	VOCs, PAHs
SB-3	Former 10,000 gallon gasoline UST location	17.5-18.7	VOCs, PAHs
SB-4	Highly disturbed asphalt area west of building	14-15	VOCs, PAHs
SB-5	Highly disturbed asphalt area west of building	15-16	VOCs, PAHs
SB-6	Trench drain in truck dock area on west side of building	3-4	VOCs, PAHs, RCRA Metals
SB-7	Former 1,500 gallon waste oil UST (filled with concrete)	7-8	VOCs, PAHs, RCRA Metals, PCBs
SB-8	Former 1,500 gallon waste oil UST (filled with concrete)	4-5	VOCs, PAHs, RCRA Metals, PCBs
SB-9	Former 20,000 gallon UST location (Diesel of #6 Oil)	17.5-18.4	VOCs, PAHs
SB-10	Former 20,000 gallon UST location (Diesel of #6 Oil)	17-17.5	VOCs, PAHs
SB-11	Former 20,000 gallon UST location (Diesel of #6 Oil)	18-18.8	VOCs, PAHs
SB-12	Former 20,000 gallon UST location (Diesel of #6 Oil)	14.5-15.5	VOCs, PAHs
SB-13	Site catch basin adjacent to Seneca Street	17-17.4	VOCs, PAHs, RCRA Metals, PCBs
SB-16	Floor drain in basement	0.5-2	VOC
SB-16	Floor drain in basement	4-5	PAH, RCRA Metals
SB-16	Floor drain in basement	6-7	PCBs
SB-17	Elevator oil on floor in vicinity of elevator machinery	6-7	VOC
SB-17	Elevator oil on floor in vicinity of elevator machinery	7-7.5	PAH, RCRA Metals
SB-17	Elevator oil on floor in vicinity of elevator machinery	5-6	PCBs
SB-18	Sump on main floor of facility	2.5-3.5	VOCs, PAHs, RCRA Metals
SB-19	Floor drain in reported former dry cleaning area	12-13	VOCs, PAHs, RCRA Metals
SB-20	Floor drain in reported former dry cleaning area	4-5	VOCs, PAHs, RCRA Metals
SB-21	Drain trench in washroom on main floor of facility	3.7-4.7	VOCs, PAHs, RCRA Metals
SB-22	Sump on main floor of facility	3-5	VOCs, PAHs, RCRA Metals
SB-23	Sump on main floor of facility	3-4	VOCs, PAHs, RCRA Metals
SB-24	Floor drain in dryer area	2-3	VOCs, PAHs, RCRA Metals
SB-25	Water-wash chemical storage area	5-7	VOCs, PAHs, RCRA Metals
SB-26	Oil seep in basement adjacent to identified AST location	5-6	VOCs
SB-26	Oil seep in basement adjacent to identified AST location	4.5-5	PAH, RCRA Metals
SB-27	Adjacent to Pit 1	5-6	VOCs
SB-27	Adjacent to Pit 1	4-5	PAH, RCRA Metals
SB-28	Adjacent to Pit 2	4-6	VOCs, PAHs, RCRA Metals
SB-29	Adjacent to sump in basement	0.5-2	VOCs, PAHs, RCRA Metals
SB-30	Situated in expansion joint in basement	2-3	VOCs, PAHs, RCRA Metals
Wipe-1	Pad mounted transformer	surface wipe	PCBs
Wipe-2	Pad mounted transformer	surface wipe	PCBs
Wipe-3	Electrical capacitor bank	surface wipe	PCBs
Wipe-4	Oil on floor adjacent to Elevator	surface wipe	PCBs

Notes:
VOCs - Volatile Organic Compounds
PAHs - Polycyclic Aromatic Hydrocarbons
PCBs- Polychlorinated Biphenyls
bgs - below ground surface

TABLE 2

Analytical Results - VOCs
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-1 (7.5-8.5') 8/22/2005	SB-2 (0.5-1.5') 8/22/2005	SB-3 (17.5-18.7') 8/22/2005	SB-4 (14-15') 8/23/2005	SB-5 (15-16') 8/23/2005
1,1-Dichloroethene	75-35-4	0.4	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
1,2-Dichlorobenzene	95-50-1	7.9	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
1,4-Dichlorobenzene	106-46-7	8.5	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Acetone	67-64-1	0.2	< 0.029	< 0.029	< 0.028	< 0.029	< 0.031
Carbon Disulfide	75-15-0	2.7	< 0.006	< 0.006	**0.001 J**	< 0.006	< 0.006
Carbon Tetrachloride	56-23-5	0.6	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Chlorobenzene	108-90-7	1.7	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Chloroform	67-66-3	0.3	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
cis-1,2-Dichloroethene	156-59-2	NA	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Dichlorodifluoromethane	75-71-8	NA	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Ethylbenzene	100-41-4	5.5	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Methylene chloride	75-09-2	0.1	< 0.006	< 0.006	< 0.006	< 0.006	**0.006 B**
Tetrachloroethene	127-18-4	1.4	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Toluene	108-88-3	1.5	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Total Xylenes	1330-20-7	1.2	< 0.018	< 0.017	< 0.017	< 0.017	< 0.019
trans-1,2-Dichloroethene	156-60-5	0.3	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Trichloroethene	79-01-6	0.7	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Vinyl chloride	75-01-4	0.2	< 0.012	< 0.012	< 0.011	< 0.012	< 0.012

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

Determination of Soil Cleanup Objectives and Soil Cleanup Levels

E Indicates concentration exceeds calibration limits for the instrument for that specific analysis

D indicates that Dilution

B indicates that parameter was detected in associated method blank

Table is summary of detections only - Other VOCs were not detected in samples collected during the investigation

TABLE 2

Analytical Results - VOCs
AmeriPride - Buffalo, NY

Analyte	**CAS**	**NYSDEC TAGM 4046 RSCO**	**SB-5 (Dup) (15-16') 8/23/2005**	**SB-6 (3-4') 8/25/2005**	**SB-7 (7-8') 8/25/2005**	**SB-7DL (7-8') 8/25/2005**	**SB-8 (4-5') 8/25/2005**
1,1-Dichloroethene	75-35-4	0.4	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
1,2-Dichlorobenzene	95-50-1	7.9	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
1,4-Dichlorobenzene	106-46-7	8.5	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
Acetone	67-64-1	0.2	< 0.032	< 0.029	< 0.027	< 3.5	< 0.032
Carbon Disulfide	75-15-0	2.7	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
Carbon Tetrachloride	56-23-5	0.6	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
Chlorobenzene	108-90-7	1.7	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
Chloroform	67-66-3	0.3	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
cis-1,2-Dichloroethene	156-59-2	NA	< 0.006	< 0.006	**0.11**	**1.7 D**	**0.009**
Dichlorodifluoromethane	75-71-8	NA	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
Ethylbenzene	100-41-4	5.5	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
Methylene chloride	75-09-2	0.1	< 0.006	**0.006**	**0.008**	< 0.7	**0.006**
Tetrachloroethene	127-18-4	1.4	< 0.006	< 0.006	**0.031**	**4.2 D**	**0.39 E**
Toluene	108-88-3	1.5	< 0.006	< 0.006	< 0.005	< 0.7	< 0.006
Total Xylenes	1330-20-7	1.2	< 0.019	< 0.017	< 0.016	< 2.100	< 0.019
trans-1,2-Dichloroethene	156-60-5	0.3	< 0.006	< 0.006	**0.006**	< 0.7	< 0.006
Trichloroethene	79-01-6	0.7	< 0.006	< 0.006	**0.26 E**	**9.8 D**	**0.042**
Vinyl chloride	75-01-4	0.2	< 0.013	< 0.012	< 0.011	< 1.4	< 0.013

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

Determination of Soil Cleanup Objectives and Soil Cleanup Levels

E Indicates concentration exceeds calibration limits for the instrument for that specific an

D indicates that Dilution

B indicates that parameter was detected in associated method blank

Table is summary of detections only - Other VOCs were not detected in

TABLE 2

Analytical Results - VOCs
AmeriPride - Buffalo, NY

Analyte	**CAS**	**NYSDEC TAGM 4046 RSCO**	**SB-8DL (4-5') 8/25/2005**	**SB-9 (17.5-18.4') 8/23/2005**	**SB-10 (17-17.5') 8/23/2005**	**SB-11 (18-18.8') 8/25/2005**	**SB-12 (14.5-15.5') 8/25/2005**
1,1-Dichloroethene	75-35-4	0.4	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
1,2-Dichlorobenzene	95-50-1	7.9	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
1,4-Dichlorobenzene	106-46-7	8.5	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
Acetone	67-64-1	0.2	< 0.15	< 0.03	< 0.027	< 0.029	< 0.029
Carbon Disulfide	75-15-0	2.7	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
Carbon Tetrachloride	56-23-5	0.6	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
Chlorobenzene	108-90-7	1.7	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
Chloroform	67-66-3	0.3	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
cis-1,2-Dichloroethene	156-59-2	NA	**0.019 DJ**	< 0.006	< 0.005	**0.024**	**0.034**
Dichlorodifluoromethane	75-71-8	NA	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
Ethylbenzene	100-41-4	5.5	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
Methylene chloride	75-09-2	0.1	< 0.03	**0.006 B**	**0.005 B**	**0.008**	**0.01**
Tetrachloroethene	127-18-4	1.4	**0.78 D**	< 0.006	< 0.005	**0.002** J	**0.001 J**
Toluene	108-88-3	1.5	**0.035 D**	< 0.006	< 0.005	< 0.006	< 0.006
Total Xylenes	1330-20-7	1.2	< 0.091	< 0.018	< 0.016	< 0.018	< 0.017
trans-1,2-Dichloroethene	156-60-5	0.3	< 0.03	< 0.006	< 0.005	< 0.006	< 0.006
Trichloroethene	79-01-6	0.7	**0.14 D**	< 0.006	< 0.005	**0.056**	**0.002 J**
Vinyl chloride	75-01-4	0.2	< 0.061	< 0.012	< 0.011	< 0.012	< 0.011

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

Determination of Soil Cleanup Objectives and Soil Cleanup Levels

E Indicates concentration exceeds calibration limits for the instrument for that specific an

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Table is summary of detections only - Other VOCs were not detected in

TABLE 2
Analytical Results - VOCs
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-13 (17-17.4') 8/25/2005	SB-13DL (17-17.4') 8/25/2005	SB-16 (0.5-2') 8/24/2005	SB-17 (6-7') 8/24/2005	SB-18 (2.5-3.5') 8/26/2005
1,1-Dichloroethene	75-35-4	0.4	**0.003 J**	< 7.6	< 0.006	< 0.005	< 0.006
1,2-Dichlorobenzene	95-50-1	7.9	< 0.006	< 7.6	< 0.006	< 0.005	< 0.006
1,4-Dichlorobenzene	106-46-7	8.5	< 0.006	< 7.6	< 0.006	< 0.005	< 0.006
Acetone	67-64-1	0.2	< 0.03	< 38	< 0.032	< 0.027	< 0.03
Carbon Disulfide	75-15-0	2.7	< 0.006	< 7.6	< 0.006	< 0.005	< 0.006
Carbon Tetrachloride	56-23-5	0.6	< 0.006	< 7.6	< 0.006	< 0.005	< 0.006
Chlorobenzene	108-90-7	1.7	< 0.006	< 7.6	< 0.006	< 0.005	< 0.006
Chloroform	67-66-3	0.3	< 0.006	< 7.6	< 0.006	< 0.005	< 0.006
cis-1,2-Dichloroethene	156-59-2	NA	**1.6 E**	< 7.6	< 0.006	< 0.005	< 0.006
Dichlorodifluoromethane	75-71-8	NA	< 0.006	< 7.6	< 0.006	< 0.005	< 0.006
Ethylbenzene	100-41-4	5.5	**0.004 J**	< 7.6	< 0.006	< 0.005	< 0.006
Methylene chloride	75-09-2	0.1	**0.009**	< 7.6	**0.007**	< 0.005	**0.006**
Tetrachloroethene	127-18-4	1.4	**6.8 E**	**98 D**	**0.002 J**	**0.001 J**	**0.002 J**
Toluene	108-88-3	1.5	< 0.006	< 7.6	< 0.006	< 0.005	< 0.006
Total Xylenes	1330-20-7	1.2	**0.006 J**	< 23	< 0.019	< 0.016	< 0.018
trans-1,2-Dichloroethene	156-60-5	0.3	**0.007**	< 7.6	< 0.006	< 0.005	< 0.006
Trichloroethene	79-01-6	0.7	**3.3 E**	**3 DJ**	< 0.006	< 0.005	< 0.006
Vinyl chloride	75-01-4	0.2	**0.021**	< 15	< 0.013	< 0.011	< 0.012

Notes:

All results reported in miligrams per kilogram (ppm)

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Determination of Soil Cleanup Objectives and Soil Cleanup Levels

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Table is summary of detections only - Other VOCs were not detected in

TABLE 2
Analytical Results - VOCs
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-19 (12-13') 8/26/2005	SB-20 (4-5') 8/26/2005	SB-21 (3.7-4.7') 8/26/2005	SB-21DL (3.7-4.7') 8/26/2005	SB-21Dup (3.7-4.7') 8/26/2005
1,1-Dichloroethene	75-35-4	0.4	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
1,2-Dichlorobenzene	95-50-1	7.9	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
1,4-Dichlorobenzene	106-46-7	8.5	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
Acetone	67-64-1	0.2	< 0.028	< 0.03	**0.027 J**	< 3.6	**0.031 J**
Carbon Disulfide	75-15-0	2.7	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
Carbon Tetrachloride	56-23-5	0.6	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
Chlorobenzene	108-90-7	1.7	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
Chloroform	67-66-3	0.3	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
cis-1,2-Dichloroethene	156-59-2	NA	< 0.006	**0.001 J**	**0.002 J**	< 0.71	**0.002 J**
Dichlorodifluoromethane	75-71-8	NA	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
Ethylbenzene	100-41-4	5.5	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
Methylene chloride	75-09-2	0.1	**0.008**	**0.006**	< 0.006	< 0.71	**0.006 J**
Tetrachloroethene	127-18-4	1.4	< 0.006	**0.18**	**1 E**	**9.4 D**	**0.86 E**
Toluene	108-88-3	1.5	**0.002 J**	< 0.006	**0.002 J**	< 0.71	**0.002 J**
Total Xylenes	1330-20-7	1.2	< 0.017	< 0.018	< 0.017	< 2.1	< 0.02
trans-1,2-Dichloroethene	156-60-5	0.3	< 0.006	< 0.006	< 0.006	< 0.71	< 0.007
Trichloroethene	79-01-6	0.7	< 0.006	**0.004 J**	**0.008**	**0.13 DJ**	**0.007**
Vinyl chloride	75-01-4	0.2	< 0.011	< 0.012	**0.005 J**	< 1.4	**0.002 J**

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

Determination of Soil Cleanup Objectives and Soil Cleanup Levels

E Indicates concentration exceeds calibration limits for the instrument for that specific an

D indicates that Dilution

B indicates that parameter was detected in associated method blank

Table is summary of detections only - Other VOCs were not detected in

TABLE 2
Analytical Results - VOCs
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-21DLDup (3.7-4.7') 8/26/2005	SB-22 (3-5') 8/29/2005	SB-23 (3-4') 8/26/2005	SB-24 (2-3') 8/29/2005	SB-24DL (2-3') 8/29/2005
1,1-Dichloroethene	75-35-4	0.4	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
1,2-Dichlorobenzene	95-50-1	7.9	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
1,4-Dichlorobenzene	106-46-7	8.5	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
Acetone	67-64-1	0.2	< 4.3	< 0.028	< 0.035	< 0.028	< 3.5
Carbon Disulfide	75-15-0	2.7	< 0.86	< 0.006	**0.002 J**	< 0.006	< 0.71
Carbon Tetrachloride	56-23-5	0.6	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
Chlorobenzene	108-90-7	1.7	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
Chloroform	67-66-3	0.3	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
cis-1,2-Dichloroethene	156-59-2	NA	< 0.86	< 0.006	**0.002 J**	< 0.006	< 0.71
Dichlorodifluoromethane	75-71-8	NA	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
Ethylbenzene	100-41-4	5.5	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
Methylene chloride	75-09-2	0.1	< 0.86	**0.009**	**0.006 J**	**0.01**	< 0.71
Tetrachloroethene	127-18-4	1.4	**11 D**	**0.004 J**	**0.094**	**0.54 E**	**5.4 D**
Toluene	108-88-3	1.5	< 0.86	< 0.006	**0.002 J**	< 0.006	< 0.71
Total Xylenes	1330-20-7	1.2	< 2.6	< 0.017	< 0.021	< 0.017	< 2.1
trans-1,2-Dichloroethene	156-60-5	0.3	< 0.86	< 0.006	< 0.007	< 0.006	< 0.71
Trichloroethene	79-01-6	0.7	**0.11 DJ**	< 0.006	**0.002 J**	< 0.006	< 0.71
Vinyl chloride	75-01-4	0.2	< 1.7	< 0.011	< 0.014	< 0.011	< 1.4

Notes:

All results reported in miligrams per kilogram (ppm)

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Shading indicates compoud was detected above RSCO value.

Determination of Soil Cleanup Objectives and Soil Cleanup Levels

E Indicates concentration exceeds calibration limits for the instrument for that specific an

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Table is summary of detections only - Other VOCs were not detected in

TABLE 2

Analytical Results - VOCs
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-25 (5-7') 8/29/2005	SB-26 (5-6') 8/24/2005	SB-27 (5-6') 8/24/2005	SB-28 (4-6') 8/24/2005	SB-28DL (4-6') 8/24/2005
1,1-Dichloroethene	75-35-4	0.4	< 0.006	< 0.005	< 0.006	< 3.2	< 8
1,2-Dichlorobenzene	95-50-1	7.9	< 0.006	< 0.005	< 0.006	< 3.2	< 8
1,4-Dichlorobenzene	106-46-7	8.5	< 0.006	< 0.005	< 0.006	< 3.2	< 8
Acetone	67-64-1	0.2	< 0.031	< 0.027	< 0.032	< 16	< 40
Carbon Disulfide	75-15-0	2.7	< 0.006	< 0.005	< 0.006	< 3.2	< 8
Carbon Tetrachloride	56-23-5	0.6	< 0.006	< 0.005	< 0.006	< 3.2	< 8
Chlorobenzene	108-90-7	1.7	< 0.006	< 0.005	< 0.006	< 3.2	< 8
Chloroform	67-66-3	0.3	**0.063**	< 0.005	< 0.006	< 3.2	< 8
cis-1,2-Dichloroethene	156-59-2	NA	< 0.006	**0.160**	**0.24**	**2.5 J**	**2.3 DJ**
Dichlorodifluoromethane	75-71-8	NA	< 0.006	< 0.005	**0.003 J**	< 3.2	< 8
Ethylbenzene	100-41-4	5.5	< 0.006	< 0.005	< 0.006	< 3.2	< 8
Methylene chloride	75-09-2	0.1	**0.009**	< 0.005	< 0.006	< 3.2	< 8
Tetrachloroethene	127-18-4	1.4	**0.001 J**	< 0.005	**0.068**	**89**	**92 D**
Toluene	108-88-3	1.5	< 0.006	< 0.005	< 0.006	< 3.2	< 8
Total Xylenes	1330-20-7	1.2	< 0.018	< 0.016	< 0.019	< 9.6	< 24
trans-1,2-Dichloroethene	156-60-5	0.3	< 0.006	< 0.005	**0.009**	< 3.2	< 8
Trichloroethene	79-01-6	0.7	< 0.006	< 0.005	**0.076**	**4.2**	**4.1 DJ**
Vinyl chloride	75-01-4	0.2	< 0.012	**0.013**	**0.081**	< 6.4	< 16

Notes:

All results reported in miligrams per kilogram (ppm)

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Determination of Soil Cleanup Objectives and Soil Cleanup Levels

E Indicates concentration exceeds calibration limits for the instrument for that specific an

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Table is summary of detections only - Other VOCs were not detected in

TABLE 2

Analytical Results - VOCs
AmeriPride - Buffalo, NY

Analyte	**CAS**	**NYSDEC TAGM 4046 RSCO**	**SB-29 (0.5-2') 8/24/2005**	**SB-30 (2-3') 8/29/2005**
1,1-Dichloroethene	75-35-4	0.4	< 0.006	< 0.007
1,2-Dichlorobenzene	95-50-1	7.9	**0.013**	< 0.007
1,4-Dichlorobenzene	106-46-7	8.5	**0.006**	< 0.007
Acetone	67-64-1	0.2	< 0.03	< 0.033
Carbon Disulfide	75-15-0	2.7	< 0.006	< 0.007
Carbon Tetrachloride	56-23-5	0.6	**0.027**	< 0.007
Chlorobenzene	108-90-7	1.7	**0.026**	< 0.007
Chloroform	67-66-3	0.3	**0.015**	< 0.007
cis-1,2-Dichloroethene	156-59-2	NA	**0.018**	< 0.007
Dichlorodifluoromethane	75-71-8	NA	< 0.006	< 0.007
Ethylbenzene	100-41-4	5.5	< 0.006	< 0.007
Methylene chloride	75-09-2	0.1	**0.006**	**0.014**
Tetrachloroethene	127-18-4	1.4	**0.120**	< 0.007
Toluene	108-88-3	1.5	**0.002 J**	< 0.007
Total Xylenes	1330-20-7	1.2	< 0.018	< 0.02
trans-1,2-Dichloroethene	156-60-5	0.3	< 0.006	< 0.007
Trichloroethene	79-01-6	0.7	**0.012**	< 0.007
Vinyl chloride	75-01-4	0.2	< 0.012	< 0.013

Notes:

All results reported in miligrams per kilogram (ppm)

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Determination of Soil Cleanup Objectives and Soil Cleanup Levels

E Indicates concentration exceeds calibration limits for the instrument for that specific an

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Table is summary of detections only - Other VOCs were not detected in

TABLE 3
Analytical Results - PAHs
AmeriPride - Buffalo, NY

Analyte	**CAS**	**NYSDEC TAGM 4046 RSCO**	**SB-1 (7.5-8.5) 8/22/2005**	**SB-2 (0.5-1.5) 8/22/2005**	**SB-3 17.5-18.7 8/22/2005**	**SB-4 (14-15') 8/23/2005**	**SB-5 (15-16') 8/23/2005**	**SB-6 (3-4') 8/25/2005**	**SB-7 (7-8') 8/25/2005**
2-Methylnaphthalene	91-57-6	36.4	< 0.38	< 3.6	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Acenaphthene	83-32-9	50	< 0.38	< 3.6	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Acenaphthylene	208-96-8	41	< 0.38	< 3.6	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Anthracene	120-12-7	50	< 0.38	**0.36** J	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Benzo(a)anthracene	56-55-3	0.224	< 0.38	**1.3** J	**0.023** J	**0.12** J	**0.032** J	< 0.39	**0.1** J
Benzo(a)pyrene	50-32-8	0.061	< 0.38	**1.5** J	< 0.36	**0.14** J	< 0.42	< 0.39	< 1.8
Benzo(b)fluoranthene	205-99-2	1.1	< 0.38	**1.9** J	**0.019** J	**0.21** J	< 0.42	< 0.39	< 1.8
Benzo(ghi)perylene	191-24-2	50	< 0.38	**1.4** J	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Benzo(k)fluoranthene	207-08-9	1.1	< 0.38	**0.35** J	< 0.36	**0.22** J	< 0.42	< 0.39	< 1.8
Chrysene	218-01-9	0.4	< 0.38	**1.5** J	**0.024** J	**0.16** J	< 0.42	< 0.39	< 1.8
Dibenzo(a,h)anthracene	53-70-3	0.014	< 0.38	< 3.6	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Fluoranthene	206-44-0	50	< 0.38	**2.8** J	**0.039** J	**0.25** J	**0.049** J	< 0.39	**0.14** J
Fluorene	86-73-7	50	< 0.38	< 3.6	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Indeno(1,2,3-cd)pyrene	193-39-5	3.2	< 0.38	< 3.6	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Naphthalene	91-20-3	13	< 0.38	< 3.6	< 0.36	< 2.1	< 0.42	< 0.39	< 1.8
Phenanthrene	85-01-8	50	< 0.38	**1.4** J	**0.03** J	**0.14** J	**0.042** J	< 0.39	< 1.8
Pyrene	129-00-0	50	< 0.38	**2.4** J	**0.043** J	**0.23** J	**0.046** J	< 0.39	**0.13** J

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

RSCO: Recommended Soil Cleanup Values from NYSDEC TAGM #4046: Determination of Soil Cleanup Objectives and Soil Cleanup Levels

E Indicates concentration exceeds calibration limits for the instrument for that specific analysis

D indicates that Dilution

B indicates that parameter was detected in associated method blank

TABLE 3
Analytical Results - PAHs
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-8 (4-5') 8/25/2005	SB-9 (17.5-18.4') 8/23/2005	SB-10 (17-17.5') 8/23/2005	SB-11 (18-18.8') 8/25/2005	SB-12 (14.5-15.5') 8/25/2005	SB-120 (14.5-15.5') 8/25/2005	SB-13 (17-17.4') 8/25/2005
2-Methylnaphthalene	91-57-6	36.4	< 2.2	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Acenaphthene	83-32-9	50	< 2.2	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Acenaphthylene	208-96-8	41	< 2.2	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Anthracene	120-12-7	50	**0.13** J	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Benzo(a)anthracene	56-55-3	0.224	**0.33** J	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Benzo(a)pyrene	50-32-8	0.061	**0.24** J	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Benzo(b)fluoranthene	205-99-2	1.1	**0.35** J	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Benzo(ghi)perylene	191-24-2	50	**0.16** J	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Benzo(k)fluoranthene	207-08-9	1.1	< 2.2	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Chrysene	218-01-9	0.4	**0.35** J	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Dibenzo(a,h)anthracene	53-70-3	0.014	< 2.2	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Fluoranthene	206-44-0	50	**0.73** J	**0.023** J	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Fluorene	86-73-7	50	< 2.2	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Indeno(1,2,3-cd)pyrene	193-39-5	3.2	**0.15** J	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Naphthalene	91-20-3	13	< 2.2	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Phenanthrene	85-01-8	50	**0.67** J	< 0.38	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41
Pyrene	129-00-0	50	**0.6** J	**0.023** J	< 0.36	< 0.36	< 0.39	< 0.37	< 0.41

Notes:

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RSCO: Recommended Soil Cleanup Values from NYSDEC TAG

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TABLE 3
Analytical Results - PAHs
AmeriPride - Buffalo, NY

Analyte	**CAS**	**NYSDEC TAGM 4046 RSCO**	**SB-16 (4-5') 8/24/2005**	**SB-17 (7-7.5') 8/24/2005**	**SB-18 (2.5-3.5') 8/26/2005**	**SB-19 (12-13') 8/26/2005**	**SB-20 (4-5') 8/26/2005**	**SB-21 (3.7-4.7') 8/26/2005**	**SB-22 (3-5') 8/29/2005**
2-Methylnaphthalene	91-57-6	36.4	< 0.36	< 0.37	< 2	< 0.38	< 2.1	< 1.9	**0.43**
Acenaphthene	83-32-9	50	< 0.36	< 0.37	< 2	< 0.38	< 2.1	< 1.9	**0.75**
Acenaphthylene	208-96-8	41	< 0.36	< 0.37	< 2	< 0.38	< 2.1	< 1.9	**0.39**
Anthracene	120-12-7	50	< 0.36	< 0.37	**0.19** J	< 0.38	< 2.1	< 1.9	**1.5**
Benzo(a)anthracene	56-55-3	0.224	< 0.36	< 0.37	**0.53** J	< 0.38	**0.38** J	**0.24** J	**3.6**
Benzo(a)pyrene	50-32-8	0.061	< 0.36	< 0.37	**0.48** J	< 0.38	**0.31** J	**0.18** J	**3.4**
Benzo(b)fluoranthene	205-99-2	1.1	< 0.36	< 0.37	**0.81** J	< 0.38	**0.51** J	**0.21** J	**4.2**
Benzo(ghi)perylene	191-24-2	50	< 0.36	< 0.37	**0.34** J	< 0.38	**0.26** J	**0.12** J	**1.5**
Benzo(k)fluoranthene	207-08-9	1.1	< 0.36	< 0.37	**0.87** J	< 0.38	**0.55** J	< 1.9	**1**
Chrysene	218-01-9	0.4	< 0.36	< 0.37	**0.51** J	< 0.38	**0.37** J	**0.2** J	**3.5**
Dibenzo(a,h)anthracene	53-70-3	0.014	< 0.36	< 0.37	< 2	< 0.38	< 2.1	< 1.9	**0.52**
Fluoranthene	206-44-0	50	< 0.36	< 0.37	**1.1** J	< 0.38	**0.7** J	**0.35** J	**8.5** E
Fluorene	86-73-7	50	< 0.36	< 0.37	< 2	< 0.38	< 2.1	< 1.9	**0.96**
Indeno(1,2,3-cd)pyrene	193-39-5	3.2	< 0.36	< 0.37	**0.28** J	< 0.38	**0.2** J	< 1.9	**1.5**
Naphthalene	91-20-3	13	< 0.36	< 0.37	< 2	< 0.38	< 2.1	< 1.9	**0.88**
Phenanthrene	85-01-8	50	< 0.36	< 0.37	**0.89** J	< 0.38	**0.38** J	**0.3** J	**7.1** E
Pyrene	129-00-0	50	< 0.36	< 0.37	**1.1** J	< 0.38	**0.57** J	**0.39** J	**6.9** E

Notes:

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RSCO: Recommended Soil Cleanup Values from NYSDEC TAG

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TABLE 3
Analytical Results - PAHs
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-22DL (3-5') 8/29/2005	SB-23 (3-4') 8/26/2005	SB-24 (2-3') 8/29/2005	SB-24DL (2-3') 8/29/2005	SB-25 (5-7') 8/29/2005	SB-250 (5-7') 8/29/2005	SB-26 (4.5-5') 8/24/2005
2-Methylnaphthalene	91-57-6	36.4	**0.39** DJ	< 2.1	**0.28** J	**0.34** DJ	< 0.42	< 0.41	< 0.36
Acenaphthene	83-32-9	50	**0.69** DJ	< 2.1	**0.19** J	**0.24** DJ	< 0.42	< 0.41	< 0.36
Acenaphthylene	208-96-8	41	**0.32** DJ	< 2.1	**0.3** J	**0.4** DJ	< 0.42	< 0.41	< 0.36
Anthracene	120-12-7	50	**1.5** D	**0.13** J	**1.6**	**2** D	< 0.42	< 0.41	< 0.36
Benzo(a)anthracene	56-55-3	0.224	**3.3** D	**0.54** J	**7.7** E	**9.5** D	**0.042** J	**0.061** J	< 0.36
Benzo(a)pyrene	50-32-8	0.061	**3.2** D	**0.41** J	**6**	**7.6** D	**0.038** J	**0.064** J	< 0.36
Benzo(b)fluoranthene	205-99-2	1.1	**3.7** D	**0.47** J	**10** E	**9.4** D	**0.045** J	**0.1** J	< 0.36
Benzo(ghi)perylene	191-24-2	50	**1.6** D	**0.27** J	**2.5**	**5.2** D	**0.022** J	**0.061** J	< 0.36
Benzo(k)fluoranthene	207-08-9	1.1	**1.4** DJ	**0.22** J	**11** E	**3.7** D	< 0.42	**0.11** J	< 0.36
Chrysene	218-01-9	0.4	**3.4** D	**0.51** J	**7.2** E	**9** D	**0.032** J	**0.068** J	< 0.36
Dibenzo(a,h)anthracene	53-70-3	0.014	**0.5** DJ	< 2.1	**1.2**	**1.6** DJ	< 0.42	< 0.41	< 0.36
Fluoranthene	206-44-0	50	**7.8** D	**0.96** J	**17** E	**21** D	**0.059** J	**0.12** J	< 0.36
Fluorene	86-73-7	50	**0.9** DJ	< 2.1	**0.27** J	**0.33** DJ	< 0.42	< 0.41	< 0.36
Indeno(1,2,3-cd)pyrene	193-39-5	3.2	**1.5** D	**0.2** J	**2.4**	**4.4** D	< 0.42	**0.038** J	< 0.36
Naphthalene	91-20-3	13	**0.84** DJ	< 2.1	**0.18** J	**0.24** DJ	< 0.42	< 0.41	< 0.36
Phenanthrene	85-01-8	50	**6.7** D	**0.41** J	**14** E	**18** D	**0.04** J	**0.085** J	< 0.36
Pyrene	129-00-0	50	**6.5** D	**0.94** J	**13** E	**16** D	**0.052** J	**0.087** J	< 0.36

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

RSCO: Recommended Soil Cleanup Values from NYSDEC TAG

E Indicates concentration exceeds calibration limits for the instru

D indicates that Dilution

B indicates that parameter was detected in associated method b

TABLE 3
Analytical Results - PAHs
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-27 (4-5') 8/24/2005	SB-28 (4-6') 8/24/2005	SB-29 (0.5-2') 8/24/2005	SB-30 (2-3') 8/29/2005
2-Methylnaphthalene	91-57-6	36.4	< 0.42	< 0.34	< 0.39	< 0.45
Acenaphthene	83-32-9	50	< 0.42	< 0.34	< 0.39	< 0.45
Acenaphthylene	208-96-8	41	< 0.42	< 0.34	< 0.39	< 0.45
Anthracene	120-12-7	50	< 0.42	< 0.34	< 0.39	< 0.45
Benzo(a)anthracene	56-55-3	0.224	< 0.42	< 0.34	< 0.39	< 0.45
Benzo(a)pyrene	50-32-8	0.061	< 0.42	< 0.34	< 0.39	< 0.45
Benzo(b)fluoranthene	205-99-2	1.1	< 0.42	< 0.34	< 0.39	< 0.45
Benzo(ghi)perylene	191-24-2	50	< 0.42	< 0.34	< 0.39	< 0.45
Benzo(k)fluoranthene	207-08-9	1.1	< 0.42	< 0.34	< 0.39	< 0.45
Chrysene	218-01-9	0.4	< 0.42	< 0.34	< 0.39	< 0.45
Dibenzo(a,h)anthracene	53-70-3	0.014	< 0.42	< 0.34	< 0.39	< 0.45
Fluoranthene	206-44-0	50	< 0.42	< 0.34	< 0.39	< 0.45
Fluorene	86-73-7	50	< 0.42	< 0.34	< 0.39	< 0.45
Indeno(1,2,3-cd)pyrene	193-39-5	3.2	< 0.42	< 0.34	< 0.39	< 0.45
Naphthalene	91-20-3	13	< 0.42	**0.027** J	< 0.39	< 0.45
Phenanthrene	85-01-8	50	< 0.42	< 0.34	< 0.39	< 0.45
Pyrene	129-00-0	50	< 0.42	< 0.34	< 0.39	< 0.45

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

RSCO: Recommended Soil Cleanup Values from NYSDEC TAG

E Indicates concentration exceeds calibration limits for the instru

D indicates that Dilution

B indicates that parameter was detected in associated method b

TABLE 4
Analytical Results - Metals
AmeriPride - Buffalo, NY

Analyte	**CAS**	**NYSDEC TAGM 4046 RSCO**	**SB-6 (3-4') 8/25/2005**	**SB-7 (7-8') 8/25/2005**	**SB-8 (4-5') 8/25/2005**	**SB-13 (17-17.4') 8/25/2005**	**SB-16 (4-5') 8/24/2005**	**SB-17 (7-7.5') 8/24/2005**	**SB-18 (2.5-3.5') 8/26/2005**
Arsenic - Total	T7440-38-2	7.5	**7.8**	**5.6**	**6.7**	**7.2**	< 2.2	< 2.2	**15.1**
Barium - Total	T7440-39-3	300	**114** E	**27.9** E	**98.2** E	**48.1 E**	**35.3**	**19.6**	**114** EN*
Cadmium - Total	T7440-43-9	1	**0.68**	**0.55**	**0.5**	**0.53**	< 0.22	< 0.22	**0.85**
Chromium - Total	T7440-47-3	10	**20.4**	**8.1**	**9.4**	**14.2**	**5.8**	**3.6**	**16.3**
Lead - Total	T7439-92-1	SB	**10.7**	**13.2**	**124**	**12**	**5.9**	**3.1**	**53.3**
Selenium - Total	T7782-49-2	2	< 4.7	< 4.6	< 5.3	< 5.1	< 4.4	< 4.4	< 4.3
Silver - Total	T7440-22-4	SB	< 0.59	< 0.58	< 0.67	< 0.63	< 0.55	< 0.55	< 0.53
Mercury - Total	T7439-97-6	0.1	< 0.019	**0.02**	**0.671**	< 0.021	**0.05**	< 0.018	**0.445**

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

RSCO: Recommended Soil Cleanup Values from NYSDEC TAGM #4046: Determination of Soil Cleanup Objectives and Soil Cleanup Levels

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

D Indicates an sample was diluted.

N indicates that spike sample recovery not within quality control limits

* indicates that spike or duplicate analysis not within quality control limits

E Indicates concentration exceeds calibration limits for the instrument for that specific analysis

TABLE 4
Analytical Results - Metals
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-19 (12-13') 8/26/2005	SB-20 (4-5') 8/26/2005	SB-21 (3.7-4.7') 8/26/2005	SB-22 (3-5') 8/29/2005	SB-23 (3-4') 8/26/2005	SB-24 (2-3') 8/29/2005
Arsenic - Total	T7440-38-2	7.5	**3.3**	**8.5**	**12.5**	**13**	**5.5**	**4.7**
Barium - Total	T7440-39-3	300	**105** EN*	**133** EN*	**245** EN*	**186**	**96.9** EN*	**111**
Cadmium - Total	T7440-43-9	1	**0.51**	**0.92**	**0.53**	< 0.22	**2.6**	< 0.23
Chromium - Total	T7440-47-3	10	**15.6**	**21.2**	**8.5**	**10.4**	**99.2**	**15.8**
Lead - Total	T7439-92-1	SB	**12.2**	**42.4**	**90**	**422** N*	**97.3**	**15.2** N*
Selenium - Total	T7782-49-2	2	< 4.4	< 5.3	< 4.6	< 4.5	< 5.4	< 4.6
Silver - Total	T7440-22-4	SB	< 0.56	< 0.67	< 0.58	< 0.56	**2.7**	< 0.58
Mercury - Total	T7439-97-6	0.1	< 0.02	**0.794**	**0.201**	**0.836** N	**0.794**	**0.033** N

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

RSCO: Recommended Soil Cleanup Values from NYSDEC TAGM #4

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

D Indicates an sample was diluted.

N indicates that spike sample recovery not within quality control limits

* indicates that spike or duplicate analysis not within quality control lim

E Indicates concentration exceeds calibration limits for the instrument

TABLE 4
Analytical Results - Metals
AmeriPride - Buffalo, NY

Analyte	CAS	NYSDEC TAGM 4046 RSCO	SB-25 (5-7') 8/29/2005	SB-26 (4.5-5') 8/24/2005	SB-27 (4-5') 8/24/2005	SB-28 (4-6') 8/24/2005	SB-29 (0.5-2') 8/24/2005	SB-30 (2-3') 8/29/2005
Arsenic - Total	T7440-38-2	7.5	**5.8**	< 2.1	**7.8**	**2.3**	**2.6**	< 2.6
Barium - Total	T7440-39-3	300	**119**	**30.8**	**100**	**76.1**	**38**	**94.2**
Cadmium - Total	T7440-43-9	1	< 0.26	< 0.21	< 0.27	< 0.2	< 0.2	< 0.26
Chromium - Total	T7440-47-3	10	**11**	**3.4**	**21.6**	**15.3**	**11.7**	**13.8**
Lead - Total	T7439-92-1	SB	**110** N*	**3.6**	**10.6**	**10.8**	**12.5**	**14** N*
Selenium - Total	T7782-49-2	2	< 5.2	< 4.3	< 5.3	< 4.1	< 3.9	< 5.1
Silver - Total	T7440-22-4	SB	< 0.65	< 0.54	< 0.67	< 0.51	< 0.49	< 0.64
Mercury - Total	T7439-97-6	0.1	**0.273** N	< 0.019	< 0.022	< 0.018	< 0.019	**0.086** N

Notes:

All results reported in miligrams per kilogram (ppm)

J Indicates an estimated value.

RSCO: Recommended Soil Cleanup Values from NYSDEC TAGM #4

Bold indicates compound was detected.

Shading indicates compoud was detected above RSCO value.

D Indicates an sample was diluted.

N indicates that spike sample recovery not within quality control limits

* indicates that spike or duplicate analysis not within quality control lim

E Indicates concentration exceeds calibration limits for the instrument

L:\Denise Sero\Tabulated Analytical Results Tables 2 through 6.xls

Table 5
Analytical Results - Polychlorinated Biphenyls - Soil Samples
AmeriPride - Buffalo, NY

Analyte	**CAS**	**NYSDEC TAGM 4046 RSCO**	**SB-7(7-8)** **8/25/2005**	**SB-8(4-5)** **8/25/2005**	**SB-16(6-7)** **8/24/2005**	**SB-17(5-5)** **8/24/2005**
Aroclor 1016	12674-11-2	10.0*	< 0.019	< 0.022	< 0.018	< 0.018
Aroclor 1221	11104-28-2	10.0*	< 0.019	< 0.022	< 0.018	< 0.018
Aroclor 1232	11141-16-5	10.0*	< 0.019	< 0.022	< 0.018	< 0.018
Aroclor 1242	53469-21-9	10.0*	< 0.019	< 0.022	< 0.018	< 0.018
Aroclor 1248	12672-29-6	10.0*	< 0.019	**0.022**	< 0.018	< 0.018
Aroclor 1254	11097-69-1	10.0*	**0.041**	**0.016 J**	< 0.018	< 0.018
Aroclor 1260	11096-82-5	10.0*	< 0.019	< 0.022	< 0.018	< 0.018

Notes:

Concentrations reported in mg/kg (ppm)

Bold indicates compound was detected.

* TAGM Standard is 1 ppm total PCBs in surface soils and 10 ppm total PCBs for subsurface soils.

TABLE 6
Analytical Results - Polychlorinated Biphenyls - Wipe Samples
AmeriPride - Buffalo, NY

Analyte	CAS	WIPE 1 8/22/2005	WIPE 2 8/22/2005	WIPE 3 8/26/2005	WIPE 4 8/26/2005
Aroclor 1016	12674-11-2	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor 1221	11104-28-2	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor 1232	11141-16-5	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor 1242	53469-21-9	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor 1248	12672-29-6	< 0.5	< 0.5	< 0.5	**2.2**
Aroclor 1254	11097-69-1	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor 1260	11096-82-5	< 0.5	< 0.5	< 0.5	**1.9**

Notes:

Concentrations reported in ug/100 cm^2

Bold indicates compound was detected.

TSCA standard for PCBs on solid surfaces is 10 ug/100cm^2

TABLE 7
Sampling and Analytical Program for Supplemental Phase II Investigation Activities
AmeriPride - Buffalo

Sample Location	Number of Samples	Proposed Analyses
Soil Borings		
SB-31	2	BNA
SB-32	2	BNA
SB-33	2	BNA
SB-34	1	VOCs, BNA, RCRA Metals
SB-35	1	VOCs, BNA, RCRA Metals
SB-36	1	VOCs, BNA, RCRA Metals
SB-37	1	VOCs, BNA, RCRA Metals
SB-38	1	VOCs, BNA, RCRA Metals
SB-39	2	VOCs, BNA, RCRA Metals
SB-40	2	VOCs, BNA, RCRA Metals
SB-41	2	VOCs, BNA, RCRA Metals
SB-42	2	VOCs, BNA, RCRA Metals
SB-43	2	VOCs, BNA, RCRA Metals
SB-44	2	VOCs, BNA, RCRA Metals
SB-45	2	VOCs, BNA, RCRA Metals
SB-46	2	VOCs, BNA, RCRA Metals
SB-47	2	VOCs, BNA, RCRA Metals
SB-48	2	VOCs, BNA, RCRA Metals
SB-49	2	VOCs, BNA, RCRA Metals
SB-50	2	VOCs, BNA, RCRA Metals
Monitoring Wells		
MW-1	1	VOCs, BNA, RCRA Metals
MW-2	1	VOCs, BNA, RCRA Metals
MW-3	1	VOCs, BNA, RCRA Metals
MW-4	1	VOCs, BNA, RCRA Metals
MW-5	1	VOCs, BNA, RCRA Metals

Notes:
VOCs - Volatile Organic Compounds
BNA - Base Neutral and Acid Extractable Semivolatile Organic Compounds

ATTACHMENT A

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride *Project:*
Project Number: 10770-001
Site Location: Buffalo
Coordinates: *Elevation:*
Drilling Method: Geoprobe
Sample Type(s): macrocore *Boring Diameter:* 2 ___in.

BORING ID:

SB-1

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 13'
Water Level:

Weather: overcast 70°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/22 13:42
Date/Time Finished: 13:55

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	4.5	14.2		0-0.5 Asphalt and sub-base		
							0.5-2 Brown Clayey SILT, little Gravel, trace misc. Fill.		
1									
2							2-5 Grayish-brown Clayey SILT, trace fine Sand and Gravel, no odor, very stiff.		
					15.0				
3									
4									
5					11.2				
	B	5-10	NA	5	2.0		5-7 orange-brown Clayey SILT, grave mottling, moist, very stiff.		
6									
7							7-10 Reddish brown Clayey eSILT, very stiff, moist, no odor.		
					6.2			SB-1	7.5-8.5
8								VOC PAH	14:15
9									
10					27				
	C	10-15	NA	5	11.7		10-13 Brownish-gray Silty CLAY, moist to wet, very tacky, trace gravel.		
11									
					5.9				
12									
13					3.3		Refusal at 13'.		
14									
15									
16									
17									
18									
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID:

SB-2

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Weather: mostly cloudy 70°
Logged By: SRD
Date/Time Started: 8/22 15:30
Depth of Boring: 19.5'
Drilling Contractor: Zebra
Ground Elevation:
Date/Time Finished: 13:55
Water Level:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	3.5			0-0.5' Asphalt and sub base.		
					393		0.5-4' Orange brown clayey SILT, some Gravel up to 0.1' subangular to angular, moderately stiff.	SB-2	0.5-1.5
1								VOC PAH	16:23
2									
3									
4							4-5' Gray brown silty SAND, little Gravel up to 0.05' subrounded to angular, moist.		
					192				
5									
	B	5-10	NA	2.5			5-10' Same as above, moist to saturated.		
6									
					150				
7									
8									
					41.8				
9									
10									
	C	10-15	NA	4.5			10-12.5' Grayish brown silty SAND and Gravel, saturated.		
11									
					45.8				
12							12.5-14.5' Brown to gray, fine to coarse SAND, trace Gravel up to 0.1', wet.		
13					220				
14									
							14.5-15' Reddish brown clayey SILT.		
15									
	D	15-20	NA	4			15-17.5' Fine to coarse SAND, little fine Gravel, wet to saturated.		
16					127				
17									
							17.5-19.5 Grades to reddish/grayish brown clayey SILT with Sand.		
18									
19					106				
							19.3-19.5' 0.2' diameter rocks, unidentifiable (coated with clay)		
20							Refusal at 19.5'.		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride *Project:*

Project Number: 10770-001

Site Location: Buffalo

Coordinates: *Elevation:*

Drilling Method: Geoprobe

Sample Type(s): macrocore *Boring Diameter:* 2 ___in.

BORING ID:

SB-3

Sheet: 1 *of* 1

Monitoring Well Installed: N

Screened Interval:

Weather: mostly cloudy, 70

Drilling Contractor: Zebra

Logged By: SRD

Ground Elevation:

Date/Time Started: 8/22 14:10

Date/Time Finished: 14:30

Depth of Boring: 18.7'

Water Level:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA				0-0.5 Asphalt and sub-base.		
							0.5-5 Gray-brown silty SAND, some Gravel up to 0.1', subangular to angular, moist, petroleum odor.		
1									
2									
3									
4									
5									
	B	5-10	NA				5-6 SAA, moist.		
6							6-7 Brown fine to medium SAND, some Gravel, wet.		
7							7-10 Brown GRAVEL, some Sand, wet.		
8									
9									
10									
	C	10-15	NA				10-12 gravelly SAND, saturated.		
11									
12							12-13 Brown GRAVEL, some Sand.		
13							13-14.5 Weathered concrete.		
14							14.5-15 Reddish-brown clayey SILT		
	D	15-18.7							
15							15-18.7 some slough, difficult to delineate slough and native material. Coarse saturated GRAVEL.		
16									
17									
18								SB-3	17.5-18.7
							Refusal at 18.7'.	VOC PAH	15:28
19									
20									

NOTES:

All PID readings are considered unreliable due to malfunctioning instrument.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID:

SB-4

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 18'
Water Level:

Weather: mostly cloudy 65°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/25 8:08
Date/Time Finished: 8:40

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	4.5			0-0.5 Asphalt and sub-base		
					86.9		0.5-3 Dark gray-brown SILT, some Gravel, little Clay. Moist.		
1									
2									
3							3-5 Orange-brown clayey SILT, gray mottling, stiff. Moist.		
					151				
4									
5									
	B	5-10	NA	5	130		5-5.5 Slough. 5.5-10 SAA.		
6									
7									
8									
					177				
9									
10									
	C	10-15	NA	5			10-13 SAA		
11					10.9				
12									
13							13-15 SAA but with increased plasticity.		
					22				
14					225			SB-4	14-15
								VOC PAH	10:43
15									
	D	15-18					15-16 Olive brown clayey SILT, some fine Sand and Gravel, saturated.		
16				3	11		16-18 Orange-brown clayey SILT, trace Gravel, high plasticity, moist.		
17									
18							Refusal at 18'.		
19									
20									

NOTES:

All PID readings are considered unreliable due to malfunctioning instrument.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:*		**BORING ID:** SB-5
Project Number: 10770-001			
Site Location: Buffalo			
Coordinates:		*Elevation:*	*Sheet:* 1 *of* 1
Drilling Method: Geoprobe			*Monitoring Well Installed:* N
Sample Type(s): macrocore		*Boring Diameter:* 2 ___in.	*Screened Interval:*
Weather: mostly cloudy 65°	*Logged By:* SRD	*Date/Time Started:* 8/23 10:45	*Depth of Boring:* 18.3
Drilling Contractor: Zebra	*Ground Elevation:*	*Date/Time Finished:* 11:45	*Water Level:*

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	5			0-0.5 Asphalt and sub-base 0.5-1 black SILT, with miscellaneous Fill.		
1							1-3.2 dark gray SILT, little Gravel up to 0.02', subangular to angular, moist.		
2									
3							3.2-5 Orange-brown clayey SILT, gray mottling, moist. Slightly stiff, low plasticity.		
4									
5	B	5-10	NA	5			5-10 SAA, trace fine Sand.		
6									
7									
8									
9									
10	C	10-14	NA	4			10-12 SAA		
11									
12							12-14 Orange-brown clayey SILT, high plasticity, moist.		
13									
14	D	14-18.3		4			14-18.3 SAA.		
15								SB-5 VOC PAH	15-16 13:40
16								SB-50 DUP VOC PAH	15-16 13:45
17									
18							Refusal at 18.3		
19									
20									

NOTES:

All PID readings are considered unreliable due to malfunctioning instrument.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID:

SB-6

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Weather: sunny 60°
Logged By: SRD
Date/Time Started: 8/25 8:21
Depth of Boring: 17'
Drilling Contractor: Zebra
Ground Elevation:
Date/Time Finished:
Water Level:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	5			0-0.5' Concrete and sub base		
							0.5-2' Brown SILT, some miscellaneous Fill, black and rusty red mottling, moist, stiff.		
1					1.4				
2							2-5' Orange brown clayey SILT, trace fine Sand, gray mottling, stiff, slightly moist.		
3					1.5				
4								SB-6 VOC, PAH, RCRA ME	3-4' 10:26
5									
	B	5-10	NA	5'	1.2		0.5' slough 5-10' Same as above		
6									
7									
8									
					1.1				
9									
10									
	C	10-14	NA	4			10-12' Same as above		
11					0.5				
12							12-14' Grades to Gray brown clayey SILT, some Gravel up to 0.03' subrounded to angular, wet, high plasticity, soft to very soft.		
					0.9				
13									
14									
	D	14-18.2		5'	0.9		14-15.5' Same as above		
15									
16					0.9		15.5-17' Gray brown SILT, some Gravel up to 0.1' subrounded to angular, trace fine to medium Sand, moist.		
							Refusal at 17'		
17					0.7				
18									
19									
20									

NOTES:

All PID readings are considered unreliable due to malfunctioning instrument.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID: **SB-7**

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 18.8
Water Level:

Weather: sunny 61°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/15 11:35
Date/Time Finished: 12:15

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	3			0-1' Concrete and sub base		
							1-2' Light brown fine to medium SAND, little Gravel up to 0.1' subrounded to angular.		
1					3.0				
2							2-3' Black/brown SILT, some Gravel, some Sand, slight odor, staining.		
					12*				
3							3-3.5' Orange brown clayey SILT, high plasticity to Gravel.		
							3.5-4' Coarse Gravel, stained black, moist to wet.		
4									
					11		4-5' Orange brown clayey SILT, some Gravel up to 0.1' subrounded to angular, moist.		
5									
	B	5-10	NA	5'			1' slough 5-8' Olive brown fine to coarse SAND, some Gravel up to 0.2' rounded to angular, trace SILT, moist to wet, droplet of oil-like material at 7'		
6					37.1				
7									
								SB7(7-8) VOC, PAH, RCRA ME, PCB	7-8 13:06
8					65				
							8-10' Orange brown clayey SILT, very stiff, moderate to low plasticity, slightly moist.		
9									
10					30				
	C	10-14	NA	5'			2.5' slough		
11							10-14' Same as above.		
					16.8				
12									
13					23.7				
14									
	D	14-18.8		5'			2.5' slough 14-18.8' Gray clayey SILT, some Gravel up to 0.05' subrounded to angular, some fine to coarse Sand, soft, moist to wet, moderate plasticity.		
15									
16					13.3				
17									
18									
					10.3				
19							Refusal at 18.8'		
20									

NOTES:
*Reading taken directly from soil as opposed to soil placed in a zip lock bag.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID:

SB-8

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Weather: sunny 61°
Logged By: SRD
Date/Time Started: 8/15 10:38
Depth of Boring: 18.2
Drilling Contractor: Zebra
Ground Elevation:
Date/Time Finished: 11:04
Water Level:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	3			0-0.5' Concrete and sub base 0.5-3' Brown fine to coarse SAND, little Gravel up to 0.03' subrounded to angular, moist.		
1					0.6				
2									
3							3-5' Blackish brown silty SAND, some Gravel up to 0.05', moist.		
4					2.9			SB8(4-5) VOC, PAH, RCRA ME, PCB	4-5' 11:40
5	B	5-10	NA	5'			0.6' slough 5-7' Same as above		
6					1.5				
7							7-10' Orange brown clayey SILT, gray mottling, stiff, moderate plasticity, moist to dry.		
8					0.9				
9									
10	C	10-14	NA	4'	0.6		0.8' slough		
11							10-14' Same as above.		
12					0.5				
13									
14	D	14-18.2		4'			14-14.5' Same as above 14.5-17.5' Grades to grayish brown SILT, some fine to coarse Sand, some Gravel up to 0.1' subrounded to angular, little Clay, saturated.		
15					0.9				
16									
17							17.5-18.2' Orange brown clayey SILT, some Gravel up to 0.25' subrounded to angular, high plasticity, slightly stiff.		
18					0.8		Refusal at 18.2'		
19									
20									

NOTES:

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.
Weather: mostly cloudy 65°
Logged By: SRD
Date/Time Started: 8/23 15:15
Drilling Contractor: Zebra
Ground Elevation:
Date/Time Finished: 15:40

BORING ID:

SB-9

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 18.4
Water Level:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	3.6'			0-1 Asphalt and sub-base.		
1							1-3 Black coarse SAND and Gravel (misc. fill).		
2									
3							3-5 Brown fine to coarse SAND and Gravel up to 0.06', subrounded to angular.		
4									
5									
	B	5-10	NA	4'			5-7 Brown fine to coarse SND and Gravel, up to 0.04', subrounded to angular, moist to wet, trace Silt.		
6									
7							7-10 SAA, grades to saturated.		
8									
9									
10									
	C	10-15	NA	3.4'			10-15 SAA		
11									
12									
13									
14									
	D	15-18.4	NA				15-18.2 SAA		
15									
16									
17									
								SB-9	17.5-18.4
18							18.2-18.4 Gray to light gray silty CLAY with some Gravel up to 0.13', angular.	VOC, PAH	15:58
							Refusal (bedrock) at 18.4'.		
19									
20									

NOTES:
No headspace readings due to malfunctioning PID.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID:

SB-10

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 17.5
Water Level:

Weather: mostly cloudy 80°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/23 16:00
Date/Time Finished: 16:16

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	2.8	NA		0-0.5 Asphalt and sub-grade. 0.5-1 FILL, consisting of weathered concrete and sub-base.		
1							1-5 Dark brown fine to corase SAND, some Gravel up to 0.04', subrounded to angular, moist, no odor.		
2									
3									
4									
5									
	B	5-10	NA	3.5	NA		5-10 Medium brown fine to coarse SAND, some Gravel up to 0.18', subrounded to angular, wet, no odor.		
6									
7									
8									
9									
10									
	C	10-15	NA	2.5	NA		10-15, SAA, saturated.		
11									
12									
13									
14									
15									
	D	15-17.5	NA	2.5	NA		15-17.5 Gray-brown silty SAND, some Gravel up to 0.1, subangular to angular, trace Clay. Grades to sandy SILT. Wet to 15.2, the wet to 17.5		
16									
17								SB-10 VOC, PAH	17-17.5 16:30
18									
19									
20									

NOTES:
PID malfunctioning.

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID:

SB-11

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 18.8
Water Level:

Weather: sunny 61°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/25 13:33
Date/Time Finished: 14:15

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	2.5'			0-1' Concrete and sub base		
							1-5' Brown SILT with some Gravel up to 0.1' subrounded to angular, little Sand, stiff, moist to dry.		
1									
2					4.4				
3									
4					3.0*				
5									
	B	5-10	NA	4'			1' slough		
6					3.0		5-10' Brown fine to coarse SNAD, little fine to medium Gravel, wet to staurated.		
7									
8					3.6				
9									
10					2.3				
	C	10-14	NA	4.5'			1' slough		
11							10-14' Same as above, saturated from 10' to 11.5', Sand more coarse.		
12					3.9				
13									
					4.6				
14									
	D	14-18.8	NA	3'			0.5' slough		
15					1.3		14-15' Same as above		
							15-18' Gray clayey SILT, some Gravel up to 0.1' subrounded to angular, wet.		
16									
17									
18									
					5.8			SB-11	18-18.8'
19							Refusal at 18.8'	VOC, PAH	15:00
20									

NOTES:
* very unreliable due to malfuctioning PID

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID:

SB-12

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Weather: sunny 61°
Logged By: SRD
Date/Time Started: 8/25 14:30
Depth of Boring: 17.9'
Drilling Contractor: Zebra
Ground Elevation:
Date/Time Finished: 14:56
Water Level:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	3'			0-1' Concrete and sub base 1-5' Brown fine to coarse SAND, some Silt, some Gravel , moist to wet.		
1									
2									
3									
4									
5	B	5-10	NA	4.5			0.5' slough		
6							5-10' Same as above, wet to saturated		
7									
8									
9									
10	C	10-14	NA	3			10-14 Same as above, saturated		
11									
12									
13									
14				2.5			0.5' Slough, some chunks of wood at the top of interval.		
15							14-18 Gray clayey SILT, some Gravel up to 0.1' rounded to subangular, some fine to medium Sand. Wet, with some staining at the top of the interval.	SB-12 VOC, PAH	14.5-15.5 15:48
16									
17									
18							Refusal at 17.9'		
19									
20									

NOTES:

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride *Project:*

Project Number: 10770-001

Site Location: Buffalo

Coordinates: *Elevation:*

Drilling Method: Geoprobe

Sample Type(s): macrocore *Boring Diameter:* 1 ___in.

BORING ID:

SB-13

Sheet: 1 *of* 1

Monitoring Well Installed: N

Screened Interval:

Depth of Boring: 17.4

Water Level:

Weather: sunny 61°

Drilling Contractor: Zebra

Logged By: SRD

Ground Elevation:

Date/Time Started: 8/25 15:50

Date/Time Finished: 16:11

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0				2.5			0-1 Asphalt and sub-base.		
1							1-4 Orange-brown clayey SILT interbedded with miscelaneous Fill and Asphalt.		
2									
3									
4							4-5 Brown fine to coarse SAND, some Gravel up to 0.1', subrounded to angular. Moist.		
5									
				2.5			5-10 SAA, lenses of orange-brown clayey SILT. Slight petroleum odor, moist to wet.		
6									
7									
8									
9									
10									
				4.7			10-10.5 Slough.		
11							10.5-12 orange-brown SILT, some fine Sand, stiff, moderately plastic, slight solvent odor.		
12							12-14 Gray clayey SILT, some Gravel up to 0.15' subangular to angular, moist.		
13									
14									
							14-15.7 Slough.		
15									
				2.4			15.7-17.4 Orange-brown SILT, some fine Sand, stiff, moderately plastic.		
16									
17								SB-13 VOC, PAH, RCRA ME	17-17.4 15:48
							Refusal at 17.4.		
18									
19									
20									

NOTES:

PID readings directly from soil.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): 1" x 2' sampler
Boring Diameter: 1 ___in.

BORING ID:

SB-16

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 8.5
Water Level:

Weather: sunny 61°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/24 13:15
Date/Time Finished: 13:50

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-2	NA	1			0-0.5' Concrete		
					4.4		0.5-2' Brown sandy SILT	SB16(0.5-2)	0.5-2'
1								VOC	15:48
2	B	2-4	NA	0.6			0.45' slough		
					NA		2-8.5 Same as above		
3									
4	C	4-6'	NA	1.0					
					0.4			SB16(4-5)	4-5'
5								PAH	15:48
					0.9				
6	D	6-8	NA	1.7					
								SB16(6-7)	6-7'
7					1.0			PCB	15:48
8	E	8-10	NA	2	NA		1.75' slough		
							Refusal at 8.5'		
9									
10									
11									
12									
13							Samples for each parameter were taken at different depths due to limited amount of material at each depth interval. 2' x 1" samplers were utilized because they were easier to drive using the hand held jack hammer.		
14									
15									
16									
17									
18									
19									
20									

NOTES:

Boring was driven by hand held jack hammer, and ended at 10' because it would be too difficult to get the drive rods out from any deeper. NA for PID due to little actual recovery.

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:*		**BORING ID:** SB-17
Project Number: 10770-001			
Site Location: Buffalo			
Coordinates:		*Elevation:*	*Sheet:* 1 *of* 1
Drilling Method: Geoprobe			*Monitoring Well Installed:* N
Sample Type(s): 1" x 2' sampler		*Boring Diameter:* 1 ___in.	*Screened Interval:*
Weather: sunny 61°	*Logged By:* SRD	*Date/Time Started:* 8/24 14:00	*Depth of Boring:* 8
Drilling Contractor: Zebra	*Ground Elevation:*	*Date/Time Finished:* 14:15	*Water Level:*

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth
0	A	0-2	NA				0-0.5' Concrete		
							0.5-2' Brown sandy SILT, little Gravel, moist.		
1					0.9				
2	B	2-4	NA		0.9				
							2-4' Grayish brown sandy SILT, some Gravel up to 0.03' subrounded to angular, moist to wet.		
3					0.8				
4	C	4-6'	NA		2.5				
							4-6' Same as above, Gravel up to 0.1' subrounded to angular.		
5					1.1				
								SB17(5-6)	5-6'
6	D	6-8	NA		1.3			PCB	16:28
							6-8' Same as above.	SB17(6-7)	6-7'
7					5.6			VOC	16:28
								SB17(7-7.5)	7-7.5'
8	E	8-10	NA		1.4			PAH, RCRA ME	16:28
							Refusal at 8'		
9									
10									
11									
12									
							Samples for each parameter were taken at different depths due to limited amount of material at each depth interval.		
13							2' x 1" samplers were utilized because they were easier to drive using the hand held jack hammer.		
14									
15									
16									
17									
18									
19									
20									

NOTES:

Boring was driven by hand held jack hammer, and ended at 10' because it would be too difficult to get the drive rods out from any deeper. NA for PID due to little actual recovery.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:*		**BORING ID:** **SB-18**
Project Number: 10770-001			
Site Location: Buffalo			
Coordinates:	*Elevation:*		*Sheet:* 1 *of* 1
Drilling Method: Geoprobe			*Monitoring Well Installed:* N
Sample Type(s): macrocore	*Boring Diameter:* 2 ___in.		*Screened Interval:*
Weather: sunny 65°	*Logged By:* SRD	*Date/Time Started:* 8/26 8:09	*Depth of Boring:* 20'
Drilling Contractor: Zebra	*Ground Elevation:*	*Date/Time Finished:* 8:40	*Water Level:*

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA				0-1' void.		
1				2.5			1-5' no recovery (possibly due to a rock blocking the core). Interval was redrilled.		
							1-1.3' Pulverized brick and large Gravel (up to 0.1')		
2							1.3-1.5' Brown clayey SILT, little Gravel.		
							1.5-2.1' Black coarse SAND and Gravel, some Silt, staining, no odor.	SB18(2.5-3.5)	2.5-3.5
3					1.4		2.1-5' Gray brown clayey SILT, little Gravel.	VOC, PAH, RCRA ME,	9:19
4									
5									
	B	5-10	NA	5	1.0		5-10' Orange brown clayey SILT, little fine Sand, stiff, low plasticity, moist.		
6									
7									
					1.0				
8									
9									
					1.2				
10									
	C	10-15	NA	5			10-14.7 Same as above		
11									
12					0.9				
13					1.2				
14									
							14.7-15' Orange brown and gray silty CLAY, soft, high plasticity, moist.		
15					0.9				
	D	15-20	NA	2			15-15.7 Orange brown clayey SILT, moderately stiff, moist		
16					0.7		15.7-17 Gray silty CLAY, some Gravel up to 0.22', high plasticity, moist to wet.		
							16-16.5' Lens of brown/black coarse SAND, Gravel, slag, dry to moist.		
17					1.1				
18							Appears that the material from 17-20' fell out of the bottom of the sleeve. All recovered material is at the top of the sleeve.		
19					2.2				
20							Boring terminated at 20'.		

NOTES:

At the time of sampling, the PID was not fundtioning. Sample locations were based on observed staining. After the sample had been collected, a replacement PID arrived and readings were taken from soil that had been placed in zip lock bags.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:*		**BORING ID:** **SB-19**
Project Number: 10770-001			
Site Location: Buffalo			
Coordinates:		*Elevation:*	*Sheet:* 1 *of* 1
Drilling Method: Geoprobe			*Monitoring Well Installed:* N
Sample Type(s): macrocore		*Boring Diameter:* 2 ___in.	*Screened Interval:*
Weather: sunny 65°	*Logged By:* SRD	*Date/Time Started:* 8/26 10:05	*Depth of Boring:* 20'
Drilling Contractor: Zebra	*Ground Elevation:*	*Date/Time Finished:* 10:40	*Water Level:*

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	3.5			0.18' Concrete 0.2-3' Brown SILT, some fine to coarse Sand, some Gravel up to 0.08' subrounded to angular, stiff, dry to moist.		
1					1.5				
2									
3							3-5' Black coarse SAND and Gravel (FILL)		
					1.9				
4									
5									
	B	5-10	NA	5'			5-6' Same as above		
6					2.1		6-6.5' Grades to dark gray SILT, little fine Sand, staining.		
					1.5		6.5-10' Grades to Orange brown clayey SILT, stiff, little fine Sand, moist.		
7									
8									
					1.5				
9									
10									
	C	10-15	NA	5'			10-15' Same as above, trace fine Sand, moderate plasticity.		
11					2.5		10-15' Orange brown clayey SILT, very stiff.		
12									
								SB19(12-13) VOC, PAH, RCRA ME, ME-MS/MSD	12-13' 11:09
13					2.8				
14									
15					1.4				
	D	15-20	NA	5					
16							15-20' Same as above, not as stiff, moderate to high plasticity, little Gravel.		
17					2.4				
18									
19					2.2				
20							Boring terminated at 20'.		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:*		**BORING ID:** **SB-20**
Project Number: 10770-001			
Site Location: Buffalo			
Coordinates:		*Elevation:*	*Sheet:* 1 *of* 1
Drilling Method: Geoprobe			*Monitoring Well Installed:* N
Sample Type(s): macrocore		*Boring Diameter:* 2 ___in.	*Screened Interval:*
Weather: sunny 65°	*Logged By:* SRD	*Date/Time Started:* 8/26 11:25	*Depth of Boring:* 20'
Drilling Contractor: Zebra	*Ground Elevation:*	*Date/Time Finished:* 12:10	*Water Level:*

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	3.5			0.25' Concrete		
							0.25-0.45' Brown SAND.		
1							0.45-3' Orange brown clayey SILT, stiff.		
					4.8				
2									
3							3-5' Black coarse SAND and Gravel (FILL) interbedded with SILT.		
					6.0				
4									
								SB20(4-5) VOC, PAH, RCRA ME	4-5'
5					7.1				12:26
	B	5-10	NA	5'			5-5.8' Same as above		
6					3.7		5.8-6.3' Dark gray SILT, soft, stained, no odor.		
							6.3-10' Grades to Orange brown/Gray Brown SILT, some fine Sand, very stiff, moist to dry.		
7									
					1.8				
8									
9					1.4				
10									
	C	10-15	NA	5'			0.8' slough		
11					1.3		10-15' Orange brown clayey SILT, very stiff.		
12									
13									
					0.9				
14									
15					1.5				
	D	15-20	NA	4.5			15-20' Same as above (16.1-16.9' lens of coarse SAND and Gravel, black)		
16									
17					3.7				
18					2.4		18-20' Same as above, little fine Sand.		
19									
20							Boring terminated at 20'.		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by _____________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 2 ___in.

BORING ID:

SB-21

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 15'
Water Level:

Weather: sunny 65°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/26 13:45
Date/Time Finished: 14:20

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-3.2' Void (sump)		
1									
2									
3							3.2-5.2' Brown/black coarse Gravel and Sand (FILL), slag, moist to dry. Surface was wet and first couple tenths of a foot.	SB21(3.7-4.7) VOC, PAH, RCRA ME, VOC dup	3.7-4.7' 14:42
4	A	3.2-8.2	NA	3.5	10.4				
5							5.2-5.7' Brown SILT, some Gravel and miscellaneous Fill.		
6					5.0		5.7-6.2' Brown coarse SAND and Gravel. 6.2-8.2' Dark gray SILT, possibly stained, little Clay.		
7									
8					2.6		0.3' slough 8.2-13.2 Orange brown/Gray brown clayey SILT, some fine Sand, trace fine Gravel, stiff, moderate to low plasticity.		
9	B	8.2-13.2	NA	5	2.4				
10									
11					3.0				
12									
13					1.1		2.5' slough		
14	C	13.2-18.2	NA	5	1.5		13.2-18.2' Orange brown clayey SILT, moderate to high plasticity, plasticity increases with depth, moist.		
15									
16					1.0				
17									
18					1.3		Boring terminated at 18.2'		
19							Boring in sump, first few feet are void so there is nothing to hold the rods as they come up.		
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:*		**BORING ID:** **SB-22**
Project Number: 10770-001			
Site Location: Buffalo			
Coordinates:	*Elevation:*		*Sheet:* 1 *of* 1
Drilling Method: Geoprobe			*Monitoring Well Installed:* N
Sample Type(s): macrocore	*Boring Diameter:* 2 ___in.		*Screened Interval:*
Weather: partly cloudy 76°	*Logged By:* SRD	*Date/Time Started:* 8/29 15:20	*Depth of Boring:* 20'
Drilling Contractor: Zebra	*Ground Elevation:*	*Date/Time Finished:* 16:00	*Water Level:*

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA				0-0.5 Concrete		
							0.5-3 Brown fine to medium SAND, moist.		
1									
2									
3							3-5 Tan to gray-brown SILT, low plasticity, moist.		
								SB-22 VOC, PAH, RCRA ME	3-5 16:20
4									
5									
	B	5-10	NA				5-6 Gray fine to medium SAND		
6							6-6.5 Dark brown organic-rich SILT, chunks of wood.		
							6.5-7 Gray SILT, low plasticity, stiff, moist.		
7							7-10 SAA, grading to orange-brown SILT, low plasticity, stiff, moist.		
8									
9									
10									
	C	10-15	NA				10-10.5 Slough.		
11							10.5-15 SAA, trace fine Sand.		
12									
13									
14									
15									
	D	15-20	NA				15-16.8 Slough.		
16									
							16.8-18.5 SAA		
17									
18									
							18.5-20 SAA grading to orange-brown and gray silty CLAY, high plasticity. Moist.		
19									
20							Boring terminated at 20'.		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:_________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride *Project:*

Project Number: 10770-001

Site Location: Buffalo

BORING ID: **SB-23**

Coordinates: *Elevation:*

Sheet: 1 *of* 1

Drilling Method: Geoprobe

Monitoring Well Installed: N

Sample Type(s): macrocore

Boring Diameter: 2 ___in.

Screened Interval:

Weather: sunny 60°

Logged By: SRD

Date/Time Started: 8/26 14:52

Depth of Boring: 20'

Drilling Contractor: Zebra

Ground Elevation:

Date/Time Finished: 15:20

Water Level:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5	NA	2.5			0-2' Void (sump)		
1									
2							2-4' Gray brown SILT, some Gravel, little fine to coarse Sand, moist.		
3									
					9.2			SB23(3-4) VOC, PAH, RCRA ME	3-4' 15:32
4							4-5' Orange brown SILT, little Gravel.		
5					2.3				
	B	5-10	NA	0			Material not recovered/ fell out of the sleeve.		
6							Material was quickly placed in a zip lock bag (approx. 8 oz.) and a PID reading was taken.		
							5-10' Dark brown SILT and Gravel, some fine to coarse Sand, wet to saturated.		
7									
					1.8				
8									
9									
10									
	C	10-15	NA	5			0.2' slough		
11					1.1		10-15' Orange brown clayey SILT, trace Gravel, stiff, moist, moderate to low plasticity.		
12									
13									
					1.7				
14									
15					2.0				
	D	15-20	NA	2.5			2.5' slough (scraped off sides on way down)		
16					1.9		15-20' Same as above, not as stiff, moderate to high plasticity.		
17									
18									
					1.0				
19									
20					2.1		Boring terminated at 20'		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): 1" x 2' sampler
Boring Diameter: 1 ___in.

BORING ID:

SB-24

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 20
Water Level:

Weather: partly cloudy 76°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/29 14:19
Date/Time Finished: 14:45

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A			4.5	5.1		0-0.5 Concrete.		
1							0.5-4.8 Orange-brown clayey SILT with trace Gravel and gray mottling. Dry to moist, stiff, low plasticity.		
2					5.7			SB-24 VOC, PAH, RCRA ME	2-3 15:06
3									
4									
					4.7		4.8-5 Fine to coarse brown SAND, some Gravel up to 0.02'.		
5									
	B				4.4		5-5.3 Slough.		
6							5.3-6 SAA		
							6-7.3 Gray clayey SILT, trace Gravel, high plasticity, soft.		
7							7.3-10 Brown to black SILT, some fine to coarse Sand, piece of wood.		
8									
9					3.6				
10									
	C						10-10.3 SAA		
11					2.5		10.3-15 SAA grading to orange-brown clayey SILT with gray mottling, still, low to moderately plastic.		
							Trace fine Sand, moist.		
12									
13									
14					2.6				
15									
	D				3.3		15-16.1 SAA		
16							16.1-16.5 Cray clayey SILT, some fine to coarse Sand, little Gravel up to 0.02, soft, moist, high plasticity.		
							16.5-20 Orange-brown clayey SILT, little fine Sand, moderate to high plasticity.		
17									
					3.4				
18									
19									
20					3.1		Boring terminated at 20'.		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): macrocore
Boring Diameter: 1 ___in.

BORING ID:

SB-25

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 20
Water Level:

Weather: partly cloudy 76°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/29 12:38
Date/Time Finished: 12:48

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-5		3			0-0.5 Concrete and sub-base.		
					2.0		0.5-4.8 Orange-brown clayey SILT, some gray-brown mottling, stiff, dry to moist.		
1									
2									
					2.4				
3									
4									
							4.8-5 Brownish-black SILT with some Gravel up to 0.25' subrounded to angular, little Sand.		
5								SB-25 VOC, PAH, RCRA ME, MS/MSD	5-7
	B	5-10		3			5-10 Gray-brown clayey SILT, some Gravel up to 0.1' subrounded to angular, little Sand, moist, soft.		15:06
6					2.6			SB-250	5-7
								PAH	13:20
7									
8									
9									
					2.6				
10									
	C	10-15		5			10-10.6 SAA		
11					2.1		10.6-15 Orange-brown clayey SILT, trace Gravel, moderate to low plasticity, little fine Sand, stiff.		
12									
					2.6				
13									
14					2.6				
15									
	D	15-20		3			15-20 Orange-brown clayey SILT, moderately stiff, little fine Sand.		
16					2.3				
17									
					1.8				
18									
19					2.3				
20							Boring terminated at 20'.		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:*		**BORING ID:**
Project Number: 10770-001			**SB-26**
Site Location: Buffalo			
Coordinates:	*Elevation:*		*Sheet:* 1 *of* 1
Drilling Method: Geoprobe			*Monitoring Well Installed:* N
Sample Type(s): 1" x 2' sampler	*Boring Diameter:* 1 ___in.		*Screened Interval:*
Weather: sunny 61°	*Logged By:* SRD	*Date/Time Started:* 8/24 14:30	*Depth of Boring:* 6
Drilling Contractor: Zebra	*Ground Elevation:*	*Date/Time Finished:* 14:50	*Water Level:*

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-2	NA	1.8			0-0.5' Concrete 0.5-2' Brown clayey SILT, some fine to coarse Sand, little Gravel up to 0.1' subangular to angular, moist to wet.		
1					0.5				
2					0.8				
	B	2-4	NA	2			0.4' slough (saturated)		
3					1.5		2-4' Gray brown SILT, some fine to coarse Sand, little Gravel up to 0.05' subangular to angular, moist.		
4					3.2				
	C	4-6'	NA	2			4-6' Same as above.	SB-26	4.5-5
5					2.1			PAH	16:56
								SB-26	5-6
6					5.1			VOC	16:56
	D	6-8	NA	0			End of boring at 6' due to power loss.		
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

NOTES:

Boring was driven by hand held jack hammer, and ended at 10' because it would be too difficult to get the drive rods out from any deeper. NA for PID due to little actual recovery.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): 1" by 2' sampler
Boring Diameter: 1 ___in.

BORING ID:

SB-27

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Weather: sunny 61°
Logged By: SRD
Date/Time Started: 8/24 9:38
Depth of Boring: 10
Drilling Contractor: Zebra
Ground Elevation:
Date/Time Finished:
Water Level:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-2					0-0.5 Concrete		
							0.5-2' Orange brown silty CLAY, high plasticity, stiff		
1									
2									
	B	2-4	NA	2	0.4		2-4' Same as above, gray mottling		
3									
					1.1				
4									
	C	4-6'	NA	2			4-6' Same as above	SB-27	4-5
5					0.4			PAH, RCRA ME	10:49
					1.2			SB-27	5-6
6					2.0			VOC	10:49
	D	6-8	NA	2			6-8' Same as above		
7					0.4				
					0.6				
8					0.6				
	E	8-10	NA	1.5			0.5' slough		
9					0.4		8-10' Same as above		
					0.4				
10					0.3		End of boring at 10'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

NOTES:
Boring was driven by hand held jack hammer, and ended at 10' because it would be too difficult to get the drive rods out from any deeper.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

Soil Boring Log

Client: AmeriPride *Project:*

Project Number: 10770-001

Site Location: Buffalo

Coordinates: *Elevation:*

Drilling Method: Geoprobe

Sample Type(s): 1" x 2' sampler *Boring Diameter:* 1 ___in.

BORING ID: **SB-28**

Sheet: 1 *of* 1

Monitoring Well Installed: N

Screened Interval:

Depth of Boring: 10

Water Level:

Weather: sunny 61°

Logged By: SRD

Date/Time Started: 8/24 8:15

Drilling Contractor: Zebra

Ground Elevation:

Date/Time Finished: 9:30

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-2	NA	1.3			0-0.5 Concrete		
					7.3		0.5-1' Dark gray silty CLAY, little Gravel up to 0.02' diameter, subangular to angular		
1							1-2' Orange brown silty CLAY, very stiff, high plasticity		
2	B	2-4	NA	1.7			2-4' Same as above, gray mottling		
3					195				
4	C	4-6'	NA	2			0.4' slough	SB-28 VOC, PAH, RCRA ME	4-6 11:33
							4-6' Same as above		
5					298				
6	D	6-8	NA	1.5			0.5' slough		
							6-8' Same as above		
7					295				
8	E	8-10	NA	1.5			Sleeve splintered, material un-useable.		
							8-10' Gray brown silty CLAY, moderately stiff, high plasticity		
9									
10							End of boring at 10'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

NOTES:

Boring was driven by hand held jack hammer, and ended at 10' because it would be too difficult to get the drive rods out from any deeper.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): 1" x 2' sampler
Boring Diameter: 1 ___in.

BORING ID:

SB-29

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 10
Water Level:

Weather: sunny 61°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/24 11:05
Date/Time Finished: 11:30

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-2	NA	2			0-0.5 Concrete		
					0.6		0.5-2' Orange brown clayey SILT, stiff, high plasticity	SB-29 VOC, PAH, RCRA ME	0.5-2
1					0.9				12:34
					1.2				
2	B	2-4	NA	2			2-4' Orange brown silty CLAY, stiff, moderate plasticity		
					1.0				
3					0.8				
					0.7				
4	C	4-6'	NA	2			4-6' Same as above, high plasticity, not as stiff		
					0.6				
5									
					0.5				
6	D	6-8	NA	2			6-8' Same as above		
					0.5				
7									
					0.4				
8	E	8-10	NA	2			1.1 slough		
							8-10 Same as above		
9					0.2				
10							End of boring at 10'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

NOTES:

Boring was driven by hand held jack hammer, and ended at 10' because it would be too difficult to get the drive rods out from any deeper.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project:
Project Number: 10770-001
Site Location: Buffalo
Coordinates:
Elevation:
Drilling Method: Geoprobe
Sample Type(s): 1" x 2' sampler
Boring Diameter: 1 ___in.

BORING ID:

SB-30

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 9.5
Water Level:

Weather: sunny 61°
Drilling Contractor: Zebra
Logged By: SRD
Ground Elevation:
Date/Time Started: 8/29 11:05
Date/Time Finished: 11:30

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0	A	0-2	NA	0.4	16.7		0-2 Light brown to orange-brown silty CLAY, moist to wet, moderate petroleum odor.		
1									
2	B	2-4	NA	1.9	3.3		2-4 Orange-brown silty CLAY, wet, slight odor, soft.	SB-30 VOC, PAH, RCRA ME	2-3 11:13
3					3.0				
4	C	4-6'	NA	2	2.8		4-6 Gray-brown silty CLAY, moist to wet, soft.		
5									
6	D	6-8	NA	1.2	2.3		6-8 SAA< trace Gravel up to 0.02.		
7									
8	E	8-9.5	NA	2	2.6		8-9.5 SAA, some Gravel up to 0.05 subrounded to angular, some fine to coarse Sand, soft to firm.		
9									
10							End of boring at 10'		
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

NOTES:

Boring was driven by hand held jack hammer, and ended at 10' because it would be too difficult to get the drive rods out from any deeper.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

Appendix B

Supplemental Boring Logs

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project: Buffalo, New York
Project Number: 10770-001
Site Location: 8 Lord Street
Coordinates:
Elevation:
Drilling Method: GeoProbe
Sample Type(s): 2" by 4' MacroCore
Boring Diameter: 2 ___in.

BORING ID:

SB-31

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 18.5'
Water Level: 13'

Weather: Overcast 30 F
Logged By: KDR
Date/Time Started: 12/01/05
Drilling Contractor: Nothnagle Drilling
Ground Elevation:
Date/Time Finished: 12/01/05

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth
0							0-0.25' Asphalt		
							0.25 - 3.5' f. SAND, little Silt, little c. Gravel, (FILL: includes brick fragments, clinker, wood fragments).		
1					0.6				
2					0.5				
3					0.1				
4	A	0-4	N/A	4	0.1		3.5-4.0' Organic SILT, little f-m SAND; tr. Gravel.		
							4.0-8.0' Grey brown to red CLAY; some Silt; moderate plasticity		
5					0.8				
6					0.7				
7					0.7				
8	B	4-8	N/A	3.5	0.8				
							8.0-11.0' Same as above.		
9					1.1				
10					1.0				
11	C	8-11	N/A	3	1.2				
							Grey CLAY; some Silt, moderate plasticity. Wet at 13'.		
12					1.0				
13	D	11-13	N/A	2	0.5				
							Same as above to 15.5'.		
14					0.6			SB-31 (13-16')	
15					0.4				
16	E	13-16	N/A	2.5	0.3		15.5 - 16.0' f-m SAND; little Silt; little Clay; little Gravel.		
17								SB-31 (16-18.5')	
18									
	F	16-18.5	N/A	2.0			16-18.5' Same as Above.		
19									
20									

NOTES:

Probe refusal at 18.5 ft. Duplicate sample SB-99(16-18.5') collected of SB-31(16-18.5') at t=11:15

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride *Project:* Buffalo, New York

Project Number: 10770-001

Site Location: 8 Lord Street

Coordinates: *Elevation:*

Drilling Method: GeoProbe

Sample Type(s): 2" by 4' MacroCore *Boring Diameter:* 2 ___in.

BORING ID:

SB-32

Sheet: 1 *of* 1

Monitoring Well Installed: N

Screened Interval:

Weather: Overcast 30 F *Logged By:* KDR *Date/Time Started:* 12/01/05 *Depth of Boring:* 17'

Drilling Contractor: Nothnagle Drilling *Ground Elevation:* *Date/Time Finished:* 12/01/05 *Water Level:* 12.5'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.25' - Asphalt		
							0.25-4' f. SAND; little Silt; little coarse Gravel (FILL: includes brick fragments, wood, clinker). Damp, no odor, no staining.		
1					0.8				
2					0.7				
3					0.4				
4	A	0-4	N/A	2.7	0.8				
							4-8' dark gray SILT; some Clay; trace c. Sand, trace f. Gravel. Damp, no odor, no staining.		
5					0.7				
6									
					0.7				
7									
8	B	4-8	N/A	1.5	0.7				
							8-11' No recovery.		
9									
10									
11	C	8-11	N/A	0					
					0.6		11-13' Red brown, CLAY; little/some Silt; (FILL: includes wood and plastic).		
12					0.5				
					0.4		Wet at 12.5'.		
13	D	11-13	N/A	2.0	0.8			SB-32 (12.5-13)	
							Same as above to 15.5'.		
14					0.8				
15					0.9				
16					1.0		15.5-17' f-m SAND; little Silt; little Clay; tr. c. Gravel (gray).		
17	E	13-17	N/A	2.5	1.1			SB-32 (17)	
18									
19									
20									

NOTES:

Probe refusal at 17 ft.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York		**BORING ID:**
Project Number: 10770-001			**SB-33**
Site Location: 8 Lord Street			
Coordinates:	*Elevation:*		*Sheet:* 1 *of* 1
Drilling Method: GeoProbe			*Monitoring Well Installed:* N
Sample Type(s): 2" by 4' MacroCore	*Boring Diameter:* 2 ___in.		*Screened Interval:*
Weather: Overcast 30 F	*Logged By:* KDR	*Date/Time Started:* 12/01/05	*Depth of Boring:* 17'
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/01/05	*Water Level:*

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.25' Asphalt.		
							0.25-4' Brown f. SAND; little Silt; little c. Gravel. (Fill: includes brick fragments). Damp, no odor, no staining.		
1					0.5				
2					0.4				
3					0.6				
4	A	0-4	N/A	4	0.3				
							4-8' Red brown CLAY; some Silt, tr. f. Gravel; tr. f. Sand. Grey mottling, damp.		
5					0.4				
6					0.3				
7					0.3				
8	B	4-8	N/A	2.5	0.4				
					0.5		8-11' Same as above.		
9									
					0.4				
10									
					0.3				
11	C	8-11	N/A	3	0.2				
					0.5		11-13' Same as above.		
12									
					0.6				
13					0.5				
							13-14' Olive green/grey CLAY; some Silt; little f. Sand; tr. f. Gravel.	SB-33(13-14')	
14	D	11-14	N/A	3	0.5				
							14-17' Brown gray,		
15									
16									
								SB-33(16-17')	
17	E	14-17	N/A	3					
18									
19									
20									

NOTES:

Probe refusal at 17 ft. Additional sample volume collected for sample SB-33(16-17') for MS/MSD.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York		**BORING ID:** **SB-34**
Project Number: 10770-001			
Site Location: 8 Lord Street			
Coordinates:		*Elevation:*	*Sheet:* 1 *of* 1
Drilling Method: GeoProbe			*Monitoring Well Installed:* N
Sample Type(s): 2" by 4' MacroCore		*Boring Diameter:* 2 ___in.	*Screened Interval:*
Weather: Overcast 30 F	*Logged By:* KDR	*Date/Time Started:* 12/01/05	*Depth of Boring:* 17.5'
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/01/05	*Water Level:* 10.5'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.25' Asphalt		
1					0.5		0.25-4' Brown to black f. SAND; little Silt; tr. Clay; tr. C. Gravel. (Fill: includes brick fragments), damp, no odor, no staining.		
2					1.2				
3					0.9				
4	A	0-4	2.5	N/A	0.6				
							4-8' Red brown to grey, CLAY; some Silt; little f. Sand; tr. f. Gravel. No odor no staoining.		
5					0.5				
6					0.4				
7					0.9				
8	B	4-8	3	N/A	1.3				
					1.6		8-10.5' Same as above.		
9					1.2				
10					0.3				
							10.5-11' Olive green to grey CLAY; some Silt; little fine Sand; tr. f-m Gravel. Wet.		
11	C	8-11	2.5	N/A	0.5				
					0.5		11-14' Grey olive green CLAY; some Silt; little f. Sand;		
12					0.8				
13					0.9				
14	D	11-14	3	N/A	0.7				
							14-16.5' Same as above.		
15									
16									
							16.5-17.5' Grey SILT; Some Clay; little Sand; tr. C. Gravel. Wet.		
17									
	E	14-17.5	N/A	N/A	NA			SB-34 (17-17.5')	
18									
19									
20									

NOTES:

Probe refusal at 17.5'.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

N/A

Soil Boring Log

Client: AmeriPride
Project: Buffalo, New York
Project Number: 10770-001
Site Location: 8 Lord Street
Coordinates:
Elevation:
Drilling Method: GeoProbe with 4.25" Hollow Stem Auger
Sample Type(s): 2" by 4' MacroCore
Boring Diameter: 7 ___in.

BORING ID:

SB-35 (MW-1)

Sheet: 1 *of* 1
Monitoring Well Installed: Y
Screened Interval: 17-7
Depth of Boring: 17'
Water Level: 13'

Weather: Overcast, sleet and snow.
Logged By: KDR
Date/Time Started: 11/30/05
Drilling Contractor: Nothnagle Drilling
Ground Elevation:
Date/Time Finished: 11/30/05

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.25' Asphalt		
							0.25- 2.5' SAND; little Gravel; lillle Silt (Fill). Damp.		
1					0.3				
2					0.3				
							2.5-4' Red brown SILT; some fine Sand; little Clay. Damp, no odor, no staining.		
3					0.4				
4	A	0-4	N/A	3.5	0.3				
					0.3		4-7' Red brown CLAY; some Silt; tr. f. Sand; tr. c. Sand; moderate plasticity. Damp, no odor, no staining.		
5									
					0.3				
6									
					0.5				
7	B	4-7	N/A	3.5	0.6				
							7-9' Red brown CLAY; tr. Silt; tr. F. Sand (lenses); moderate plasticity. No odor, no staining.		
8									
9	C	7-9	N/A	2.0	N/A				
					0.5		9-11' Same as above. Very soft at 11'. No odor no staining.		
10					0.6				
					0.6				
11	D	9-11	N/A	2.5	0.5				
							11-12' no recovery		
12									
					0.4		12-14' Red brown CLAY; some Silt; tr. C. Sand. Saturated, no odor, no staining.		
13					0.5				
14	E	11-14	N/A	0.9	0.6				
					0.7		14-15' Same as above.		
15									
					0.5		15-16' Red SILT; some Clay; little m. Sand; little c. Gravel. Very soft. Non-plastic	SB-35(15-16')	
16	F	14-16	N/A	2	0.4				
17							Augered to 17' to allow for well installation.		
18									
19									
20									

NOTES:

Probe refusal at 16 ft. Augered to 17 ft. for well installation.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride *Project:* Buffalo, New York

Project Number: 10770-001

Site Location: 8 Lord Street

Coordinates: *Elevation:*

Drilling Method: GeoProbe

Sample Type(s): 2" by 4' MacroCore *Boring Diameter:* 2 ___in.

BORING ID:

SB-36

Sheet: 1 *of* 1

Monitoring Well Installed: N

Screened Interval:

Weather: Overcast 30 F

Logged By: KDR

Date/Time Started: 12/01/05

Depth of Boring: 14

Drilling Contractor: Nothnagle Drilling

Ground Elevation:

Date/Time Finished: 12/01/05

Water Level: 7.5'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							1-0.25' Asphalt		
							0.25-1.5' Black f. SAND; little Silt; little Clay; little c. Gravel (Fill). Wet		
1					0.8				
							1.5-4' Red brown CLAY; some Silt; little f. Sand; tr. f. Gravel. Damp, no odor, no staining.		
2					0.7				
3					0.6				
4	A	0-4	N/A	2	0.5				
					0.5		4-7' Same as above.		
5									
					1.1				
6									
					0.9				
7	B	4-7	N/A	3	0.8				
							7-7.5' Same as above.		
8					0.7		7.5-9' Coarse SAND; some f. Sand; tr. Silt. Saturated.		
					0.6				
9	C	7-9	N/A	2	0.6				
							9-9.5' Same as above.		
10					0.8		9.5-13' Grey brown CLAY; some Silt. Saturated. Soft.		
11					0.7				
					0.4				
12					0.3				
					0.5				
13	D	9-13	N/A	4	0.6				
							13-13.5' Same as above.	SB-36(13-14')	
14	E	13-14	N/A				13.5-14' Gray SILT; some Clay; some Sand, tr. c. Gravel.		
15									
16									
17									
18									
19									
20									

NOTES:

Probe refusal at 14 ft.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project: Buffalo, New York
Project Number: 10770-001
Site Location: 8 Lord Street
Coordinates:
Elevation:
Drilling Method: GeoProbe
Sample Type(s): 2" by 4' MacroCore
Boring Diameter: 2 ___in.

BORING ID:

SB-38

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:

Weather: Overcast 30 F
Logged By: KDR
Date/Time Started: 12/01/05
Depth of Boring: 19
Drilling Contractor: Nothnagle Drilling
Ground Elevation:
Date/Time Finished: 12/01/05
Water Level: 12.5

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.25' Asphalt		
1					0.5		0.25-4' SAND, tr. Silt, tr. Gravel. (FILL: includes brick fragments), well graded.		
2					1.1				
3					1.3				
4	A	0-4	N/A	3.25	1.2				
							4-8' Red brown CLAY; some Silt; tr. f. Sand; tr. Grevel. Moderate plasticity.		
5					0.6				
6					1.0				
7					0.9				
8	B	4-8	N/A	3	0.8				
							8-10' Same as above.		
9					0.7				
10	C	8-10	N/A	1	0.6				
							10-15' Grey/olive green Clay; some Silt; tr. f. Sand; tr. Gravel. Moderate plasticity.		
11									
12	D	10-12	N/A	0.5	0.3				
							12-12.5' Same as above.		
13					0.5				
14	E	12-14	N/A	4	0.7				
					0.6		12.5-16' Red Grey Clay; some Silt; trace fine Gravel. Saturated, soft, non-plastic.		
15					0.8				
16	F	14-16	N/A	N/A	0.9				
							16-19' Grey f. SAND; some Clay; little Silt; little c. Sand; tr. c. Gravel. Saturated.		
17					0.5				
18					0.4				
								SB-38 (18-19')	
19	G	16-19	N/A	1	0.9				
20									

NOTES:
Probe refusal at 19 ft.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

N/A

Soil Boring Log

Client: AmeriPride *Project:* Buffalo, New York

Project Number: 10770-001

Site Location: 8 Lord Street

Coordinates: *Elevation:*

Drilling Method: GeoProbe with 4.25" Hollow Stem Auger

Sample Type(s): 2" by 4' MacroCore *Boring Diameter:* 7 ___in.

BORING ID:

SB-39 (MW-2)

Sheet: 1 *of* 1

Monitoring Well Installed: Y

Screened Interval: 19-9'

Depth of Boring: 19

Water Level: 12'

Weather: Overcast, sleet and snow.

Logged By: KDR

Date/Time Started: 12/7/05

Date/Time Finished: 12/7/05

Drilling Contractor: Nothnagle Drilling

Ground Elevation:

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth
0							0-0.25' Asphalt		
					1.3		0.25- 1' Black to brown SAND and GRAVEL; well graded, wet, no odor.		
1					1.5				
							1-4' Red grey brown CLAY; some Silt; trace f. Sand, damp.		
2					4.2				
3					4.3				
4	A	0-4	N/A	4	5.1				
					1.2		4-7' Same as above.		
5									
					1.9				
6					2.1				
7	B	4-7	N/A	3	2.5				
					1.8		7-9' Same as above.		
8					1.9				
9	C	7-9	N/A	2	1.4				
							9-9.5' Same as above.		
10					1.9		9.5' Color change to olive green/brown.		
11	D	9-11	N/A	2	1.8				
							11-13' Same as above. Wet at 12'.		
12					1.9				
13	E	11-13	N/A	2	1.7		Saturated at 13'.		
							13-15' Same as above. Saturated.	SB-38(13-14')	
14					2.1				
15	F	13-15	N/A	2	2.5		15-18' Same as above.		
					4.3				
16									
					2.1				
17					2.4				
18					1.9				
							18-19' Same as above; tr. fine Gravel.	SB-38(18.5-19')	
19	G	15-19	N/A	4	1.8				
20									

NOTES:

Probe refusal at 19 ft. Augered to 19 ft. for well installation.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York		**BORING ID:**
Project Number: 10770-001			**SB-40**
Site Location: 8 Lord Street			
Coordinates:	*Elevation:*		*Sheet:* 1 *of* 1
Drilling Method: GeoProbe			*Monitoring Well Installed:* N
Sample Type(s): 2" by 4' MacroCore	*Boring Diameter:* 2 ___in.		*Screened Interval:*
Weather: Sunny 17 F, very strong wind	*Logged By:* KDR	*Date/Time Started:* 12/07/05	*Depth of Boring:* 18'
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/07/05	*Water Level:* 12'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth
0							0-1' Asphalt with Gravel sub-base.		
					1.2		GRAVEL and SILT; trace to little f. SAND; (FILL). damp to wet.		
1									
					1.4				
2									
					6.5				
3									
4	A	0-4	N/A	2.5	5.4				
					9.8		4-8' Red brown CLAY; some Silt; stiff, tight, damp.		
5							Faint hydrocarbon-like odor, no staining.		
					11.3				
6									
					1.2				
7									
8	B	4-8	N/A	3	1.4				
					12.8		8-11' Red Brown CLAY; little Silt. Stiff, damp.		
9							faint hydrocarbon-like odor, no staining/		
					10.8				
10									
					15.2				
11									
12	C	8-12	N/A	1			Saturated at 12'.		
					35.8		Same as above, faint odor.		
13								SB-40 (12-14')	
					52.2				
14	D	12-14	N/A	2	32.3				
					35.6		Same as above, faint odor.		
15								SB-40 (14-16')	
					28.2				
16	E	14-16	N/A	2	25.4				
					5.2		Same as above.		
17						1.3			
18	F	16-18	N/A	1	9.2				
19									
20									

NOTES:

Probe refusal at 18 ft. Per KDR's instructions, stratigraphy below 4 ft. obtained from adjacent boring (see log for SB-41).

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

N/A

Soil Boring Log

Client: AmeriPride

Project: Buffalo, New York

Project Number: 10770-001

Site Location: 8 Lord Street

Coordinates:

Elevation:

Drilling Method: GeoProbe with 4.25" Hollow Stem Auger

Sample Type(s): 2" by 4' MacroCore

Boring Diameter: 7 ___in.

BORING ID:

SB-41 (MW-3)

Sheet: 1 *of* 1

Monitoring Well Installed: Y

Screened Interval: 17.2-7.2'

Weather: Overcast, sleet and snow 30 F.

Logged By: KDR

Date/Time Started: 11/30/05

Depth of Boring: 18'

Drilling Contractor: Nothnagle Drilling

Ground Elevation:

Date/Time Finished: 11/30/05

Water Level: 14'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-1' Asphalt with Gravel sub-base, damp.		
1							1-2' CLAY and SILT; trace-little f. Sand; CLAY Silt trace little f. Sand. Damp to wet. No odors, no staining.		
2							2-4' Wood debris (FILL), trace Sand, damp.		
3									
4	A	0-4'	N/A	4					
5							4-8' Red brown CLAY; some Silt; stiff, tight, damp. No odor. Grey/beige mottling between 5 and 7 ft. bgs.		
6								SB-41(5-7')	
7									
8	B	4-8	N/A	4					
9							8-11' Red Brown CLAY; little Silt. Stiff damp, no odor.		
10									
11	C	8-11	N/A	2.5					
12							11-13' Same as above.		
13	D	11-13	N/A	1.1					
14					0.8		13-16' Same as above. Saturated at approx. 14'.		
15									
16	E	13-16	N/A	2	1.1 1.2				
17					0.9		16-18 Same as above.		
18	F	16-18	N/A	1.1	0.8 0.5			SB-41 (17-18')	
19									
20									

NOTES:

Probe refusal at 18 ft. Augered to refusal at 17.2 ft. for well installation.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York		**BORING ID:** SB-42
Project Number: 10770-001			
Site Location: 8 Lord Street			
Coordinates:		*Elevation:*	*Sheet:* 1 *of* 1
Drilling Method: GeoProbe			*Monitoring Well Installed:* N
Sample Type(s): 2" by 4' MacroCore		*Boring Diameter:* 2 ___in.	*Screened Interval:*
Weather: Overcast 30 F	*Logged By:* KDR	*Date/Time Started:* 12/08/05	*Depth of Boring:* 20'
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/081/05	*Water Level:* 17'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.3' Concrete		
							0.3-0.6' SAND and GRAVEL, well graded, no odor, no staining.		
1							0.6 -4' Red brown CLAY; some Silt; tr. f. Sand; tr. Gravel. No odor, no staining.		
2									
3									
4	A	0-4	N/A	2.5	N/A				
							4-8' Black SAND and GRAVEL; trace Silt; trace Clay; well graded. Damp, no odor, no staining.		
5									
6									
7									
8	B	4-8	N/A	1.5	N/A				
							8-11' Grey CLAY; little SILT, tr. f.. Sand; tr. Gravel. Moderate plasticity.		
9									
10									
11							11-12' Same as above, color change to red brown.		
12	C	8-12	N/A	3	N/A				
							12-14' Same as above.		
13									
14	E	12-14	N/A	2	N/A				
15									
16								SB-42 (16-16.5')	
17	F	14-17	N/A	N/A	N/A		Saturated at 17'.		
							Same as above to 20'.		
18									
19									
								SB-42 (19-20')	
20									

NOTES:

Boring terminated at 20 ft. bgs. Sample SB-100(19-20') collected as duplicate of SB-42(19-20) at t=9:10.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

N/A

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York		**BORING ID:**
Project Number: 10770-001			**SB-43 (MW-4)**
Site Location: 8 Lord Street			
Coordinates:	*Elevation:*		*Sheet:* 1 *of* 1
Drilling Method: GeoProbe with 4.25" Hollow Stem Auger			*Monitoring Well Installed:* Y
Sample Type(s): 2" by 4' MacroCore	*Boring Diameter:* 7 ___in.		*Screened Interval:* 17-7'
Weather: Overcast, 17 F Strong wind.	*Logged By:* KDR	*Date/Time Started:* 12/7/05	*Depth of Boring:* 17
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/7/05	*Water Level:* 8'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0									
							0-0.5' Concrete		
1					2.3		0.5-4' Brown f. - m. SAND; tr. c. Sand; tr. c. Gravel. Wet, no odor, no staining.		
					5.2				
2					4.2				
3					4.3				
4	A	0-4	N/A	3	5.1				
							Same as above.		
5					4.8				
6					5.1				
7					5.1				
8	B	4-8	N/A	2.5	5.2			SB-43 (7.5-8')	
							Same as above. Groundwater encountered between 8 and 8.5'.	SB-43 (8-8.5')	
9					4.8				
10					4.9				
11					5.2				
12	C	8-12	N/A		5.5				
							Same as above.		
13					6.3				
14					5.2				
15	D	12-15	N/A		5.1				
							Same as above.		
16					2.9				
					2.8				
17	E	15-17	N/A		5.4				
18									
19									
20									

NOTES:

Probe refusal at 17 ft. Augered to 17 ft. for well installation.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project: Buffalo, New York
Project Number: 10770-001
Site Location: 8 Lord Street
Coordinates:
Elevation:
Drilling Method: GeoProbe
Sample Type(s): 2" by 4' MacroCore
Boring Diameter: 2 ___in.

BORING ID:

SB-44

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 17.5
Water Level: 11

Weather: Sunny, 17 F, strong wind
Logged By: KDR
Date/Time Started: 12/07/05
Drilling Contractor: Nothnagle Drilling
Ground Elevation:
Date/Time Finished: 12/07/05

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0									
1									
2									
3									
4	A	0-4	N /A				Red brown CLAY; some Silt. No staining, no odor.		
5									
6									
7	B	4-7	N /A				Same as above.		
8									
9	C	7-9	N /A				Same as above.		
10									
11	D	9-11	N /A				Same as above. Groundwater encountered between 11 and 12 ft.	SB-44(11-12')	
12									
13									
14	E	11-14	N /A				Same as above.		
15									
16									
17	F		N /A					SB-44(17-17.5')	
18									
19									
20									

NOTES:

Probe refusal at 17.5 ft.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York	**BORING ID:** **SB-45 (MW-5)**	
Project Number: 10770-001			
Site Location: 8 Lord Street			
Coordinates:	*Elevation:*	*Sheet:* 1 *of* 1	
Drilling Method: GeoProbe and 4.25" Hollow stem auger		*Monitoring Well Installed:*	Y
Sample Type(s): 2" by 4' MacroCore	*Boring Diameter:* 7 ___in.	*Screened Interval:*	20-10'
Weather: Sunny 15 F	*Logged By:* KDR	*Date/Time Started:* 12/08/05	*Depth of Boring:* 20'
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/08/05	*Water Level:* 15.5'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.5' Concrete		
1							0,.5-1.5' Well graded SAND; trace Silt; trace Clay. No odors, no staining. 1.5-4' Grey CLAY and SILT; trace Sand. (Fill: includes brick and glass).		
2									
3									
4	A	0-4	N/A	3	*				
5							4-7' Same as above.		
6									
7							7-8' Grey brown Clay; little to some Silt; trace f. Sand; tace Gravel. Slightly plastic.		
8	B	4-8	N/A	4	*				
9							8-12' Same as above.		
10									
11							Color change to red grey at 11 ft.		
12	C	9-12	N/A	2.5	*				
13							Same as above. White staining between 12.5 and 14'.	SB-45 (12.5-14')	
14	D	11-14	N/A	3	*				
15							14-17' Red grey CLAY; little to some Silt; trave f. Sand; trace Gravel. Moderate plasticity, wet at 15.5-16'.		
16									
17	E	14-17	N/A	N/A	*				
18							Same as above. Saturated.		
19								SB-45 (18-20')	
20	F	17-20	N/A	N/A	*		Boring terminated at 20 ft.		

NOTES:

* - PID non-responsive. Boring terminated at 20 ft.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project: Buffalo, New York
Project Number: 10770-001
Site Location: 8 Lord Street
Coordinates:
Elevation:
Drilling Method: GeoProbe
Sample Type(s): 2" by 4' MacroCore
Boring Diameter: 2 ___in.

BORING ID:

SB-46

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 20'
Water Level: 17'

Weather:
Drilling Contractor: Nothnagle Drilling
Logged By: KDR
Ground Elevation:
Date/Time Started: 12/2/05
Date/Time Finished: 12/02/05

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.2' Concrete		
							0.2-4' CLAY; some Silt; little f. Sand; little f. Gravel (Fill; includes wood). Moderate solvent-like odor.		
1					25.3				
2					22.1				
								SB-46(2-3')	
3					19.3				
4	A	0-4	N/A	3	30.1				
							4-8' Grey black CLAY; some Silt; trace f. Sand; damp, no odor, no staining.		
5					1.9				
6					2.3				
7					2.2				
8	B	4-8	N/A	3	2.4				
							8-12' Same as above. No odors, no staining.		
9					1.6		Color change to red brown at approx. 9 ft.		
10					2.1				
11					1.7				
12	C	8-12	N/A	2.5	2.3				
							Same as above.		
13					1.5				
					1.4				
14	D	12-14	N/A	1.5	1.6				
					2.3		Same as above.		
15					2.5				
16	E	14-16	N/A	2	1.4				
							Same aa above.	SB-46 (16-17')	
17					1.7				
					1.6		Saturated at 17'		
18	F	16-18	N/A	2	1.3				
							No recovery.		
19									
20	G	18-20	N/A	0	N/A				

NOTES:

Boring terminated at 20 ft.

Checked by ______________________________ Date:________________

Date	Time	Depth to groundwater while drilling

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride
Project: Buffalo, New York
Project Number: 10770-001
Site Location: 8 Lord Street
Coordinates:
Elevation:
Drilling Method: GeoProbe
Sample Type(s): 2" by 4' MacroCore
Boring Diameter: 2 ___in.

BORING ID:

SB-47

Sheet: 1 *of* 1
Monitoring Well Installed: N
Screened Interval:
Depth of Boring: 20'
Water Level: 14'

Weather: Overcast 20 F
Logged By: KDR
Date/Time Started: 12/02/05
Drilling Contractor: Nothnagle Drilling
Ground Elevation:
Date/Time Finished: 12/02/05

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0							0-0.5' Concrete.		
							0.5-4' Grey black, CLAY; some Silt; little f. Sand; trace f. Gravel. No odor, no staining.		
1					1.5				
2					1.3				
3					1.1				
4	A	0-4	N/A	3.5	1.0				
							4-8' Grey brown CLAY; xome Silt; little f. Sand; trace f. Gravel. No odors, no staining.		
5					1.5				
6					1.0				
7					1.2				
8	B	4-8	N/A	3.5	1.2				
					0.9		8-12' Same as above.		
9									
					1.1				
10									
					1.3				
11									
					1.5				
12	C	8-12	N/A	3.5	1.3				
							12-14' Same as above. Wet at 14'.		
13					1.0				
					1.1				
14	D	12-14	N/A	2	1.3				
							Same as above. Wet at 14'. Saturated at 17'.		
15					0.9				
					1.1				
16					1.3			SB-47(16-17')	
17	E	14-17	N/A	3	1.4				
							17-18' Same as above.		
18					1.5				
					1.3		18-20' Olive grey f. SAND; some Silt; little Clay; little m. Sand; tr. f-m. Gravel.		
19					1.2				
								SB-47 (19-20')	
20	F	17-20	N/A	4	0.9				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York		**BORING ID:**	
Project Number: 10770-001			**SB-48**	
Site Location: 8 Lord Street				
Coordinates:		*Elevation:*	*Sheet:* 1 *of* 1	
Drilling Method: GeoProbe			*Monitoring Well Installed:*	N
Sample Type(s): 2" by 4' MacroCore		*Boring Diameter:* 2 ___in.	*Screened Interval:*	
Weather: Overcast 26 F	*Logged By:* KDR	*Date/Time Started:* 12/02/05	*Depth of Boring:*	19.8'
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/02/05	*Water Level:*	14'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	**MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)**	Lab Sample ID	Lab Sample Depth
0									
							0-0.5' Concrete.		
1					16		0.5-4' Brown black CLAY; some Silt; trace f. Sand (Fill: includes wood fragments). Moderate Hydrocarbon odor. Damp.		
2					14.5			SB-48 (1.5-2')	
3					17.3				
4	A	0-4	N/A	2	18.2				
							4-8' red gray CLAY; some Silt; trace f. Sand;. No odor.		
5					1.8				
6					1.9				
7									
					1.6				
8	B	4-8	N/A	1					
							8-12' Grey/Olive green CLAY; some Silt; trace f. Sand.		
9									
					1.1				
10									
					1.3				
11									
					1.5				
12	C	8-12	N/A	1.5					
					4.2		12-14' Grey CLAY; some Silt; trave f. Sand. Wet at 14'.		
13					0.9				
					1.5				
14	D	12-14	N/A	2	1.6				
					1.3		14-17' Same as above. Saturated at 15'.	SB-48(14-15')	
15					1.2				
16					1.1				
17	E	14-17	N/A	3	0.8				
							17-18.5' Same as above.		
18									
							18-19.8' f. SAND; some Silt; little Clay; little m. Sand; tr. f-m. Gravel.		
19									
20	F	17-19.8	N/A	NR	NR		Probe refusal at 19.8 ft.		

NOTES:

NR - Not Recorded

Probe refusal at 19.8 ft.

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York		**BORING ID:**
Project Number: 10770-001			**SB-49**
Site Location: 8 Lord Street			
Coordinates:		*Elevation:*	*Sheet:* 1 *of* 1
Drilling Method: GeoProbe			*Monitoring Well Installed:* N
Sample Type(s): 2" by 4' MacroCore		*Boring Diameter:* 2 ___in.	*Screened Interval:*
Weather:	*Logged By:* KDR	*Date/Time Started:* 12/02/05	*Depth of Boring:* 19.5'
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/02/05	*Water Level:* 13'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth
0									
							0-0.5' Concrete		
1							0.5-4' SILT; soeme Clay; little Sand; trace Gravel (Fill; includes wood fragments). No odor, no staining.		
2									
3									
4	A	0-4	N/A	2.5	NR				
							4-8' Brown (mottled with grey) CLAY; some Silt; trace to little f. Sand; trace f. Gravel. Damp, no odor, no Staining.		
5					1.5				
6					1.3				
					1.6				
7					1.8				
8	B	4-8	N/A	3.5	1.7				
					1.2		8-11' Olive Gren CLAY; some Silt; trace to little f. Sand; trace f. Gravel. Damp, no odors, no staining.		
9					1.3				
10					1.4				
11	C	8-11	N/A	2.5	4.3				
							11-13' Olive green to grey CLAY; some Silt; trace f. Sand. Wet at 13'. Slight hydrocarbon odor.		
12					24.8				
					25.6			SB-49(12-13')	
13	D	11-13	N/A	2	30.1				
							13-17' Red grey CLAY; some Silt; little f. Sand; trace f. Gravel. Slight hydrocarbon odor at 13-13.5'.		
14					9.8				
15					1.5				
16					1.8		Saturated at 16'.		
								SB-49(16-17')	
17	E	13-17	N/A	3	1.2				
							17-18' Red Grey CLAY; some Silt; trace f. Sand; trace f.- m. Gravel.		
18					1.5				
					1.2		18-19.5' Grey f. SAND; Some Silt; little Clay; little m. Sand; trace f-m. Gravel.		
19					1.3				
	F	17-19.5	N/A	2.5	1.2		Probe refusal at 19.5'.		
20									

NOTES:

NR - Not recorded.

ft.

Probe refusal at 19.5

Date	Time	Depth to groundwater while drilling

Checked by ______________________________ Date:________________

ENSR INTERNATIONAL

Soil Boring Log

Client: AmeriPride	*Project:* Buffalo, New York		**BORING ID:**
Project Number: 10770-001			**SB-50 (MW-6)**
Site Location: 8 Lord Street			
Coordinates:	*Elevation:*		*Sheet:* 1 *of* 1
Drilling Method: GeoProbe and 4.25" Hollow stem auger			*Monitoring Well Installed:* Y
Sample Type(s): 2" by 4' MacroCore	*Boring Diameter:* 7 ___in.		*Screened Interval:* 17.2-7.2
Weather: Sunny 15 F	*Logged By:* KDR	*Date/Time Started:* 12/01/05	*Depth of Boring:* 19
Drilling Contractor: Nothnagle Drilling	*Ground Elevation:*	*Date/Time Finished:* 12/01/05	*Water Level:* 15.5'

Depth (feet)	Geologic sample ID	Sample Depth (ft)	Blow Count (per 6-inches)	Recovery (ft.)	(Headspace (ppmv)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth
0									
							0-0.25' Asphalt		
1							0.25-4' Sand and Gravel, well graded, (Fill). Damp to moist, no odors, no staining.		
2					0.5				
3					0.6				
4	A	0-4	N/A	1	0.6				
							4-8' Grey CLAY; some Silt; trace f. Sand. Stiff, damp, no odors, no staining.		
5					0.7				
6					0.7				
							Color grades to red brown with grey mottling.		
7					0.6				
8	B	4-8	N/A	2.5	0.7				
							8-11' Red brown CLAY; some Silt; trace f. Sand, damp, stiff.		
9					0.8				
					0.8				
10									
					0.7				
11	C	8-11	N/A	4	0.6				
					0.8		11-13' Red brown grading to grey CLAY; some Silt; trace f. Sand. Stiff.		
12					0.9				
					0.7				
13	D	11-13	N/A	3.5	0.4				
							13-16' Soft, Grey CLAY; some Silt; trace f. Sand.		
14					0.9				
					0.8				
15								SB-50 (12-16')	
					1.1				
16	E	13-16	N/A	1	1.0				
							16-18' Grey SILT; some Clay; little c. Gravel; little c. Sand. Saturated.		
17									
18	F	16-18	N/A	2.5					
					1.1		18-19' Gray f. SAND; some Silt; little c. Gravel; little c. Sand.	SB-50(17-19')	
19	G	18-19	N/A	1.0	1.3				
20									

NOTES:

Probe refusal at 19 ft. Augered to refusal at 17.2 ft. for well installation.

Checked by ______________________________ Date:________________

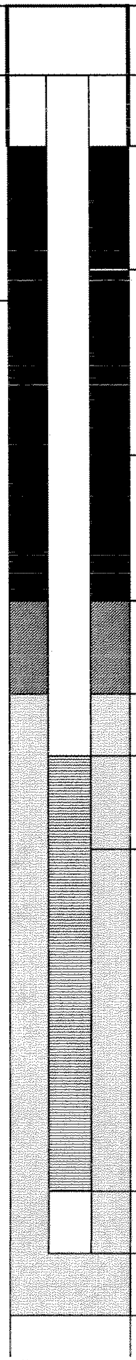
Date	Time	Depth to groundwater while drilling

Appendix C

Monitoring Well Construction Detail

ENSR INTERNATIONAL	*Client:* AmeriPride	**WELL ID: MW- 1**
	Project Number: 10770-001-200	
	Site Location: 8 Lord St. Buffalo, N.Y.	*Date Installed:* 11/30/2005
	Well Location: SB-35 *Coords:*	*Inspector:* KDR
	Method: Hollow Stem Auger	*Contractor:* Nothnagle

MONITORING WELL CONSTRUCTION DETAIL



Measuring Point for Surveying & Water Levels

Cement, Bentonite, Bentonite Slurry Grout, or Native Materials

___ % Cement

100 % Bentonite

___ % Native Materials

	Depth from G.S. (feet)	Elevation(feet) Datum Local
Top of flush-mount (manhole) cover (ground surface)	0	101.38
Top of Riser Pipe	0.34	101.04
Ground Surface (G.S.)	NA	NA
Bottom of Steel Guard Pipe	1.0	100.4
Top of Bentonite	2.0	99.4
Top of Sand	5.0	96.4
Top of Screen	7.11	94.3
▼ Stabilized Water Level (TOC)	7.05	93.99
Bottom of Screen	16.69	84.7
Bottom of Tail Pipe:	17.0	84.4
Bottom of Borehole	17.0	84.4

Riser Pipe:
Length 6.6
Inside Diameter (ID) 2"
Type of Material PVC

Bentonite Seal Thickness 3

Screen:
Length 10'
Inside Diameter (ID) 2"
Slot Size 0.010"
Type of Material PVC

Type/Size of Sand 00N
Sand Pack Thickness 12'

Borehole Diameter: 6 7/8"

Approved:

Ka

Signature

02/15/06

Date

Describe Measuring Point:

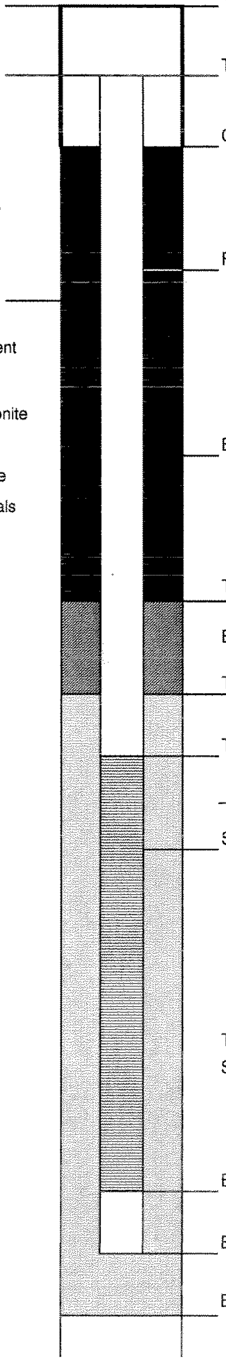
High point on PVC casing

ENSR INTERNATIONAL

Client: AmeriPride
Project Number: 10770-001-200
Site Location: 8 Lord St. Buffalo
Well Location: SB-39 *Coords:*
Method: Hollow Stem Auger

WELL ID: MW- 2
Date Installed: 12/7/05
Inspector: Karl Reimer
Contractor: Nothnagle

MONITORING WELL CONSTRUCTION DETAIL



Measuring Point for Surveying & Water Levels

Cement, Bentonite, Bentonite Slurry Grout, or Native Materials

____ % Cement
100 % Bentonite
____ % Native Materials

	Depth from G.S. (feet)	Elevation(feet) Datum LOCAL
Top of flush-mount (manhole) cover (ground surface)	0	100.66
Top of Riser Pipe	0.47	100.19
Ground Surface (G.S.)	0	100.66
Bottom of Steel Guard Pipe	1.0	99.66
Top of Bentonite	4.0'	96.66
Top of Sand	7.0'	93.66
Top of Screen	9.31	91.35
Stabilized Water Level (TOC)	6.36	93.83
Bottom of Screen	18.69	81.97
Bottom of Tail Pipe:	19.0	81.66
Bottom of Borehole	19.0	81.66

Riser Pipe:
Length 8.84
Inside Diameter (ID) 2"
Type of Material Sch 40 PVC

Bentonite Seal Thickness 3.0'

Screen:
Length 10'
Inside Diameter (ID) 2"
Slot Size 0.010
Type of Material Sch. 40 PVC

Type/Size of Sand 00N
Sand Pack Thickness 12'

Borehole Diameter: 6 7/8"

Describe Measuring Point:
High point on PVC casing

Approved:
Signature

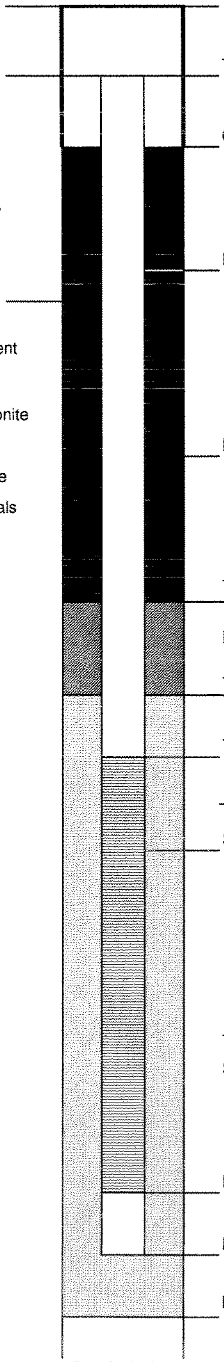
02/15/06
Date

ENSR INTERNATIONAL

Client: AmeriPride
Project Number: 10770 - 001 - 200
Site Location: 8 Lord Street Buffalo, NY.
Well Location: *Coords:*
Method: Hollow Stem Auger

WELL ID: **MW-** 3
Date Installed: 11/30/2005
Inspector: Karl Reimer
Contractor: Nothnagle

MONITORING WELL CONSTRUCTION DETAIL



Measuring Point for Surveying & Water Levels

Cement, Bentonite, Bentonite Slurry Grout, or Native Materials

____ % Cement
100 % Bentonite
____ % Native Materials

	Depth from G.S. (feet)	Elevation(feet) Datum LOCAL
Top of flush-mount (manhole) cover (ground surface)	0	98.34
Top of Riser Pipe	0.41	97.93
Ground Surface (G.S.)	NA	98.34
Bottom of Steel Guard Pipe	1.0	97.34
Top of Bentonite	2.31	96.03
Top of Sand	5.3	93.04
Top of Screen	7.31	91.03
▼ Stabilized Water Level (TOC)	7.31	90.62
Bottom of Screen	16.89	81.45
Bottom of Tail Pipe:	17.2	81.1
Bottom of Borehole	17.2	81.1

Riser Pipe:
Length 6.9
Inside Diameter (ID) 2"
Type of Material PVC

Bentonite Seal Thickness 3.0'

Screen:
Length 10'
Inside Diameter (ID) 2"
Slot Size 0.010 in
Type of Material Sch 40 PVC

Type/Size of Sand OON
Sand Pack Thickness 12'

Borehole Diameter: 6 7/8

Approved:

Signature

Date 02/15/06

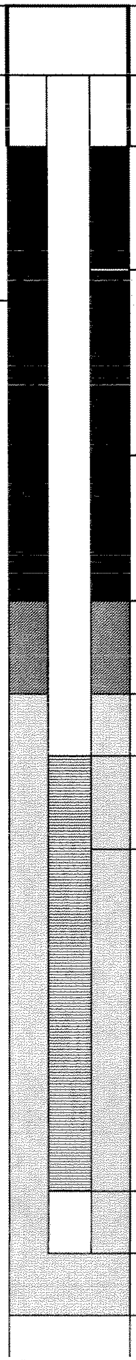
Describe Measuring Point:
Top of PVC casing (high Point)

ENSR INTERNATIONAL

Client: Ameri Pride
Project Number: 10770-001-200
Site Location: 8 Lord Street
Well Location: SB-43 Coords:
Method: Hollow Stem Auger

WELL ID: MW- 4
Date Installed: 12/08/05
Inspector: Karl Reimer
Contractor: Nothnagle

MONITORING WELL CONSTRUCTION DETAIL



Measuring Point for Surveying & Water Levels

Cement, Bentonite, Bentonite Slurry Grout, or Native Materials

_____ % Cement
100 % Bentonite
_____ % Native Materials

	Depth from G.S. (feet)	Elevation(feet) Datum LOCAL
Top of flush-mount (manhole) cover (ground surface)	0	99.77
Top of Riser Pipe	0.37	99.40
Ground Surface (G.S.)	NA	99.77
Bottom of Steel Guard Pipe	1.0	98.77
Top of Bentonite	2.0	97.77
Top of Sand	5.0	94.77
Top of Screen	7.31	92.46
▼ Stabilized Water Level (TOC)	5.61	93.79
Bottom of Screen	16.69	83.08
Bottom of Tail Pipe:	17.0	82.77
Bottom of Borehole	17.0	82.77

Riser Pipe:
Length 6.94
Inside Diameter (ID) 2"
Type of Material Sch 40 PVC

Bentonite Seal Thickness 3'

Screen:
Length 10
Inside Diameter (ID) 2"
Slot Size 0.010
Type of Material Sch. 40 PVC

Type/Size of Sand 00N
Sand Pack Thickness 12'

Borehole Diameter: 6 7/8"

Describe Measuring Point:
High point on PVC casing

Approved:
Signature

02/15/06
Date

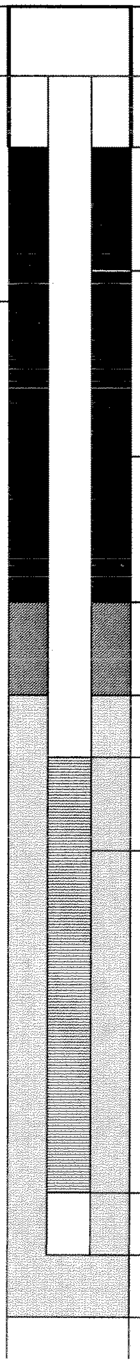
ENSR INTERNATIONAL

Client: AmeriPride
Project Number: 10770-001-200
Site Location: 8 Lord Street, Buffalo
Well Location: SB-45 Coords:
Method: Hollow Stem Auger

WELL ID: MW- 5

Date Installed: 12/8/05
Inspector: Karl Reimer
Contractor: Nothnagle

MONITORING WELL CONSTRUCTION DETAIL



Measuring Point for Surveying & Water Levels

Cement, Bentonite, Bentonite Slurry Grout, or Native Materials

____ % Cement
100 % Bentonite
____ % Native Materials

	Depth from G.S. (feet)	Elevation(feet) Datum LOCAL
Top of flush-mount (manhole) cover (ground surface)	0	99.93
Top of Riser Pipe	0.44	99.49
Ground Surface (G.S.)	NA	99.93
Bottom of Steel Guard Pipe	1.0	98.93
Top of Bentonite	4.0	95.93
Top of Sand	7.0	92.93
Top of Screen	10.11	89.81
▼ Stabilized Water Level (TOC)	11.24	88.25
Bottom of Screen	19.	80.93
Bottom of Tail Pipe:	19.8	80.1
Bottom of Borehole	19.8	80.1

Riser Pipe:
Length 9.67
Inside Diameter (ID) 2"
Type of Material PVC

Bentonite Seal Thickness 3'

Screen:
Length 10'
Inside Diameter (ID) 2"
Slot Size 0.010 in.
Type of Material Sch 40 PVC.

Type/Size of Sand 00N
Sand Pack Thickness 12'

Borehole Diameter: 6 7/8"

Describe Measuring Point:
High point on PVC casing

Approved: K Rei
Signature

02/15/08
Date

SUSTAINABLE STRATEGIES FOR GLOBAL LEADERS

July 23, 2009

Mr. Joseph E. Peter
AmeriPride Services, Inc.
10801 Wayzata Boulevard
Minnetonka, Minnesota 55305

Subject: Groundwater Monitoring – June 09
8 Lord Street, Buffalo, NY
Delta Project No. AP0904744P

Dear Mr. Peter:

Delta Consultants (Delta) conducted groundwater monitoring on June 9, 2009 at the subject site. This letter summarizes the activities performed and the analytical results.

SCOPE OF WORK

Groundwater Sampling

Groundwater level readings were collected from monitoring wells MW-1 to MW-5 to determine depth to groundwater and groundwater flow direction. Depths to groundwater were measured from the top of the PVC well casing using an electronic water level indicator. Groundwater elevations were calculated and a groundwater contour map was constructed. **Note**: Monitoring well MW-6 could not be located during the sampling event.

Groundwater samples from monitoring wells MW-1 to MW-5 were collected on June 9, 2009. Prior to collection, each monitoring well was purged a minimum of three well volumes and allowed to recover. Groundwater samples were then collected from each well using low flow sampling techniques. Groundwater samples were analyzed for volatile organic compounds (VOCs) (EPA Method 8260) by TestAmerica located in Amherst, NY. Field observations and sampling records are presented in Attachment A.

RESULTS

Groundwater Flow

Groundwater elevation data indicate that groundwater flow was generally to the south across the southern area of the site at a gradient of 0.037 ft/ft (Figure 1). However, in the central area of the site groundwater flow was to the north. The observed 180 degree reversal in flow direction may be caused by the proximity of MW-2 to a storm drain and/or other sub-grade features, which may be causing artificial highs in groundwater elevation in this area of the site due to leakage from the storm drain system.

A review of historical groundwater flow data presented in the March 2007 Supplemental Phase II Investigation Report, prepared by ENSR, indicated that groundwater flow conditions observed in December 2005 were similar to those observed by Delta during the June 2009 sampling event.

104 Jamesville Road, Syracuse, NY 13214 USA
Phone: 315.445.0224 / 800.477.7411 Fax: 315.445.0793
www.deltaenv.com

Groundwater Analytical Data

Groundwater analytical data indicated that VOCs in excess of NYSDEC Class GA groundwater standards were detected in monitoring wells MW-3, MW-4, and MW-5 (Table 1). VOCs detected in excess of groundwater standards were chlorinated compounds including; cis-1,2-dichloroethene, tetrachloroethene, trichloroethene and vinyl chloride. Laboratory analytical reports are presented as Attachment B.

Summary of 2005 and 2009 Groundwater Analytical Data

A review of the groundwater analytical data from the June 2009 groundwater sampling event and the December 2005 sampling event indicated the following:

- VOCs detected in MW-1 during the 2005 and 2009 sampling events were generally petroleum based compounds. Concentrations of detected VOCs during both sampling events were low and below applicable groundwater standards.

- Concentrations of VOCs detected in MW-2 were below applicable standards during the 2005 sampling event and decreased to non-detect levels during the 2009 sampling event. VOCs detected in monitoring well MW-2 during the 2005 sampling event were non-chlorinated based compounds.

- Concentrations of total VOCs detected in MW-3 during the 2009 sampling event decreased by 45 percent from those observed during the 2005 sampling event. This overall decrease is mainly attributable to a decrease in the concentration of cis-1,2-dichloroethene. Concentrations of vinyl chloride remained similar during both sampling events. VOCs generally detected in MW-3 during both sampling events were chlorinated based compounds.

- Concentrations of total VOCs detected in MW-4 during the 2009 sampling event increased by 27 percent from those observed during the 2005 sampling event. This overall increase is mainly attributable to an increase in the concentration of cis-1,2-dichloroethene. VOCs generally detected in MW-4 during both sampling events were chlorinated based compounds.

- Concentrations of VOCs detected in MW-5 during the 2009 sampling event increased by 600 percent from those observed during the 2005 sampling event. This overall increase is mainly attributable to an increase in the concentration of cis-1,2-dichloroethene and vinyl chloride. VOCs detected in MW-5 during both sampling events were chlorinated based compounds.

SUMMARY

Groundwater flow across the southern area of the site is to the south towards Seneca Street. Analytical data has indicated an increase of chlorinated VOCs in several down gradient monitoring wells, which suggests that an impacted plume is migrating to the south. The overall extent of the plume has yet to be determined and offsite impacts are considered a risk for the site.

If you have any questions or comments concerning this submittal, feel free to contact the undersigned at (315) 445-0224 or by e-mail (mschumacher@deltaenv.com).

Sincerely,

DELTA CONSULTANTS

Mark J Schumacher

Mark J. Schumacher
Senior Project Manager

Attachments

G:\37319 (AmeriPride, 8 Lord Street, Buffalo)\Client Files\Ameripride Buffalo Site\June 2009 GW Samp Summary.doc

TABLE 1
Groundwater Sample Analytical Results
AmeriPride Services, Inc.
8 Lord St., Buffalo, NY

June 9, 2009

PARAMETER	**NYSDEC Class GA Groundwater Standard (ppb)**	**SAMPLE ID**					
		MW-1	**MW-2**	**MW-3**	**MW-4**	**MW-5**	**MW-6**
Volatile Organic Compounds (ppb)							
Acetone	50	ND	ND	ND	ND	ND	NS
Carbon Disulfide	NS	ND	ND	ND	ND	ND	NS
cis-1,2-Dichloroethene	5	ND	ND	**42**	**180**	**70**	NS
Dichlorodifluoromethane	5	ND	ND	ND	ND	ND	NS
MTBE	10	6.5	ND	ND	ND	ND	NS
Tetrachloroethene	5	ND	ND	ND	**92**	ND	NS
trans-1,2-Dichloroethene	5	ND	ND	1.7	3.2	ND	NS
Trichloroethene	5	ND	ND	ND	**96**	ND	NS
Vinyl Chloride	2	ND	ND	**25**	1.1	**16**	NS
Total VOCs	NA	6.5	0	68.7	372.3	86	NS

December 14, 2005

PARAMETER	**NYSDEC Class GA Groundwater Standard (ppb)**	**SAMPLE ID**					
		MW-1	**MW-2**	**MW-3**	**MW-4**	**MW-5**	**MW-6**
Volatile Organic Compounds (ppb)							
Acetone	50	2.9	11	ND	ND	10	ND
Carbon Disulfide	NS	0.65	1.3	ND	ND	1.2	ND
cis-1,2-Dichloroethene	5	ND	ND	**94**	**66**	ND	ND
Dichlorodifluoromethane	5	ND	ND	0.68	ND	ND	ND
MTBE	10	2.2	ND	0.52	0.88	ND	ND
Tetrachloroethene	5	ND	ND	ND	**140**	0.91	ND
trans-1,2-Dichloroethene	5	ND	ND	3.6	0.9	ND	ND
Trichloroethene	5	ND	ND	0.73	**87**	ND	ND
Vinyl Chloride	2	ND	ND	**26**	ND	ND	ND
Total VOCs	NA	5.75	12.3	125.53	294.78	12.11	0

Notes:

ND: Compound not detected.
NS: Not Sampled.
NA; Not Applicable.
5 Analyte detected at concentration in excess of NYSDEC Class GA Groundwater Standard.

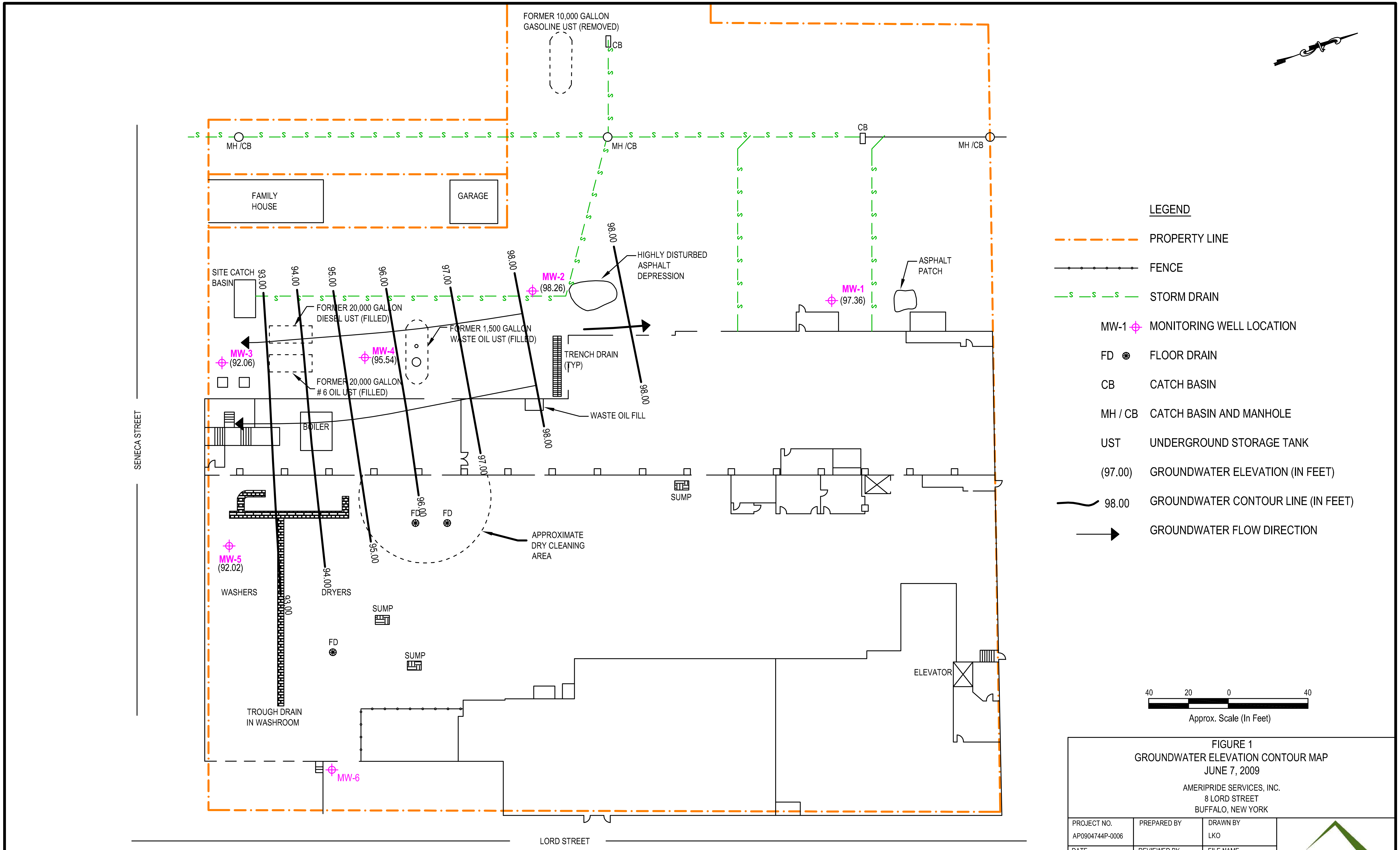


FIGURE 1
GROUNDWATER ELEVATION CONTOUR MAP
JUNE 7, 2009

AMERIPRIDE SERVICES, INC.
8 LORD STREET
BUFFALO, NEW YORK

PROJECT NO.	PREPARED BY	DRAWN BY
AP0904744P-0006		LKO
DATE	REVIEWED BY	FILE NAME
07-16-09	MS	Ameripride Layout

DELTA®

ATTACHMENT A

SAMPLING RECORDS

ATTACHMENT B

ANALYTICAL DATA

APPENDIX B

Field Sampling Plan

FIELD SAMPLING PLAN

REMEDIAL INVESTIGATION WORK PLAN
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
BUFFALO, NEW YORK

by

Haley & Aldrich of New York
Rochester, New York

for

AmeriPride Services, Inc
Minneapolis, Minnesota

File No. 37319-020
May 2011

TABLE OF CONTENTS

I. INTRODUCTION

This Field Sampling Plan has been prepared on behalf of AmeriPride Services, Inc. as a component of the Remedial Investigation (RI) Work Plan for the Former American Linen Supply Company Facility (the Site) located at 822 Seneca Street, Buffalo, New York. This document was prepared to establish field procedures for field data collection to be performed in support of the RI Work Plan for the Site.

The RI Work Plan includes this Field Sampling Plan, a Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP), and Community Air Monitoring Plan (CAMP), which are included as part of this plan by reference.

The standard operating procedures (SOP) included as components of this plan will provide the procedures necessary to meet the objectives of the RI Work Plan. The SOPs will be used as reference for the appropriate methods to be employed for field sample collection and handling and the management of filed data collected in the execution of the approved RI Project Work Plan. The SOPs includes numerous methods to execute the tasks of the RI Work Plan. The Project Manager will select the appropriate method as required by Field Conditions and/or the objective the respective project task.

II. FIELD PROGRAM

The field program has been designed to acquire the necessary data to meet the Data Quality Objectives (DQOs) outlined in the Quality Assurance Project Plan (QAPP). Haley & Aldrich will perform oversight and consulting during the field investigation. Data necessary to complete the RI will be collected by: soil sampling, groundwater sampling, soil vapor sampling, and any additional sampling/analysis as needed.

These standard operating procedures (SOP) may be changed as required, dependent on site conditions, equipment limitations, or limitations imposed by the procedure. If the procedures employed differ from the SOP, the deviations will be documented.

The primary objective of sampling activities is to characterize environmental conditions accurately to evaluate its impact on human health and the environment. The sampling will be conducted so that samples collected will retain, as much as possible, its original physical form and chemical composition.

This FSP provides the general purpose of sampling as well as procedural information. The RI Work Plan contains the details on sampling and analysis (locations, depths, frequency, analyte lists, etc.).

III. STANDARD OPERATING PROCEDURES

1.0 INITIAL SITE RECONNAISSANCE SURVEYS

1.1 Utility Clearance

Introduction

Invasive field investigation activities such as drilling, soil gas surveys, test excavation or remedial construction activities require location of underground utilities prior to initiating work. Such clearance is sound practice in that it minimizes the potential for damage to underground facilities and more importantly, is protective of the health and safety of personnel. Under no circumstances will invasive activities be allowed to proceed without obtaining proper utility clearance by the appropriate public agencies and/or private entities. **This clearance requirement applies to all work on both public and private property, whether located in a dense urban area or a seemingly out-of-the-way rural location.**

The Contractor performing the work is responsible for obtaining utility clearance.

In most states such utility clearance is required by law, and obtaining clearance includes contacting a public or private central clearance agency via a "one-call" telephone service and providing them with proposed exploration location information. This is discussed in more detail herein. It is important to note that public utility agencies may not, and usually do not have information regarding utility locations on private property.

Procedures Referenced

- 3.0 Subsurface Investigations

- Before marking any proposed exploration or underground construction locations, it is critical that all readily-available information on underground utilities and structures be obtained. This includes publicly-available information as well as information in the possession of private landowners. Any drawings obtained must be reviewed in detail for information pertaining to underground utilities.

- Using the information obtained, the site should be viewed in detail for physical evidence of buried lines or structures, including pavement cuts and patches, variation in or lack of vegetation, variations in grading, etc. (Care must also be taken to avoid overhead utilities as well). Presence of surface elements of buried utilities should be documented, such as manholes, gas or water service valves, catch basins, monuments or other evidence.

- Overhead utility lines must be taken into account when choosing exploration and excavation locations. Most states require a minimum of 10 ft. of clearance between equipment and energized wires. Such separation requirements may also be voltage-based and may vary depending on state or municipality regulations. In evaluating clearance from overhead lines, the same restrictions may apply to "drops", or wires on a utility pole connecting overhead and underground lines.

- Using the information obtained and observations made, *proposed* exploration or construction locations should be marked in the field. Marking locations can be accomplished using spray paint on the ground, stakes, or other means**. All markings of proposed locations should be made in white**, in accordance with the generally-accepted universal color code for facilities identification (AWMA 4/99):

- White:	Proposed Excavation or Drilling location
- Pink:	Temporary Survey Markings
- Red:	Electrical Power Lines, Cables, Conduit and Lighting Cables
- Yellow:	Gas, Oil, Steam, Petroleum or Gaseous Materials
- Orange:	Communication, Alarm or Signal Lines, Cables or Conduits
- Blue:	Potable Water
- Purple:	Reclaimed Water, Irrigation and Slurry Lines
- Green:	Sewers and Drain Lines

- In order to effectively evaluate the proposed locations with these entities, detailed, accurate measurements between the proposed locations and existing surface features should be obtained. Such features can be buildings, street intersections, utility poles, guardrails, etc.

Obtaining the utility clearance generally involves two entities: The designated “One-Call” underground facilities protection organization for the area; and The landowner.

Both entities must be contacted and the proposed locations evaluated in light of information available for existing underground facilities. The detailed measurement information described above will be required by the “one call” agency. The owners of the applicable, participating underground utilities are obligated to mark their respective facilities at the site in the colors described above. Utility stake-out activities will typically not commence for approximately 72 hours after the initial request is made.

- The public and private utility entities generally only mark the locations of their respective underground facilities within public rights-of-way. Determination of the locations of these facilities on private property will be the responsibility of the property owner or Contractor. If available information does not contain sufficient detail to locate underground facilities with a reasonable amount of confidence, alternate measures may be appropriate, as described below. In some cases, the memory of a long-time employee of a facility on private property may be the best or only source of information. It is incumbent on the Consultant or Contractor to exercise caution and use good judgement when faced with uncertainty.

- **Notes: It is important to note that not all utilities are participants in the “one-call” agency or process. As such, inquiries must be made with the “one-call” agency to determine which entities do not participate, so they can be contacted independently.**

  Most utility stake-outs have a limited time period for which they remain valid, typically two to three weeks. It is critical that this time period be taken into account to prevent expiration of clearance prior to completion of the invasive activities, and the need to repeat the stake-out process.

- Care must be exercised to document receipt of notice from the involved agencies of the presence or absence of utilities in the vicinity of the proposed locations.

  Most agencies will generally provide a telephone or fax communication indicating the lack of facilities in the project area. **If contact is not made by all of the agencies identified by the "one-call" process, do not assume that such utilities are not present. Re-contact the "one-call" agency to determine the status.**

- For complicated sites with multiple proposed locations and multiple utilities, it is advisable to arrange an on-site meeting with utility representatives. This will minimize the potential for miscommunication amongst the involved parties.

- Completion of the utility stake out process is not a guarantee that underground facilities will not be encountered in excavations or boreholes; in fact, most "one-call" agencies and individual utilities do not offer guarantees, nor do they accept liability for damage that might occur. Accordingly, it is advisable that any invasive activities proceed with extreme caution in the upper four to five feet in the event the clearance has failed to identify an existing facility. This may necessitate hand-excavation or probing to confirm potential presence of shallow utilities. If uncertainty exists for any given utility, extra activities can be initiated to solve utility clearance concerns. These options include:

  - Hand digging, augering or probing to expose or reveal shallow utilities and confirm presence and location. In northern climates this may require advancing to below frost line, typically at least four feet.
  - Screening the proposed work areas with utility locating devices, and/or hiring a utility locating service to perform this task. The private utility locating service is a growing industry that has formed a national organization. The National Utility Locate Contractors Association (NULCA) can be reached at 715-635-6004.

Equipment/Materials

- White Spray paint
- Wooden stakes, painted white or containing white flagging
- Color-code key
- Available drawings

Reference

1. American Public Works Association, April 1999, Uniform Color Code (http://www.apwa.net/)

2.0 FIELD DATA RECORDING – FIELD BOOKS, LOG FORMS, AND ELECTRONIC DATA

Introduction

This procedure describes protocol for documenting standard investigation activities in the field. Field data serves as the cornerstone for an environmental project, not only for site characterization but for additional phases of investigation or remedial design. Inaccurate or incomplete field data may create significant problems and additional project costs. In addition, recorded field data becomes a legal record of project work, and should be approached with that in mind. Producing legally-defensible data includes proper and appropriate recording of field data as it is obtained in a manner that will preserve it for future use.

This procedure provides guidelines for accurate, thorough collection and preservation of written and electronic field data.

Procedures Reference

- 9.0 Field Instruments - Use And Calibration

Procedure

Typical field data to be recorded generally includes, but is not limited to, the following:

- general field observations;
- numeric field measurements and instrument readings;
- quantity estimates;
- sample locations and corresponding sample numbers;
- relevant comments and details pertaining to the samples collected;
- documentation of activities, procedures and progress achieved;
- contractor pay item quantities;
- weather conditions;
- a listing of personnel involved in site-related activities;
- a log of conversations, site meetings and other communications; and
- field decisions made and pertinent information associated with the decisions.

Written Field Data

Written field data is generally recorded on one of two media: A standardized, pre-printed field log form, or a bound field log book. In general, use of a field log form is preferable as it prompts field personnel to make appropriate observations and record data in a standardized format. This promotes completeness and consistency from one person to the next.

In the absence of an appropriate pre-printed form, the data should be recorded in an organized and structured manner in a dedicated project field log book. Log books must be hard-cover, bound so that pages cannot be added or removed, and should be made from high-grade 50% rag paper with a water-resistant surface.

The following are guidelines for use of field log forms and log books:

1. Information must be factual and complete. Do not abbreviate.

2. All entries will be made in black indelible ink with a ballpoint pen and will be written legibly. Do not use “rollerball” or felt tip-style pens, since the water-soluble ink can run or smear in the presence of moisture.

3. All pages in a log book must be consecutively numbered. Field log forms should also be consecutively numbered.

4. Each day’s work must start a new log book page.

5. At the end of each day, the current log book page must be *signed and dated* by the field personnel making the entries.

6. When using field log forms, they must also be *signed and dated*.

7. Make data entries immediately upon obtaining the data. Do not make temporary notes in other locations for later transfer to log forms or log books; this only increases the potential for error or loss of data.

8. Entry errors are to be crossed out with a single line, dated and initialed by the person making the correction.

9. Do not leave blanks on log forms, if no entry is applicable for a given data field, indicate so with “NA” or a dash (“--“).

10. At the earliest practical time, photocopies of log forms and log book pages should be made and placed in the project file as a backup in the event the book or forms are lost are damaged.

11. Log books should be dedicated to one project only, i.e., do not record data from multiple projects in one log book.

Electronic Data

Electronic data recording is widely used in environmental investigation and remediation projects. In general, it involves electronic measurement of field information through the use of monitoring instruments, sensors, gauges, and equipment controls. The following is a list of guidelines for proper recording and management of electronic field data:

1. Field data management should follow requirements of a project-specific data management plan (DMP), if one exists.

2. Use only instruments that have been calibrated in accordance with manufacturer’s recommendations.

3. Usage of instruments, controls and computers for the purpose of obtaining field data should only be performed by personnel properly trained and experienced in the use of the equipment and software.

4. Use only fully-licensed software on personal computers and laptops.

5. Loss of electronic files may mean loss of irreplaceable data. Every effort should be made to back up electronic files obtained in the field as soon as practical. A backup file placed on a disk and kept in a separate location from the original will minimize the potential for loss.

6. Electronic files, once transferred from field instruments or laptops to office computers, should be protected if possible to prevent unwanted or inadvertent manipulation or modification of data. Several levels of protection are usually available for spreadsheets, including making a file "read-only" or assigning a password to access the file.

7. Protect floppy disks from exposure to moisture, excessive heat or cold, magnetic fields, or other potentially damaging conditions.

8. Remote monitoring is often used to obtain stored electronic data from site environmental systems. A thorough discussion of this type of electronic field data recording is beyond the scope of this Section. Such on-site systems are generally capable of storing a limited amount of data as a comma-delimited or spreadsheet file. Users must remotely access the monitoring equipment files via modem or other access, and download the data. In order to minimize the potential for loss of data, access and downloading of data should be performed frequently enough to insure the data storage capacity of the remote equipment is not exceeded.

Equipment/Materials

- 5" by 7" National 407 Field Book, with high-grade 50% rag paper with water-resistant surface, hard-cover, or equivalent;
- Appropriate field log forms;
- Indelible ball point pen (do not use "rollerball" or felt-tip style pens);
- Straight edge;
- Pocket calculator;
- Laptop computer (if required).

3.0 SUBSURFACE INVESTIGATIONS

3.1 Drilling Techniques/Background Information

Introduction

This section will provide a brief description of common methods for conducting subsurface investigations. It should be noted that every drilling technology has its limitations.

Procedures Referenced

3.2 Soil Classification
4.2 Procedures for Overburden Monitoring Well Installation
10.0 Equipment Decontamination

Drilling Methods

It is important that the drilling method or methods used minimize disturbance of subsurface materials and not contaminate the subsurface and groundwater. The actual drilling method would be dependent upon site-specific geologic conditions. It is important to note that the drilling equipment selected be decontaminated before and between borehole locations to prevent cross contamination (see Section 8.0). Where possible, drilling methods that minimize waste generation (soil cuttings) and waste water generation (decon water) should be selected for investigation/remedial tasks.

In other settings it may be desirable to dictate drilling procedures that minimize turbidity/maximize the ability to achieve sediment-free groundwater. Generally, rotosonic techniques or rotary spun casing techniques achieve these objectives, or oversizing the borehole/sand pack may be considered, as well.

Rotosonic Drilling

This method consists of a combination of rotation with high frequency vibration to advance a core barrel to a desired depth. Once the vibration is stopped, the core barrel is retrieved, and the sample is vibrated or hydraulically extracted into plastic sleeves or sample trays. Monitoring wells shall be installed through the outer casing with minimal formation disturbance and mixing of formation materials. Rotosonic drilling generally requires less time than more traditional methods and minimizes soil mixing and soil disturbance (preferred for well locations where low turbidity is an important objective). Continuous, relatively undisturbed samples can be obtained through virtually any formation. Conventional sampling tools can be employed as attachments (i.e., hydropunch, split spoon, shelby tube, etc.). No mud, air, water, or other circulating medium is required. The rotosonic method can drill easily through formations such as rock, sand, clay, or glacial till. The main limitation of this method is the availability of equipment, the large area required (i.e., drill units are quite large), and costs.

Direct Push (Geoprobe™)

Direct push refers to the sampler being “pushed” into the soil material without the use of drilling to remove the soil. This method relies on the amount of the drill weight combined with percussion for advancement of the tool string. Discrete soil samples are continuously obtained as well groundwater and vapor samples can also be collected utilizing this method. Subsurface investigations typically probe to depths of 30 feet or more, although depths will vary based on site-specific geology. This method is used extensively for initial site screening activities to delineate vertical and horizontal plume presence and can significantly reduce investigative costs. This method is becoming more popular due to the limited cuttings that are produced during the sampling process and the sampling process speed. The use of the Geoprobe™ 6600 also allows for the installation of 2-inch diameter monitoring wells.

Rotary Method

This method consists of a drill rod attached to a drill bit (soils: tricone, drag; rock: button studded, diamond studded) that rotates and cuts through the soils and rock. The cuttings produced are forced to the surface between the borehole wall and the drill rod by drilling fluids which generally consist of water, drilling mud, or air. The drilling fluids not only force the cuttings to the surface but also keep the drilling bit cool. Using rotary methods for well installations can be difficult as it usually requires several steps to complete the installation. First, the borehole is drilled; then temporarily cased; then the well is installed; and then the temporary casing is removed. In some cases, the borehole may remain open without installing a casing but this will only occur in limited instances (i.e., cohesive soils).

Water Rotary

When using water rotary, the potable water supply shall be analyzed for contaminants of concern. Water rotary is the preferred rotary method since the potable water is the only fluid introduced into the borehole during drilling. However, the use of water as a fluid is generally only successful when drilling in cohesive soils. The use of potable water (only) also reduces well development time, when compared to mud rotary.

Air Rotary (typically used in rock)

When using air rotary, the air compressor must have an in-line oil filter system assembly to filter the oil mixed with the air coming from the compressor. This will help eliminate contaminant introduction into the formation. The oil filter system shall be regularly inspected. Air compressors not having an in-line oil filter system are not acceptable for air rotary drilling. A cyclone velocity dissipater or similar air containment system shall also be used to funnel the cuttings to one location rather than letting the cuttings blow uncontrolled out of the borehole. Air rotary may not be an acceptable method for well installation where certain contaminants are present in the formation. Alternatively, it may be necessary to provide treatment for the air being exhausted from the borehole during the installation process.

Mud Rotary

Mud rotary is the least preferred rotary method because contamination can be introduced into the borehole from the constituents in the drilling mud (i.e., Ohio, Michigan). The drilling muds are generally non-toxic and do not introduce contaminants into the borehole, however, it is possible for mud to commonly infiltrate and affect water quality by sorbing metals and polar organic compounds. Chemical composition and priority pollutants analysis may be obtained from the manufacturer. Mud rotary shall utilize only potable water and pure (no additives) bentonite drilling muds. The viscosity of the drilling mud shall be kept as low as possible in order to expedite well development. Proper well development is essential to ensure the removal of all the drilling mud and to return the formation to its previously undisturbed state.

Hollow-Stem Auger

The hollow-stem continuous-flight auger (HSA) is among the most frequently used in the drilling of monitoring wells (overburden wells) or for placement of overburden casings for bedrock wells.

The primary advantages of hollow-stem augering are that:

- generally, no additional drilling fluids are introduced into the formation;
- representative geologic soil samples can be easily obtained using split-spoon samples in conjunction with the hollow-stem augers; and
- monitoring wells can be installed through the augers eliminating the need for temporary borehole casings.

Disadvantages of hollow-stem augering are:

- creates problems for select parameters;
- large volumes of cuttings are typically generated;
- decon is fairly time consuming/labor intensive; and
- relatively slow when compared to direct-push methods (soil sampling tasks).

Installing monitoring wells through hollow-stem augers is a relatively simple process although precautions need to be taken to ensure that the well is properly backfilled. This can be particularly problematic in cases where flowing sand is present.

Hollow-stem augers are available with inside diameters of 2.5, 3.25, 4.0, 4.25, 6.25, 8.25, and 10.25 inches. The most commonly used are 4.25 inches for 2-inch (5 cm) monitoring wells and 6.25 inches for 4-inch (10 cm) monitoring wells. Boreholes can usually be drilled with hollow-stem augers to depths up to 100 feet (30 m) in unconsolidated clays, silts, and sands. Removing augers in flowing sand conditions while installing monitoring wells may be difficult since the augers have to be removed without being rotated. A bottom plug or pilot bit assembly should be utilized to keep out soils and/or water that have a tendency to plug the bottom of the augers during drilling. If flowing sands are encountered, potable water (analyzed once for contaminants of concern) may be poured into the augers to equalize the pressure to keep the formation materials and water from coming up into the auger once the bottom plug is removed.

Dual-Wall Reverse Circulation Air Method of Drilling

This method consists of two concentric strings of drill pipe (an outer casing and a slightly smaller inner casing). The outer drill pipe is advanced using rotary drilling with a donut-shaped bit attached to the dual casing string cuts an area only the width of the two casings and annulus between. Compressed air is continually forced down the annulus between the inner casing carrying the drill cuttings and groundwater. At the surface, the inner casing is connected to a cyclone hopper where the drill cuttings and groundwater fall out the bottom of the hopper, and air is disbursed out the top. The dual wall provides a fully cased borehole in which to install a monitoring well. The only soil or groundwater materials exposed at any time are those at the drill bit. Therefore, the potential for carrying contamination from one stratum to another is minimal. Depth-specific groundwater samples can be collected during drilling; however, since the groundwater is aerated, analysis for volatile compounds may not be valid.

Well Points

In some limited cases, well points (sand points) are driven into place without the use of augers. This method provides no information on the geologic condition (other than the difficulty of driving which may be related to formation density). Well points are most often used simply to provide dewatering of a geologic unit prior to excavation in the area. Well points are also used in monitoring shallow hydrogeologic conditions such as in stream beds.

References

Numerous publications are available describing current monitoring well design and construction procedures.

1. Driscoll, F.G., 1986. Groundwater and Wells, 2nd Edition. Johnson Division.

2. Freeze, R.A. and Cherry, J.A., 1979. Groundwater. Prentice Hall, Inc.

3. EPA/625/6-90/0166 (July 1991), Handbook Ground Water Volume II:Methodology

4. National Water Well Association, 1989. Handbook of Suggested Practices for the Design and Installation of Groundwater Monitoring Wells

5. Environmental Protection Agency (1986), RCRA Groundwater Monitoring Technical Enforcement Guidance Document, OSWER-9950.1

In addition, the following ASTM publications apply:

1. ASTM D5474 Guide for Selection of Data Elements for Ground-Water Investigations
2. ASTM D5787 Practice for Monitoring Well Protection

3. ASTM D5521 Guide for Development of Ground-Water Monitoring Wells in Granular Aquifers

4. ASTM D5978 Guide for Maintenance and Rehabilitation of Ground-Water Monitoring Wells

5. ASTM D5299 Guide for Decommissioning of Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes and Other Devices for Environmental Activities

6. ASTM D5092 Standard Practice for Design and Installation of Ground Water Monitoring Wells in an Aquifer.

3.2 Soil Classification

Introduction

The stratigraphic log is a factual description of the soil at the borehole location and is relied upon to interpret the soil characteristics, and their influence and significance in the subsurface environment. The accuracy of the stratigraphic log is to be verified by the person responsible for interpreting subsurface conditions. An accurate description of the soil stratigraphy is essential for a reasonable understanding of the subsurface conditions. Confirmation of the field description by examination of representative soil samples by the project geologist, hydrogeologist, or geotechnical engineer (whenever practicable) is recommended.

The ability to describe and classify soil correctly is a skill that is learned from a person with experience and by systematic training and comparison of laboratory results to field descriptions.

Procedures Referenced

2.0 Data Recording

Descriptions

Several methods for classifying and describing soils or unconsolidated sediments are in relatively widespread use. The Unified Soil Classification System (USCS) is the most common. With the USCS, a soil is first classified according to whether it is predominantly coarse-grained or fine-grained.

The description of fill soil is similar to that of natural undisturbed soil except that it is identified as fill and not classified by USCS group, relative density, or consistency. Those logging soils must attempt to distinguish between soils that have been placed (i.e., fill) and not naturally present; or soils that have been naturally present but disturbed (i.e., disturbed native).

It is necessary to identify and group soil samples consistently to determine the subsurface pattern or changes and non-conformities in soil stratigraphy in the field at the time of drilling. The stratigraphy in each borehole during drilling is to be compared to the stratigraphy found at the previously completed boreholes to ensure that pattern or changes in soil stratigraphy are noted and that consistent terminology is used.

Visual examination, physical observations and manual tests (adapted from ASTM D2488, visual-manual procedures) are used to classify and group soil samples in the field and are summarized in this subsection. ASTM D2488 should be reviewed for detailed explanations of the procedures. Visual-manual procedures used for soil identification and classification include:

- visual determination of grain size, soil gradation, and percentage fines;
- dry strength, dilatancy, toughness, and plasticity (thread or ribbon test) tests for identification of inorganic fine grained soil (e.g., CL, CH, ML, or MH); and
- soil compressive strength and consistency estimates based on thumb indent and pocket penetrometer (preferred) methods.

The three main soil divisions are: coarse grained soil (e.g., sand and gravel), fine grained soil (e.g., silt and clay), and soil with high natural organic matter content (e.g., peat and marl).

Coarse Grained Soil

The USCS group symbols for coarse grained soil are primarily based on grain or particle size, grain size distribution (gradation), and percent fines (silt and clay content).

Coarse-grained soils are then further subdivided according to the predominance of sand and gravel. Course grained soil is made up of more than 50 percent, by weight, sand size, or larger (75 µm diameter, No. 200 sieve size or larger). It is noted that there are other definitions for coarse grained or coarse textured soil and for sand size such as soil having greater than 70 percent particles equal to or greater than 50 µm diameter.

Descriptions for grain size distribution of soil include; poorly graded (i.e., soil having a uniform grain size, SP and GP) and well graded (i.e., poorly sorted; having wide range of particle sizes with substantial intermediate sizes, SW and GW).

Coarse grained soils are further classified based on the percentage of silt and clay it contains (fines content). Coarse grained soils containing greater than 12 percent fines is commonly described as dirty. This description arises from the soil particles that adhere when the soil is rubbed between the hands or adhere to the sides of the jar after shaking or rolling the soil in the jar. The jar shake test which results in segregation of the sand and gravel particles is also used as a visual aid in determining gravel and sand percentages.

Examples of the group symbol, name, and adjectives used to describe the primary, secondary, and minor components of soil are; GW - Sandy Gravel (e.g., 70 percent gravel and 30 percent sand) or Sandy Gravel trace silt (less than 10 percent silt), and SP - Sand, uniform.

Relative density is an important parameter in establishing the engineering properties and behavior of coarse grained soil. Relative density of non-cohesive (granular) soil is determined from standard penetration test (SPT) blow counts (N values) (after ASTM Method D1586).

The SPT gives a reliable indication of relative density in sand and fine gravel. N values in coarse grained soil are influenced by a number of factors that can result in overestimates of relative density (e.g., in coarse gravel and dilatent silty fine sand) and can be conservative and underestimate the relative density (e.g., sand below the groundwater table and uniform coarse sand). These effects will be assessed by the project geotechnical engineer, if required, and need not be taken into account by field personnel.

Other dynamic methods, such as modified SPT and cone penetration tests, are used on occasion to supplement or replace the SPT method for certain site-specific conditions. The details of all modifications to the SPT or substitute methods should be recorded as they are required to interpret test results and correlate to relative density.

Fine Grained Soil

A soil is fine grained if it is made up of half or more of clay and silt (i.e., fines greater than 50 percent by weight passing the 75 µm (No. 200) sieve size). A description of visual-manual field methods and criteria (after ASTM D2488) that are used to further characterize and group fine grained soil (e.g., CL, CH, ML, or MH) including dry strength, dilatancy, toughness, and plasticity (thread or ribbon test) follows. Fine grained soils are subdivided on a basis of the liquid limit and the degree of plasticity.

The accurate identification of silts and clays can be aided by the use of some single field tests. Clay is sticky, will smear readily, and can be rolled into a thin thread even when the moisture content is low. When it is dry, clay forms hard lumps. Silt on the other hand, has a low dry strength, can be rolled into threads only at high moisture content, and a wet silt sample will puddle when it is tapped.

CRITERIA FOR DESCRIBING DRY STRENGTH

Description	***Criteria***
None	The dry specimen crumbles into powder with mere pressure of handling.
Low	The dry specimen crumbles into powder with some finger pressure.
Medium	The dry specimen breaks into pieces or crumbles with considerable finger pressure.
High	The dry specimen crumbles into powder with finger pressure. Specimen will break into pieces between thumb and a hard surface.
Very High	The dry specimen cannot be broken between the thumb and a hard surface.

CRITERIA FOR DESCRIBING DILATANCY

Description	***Criteria***
None	No visible change in small wetted specimen when rapidly shaken in palm of hand.
Slow	Water appears slowly on the surface of the specimen during shaking and does not disappear or disappears slowly upon squeezing.
Rapid	Water appears quickly on the surface of the specimen during shaking and disappears quickly upon squeezing or stretching.

CRITERIA FOR DESCRIBING TOUGHNESS

Description	***Criteria***
Low	Only slight pressure is required to roll the thread near the plastic limit. The thread and the lump are weak and soft.
Medium	Medium pressure is required to roll the thread to near the plastic limit. The thread and the lump have medium stiffness.
High	Considerable pressure is required to roll the thread to near the plastic limit. The thread and the lump have very high stiffness.

CRITERIA FOR DESCRIBING PLASTICITY

Description	***Criteria***
Nonplastic	A 1/8-inch (3 mm) thread cannot be rolled at any water content.

Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be re-rolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be re-rolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

Examples of group symbol identification based on visual-manual procedures and criteria for describing fine grained soil are:

Group Symbol	***Dry Strength***	***Dilatancy***	***Toughness***	***Plasticity***
ML	None to low	Slow to rapid	Low or thread cannot be formed	
	Slight			
CL	Medium to high	None to slow	Medium	
	Low			
MH	Low to medium	None to slow	Low to medium	Low
CH	High to very high	None	High	High

A requirement for positive classification by USCS group symbols (as described in Test Method ASTM D2487) is laboratory determination of particle size characteristics, liquid limit and plasticity index. The need for this type of testing will be determined by the project geologist, hydrogeologist, or geotechnical engineer.

Examples of name terminology that accompanies the group symbols are ML - Sandy Silt (e.g., 30 percent sand) and CL - Lean Clay with sand (e.g., 15 to 29 percent sand).

The correlation between N value and consistency for clays is rather unreliable. It is preferable to determine consistency using more appropriate static test methods, particularly for very soft to stiff clay soil. N value estimates of consistency are more reasonable for hard clay.

Unconfined compressive strength (Su) may be estimated in the field from the pocket penetrometer test method. To obtain a pocket penetrometer estimate of consistency and compressive strength, the soil core is cut perpendicular to the core length, the length of core (minimum 4 inches) is held in the hand and a moderate confining pressure is applied to the core (not sufficient to deform the core); the penetrometer piston tip is slowly inserted into the perpendicular face of the core until the penetrometer indents into the soil core to the mark indicated on the tip of the penetrometer piston; the penetrometer estimate of soil compressive strength (Su) is the direct reading of the value mark on the graduated shaft (in tons per square foot or other unit of pressure as indicated) indicated by the shaft ring marker, or in some models, by the graduated piston reading at the shaft body. To obtain an average estimate, this procedure is completed several times on both ends and mid cross-section of the core. For Shelby Tube (or thin wall sampler) samples the pocket penetrometer tip is applied to the exposed bottom of the sample at several locations.

Estimates of compressive strength for clay soil of very soft to stiff consistency are better established by in situ shear vane tests or other static test methods.

The description of consistency (or strength) is an important element in determining the engineering properties and strength characteristics of fine grained cohesive soil. Consistency terms (e.g., soft, hard) are based on the unconfined compressive strength (Su) and shear strength or cohesion (cu) of the soil.

The ease and pattern of soil vapor and groundwater movement in the subsurface is influenced by the natural structure of the soil. Soil structure, for the most part, depends on the deposition method and, to a lesser extent, climate.

Visual Appearance/Other Features

Those logging soils should also note the presence, depth and components of fill soils (if evident), and note the distinction between disturbed native soils (i.e., excavation likely performed) vs. undisturbed native soils.

Other features such as root presence/structure, and soil fractures should also be recorded. Soil fractures should be described noting fracture orientation (i.e., horizontal/vertical), length/aperture and appearance of soil infilling, oxidation and/or weathering (if present).

Field Sample Screening

Upon the collection of soil samples, the soil is screened with a photoionization detector (PID) for the presence of organic vapor. This is accomplished by running the PID across the soil sample. The highest reading and sustained readings are recorded.

Note: The PID measurement must be done upwind of the excavating equipment or any running engines so that exhaust fumes will not affect the measurements.

Another method of field screening is head space measurements. This consists of placing a portion of the soil sample in a sealable glass jar, placing aluminum foil over the jar top, and tightening the lid. Alternatively, plastic sealable bags may be utilized for field screen in lieu of glass containers. The jar should only be partially filled. Shake the jar and set aside for at least 30 minutes. After the sample has equilibrated, the lid of the jar can be opened; the foil is punctured with the PID probe and the air (headspace) above the soil sample is monitored. This headspace reading on the field form or in the field book is recorded.

Note: Perform all headspace readings in an area that is not subject to wind. Also, in the winter, it is necessary to allow the samples to equilibrate in a warm area (e.g., site trailer, van, etc.). This requirement is dictated by the Work Plan.

All head space measurements must be completed under similar conditions to allow comparability of results.

NAPL Detection

During soil examination and logging, the sampler shall carefully check for the presence of light or dense NAPL. NAPL may be present in gross amounts or present in small/minute quantities. The adjectives and corresponding quantities used when describing NAPL within a soil matrix are as follows:

Visual Description	***Fraction of Soil Pore Volume Containing NAPL***
Saturated	>0.5
Some	0.5 - 0.25
Trace	<0.25

A complete description of NAPL, must describe the following:

- color;
- quantity;
- density (compared to water i.e., light/floats or heavy/sinks);
- odor (if observed); and
- viscosity (i.e., mobile/flowable, non-mobile/highly viscous-tar like).

The presence of an "iridescent sheen" by itself does not constitute 'NAPL presence', but may be an indicator that NAPL is close to the area.

NAPL presence within a soil matrix may be confirmed by placing a small soil sample within water, shaking, and observing for NAPL separation (i.e., light or dense), from the soil matrix.

Trace amounts of NAPL are identified/confirmed by a close visual examination of the soil matrix, [i.e., separate soil by hand (wearing disposable gloves)] and careful inspection of the soil separation planes/soil grains is performed for NAPL presence.

Often during the sample examination with a knife, an iridescent sheen will be noted on the soil surface (i.e., clay/silts) if the knife has passed through an area of NAPL.

There are a number of more sophisticated tests available to confirm/identify NAPL presence, these are:

- UV fluorescent analysis;
- hydrophobic dyes;
- centrifugation; and
- chemical analysis.

Typically consultants will utilize organic vapor detection results, visual examination, soil/water shake testing, and chemical analysis to confirm NAPL presence. The more complex techniques described may be incorporated on sites where clear colorless NAPL is present and its field identification is critical to the program.

Note: When describing the presence of vegetative matter in the soil sample, do not use the term "organic" as this often leads to confusion with regards to the presence of organic chemicals (i.e., NAPL).

Equipment/Materials

- Pocket knife or small spatula
- Small handheld lense
- Stratigraphic Log (Overburden) (Form 2001)
- Tape Measure

Reference

1. American Society for Testing and Materials (1991), Standard D1452-80, "Practice for Soil Investigation and Sampling by Auger Borings", Annual Book of ASTM Standard, Section 4, Volume 04.08.

2. ASTM Standards on Environmental Sampling (1995), Standard D 2488-93, "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)"

3. ASTM Standards on Environmental Sampling (1995), Standard D 4700-91, " Guide for Soil Sampling from the Vadose Zone".

4. ASTM Standards on Environmental Sampling (1995), Standard D 1586-92, " Test Method for Penetration Test and Split-Barrel Sampling of Soils".

5. ASTM Standard D 2487, " Classification of Soils for Engineering Purposes (Unified Soil Classification System)".

6. Geotechnical Guage, Manufactured by W.F. McCollough, Beltsville, MD.

7. Sand Grading Chart, by Geological Specialty Company, Northport, Alabama.

3.3 Exploratory Test Pits

Exploratory test pits are important sources of subsurface information relating to geologic conditions and site suitability fundamental to environmental site assessment and geotechnical design. The following procedure is an introduction to test pit excavation equipment and techniques and an outline of field staff responsibilities while conducting test pit excavation methods utilized by Haley & Aldrich Inc.

Standard Required Equipment

1. Project Work Plan
2. Site Plan
3. Contract with Subcontractor (pay items)
4. Exploration Criteria/Specifications
5. Field Book
6. Clipboard
7. Logs & Forms
8. Office Supplies (pencils & markers)
9. Engineer’s Scale
10. 6 ft. Ruler
11. 100 ft. Measuring Tape
12. Hand Lens, magnifying
13. Pocket Knife
14. Hard Hat
15. Safety Glasses
16. Sound Dampeners
17. Steel Toe Boots
18. Protective Gloves
19. Rain Gear
20. First Aid Kit
21. Cellular Phone
22. Health & Safety Plan
23. Respirator & Tyvek Suit
24. Laptop Computer
25. Camera & Film
26. Field Procedures
27. Maps and References
28. Sample Bags & Jars with Labels
29. Survey Stakes/Paint/Flagging
30. Shovel
31. Geologist’s Pick
32. Flashlight
33. Roadway Box Key/Socket Wrench
34. Water Level Indicator
35. Hand Level
36. Brunton Compass
37. Pocket Penetrometer
38. Torvane

Required Environmental Equipment

Test pit excavation programs conducted for environmental purposes will require specific equipment for personal protection, air quality monitoring, headspace screening, sampling, testing and decontamination. A comprehensive list of equipment and materials must be developed for each project in coordination with the Project Manager (PM) and the Health & Safety (H&S) Coordinator prior to the start of the field program.

Additional Equipment, Specialized Instrumentation, Materials & Company Vehicles

Company-wide, Haley & Aldrich maintains an array of equipment, vehicles and specialized instrumentation for a broad variety of uses in addition to the selected equipment listed above. Additional equipment, vehicles and materials may be rented or purchased as needed with the approval of the project manager. Project equipment needs should be addressed proactively so that interoffice allocation can take place. It is recommended that the field staff familiarize themselves with the use, function and availability of all types of equipment standard to the industry.

Preliminary Preparations

Prior to the beginning of a test pit excavation program field staff must attend a project briefing for the purpose of reviewing the project work plan, site and utility plans, contract documents and drawings, applicable regulations, test pit sampling, testing and termination criteria, site restoration, site contacts, phone numbers of team members, and other related documents and references. In addition, certain projects will require the field staff to attend a Health & Safety briefing due to specific occupational safety concerns. The individual nature of these concerns will be addressed by a site specific Health & Safety Plan.

A file folder for the field activities should be created and maintained such that all relevant documents and log forms likely to be useful for the completion of field activities by others are readily available in the event of personnel changes.

Duties and Responsibilities

The principal reason for providing Haley & Aldrich field representation during test pit excavation is to assure that the field data being collected is accurate and of the type necessary to properly evaluate the site geologic conditions for the subsequent engineering analyses and environmental assessment.

Supervision of Test Pit Excavation Programs

Test pit excavation programs are regularly used for surficial geological mapping activities including routine soil identification and sampling. Test pits are particularly useful for delineating overburden thickness in areas of shallow bedrock and for determining the extent of potentially contaminated zones. In addition, test pits may be used to expose existing underground structures for detailed documentation or as a means to establish the soil profile and to excavate to a particular elevation for the purpose of conducting percolation testing.

Proposed test pit locations and depths may be modified throughout the execution of the excavation program as the accumulated geologic data and any test results are interpreted. For this reason it is essential that all records are maintained current and complete and that uncertainties are identified for resolution as they occur. Field staff members are responsible for maintaining communication with the project manager and for logistical coordination of the field effort within the work scope and budgetary limits.

Test pit excavation programs are by nature more destructive than other subsurface exploration methods. H&A field staff should be extremely clear as to the expectations of the client and project manager with regard to site damage and restoration efforts, prior to conducting the test pits.
It is the responsibility of the H&A field staff to verify that test pits and related subsurface sampling and testing methods are in conformance with applicable approved standards and specifications and to document conditions and results. All applicable safety standards must be complied with including establishment of exclusion zones, installation of safety fencing, use of trench boxes, maintenance of proper slopes or benching, and provision of access and egress. The Occupational Safety and Health Administration's (OSHA) Excavation and Trenching standard Title 29 of the Code of Federal Regulation (CFR) Part 1926.650 covers requirements for excavation and trenching standards whichmay be accessed through their website www.OSHA.gov or from your Health & Safety Administrator.

It is the responsibility of the H&A field staff to verify that proper equipment and techniques are employed and to obtain measurements and make observations independently. H&A field staff are responsible for complete field logging of groundwater, soil and bedrock conditions, the maintenance of accurate test records and field exploration location sketches, and ensuring proper sample preservation and handling.

Payment for services rendered on behalf of the client is commonly handled with H&A providing an accurate breakdown of the work activities and itemized costs. Excavation subcontractor pay items and method of payment are defined in their contract. Typically test pits are paid for on an hourly basis with a mobilization fee and a utility clearance fee with additional pay items as needed such as laborers, jack hammers and compressors, chainsaws, surface patching with asphalt or reseeding landscaped areas.

Right of Access

Prior to site entry, Haley & Aldrich staff members must ensure that permission has been gained from the property owner to access the property.

Layout and Utility Clearance

Prior to the start of any subsurface exploration all proposed locations must have utility clearance from all appropriate agencies and utility owners. Utility owners typically do not enter private properties. If there are particular concerns regarding utilities on private property, arrangements can be made with a private utility locating service. Prior to contacting any utility agency or service all proposed exploration locations must first be clearly marked in the field either with white paint or staked and white flagged. Additional colors can be used to highlight the location if the ground is snow covered. Alternate locations should be laid out in areas of suspected utilities. H&A requires the subsurface exploration subcontractor to obtain the utility clearance within the terms of the contract or services agreement. H&A field staff should verify with the driller/test pit contractor that the utilities have been cleared and obtain the clearance number prior to the start of subsurface explorations. Pre-excavation may be necessary in areas of closely spaced utilities either by hand, vacuum, or other means. Additional guidance is provided in OP1003 Utility Clearance.

Site Briefing

At the start of fieldwork H&A field staff should coordinate a site briefing and review the schedule and work scope with all subcontractors involved with the project. This briefing should include a review of the following:

- Excavation requirements including depths, maximum slopes and shoring
- Test pit lay out, criteria and priority
- Testing and sampling specifics
- Site conditions
- Environmental concerns, known or suspected contamination
- H&S information
- Decontamination requirements
- Site restoration and waste disposal issues
- A site walkover and utility check

While it is the subcontractor’s responsibility to obtain the utility clearance, the field representative should pay attention to the utility plans as well as surface manifestations of the utilities including, manholes or catch basin grates, and gate or roadway boxes. Distance to overhead utilities must be verified by the test pit contactor as well.

General

Test pits are an extremely economical and effective way to rapidly characterize shallow subsurface conditions. Test pits are particularly useful for surficial geologic mapping, determining fill thickness and content, identifying the presence and extent of contamination, contouring shallow bedrock conditions and in determining oversized (cobble and boulder) percentages. Small backhoes with an approximately ¼ cubic yard bucket capacity are capable of excavating test pits up to 12 ft. depth in most materials and can be used with minimal site damage. Larger excavators with an approximately ¾ cubic yard bucket capacity are capable of excavating test pits up to 16 to 20 ft. depth and can be used to construct access for drill rigs on difficult sites. Given sufficient area, excavators can safely enter the excavation and extend the test pit indefinitely. During test pit excavation careful consideration must be given to potential bearing surface disturbance within proposed structures. In addition, care must be taken to minimize other site impacts requiring costly restoration including damage to trees, pavement, curbing, landscaping and utilities.

Haley & Aldrich field staff members are required to become familiar with the technical details and suitability of all excavation equipment and methods as well as with the regulations governing excavation safety.

Excavation Safety

Specific regulations and H&A procedures must be consulted for additional details relating to excavation safety. The Occupational Safety and Health Administration’s (OSHA) Excavation and Trenching standard Title 29 of the Code of Federal Regulation (CFR) Part 1926.650 covers requirements for excavation and trenching standards which may be accessed through their website www.OSHA.gov or from your Health & Safety Administrator.

Logging

Test pit logging standards require thorough documentation and qualification of all natural and man-made materials and structures encountered. This includes detailed descriptions of any fill materials, overburden soils, bedrock, groundwater, contamination and structures encountered including accurate measurements of the depth and extent of each. Fill materials and overburden soils are described in accordance with OP2001 Identification &Description of Soils in the Field Using Visual-Manual Methods. While the bedrock may not be penetrated to a great extent in a test pit, effort should be made to qualify the competency of the bedrock through excavation rates and to describe the bedrock hardness, type, weathering and fracturing according to OP2002 Identification & Description of Rock in the Field Using Visual-Manual Methods.

Accurate distinction and depths of geologic contacts are a primary objective of test pit excavation programs. Stratigraphic contacts between separate geologic units are drawn with a solid line while variations in texture, density, weathering or color occurring within a unit are distinguished with a dashed line. Groundwater is of fundamental importance to environmental assessment and geotechnical engineering. Careful observation of the points and rates of groundwater inflow within a test pit may help to make the distinction between perched groundwater and the phreatic surface. The seasonal high water level may be discernible through mottling or oxidation. A complete record of observations taken throughout the excavation of a test pit must be maintained. Meaningful terminology to qualify the degree and extent of each type of contamination found on a particular site may be developed on a site-specific basis in conjunction with the project manager. Criteria may be based upon a combination of obvious physical properties and field testing and instrumentation measurements.

Man-made structures must be documented in detailed scale drawings shown in plan and elevation perspective. Every effort should be made to properly identify the type of structure encountered based upon construction, geometry and any other observation. Distinction between a footing and a grade beam or pile cap can only be made by effectively exposing a sufficient area beneath the structure to make a judgment based upon direct observation of the bearing surface. Qualification must be made wherever possible to document the condition of the structure encountered as well. Notes must be taken to clearly describe such details as the integrity of a buried granite block footing, the degree of decomposition of a poured-concrete foundation wall or the spacing and degree of decay observed in a series of timber piles.

Sampling

A. *Bag Samples* – Bulk soil samples are routinely obtained from test pits for the purpose of conducting a number of geotechnical laboratory tests including sieve (gradation),hydrometers, Atterberg limit, unit weight and proctor analysis. It is imperative that a sufficient volume of material is obtained for each sample for the desired test to be performed and for the results to be valid. Generally speaking, a minimum of 50 lbs. of material must be collected for a standard suite of geotechnical tests. ASTM D2488defines the minimum amount of soil required for identification and description. The minimum amount required is based on the maximum particle size observed in the soil.

Bulk samples are retained in clean, unused, heavy-duty sample bags that can contain approximately 0.6 cubic feet (5 gallons) or 80 lbs. of soil. Care must be exercised to obtain a representative sample of material. The coarser fraction in the upper portion of a material stockpile tends to roll to the toe or perimeter of the mound, therefore hand excavation into the stockpile some distance is required in order to obtain a truly representative sample. Grab samples are obtained at a discrete point while composites may be obtained from several points or along a linear trend. Sampling may occur within or across stratification. It is critical to the analysis to recognize the inherent bias in the technique prior to the sampling event. All samples must be thoroughly documented in the field prior to transport off site.

Bag sample tags must be affixed to the twist-tie with the following information.

- Project Name
- File Number
- Date
- Sampled By
- Exploration No.
- Sample No.
- Depth
- Remarks (sample source, general description, possible tests to assign).

B. *Jar Samples* – Representative soil samples from each stratigraphic unit are routinely obtained from test pits for quick reference by the project manager. These may beretained in clean, unused, 8 oz. glass jars that have been clearly labeled with thefollowing sample information.

- File Number
- Exploration Number
- Sample Number
- Depth
- Stratigraphic unit or geologic interpretation

Soil samples should be carefully selected and placed in sample jars as nearly intact and undisturbed as possible. Original soil structure, including bonding, foliation and stratification, are critical to the geological interpretation and understanding the engineering properties of soils. Careless handling of samples may destroy soil structure making any geologic interpretation of soils during the review process impossible.

Transportation of samples from the site should be addressed by the project manager in advance of the sampling. Commonly samples will be taken at the site by H&A field staff and entered into the sample receiving storage and tracking database. Company owned vehicles may be scheduled for periodic pick-up of contaminated samples or on projects with particularly large sample volume requirements or difficult site access. Restoration

Test pit excavation programs are by nature more destructive than other subsurface exploration methods. H&A field staff should be extremely clear as to the expectations of the client and project manager with regard to site damage and restoration efforts. Typically on undeveloped sites the test pit may be accessed with a minimum of damage to the ground surface and surrounding vegetation and the test pit can be backfilled upon completion with a degree of care to ensure that a relatively smooth surface remains. Limited clearing using a chainsaw is preferable to the vegetation damage resulting from attempting to overrun or sweep vegetation with the excavation equipment. The degree of destruction increases proportionally with the size of the excavation equipment selected, the number of oversized components or obstructions encountered as well as with the ultimate dimension and depth of the excavation.

Landscaped areas may incur widespread damage in traveled zones in addition to the actual areas of excavation. Use of plywood to “raft” the excavation equipment over short distances may not be successful especially during wet conditions and hand grading, raking and reseeding is typically necessary to restore the landscaping. Paved areas should be pre-cut with saws or a jackhammer prior to excavation after which, they should be backfilled and compacted in lifts that have had oversized components segregated and removed. Later a paving crew can place and compact hot-mix asphalt to complete the restoration. Restoration efforts commonly exceed the excavation efforts in time and cost.

Environmental Sampling and Monitoring

Environmental sampling combined with discrete field screening of soil for contaminants is routinely conducted during the performance of test pit explorations. In addition, continuous monitoring of air quality within the work zone or at the project site may be required to address H&S concerns. Potential contaminants and sources may be identified in the initial stage of project planning and prior arrangements made for PPE, monitoring, sampling and laboratory analysis.

To minimize the risk of cross-contamination typical environmental sampling programs work from known or suspected clean areas toward areas of known or suspected contamination. Contamination encountered unexpectedly may present serious exposure risks to field personnel without proper PPE and monitoring instrumentation, particularly if the contamination is gross or unidentified. In the event unexpected contamination is encountered, all fieldwork should be suspended and the area evacuated immediately until the Project Manager and the Health & Safety Coordinator can be contacted so that H&S and sampling guidelines can be developed.

A. *Decontamination Procedures and Waste Management* - Standard equipment decontamination practices may include the establishment of a decontamination area such that decontamination fluids are collected and properly stored for disposal. Typically a location within the site is chosen away from sensitive or occupied zones and a decontamination pad is created within a bermed area using polyethylene sheeting. A high-pressure steam cleaner is used to wash all equipment prior to each exploration and wastewater is pumped into adjacent drums. Excavation and hand sampling tools are scrubbed between samples at the exploration location using a detergent (water and alconox) solution rinsed with control (tap) water followed by a solvent (methanol) rinse, wiped with a paper towel and rinsed with deionized water before being allowed to air dry. Hexane may be needed for removal of heavy petroleum, grease and coal tar. Decontamination waste, sample residue and excess excavation spoils are typically drummed, labeled and staged onsite for proper disposal.

B. *Environmental Soil Sampling* - Environmental soil samples obtained for chemical analyses are collected in test pits with special attention given to the rationale behind determining the precise zone to sample, the specifics of the method of soil extraction and the requisite decontamination procedures. Preservation, handling and glassware for environmental soil samples varies considerably depending upon several factors including the type and degree of contamination, the analytical method to be conducted,the analytical laboratory being used and the governing regulations. In addition, the depth and location of samples may be strictly controlled under agency guidelines. Documentation of volatile organic compounds (VOC) in the soil through headspace screening is required in order to provide real-time guidance in the field to direct the sampling. Clean 8 oz. jars are partially filled with newly obtained soils and covered with aluminum foil and allowed to stabilized prior to screening with a photoionization detector (PID).

   The presence of metals in soils is not associated with odors, while coal tar, fuels and solvents are often easily distinguished. Particular attention is given to discoloration or odors noted, however, it is company policy to avoid fumes and odors at all times. Soils collected from a discrete zone should be homogenized and a representative portion placed into laboratory glassware and labeled. Analytical samples are kept in a cooler with ice blocks and a Chain of Custody form is maintained untiltransfer to the analytical laboratory. Applicable environmental sampling protocols must be followed as given in OP3000 General Environmental Field Procedures and Protocol, OP3001 Preservation and Shipment of Environmental Samples, OP3002 Headspace Screening Procedure, OP3003 Surficial Soil Sampling, OP3004 Stream Sediment and Wetland Soils Sampling, OP3005 Field Procedure for Logging MGP Residuals, and OP3006 Procedures for Subsurface Soil Sampling for ChemicalAnalysis.

C. *Environmental Water Sampling* – Sampling of groundwater encountered in test pits isnot a recommended practice due to a variety of potential impacts resulting from the excavation equipment and activity. Visual or olfactory evidence of groundwater contamination should be carefully detailed in order to help direct potential subsequent groundwater sampling through acceptable means.

Documentation

Thorough field documentation is the primary responsibility of H&A field staff throughout the execution of any test pit program. Site conditions, soil and rock logging, sample identification and tracking, test and data collection, sketches, photographs, pay item quantities, events, personnel onsite, incidents, discussions and issues must be recorded in the appropriate manner in order to comply with contractual agreements, regulatory requirements and recommended loss prevention practices.

All field documentation must be duplicated, photocopied or reproduced as soon as is practical in order to guard against loss. In no case should originals be mailed, transferred or removed from the author’s custody until a back up copy is made. Copies of field documentation should be delivered to the project manager in a timely fashion as the project warrants. Originals may be issued to word processing or data entry personnel directly upon completion of a short term test pit program or periodically throughout longer term projects.

Documentation related to environmental sampling, testing and chemical analysis is covered in detail in specific procedures developed for the particular sampling practice, medium, compound and applicable regulations.

A. Field Book - The field book is a first line repository of anything observed or discussed onsite without regard to potential use or merit. While the type of information in the field book may in some cases be informal or general in nature, the field book is a legal document and is the property of H&A. Long after a project is completed and the file is closed the field notes may provide an invaluable record of details that may not have been recorded elsewhere. The standard format of the daily field book entry typically includes the following:

- File Number
- Project & Location
- Date
- Weather
- Personnel Onsite
- Equipment Onsite
- Activities
- Observations
- Conversations
- Data
- Issues
- Incidents
- Other items not recorded elsewhere

B. Photographs - Photographic documentation of site conditions, activities and incidents are very useful for conveying a visual perspective to what may be difficult to describe otherwise. The fundamentals of good photography must be applied for the images to be of use including:

- Lighting (adequate but not excessive)
- Composition (frame the subject properly)
- Perspective (include a scale)

In addition, subject identification within the photograph by means of a white board and use of the camera date/time feature (if so equipped) renders ease to later captioning as does indicating on a site plan during shooting the approximate location and direction of the shot by frame number.

C. Test Pit Logs - Test pit logs must be completed entirely and without omission to stand alone as documentation of the subsurface conditions at a given point. (See Form 2006 Test Pit Logs.) To guard against loss, test pit logs should be proofed in the field and photocopied or faxed as soon as is practical. Protocols for electronic logging using a PDA or laptop computer require periodic file back-up and memory card replacement as well as daily transmission to the H&A server.
Each test pit log contains a header to identify the project, client and test pit designation and to document the test pit location, the ground surface elevation, contractor and equipment used, H&A Project Manager, Field Representative, date, weather conditions and groundwater entry. Within the body of the test pit log each sampling event is recorded in a column by including sample type, designation and depth. Separate columns are used for USCS group symbol and the USCS identification and description. A column for indicating PID (photoionization detector) readings is included in the Environmental Test Pit Log. In the test pit log footer standing groundwater observations noted during the execution of the excavation are carefully recorded in relation to the excavation activity in order to assist in the interpretation of the reading. Boulder counts and test pit dimensions are also recorded in the footer.

D. *Special Testing and Instrumentation* - Forms for documenting specific field sampling procedures, special testing and instrumentation installations are available for use as appropriate. A complete index of forms may be accessed on the Haley & Aldrich Intranet. In addition, new forms may be created as the need arises from a template located within the same directory. Specific guidelines for documenting special testing and instrumentation installations may be given within established procedures. In the absence of documentation standards for a particular procedure the general standards of scope, precision, accuracy and completeness from related procedures should be referred to until specific guidelines are developed.

E. *Subcontractor Quantities for Test Pits* - Test pit pay items are recorded on Form 2004 Subcontractor Quantities for Test Pits which is used to summarize the pay item totals as defined in the contract or agreement with the subcontractor. This form must be reviewed and signed by the subcontractor's representative upon completion of the subsurface exploration program. Carbon copies are distributed to the subcontractor's representative, the project file and the Field Services Manager.

F. *As-Built Test Pit Locations and Elevations* - An accurate sketch showing the actual (as built) location of completed test pits must accompany the test pit logs. In addition, the estimated elevation of the ground surface or excavation reference elevation must also be included. Locations and elevations should be measured with 0.1 ft. precision from known or permanent features whenever possible, however, establishment of a temporary baseline and/or series of benchmarks may be necessary in open or virgin sites. An existing site plan with location and elevation data may have been provided for use during the test pit program. In such cases the scale and elevation datum should be verified and the accuracy of the horizontal and vertical data should be checked. All excavation and field references should be painted or staked in the field as appropriate for future field survey.

G. *Geologic Profiles* - Simple geologic columns of individual excavations may be quickly sketched in the field and combined as needed in order to produce a two-dimensional stratigraphic cross-section or geologic profile. This exercise may be useful in the development and support of the geologic interpretation of the stratigraphy and in the identification of data gaps during the test pit program.

Final Review and Summary

The final complete package of field data must include copies of all first draft field logs, test reports, raw data, field book entries, photographs, plans and sketches, daily field reports, subcontractor quantities and any additional notes. All field data must be reviewed for discrepancies, errors and omissions as well as for the identification of factors of critical importance and any areas of uncertainty.

In addition to the field generated data, all relevant research, correspondence, contracts, drawings, test pit rationale and criteria, sample receiving forms, environmental regulations and health and safety protocols assembled for the test pit program should be included in the final package to the file.
A summary of the test pit program should be prepared including the subcontractor and equipment, dates of execution, the total number of excavations, sampling types and quantities, excavation depths, stratigraphy and depth to bedrock.

The site features and geologic conditions should be described incorporating the synthesized data from the test pit program and all available published literature or research. The geologic summary should present the reasoning behind the interpretation and any supporting documentation including geologic profiles developed for the site and related references.

References

1. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards," Vol.04.08, D420-98, “Standard Guide to Site Characterization for Engineering Design and Construction Purposes.”

2. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards," Vol.04.08, D653-01, “Standard Terminology Relating to Soil, Rock and Contained Fluids.”

3. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards," Vol.04.08, D2488-93, “Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).”

4. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards," Vol.04.08, D4220-95, “Standard Practices for Preserving and Transporting Soil Samples.”

5. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards,"Vol.04.08, D5434-97, “Standard Guide for Field Logging of Subsurface Explorations of Soil and Rock.”

6. American Society of Civil Engineers, 1976," Subsurface Investigations for Design and Construction of Foundations of Buildings", Manual and Report on Engineering Practice, No. 56, 61 p.

7. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards," Vol.04.08, D5088-90, “Standard Practice for Decontamination of Field Equipment Used at Nonradioactive Waste Sites.”

8. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards," Vol.04.08, D5730-98, “Standard Guide for Site Characteristics for Environmental Purposes with Emphasis on Soil, Rock, the Vadose Zone and Ground Water.”

9. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards," Vol.04.09, D6169-98, “Standard Guide for Selection of Soil and Rock Sampling Devices for Environmental Investigations.”

10. American Society for Testing and Materials, current edition, "Annual Book of ASTM Standards," Vol.11.04, E1527-00, “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.”

3.4 Soil Borings

The following presents a description of the methods generally employed for the installation of boreholes and the collection of subsurface soil samples. Boreholes are typically installed to define geologic conditions for hydrogeologic and geotechnical evaluation; to allow the installation of monitoring wells and piezometers; and to allow the collection of subsurface soil samples (generally above the water table) for chemical analysis.

Several manual methods are available for the collection of shallow subsurface soil samples (e.g., hand augers, post-hole augers, vibratory hammers). However, the most common method to advance boreholes is rotosonic drilling techniques, hollow-stem augers (HSA), or the use of a direct-push equipment. SECTION 3.1 Drilling Techniques/Background, provides insight into the advantages/disadvantages of these drilling methods.

Procedures referenced

1.1 Utility Clearance
3.1 Drilling Techniques/Background Information
3.5 Soil Classification
6.1 Soil Sample Collection

Borehole Requirements

The following activities must be undertaken prior to installing a borehole.

i) Assemble all equipment and supplies required per the Work Plan.
ii) Obtain a site plan and any previous stratigraphic logs. Determine the exact number and location of boreholes to be installed and the depths of samples for chemical analysis.
iii) Coordinate lab services including:
  - glassware/sample jars;
  - cooler;
  - shipping details;
  - start date; and
  - expected duration.

iv) Establish borehole locations in field using available landmark or by surveying methods if necessary.
v) Arrange for utility clearance of franchised utilities and site utilities.
vi) Determine notification needs with the Project Manager. Notify the regulatory groups, landowner, Delphi Facility personnel, and laboratory of the sampling event.
vii) Determine the methods for handling and disposal of drill cuttings, wash waters, and spent decontamination fluids.

Once the prior planning and preparation activities are completed, the borehole installation and subsurface soil sampling program can proceed. The typical work sequence is as follows:

- locating and marking of borehole locations (if not already completed);
- equipment decontamination;

- final visual examination of proposed drilling area for utility conflicts/final hand auger or post-hole check to verify utility absence;
- advancement of borehole and collection of the soil sample;
- field screening of soil sample;
- description of soil sample (Form 2001 will be used to record data);
- sample preparation and packaging;
- abandonment of boreholes;
- surveying of borehole locations and elevations; and
- field note completion and review.

i) Location and Marking of Boreholes/Final Visual Check

The proposed borehole locations marked on the site plan are located in the field and staked. On most sites, this will likely be done several days in advance of the drill rig arriving on site. Unless boreholes are to be installed on a fixed grid, the proposed locations are usually placed at biased locations.

Once the final location for the proposed boring has been selected and utility clearances are complete, one last visual check of the immediate area should be performed before drilling proceeds. This last visual check should confirm the locations of any adjacent utilities (subsurface or overhead) and verification of adequate clearance. If gravity sewers or conduits exist in the area, any access manholes or chambers should be opened and the conduit/sewer alignments confirmed. Do not enter manholes unless confined space procedures are followed.

ii) Borehole Advancement

If possible, it is prudent to use a hand auger or post-hole digging equipment to a sufficient depth to verify the absence of buried utilities and pipelines. This procedure should clear the area to the full diameter of the drilling equipment which will follow.

If it is necessary to relocate any proposed borehole due to terrain, utilities, access, etc., the Project Manager must be notified and an alternate location will be selected.

Prior to use and between each borehole location at an environmental site, the drilling and sampling equipment must be decontaminated. All decontamination must be conducted in accordance with the project-specific plans or the methods presented in Section 8.0.

The clean augers/tooling are covered with clean plastic sheeting to prevent contact with foreign materials. For geotechnical, geologic, or hydrogeologic studies where contaminants will not be present, it is sufficient to clean the drilling equipment simply by removing the excess soils.

Collection of soil samples is one of the most important considerations in selecting drilling methods. Therefore, the need for reviewing drilling techniques (Section 3.1) and the Site objectives must first be considered. Soil Classification will be completed in accordance with Section 3.2. Sections iii) and iv) describe borehole soil sampling procedures using direct-push tooling and hollow stem augering/split spoon sampling (Standard Penetration Testing - SPT), respectively.

iii) Direct-Push/Macro-Core™ Soil Sampler

The operation of the direct-push/Macro-Core™ Soil Sampler (or equivalent) consists of "pushing" the sampler into the subsurface and then retrieved using a direct-push soil probing machine. The collected soil core is contained within an internal soil liner (acetate, polyethylene or teflon) and removed from the sampler once returned to the ground surface. Sampler length is variable depending on equipment available (2 ft., 4 ft., 5 ft.). Once the soil liner has been removed and the outer sampler deconed, a new liner is inserted and the sampler reassembled. The clean sampler is then driven back down the same hole to collect the next soil sample.

The Macro-Core™ sampler can be used in either the open-tube or closed-point sampling mode. The open-core sample mode is most commonly used in stable soil conditions. In unstable soils, the piston rod point system prevents collapsed soil from entering the sampler as it is advanced back down the hole. Once at the sample depth, the piston rod is unthreaded and released. The sampler is then driven into the subsurface to fill the sampler with soil, the piston point rides on top of the soil, as it enters the sampler.

Once recovered the soil liner with collected soils is opened (cut lengthwise) and examined to collected soil screening information, soil logging information, and soils for chemical analysis.

iv) Standard Penetration Testing (SPT) Sampling and Testing Procedure

This method is used to obtain representative samples of subsurface soil materials and to determine a measure of the in situ relative density of the subsurface soils. The test methods described below must be followed to obtain accurate SPT values. The split spoon is typically driven in advance of a hollow stem auger string which allows collection of the disturbed but representative sample.

SPT sampling is performed by using a split barrel sampler in accordance with ASTM D1586. The split barrel sampler, or split spoon, consists of an 18- or 24-inch long, 2-inch outside diameter tube, which comes apart length wise into two halves. The split spoon is typically driven in advance of a hollow stem auger string which allows collection of the disturbed but representative soil sample.

Once the borehole is advanced to the target depth and the borehole cleaned of cuttings, representative soil samples are collected in the following manner:

- the split-spoon sampler should be inspected to ensure it is properly cleaned and decontaminated. The driving shoe (tip) should be relatively sharp and free of severe dents and distortions;
- the cleaned split-spoon sampler is attached to the drill rods and lowered into the borehole. Do not allow the sampler to drop onto the soil;
- after the sampler has been lowered to the bottom of the hole, it is given a single blow to seat it and make sure that it is in undisturbed soil. If there still appear to be excessive cuttings in the bottom of the borehole, remove the sampler from the borehole and remove the cuttings; and
- mark the drill rods in three or four successive 6-inch (0.15 m) increments, depending on sampler length, so that the advance of the sampler under the impact of the hammer can be easily observed for each 6-inch (0.15 m) increment.

The sampler is then driven continuously for either 18 or 24 inches (0.45 or 0.60 m) by use of a 140-pound (63.5 kg) hammer. The hammer may be lifted and dropped by either the cathead and rope method, or by using a trip, automatic, or semi-automatic drop system. The hammer should free-fall a distance of

30 inches (±1 inches) (760 mm, ±25 mm) per blow. Measure the drop at least daily to ensure that the drop is correct. To ensure a free-falling hammer, no more than 2 1/4 turns of the rope may be wound around the cathead (see ASTM D1586). The number of blows applied in each 6-inch (0.15 m) increment is counted until one of the following occurs:

- a total of 50 blows have been applied during any one of the 6-inch (0.15 m) increments described above;
- a total of 100 blows have been applied;
- there is no advancement of the sampler during the application of ten successive blows of the hammer (i.e., the spoon is "bouncing" on a stone or bedrock); or
- the sampler has advanced the complete 18 or 24 inches (0.45 or 0.60 m) without the limiting blow counts occurring as described above.

In some cases where the limiting number of blow counts has been exceeded, the Consultant may direct the driller to attempt to drive the sampler more if collection of a greater sample length is essential.

On the field form, record the number of blows required to drive each 6-inch (0.15 m) increment of penetration. The first 6 inches is considered to be a seating drive. The sum of the number of blows required for the second and third 6 inches (0.15 m) of penetration is termed the "standard penetration resistance" or the "N-value".

Note: *If the borehole has sloughed and there is caved material in the bottom, the split spoon may push through this under its own weight, but now the spoon is partially "pre-filled". When the spoon is driven the 18 or 24 inches representing its supposedly empty length, the spoon fills completely before the end of the drive interval. Two problems arise:*
1. the top part of the sample is not representative of the in-place soil at that depth; 2. the SPT value will be artificially higher toward the bottom of the drive interval since the spoon was packed full. These conditions should be noted on the field log.

The sampler is then removed from the borehole and unthreaded from the drill rods. The open shoe (cutting end) and head of the sampler are partially unthreaded by the drill crew and the sampler is transferred to the geologist/engineer work surface.

Note: *A table made out of two sawhorses and a piece of plywood is appropriate, or a drum, both covered with plastic sheeting.*

The open shoe and head are removed by hand, and the sampler is tapped so that the tube separates.

Note: *Handle each split spoon with clean disposable gloves if environmental issues are being investigated.*

Measure and record the length of sample recovered making sure to discount any sloughed material that is present on top of the sample core.

Caution must be used when conducting SPT sampling below the groundwater table, particularly in sand or silt soils. These soils tend to heave or "blow back" up the borehole due to the difference in hydraulic pressures between the inside of the HSA and the undisturbed soil. To equalize the hydraulic pressure, the inside of the HSA must be filled with water or drilling mud. The drilling fluid level within the boring or hollow-stem augers needs to be maintained at or above the in situ groundwater level at all times during drilling, removal of drill rods, and sampling. Since heave or blow back is not always obvious to the driller, it is essential that the water level in the borehole always be maintained at or above the groundwater level. Heaving conditions and the use of water or mud should be noted on the field logs.

SPT sampling below the water table in sands and silt occasionally results in low SPT values being obtained due to the heaving effect disturbing the soil especially if the water level in the hole has not been maintained at the in situ water level. Suspect low N values should be noted on the field logs. If it is critical to have accurate N values below the water table, other methods can be employed, such as conducting a dynamic cone penetration test. This quick and easy test involves attaching a cone shaped tip to the end of the drill rods, and driving the tip into the ground similar to the SPT method, except that the borehole is not pre-augered. Cones may be driven 20 to 40 feet through a formation without augering. Blow counts are recorded for each foot (0.3 m) of advancement.

A variation of split barrel sampling involves the use of a longer barrel in conjunction with hollow stem augers. The sampling barrel is installed inside the auger with a swivel attachment to limit rotation of the barrel. After completion of a 5-foot auger penetration, the auger is left in place and the barrel retrieved from the borehole. The sampler should be handled and the sample retrieved in the same way as described above for SPT sampling. This method is quicker than SPT split spoon sampling and the sample is virtually undisturbed because the cutting shoe sits ahead of the auger. No SPT information is collected due to soil sample collection during auger run.

Thin-Walled Samplers (Shelby Tubes)

Thin-walled samplers are used to collect relatively undisturbed samples (as compared to split-spoon samples) of soft to stiff clayey soils. Shelby tubes are commonly used. The Shelby Tube has an outside diameter of 2 or 3 inches and is 3 feet long. These undisturbed samples are used for certain laboratory tests of structural properties (consolidation, hydraulic conductivity, shear strength) or other tests that might be influenced by sample disturbance. Procedures for conducting thin-walled tube sampling are provided in ASTM D1587, and are briefly described below.

- the soil deposit being sampled must be cohesive in nature, and relatively free of sand, gravel, and cobble materials, as contact with these materials will damage the sampler;
- clean out the borehole to the sampling elevation using whatever method is preferred that will ensure the material to be sampled is not disturbed. If groundwater is encountered, maintain the liquid level in the borehole at or above groundwater level during the sampling operation;
- bottom discharge bits are not permitted. Side discharge bits may be used, with caution. Jetting through an open-tube sampler to clean out the borehole to sampling elevation is not permitted. Remove loose material from the center of a casing or hollow-stem auger as carefully as possible to avoid disturbance of the material to be sampled;
- place the sample tube so that its bottom rests on the bottom of the hole. Advance the sampler into the formation without rotation by a continuous and relatively rapid motion; usually hydraulic pressure is applied to the top of the drill rods;

- determine the length of advance by the resistance and condition of the formation, but the length shall never exceed 5 to 10 diameters of the tube in sands and 10 to 15 diameters of the tube in clays;
- in no case should the length of advance be greater than the sample-tube length minus an allowance for the sampler head and a minimum of 3 inches for cuttings.
- the tube may be rotated to shear the bottom of the sample 2 to 3 minutes after pressing in, and prior to retrieval to ensure the sample does not slide out of the tube. Lift the weight of the rods off of the tube prior to rotating.
- withdraw the sampler from the formation as carefully as possible in order to minimize disturbance of the sample;
- package and transport the sample in accordance with Paragraph ix).

On occasion it maybe required to extract the sample from the tube in the field.

- a sample extruder, which consists of a clamp arrangement to hold the tube and a hydraulic ram to push the sample through the tube, is usually mounted on the side of the rig. To prevent cross-contamination, be certain that the extruder is field cleaned between each sample;
- the sample is then extruded into a carrying tray; these are often made from a piece of 4-inch or 6-inch diameter PVC pipe cut lengthwise. Be certain that the carrying tray is field cleaned between each sample. The sample is carried to the work station to describe the sample, trim the potentially cross contaminated exterior, and place it in the appropriate container; and
- the Shelby tube may then be thoroughly field cleaned and decontaminated for reuse. Since they are thin-walled, the tubes are easily damaged, crimped, or otherwise distorted during handling or pushing. The Shelby Tube should be inspected before use and any which are significantly damaged should be rejected.

v) Borehole Completion

At the completion of the soil boring, once the soil/groundwater samples have been collected, the borehole annulus is then abandoned. Borehole abandonment options are identified in Section 3.5 - Borehole Abandonment/Sealing. Each boring will be surveyed to establish vertical/horizontal information; field ties (i.e., swing ties) will also be collected to document the boring location. Once completed, a stratigraphic log will be prepared for reporting purposes.

Equipment

- Drilling Equipment

- Stratigraphy Log (Overburden) (Form 2001)

- Tape Measure

References

1.	ASTM D420-93	Guide to Site Characterization for Engineering, Design, and Construction Purposes

2. ASTM D1452-80 Practice for Soil Investigation and Sampling by Auger Borings

3. ASTM D1586-84 Test Method for Penetration Test and Split-Barrel Sampling of Soils

4. ASTM D1587-94 Practice for Thin-Walled Tube Geotechnical Sampling of Soils

5. ASTM D2488-93 Practice for Description and Identification of Soils (Visual-Manual Procedure)

6. National Water Well Association, Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells.1989

7. EPA OSWER-9950.1,1986. RCRA Ground-Water Monitoring Technical Enforcement Guidance Document

3.5 Borehole Abandonment/Sealing

The following procedure describes common techniques for the abandonment/sealing of overburden boreholes. Borehole completion may have been performed by hollow stem augering/split spoon sampling, direct push sampling device, solid stem augering or other soil sample collection techniques. The method of borehole abandonment selected for a program will be dependent on a number of factors such as: depth to groundwater, presence of contamination (and degree of contamination i.e., light or dense non-agueous phase liquids - NAPL), confining layer presence and/or physical setting (i.e., open field/vacant land, vs. facility setting). The Work Plan guiding these activities (soil boring/boring closure) will dictate which method of borehole abandonment/sealing is required. The borehole abandonment/sealing techniques reviewed in the following consist of:

- soil cutting backfill;
- bentonite chip backfill; or
- cement/bentonite grout backfill using tremie techniques.

Boreholes need to be abandoned and sealed properly to prevent surface water entry to the groundwater regime, to eliminate any physical hazard, and to prevent/protect groundwater movement from one aquifer to another.

Procedures Referenced

- 3.4 Soil Borings

Borehole Abandonment/Sealing

A. Soil Cutting Backfill

Typically employed when working above groundwater table and at shallow depths.

- The final depth of borehole will be measured and recorded.
- Cuttings are dropped into borehole after augering/sample equipment is removed.
- Drill rod and/or probe rodding is used to compact/compress cuttings to allow return of all cuttings back into borehole.
- Mound final surface of cuttings above ground surface to allow settlements and promote surface water runoff away from boring.
- Borehole abandonment will be documented in field records/notes.

B. Bentonite Chip Backfill

Typically employed when working above or just into the groundwater table

- Excess cuttings have been drummed for disposal or excess cuttings have been spread at ground surface.
- The depth of the borehole will be measured and recorded.

- Bentonite chips will be dropped into borehole as hollow stem augers are removed, or after the boring equipment has been removed from the borehole (solid stem auger, probing tools, split spoon samplers).
- The bentonite chip backfill will be extended to within 1 foot of ground surface, the final borehole space will be backfilled with native soil and mounded slightly to allow settlement and promote surface water runoff away from the boring. Alternatively, the borehole cuttings may be mixed with bentonite to complete the abandonment/sealing task.
- Borehole abandonment will be documented in field records/notes.

C. Cement/Bentonite Grout Backfill

Typically employed when working below the groundwater table, or in an area where a confining layer exists and the potential for groundwater/NAPL movement along a preferential pathway (i.e., former borehole) must be eliminated.

- The final depth of borehole will be measured and recorded.
- The volume of grout required will be calculated from the above measurements.
- A grout mix of one bag (94 lbs.) of Portland Cement and three pounds of bentonite with approximately 7.5 gallons of clean water will be prepared.
- Using a tremie tube placed at the base of the borehole the grout will be pumped until observed at the required elevation. The tremie tube will be raised as the grout level rises (positive displacement technique).
- The benonite/grout backfill will be extened to within 1 foot of ground surface, the final borehole space will be backfilled with native soil and mounded slightly to allow settlement and promote surface water runoff away from boring.
- Borehole abandonment will be documented, noting depth of borehole, volume of grout used and mix ratio.
- Groundwater displaced from the borehole may or may not required containment depending on borehole setting and/or water quality.

NOTE: AT THE COMPLETION OF BOREHOLE ABANDONMENT/SEALING ACTIVITIES (REGARDLESS OF METHODOLOGY EMPLOYED) IT IS NECESSARY TO CHECK FOR SURFACE SETTLEMENT A FEW DAYS AFTER WORK COMPLETION TO DETERMINE IF THE BOREHOLE AREA REQUIRES "TOPPING OFF".

Restoration

The area around the borehole shall be restored as directed by the plant representative (e.g., asphalt, concrete, vegetation).

Cleanup

The area around the borehole shall be completely cleaned up of any investigation related materials (litter, etc.).

Equipment/Materials

- Grout pump/mixing equipment

References

1. United States Environmental Protection Agency (1992) "Guide to Management of Investigation-Derived Wastes", Quick Reference Fact Sheet

2. ASTM D5299 "Guide for Decommissioning of Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes and Other Devices for Environmental Activities

3.6 Bedrock Coring

The procedure describes the methodology for bedrock coring.

Procedures Referenced

3.7 Bedrock Logging & Classification

Equipment/Materials

- Drilling equipment
- Appropriate coring equipment
- Bedrock stratigraphic log form (Form 2.7-01)
- Tape measure
- Hand lens
- Camera
- Stopwatch
- Work Plan
- Health and Safety Plan

Procedure

- Prior to initiating coring activities, ensure that the overburden portion of the hole is isolated from the bedrock portion of the hole using an overburden casing grouted in-place.

- Coring must be performed utilizing an approved coring method and size, and performed with wire line coring techniques.

- Potable water or air can be utilized as circulating medium.

- If required, all rock cuttings produced will be properly contained and disposed of in accordance with the Work Plan requirements.

- All coring activities shall be performed following procedures outlined in ASTM Standard D2113.

- All bedrock core runs should be completed without interruption so penetration rates can be determined.

- Upon completion of bedrock coring activities, the corehole shall be flushed with potable water to remove all residual bedrock cuttings and measured to confirm final depth

References

1. American Society for Testing and Materials (1991) Standard D2113-8307 *"Standard Practice for Diamond Core Drilling for Site Investigations"* Annual Book of ASTM Standards, Section 4, volume 04.08

2. American Society for Testing and Material (1991) Standard D5434-93 *"Standard Guide for Field Logging of Subsurface Exploration of Soil and Rock"* Annual Book of ASTM Standards, Section 4, Volume 04.09

3.7 Bedrock Logging and Classification

This procedure is for the Logging and Classification of bedrock cores.

Procedures Referenced

3.6 Bedrock Coring

Equipment/Materials

- Drilling equipment
- Appropriate coring equipment
- Bedrock stratigraphic log form (Form 2.7-01)
- Tape measure
- Hand lens
- Camera
- Work Plan
- Health and Safety Plan

Procedure

- All Bedrock logging activities will be conducted according to procedures outlined in ASTM Standard D5434-93.

- All retrieved bedrock core shall be handled in a manner as to cause the least amount of mechanical fractures as possible.

- All retrieved bedrock cores will be placed in an appropriate sized core box with increasing depths aligned left to right.

- All bedrock core runs shall be separated and core depths marked utilizing wooden blocks.

- Upon the completion of each core run, the depth of the corehole will be measured to properly document the termination depth of each core run.

- Each stratigraphic bedrock core run will be logged for all structural and lithographic features.

- All natural occurring fractures, structural and lithographic features will be logged for depth and documented on standard Bedrock Stratigraphic Log Forms (Form 2.7-01).

- Rock Quality Designation (RQD) values and documentation on the bedrock log form will be calculated for each bedrock core run.

- RQD values will be calculated to indicate rock-mass properties according to Deere (1986) by summarizing all the bedrock core portions greater than 4-inches in length and dividing the sum of these pieces by the length of the bedrock core run. RQD is expressed as a percentage.

- The percentage of bedrock core recovery for each core run will be calculated and recorded on the bedrock log form.

- If potable water is utilized as a circulating medium, the volume of water lost during each bedrock core run will be recorded on the bedrock log form.

- Special attention will be paid to fracture surfaces to indicate if any fracture infilling is evident (i.e., matrix description) or groundwater movement is indicated (i.e., oxidation, weathering). All fractures will be measured for depth and recorded on the bedrock log form.

- A picture of each run of bedrock core will be taken to document each retrieved bedrock core run.

- Each completed core box will be properly sealed to keep the bedrock core intact.

- Each core box will be labeled on the outside to include Site name, job number, boring number, date, bedrock core depth, interval, bedrock core run number, RQD and bedrock core recovery for each core run, fluid loss (if applicable) and bedrock core loggers name.

- Upon completion of bedrock coring activities the corehole should be flushed with potable water to remove all residual rock cuttings from the corehole and measured to ensure that the documented termination depth of the corehole is correct.

- Care should be taken to ensure that all bedrock coring equipment is properly decontaminated according to Site protocols prior to construction of the next well.

References

1. American Society for Testing and Materials (1991) Standard D2113-8307 *"Standard Practice for Diamond Core Drilling for Site Investigations"* Annual Book of ASTM Standards, Section 4, volume 04.08

2. American Society for Testing and Material (1991) Standard D5434-93 *"Standard Guide for Field Logging of Subsurface Exploration of Soil and Rock"* Annual Book of ASTM Standards, Section 4, Volume 04.09

4.0 MONITORING WELLS

4.1 Well Construction Materials

Introduction

In environmental subsurface investigations, the information used to evaluate subsurface conditions often relies on the installation of appropriate groundwater monitoring wells. The application and use of the proper well construction materials to the specific well installation is crucial to obtaining representative and reliable groundwater samples.

The two general types of wells are groundwater monitoring wells and pumping (also referred to as recovery, extraction, or withdrawal) wells. The specific use of a groundwater well dictates the types of materials with which it is constructed.

This section outlines the general types and use of well construction materials and considerations involved in selecting appropriate materials for specific well installation applications. Installation of these materials are described in detail in the specific well-installation section listed below. See the ICM Work Plan for site-specific requirements on well installation and construction.

Procedures Referenced

4.2 Overburden Monitoring Well Installation
4.3 Bedrock Monitoring Well Installation

Material Descriptions

A. Well Screen

The screen is the portion of the well that contains appropriately-sized openings and allows groundwater to enter the well. The screen materials used in groundwater monitoring wells are crucial to ensuring the installation of an efficient, productive, and durable groundwater well.

The diameter of the well screen is generally dependent upon the application of the well. For monitoring wells used in groundwater level measurements and groundwater sampling, screen diameter will generally be 2.0-inch inner-diameter (I.D.) flush-threaded screen segments (piezometers are typically 1.0-inch inner diameter but may be 2-inch also). These screen segments are typically available in 10-foot lengths. Four-inch diameter or larger well screens are usually used for recovery or production well applications where larger diameters permit greater groundwater withdrawal rates. Larger diameter wells also allow a well to serve additional functions such as housing extraction oil recovery systems.

Screen material will be either thermoplastic Schedule 40 PVC (PolyVinylChloride) (ASTM D1785, ASTM D2665, ASTM F480) or Schedule 5 Type 316 stainless steel, depending primarily on the depth of the well and the groundwater quality (degree and nature of contamination). Shallower depths and generally low levels of contaminants in groundwater allow for PVC applications, whereas greater depths and severely-degraded groundwater quality, or the presence of free-phase oils or solvents, may necessitate stainless steel due to its greater strength and resistance to chemical degradation. It should be noted that

PVC and stainless steel are appropriate for the vast majority of environmental applications, and are generally accepted by regulatory agencies. Well materials other than PVC or stainless steel should be used only in certain instances, to be determined and approved by the Consultant Project Manager on a case-by-case basis.

Certain applications such as investigation of inorganic (metals) concentrations in groundwater, or the presence of low pH (acidic) conditions may preclude the use of stainless steel wells. Stainless steel, which contains molybdenum in addition to its iron content, may leach out metal compounds which could cause to misleading groundwater analysis results.

PVC may likewise leach out or degrade specific thermoplastic elements of its composition which may compromise the well integrity or groundwater analyses. PVC generally performs well in acidic groundwater conditions; however, it may degrade in the presence of certain organic compounds such as ketones, aldehydes or chlorinated compounds in high concentrations. Certain additives to the PVC may also affect groundwater quality.

Well screen slot sizes and well screen type will also be consistent for groundwater monitoring wells. Screen slot size is typically 0.010 inches; 0.020-inch slot size may be more appropriate for coarser formation materials or where the well may serve as a recovery well for free-phase oils. For monitoring applications, slot type should be either factory machine-slotted or continuous-wrap slotted. Perforated, bridge-slotted or louver-slotted well screens are generally not acceptable for most environmental applications and should be avoided.

Screen slot sizes may vary from these two sizes when used in production or recovery (pumping) well applications where the need to maximize groundwater withdrawal is essential. In such cases, screen slot sizes can be manufactured to exact specifications for a particular well based on particle size analysis results and formation transmissivity or permeability.

B. Well Riser Pipes and Casings

Well riser pipe is a solid extension of the well that extends from the screen up to the surface. The riser pipe protects the well screen, prevents outside groundwater from entering the well, and allows groundwater pumped from down in the open interval to be routed up through the well to the surface.

Well riser pipe should be of the same material and size as the well screen described above. In instances to be determined and approved by the project manager on a case-by-case basis only, differing materials may be approved for use in the same well (e.g. stainless steel well screen connected to PVC riser). Well risers should extend to the surface and should either be cut at grade in flush-mount completions or as an approximately 3-foot stickup to be covered with a steel protective casing.

Well riser pipe sections shall be flush-threaded and fitted with neoprene, rubber, or other appropriately constructed, durable o-rings to properly seal the threaded pipe joints. Glues or cements are not to be used in well construction.

In installations of bedrock monitoring wells, which have an open rock monitoring interval and a permanent well casing that extends from bedrock to the surface, the permanent casing (or casings in telescoping wells) shall be made of carbon steel, low-carbon steel ($\geq$ 0.8% carbon and $\leq$ 0.8% carbon, respectively), or PVC. The well casing should be a minimum of 4 inches in diameter (at least 4-inch diameter for the innermost casing).

C. Sand Packs

The filter pack, or sand pack, installed in a well replaces formation material immediately around a well with a more permeable material (sand). The sand pack separates the well screen from the formation, increases the hydraulic diameter of the well, and prevents fines (silt or clay) from entering or clogging the well screen.

Sand pack of an appropriate size shall be utilized based on the well screen slot size being used. Sand pack size should be chosen so that the majority of the sand (sand pack has inherent variation in its particle grain size distribution) is larger than the screen slot size while sized small enough to prevent deleterious amounts of formation fines from entering the well through the sand pack. Screen slot sizes of 0.010-inch and 0.020-inch typically use a sand pack such as Morie or U.S. Silica #1, #0, #00N, or equivalent.

Sand pack shall be washed silica sand with a silica content of at least 95%. Sands should meet one or more of the following requirements: NSF Standard 61, AWWA B-100, ANSI, or equivalent standards for uniformity and chemical inertness. In cases to be determined and approved by the project manager on a case-by-case basis only, differing sand pack materials may be approved for use in a well. Sand packs used for production and recovery wells with larger screen slot sizes will use larger-particle-sized sand packs of the same type and quality. The slot size and sand pack size for recovery wells should be chosen based on results of formation grain size distribution analysis.

D. Seals

Bentonite and grout seals are installed above the sand pack to isolate the monitoring interval and prevent groundwater from infiltrating into the well screen from other water-bearing zones. Seals also prevent migration of backfill or formation materials downward into the sand pack.

Bentonite is the generic name for a group of a naturally-occurring clay minerals (montmorillonites) that come in a variety of forms: pellets, chips, granulated, or powdered. This material is commercially available as “Wyoming Bentonite”. When hydrated it swells to many times its original volume and forms an ultra-low-permeability clay seal.

Bentonite chips or pellets are generally used to create a seal immediately above the sand pack. The chips/pellets are dropped inside the augers or well casing by hand down through the water column onto the top of the sand pack. Care must be taken to prevent “bridging” of the bentonite particles in the casing above the target zone. Measurements of the depth to the top of the seal must be obtained during installation of the seal to ensure its proper position and thickness. In the absence of significant water in a casing or borehole, potable water must be added to hydrate the bentonite. The bentonite seal will be allowed to set for a minimum of one-half hour, in order to hydrate properly, before additional seals (grout) are applied. Once the bentonite has set for one-half hour the grout seal may be placed, as described below.

In saline groundwater environments, such as where ocean water may infiltrate the monitoring interval, a zeolite-based seal material may be used, as saline conditions may hamper the performance of bentonite pellets.

Portland cement grout (grout) forms a concrete-like seal that can be more manageable than bentonite (e.g. able to be pumped through a water pump). Grout is generally placed on top of the hydrated bentonite seal to form a solid cement seal around the well riser up to the surface.

The grout mixture will consist of one 94-pound bag of Portland Cement and 3 to 5 pounds of powdered bentonite added per sack of cement. Two (2) pounds of calcium chloride may also be added (under certain conditions, e.g. very cold days) to accelerate the setting time of the grout, as well as to increase the dry strength of the grout. The grout will be thoroughly mixed with 6.5 gallons of potable water per sack of cement. Grout is generally placed using either the tremie or Halliburton grouting methods. These are described in the specific well installation SOPs.

E. Protective Casings and Surface Seals

Once the well screen, riser, and all seals have been placed to ground surface, the well riser must be protected. This includes protection from vehicles, damage, surface water infiltration, and weather. This is typically accomplished using either a flush-mount roadbox or a stickup casing.

Flush-mount roadboxes are circular steel casing segments with a heavy-duty steel lid with locking bolts. These units are widely available and come in a number of diameters and lengths, depending on the well diameter. A stickup protective casing is generally a length of carbon or stainless steel pipe with a locking top.

For a typical 2-inch monitoring well, the roadbox should be at least 6 inches in diameter; a stickup casing should be at least 4 inches in diameter. A roadbox should be at least 12 inches in length (they are typically 16 to18 inches long) and is installed flush with the ground surface. A stickup casing should be at least 5 to 6 feet long such that approximately 2.5-3 feet is below ground surface and 2.5-3 feet is protruding above grade. In wells where a permanent steel casing is installed (serves as the well riser pipe) and brought to the ground surface, it may be used as the protective casing provided it is equipped with a semi-permanent, metal, locking cap or cover that can be affixed to the steel casing.

Flush-mount installations should have at least the last 18-inches of the open borehole filled with coarse sand, placed up to ground surface to allow drainage of surface water infiltration down through and out of the roadbox. This also prevents infiltrating surface water from accumulating up over the top of the well riser and draining down into the well. This sand drain is not necessary in the locking-cap stickup casings.

Both roadbox and stick-up casings must be secured in the ground with concrete, which also serves as a surface seal.

In areas of high vehicle traffic activity, protective steel bollards should be installed. This is typically a vertically-oriented, concrete-filled, steel pipe (min. 4-in diameter) cemented at least 3 ft. into the ground, acting as a “guard rail” for the well casing and preventing it from being damaged by vehicles. Three bollards should be placed around a well to provide adequate protection.

Equipment/Materials

- Drilling equipment
- Well screen and riser materials
- Sand pack
- Bentonite pellets/chips
- Powdered bentonite
- Portland cement

References

1. ASTM D1785-99, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.

2. ASTM D2665-00, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings.

3. ASTM F480-00, Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80.

4. ASTM A53/A53M-01 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless for Ordinary Uses.

5. Campbell, M.D., and Lehr, J.H., Water Well Technology, McGraw Hill, 1973.

6. Cold Weather Concreting, ACI Committee 306, Materials Journal, Volume 85, Issue 4, July 1, 1988.

7. Driscoll, Fletcher G., Groundwater and Wells, Johnson Filtration Systems, Inc., 1986.

8. Freeze, R. Allen, and Cherry, John A., Groundwater, Prentice-Hall, 1979.

USEPA, 1986, RCRA Groundwater Monitoring Technical Enforcement Guidance

4.2 Procedures for Overburden Monitoring Well Installation

Introduction

This procedure presents the drilling, installation, and completion of overburden monitoring wells. The design and installation of monitoring wells involves the drilling of boreholes into various types of geologic formations. Designing and installing monitoring wells may require different drilling methods and installation in the overburden. However, due to specific site and monitoring requirements, the procedure may be revised as necessary to reflect these site-specific needs. Prior planning is required for the selection of the appropriate drilling method and selection of well materials. See the ICM Work Plan for site-specific requirements on well installation and construction.

Procedures Referenced

3.2	Soil Classification
4.4	Well Development
6.1	Soil Sampling
8.0	Equipment Decontamination
9.0	Waste Characterization

Drilling Procedures

Drilling and sampling equipment arriving on site will be decontaminated prior to drilling in accordance with the Decontamination and Waste Disposal Procedure.

Drilling generated waste materials will be disposed according to the Decontamination and Waste Disposal Procedure.

Record construction and geologic information on the attached subsurface boring log.

The depth to the target interval may be determined from an existing adjacent monitoring well/boring or from information obtained from split spoon sampling of the borehole. The criteria for determining the target interval to be monitored will be presented in the RI Work Plan. An 8-inch diameter borehole will be advanced to the target interval using a minimum 4¼-inch inside diameter (I.D.) hollow-stem auger.

In the instances where the borehole is advanced deeper than the target interval, a bentonite pellet seal will be installed to bring the bottom of the boring to within 6 inches of the target interval. Six inches of filter sand will then be placed above the bentonite seal prior to further well installation.

In some areas where the water table is known to be at or near the top of bedrock, the base of the overburden well will be installed at the top of bedrock. If a weathered bedrock zone is encountered, the base of the overburden well will be installed at the top of the weathered bedrock zone.

Continuous split-spoon samples will be collected, if required by applicable project Work Plan. (see Subsurface Soil Sampling Procedure). If collected, soil samples will be classified in accordance with the Soil Classification Procedure.

Well Construction

The well construction procedures presented below are the recommended standards. However, due to variations in subsurface conditions, changes in these well construction standards may be necessary in order to facilitate the installation of the protective casing.

Overburden wells will be constructed of either 2-inch Schedule 40 Flush-threaded Virgin PVC or type 316 Stainless Steel. Type of well material to use will be dependent upon known subsurface conditions. Wells constructed of PVC are preferable; however in situations where sufficient levels of chlorinated solvents are present to affect the PVC well integrity, stainless steel will be the material of choice. Wells of mixed construction materials are not acceptable. The well screen will consist of machine slot or continuous wrap PVC or Stainless Steel with screen slot size appropriate for the type of subsurface material. It is anticipated that PVC will be used at the site.

The bottom of the well screen will be placed to the bottom of the borehole. Ideally, the top of the well screen should be greater than 4 feet below grade. As the augers are slowly removed, clean washed silica sand filter pack will be placed in the annular space around the well screen and casing from the base of the screen to at least 2 feet above the screen.

In wells that exhibit a water table elevation above the sand pack, a minimum of 2-foot thick layer of bentonite pellets will be placed above the sand pack. The seal will be hydrated and allowed to set for approximately 30 minutes.

Cement/bentonite grout will be placed from the top of the bentonite seal to a point 5 feet below existing ground surface where conditions allow. The grout will be prepared in the ratio of one bag (94 pounds) of Type I or Type II Portland Cement to 3 to 5 pounds of bentonite powder mixed with approximately 7 gallons of potable water.

Accurate measurements of the material depths will be made by sounding the annulus during installation. The volume of materials needed will be calculated and compared to the actual volume used. Material depths will be recorded on the well installation report log (attached).

The well casing will be secured with a vented lockable cap. If the well is located in a high traffic area, the casing will be protected by 9-inch flush-mounted roadway box set in a concrete seal. Alternatively, in low traffic areas, the well casing may be cut above grade and completed with 4 or 6-inch diameter steel protective casing with approximately 3 feet of stick up, set in a concrete surface seal.

For flush-mounted wells, a 9-inch diameter, water-tight protector will be installed complete with a sand drain. A lockable gripper plug will top the PVC casing.

After installation, the monitoring well will be labeled with the well identification and a reference point for water level and depth measurements will be notched into the well casing. The well will be allowed to sit for at least 24 hours prior to well development, and for one week between development and groundwater sampling.

Equipment/Materials

- Drilling Equipment
- Well Supplies
- Subsurface Boring Log
- Overburden Well Log
- Tape Measure

References

1. American Society for Testing and Materials (1991), Standard D1452-80, "Practice for Soil Investigation and Sampling by Auger Borings", Annual Book of ASTM Standard, Section 4, Volume 04.08.

2. American Society for Testing and Materials (1991), Standard D2113-83 (87), "Diamond Core Drilling for Site Investigations", Annual Book of ASTM Standards, Section 4, Volume 04.08.

3. American Society for Testing and Materials (1991), Standard D5092, "Practices for Design and Installation of Ground Water Monitoring Wells in Aquifers", Annual Book of ASTM Standard, Section 4, Volume 04.08.

4. New York State Department of Environmental Conservation (1988), Draft Generic Environmental Impact Statement on the Oil, Gas, and Solution Mining Regulatory Program, Division of Mineral Resources.

5. Environmental Protection Agency (1986), RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, OSWER-9950.1.

6. Environmental Protection Agency (1987), A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001.

7. Environmental Protection Agency (1988), Guidance for Conducting Remedial Investigation

4.3 Procedures for Bedrock Monitoring Well Installation

This procedure is for the installation of deep groundwater monitoring wells in bedrock zones that lie below the top of bedrock groundwater flow zone.

Procedures Referenced

3.0 Subsurface Investigations
4.0 Monitoring Wells
5.0 Aquifer Characterization
8.0 Equipment Decontamination
9.0 Waste Characterization

Equipment/Materials

- Well construction materials
- Water level probe
- Bedrock Well Installation form
- Weighted Tape Measure

Procedure

- Overburden drilling will be performed down to the top of bedrock surface in accordance with the procedures outlined in Section 4.2, Procedures for Overburden Monitoring Well Installation. Once at the top of bedrock surface, the augers will be advanced a minimum of one foot into bedrock, if possible.

- If the augers cannot be advanced the minimum one-foot into bedrock, the augers will be removed and a temporary 8-inch steel casing will be placed to the bottom of the borehole to seal off the overburden. The seal shall be augmented by either pounding or spinning the casing just into the top of bedrock.

- Once the augers or casing are in place, either bedrock coring or 7-7/8-inch rotary drilling using standard techniques will be performed to advance the corehole to the depth of the top of the desired open monitoring interval. If cored, the core boring will be reamed to a nominal 8-inch diameter with a rotary bit. Bedrock coring will be performed in accordance with procedures outlined in ASTM Standard D2113 and Section 3.6, Bedrock Coring.

- Bedrock logging and classification will be performed in accordance with Section 3.7, Rock Classification.

- Once at the top of the desired monitoring interval a 4-inch diameter permanent black-iron or steel casing equipped with centralizers will be installed. The casing will be grouted in place to within 6 inches of the base of the borehole using either the Halliburton single-plug grouting method or by tremie grouting, as described below. Grout will be mixed according to the specifications presented in Section 4.1, Well Materials.

Halliburton Method

Approximately 1.5 times the total calculated annular space volume of grout will be mixed. The grout will be placed inside the casing and a drillable plug (made of inert material that shall not result in the introduction of contaminants to the well) will be placed on top of the grout. The plug must fit tight enough to prevent the mixing of the grout with the water above the plug. Potable water will be injected under pressure into the casing, forcing the plug to the bottom of the casing and grout into the annular space. A valve on the freshwater line will be closed to maintain pressure on the plug and the grout will be allowed to set for at least 12 hours. The temporary casing or auger assembly will be gradually withdrawn during the grouting process. The Halliburton method may also employ the use of drilling rods, in lieu of pressurized water, to force the plug down through the casing and maintain pressure on the plug.

Tremie Grouting Method

A temporary tremie pipe will be installed to the depth of the bottom of the 4-inch casing in the annular space between the 4-inch casing and the 8-inch borehole wall. Grout will be pumped through the pipe until undiluted grout return is noted at the ground surface in the annular space between the 4-inch casing and the temporary casing or augers. The temporary casing or auger assembly will then be gradually withdrawn: the tremie pipe will be disconnected from the grout pump without removing it from the bottom of the borehole, temporary casing sections or auger flights will be withdrawn one at a time, the tremie pipe will be reconnected, and additional grout will be pumped until grout return is again observed at the ground surface inside and outside the temporary casing or augers. This procedure will be repeated, thereby maintaining a full head of grout in the casing, until the temporary casing or auger string has been completely withdrawn. Additional grout will then be pumped through the tremie pipe if necessary to achieve and maintain undiluted grout at ground surface outside the 4-inch casing. The tremie pipe will then be withdrawn from the borehole.

- The grout will be allowed to set for a minimum of 12 hours prior to resuming drilling operations.

- Excess grout will be drilled out of the casing first with a tri-cone roller-bit of a diameter just slightly less than the inner diameter of the casing.

- At most locations, after the casing grout has set, an NQ or NX-core boring will be advanced approximately 10 feet (or alternate length to serve as the desired monitoring interval) below the 4-inch casing seat. The cored interval will serve as the monitoring interval for most locations, or the corehole may be reamed to a nominal 4-inch diameter.

- In some instances, depending on factors such as degree of rock competency (i.e. low-competency rock), groundwater quality, etc., a well screen may be appropriate for the monitoring interval. In such cases, a 2-inch-diameter stainless steel or PVC well screen, machine-slotted or continuous wrapped, with 0.020-inch slot screen size, and equal in length to the cored interval may be installed within the open bedrock interval. A riser pipe of similar material will be attached to complete the wellscreen to the surface. In such cases the annular space between the well screen and corehole will be filled with a sandpack of appropriate grain size distribution to match the screen slot size. Seals of bentonite (minimum 2 feet thick) and grout may be installed above the sandpack to fill the annular space between the 2-inch riser and 4-inch casing, although these are not required since the screen is for stability purposes only and the monitoring interval has already been isolated.

- Well screen "centralizers" may also be used in deeper wells to ensure that the well screen remains centered in the borehole at depth and facilitating an even distribution of the sand pack around the screen. These are generally a steel bracket or clamping device affixed (prior to installation) at 1 or more locations along the lower portion of the well screen and riser pipe. Care must be taken to insure that bridging of sand or bentonite does not occur at the centralizer locations.

- The well casing will be secured with a vented lockable cap. If the well is located in a high traffic area, the casing will be cut below grade and packed in coarse sand for drainage. The casing will be protected by a 9-inch flush-mounted roadway box set in a concrete seal. Alternatively, in low traffic areas, the well casing may be cut above grade and completed with a locking steel protective casing with approximately 3 feet of stick up, set in a concrete surface seal. Protective steel bollards will be installed, where necessary, to protect the well casing. Refer to Section 4.1, Well Construction Materials, for additional information regarding protective casings.

- For deep bedrock monitoring well installation, where multiple zones of permeable rock may exist, steel casings and rotary drilling bits of larger size than indicated in this Section may be used to create "telescoping" wells in which the sizes of the casings and boreholes become progressively smaller with increased depth. The deeper the well installation, the larger the diameter required for the near-surface (initial) drilling. Each permanent steel casing shall be grouted in place, using the methods described herein.

- Bedrock coring and deep bedrock well installations may also be performed in conjunction with packer pressure testing in order to define more permeable bedrock zones or to target specific hydrogeologic zones.

- All equipment will be decontaminated in accordance with Section 8.0, Equipment Decontamination, and all drilling-related wastes shall be handled and disposed in accordance with Section 9.0, Waste Characterization.

- Well installation will be followed by development. The procedure for well development is described in Section 4.4, Well Development. Water level monitoring will be performed in accordance with Section 5.1.

References

1. ASTM D1452-80, "Practice for Soil Investigation and Sampling by Auger Borings", Annual Book of ASTM Standard, Section 4, Volume 04.08.

2. ASTM D2113-83 (87), "Diamond Core Drilling for Site Investigations", Annual Book of ASTM Standards, Section 4, Volume 04.08.

3. American Society for Testing and Materials (1991), Standard D5092, "Practices for Design and Installation of Ground Water Monitoring Wells in Aquifers", Annual Book of ASTM Standard, Section 4, Volume 04.08.

4. New York State Department of Environmental Conservation (1988), Draft Generic Environmental Impact Statement on the Oil, Gas, and Solution Mining Regulatory Program, Division of Mineral Resources.

5. Environmental Protection Agency (1986), RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, OSWER-9950.1.

6. Environmental Protection Agency (1987), A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001.

7. Environmental Protection Agency (1988), Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, EPA/540/G-89/004.

8. Campbell, M.D., and Lehr, J.H., Water Well Technology, McGraw Hill, 1973.

9. Driscoll, Fletcher G., Groundwater and Wells, Johnson Filtration Systems, Inc., 1986.

10. Freeze, R. Allen, and Cherry, John A., Groundwater, Prentice-Hall, 1979.

4.4 Well Development Procedures

This procedure is for the development of groundwater monitoring wells that have been installed in overburden, top of bedrock, or deep bedrock formations. Before a newly constructed well can be used for water-quality sampling, measuring water levels, or aquifer testing, it must be developed. Well development refers to the procedure used to clear the well and formation around the screen of fine-grained materials (sands, silts, and clays) produced during drilling or naturally occurring in the formation.

Well development is completed to remove fine grained materials from the well but in such a manner as to not introduce fines from the formation into the sand pack. Well development continues until the well responds to water level changes in the formation (i.e., a good hydraulic connection is established between the well and formation) and the well produces clear, sediment-free water to the extent practical.

Procedures Referenced

4.2 Procedures for Monitoring Well Installation
9.0 Waste Characterization

Well Development Procedures

The well development procedures presented below are the recommended standards. However, due to variations in conditions, changes in these well development standards may be necessary in order to facilitate the successful completion of developing the monitoring well. Well development can be accomplished by using in-place pumps or using manual equipment; either peristaltic, bladder, or other appropriate pumps depending on well depth.

Don appropriate safety equipment.

Attach appropriate pump and lower tubing into well.

Turn on pump. If well runs dry, shut off pump and allow to recover.

Surging will be performed by raising and lowering the pump in the well to open and close the check valve in the pump several times to pull fine-grained material from the well. Collect the groundwater sample in a glass jar to determine relative turbidity, and measure and record the temperature, pH, and specific electrical conductance.

The fourth and fifth steps will be repeated until groundwater is relatively silt-free; no further change is noted; and the temperature, pH, and specific conductance readings have stabilized to within 10% or 10 well volumes and 5 times the volume of water used to complete the well have been removed.

The developing equipment will be raised two feet and then Steps 4 and 5 will be repeated.

Step 6 will be repeated until entire well screen has been developed.

Waste Disposal

All waste generated will be disposed in accordance to the methods and procedures contained in the Waste Disposal Section.

All water generated during cleaning and development procedures will be collected and contained on site in 55-gallon drums for future analysis and appropriate disposal.

Personal protective equipment, such as gloves, disposable clothing, and other disposable equipment, resulting from personnel cleaning procedures and from soil sampling and handling activities, will be placed in plastic bags. These bags will be transferred into appropriately labeled 55-gallon drums or a covered roll-off box for appropriate disposal.

Equipment/Materials

- Appropriate health and safety equipment
- Knife
- Power source (generator)
- Field book
- Well Development Form (Form 3006)
- Well keys
- Graduated pails
- Pump and tubing

Cleaning supplies (including non-phosphate soap, buckets, brushes, laboratory-supplied distilled/deionized water, tap water, cleaning solvent, aluminum foil, plastic sheeting, etc.)

- Water level meter
- PH/temperature/conductivity meter
- Clear glass jars (e.g., drillers' jars)

References

1. Environmental Protection Agency (1986), RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, OSWER-9950.1.

2. Environmental Protection Agency (1987), A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001.

3. Environmental Protection Agency (1988), Guidance for Conducting Remedial Inv

5.0 AQUIFER CHARACTERIZATION

5.1 Manual Water Level Measurement Procedure

Introduction

This procedure describes measurement of water levels in groundwater monitoring and extraction wells, piezometers and boreholes. This procedure does not cover automated measurement of water levels with a transducers/datalogger, and does not cover measurement of phase-separated liquids.

Water levels in monitoring wells will be measured prior to each sampling event and at other times as indicated in the project Work Plan. Water levels will be acquired in a manner that provide accurate data that can be used to calculate vertical and horizontal hydraulic gradients and other hydrogeologic parameters. Accuracy in obtaining the measurements is critical to insure the useability of the data.

Procedures Referenced

6.3 Non-Aqueous Phase Liquid (NAPL) Monitoring and Sample Collection
7.0 Field Instruments – Use And Calibration
9.0 Equipment Decontamination

Procedure

In order to provide reliable data, water level monitoring events should be collected over as short a period of time as practical. Barometric pressure can affect groundwater levels and, therefore, observation of significant weather changes during the period of water level measurements must be noted. Tidal fluctuations, navigation controls on rivers, rainfall events and groundwater pumping can also affect groundwater level measurements. Personnel collecting water level data must note if any of these controls are in effect during the groundwater level collection period. Due to possible changes during the groundwater level collection period, it is imperative that the time of data collection at each station be accurately recorded.

In conjunction with groundwater level measurements, surface water (e.g., ponds, lakes, rivers, and lagoons) often are monitored as well. This information is very helpful (and can be critical) in understanding the hydrogeologic setting of the site and most importantly how contaminants may move beneath the site.

The depth to groundwater will be measured with an electronic depth-indicating probe. Prior to obtaining a measurement, a fixed reference point on the well casing will be established for each well to be measured. Unless otherwise established, the reference point is typically established and marked on the north side of the well casing. Avoid using protective casings or flush-mounted roadboxes for reference, due to the greater potential for damage or settlement.

If provided for in the project Work Plan, the elevation of the reference point shall be obtained by accepted surveying methods, to the nearest 0.01 ft.

The water level probe will be lowered into the well until the meter indicates (via indicator light or tone) the water is reached. The probe will be raised above water level and slowly lowered again until water is indicated. The cable will be held against the side of the inner protective casing at the point designated for water level measurements and a depth reading taken. This procedure will be followed three times or until a consistent value is obtained. The value will be recorded to the nearest 0.01 feet on the Groundwater Level Monitoring Report form or other designated data recording location if specified in the project Work Plan.

Upon completion, the probe will be raised to the surface and together with the amount of cable that entered the well casing, will be decontaminated in accordance with methods described in Equipment Decontamination Procedure.

Equipment/Materials

- Battery-operated, non-stretch electronic water level probe with permanent markings at 0.01 ft. increments (traceable to national measurement standards), such as the Solinst Model 101 or equivalent.

- The calibrated cable on the depth indicator will be checked against a surveyor's steel tape once per quarter year. A new cable will be installed if the cable has changed by more than 0.01% (0.01 feet for a 100 foot cable). See also the Field Instruments – Use And Calibration Procedure.

- Groundwater Level Monitoring Report form.

References

1. ASTM 4750 Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well (Observation Well)

2. ASTM D6000 Guide for Presentation of Water-Level Information from Ground-Water Sites

6.0 SAMPLE COLLECTION FOR LABORATORY ANALYSIS

6.1 Soil Sample Collection for Laboratory Analysis

The following procedure describes typical soil sample collection methods for submission of samples to a laboratory for chemical analysis. Soil sampling procedures may vary from project to project due to different parameters of concern, different guidance provided by the state/province where the site is located, or the specific objectives for the project. Therefore, it is essential that the sampling team members carefully review the ICM Work Plan requirements and the rationale behind the program. The primary goal of soil sampling is to collect representative samples for examination and chemical analysis (if required).

Grab Versus Composite Samples

A grab sample is collected to identify and quantify compounds at a specific location or interval. The sample is comprised of no more than the minimum amount of soil necessary to make up the volume of sample dictated by the required sample analyses. Composite samples may be obtained from several locations or along a linear trend (in a test pit or excavation). Sampling may occur within or across stratification. It is critical to the analysis to recognize the inherent bias in the technique prior to the sampling event. All sample locations must be thoroughly documented in the field prior to transport off site.

Procedures Referenced

3.2 Soil Classification
6.4 Sample Handling and Shipping
7.0 Equipment Decontamination

Sample Collection

1.0 Stockpile Soil Sample Collection

1.1 Sample Strategy – Random and Biased Sampling

Unless there is a strong indication of contaminant presence, such as staining or elevated detections using a photoionization detector (PID), soil sample locations may be randomly selected from several areas within the stockpile. The number and type (grab or composite) of samples collected from each stockpile is discussed in the ICM Work Plan and depends on whether the soils will be disposed at an offsite landfill or used as backfill in the excavation or elsewhere on site as cover or backfill.

If any areas show evidence of contamination, such as staining, biased samples will be collected from each area to characterize the contamination present in each area. Background and control samples are also biased, since they are collected in locations typical of non-Site-impacted conditions.

1.2 Stockpile Sampling Procedure

Soil sampling techniques are dependent upon the sample interval of interest, the type of soil material to be sampled, and the requirements for handling the sample after retrieval. The most common method for collection of surficial soil samples involves the use of a stainless steel trowel. Soil samples may also be collected with spoons and push tubes. The sampling equipment is cleaned between sample locations. A typical stockpile soil sampling protocol is outlined below:

- Stockpile soil samples will be collected using a pre-cleaned stainless steel trowel or other appropriate tool. Each sample will consist of soil from 6 inches below the soil pile surface. If a composite sample is required, then the composite sample will be be comprised of soil collected from four randomly selected areas of the pile.;

- A new pair of disposable gloves will be used at each sample location;

- Any surficial debris (i.e., grass cover, gravel) should be removed from the area where the sample is to be collected using a separate pre-cleaned device. Gravel presents difficulties for the laboratory in terms of sample preparation and is typically not representative of contaminant concentrations in nearby soil.

- A pre-cleaned sampling tool will be used to remove the sample from the layer of exposed soil.

- When only one sample container is required, the collected soil will be placed directly into the clean, pre-labeled sample jar. When more than one sample container requires filling or samples will be split for duplicate analyses; the soils will first be homogenized in a pre-cleaned stainless steel bowl; and then placed into the respective sample containers. It is important that soil samples be mixed as thoroughly as possible to ensure that the sample is as representative as possible of the sample interval. When round bowls are used for sample mixing, mixing is achieved by stirring the material in a circular motion and occasionally turning the material over. Soil samples collected for volatile organic compounds analyses shall <u>not</u> be mixed.

- Samples will be placed on ice or cooler packs in laboratory supplied shipping coolers after collection.

Exception is noted for the collection of volatile organic compounds (VOCs) which require special sample collection methods. VOCs are collected directly into a sample vial (triplicate volume typically required) without headspace. Samples for VOCs are typically collected first, without homogenization or extra handling to limit the loss of volatile constituents.

The VOC sample collection methodology will be identified in the Work Plan, which will dictate the sample method. The methodology for VOC sampling varies from area to area, so carefull review of this issue in advance of the field efforts is required.

2.0 Sub-Surface Sample Collection

Sub-surface soil sample collection is typically performed with the help of a drill unit, direct-push probing unit, or hand-driven/held samplers. Typically a boring is advanced incrementally to permit intermittent or continuous sampling to the required depth of chemical sample collection; or alternatively sampling may be initiated if certain conditions are observed (i.e. chemical presence or volatile presence identified from monitoring). Sample collection criteria and locations, are normally stipulated by the Work Plan.

Any drilling procedure that provides a suitably clean and stable hole before insertion of the sampler and assures that the penetration test or other sampling technique is performed on essentially undisturbed soil is acceptable. The drilling method is to be selected based on the subsurface conditions. Each of the following procedures have proven to be acceptable for specific subsurface conditions:

- Conventional drilling with continuous flight hollow-stem auger method (with inside diameter between 2.2 and 6.5 inches) using split spoon samplers (Standard Penetration Test – SPT) or shelby tube samplers; or
- direct - push samplers, advanced using a percussion/vibratory hammer (Geoprobe TM
- or equivalent); or
- hand – held/driven split spoon sampling equipment or portable hammer and split spoon sampling equipment (final depth will be limited).

Several drilling methods are not acceptable. These include: jetting through an open tube sampler and then sampling when the desired depth is reached; use of continuous flight solid auger equipment below the groundwater table in non-cohesive soils; casing driven below the sampling depth prior to sampling; and advancing a borehole with bottom discharge bits.

The following subsections describe the specific methods for completing split spoon sampling, shelby tube sampling, and direct-push sampling. Section 2.4 describes the soil sampling procedure for chemical analysis, once a soil core is recovered from any of the above sample collection devices.

2.1 Split – Spoon Sampling Method

This method is used to obtain representative samples of subsurface soil materials for sample collection. The test methods described below must be followed to ensure that the soils captured in the split-spoon or shelby tube are relatively undisturbed/representative of the desired soil interval and obtain accurate Standard Penetration Test (SPT) values. The SPT values reflect the sub-surface soils density and is typically measured when performing geo-technical work or environmental borings. This information although not directly relevant to the collection of chemical samples, is collected because it is beneficail in terms of stratigraphy interpretation and understanding the conditions below grade.

The split barrel sampler, or split spoon, consists of an 18- or 24-inch long, 2-inch outside diameter tube, which comes apart length wise into two halves. Larger spoons are available for use when a larger sample volume is required (4-inch diameter spoons).

Once the borehole is advanced, by an appropriate method (e.g. hollow stem augers), to the target depth and the borehole cleaned of cuttings, representative soil samples are collected in the following manner:

- the split-spoon sampler should be inspected to ensure it is properly cleaned and decontaminated. The driving shoe (tip) should be relatively sharp and free of severe dents and distortions;
- the cleaned split-spoon sampler is attached to the drill rods and lowered into the borehole. Do not allow the sampler to drop onto the soil;
- after the sampler has been lowered to the bottom of the hole, it is given a single blow to seat it and make sure that it is in undisturbed soil. If there still appear to be excessive cuttings in the bottom of the borehole, remove the sampler from the borehole and remove the cuttings; and
- mark the drill rods in three or four successive 6-inch (0.15 m) increments, depending on sampler length, so that the advance of the sampler under the impact of the hammer can be easily observed for each 6-inch (0.15 m) increment.

The sampler is then driven continuously for either 18 or 24 inches (0.45 or 0.60 m) by use of a 140-pound (63.5 kg) hammer. The hammer may be lifted and dropped by either the cathead and rope method, or by using a trip, automatic, or semi-automatic drop system. The hammer should free-fall a distance of 30 inches (±1 inches) (760 mm, ±25 mm) per blow. Measure the drop at least daily to ensure that the drop is correct. To ensure a free-falling hammer, no more than 2 1/4 turns of the rope may be wound around the cathead (see ASTM D1586-84). The number of blows applied in each 6-inch (0.15 m) increment is counted until one of the following occurs:

- a total of 50 blows have been applied during any one of the 6-inch (0.15 m) increments described above;
- a total of 100 blows have been applied;
- there is no advancement of the sampler during the application of ten successive blows of the hammer (i.e., the spoon is "bouncing" on a stone or bedrock); or
- the sampler has advanced the complete 18 or 24 inches (0.45 or 0.60 m) without the limiting blow counts occurring as described above.

In some cases where the limiting number of blow counts has been exceeded, the field supervisor may direct the driller to attempt to drive the sampler more if collection of a greater sample length is essential.

On the field form, record the number of blows required to drive each 6-inch (0.15 m) increment of penetration. The first 6 inches is considered to be a seating drive. The sum of the number of blows required for the second and third 6 inches (0.15 m) of penetration is termed the "standard penetration resistance" or the "N-value".

Note: If the borehole has sloughed and there is caved material in the bottom, the split spoon may push through this under its own weight, but now the spoon is partially "pre-filled". When the spoon is driven the 18 or 24 inches representing its supposedly empty length, the spoon fills completely before the end of the drive interval. Two problems arise:

1. the top part of the sample is not representative of the in-place soil at that depth; and
2. the SPT value will be artificially higher toward the bottom of the drive interval since the spoon was packed full. These conditions should be noted on the field log.

The sampler is then removed from the borehole and unthreaded from the drill rods. The open shoe (cutting end) and head of the sampler are partially unthreaded by the drill crew and the sampler is transferred to the field supervisors work surface.

The open shoe and head are removed by hand, and the sampler is tapped so that the spoon separates.

Measure and record the length of sample recovered making sure to discount any sloughed material that is present on top of the sample core.

Caution must be used when conducting SPT sampling below the groundwater table, particularly in sand or silt soils. These soils tend to heave or "blow back" up the borehole due to the difference in hydraulic pressures between the inside of the HSA and the undisturbed soil. To equalize the hydraulic pressure, the inside of the HSA must be filled with water. The drilling fluid level within the boring or hollow-stem augers needs to be maintained at or above the in-situ groundwater level at all times during drilling, removal of drill rods, and sampling. Since heave or blow back is not always obvious to the driller, it is essential that the water level in the borehole always be maintained at or above the groundwater level.

Section 2.4 describes the soil sampling procedure for chemical analysis, once a soil core is recovered from a split spoon sampler.

2.2 Thin-Walled (Shelby Tubes) Sample Method

Thin-walled samplers are used to collect relatively undisturbed samples (as compared to split-spoon samples) of soft to stiff clayey soils. Shelby tubes are commonly used. The shelby tube has an outside diameter of 2 or 3 inches and is 3 feet long. These undisturbed samples are used for certain laboratory tests of structural properties (consolidation, hydraulic conductivity, shear strength) or other tests (such as collection of soils for chemical analysis) that might be influenced by sample disturbance. Procedures for conducting thin-walled tube sampling are provided in ASTM D1587-94, and are briefly described below.

- the soil deposit being sampled must be cohesive in nature, and relatively free of sand, gravel, and cobble materials, as contact with these materials will damage the sampler;
- clean out the borehole to the sampling elevation using whatever method is preferred that will ensure the material to be sampled is not disturbed. If groundwater is encountered, maintain the liquid level in the borehole at or above groundwater level during the sampling operation;
- bottom discharge bits are not permitted. Side discharge bits may be used, with caution. Jetting through an open-tube sampler to clean out the borehole to sampling elevation is not permitted. Remove loose material from the center of a casing or hollow-stem auger as carefully as possible to avoid disturbance of the material to be sampled;
- place the sample tube so that its bottom rests on the bottom of the hole. Advance the sampler into the formation without rotation by a continuous and relatively rapid motion; usually hydraulic pressure is applied to the top of the drill rods;
- determine the length of advance by the resistance and condition of the formation, but the length shall never exceed 5 to 10 diameters of the tube in sands and 10 to 15 diameters of the tube in clays;
- in no case should the length of advance be greater than the sample-tube length minus an allowance for the sampler head and a minimum of 3 inches for cuttings.
- the tube may be rotated to shear the bottom of the sample 2 to 3 minutes after pressing in, and prior to retrieval to ensure the sample does not slide out of the tube. Lift the weight of the rods off of the tube prior to rotating.
- withdraw the sampler from the formation as carefully as possible in order to minimize disturbance of the sample.

On occasion it may be required that extraction of the sample from the tube be conducted in the field for chemical sample collection. The following procedure should be followed.

- a sample extruder, which consists of a clamp arrangement to hold the tube and a hydraulic ram to push the sample through the tube, is usually mounted on the side of the rig. To prevent cross-contamination, be certain that the extruder is field cleaned between each sample;
- the sample is then extruded into a carrying tray; these are often made from a piece of 4-inch or 6-inch diameter PVC pipe cut lengthwise. Be certain that the carrying tray is field cleaned between each sample. The sample is carried to the work station to describe the sample, trim the potentially cross-contaminated exterior, and select the area for sample collection (see section 2.4 collection procedure).
- the shelby tube may then be thoroughly field cleaned and decontaminated for reuse. Since they are thin-walled, the tubes are easily damaged, crimped, or otherwise distorted during handling or pushing. The shelby tube should be inspected before use and any which are significantly damaged should be rejected.

Section 2.4 describes the soil sampling procedure for chemical analysis, once a soil core is recovered from a shelby tube sampler.

2.3 Direct- Push Sample Method

The operation of the direct-push samplers (i.e. Macro-Core TM Soil Sampler or equivalent) consists of "pushing and/or vibrating" the sampler into the subsurface using a direct-push unit (i.e. Geoprobe TM soil probing machine or equivalent). The sampler is typically a hollow tube with a threaded drive head, and threaded cutting shoe; provided with an internal sleeve (i.e.liner) that the soil sample is captured in.

Once driven to the required depth, the sampler body/soil liner and soil core is removed from the borehole for inspection and sample collection. Once above grade the sampler is opened by the probe operator and the liner removed and cut open (opened with a dual blade cutting tool), to expose the soil for inspection and sampling.

The sampler body and ends are decontaminated and a new liner is inserted and the sampler reassembled for collection of the next interval. The clean sampler is then advanced back down the same hole to collect the next soil sample. The Macro-Core TM sampler can be used in either the open-tube or closed-point sampling mode. The open-tube is the most commonly used method, typically employed in stable soil conditions when the borehole does not collapse. The closed-point system seals the cutting shoe opening until the sampler is at the next sample interval, this prevents collapsed soil from entering the sampler as it is advanced back down the hole. Once at the sample depth, the closed-point is unthreaded and released from the cutting shoe area, such that it rides on top of the soil core as it is being driven into the next interval.

Section 2.4 describes the soil sampling procedure for chemical analysis, once a soil core is recovered from a direct-push sampler.

2.4 Soil Core Chemical Sample Collection Procedure

The following describes the collection of soil samples for chemical analysis from a split spoon soil core, shelby tube soil core, or direct-push sample core.

- record soil core recovery and soil stratigraphy data;
- discard upper and lower ends of sample core (3 inches ±);
- if clayey soils are present use a pre-cleaned stainless steel knife to cut the remaining core longitudinally, alternatively if sandy soils are present, use a clean stainless steel spoon to scrape away the soil surface;
- screen the exposed soil surface with a PID to monitor for the presence of volatile organics;
- with a sample knife or spoon, remove soil from the center portion of the core and place in the sample jar (when only one aliquot is required), or
- when more than one aliquot is required place soils in a pre-cleaned stainless steel bowl for homogenization;
- do not sample large stones and natural vegetative debris;
- homogenize the soil and place directly into the sample jars
- properly label sample container; and
- place collected samples on ice or cooler packs in laboratory supplied shipping coolers.

When only one sample container is required, the collected soil will be placed directly into the clean, pre-labeled sample jar. When more than one sample container requires filling or samples will be split for duplicate analyses; the soils will first be homogenized in a pre-cleaned stainless steel bowl; and then placed into the respective sample containers. It is important that soil samples be mixed as thoroughly as possible to ensure that the sample is as representative as possible of the sample interval. When round bowls are used for sample mixing, mixing is achieved by stirring the material in a circular motion and occasionally turning the material over. Soil samples collected for volatile organic compounds analyses shall not be mixed.

The VOC sample collection methodology will be identified in the ICM Work Plan, which will dictate the sample method. The methodology for VOC sampling varies from area to area, so carefull review of this issue in advance of the field efforts is required.

3.0 Test Pit/Excavation Sample Collection

Details of the test pit and excavation program are detailed in the ICM Work Plan. Prior to any excavation with a backhoe, it is important to ensure that all sampling locations are clear of overhead and buried utilities. Review the site specific Health & Safety plan and ensure that all safety precautions including appropriate monitoring equipment are installed as required. The following describes the collection of soil samples for chemical analysis from a test pit or excavation.

- Using the backhoe, excavate a trench approximately three feet wide and approximately one foot deep below the cleared sampling location, or as specified in the Work Plan. Place excavated soils on plastic sheets. Trenches greater than five feet deep must be sloped or protected by a shoring system, as required by OSHA regulations.
- Record in the Field Log book or test pit log the depth intervals from which the samples are being collected.

- Samples are taken using a trowel, scoop, or coring device at the desired intervals. Be sure to scrape the vertical face at the point of sampling to remove any soil that may have fallen from above, and to expose fresh soil for sampling. In many instances, samples can be collected directly from the backhoe bucket. A telescopic mechanical arm (see next sampling device) and stainless steel sampling beaker may be used to collect samples.
- If volatile organic analyses are required, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, wooden tongue depressor or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.
- Abandon the pit or excavation according to applicable state regulations. Generally, shallow excavations can simply be backfilled with the removed soil material. The test pit/excavation should be backfilled in accordance with a Site work plan or related document.

3.1 Telescopic Mechanical Sampling Arm

The device consists of an aluminum pole approximately 1 to 2 inches in diameter divided into three, 4-foot sections. Attached to the end of the pole is a stainless steel sampling beaker (usually with an 18-ounce capacity). The pole is capable of telescoping from 4 to 12 feet. This mechanical sampling arm is used to collect soil samples from test pits or other excavations. It allows a sample to be collected from a location that would otherwise be difficult to access. The following describes the collection of soil samples for chemical analysis using a telescopic mechanical sampling arm.

- Attach the cleaned, stainless steel beaker to the end of the pole either by tightening a clamp or wing nuts.
- Make sure your feet are safely and securely positioned.
- Telescope the pole to the required length
- Lower the pole end into the test pit or other excavation.
- Collect the sample.
- Remove the sample from the beaker with a cleaned, stainless steel scoop, trowel or new wooden tongue depressor.

Field Notes

All conditions at the time of sample collection should be properly documented in the field log book. This should include a thorough description of the collection method, sample characteristics, including grain size, color, and general appearance, as well as date/time of sampling and labeling information. The location of the sampling point should be described in a sketch and three measurements (swing ties) should be taken to adjacent permanent structures so that the sample location can be readily identified in the field at a future date if necessary. It is often advisable to have a licensed land surveyor accurately survey the locations.

Decontamination

In all sampling scenarios measures to prevent cross-contamination must be employed. The sampling device selected must be constructed of an inert material with smooth surfaces that can be readily cleaned.

Heavy equipment used for test pit operations must also be cleaned between each location when collecting samples for chemical analysis.

Equipment/Materials

- Drilling equipment and soil sampling tools
- Decontamination fluids and rinse water
- Subsurface Boring Log
- Tape Measure
- Water Level Probe
- Appropriate sampling containers

References

1. American Society for Testing and Materials (1991), Standard D1452-80, "Practice for Soil Investigation and Sampling by Auger Borings", Annual Book of ASTM Standard, Section 4, Volume 04.08.

2. Environmental Protection Agency (1986), RCRA Ground-Water Monitoring Technical Enforcement Guidance Document, OSWER-9950.1.

3. Environmental Protection Agency (1987), A Compendium of Superfund Field Operations Methods, EPA/540/P-87/001.

4. ASTM D1452-80 Practice for Soil Investigation and Sampling by Auger Borings.

5. ASTM D1586-84 Test Method for Penetration Test and Split-Barrel Sampling of Soils

6. ASTM D1587-94 Practice for Thin Walled Tube Geotechnical Sampling of Soils

7. ASTM D2488-93 Practice for Description and Identification of Soils (Visual-Manual Procedure)

8. ASTM D4700-91 Guide for Soil Sampling from the Vadose Zone

6.2 Groundwater Sample Collection for Laboratory Analysis

Introduction

This procedure is for the collection of groundwater samples for laboratory analysis.

The following describes two techniques for groundwater sampling: "Low Stress/Low Flow Methods" and "Typical Sample Methods."

"Low Stress/Low Flow" methods will be employed when it is critical to collect groundwater samples where sediment/colloid presence is significant, particularly in fine-grained formations. Analyses typically sensitive to turbidity/sediment issues are Polychlorinated-biphenyls (PCBs), Semi-volatile compounds (SVOCs) and metals.

The "Typical Sample Methods" will be employed where the collection of parameters less sensitive to turbidity/sediment issues are being collected (volatile organics - VOCs, and general chemisty).

NOTE: If Non-aqueous phase liquids (NAPL) (light or dense) are detected in a monitoring well, groundwater sample collection will not be conducted and the Project Manager must be contacted to determine a course of action.

Procedures Referenced

5.1 Manual Water Level Measurement
7.0 Equipment Decontamination

Preparatory Requirements

- Verify well identification and location using borehole log details and location layout figures. Note the condition of the well and inform the Project Coordinator of any necessary repair work required.
- Prior to opening the well cap, measure the breathing space above the well casing with a PID to establish baseline levels. Repeat this measurement once the well cap is opened. If either of these measurements exceeds the air quality criteria in the health and safety plan, field personnel should adjust their PPE accordingly.
- Prior to commencing the groundwater purging/sampling tasks, a water level must be obtained to determine the well volume for hydraulic purposes. Refer to the Manual Water Level Measurement Procedure for details. In some settings it maybe necessary to allow the water level time to equilibrate. This condition exists if a water tight seal exists at the well cap and the water level has fluctuated above the top of screen; creating a vacuum or pressurized area in this air space. Three water level checks will verify static water level conditions or changing conditions.

- Calculate the water volume in the well. Typically overburden well volumes consider only the quantity of water standing in the well screen and riser; bedrock well volumes are calculated on the quantity of water within the open corehole and within the overburden casing.
- Estimate natural groundwater flow rate into well to determine the approximate pumping rate for purging/sampling activities.

<u>Well Purging and Stabilization Monitoring (Low Stress/Low Flow Method)</u>

- The preferred method for groundwater sampling will be the low stress/low flow method described below.
- Bladder pumps/submersible variable rate pumps (i.e., Grundfos™ Rediflo or equivalent) are typically employed.
- Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified by the project requirements. The pump intake must be at the mid-point of the well screen to prevent disturbance and resuspension of any sediment in the screen base.
- Before starting the pump, measure the water level again with the pump in the well leaving the water level measuring device in the well when completed.
- Purge the well at 100 to a maximum of 500 milliliters per minute (mL/min). During purging, the water level should be monitored approximately every 5 minutes, or as appropriate. A steady flow rate should be maintained that results in drawdown of 0.3 feet or less. The rate of pumping should not exceed the natural flow rate conditions of the well being sampled. Care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record adjustments made to the pumping rates and water levels immediately after each adjustment.
- During the purging of the well, monitor and record the field indicator parameters (pH, temperature, conductivity, oxidation-reduction (redox) reaction potential (ORP), dissolved oxygen (DO), and turbidity) approximately every five minutes. Stabilization is considered to be achieved when the final groundwater flow rate is achieved, and three consecutive readings for each parameters are within the following limits:
  - pH ±0.1 pH units of the average value of the three readings;
  - temperature ±3 percent of the average value of the three readings;
  - conductivity ±0.005 milliSiemen per centimeter (mS/cm) of the average value of the three readings for conductivity <1 mS/cm and ±0.01 mS/cm of the average value of the three readings for conductivity >1 mS/cm;
  - ORP ±10 millivolts (mV) of the average value of the three readings;
  - DO ±10 percent of the average value of the three readings; and
  - Turbidity ±10 percent of the average value of the three readings, or a final value of less than 5 nephelometric turbidity units (NTU).

- Should stabilization not be achieved for all field parameters, purging is continued until a maximum of 20 well screen volumes have been purged from the well. Since low-flow purging

(LFP) likely will not draw groundwater from a significant distance above or below the pump intake, the screen volume is based upon a 5-foot (1.4 m) screen length. After purging 20 well screen volumes, purging is continued if the purge water remains visually turbid and appears to be clearing, or if stabilization parameters are varying slightly outside of the stabilization criteria listed above and appear to be approaching stabilization.

- If low-turbidity samples are critical to the project goals, purging will be extended until turbidity has been reduced to 5 NTU or less.
- The pump must not be removed from the well between purging and sampling.

Well Purging and Stabilization Monitoring (Traditional Method)

- Typically peristaltic pumps or bladder pumps or submersible pumps are preferred. In most cases bailer use is not desirable.
- Pump placement is typically performed at the mid-point of the screen.
- Purge the well until three consecutive well volume measurements of temperature and specific conductivity are approximately plus or minus 10 percent and if the pH values are within 1 pH unit of the last three value averages, and the groundwater turbidity values are less than 5 NTU. If stabilization has not occurred within the first five well volumes removed, continue purging and monitoring until eight well volumes have been pumped.
- Groundwater turbidity may be evaluated by a visual examination for sediment/silt presence or use of a nephlometer. Work Plan specific goals may exist for turbidity values which may require extending the purging, or require an alternate pumping system.
- Monitoring well purging is accomplished by using in-place pumps or by either a peristaltic, bladder or other appropriate pump, depending on the well depth. The pump/hose assembly or bailer used for purging should be lowered into the top of the standing water column and not deep into the column. Typically pump placement at the mid-point of the screen is adequate.

Sampling Techniques

- If an alternate pump is utilized, the first pump discharge volumes should be discarded to allow the equipment a period of acclimation to the groundwater.
- Samples are typically collected directly from the pump with the groundwater being discharged directly into the appropriate sample container. Avoid handling the interior of the bottle or bottle cap and don new gloves for each well sampled to avoid contamination of the sample.
-
- Order of sample collection:
  - Volatile organic compounds
  - Semi-volatile organic compounds
  - Total organic carbon (TOC)
  - Total organic halogens (TOX)
  - Extractable organics

  - Total metals
  - Dissolved metals
  - Phenols
  - Cyanide
  - Sulfate and chloride
  - Nitrate and ammonia
  - Radionuclides

- For low stress/low flow sampling, samples should be collected at a flow rate between 100 and 500 mL/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 feet.
- The pumping rate used to collect a sample for VOCs should not exceed 100 mL/min. Samples should be transferred directly to the final container 40 mL glass vials completely full and topped with a teflon cap. Once capped the vial must be inverted and tapped to check for headspace/air presence (bubbles). If air is present the sample vial will be discarded, and re-collected until free of air.
- Field filtration will be performed if dictated by the project Work Plan.
- Sample labels/sample identification
- All samples must be labeled with:
  - A unique sample number
  - Date and time
  - Parameters to be analyzed
  - Project Reference ID
  - Samplers initials

- Labels should be secured to the bottle and should be written in indelible inks.

Equipment/Materials

- pH meter, Conductivity meter, Dissolved Oxygen (DO) meter, Oxidation-reduction (redox) reaction potential (ORP) meter, Nephlometer, Temperature guage
- Field filtration units (if required)
- Purging/sampling equipment
  - Peristaltic Pump (not suitable for VOCs[1]/SVOCs or depths >25 feet);
  - Suction Pumps (not suitable for LFP, VOCs/SVOCs, or depths >25 feet);
  - Submersible Pumps (suitable for VOCs/SVOCs only at low flow rates);
  - Air Lift Pumps (not suitable for VOCs/SVOCs);
  - Bladder Pumps (suitable for LFR and VOCs/SVOCs);
  - Inertia Pumps (gaining acceptability for VOCs/SVOCs); and

- Water Level Probe
- Sampling Materials (containers, log book/forms, coolers, chain-of-custody)
- Work Plan
- Health and Safety Plan

NOTE[1]: PERISTALTIC PUMP USE FOR VOC COLLECTION IS NOT ACCEPTABLE ON EPA/RCRA SITES; THIS TECHNIQUE HAS GAINED ACCEPTANCE IN SELECT AREAS WHERE IT IS PERMISSIBLE TO COLLECT VOCS USING A PERISTALTIC PUMP AT A LOW FLOW RATE (EX. MICHIGAN).

Field Notes

- Field notes must document all the events, equipment used, and measurements collected during the sampling activities. Section 2.0 describes the data/recording procedure for field activities. The log book should document the following for each well sampled:
    - Identification of well
    - Well depth
    - Static water level depth and measurement technique
    - Sounded well depth
    - Presence of immiscible layers and detection/collection method
    - Well yield – high or low
    - Purge volume and pumping rate
    - Time well purged
    - Measured field parameters
    - Purge/sampling device used
    - Well sampling sequence
    - Sampling appearance
    - Sample odors
    - Sample volume
    - Types of sample containers and sample identification
    - Preservative(s) used
    - Parameters requested for analysis
    - Field analysis data and method(s)
    - Sample distribution and transporter
    - Laboratory shipped to
    - Chain of custody number for shipment to laboratory
    - Field observations on sampling event
    - Name collector(s)
    - Climatic conditions including air temperature

  - Problems encountered and any deviations made from the established sampling protocol.

A standard log form for documentation and reporting groundwater purging and sampling events are presented on Form 3005 (Groundwater Sampling Record), Form 3201a (Low Flow Groundwater Sampling Form), and Form 3010 (Low Flow MNA Field Sampling Form).

Groundwater/Decon Fluid Disposal

- Groundwater disposal methods will vary on a case-by-case basis but may range from:
  - Off-site treatment at private treatment/disposal facilities or public owned treatment facilities
  - On-site treatment at Facility operated facilities
  - Direct discharge to the surrounding ground surface, allowing groundwater infiltration to the underlying subsurface regime
- Decon fluids should be segregated and collected separately from wash waters/groundwater containers.

Reference

1.	ASTM D5474	Guide for selection of Data Elements for Groundwater Investigations
2.	ASTM D4696	Guide for pore-liquid sampling from the vadose zone
3.	ASTM D5979	Guide for conceptualization and characterization of groundwater systems
4.	ASTM D5903	Guide for planning and preparing for a groundwater sampling event
5.	ASTM D4448	Standard guide for sampling groundwater wells
6.	ASTM D6001	Standard guide for direct push water sampling for geo-environmental investigations.
7.	USEPA	Low-flow (minimal drawdown) ground-water sampling procedures (EPA/540/S-95/504)
8.	USEPA	RCRA Groundwater Monitoring: Draft Technical guidance (EPA/530-R-93-001)

6.3 Non-Aqueous Phase Liquid (NAPL) Monitoring and Sample Collection

This procedure is for monitoring the presence of dense and light non-aqueous phase liquids (DNAPL and LNAPL), and collection of NAPL samples for laboratory analysis in monitoring, observation, and extraction wells.

It should be noted that groundwater sampling and analysis should **not** be performed in locations where NAPL has been identified.

Procedures Referenced

5.1 Manual Water Level Measurement
7.0 Equipment Decontamination

NAPL Level Measurements

- Conduct well identification, inspection, and opening in accordance with the Manual Water Level Measurement Procedures.
- NAPL level measurements are best conducted using a dual phase interface probe. The interface probe uses an optical liquid sensor, in conjunction with an electric circuit to detect the top of a phase-separated liquid and the interface between the phase layer and water (water level). The procedure for use of this probe is:
- For LNAPL:
    - Lower the probe tip into the center of the well until discontinuous beeping is heard (this indicates the top of the LNAPL has been detected). Grasp the calibrated tape at the reference point and note reading. Confirm the reading by slowly raising and lowering the probe to the level of the phase layer.
    - Once the top of the phase layer is confirmed, slowly lower the probe until a continuous sound is heard. This indicates that the water level has been encountered. Grasp the tape at the reference point and note the reading. Confirm this water level measurement.
    - Decontaminate the submerged end of the tape and probe prior to the next use in accordance with the ICM Work Plan requirements.
- For DNAPL:
    - Lower the probe tip in the center of the well to the bottom of the well, a discontinuous beeping will be heard if DNAPL is present. Grasp the calibrated tape at the reference point and note reading.
    - Once the bottom of the well is confirmed, slowly raise the probe until a continuous sound is heard. This indicates that the water level has been encountered and represents the top of the DNAPL layer. Grasp the tape at the reference point and note the reading. Confirm this water level measurement.
    - Decontaminate the submerged end of the tape and probe prior to the next use.
- Alternative NAPL measurement methods exist in the event an interface probe is unavailable or not functioning properly. These methods tend to be less accurate than the interface probe but may be used to establish an estimated NAPL measurement.
    - Clear Bailer – A clear bottom-loading bailer may be used to estimate NAPL thickness if floating or denser than water. If NAPL presence is suspected, the bailer is carefully lowered

to the location of suspected NAPL presence (top of water column/base of water column), and slowly removed and examined for NAPL. If present, the column of NAPL within the clear bailer can be measured to estimate the NAPL thickness within the groundwater column.

  - Weighted Cord – Primarily used for DNAPL measurements, a weighted "cotton" string or cord may be lowered to the base of the well and inspected upon retrieval. Typically, the lower DNAPL layer will "coat" the string indicating the approximate thickness of this layer.

Well NAPL Sampling

- Prior to sampling, the level of NAPL in the well should be measured as identified above.
- Various sampling devices can be employed to acquire fluid samples from the top and bottom of the well, including the following:
  - Bottom-loading bailer;
  - Double check value bailer (produces most reliable results);
  - Peristaltic pump for shallow wells (<25 feet in depth); or
  - Inertia pump for deeper wells (up to 300 feet in depth).
- Transfer NAPL to sample containers for shipment to laboratory. NAPL can be sampled to evaluate the physical properties of the fluid or to evaluate chemical composition.
- Decontaminate equipment prior to next use.

Note: Groundwater sampling shall not be performed in locations where NAPL is present.

Equipment/Material

- Interface Probe;
- Bottom-loading bailer;
- Double check valve bailer;
- Peristaltic pump;
- Inertia pump
- ICM Work Plan
- Health and Safety Plan
- Field Log Book

References

1. Cohen, Robert M., Mercer, James W. (GeoTrans, Inc.), Robert S. Kerr Environmental Research Laboratory "DNAPL Site Evaluation" Office Research and Development. U.S. Environmental Protection Agency

2. Cohen, R.M., Brayda, A.P., Shaw, S.T., and Spaulding, C.P.; Fall 1992 "Evaluation of Visual Methods to Detect NAPL in Soil and Water", Groundwater Monitoring Review, Vol. 12 No. 4, pp. 132-141.

6.4 Sample Handling and Shipping

Introduction

Sample management is the continuous care given to each sample from the point of collection to receipt at the analytical laboratory. Good sample management ensures that samples are properly recorded, properly labeled, and not lost, broken, or exposed to conditions which may affect the sample's integrity.

All sample submissions must be accompanied with a chain-of-custody (COC) document to record sample collection and submission.

The following sections provide the minimum standards for sample management.

Sample Handling

Prior to entering the field area where sampling is to be conducted, especially at sites with defined exclusion zones, the sampler should ensure that all materials necessary to complete the sampling are on hand.

If samples must be maintained at a specified temperature after collection, proper coolers and ice/cool-packs must be brought out to the field. Consideration should be given to keeping reserve cooling media on hand if sampling events will be of long duration. Conversely, when sampling in extremely cold weather, proper protection of water samples, trip blanks, and field blanks must be considered.

Personnel performing groundwater sampling tasks must check the sample preparation and preservation requirements to ensure compliance with the ICM Work Plan, Quality Assurance Project Plan. Typical sample preparation may involve pH adjustment (i.e., preservation), sample filtration and preservation, or simply cooling to 4°C. Sample preparation requirements vary from site to site and vary depending upon the analytical method for which the samples will be analyzed.

The sampling personnel must also confirm before the sample event, the amount of bottle filling required for the respective sample containers. VOC samples must not have any headspace within the sample collection vial; whereas when collecting select analytes (i.e., metals) a headspace must be provided to allow addition of the required preservative.

Sample Labeling

Samples must be properly labeled immediately upon collection.

Note that the data shown on the sample label is the minimum data required. The sample label data requirements are listed below for clarity.

- Project name.
- Sample number.
- Sampler's initials.
- Date of sample collection.
- Time of sample collection.

- Analysis required.
- Preservatives.

Quite often the analytical laboratory supplying the containers will provide blank sample labels. If these are adequate and convenient they can be used.

Under certain field conditions it is impractical to complete and attach sample labels to the container at the point of sample collection. However, to ensure that samples are not confused, a clear notation should be made on the container with a permanent marker indicating the last three digits of the sample number. If the containers are too soiled or small for marking, the container can be put into a "zip-lock" bag which can then be labeled.

No one sample number format is adequate for every type of sampling activity. Prior to the start of every project or sub-sampling event within the project, Project Managers and field personnel should devise a sample number format. Sample number formats should be as simple and short as possible. Sample number formats will reduce transcription errors. The sample number format should be comprehensive enough to allow for easy location of detailed sample data within the Site log books. Sample format must also be consistent with any future data management activities.

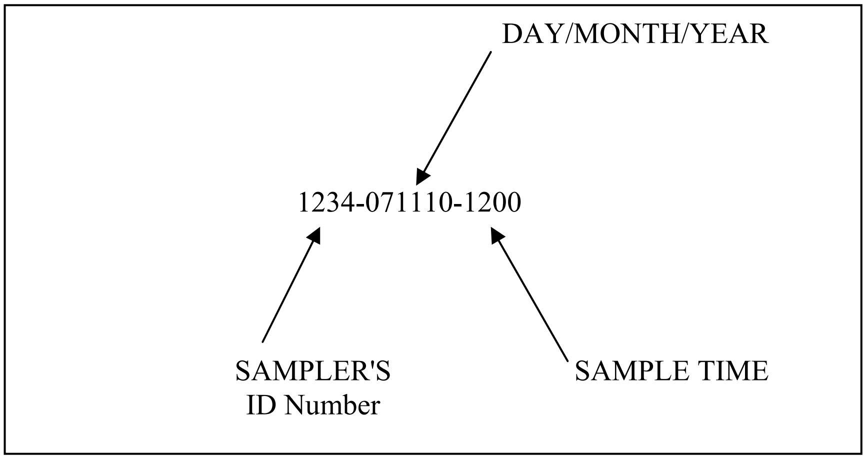
Unless otherwise instructed, labels should not contain specific names of the sample source (i.e., "Well No. 16"). Provision of such specific data on the label can produce biased lab results.

Sample Labels/Sample Identification

All samples must be labeled with:

- a unique sample number (never to be re-used, nor likely to be);
- date and time;
- parameters to be analyzed; and
- sampler's identification number.

Labels should be secured to the bottle and should be written in indelible ink. It is also desirable to place wide clear tape over the label before packing in a cooler for label protection during transportation.The unique sample identification number will follow the format below.



All sample names will be as follows:

Employee ID#:

Enter the four digit Haley & Aldrich employee ID number of the person that collected the sample. This allows for tracking the sample to the person that collected the sample.

Date:

Enter the six-digit date when the sample was collected. Note that for one digit days, months, and/or years, add zeros so that the format is mmddyy (050210). There should be NO slashes, dashes, or periods in the date.

Time:

Enter the four digit time in MILITARY TIME. Note that for one-digit times a zero should be added to four digits, (i.e. 8 AM is 0800 military time, 1:30 PM is 1330). There should be NO colons, slashes, dashes, or periods in the time. This should match the time on the chain of custody. (Note: For Field Duplicates, Field Blanks, Equipment Blanks, Trip Blanks, and other QA/QC samples, sample time will NOT be used. This will simplify sample naming for the QA/QC samples and avoid identifying the parent sample for blind duplicates.

The QA/QC samples will be numbered consecutively as collected. Examples of this naming convention is as follows:

Sample Name:	Comments
1234-050202-0001	TB
1234-050202-0002	TB
1234-050202-0003	FD
1234-050202-0004	EB

Field Code:

The field code will be written in the 'Comments' field on the chain of custody for EVERY sample, but will not be a part of the actual sample name. Enter the one/two character code for type of sample (must be in CAPITALS):

N	Normal Field Sample
FD	Field Duplicate (note sample number (i.e. 0001) substituted for time)
TB	Trip Blank (note sample number (i.e. 0001) substituted for time)
EB	Equipment Blank (note sample number (i.e. 0001) substituted for time)
FB	Field Blank (note sample number (i.e. 0001) substituted for time)
KD	Known Duplicate
FS	Field Spike Sample
MS	Matrix Spike Sample (note on ‘Comments’ field of COC – laboratory to spike matrix.
MD	Matrix Spike Duplicate Sample (note on ‘Comments’ field of COC – laboratory to spike matrix.
RM	Reference Material

The sample labeling – both chain and sample bottles must be **<u>EXACTLY</u>** as detailed above. **Since this naming convention does not link back to the actual locations, the Sampling Record (Form 3004) for each sample collected must be filled out**.

Packaging

When possible, sample container preparation and packing for shipment should be completed in a well organized and clean area, free of any potential cross-contaminants.

Sample containers should be prepared for shipment as follows:

- Containers should be wiped clean of all debris/water using paper towels (paper towels must be disposed of with other contaminated materials).
- Clear, wide packing tape should be placed over the sample label for protection.

While there is no one "best" way to pack samples for shipment, the following packing guidelines should be followed.

- Plan time to pack your samples (and make delivery to shipper if applicable). Proper packing and manifesting takes time. A day's worth of sampling can be easily wasted due to a few minutes of neglect when packing the samples.
- Always opt for more coolers and more padding rather than crowd samples. The cost associated with the packing and shipment of additional coolers is usually always small in comparison with the cost of having to re-sample due to breakage during shipment.
- Do not bulk pack. Each sample must be individually padded.
- Large glass containers (1 liter and up) require much more space between containers.
- Ice is not a packing material due to the reduction in volume when it melts.

The following is a list of standard guidelines which must be followed when packing samples for shipment.

- When using ice for a cooling media, always double bag the ice in "Zip-Lock" bags.
- Double-check to ensure trip and temperature blanks have been included for all shipments containing VOCs, or where otherwise specified in the QA/QC plan.
- Enclose the Chain-of-Custody form in a "Zip-Lock" bag.
- Ensure custody seals (two, minimum) are placed on each cooler. Coolers with hinged lids should have both seals placed on the opening edge of the lid. Coolers with "free" lids should have seals placed on opposite diagonal corners of the lid. Place clear tape over custody seals.
- Ensure that all "Hazardous Material" stickers/markings have been removed from coolers being used which previously contained such materials.

Note: Never store sterile sample containers in enclosures containing equipment which use any form of fuel or volatile petroleum based product.
When conducting sampling in freezing conditions at sites without a heated storage area (free of potential cross contaminants), unused trip blanks should be isolated from coolers immediately after receipt. Trip blanks should be double-bagged and kept from freezing.

Chain-of-Custody Records

Chain-of-custody forms will be completed for all samples collected. The form documents the transfer of sample containers.

The chain-of-custody record, completed at the time of sampling, will contain, but not be limited to, the sample number, date and time of sampling, and the name of the sampler. The chain-of-custody document will be signed and dated by the sampler when transferring the samples.

Each sample cooler being shipped to the laboratory will contain a chain-of-custody form. The chain-of-custody form will consist of four copies which will be distributed as follows: The shipper will maintain a copy while the other three copies will be enclosed in a waterproof envelop within the cooler with the samples. The cooler will then be sealed properly for shipment. The laboratory, upon receiving the samples, will complete the three remaining copies. The laboratory will maintain one copy for their records. One copy will be returned to the Field QA/QC Officer upon receipt of the samples by the laboratory. One copy will be returned with the data deliverables package.

Chain-of-custody (COC) records are legal documents. They must be completed and handled accordingly.

The following list provides guidance for the completion and handling of all COCs.

- COCs used should be Consultant-standard forms or supplied by the analytical laboratory.
- COCs must be completed in black ball-point ink only.
- COCs must be completed neatly using printed text.
- If a simple mistake is made, line out the error with a single line and initial and date next to it.
- Each separate sample entry must be sequentially numbered.
- The use of "Ditto" or quotation marks to indicate repetitive information in columnar entries should be avoided. If numerous repetitive entries must be made in the same column, place a continuous vertical arrow between the first entry and the next different entry.
- When more than one COC form is used for a single shipment, each form must be consecutively numbered using the "Page ___ of ___" format.
- If necessary, place additional instructions directly onto the COC. Do not enclose separate loose instructions.
- Include a contact name and phone number on the COC in case there is a problem with the shipment.
- Do not indicate the source of the sample as this may produce a biased lab result.
- Before using an acronym on a COC, define clearly the full interpretation of your designation [i.e., Polychlorinated Biphenyls - (PCBs)].

Shipment

In all but a few cases the QA/QC plan for the field work will require shipment of samples by overnight carrier. A great many problems can be avoided by proper advance planning.

Prior to the start of the field sampling, the carrier should be contacted to determine if pickup can be made at the field site location. If pickup at the field site can be made, the "no-later-than" time for having the shipment ready must be determined.

If no pick-up is available at the Site, the nearest pick-up or drop-off location should be determined. Again, the "no-later-than" time for each location should be determined.

Sample shipments must not be left at unsecured or questionable drop locations (i.e., if the cooler will not fit in a remote drop box do not leave the cooler unattended next to the drop box). Some overnight carriers do not in fact provide "overnight" shipment to/from some locations. Do not assume; call the carrier in advance before the start of the field work.

Copies of all shipment manifests must be maintained in the field file.

7.0 FIELD INSTRUMENTS – USE AND CALIBRATION

Introduction

A significant number of field activities involve usage of electronic instruments to monitor for environmental screening and health and safety purposes. It is imperative the instruments are used and maintained properly to optimize their performance and minimize the potential for inaccuracies in the data obtained, and to insure worker's health and safety is not compromised.

This section provides guidance on the usage, maintenance and calibration of electronic field equipment, whether for equipment owned by the Consultant or Contractor, or equipment obtained from a rental agency.

Procedures Referenced

a. Field Data Recording

- All monitoring equipment will be in proper working order, and operated in accordance with manufacturer's recommendations.

- Field personnel will be responsible for insuring that the equipment is maintained and calibrated in the field in accordance with manufacturer's recommendations. Calibration is discussed in greater detail below.

- A copy of the Operating Instructions, Maintenance and Service manual and calibration log, if available, for each instrument will be kept on site.

- Instruments will be operated only by personnel trained in the proper usage and calibration. In the event certification of training is required, personnel will have documentation of training/certification on site.

- Personnel must be aware of the range of conditions such as temperature and humidity for instrument operation. Usage of instruments in conditions outside these ranges will only proceed with approval of the Project Manager and/or Health and Safety Officer as appropriate.

- Instruments that contain radioactive source material, such as x-ray fluorescence (XRF) analyzers or moisture-density gauges require specific transportation, handling and usage procedures that are generally associated with a license from the Nuclear Regulatory Commission (NRC) or an NRC-Agreement State. Under no circumstance will operation of such instruments be allowed on site unless by properly authorized and trained personnel, using the proper personal dosimetry badges or monitoring instruments.

Calibration

Calibration of an electronic instrument is critical to insure it is operating properly for its intended use. Such instruments are often sensitive to changes in temperature or humidity, or chemical vapors in the working atmosphere, and as a result their response and ability to monitor conditions and provide data can change significantly.

Calibration: Calibration of instruments shall be performed once at the beginning of every day and one additional time during the day. This includes the following parameters:

- Frequency
- Use of proper calibration Gases or Chemical Standards
- Requirements for Factory Calibration

Calibration Gas Safety: Several instruments such as photoionization detectors (PIDs), flame ionization detectors (FIDs), oxygen meters, explosimeters, combustible gas indicators and many others require use of calibration gasses contained in compressed gas cylinders. Many of these gases are combustible or explosive. Care shall be taken to minimize the potential for injury from the use of such compressed gases. Transport, handling and storage of cylinders, where necessary, shall be performed in accordance with applicable DOT regulations and site requirements.

Calibration will only be performed in areas free of sources of spark, flame or excessive heat. Smoking will not be allowed in the vicinity of calibration gas usage areas. In situations where an extreme temperature differential exists, the unit should be brought to the temperature it is used in and calibrated at that temperature.

Documentation of Calibration: Instrument calibration activities and maintenance activities will be documented on the appropriate field forms. In addition, protocol for documentation outlined in the Field Data Recording Procedure will be followed.

Intrinsically Safe Requirements

Certain work locations may be such that dangerous, ignitable or explosive conditions exist. In such cases, it may be necessary to utilize only equipment that is rated as “Intrinsically Safe.” Intrinsically safe instrumentation is designed with limited electrical and thermal energy levels to eliminate the potential for ignition of hazardous mixtures.

For site work requiring operation of monitoring instruments in Class I, Division I locations (as defined by the National Fire Protection Agency (NFPA)) only instrumentation rated as Intrinsically Safe will be used. Such equipment (including all accessories and ancillary equipment) must be rated to conform to Underwriter’s Laboratories (UL) Standard 913, for use in a Class I, Division 1 Groups A, B, C, and D locations. It is also recommended the equipment conform with CSA Standard 22.2, No. 157-92.

Upon completion of the field activities, equipment shall be returned to the possession of the Consultant, Contractor or Rental Agency accompanied by a written summary of any problems encountered.

Equipment shall be properly prepared for shipping, including insuring that residual gases (if applicable) are removed from the instrument, and accompanying containers of compressed gases or fluids are properly labeled and sealed.

Equipment Decontamination

Equipment that comes in contact with Site media (water level meters, water quality meters) must be cleaned **before** removal from the site. It is the responsibility of the person who requisitioned the equipment to ensure appropriate cleaning before returning the equipment. Equipment decontamination procedures may be-specific for unique site conditions.

Equipment/Materials

- Monitoring equipment specific to work plan tasks.
- Manufacturer’s instructions, operation and maintenance information.
- Associated calibration gases, aqueous standards, etc.
- Appropriate shipping containers to facilitate transport without damage to equipment.

References

1. Underwriter’s Laboratories, Inc. (http://www.ul.com/hazloc/define.htm) Standard UL 913.

2. National Fire Protection Agency (http://www.nfpa.org/index.html) Canadian

8.0 EQUIPMENT DECONTAMINATION

Introduction

This procedure describes decontamination of field equipment potentially exposed to contaminants. Proper decontamination is required to reduce the risk of transfer of contaminants from areas of contamination to other areas and to minimize the potential for cross-contamination that would compromise sample quality. The degree of decontamination required will be dependent on the nature of the activity, equipment used and on the amount of exposure to contaminants.

Procedures Referenced

3.0 Subsurface Investigations
5.0 Aquifer Characterization
6.0 Sample Collection for Laboratory Analysis
7.0 Field Instruments – Use And Calibration
9.0 Waste Characterization

General Procedure Discussion

Decontamination activities must be performed in a controlled area outside any exclusion zones established on the site. Care must be taken to minimize the potential for transfer of contaminated materials to the ground or onto other materials. Regardless of the size or nature of the equipment being decontaminated, the process will utilize a series of steps that involve removal of gross material (dirt, grease, oil etc.), washing with a detergent, and multiple rinsing steps. In lieu of a series of washes and rinse steps, steam cleaning with low-volume, high-pressure equipment (i.e. steam cleaner) is acceptable.

Drill rigs, backhoes and other exploration equipment, and all monitoring equipment (rented or not) in contact with the sampling media must be decontaminated prior to initiating site activities, in-between exploration locations to minimize cross- contamination potential, and prior to mobilizing off site after completion of site work. Heavy equipment is generally best decontaminated with a combination of steam-cleaning equipment and detergent scrubbing. Particular attention should be paid to parts in direct contact with contaminants, e.g. shovels, tires, augers, drilling decks, etc.

Control and containerization of all decontamination fluids is critical. A decontamination pad must be constructed that is appropriate for the size and type of equipment being decontaminated. At a minimum, the decontamination pad will have the following elements:

- an impermeable barrier capable of containing decontaminated fluids;
- a low point where fluids will collect and can be pumped into appropriate containers;
- durability to withstand equipment such as vehicle and foot traffic;
- appropriate ancillary equipment such as racks to place decontaminated equipment to drain without further exposure to contaminated fluids;
- Labels to alert personnel as to the potential presence of contaminated materials.

Decontamination of Specific Sampling Equipment

The following specific decontamination procedure is recommended:

- Brush loose soil off of equipment;
- Wash equipment with laboratory grade detergent (i.e. Alconox or equivalent);
- Rinse with tap water (three rinses minimum);
- Rinse equipment with reagent grade methanol for VOC samples (this requirement may not be appropriate for sites where methanol is a contaminant of concern);
- Rinse equipment with nitric acid for metal samples (especially important for sites with potentially high metals concentrations);
- Rinse equipment with distilled water;
- Allow water to evaporate before reusing equipment; and
- Wrap equipment in aluminum foil when not being used.

Decontamination of Monitoring Equipment

Because monitoring equipment is difficult to decontaminate, care should be exercised to *prevent* contamination. Sensitive monitoring instruments should be protected when they are at risk of exposure to contaminants. This may include enclosing them in plastic bags allowing an opening for the sample intake. Ventilation ports should not be covered.

If contamination does occur, decontamination of the equipment will be required; however, immersion in decon fluids is not possible. As such, care much be taken to wipe the instruments down with detergent-wetted wipes or sponges, and then with de-ionized water-wetted wipes or sponges.

Disposal of Wash Solutions and Contaminated Equipment

All contaminated wash water, rinsates, solids and materials used in the decontaminated process that cannot be effectively decontaminated (such as polyethylene sheeting) will be containerized and disposed of in accordance with applicable regulations and Delphi requirements. All containers will be labeled with an indelible marker as to contents and date of placement in the container, and any appropriate stickers required (such as PCBs).

Sampling of containerized wastes will be performed immediately upon completion of the investigations to minimize storage time on site. Storage of decon wastes on site will not exceed 90 days under any circumstances.

Equipment/Materials

Decontamination equipment and solutions are generally selected based on ease of decontamination and disposability.

- Polyethylene sheeting;
- Metal racks to hold equipment;
- Soft-bristle scrub brushes or long-handle brushes for removing gross contamination and scrubbing with wash solutions;

- Large galvanized wash tubs, stock tanks, or wading pools for wash and rinse solutions;
- Plastic buckets or garden sprayers for rinse solutions;
- Large plastic garbage cans or other similar containers lined with plastic bags can be used to store contaminated clothing;
- Contaminated liquids and solids should be segregated and containerized in DOT-approved plastic or metal drums, appropriate for offsite shipping/disposal if necessary.

References

1. ASTM D5088 - Practice for Decontamination of Field Equipment Used at Non-Radioactive Waste Sites

9.0 WASTE CHARACTERIZATION – (INVESTIGATION DERIVED WASTE)

Rationale/Assumptions

This procedure applies when disposition of investigation soils and/or groundwater are required in accordance with the project Work Plan. Generally, this procedure is applicable to Facilities where the Project Manager has assessed the areas of investigation and has developed a waste handling plan. In some areas and/or sections within a Facility it is permitted to return soil cuttings/test pit soils and groundwater to the source area (RCRA guidance allows waste management techniques within an area of concern without "triggering" new points of waste generation). In other areas it may not be practical to return cutting/soils to their origin, and they are better handled by this characterization/disposal procedure. These practices are consistent with USEPA procedure for IDW at RCRA facilities and CERCLA sites (reference 1, 2,3).

Typically, investigative derived wastes are dealt with following "Best Management Practices"; and are not handled under RCRA regulations until proven to be listed and/or identified as characteristically hazardous waste (reference 1, pg.5). Investigative soils and groundwater often cannot be considered a listed waste due to the lack of generator knowledge concerning chemical source, chemical origin, and timing of chemical introduction to the subsurface. Consequently, waste sampling and characterization is performed to determine if the wastes exhibit a characteristic of hazardous waste. Once the IDW characterization is complete, RCRA regulations apply if determined hazardous; if determined to be non-hazardous solid wastes, best management /solid waste handling practices apply.

The disposal of soil cuttings, test pit soils and/or purged groundwater must be reviewed on a case by case basis prior to initiation of field activities. Two scenarios typically exist:

- Alternatively, no information may be available in the area of activity or investigation, and impacted media/soils are identified. Activities such as new construction and /or maintenance works below grade may encounter environmental conditions that were unknown. Again it is logistically practical to complete the activity, employ health and safety measures appropriate to the conditions identified, and evaluate the extent and magnitude of the impact. Timely notification to the environmental group at the Facility would be required to formulate a course of action, and collect chemical samples from the area of concern (if warranted). Investigative works may be conducted in areas where it is not known if impacted soils/groundwater exist, and the presence of hazardous constituents is not known. Again RCRA guidance permits Best Management Practices of keeping media on-Site (reference 2, Part V, Section 2(b)).

- Disposal Required/Containerization Required – When sufficient Facility and/or Site information regarding the investigative Site conditions warrant that all materials handled will be contained and disposed.

  Interior study work may dictate that all IDW be recovered and contained. This approach may be performed to facilitate quick closure/allow access quickly back into the study area regardless of environmental impact or not.

If a known listed hazardous and/or characteristically hazardous waste/contaminated environmental media is being handled, then handling must be performed in accordance with RCRA Subtitle C (reference 2, Part V, Section 1(a),(b),(c)).

The following outlines the waste characterization procedures to be employed when IDW disposal is required.

Introduction

The following procedure describes the techniques for characterization of investigation derived waste (IDW) for disposal purposes. IDW may consist of soil cuttings (augering, boring, well installation soils, test pit soils), rock core or rock flour (from coring, reaming operations), groundwater (from well development, purging and sampling activities), decontamination fluids, personal protective equipment (PPE), and disposal equipment (DE).

Procedure

The procedures for handling and characterization of field activity generated wastes are:

A.) Soil/Rock Cuttings - Soils removed from boring activities and well construction tasks (including rock flour from bedrock coring) will be contained within an approved container, suitable for transportation and disposal.

- Once placed into the approved container, any free - liquids (i.e., groundwater) will be poured off for disposal as waste fluids, or solidified within the approved container using a solidification agent such as speedy-dri (or equivalent). No free liquid as determined by the "paint filter test (reference 5)" shall be present.
- Contained soils will be screened for the presence of Volatile Organic Compounds (VOCs), using a Photo-ionization detector (PID); this data will be logged for future reference.
- Once screened, full and closed; the container will be labeled in accordance with the Facility labeling requirements and placed into the Facility container storage area. At a minimum the following information will be shown on each container label: date of filling/generation, Facility name, source of soils (i.e., borehole or well), and Facility contact. If necessary, the exterior of the container will be cleaned to remove any lose dirt/cuttings.
- Prior to container closure, representative samples from the containers will be collected for waste characterization purposes and submitted to the project laboratory.

Alternatively, it maybe practical to collect waste characterization samples as the containers are being filled. The waste characterization sampling scheme will be dictated by the Work Plan and establish the volume of soils required for analysis (depending on parameters required), the number of containers considered representative, the homogenization procedure, volatile analysis collection procedure (if required), and preparation handling requirements. Typically at a location where an undetermined site specific parameter group exists, sampling and analysis may consist of the full RCRA Waste Characterization (ignitability, corrosivity, reactivity, toxicity), or a subset of the above based upon data collected, historical information, and generator knowledge.

B.) Groundwater - Well construction development, purging, and sampling groundwater, which requires disposal, will be contained.

- Containment may be performed in 55-gallon drums, tanks suitable for temporary storage (i.e., nalgene or Facility provided tanks 500 to 1,000 gallons) or if large volumes of groundwater are anticipated, tanker trailer (5,000 to 10,000 gallons ±), or drilling "Frac" tanks may be utilized (20,000 gallons ±). In all cases the container/tank used for groundwater storage must be clean before use such that cross-contamination does not occur.

C.) Decon Waters/Decon Fluids - Decon waters and/or fluids will be segregated, contained, and disposed accordingly.

- Decon waters may be disposed of with the contained groundwater once analytical results have been acquired. Depending on the extent of chemistry present it may be appropriate to discharge the decon waters to the Publicly Owned Treatment Works (POTW); or discharge to an On-Site treatment system; or sent off-Site for treatment. Discharge to a POTW or on-Site treatment system will require proper permitting by the system operator.

- Spent Solvent/Acid Rinses - Solvents and acids used during decon activities must be segregated and disposed separately from the groundwater/decon water. Often if only small amounts of solvents are involved these can be left to evaporate. If larger volumes are involved then containerization, labeling, and storage is required.

D.) PPE/DE – A number of disposal options exists for spent PPE/DE generated from investigation tasks. The options typically employed are:

- Immediately disposed of within on-site dumpster/municipal trash; or
- If known to be contaminated with RCRA hazardous waste, dispose off-Site at a RCRA-Subtitle C facility; or alternatively decontaminate PPE/DE and dispose on-site within dumpster/municipal trash; or
- Contain and store until the final remedy is implemented.

Waste Characterization Procedure

The ICM Work Plan will identify the appropriate sampling strategy and analytes required to determine the IDW characteristics and disposal requirements. USEPA SW-846 (reference 5, Chapters 9 and 10), describe the rationale for sampling plan development and sampling procedures. Random sampling and preparation of a composite sample of the excavated soils will be collected per the requirements of the ICM Work Plan Often a minimum of 4 representative samples is required to gain valid waste characteristic data to determine the disposal option applicable (if statistics are employed).

Sampling procedures for IDW are:

- Solid Wastes –Grab sampling using pre-cleaned sample spoons from bulk piles, lugger boxes, or as drums are being filled is commonly employed. In some instances sufficient media mixing may be evident to permit drum sampling from a random number of drums by accessing only the top solids. In other instances where stratification is evident, a sample trier/hand auger or device to collect from the entire vertical profile is required. Typically, a composite sample(s) from representative areas of the container(s) is homogenized and submitted for analysis. If VOC's are being evaluated, compositing and homogenization is not permitted. Individual grab samples are typically required for VOC's.

- Waste Waters – Grab sampling techniques using pre-cleaned bailers or sampling pumps are typically employed. Waters in bulk are typically sampled once using a bailer or pump. The Work Plan will outline the appropriate sample frequency and analytes necessary to adequately characterize the contained waters. Facility sewer discharge permit parameters will be evaluated when disposal to the POTW is being considered.

Note: If NAPL is present special sampling and handling requirements will apply. Pre-cautions to separate the NAPL from the wastewater will commonly be employed, due to the special material handling and waste disposal requirements when dealing with phase materials.

- Spent Solvent/Acid Rinses- The need for sampling must be determined in consultation with the waste management organization handling the materials. If known that only the solvent and/or acids are present, then direct disposal/treatment using media specific options maybe possible without sampling (i.e. incineration).
- PPE/DE – Typically not sampled and included with the disposal of the solid wastes.

Equipment/Materials

- Sample spoons, trier, auger,
- Sample mixing bowl,
- Sampling bailer, or pump,
- Sample glassware.

References

1. USEPA RCRA - Guidance and Policies: Management of Remediation Waste Under RCRA (October 1998).

2. USEPA RCRA - Management of Contaminated Media (October 1998).

3. USEPA CERCLA Guidance (Options Relevant to RCRA Facilities): Guide to Management of Investigation - Derived Wastes (January 1992).

4. USEPA Office of Solid Waste- SW846 Chapter 9 Sampling Plan, Chapter 10 Sampling Methods (September 1986).

10.0 SOIL VAPOR INVESTIGATION

Introduction:

This procedure is for the collection of soil vapor samples from temporary wells and permanent monitoring wells for laboratory analysis in accordance with USEPA Method TO-15.

Procedures Referenced:

2.0 - Field Data Recording – Daily Field Reports, Log Forms, and Electronic Data
5.0 - Aquifer Characterization
6.0 - Sample Collection for Laboratory Analysis
7.0 - Field Instruments – Use And Calibration
8.0 – Waste Characterization

Equipment and Materials:

- Adjustable rate, positive displacement pumps for permanent monitoring well sampling. The pump will be easily adjustable and capable of operating reliably at flow rates from 100 to 500 mL/minute.
- The tubing wall thickness will be maximized (3/8 to ½ inch) and the tubing length will be minimized (i.e. do not have excess tubing outside of the well). HDPE or Teflon-lined polyethylene tubing will be used to collect samples.
- Polyethylene sheeting
- Nitrile gloves.
- Power source (e.g. generator, nitrogen tank, etc). The generator should not be oversized for the pump.
- Helium Selective detector (Mark 9822, or equivalent).
- Nylon stay-ties.
- Decontamination supplies.
- Soil Vapor Well point sampling form.
- Passivated SUMMA® Canister (or equivalent).
- Sample Identification Key.
- Sample tags or labels.
- Chain of custody.

- Soil Vapor well point construction data, location map, field data from last sampling event.
- Project Health & Safety Plan

8.1 Preparatory Requirements:

Preparatory requirements apply to temporary wells and permanent wells. Personal protective equipment will be donned in accordance with the requirements of the project Health and Safety Plan.

- Don a new pair of Nitrile gloves prior to soil vapor sampling activities at each well.

- Verify soil vapor well point identification using location layout figures. Note the condition of the well completion and determine the integrity of the installation to mitigate infiltration of ambient air to the subsurface during sample collection.

- Prior to commencing purging/sampling tasks, groundwater elevation measurements will be obtained at nearby monitoring wells in the groundwater monitoring well network. If the groundwater elevation is above the bottom of the soil vapor point well screen (creating a direct route of volatilization of contaminants to the well casing), sampling will be abandoned at this location. If the groundwater elevation is below the bottom of the soil vapor point well screen, proceed to well point purging and sampling.

8.2 Well Purging and Stabilization

1. Soil Vapor Points will be sampled in order of increasing chemical concentrations (if known or anticipated). Equipment calibration, field documentation, sampling, and shipping will be conducted in accordance with the Field Sampling Plan (FSP). Personal protective equipment will be donned in accordance with the requirements of the Health and Safety Plan.
2. Lay out sheet of clean polyethylene around the Soil Vapor Well point for placement of the sampling equipment.
3. Purge the installed well by connecting the well point to a pre-calibrated personal sampling pump (or equivalent device) using High Density Polyethylene (HDPE) tubing and extract at least 3 well volumes of soil vapor from the well point. The sampling pump may be connected to the well point using a stainless steel hose barb, quick connect fitting, or Swagelock® pressure fitting (see Photo #1).
4. Using the well point installation report to obtain well depth, calculate the volume of air present in the well, using the formula $\pi r^2 h$. (1”=2.54 cm, 1L= 1,000 cm^3). For

example, a ½" diameter well that is six (6) feet deep contains approximately 0.93L of air.

5. Purge the well at flow rates not to exceed 0.2 L/minute to remove 1 to 3 well volumes. This will insure the sample collected for analysis is representative of soil gas located in the vadose zone.
6. After purging, immediately shut off the pump and close off the well point to the atmosphere using a hose clamp or similar device. The soil vapor well point is now ready to be sampled.
7. Verify the vacuum level in the passivated SUMMA® canister (or equivalent device) to be used for sample collection using the vacuum gauge supplied by the laboratory. Attach the gauge to the ¼" male fitting on the SUMMA® canister and open the valve approximately 1¼ turn. Record the initial vacuum on the Soil Gas Survey Sampling and Purge Information sheet (sampling record), close the valve, and remove the vacuum gauge.
8. Attach a 7μ moisture/particle filter between the well point HDPE tubing and the pre-calibrated integrated flow controller. (See Photo #2).
9. Attach the integrated flow controller to the ¼" male fitting on the SUMMA® canister using a stainless steel open end wrench. (Note: Do not over tighten. ¼ turn past finger tight should be adequate to create a proper seal.)
10. Prior to the initiation of sampling, conduct a confirmation of the installation integrity using a Helium (He) tracer gas test. To conduct He tracer test, place an enclosure over the sample point. Extend the HDPE tubing from the soil vapor through the enclosure and connect to a He selective hand held analyzer.
11. Flood the enclosure with commercial grade He from a disposable compressed gas cylinder. (commercial grade can be purchased from retail stores or provided by an industrial gas supplier (i.e. welding supply).
12. Turn on the He selective handheld analyzer and monitor for a deflection from background. If a negative deflection is noted, modify the surface seal for the vapor sampling point and re-test. If no deviation is noted, proceed with sample collection.
13. Connect the SUMMA canister to the sampling HDPE tubing, open the valve on the SUMMA® canister gradually at least 1¼ turn and record the sample start time on the sampling record.
14. At the conclusion of the sample collection, record the final time on the sampling record and close the valve.
15. Disconnect the SUMMA® canister from the integrated flow controller, remove the filter, and reattach the vacuum gauge. Open the valve and record the final vacuum reading on the sampling record. Close the valve, remove the vacuum gauge and replace the ¼" cap on the canister inlet. Label the SUMMA® canister sample tag with proper well ID, vacuum readings and sampling time interval (e.g. 4 hours).

(Note: For Field Duplicate Sample collection, connect a second SUMMA® canister to the integrated flow controller and repeat Steps 12 and 13).

16. Remove the sampling train tubing apparatus for the individual well and place into a sealable storage bag, and store for future sampling events. Label the storage bag with relevant soil vapor well designation, date of sampling, project name, and file number. Fill out Chain of Custody with project name, file number, sample identifications, Summa canister and related equipment serial numbers, date and time collected, and analysis requirements. Retain copies of the Chain of Custody record and relevant shipping information. Place canisters back into their original boxes and ship them to the laboratory via an overnight courier.
17. Prior to shipment, confirm that the canister is labeled with the information described below and recorded on the Sample Identification Key and Chain-of-Custody form. Labels will be written in indelible inks secured to the canister.

- Sample number/ID
- Date and time
- Parameters to be analyzed
- Project Number
- Sampler’s initials

8.3 Decontamination

Each sampling location will have a dedicated sampling train (i.e. HDPE Tubing, 7 filter, integrated flow controller). This will minimize the possibility for cross-contamination between sampling locations. If soil or water is drawn into the sampling train, the equipment will be replaced.

Upon completion of the sampling event, purge tubing, PPE, and decontamination materials will be disposed of in accordance with Investigation-Derived Wastes (IDW) Management and Characterization (Section 9.0).

8.4 Field Notes

Field notes must document all the events, equipment used, and measurements collected during the sampling activities. Section 2.0 describes the data/recording procedure for field activities. The field forms should document the following for each well sampled:

- Identification of soil vapor well point location

- Soil vapor well point depth
- Static groundwater elevation and measurement technique
- Purge volume and pumping rate
- The amount of time required to purge the well point
- Purge/sampling device used
- Sample identification
- Parameters requested for analysis
- Laboratory to which samples were shipped
- Chain of custody number for shipment to laboratory
- Field observations on sampling event
- Name of sample collector(s)
- Climatic conditions including air temperature
- Problems encountered and any deviations made from the established sampling protocol.
- Sample Identification Key

References:

1. U.S.E.P.A., Soil Gas Sampling SOP# 2042, 1 June 1996, REV. #: 0.0

2. Compendium of Methods for the Determination of Organic Compounds in Ambient Air, EPA/625/R-96/010a, 2nd Edition, June 1999, USEPA ORD, Washington DC.

3. USEPA RCRA Groundwater Monitoring: Draft Technical guidance (EPA/530-R-93-001).

4. Michigan Department of Environmental Quality (MDEQ) Part 213 Risk-Based Screening Levels for Groundwater and Soil Volatilization to Indoor Air, Operational Memorandum #4 Attachment 8, June, 1998.

MDEQ Remediation and Re Development Division, Part 201/213 Acceptable Indoor Air Concentrations (AIAC), October, 2003.

APPENDIX A

Field Forms

HALEY & ALDRICH

DAILY FIELD REPORT

Page of

Project		**Report No.**	
Location		**Date**	
Client		**Page**	of
Contractor		**File No.**	
Weather		**Temperature**	

Field Representative(s)	**Time on site**	**Report/Travel/Other**	**Total hours**

Distribution:

Haley & Aldrich, Inc.

Form 4004

HALEY & ALDRICH

HEADSPACE SCREENING REPORT

Page 1 of 1

PROJECT ____________________ **H&A FILE NO.** __________
LOCATION ____________________ **PROJECT MGR.** __________
CLIENT ____________________ **FIELD REP** __________
INSTRUMENT ____________________ **DATE SAMPLED** __________
DATE CALIBRATED (1) __________ **LAMP (eV)** __________ **DATE SCREENED** __________
AMBIENT TEMPERATURE __________ **CALIBRATED BY** __________ **SCREENING LOC.** __________

Exploration	Sample Number	Depth (ft)	Sample Description	Sample Reading (ppm)(2)	Back-Ground Reading (ppm)(2)	Remarks	GC(3)	Containers			
								Drill Jar			

1. Instrument calibrated to the manufacturer standard.
2. ppm represents concentration of detectable volatile gaseous compounds in parts per million of air.
3. Sample assigned for gas chromatograph screening.

Sampled and relinquished by:	Received by:	Relinquished by:	Received by:
Sign:	**Sign:**	**Sign:**	**Sign:**
Print:	**Print:**	**Print:**	**Print:**
Firm:	**Firm:**	**Firm:**	**Firm:**
Date: **Time:**	**Date:** **Time:**	**Date:** **Time:**	**Date:** **Time:**

Form 1010

HALEY & ALDRICH

TEST BORING REPORT

BORING NO.

Page 1 **of**

PROJECT		**H&A FILE NO.**	
LOCATION		**PROJECT MGR.**	
CLIENT		**FIELD REP.**	
CONTRACTOR		**DATE STARTED**	
DRILLER		**DATE FINISHED**	

Elevation ft.	**Datum**	**Boring Location**	

Item	**Casing**	**Sampler**	**Core Barrel**	**Rig Make & Model**			**Hammer Type**	**Drilling Mud**	**Casing Advance**
Type				☐ Truck	☐ Tripod	☐ Cat-Head	☐ Safety	☐ Bentonite	**Type Method Depth**
Inside Diameter (in.)				☐ ATV	☐ Geoprobe	☐ Winch	☐ Doughnut	☐ Polymer	
Hammer Weight (lb.)				☐ Track	☐ Air Track	☐ Roller Bit	☐ Automatic	☐ None	
Hammer Fall (in.)				☐ Skid	☐ ________	☐ Cutting Head	**Drilling Notes:**		

Depth (ft.)	Sampler Blows per 6 in.	Sample No. & Recovery (in.)	Sample Depth (ft.)	Well Diagram	Stratum Change (ft.)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel		Sand				Field Test			
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength
0																	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to:		
			Bottom of Casing	Bottom of Hole	Water

Sample ID

O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Well Diagram

◫	Riser Pipe
▤	Screen
▭	Filter Sand
▭	Cuttings
▨	Grout
▭	Concrete
▧	Bentonite Seal

Summary

Overburden (Linear ft.) ____________

Rock Cored (Linear ft.) ____________

Number of Samples ____________

BORING NO.

Field Tests	Dilatancy:	R - Rapid S - Slow N - None	Plasticity:	N - Nonplastic L - Low M - Medium H - High
	Toughness:	L - Low M - Medium H - High	Dry Strength:	N - None L - Low M - Meduim H - High V - Very High

***NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.**

NOTE: Soil identifications based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

BORING NO.

Page of

Depth (ft.)	Sampler Blows per 6 in.	Sample No. & Recovery (in.)	Sample Depth (ft.)	Well Diagram	Stratum Change (ft.)	USCS Symbol	**Visual-Manual Identification & Description** (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel		Sand				Field Test			
								% Coarse	% Fine	% Coarse	% Medium	% Fine	% Fines	Dilatancy	Toughness	Plasticity	Strength

NOTES:

FILE NO.

BORING NO.

*NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

CORE BORING REPORT

BORING NO.

Page 1 **of**

PROJECT ____________________ **H&A FILE NO.** ____________
LOCATION ____________________ **PROJECT MGR.** ____________
CLIENT ____________________ **FIELD REP.** ____________
CONTRACTOR ____________________ **DATE STARTED** ____________
DRILLER ____________________ **DATE FINISHED** ____________

Elevation ft	**Datum**	**Boring Location**			
Item	**Casing**	**Sampler**	**Core Barrel**	**Rig Make & Model**	**Drill Mud**
Type				☐ Truck ☐ Tripod ☐ Cat-Head	**Hammer Type** ☐ Bentonite
Inside Diameter (in				☐ ATV ☐ Geoprobe ☐ Winch	☐ Safety ☐ Polymer
Hammer Weight (lb			▨	☐ Track ☐ Air Track ☐ Roller Bit	☐ Doughnut ☐ None
Hammer Fall (in)			▨	☐ Skid ☐ ________ ☐ Cutting Head	**Casing** ☐ Driven ☐ Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery RQD (in)	(%)	Weath-ering	Well Diagram	Stratum Change (ft)	Visual Classification and Remarks

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth in feet to: Bottom of Casing	Bottom of Hole	Water

Sample ID

- **O** Open End Rod
- **T** Thin Wall Tube
- **U** Undisturbed Sample
- **S** Split Spoon Sample
- **G** Geoprobe

Well Diagram

- ◫ Riser Pipe
- ▤ Screen
- ☐ Filter Sand
- ⁘ Cuttings
- ▨ Grout
- ▲ Concrete
- ▧ Bentonite Seal

Summary

Overburden (Linear ft.) ____________
Rock Cored (Linear ft.) ____________
Number of Samples ____________

BORING NO.

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ENVIRONMENTAL TEST PIT LOG

Test Pit No.

Page 1 **of** 1

PROJECT
LOCATION
CLIENT
CONTRACTOR
EQUIPMENT

H&A FILE NO.
PROJECT MGR.
FIELD REP
DATE
WEATHER

Ground El. ft
El. Datum

Location

Depth (ft)	Field Screening Results (ppm)	Sample ID	Stratum Change Depth (ft)	Description of Materials	PID

Groundwater depths/entry rates (in/min):

Visible contamination of soil/water:

Odors:

Obstructions:

Bucket decontamination method:

Remarks:

Standing water in completed pit
at depth ft
measured after hrs elapsed

Screening device(s):
Background reading (ppm)

Test Pit
Pit Depth ft
Pit Length X Width ft

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No.

Boring No.

PROJECT

LOCATION

CLIENT

CONTRACTOR

DRILLER

H&A FILE NO.

PROJECT MGR.

FIELD REP.

DATE INSTALLED

WATER LEVEL

Ground El. ft

El. Datum

Location

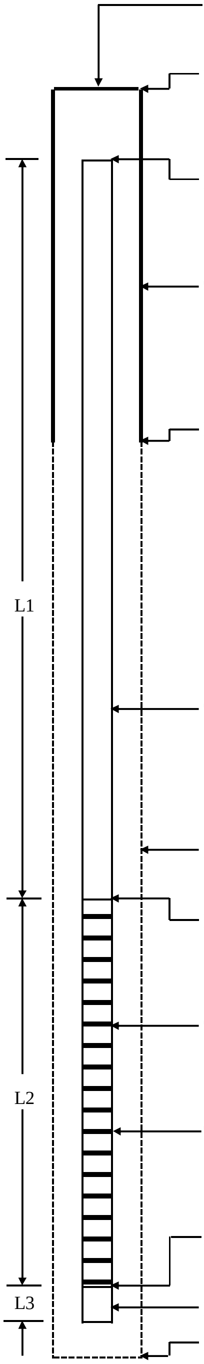
☐ **Guard Pipe**

☐ **Roadway Box**

SOIL/ROCK CONDITIONS	**BOREHOLE BACKFILL**

(Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)



Type of protective cover/lock

Height/Depth of top of guard pipe/roadway box above/below ground surface ft

Height/Depth of top of riser pipe above/below ground surface ft

Type of protective casing:

Length ft

Inside Diameter in

Depth of bottom of guard pipe/roadway box ft

Type of Seals	**Top of Seal (ft)**	**Thickness (ft)**
Concrete		
Bentonite Seal		

Type of riser pipe:

Inside diameter of riser pipe in

Type of backfill around riser

Diameter of borehole in

Depth to top of well screen ft

Type of screen

Screen gauge or size of openings in

Diameter of screen in

Type of backfill around screen

Depth of bottom of well screen ft

Bottom of Silt trap ft

Depth of bottom of borehole ft

(Not to Scale)

ft + ft + ft = ft

Riser Pay Length (L1) + Length of screen (L2) + Length of silt trap (L3) = Pay length

COMMENTS:

Form 2007

HALEY & ALDRICH

Haley & Aldrich, Inc.
465 Medford St.,
Suite 2200,
Boston, MA 02129-1402

CHAIN OF CUSTODY RECORD

Phone (617) 886-7400
Fax (617) 886-7600

Page of

H&A FILE NO. ____________________
PROJECT NAME ____________________
H&A CONTACT ____________________

LABORATORY ____________________
ADDRESS ____________________
CONTACT ____________________

DELIVERY DATE ____________________
TURNAROUND TIME ____________________
PROJECT MANAGER ____________________

Sample No.	Date	Time	Depth	Type	Analysis Requested												Number of Containers	Comments (special instructions, precautions, additional method numbers, etc.)
					VOA	ABNs PAH only	MCP Metals	Pesticides PCBs	VPH Full Suite C-ranges only	EPH Full Suite C-ranges only	TPH (specify)	TCLP (specify)	Reactivity Ignitability Corrosivity					
																		Laboratory to use applicable DEP CAM methods, unless otherwise directed.

Sampled and Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time
Relinquished by	**Received by**
Sign	Sign
Print	Print
Firm	Firm
Date Time	Date Time

LIQUID

												VOA Vial
												Amber Glass
												Plastic Bottle
												Preservative
												Volume

SOLID

												VOA Vial
												Amber Glass
												Clear Glass
												Preservative
												Volume

PRESERVATION KEY

A Sample chilled
B Sample filtered
C NaOH
D HNO_3
E H_2SO_4
F HCL
G Methanol
H Water/NaHSO4 (circle)

Sampling Comments

Evidence samples were tampered with? **YES** **NO**
If YES, please explain in section below.

Presumptive Certainty Data Package (Laboratory to use applicable DEP CAM methods)

If Presumptive Certainty Data Package is needed, initial all sections:

__________ The required minimum field QC samples, as designated in BWSC CAM-VII have been or will be collected, as appropriate, to meet the requirements of Presumptive Certainty.

__________ Matrix Spike (MS) samples for MCP Metals and/or Cyanide are included and identified herein.

__________ This Chain of Custody Record (specify) __________includes __________does not include samples defined as Drinking Water Samples.

__________ If this Chain of Custody Record identifies samples defined as Drinking Water Samples, Trip Blanks and Field Duplicates are included and identified and analysis of TICs are required, as appropriate. Laboratory should (specify if applicable)__________analyz

Required Reporting Limits and Data Quality Objectives

☐ RC-S1
☐ RC-S2
☐ RC-GW1
☐ RC-GW2

☐ S1
☐ S2
☐ S3

☐ GW1
☐ GW2
☐ GW3

Form 3003

WHITE - Laboratory **CANARY** - Project Manager **PINK** - Haley & Aldrich Laboratory **GOLDENROD** - Haley & Aldrich Contact

APRIL 2004

HALEY & ALDRICH

GROUNDWATER SAMPLING RECORD

Page of

PROJECT

LOCATION

CLIENT

CONTRACTOR

H&A FILE NO.

PROJECT MGR.

FIELD REP

DATE

GROUNDWATER SAMPLING INFORMATION

Well No.						
Water Depth (ft)						
Time						
Product						
Depth Of Well (ft)						
Inside Diameter (in)						
Standing Water Depth (ft) (1)						
Volume Of Water In Well (gal)						
Purging Device						
Volume of Bailer/Pump Capacity						
Cleaning Procedure						
Bails Removed/ Volume Removed						
Time Purging Started						
Time Purging Stopped						
Sampling Device						
Cleaning Procedure						

TIME SAMPLES TAKEN	VOA						
	ABN						
	Metals						

PARAMETERS	Color						
	Odor						
	pH						
	Conductivity						
	Turbidity						
	Dissolved Oxygen						
	Temp, ^{0} C						
	Salinity						

Remarks: (ie: field filtrations, persons communicated with at site, etc.)

1. Standing Water Depth = Depth of Well - Water Depth

MONITORING WELL DEVELOPMENT REPORT

Well No.

Page 1 of 1

PROJECT ____________________
LOCATION ____________________
CLIENT ____________________
CONTRACTOR ____________________
ELEVATION SUBTRAHEND ____________________

H&A FILE NO. ____________
PROJECT MGR. ____________
FIELD REP. ____________
DATE ____________

Estimated Volume of Water Lost During Drilling: ____________ gallons

Comments: ____________________

Depth to Water Before Development: ____________ feet

Comments: ____________________

Depth to Well Bottom Before Development: ____________ feet

Comments: ____________________

Turubitiy of Water Before Development: ____________ NTU

Comments: ____________________

Volume of Water Removed: ____________ gallons

Comments: ____________________

Method of Removal (bailing, pumping): ____________

Comments: ____________________

Depth to Well Bottom After Development: ____________ feet

Comments: ____________________

Depth to Water After Development: ____________ feet

Comments: ____________________

Turubitiy of Water After Development: ____________ NTU

Comments: ____________________

Form 3006

HALEY & ALDRICH

SAMPLING RECORD

Page ____ **of** ____

PROJECT ______________________ **H&A FILE NO.** ____________

LOCATION ______________________ **PROJECT MGR.** ____________

CLIENT ______________________ **FIELD REP** ____________

CONTRACTOR ______________________ **DATE** ____________

Weather ______________________ **Temperature** ____________

Ground surface Conditions ☐ Dry ☐ Wet ☐ Damp ☐ Standing Water ☐ Snow (_____in) ☐ Other___________

Comments ______________________

SOIL SAMPLING AND SURFACE WATER SAMPLING INFORMATION

Sample No.	Location	Depth (ft)	Time	Sample Description	Sampling Device	Cleaning Prodedure	Container Type

General Comments: (ie: field filtrations, persons communicated with at site, etc.)

Form 3004

HALEY & ALDRICH

EQUIPMENT CALIBRATION LOG

Project:

Location:

Model Name:

Model Number: **Serial Number:**

Cal. Standards:

On Site Meeting Called? / Date:

Date	Time	Calibration Standard	Calibration Gas Value	Calibration Result	Calibrated by

Other Comments:

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LOW FLOW/MNA FIELD SAMPLING FORM

Page **of**

PROJECT ______________________ **H&A FILE NO.** ______________
LOCATION ______________________ **PROJECT MGR.** ______________
CLIENT ______________________ **FIELD REP** ______________
CONTRACTOR ______________________ **DATE** ______________

Sampling Data:

Well ID: ____________ Well Depth: ____________ ft Initial Depth To Water: ____________ ft Purging Device: ____________
Start time: ____________ Depth To Top Of Screen: ____________ ft Depth Of Pump Intake: ____________ ft Tubing Present In Well: ☐ Yes ☐ No
Finish Time: ____________ Depth To Bottom Of Screen: ____________ ft Tubing Type: ____________

Elapsed Time (24 hour)	**Depth To Water From Casing (ft)**	**Pump Setting (ml/min)** or **(gal/min)**	**Purge Rate (ml/min)** or **(gal/min)**	**Cumulative Purge Vol. (liters)** or **(gal)**	**Temp-erature (^{o}F)** or **(^{o}C)**	**pH**	**Conduct-ivity (us/cm)**	**Dissolved Oxygen (mg/L)**	**Turbidity (NTU)**	**ORP/eH (mv)**	**Comments**

Form 3010

APPENDIX C

Quality Assurance Project Plan

Quality Assurance Project Plan

TITLE: Quality Assurance Project Plan, Former American Linen Supply Company Facility RIWP

Prepared By/Date: Haley & Aldrich of New York, May 2011

Approved By/Date:

5/20/2011

QA Officer Date

5/20/2011

Haley & Aldrich Project Manager Date

Laboratory Project Manager (if requested) Date

Date of Issue: May 2011

QUALITY ASSURANCE PROJECT PLAN
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY
822 SENECA STREET
BUFFALO, NEW YORK

by

Haley & Aldrich of New York
Rochester, New York

for

AmeriPride Services, Inc.
Minneapolis, Minnesota

File No. 37319-020
May 2011

EXECUTIVE SUMMARY

The following document outlines the scope of the quality assurance and quality control (QA/QC) activities to be performed in support of the Remedial Investigation Work Plan (RIWP) addressing impacted soil, soil vapor and groundwater at the Former American Linen Supply Company Facility (the “Site”) located at 822 Seneca Street, Buffalo, New York. This Quality Assurance Project Plan (QAPP) presents the organization, objectives, planned activities, and specific QA/QC procedures associated with the RIWP.

Protocols for sample collection, sample handling and storage, chain-of-custody procedures, and laboratory and field analyses are described herein or specifically referenced to related project documents.

TABLE OF CONTENTS

LIST OF TABLES

1 PROJECT DESCRIPTION

This Quality Assurance Project Plan (QAPP) has been prepared on behalf of AmeriPride Services Inc. (AmeriPride). The QAPP is a component of the Remedial Investigation Work Plan (RIWP) that also includes a Field Sampling Plan (FSP), Health and Safety Plan (HASP), and Community Air Monitoring Plan (CAMP).

1.1 Project Objectives and Decision Statement

The primary objectives for data collection activities include:

- Define the nature and extent of contaminants in environmental media at the Site including soil, soil vapor and groundwater.
- Collect sufficient data and information necessary to evaluate the sources of contamination, the migration pathways, and actual or potential threats to public health and the environment, if any.
- To produce data of sufficient quantity and quality to determine whether remedial action is needed to mitigate current and future unacceptable risks, if any, to human health or the environment, and;
- Collect sufficient data for environmental media to support the proper disposal of the investigation derived waste (IDW) materials generated during the execution of the RIWP.

Project specific objectives for field and laboratory data collection are discussed in Section 1.4 of this plan.

1.1.1 Project Status/Phase

The RIWP includes the following phases:

1. Site preparation for remedial investigation, including demolition of the superstructure and removal of the building slab.
2. Complete soil and groundwater delineation of AOCs 1, 2, 3 and 4 identified in previous assessments and investigations.
3. Identification of potential soil vapor impacts along the property boundary and sewer line.

1.1.2 QAPP Preparation Guidelines

This QAPP has been prepared in accordance with the United States Environmental Protection Agency, (1999). EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations. EPA QA/R-5 Interim Final, November 1999.

1.2 Site Description

The general Site description is provided in Section 1.1 of the RIWP and is incorporated herein by reference.

1.3 Facility History

The facility history is provided in Section 1.2 of the RIWP and incorporated herein by reference.

1.4 Target Parameter List and Intended Data Use

1.4.1 Target Parameter List

The investigative program includes the sampling and analysis of environmental media for the presence of organic and inorganic constituents based on the historical use of the Site. The field and laboratory parameters are presented in Table 1 with the associated laboratory reporting and method detection limits determined by the project laboratory in accordance with the provisions of the Federal Register, Volume 49, Number 209, October 26, 1984 pp. 198-199.

1.4.1.1 Laboratory Parameters

The laboratory parameters include target compound list (TCL) for volatile organic compounds (VOC) in soil and groundwater using EPA Method 8260B and additional VOCs included on the STARS VOC list. In addition, some soil samples will be analyzed for TCL semi-volatile organic compounds (SVOCs) by EPA Method 8270C, Priority Pollutant Metals by EPA Methods 6010/7471, and polychlorinated biphenyls (PCBs) by EPA Methods 8081. Soil vapor samples will be analyzed for VOCs using EPA Method TO-15 and the target compound list will be consistent with the NYSDOH air sampling guidance.

Concurrent with sample collection, several field parameters will be determined. For soils and solid matrices, field parameters will include visual observations, odor identification, and VOC screening using handheld monitoring equipment. For groundwater samples, pH, specific conductivity, and temperature will be determined with field testing equipment. If low-flow purging techniques are utilized for groundwater sampling, additional field parameters including turbidity, dissolved oxygen, and oxidation/reduction potential (ORP) will be measured.

1.5 Sampling Locations

The RIWP provides a summary and rationale for the location of soil, soil vapor and groundwater samples. It is possible that sampling locations may change depending on the encountered field conditions. The person responsible for making such decisions will be the Project Manager whose responsibilities are described in Section 2.0 of this QAPP.

1.6 Project Schedule

The schedule of projected milestones is presented in the RIWP.

2 PROJECT ORGANIZATION AND RESPONSIBILITIES

This section defines the roles and responsibilities of the individuals who will perform the RIWP activities. The Site Manager will have the primary responsibility for implementation of the RIWP. The selected analytical laboratory will perform the analyses of environmental samples collected at the Site.

2.1 Management Responsibilities

A description of the project organization is presented in the RIWP. Management responsibilities of key personnel include:

Mr. Joseph Peter – AmeriPride Project Manager

The AmeriPride Project Manager is responsible for implementing the project, and has the authority to commit the resources necessary to meet project objectives and requirements. The Project Manager will ensure that technical, financial, and scheduling objectives are achieved successfully. He/she will provide the primary point of contact and represent the project team at regulatory agency meetings and public hearings. The AmeriPride Project Manager will establish project policy and procedures to address the specific needs of the project and will also respond to issues related to community outreach.

Ms. Lisa Turturro – Haley & Aldrich (H&A) Project Director

The Project Director will provide final review and approval of significant submittals to NYSDEC and may participate in technical meetings. The Project Director will ensure that overall technical quality is maintained. He will be actively involved in the direction of the project and has overall responsibility for the project.

Mr. Glenn White/Mr. Christopher Schmitt – H&A Project Manager(s)

The H&A Project Manager is responsible for managing the implementation of the RIWP and coordinating the collection of data. The Project Manager is responsible for technical quality control and project oversight. The Project Manager responsibilities include the following:

- Acquire and apply technical and corporate resources as needed to ensure performance within budget and schedule restraints;
- Review work performed to ensure quality, responsiveness, and timeliness;
- Be responsible for the preparation and quality of interim and final reports;
- Communicate with the AmeriPride Project Manager concerning the progress of the project;
- Assure corrective actions are taken for deficiencies cited during audits of RIWP activities; and
- Overall Site health and safety.

2.2 Quality Assurance Responsibilities

The Quality Assurance team will consist of a Quality Assurance Officer and the Project Manager. Quality Assurance responsibilities are described as follows:

Mr. Denis Conley - Quality Assurance (QA) Officer

The QA Officer reports directly to the Project Manager and will be responsible for ensuring that QA/QC procedures are followed. The QA Officer will be responsible for overseeing the review of field and laboratory data. Additional responsibilities include the following:

- Assure the application and effectiveness of the QAPP by the analytical laboratory and the project staff; Conduct internal QA/QC of the investigation activities;
- Provide input to the Project Director, and Project Manager as to corrective actions that may be required as a result of the above-mentioned evaluations;
- Prepare and review data validation and audit reports;
- Approval of the QAPP.

The QA Officer will be assisted by the data validation staff in the evaluation and validation of field and laboratory generated data.

Data Validation Staff

The data validation staff will be independent of the laboratory and familiar with the analytical procedures performed. The validation will include a review of each validation criterion as prescribed by the guidelines presented in Section 12.2 of this document and be presented in a formal written report for submittal to the Haley & Aldrich QA Officer.

NYSDEC Quality Assurance Officer

The NYSDEC Quality Assurance Officer may review this QAPP. Additional responsibilities for the project may include:

- Conduct external performance and system audits of the project laboratory; and
- Review and evaluate field and analytical laboratory procedures.

2.3 Laboratory Responsibilities

Laboratory services in support of the RIWP include the following personnel:

Laboratory Project Manager

The Laboratory Project Manager will report directly to the H&A QA Officer and Project Manager, and will be responsible for ensuring all resources of the laboratory are available on an as-required basis. The Laboratory Project Manager will also be responsible for the approval of the final analytical reports.

Laboratory Operations Manager

The Laboratory Operations Manager will report to the Laboratory Project Manager and will be responsible for coordinating laboratory analysis, supervising in-house chain-of-custody reports, scheduling sample analyses, overseeing data review and overseeing preparation of analytical reports.

Laboratory QA Officer

The Laboratory QA Officer will have sole responsibility for review and validation of the analytical laboratory data. The Laboratory QA Officer will provide Case Narrative descriptions of any data quality issues encountered during the analyses conducted by the laboratory. The QA Officer will also define appropriate QA procedures, overview QA/QC documentation.

Laboratory Sample Custodian

The Laboratory Sample Custodian will report to the Laboratory Operations Manager and will be responsible for the following:

- Receive and inspect the incoming sample containers;
- Record the condition of the incoming sample containers;
- Sign appropriate documents;
- Verify chain-of-custody and its correctness;
- Notify the Project Manager and Operations Manager of sample receipt and inspection;
- Assign a unique identification number and customer number, and enter each into the sample receiving log;
- Initiate transfer of samples to lab sections; and
- Control and monitor access/storage of samples and extracts.

Laboratory Technical Personnel

The laboratory technical staff will have the primary responsibility in the performance of sample analysis and the execution of the QA procedures developed to determine the data quality. These activities will include the proper preparation and analysis of the project samples in accordance with the contract laboratory’s Quality Assurance Manual and associated Standard Operating Procedures.

2.4 Field Responsibilities

H&A Field Coordinator

The Field Coordinator is responsible for the overall operation of the field team and reports directly to the Project Director and Project Manager. The Field Coordinator works with the Site Health & Safety Officer (HSO) to conduct operations in compliance with the project Health & Safety Plan (HASP). The Field Coordinator will facilitate communication and coordinate efforts between the Project Manager and the field team members.

Other responsibilities include the following:

- Develop and implement field-related work plans, ensuring schedule compliance, and adhering to management-developed project requirements;
- Coordinate and manage field staff, including sampling and drilling;
- Perform field system audits;
- Oversee quality control for technical data provided by the field staff;

- Prepare and approve text and graphics required for field team efforts;
- Coordinate and oversee technical efforts of subcontractors assisting the field team;
- Identify problems in the field; resolve difficulties in consultation with the Project Director, Project QAO, and Project Manager; implement and document corrective action procedures and,
- Participate in preparation of the final reports.

Field Team Personnel

Field Team Personnel will be responsible for the following:

- Perform field activities as detailed in the RIWP and in compliance with the QAPP.
- Immediately report any accidents and/or unsafe conditions to the Site Health & Safety Officer and take reasonable precautions to prevent injury.

Contractor

General responsibilities and duties of the Contractor include:

- Maintain safe working conditions at the Site;
- Performance of RIWP activities in accordance with the RIWP;
- Decontamination of equipment; and
- Preparation of its own Site-specific worker health and safety plan.

3 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

The RIWP and associated QAPP are designed to produce data of the quality necessary to achieve the project objectives and meet or exceed the minimum standard requirements for the field and laboratory analytical methods. The overall project data quality objective (DQO) is to develop and implement procedures for field sampling, handling, chain-of-custody, laboratory analysis, and reporting that achieve the project objectives. The following section is a general discussion of the criteria that will be used to measure and achieve the project DQO.

3.1 Precision

3.1.1 Definition

Precision will be determined by collecting and analyzing field duplicate samples and by creating and analyzing laboratory duplicates from one or more of the field samples. Precision is defined as a quantitative measure of the degree to which two or more measurements are in agreement. Precision will be stated in terms of relative percent difference (RPD). The overall precision of measurement data is a mixture of sampling and analytical factors. The analytical results from the field duplicate samples will provide data on sampling precision. The results from duplicate samples created by the laboratory will provide data on analytical precision.

3.1.2 Field Precision Sample Objectives

Field precision will be assessed through collection and measurement of field duplicate samples at a rate of 1 duplicate per 20 investigative samples.

3.1.3 Laboratory Precision Sample Objectives

Laboratory precision will be assessed through the analysis of laboratory control samples (LCS/LCSD) samples. The analytical data will be presented in summary table format. The DQO criteria for laboratory LCS/LCSD analyses are provided in Table 1.

3.2 Accuracy

3.2.1 Definition

Accuracy relates to the bias in a measurement system. Bias is the difference between the observed and the "true" value. Sources of error are the sampling process, field contamination, preservation techniques, sample handling, sample matrix, sample preparation and analytical procedure limitations.

3.2.2 Field Accuracy Objectives

Sampling bias will be assessed by evaluating the results of equipment rinse and trip blanks. Equipment rinse and trip blanks will be collected as appropriate for each sampling effort.

Equipment rinse blanks will be collected by passing ASTM Type II water over and/or through the respective sampling equipment utilized during each sampling effort. One equipment rinse blank will be collected for each type of sampling equipment used for the sampling effort.

Equipment rinse blanks will be analyzed for each target parameter for the respective sampling effort for which environmental media have been collected. (Note: If dedicated or disposable sampling equipment is used, equipment rinse samples may not be collected as part of that field effort.)

Trip blank samples will be prepared by the laboratory and provided with each cooler that includes volatile organic compound (VOC) containers. Trip blank samples will be analyzed for each VOC for which environmental media have been collected for analysis.

3.2.3 Laboratory Accuracy Sample Objectives

Analytical bias will be assessed through the use of known laboratory control samples (LCS) and site specific matrix spike (MS) sample analyses. LCS analyses will be performed with each analytical batch of project samples to determine the accuracy of the analytical system.

One (1) set of MS/MSD analyses will be performed with each batch of twenty (20) project samples to assess the accuracy of identification and quantification of analytes within the site-specific sample matrices. Additional sample volume will be collected at sample locations selected for MS/MSD analyses so that method detection limits (MDLs) and laboratory reporting limits (RLs) can be met.

The accuracy of organic parameter analyses is also monitored through the analysis of system monitoring or surrogate compounds. Surrogate compounds are added to each sample, standard, blank, and QC samples prior to the sample preparation and analysis. Surrogate compound percent recoveries provide information on the effect of the sample matrix on the accuracy of the analyses. The results of the LCS and MS/MSD analyses and surrogate compounds will be presented in a summary table reporting format and evaluated versus the laboratory specific acceptance criteria presented in Table 1.

3.3 Representativeness

3.3.1 Definition

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, a parameter variation at a sampling point or an environmental condition. Representativeness is a qualitative parameter that is dependent upon the design of the sampling program. The representativeness criterion is satisfied by proper selection of sampling locations and quantity of samples collected.

3.3.2 Measures to Ensure Representativeness of Field Data

Representativeness will be addressed by prescribing sampling techniques and the rationale used to select sampling locations. Sampling locations may be biased (based on existing data, instrument surveys, observations, etc.) or unbiased (completely random or stratified-random approaches).

For this project, sampling will generally be biased unless otherwise noted in the RIWP; that is, sampling associated with the soil, soil vapor and groundwater will be based on site knowledge and/or the observed presence/absence of site specific contaminants. Specific sampling technique descriptions, which allow consistency, repetitiveness and thus representativeness, are provided as SOP in the Field Sampling Plan (FSP).

3.3.3 Measures to Ensure Representativeness of Laboratory Data

Representativeness in the laboratory is ensured by using proper analytical procedures and analyzing field duplicate samples. By definition, field duplicate samples are collected to be representative of a given point in space and time. Thus, sample duplicates provide both precision and representativeness information.

3.4 Completeness

3.4.1 Definition

Completeness is a measure of the amount of valid (usable) data obtained from a measuring system compared to the total amount of the data obtained or anticipated to be obtained. The completeness goal for all data uses is that a sufficient amount of valid data be generated so that determinations can be made related to the intended data use with a high degree of confidence.

3.4.2 Field Completeness Objectives

Completeness is a measure of the amount of valid measurements obtained from all measurements taken in this project versus the number proposed in the RIWP. Field completeness objective for this project will be greater than (>) 90 percent (%).

3.4.3 Laboratory Completeness Objectives

Laboratory data completeness objective is a measure of the amount of valid data obtained from all laboratory measurements. The evaluation of the data completeness will be performed at the conclusion of each sampling and analysis effort. Corrective actions such as revised sample handling procedures will be implemented if problems are noted.

The completeness of the data generated will be determined by comparing the amount of valid data, based on independent validation, with the total data set. The completeness goal will be >90%.

3.5 Comparability

3.5.1 Definition

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another.

3.5.2 Measures to Ensure Comparability of Field Data

Sample data should be comparable to other measurement data for similar samples and sample conditions. This goal is achieved through using standard operating procedures to collect, preserve, store and analyze representative samples, and the reporting of analytical results. The field SOP for the various activities to be conducted during this investigation will provide guidelines to generate reproducible results.

3.5.3 Measures to Ensure Comparability of Laboratory Data

Comparability of laboratory data will be measured from the analysis of Standard Reference Materials (SRM) obtained from either EPA Cooperative Research and Development Agreement (CRADA) suppliers or the National Institute of Standards and Technology (NIST). The reported analytical data will also be presented in standard units of mass of contaminant within a known volume of environmental media.

The units for various sample matrices are described as follows:

- Solid Matrices - milligrams (mg) contaminant per kilogram (kg) of media (Dry Weight).
- Aqueous Matrices – micrograms (ug) contaminant per liter (L) of media for organic analyses, and milligrams per liter for inorganic analyses.
- Non-Aqueous Phase Liquids – (NAPL) – milligrams (mg) contaminant per kilogram (kg) of media.
- Gaseous Matrices – micrograms (ug) contaminant per cubic meter (M^3) of media

3.6 Decision Rules

3.6.1 Definition

The decision rule is a statement that prescribes a course of action or non-action to be taken, based on assumptions to test its logical and empirical consequences.

3.6.2 Decision Rule Objective

The rationale for sample locations, sample number and analytical parameters is provided in the RIWP. The decision rule for the sampling and analysis data collected is as follows:

1. Samples will be collected at discrete locations to provide a comprehensive assessment of impacted media.

2. Sample data will be compared to action levels (e.g., Soil Cleanup Objectives (SCO) to determine the appropriate action as defined in the RIWP.

3.7 Level of Quality Control Effort

Equipment rinse, trip and method blank samples; field and laboratory duplicate samples; and laboratory control and matrix spike samples will be prepared and analyzed to determine the analytical data quality.

Equipment rinse blanks will be prepared by field personnel and submitted for analysis of target parameters. Equipment rinse blank samples will be analyzed to check for contamination of equipment introduced during sampling at the Site. One (1) equipment rinse blank will be collected per sampling event

Trip blanks are used to assess the potential for contamination during sample storage and shipment. The trip blank will consist of ASTM Type II water that has been provided with the sample containers to be used for sampling VOC. Trip blanks will be preserved and handled in the same manner as the project samples. One (1) trip blank will be included along with each shipment cooler containing project samples to be analyzed for VOCs.

Method blank samples will be prepared by the laboratory and analyzed concurrently with all project samples to assess potential contamination introduced during the analytical process.

Field duplicate samples are analyzed to determine sampling and analytical reproducibility. One (1) field duplicate will be collected for every 20 or fewer investigative samples collected for laboratory analysis.

Matrix spikes will provide information to assess the precision and accuracy of the analysis of the target parameters within the environmental media collected. One (1) matrix spike/matrix spike duplicate (MS/MSD) will be collected for every 20 or fewer investigative samples per sample matrix (i.e. soil or groundwater).

(Note: Soil MS/MSD samples require triple sample volume for VOC only. Aqueous MS/MSD samples require triple the normal sample volume for VOC analysis and double the volume for the remaining parameters.)

4 SAMPLING PROCEDURES

Samples of soil, soil vapor and groundwater will be obtained during the RIWP program. The RIWP describes each of the sampling tasks and project objectives.

The Field Sampling Plan (FSP) provides the standard operating procedures (SOP) for sampling of each environmental media including surface soils, soil stockpiles and groundwater.

4.1 Sample Containers

Sample containers for each sampling task will be provided by the project laboratory. The containers will be cleaned by the manufacturer to meet or exceed the analyte specifications established in the U.S. EPA, "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers", April 1992, OSWER Directive #9240.0-0.5A. Certificates of analysis for each lot of sample containers used during the RIWP will be maintained by the laboratory and will be available upon request.

The appropriate sample containers, preservation method, maximum holding times, and shipping information for each target parameter and sampling task are provided in Table 2.

4.2 Sample Labeling

Each sample will be labeled with a unique sample number that will facilitate tracking and cross-referencing of sample information. Equipment rinse blank and field duplicate samples also will be numbered with a unique sample number to prevent analytical bias of field QC samples.

Refer to the FSP for the sample labeling procedures.

4.3 Field QC Sample Collection

4.3.1 Equipment Rinse Blank Sample Collection

Equipment rinse blank samples will be collected when non-dedicated sampling equipment is used to collect samples. Equipment rinse blanks consist of distilled water that has been routed through decontaminated sampling equipment and collected into the appropriate containers. The containers will be filled in order of decreasing analyte volatility (i.e., VOC first, SVOC second and followed by the containers for the remaining analyses).

4.3.2 Field Duplicate Sample Collection

4.3.2.1 Water Samples

Field duplicate samples will be collected using the following procedure:

1. The first sample container is filled to the proper level and sealed. The procedure is repeated for the second sample container.

2. The samples are properly labeled as specified in Section 4.2.

3. Steps 1 through 4 are repeated for the bottles for each analysis. The samples are collected in order of decreasing analyte volatility as detailed in Section 4.3.1.

4. Chain-of-custody documents are executed.

5. The samples will be packaged as specified in Table 2.

4.3.2.2 Soil Samples

Soil field duplicates will be collected as specified in the following:

1. The split-spoon sampler or trowel will be retrieved from the sampling point.

2. Soil for VOC analysis will be removed from the sampling device as specified in the FSP.

3. Soil for non-VOC analysis will be removed from the sampling device and placed in a stainless steel mixing bowl. The soil will be thoroughly homogenized using stainless steel utensils and the sample containers will be filled in order of decreasing analyte volatility as described in Section 4.3.1.

5 CUSTODY PROCEDURES

Custody is one of several factors necessary for the admissibility of environmental data as evidence in a court of law. Custody procedures help to satisfy the two major requirements for admissibility: relevance and authenticity. Sample custody is addressed in three parts: field sample collection, laboratory analysis and final project files.

Custody of a sample begins when it is collected by or transferred to an individual and ends when that individual relinquishes or disposes of the sample. A sample or project file is under custody if:

1. the item is in actual possession of a person;

2. the item is in the view of the person after being in actual possession of the person;

3. the item was in actual possession and subsequently stored to prevent tampering; or

4. the item is in a designated and identified secure area.

5.1 Field Custody Procedures

Field personnel will keep written records of field activities on applicable preprinted field forms or in a bound field notebook to record data collecting activities. These records will be written legibly in ink and will contain pertinent field data and observations. Entry errors or changes will be crossed out with a single line, dated and initialed by the person making the correction. Field forms and notebooks will be periodically reviewed by the Field Coordinator.

The beginning of each entry in the logbook or preprinted field form will contain the following information:

- Date
- Start time
- Weather
- Names of field personnel (including subcontractors)
- Level of personal protection used at the Site
- Names of all visitors and the purpose of their visit.

For each measurement and sample collected, the following information will be recorded:

- Detailed description of sample location,
- Equipment used to collect sample or make measurement and the date equipment was calibrated,
- Time sample was collected,
- Description of the sample conditions,
- Depth sample was collected (if applicable),
- Volume and number of containers filled with the sample; and,
- Sampler’s identification.

5.1.1 Field Procedures

Data quality can be affected by sample collection activities. If the integrity of collected samples is questionable, the data, regardless of its analytical quality, will also be questionable.

The following procedure describes the process to maintain the integrity of the samples:

- Upon collection samples are placed in the proper containers. In general, samples collected for organic analysis will be placed in pre-cleaned glass containers and samples collected for inorganic analysis will be placed in pre-cleaned plastic (polyethylene) bottles. Refer to the FSP for sample packaging procedures.

- Samples will be assigned a unique sample number and will be affixed to a sample label. Refer to the FSP for sample labeling procedures.

- Samples will be properly and appropriately preserved by field personnel in order to minimize loss of the constituent(s) of interest due to physical, chemical or biological mechanisms.

- Appropriate volumes will be collected to ensure that the appropriate reporting limits can be successfully achieved and that the required QC sample analyses can be performed.

5.1.2 Transfer of Custody and Shipment Procedures

- A chain-of-custody (COC) record will be completed at the time of sample collection and will accompany each shipment of project samples to the laboratory. The field personnel collecting the samples will be responsible for the custody of the samples until the samples are relinquished to the laboratory. Sample transfer will require the individuals relinquishing and receiving the samples to sign, date and note the time of sample transfer on the COC record.

- Samples will be shipped or delivered in a timely fashion to the laboratory so that holding-times and/or analysis times as prescribed by the methodology can be met.

- Samples will be transported in containers (coolers) which will maintain the refrigeration temperature for those parameters for which refrigeration is required in the prescribed preservation protocols.

- Samples will be placed in an upright position and limited to one layer of samples per cooler. Additional bubble wrap or packaging material will be added to fill the cooler. Shipping containers will be secured with strapping tape and custody tape for shipment to the laboratory.

- When samples are split with the NYSDEC representatives, a separate chain-of-custody will be prepared and marked to indicate with whom the samples are shared. The person relinquishing the samples will require the representative’s signature acknowledging sample receipt.

- If samples are sent by a commercial carrier, a bill of lading will be used. A copy of the bill of lading will be retained as part of the permanent record. Commercial carriers will not sign the custody record as long as the custody record is sealed inside the sample cooler and the custody tape remains intact.

- Samples will be picked up by a laboratory courier or transported to the laboratory the same day they are collected unless collected on a weekend or holiday. In these cases, the samples will be stored in a secure location until delivery to the laboratory. Additional ice will be added to the cooler as needed to maintain proper preservation temperatures.

5.2 Laboratory Chain-of-Custody Procedures

A sample custodian will be designated by the laboratory and will have the responsibility to receive all incoming samples. Once received, the custodian will document if the sample is received in good condition (i.e., unbroken, cooled, etc.) and that the associated paperwork, such as chain-of-custody forms have been completed. The custodian will sign the chain-of-custody forms.

The custodian will also document if sufficient sample volume has been received to complete the analytical program. The sample custodian will then place the samples into secure, limited access storage (refrigerated storage, if required). The sample custodian will assign a unique number to each incoming sample for use in the laboratory. The unique number will then be entered into the sample-receiving log with the verified time and date of receipt also noted.

Consistent with the analyses requested on the chain-of-custody form, analyses by the laboratory's analysts will begin in accordance with the appropriate methodologies. Samples will be removed from secure storage with internal chain-of-custody sign-out procedures followed.

5.3 Storage of Samples

Empty sample bottles will be returned to secure and limited access storage after the available volume has been consumed by the analysis. Upon completion of the entire analytical work effort, samples will be disposed of by the sample custodian. The length of time that samples are held will be at least thirty (30) days after reports have been submitted. Disposal of remaining samples will be completed in compliance with all Federal, State and local requirements.

5.4 Final Project Files Custody Procedures

The final project files will be the central repository for all documents with information relevant to sampling and analysis activities as described in this QAPP. The Haley & Aldrich Project Manager will be the custodian of the project file. The project files including all relevant records, reports, logs, field notebooks, pictures, subcontractor reports and data reviews will be maintained in a secured, limited access area and under custody of the Project Director or his designee.

The final project file will include the following:

- Project plans and drawings
- Field data records
- Sample identification documents and soil boring/monitoring well logs
- All chain-of-custody documentation
- Correspondence
- References, literature
- Laboratory data deliverables
- Data validation and assessment reports
- Progress reports, QA reports
- Final report

The laboratory will be responsible for maintaining analytical logbooks, laboratory data and sample chain of custody documents. Raw laboratory data files and copies of hard copy reports will be inventoried and maintained by the laboratory for a period of six (6) years at which time the laboratory will contact the Haley & Aldrich Project Manager regarding the disposition of the project related files.

6 CALIBRATION PROCEDURES AND FREQUENCY

6.1 **Field Instrument Calibration Procedures**

Several field instruments will be used for both on-site screening of samples and for health and safety monitoring, as described in the Health and Safety Plan (HASP). On-site air monitoring for health and safety purposes may be accomplished using several different organic vapor detection devices, such as a Photo-ionization Detector (PID), Combustible Gas Indicator (CGI), and/or Draeger tubes.

Field instruments will be calibrated at the beginning of each day and checked during field activities to verify performance. Instrument specific calibration procedures will be performed in accordance with the instrument manufacturer's requirements.

6.2 **Laboratory Instrument Calibration Procedures**

Reference materials of known purity and quality will be utilized for the analysis of environmental samples. The laboratory will carefully monitor the preparation and use of reference materials including solutions, standards and reagents through well-documented procedures.

All solid chemicals and acids/bases used by the laboratory will be rated as "reagent grade" or better. All gases will be "high" purity or better. All Standard Reference Materials (SRMs) or Performance Evaluation (PE) materials will be obtained from approved vendors of the National Institute of Standards and Technology (formerly National Bureau of Standards), the U.S. EPA Environmental Monitoring Support Laboratories (EMSL), or reliable Cooperative Research and Development Agreement (CRADA) certified commercial sources.

7 ANALYTICAL PROCEDURES

Analytical procedures to be utilized for analysis of environmental samples will be based on referenced U.S. EPA analytical protocols and/or project specific SOP.

7.1 Field Analytical Procedures

Field analytical procedures include the measurement of pH/temperature and specific conductivity during sampling of groundwater, and the qualitative measurement of Volatile Organic Compounds (VOC) during the collection of soil samples.

7.2 Laboratory Analytical Procedures

Laboratory analyses will be based on the U.S. EPA methodology requirements promulgated in:

- "Test Methods for Evaluating Solid Waste," SW-846 EPA, Office of Solid Waste, and promulgated updates, 1986.

The laboratory reporting limits (RLs) and associated method detection limits (MDLs) for the target analytes and compounds for the environmental media to be analyzed are presented in Table 1.

7.2.1 List of Project Target Compounds and Laboratory Detection Limits

A complete list of project target compounds and project reporting limits for each analyte is listed in Table 1. MDLs have been experimentally determined by the project laboratory using the method provided in 40 CFR, Part 136 Appendix B.

7.2.2. List of Method Specific Quality Control (QC) Criteria

The laboratory SOPs include a section that presents the minimum QC requirements for the project analyses. Section 8.0 references the frequency of the associated QC samples for each sampling effort and matrix.

8 INTERNAL QUALITY CONTROL CHECKS

This section presents the internal quality control checks that will be employed for field and laboratory measurements.

8.1 Field Quality Control

8.1.1 Equipment Rinse Blanks

Internal quality control checks will include analysis of equipment blanks to validate successful equipment cleaning activities. Whenever possible, dedicated equipment will be employed to reduce the possibility of cross-contamination of samples.

The frequency of equipment rinse sample preparation will be for each type of sampling equipment on which decontamination procedures have been performed as part of each sampling event.

8.1.2 Trip Blanks

Trip blanks samples will be prepared by the project laboratory using ASTM Type II or equivalent water placed within pre-cleaned 40 milliliter (ml) VOC vials equipped with teflon septa. Trip blanks will accompany each sample delivery group (SDG) of environmental samples collected for analysis of VOCs.

Trip blank samples will be placed in each cooler that stores and transports project samples that are to be analyzed for VOCs.

8.2 Laboratory Procedures

Procedures which contribute to maintenance of overall laboratory quality assurance and control include appropriately cleaned sample containers, proper sample identification and logging, applicable sample preservation, storage and analysis within prescribed holding times, and use of controlled materials.

8.2.1 Field Duplicate Samples

The precision or reproducibility of the data generated will be monitored through the use of field duplicate samples. Field duplicate analysis will be performed at a frequency of 1 in 20 project samples.

Precision will be measured in terms of the absolute value of the relative percent difference (RPD) as expressed by the following equation:

$$RPD = \frac{\left| \frac{R1 - R2}{(R1 - R2)} \right|}{2} X100\%$$

Acceptance criteria for duplicate analyses performed on solid matrices will be 50 % and aqueous matrices will be 30%. RPD values outside these limits will require an evaluation of the sampling and/or analysis procedures by the project QA Officer and/or laboratory QA Director. Corrective actions may include re-analysis of additional sample aliquots and/or qualification of the data for use.

8.2.2 Matrix Spike Samples

Ten percent of each project sample matrix for each analytical method performed will be spiked with known concentrations of the specific target compounds/analytes.

The amount of the compound recovered from the sample compared to the amount added will be expressed as a percent recovery. The percent recovery of an analyte is an indication of the accuracy of an analysis within the site-specific sample matrix. Percent recovery will be calculated for MS/MSD using the following equation.

$$\% \ Recovery = \frac{Spiked \ Sample \text{ - } Background}{Known \, Value \ of \ \ Spike} \ x \, 100\%$$

If the quality control value falls outside the control limits (UCL or LCL) due to sample matrix effects, the results will be reported with appropriate data qualifiers. To determine the effect non-compliant MS recoveries have on the reported results, the recovery data will be evaluated as part of the validation process.

8.2.3 Laboratory Control Sample (LCS) Analyses

The laboratory will perform LCS analyses prepared from Standard Reference Materials (SRMs). The SRMs will be supplied from an independent manufacturer and traceable to NIST materials with known concentrations of each target analyte to be determined by the analytical methods performed. In cases where an independently supplied SRM is not available, the LCS may be prepared by the laboratory from a reagent lot other than that used for instrument calibration.

The laboratory will evaluate LCS analyses in terms of percent recovery using the most recent laboratory generated control limits.

LCS recoveries that do not meet acceptance criteria will be deemed invalid. Analysis of project samples will cease until an acceptable LCS analysis has been performed. If sample analysis is performed in association with an out-of-control LCS sample analysis, the data will be deemed invalid.

Corrective actions will be initiated by the Haley & Aldrich QA Officer and/or laboratory QA officer to investigate the problem. After the problem has been identified and corrected, the solution will be noted in the instrument run logbook and re-analysis of project samples will be performed, if possible.

The analytical anomaly will be noted in the sample delivery group (SDG) Case Narrative and reviewed by the data validator. The data validator will confirm that appropriate corrective actions were implemented and recommend the applicable use of the affected data.

8.2.4 Surrogate Compound/Internal Standard Recoveries

For VOCs, surrogates will be added to each sample prior to analysis to establish purge and trap efficiency. Quantitation will be accomplished via internal standardization techniques.

The recovery of surrogate compounds and internal standards will be monitored by laboratory personnel to assess possible site-specific matrix effects on instrument performance.

For semi-volatile organics analyses, surrogates will be added to the raw sample to assess extraction efficiency. Internal standards will be added to all sample extracts and instrument calibration standard immediately before analysis for quantitation via internal standardization techniques.

Method specific quality control (QC) limits are provided in the attached laboratory method SOPs. Surrogate compound/internal standard recoveries that do not fall within accepted QC limits for the analytical methodology performed will have the analytical results flagged with data qualifiers as appropriate by the laboratory and will not noted in the laboratory report Case Narrative.

To ascertain the effect non-compliant surrogate compound/internal standard recoveries may have on the reported results, the recovery data will be evaluated as part of the validation process. The data validator will provide recommendations for corrective actions including but not limited to additional data qualification.

8.2.5 Calibration Verification Standards

As presented in Section 7.0 of this plan, calibration verification (CV) standards will be utilized to confirm instrument calibrations and performance throughout the analytical process. CV standards will be prepared as prescribed by the respective analytical protocols. Continuing calibration will be verified by compliance with method-specific criteria prior to additional analysis of project samples. Non-compliant analysis of CV standards will require immediate corrective action by the project laboratory QA officer and/or designated personnel. Corrective action may include re-analysis of each affected project sample, a detailed description of the problem, the corrective action undertaken, the person who performed the action, and the resolution of the problem.

8.2.6 Laboratory Method Blank Analyses

Method blank sample analysis will be performed as part of each analytical batch for each methodology performed. If target compounds are detected in the method blank samples, the reported results will be flagged by the laboratory in accordance with standard operating procedures. The data validator will provide recommendations for corrective actions including but not limited to additional data qualification.

9 DATA REDUCTION, VALIDATION AND REPORTING

All data generated through field activities or by the laboratory operation shall be reduced and validated prior to reporting in accordance with the following procedures:

9.1 Data Reduction

9.1.1 Field Data Reduction Procedures

Field data reduction procedures will be minimal in scope compared to those implemented in the laboratory setting. The pH, conductivity, temperature, turbidity and VOC readings collected in the field will be generated from direct read instruments. The data will be written into field logbooks immediately after measurements are taken. If errors are made, data will be legibly crossed out, initialed and dated by the field member, and corrected in a space adjacent to the original entry.

9.1.2 Laboratory Data Reduction Procedures

Laboratory data reduction procedures are provided by the appropriate chapter of USEPA, Test Methods for Evaluating Solid Waste", SW-846, Third Edition. All calculations will be checked at the conclusion of each day. Errors will be noted; corrections made with the original notations crossed out legibly. Analytical results for soil samples shall be calculated and reported on a dry weight basis.

Quality control data (e.g., laboratory duplicates, surrogates, matrix spikes, and matrix spike duplicates) will be compared to the method acceptance criteria. Data considered to be acceptable will be entered into the laboratory information management system (LIMS).

Data summaries will be sent to the Laboratory QA Officer for review. Unacceptable data shall be appropriately qualified in the project report. Case narratives will be prepared which will include information concerning data that fell outside acceptance limits and any other anomalous conditions encountered during sample analysis.

9.2 Data Validation

Data validation procedures shall be performed for both field and laboratory operations as described below:

9.2.1 Procedures Used to Evaluate Field Data

Procedures to evaluate field data for this project will include review of field logbooks and checking for transcription errors to project specific documents. This task will be the responsibility of the Field QAO/Project Coordinator.

9.2.2 Procedures to Validate Laboratory Data

Validation of the analytical data will be performed by the Haley & Aldrich QA Officer or designee using the following documents as guidance for the review process:

"U.S.EPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review", EPA-540/R-99/008, October 1999 and the "U.S. EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review ", EPA-540/R-02-008, July 2002.

The specific data qualifiers used will be as presented and defined in the CLP National Functional Guidelines. Validation will be performed by qualified personnel at the direction of the Haley & Aldrich QA Officer. Data review and validation will consist of two tiers of assessment that incorporates an approach similar to "Innovative Approaches to Data Validation", U.S.EPA Region III, June 1995.

Tier I data validation will be performed on 100% of the laboratory quality control summary data deliverables. The following will be evaluated:

Organic Analysis
i) technical holding times;

ii) GC/MS instrument performance check;

iii) method, trip and equipment rinsate blanks;

iv) system monitoring compounds (surrogate spikes);

v) MS/MSD results;

vi) laboratory control samples; and

vii) field duplicate samples.

Inorganic Analysis
i) technical holding times;

ii) blanks;

iii) laboratory control samples;

iv) MS/MSD results; and

v) field duplicates.

Tier II validation will be completed on 100 percent of the expanded deliverables during the initial investigation activities. The following will be evaluated during tier II validation:

Organic Analyses

i) technical holding times;

ii) GC/MS instrument performance check;

iii) initial and continuing calibration;

iv) blanks;

v) system monitoring compounds (surrogate spikes);

vi) MS/MSD results;

vii) laboratory control samples;

viii) internal standard performance;

ix) system performance;

x) target compound identification (GC/MS analyses); and

xi) field duplicates

Inorganic Analyses

i) technical holding times;

ii) initial and continuing calibration;

iii) blanks;

iv) interference check samples;

v) laboratory control samples;

vi) matrix duplicate sample analysis;

vii) matrix spike sample analysis;

viii) ICP interference check sample;

ix) ICP serial dilution;

x) ICP/MS internal standard performance;

xi) sample result verification; and

xii) field duplicates.

The completeness of each data package will be evaluated by the Data Validator. Completeness checks will be administered on all data to determine whether deliverables specified in the QAPP are present. The validator will determine whether all required items are present and request copies of missing deliverables.

9.3 Data Reporting

Data reporting procedures shall be carried out for field and laboratory operations as indicated below:

9.3.1 Field Data Reporting

Field data reporting shall be conducted principally through the transmission of report sheets containing tabulated results of all measurements made in the field and documentation of all field calibration activities.

9.3.2 Laboratory Data Reporting

The laboratory data reporting package will be sufficient to perform a data validation in accordance with protocols described above. The final laboratory data report format shall consist of NYSDEC Analytical Services Protocol (ASP) Category B deliverables for excavation delineation and confirmation samples and groundwater baseline samples as specified in the RIWP.

10 PERFORMANCE AND SYSTEM AUDITS

A performance audit is an independent quantitative comparison with data routinely obtained in the field or the laboratory. Performance audits include two separate, independent parts: internal and external audits.

10.1 Field Performance and System Audits

10.1.1 Internal Field Audit Responsibilities

Internal audits of field activities will be initiated at the discretion of the Project Manager and will include the review of sampling and field measurements. The audits will verify that all procedures are being followed. Internal field audits will be conducted once during each phase of the sampling and at the conclusion of the project. The audits will include examination of the following:

- Field sampling records, screening results, instrument operating records
- Sample collection
- Handling and packaging in compliance with procedures
- Maintenance of QA procedures
- Chain-of-custody reports

10.1.2 External Field Audit Responsibilities

External audits may be conducted by the Project Coordinator at any time during the field operations. These audits may or may not be announced and are at the discretion of the U.S. EPA Region 2 and/or the NYSDEC. The external field audits can include (but are not limited to) the following:

- Sampling equipment decontamination procedures
- Sample bottle preparation procedures
- Sampling procedures
- Examination of health and safety plans
- Procedures for verification of field duplicates
- Field screening practices

10.2 Laboratory Performance and System Audits

10.2.1 Internal Laboratory Audit Responsibilities

The laboratory system audits are typically conducted by the laboratory QA Officer or designee on an annual basis. The system audit will include an examination of laboratory documentation including: sample receiving logs, sample storage, chain-of-custody procedures, sample preparation and analysis and instrument operating records.

At the conclusion of internal system audits, reports will be provided to the laboratory's operating divisions for appropriate comment and remedial/corrective action where necessary. Records of audits and corrective actions will be maintained by the Laboratory QA Officer.

10.2.2 External Laboratory Audit Responsibilities

External audits will be conducted as required, by the NYSDOH or designee. External audits may include any of the following:

- Review of laboratory analytical procedures
- Laboratory on-site visits
- Submission of performance evaluation samples for analysis

Failure of any of the above audit procedures can lead to laboratory disqualification, and another suitable laboratory will have to be chosen. An on-site review can consist of:

- Sample receipt procedures
- Custody, sample security and log-in procedures
- Review of instrument calibration logs
- Review of QA procedures
- Review of log books
- Review of analytical SOPs
- Personnel interviews

A review of a data package from samples recently analyzed by the laboratory can include (but not be limited to) the following:

- Comparison of resulting data to the SOP or method
- Verification of initial and continuing calibrations within control limits
- Verification of surrogate recoveries and instrument timing results
- Review of extended quantitation reports for comparisons of library spectra to instrument spectra, where applicable
- Assurance that samples are run within holding times.

11 PREVENTIVE MAINTENANCE

11.1 Field Instrument Preventive Maintenance

The field equipment preventive maintenance program is designed to ensure the effective completion of the sampling effort and to minimize equipment down time. Program implementation is concentrated in three areas:

- Maintenance responsibilities.
- Maintenance schedules.
- Inventory of critical spare parts and equipment.

The maintenance responsibilities for field equipment will be assigned to the task leaders in charge of specific field operations. Field personnel will be responsible for daily field checks and calibrations and for reporting any problems with the equipment. The maintenance schedule will follow the manufacturer's recommendations. In addition, the field personnel will be responsible for determining that critical spare parts are included with the field equipment. An adequate inventory of spare parts will be maintained. The inventory will primarily contain parts that are subject to frequent failure, have limited useful lifetimes and/or cannot be obtained in a timely manner.

11.2 Laboratory Instrument Preventive Maintenance

Analytical instruments at the laboratory will undergo routine and/or preventive maintenance. The extent of the preventive maintenance will be a function of the complexity of the equipment.

Generally, annual preventive maintenance service will involve cleaning, adjusting, inspecting and testing procedures designed to deduce instrument failure and/or extend useful instrument life. Between visits, routine operator maintenance and cleaning will be performed according to manufacturer's specifications by laboratory personnel.

Maintenance records will be placed on file at the laboratory and can be made available upon request.

12 SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA PRECISION, ACCURACY, AND COMPLETENESS

12.1 Field Measurements

Field generated information will be reviewed for validity. The review will be performed by the Field QA Officer and typically include evaluation of bound logbooks/forms, data entry and calculation checks. Field data will be assessed by the Project Field QA Officer who will review the field results for compliance with the established QC criteria that are specified in Section 3.0 of this QAPP. The accuracy of pH and specific conductance will be assessed using daily instrument calibration, calibration check, and blank data. Accuracy will be measured by determining the percent recovery of calibration check standards as defined in Section 12.2.2. Precision of the pH and specific conductance measurements will be assessed on the basis of the reproducibility of duplicate readings of a field sample and will be measured by determining the relative percent difference of the readings as defined in Section 12.2.1. Accuracy and precision of the soil VOC screening will be determined using duplicate readings of calibration checks. Field data completeness will be calculated using the following equation:

$$\text{Completeness} = \frac{\text{Valid (usable) Data Obtained}}{\text{Total Data Planned}} \quad \text{X} \quad 100$$

12.2 Laboratory Data

Surrogate, internal standard and matrix spike recoveries will be used to evaluate data quality. The laboratory quality assurance/quality control program will include the following elements:

- Precision, in terms of relative percent difference (RPD), will be determined by relative sample analysis at a frequency of one duplicate analysis for each batch of ten project samples or a frequency of 10 percent (10%). RPD is defined as the absolute difference of duplicate measurements divided by the mean of these analyses normalized to percentage.

- Accuracy, in terms of percent recovery (recovery of known constituent additions or surrogate recoveries), will be determined by the analysis of spiked and unspiked samples. MS/MSD will be used to determine analytical accuracy. The frequency of MS/MSD analyses will be one project sample MS/MSD per set of twenty project samples.

- One method blank will be prepared and analyzed with each batch of project samples. The total number of method blank sample analyses will be determined by the laboratory analytical batch size.

- Standard Reference Materials (SRMs) will be used for each analysis. Sources of SRM's include the U.S. EPA, commercially available material from CRADA certified vendors and/or laboratory produced solutions. SRMs, when available and appropriate, will be processed and analyzed on a frequency of one per set of samples.

- Completeness is the evaluation of the amount of valid data generated versus the total set of data produced from a particular sampling and analysis event. Valid data is determined by independent confirmation of compliance with method-specific and project-specific data quality objectives. The calculation of data set completeness will be performed by the following equation.

$$\frac{\mathit{Number\ of\ Valid\ Sample\ Results}}{\mathit{Total\ Number\ of\ Samples\ Planned}}\ X\ 100 = \%\ \mathit{Complete}$$

13 CORRECTIVE ACTION

13.1 Field Corrective Action

The Project Coordinator and Field QA Officer will be responsible for ensuring the quality of the sampling procedures and environmental data and as such, will be responsible for initiating corrective action when appropriate. Corrective action is intended to address unacceptable procedures or deficient quality control performance.

The corrective action procedures will be as follows:

- Identify/define the problem.
- Assign responsibility for investigating the problem.
- Investigate/determine the cause of the problem.
- Determine an appropriate corrective action to eliminate the problem.
- Implement the corrective action.
- Evaluate the effectiveness of the corrective action.
- Verify that the corrective action has eliminated the problem.
- Prepare a written record detailing the problem, corrective action utilized and solution of the problem.
- Submit the Corrective Action Record (CAR) to the Project Coordinator who initiated the corrective action and the Project QA Officer and Project Manager.

The above procedures may be implemented through the use of the Systems Audit as described previously. Any Field Team member of the project may initiate corrective action procedures by reporting in writing the nature of the suspected problem to the Project Coordinator, Project Manager or Project QA Officer. The Project Coordinator will begin corrective action by relating the problem to appropriate personnel.

13.2 Laboratory Corrective Action

The following paragraphs define the corrective action decision process relative to possible non-compliant events encountered during laboratory analysis of the project samples. Corrective actions will be initiated by the laboratory QA personnel and will be implemented by laboratory staff chemists under the oversight of the laboratory QA personnel. As with field corrective actions, the laboratory QA personnel will document the problem, the corrective action undertaken and the resolution of the problem. The corrective actions will be performed prior to release of the data from the laboratory.

Documentation will be provided to the laboratory QA officer, Haley & Aldrich QA Officer, Haley & Aldrich Project Manager and AmeriPride Project Manager.

13.3 Corrective Action During Data Validation and Data Assessment

The Haley & Aldrich QA Officer may identify the need for corrective action during either the data validation or data assessment processes. Potential types of corrective action may include re-sampling by the field team or re-injection/re-analysis of samples by the laboratory (if possible).

These actions are dependent upon the ability to mobilize the field team, whether the data to be collected is necessary to meet the required quality assurance objectives (e.g., the holding time for samples is not exceeded). When the Haley & Aldrich QA Officer identifies a corrective action situation, AmeriPride Project Manager will be responsible for approving the implementation of corrective action, including re-sampling, during data assessment.

All corrective actions will be documented by the Haley & Aldrich Project Manager.

14 QUALITY ASSURANCE (QA) REPORTS

Critically important to the successful implementation of the QA Plan is a reporting system that provides the means by which the program can be reviewed, problems identified and programmatic changes made to improve the plan.

QA reports to management include:

- Audit reports, internal and external audits with responses
- Performance evaluation sample results; internal and external sources
- Daily QA/QC exception reports/corrective actions

QA/QC corrective action reports will be prepared by the Haley & Aldrich QA Officer when appropriate and presented to the project and/or laboratory management personnel so that performance criteria can be monitored for all analyses from each analytical department. The updated trend/QA charts prepared by the laboratory QA personnel will be distributed and reviewed by various levels of the laboratory management.

15 REFERENCES

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TABLE 1
Former American Linen Supply Company Facility Remedial Investigation (RI)
Target Compound Quantitation Limits
Quality Control/Quality Assurance Sample (QA/QC) Criteria

USEPA Method 8260B (ug/kg)			**LCS Limits (%)**			**MS/MSD Limits (%)**		
Target Compound	**RL**	**MDL**	**LCL**	**UCL**	**RPD**	**LCL**	**UCL**	**RPD**
1,1,1-Trichloroethane	5.0	0.36	77	121	20	77	121	20
1,1,2,2-Tetrachloroethane	5.0	0.81	80	120	20	80	120	20
1,1,2-Trichloroethane	5.0	0.65	78	122	20	78	122	20
1,1,2-Trichlorotrifluoroethane	5.0	1.1	60	140	20	60	140	20
1,1-Dichloroethane	5.0	0.61	79	126	20	79	126	20
1,1-Dichloroethene	5.0	0.61	65	153	22	65	153	22
1,2,4-Trichlorobenzene	5.0	0.30	64	120	20	64	120	20
1,2-Dibromo-3-chloropropane	5.0	2.5	63	124	20	63	124	20
1,2-Dibromoethane (EDB)	5.0	0.64	78	120	20	78	120	20
1,2-Dichlorobenzene	5.0	0.39	75	120	20	75	120	20
1,2-Dichloroethane	5.0	0.25	77	122	20	77	122	20
1,2-Dichloroethene, Total	10	2.6	82	120	20	82	120	20
1,2-Dichloropropane	5.0	2.5	75	124	20	75	124	20
1,3-Dichlorobenzene	5.0	0.26	74	120	20	74	120	20
1,4-Dichlorobenzene	5.0	0.70	73	120	20	73	120	20
2-Butanone (MEK)	25	1.8	70	134	20	70	134	20
2-Hexanone	25	2.5	59	130	20	59	130	20
4-Methyl-2-pentanone (MIBK)	25	1.6	65	133	20	65	133	20
Acetone	25	4.2	61	137	15	61	137	15
Benzene	5.0	0.24	79	127	20	79	127	20
Bromodichloromethane	5.0	0.67	80	122	20	80	122	20
Bromoform	5.0	2.5	68	126	20	68	126	20
Bromomethane	5.0	0.45	37	149	20	37	149	20
Carbon disulfide	5.0	2.5	64	131	20	64	131	20
Carbon Tetrachloride	5.0	0.48	75	135	20	75	135	20
Chlorobenzene	5.0	0.66	76	124	25	76	124	25
Chlorodibromomethane	5.0	0.64	76	125	20	76	125	20
Chloroethane	5.0	1.1	69	135	20	69	135	20
Chloroform	5.0	0.31	80	118	20	80	118	20
Chloromethane	5.0	0.30	63	127	20	63	127	20
cis-1,2-Dichloroethene	5.0	0.64	81	117	20	81	117	20
cis-1,3-Dichloropropene	5.0	0.72	82	120	20	82	120	20
Cyclohexane	5.0	0.70	70	130	20	70	130	20
Dichlorodifluoromethane	5.0	0.41	57	142	20	57	142	20
Ethylbenzene	5.0	0.34	80	120	20	80	120	20
Isopropylbenzene	5.0	0.75	72	120	20	72	120	20
Methyl Acetate	5.0	0.93	60	140	20	60	140	20
Methyl tert-Butyl Ether	5.0	0.49	63	125	20	63	125	20
Methylcyclohexane	5.0	0.76	60	140	20	60	140	20
Methylene Chloride	5.0	2.3	61	127	15	61	127	15
Styrene	5.0	0.25	80	120	20	80	120	20
Tetrachloroethene	5.0	0.67	74	122	20	74	122	20
Toluene	5.0	0.38	74	128	20	74	128	20
trans-1,2-Dichloroethene	5.0	0.52	78	126	20	78	126	20
trans-1,3-Dichloropropene	5.0	2.2	73	123	20	73	123	20
Trichloroethene	5.0	1.1	77	129	24	77	129	24
Trichlorofluoromethane	5.0	0.47	65	146	20	65	146	20
Vinyl acetate	25	12	53	134	20	53	134	20
Vinyl chloride	5.0	0.61	61	133	20	61	133	20
Xylenes, total	10	0.84	80	120	20	80	120	20
n-propylbenzene	5.0	0.40	70	130	20	70	130	20
p-isopropyltoluene	5.0	0.40	76	119	20	76	119	20
1,2,4-Trimethylbenzene	5.0	0.96	80	119	20	80	119	20
1,3,5-Trimethylbenzene	5.0	1.00	74	120	20	74	120	20
n-Butylbenzene	5.0	0.44	70	120	20	70	120	20
sec-Butylbenzene	5.0	0.44	74	120	20	74	120	20
tert-Butylbenzene	5.0	0.52	73	120	20	73	120	20
Naphthalene	5.0	0.67	38	137	20	38	137	20
4-Bromofluorobenzene (SURR)	NA	NA	72	126	NA			
1,2-Dichloroethane-d4 (SURR)	NA	NA	64	126	NA			
Toluene-d8 (SURR)	NA	NA	71	125	NA			

TABLE 1
Former American Linen Supply Company Facility Remedial Investigation (RI)
Target Compound Quantitation Limits
Quality Control/Quality Assurance Sample (QA/QC) Criteria

USEPA Method 8260B (ug/L)			**LCS Limits (%)**			**MS/MSD Limits (%)**		
Target Compound	**RL**	**MDL**	**LCL**	**UCL**	**RPD**	**LCL**	**UCL**	**RPD**
1,1,1-Trichloroethane	1.0	0.82	73	126	15	73	126	15
1,1,2,2-Tetrachloroethane	1.0	0.21	70	126	15	70	126	15
1,1,2-Trichloroethane	1.0	0.23	76	122	15	76	122	15
1,1,2-Trichlorotrifluoroethane	1.0	0.31	60	140	20	60	140	20
1,1-Dichloroethane	1.0	0.38	71	129	20	71	129	20
1,1-Dichloroethene	1.0	0.29	65	138	16	65	138	16
1,2,4-Trichlorobenzene	1.0	0.41	70	122	20	70	122	20
1,2-Dibromo-3-chloropropane	1.0	0.39	56	134	15	56	134	15
1,2-Dibromoethane (EDB)	1.0	0.73	77	120	15	77	120	15
1,2-Dichlorobenzene	1.0	0.79	77	120	20	77	120	20
1,2-Dichloroethane	1.0	0.21	75	127	20	75	127	20
1,2-Dichloroethene, Total	2.0	0.70	72	124	20	72	124	20
1,2-Dichloropropane	1.0	0.72	76	120	20	76	120	20
1,3-Dichlorobenzene	1.0	0.78	77	120	20	77	120	20
1,4-Dichlorobenzene	1.0	0.84	75	120	20	75	120	20
2-Butanone (MEK)	10	1.3	57	140	20	57	140	20
2-Hexanone	5.0	1.2	65	127	15	65	127	15
4-Methyl-2-pentanone (MIBK)	5.0	2.1	71	125	35	71	125	35
Acetone	10	3.0	56	142	15	56	142	15
Benzene	1.0	0.41	71	124	13	71	124	13
Bromodichloromethane	1.0	0.39	80	122	15	80	122	15
Bromoform	1.0	0.26	66	128	15	66	128	15
Bromomethane	1.0	0.69	36	150	15	36	150	15
Carbon disulfide	1.0	0.19	59	134	15	59	134	15
Carbon Tetrachloride	1.0	0.27	72	134	15	72	134	15
Chlorobenzene	1.0	0.75	72	120	25	72	120	25
Chlorodibromomethane	1.0	0.32	75	125	15	75	125	15
Chloroethane	1.0	0.32	69	136	15	69	136	15
Chloroform	1.0	0.34	73	127	20	73	127	20
Chloromethane	1.0	0.35	49	142	15	49	142	15
cis-1,2-Dichloroethene	1.0	0.81	74	124	15	74	124	15
cis-1,3-Dichloropropene	1.0	0.36	74	124	15	74	124	15
Cyclohexane	1.0	0.18	70	130	20	70	130	20
Dichlorodifluoromethane	1.0	0.68	33	157	20	33	157	20
Ethylbenzene	1.0	0.74	77	123	15	77	123	15
Isopropylbenzene	1.0	0.79	77	122	20	77	122	20
Methyl Acetate	1.0	0.50	60	140	20	60	140	20
Methyl tert-Butyl Ether	1.0	0.16	64	127	37	64	127	37
Methylcyclohexane	1.0	0.16	60	140	20	60	140	20
Methylene Chloride	1.0	0.44	57	132	15	57	132	15
Styrene	1.0	0.73	70	130	20	70	130	20
Tetrachloroethene	1.0	0.36	74	122	20	74	122	20
Toluene	1.0	0.51	70	122	15	70	122	15
trans-1,2-Dichloroethene	1.0	0.90	73	127	20	73	127	20
trans-1,3-Dichloropropene	1.0	0.37	72	123	15	72	123	15
Trichloroethene	1.0	0.46	74	123	16	74	123	16
Trichlorofluoromethane	1.0	0.88	62	152	20	62	152	20
Vinyl acetate	5.0	0.85	50	144	23	50	144	23
Vinyl chloride	1.0	0.90	65	133	15	65	133	15
Xylenes, total	2.0	0.66	76	122	16	76	122	16
n-propylbenzene	1.0	0.69	77	120	15	77	120	15
p-isopropyltoluene	1.0	0.31	73	120	20	73	120	20
1,2,4-Trimethylbenzene	1.0	0.75	76	121	20	76	121	20
1,3,5-Trimethylbenzene	1.0	0.77	77	121	20	77	121	20
n-Butylbenzene	1.0	0.64	71	128	15	77	128	15
sec-Butylbenzene	1.0	0.75	74	127	15	74	127	15
tert-Butylbenzene	1.0	0.81	75	123	15	75	123	15
Naphthalene	1.0	0.43	54	140	20	54	120	20
4-Bromofluorobenzene (SURR)	NA	NA	72	126	NA			
1,2-Dichloroethane-d4 (SURR)	NA	NA	64	126	NA			
Toluene-d8 (SURR)	NA	NA	71	125	NA			

TABLE 1
Former American Linen Supply Company Facility Remedial Investigation (RI)
Target Compound Quantitation Limits
Quality Control/Quality Assurance Sample (QA/QC) Criteria

Method TO-15	**Indoor Air**		**Soil Vapor**		**LCS Limits (%)**		
Target Compound	**ppbv**	**ug/m3**	**ppbv**	**ug/m3**	**LCL**	**UCL**	**PPD**
1,1,1-Trichloroethane	0.04	0.22	0.20	1.09	70	130	25
1,1,2,2-Tetrachloroethane	0.04	0.27	0.20	1.37	70	130	25
1,1,2-Trichloroethane	0.04	0.22	0.20	1.09	70	130	25
1,1-Dichloroethane	0.04	0.16	0.20	0.81	70	130	25
1,1-Dichloroethene	0.04	0.16	0.20	0.79	70	130	25
1,2-Dibromoethane	0.04	0.31	0.20	1.54	70	130	25
1,2-Dichloroethane	0.08	0.32	0.20	0.81	70	130	25
1,2-Dichloropropane	0.08	0.37	0.20	0.92	70	130	25
1,3,5-Trimethylbenzene	0.08	0.39	0.20	0.98	70	130	25
1,3-Butadiene	0.08	0.18	0.50	1.11	70	130	25
2,2,4-Trimethylpentane	0.04	0.19	0.20	0.93	70	130	25
3-Chloropropene	0.08	0.25	0.50	1.57	70	130	25
4-Ethyltoluene	0.04	0.20	0.20	0.98	70	130	25
Benzene	0.04	0.13	0.20	0.64	70	130	25
Bromodichloromethane	0.04	0.27	0.20	1.34	70	130	25
Bromoethene	0.08	0.35	0.20	0.87	70	130	25
Bromoform	0.04	0.41	0.20	2.07	70	130	25
Bromomethane	0.08	0.31	0.20	0.78	70	130	25
Carbon Tetrachloride	0.04	0.25	0.20	1.26	70	130	25
Chloroethane	0.08	0.21	0.50	1.32	70	130	25
Chloroform	0.04	0.20	0.20	0.98	70	130	25
cis-1,2-Dichloroethene	0.04	0.16	0.20	0.79	70	130	25
cis-1,3-Dichloropropene	0.04	0.18	0.20	0.91	70	130	25
Cyclohexane	0.04	0.14	0.20	0.69	70	130	25
Dibromochloromethane	0.04	0.40	0.20	1.99	70	130	25
Dichlorodifluoromethane	0.04	0.20	0.50	2.47	70	130	25
Dichlorotetrafluoroethane	0.04	0.28	0.20	1.40	70	130	25
Ethylbenzene	0.04	0.17	0.20	0.87	70	130	25
m,p-Xylene	0.08	0.35	0.50	2.17	70	130	25
Methyl tert-Butyl Ether	0.04	0.14	0.50	1.80	70	130	25
Methylene Chloride	0.80	2.78	0.50	1.74	70	130	25
n-Heptane	0.04	0.17	0.20	0.83	70	130	25
n-Hexane	0.08	0.28	0.50	1.76	70	130	25
o-Xylene	0.04	0.17	0.20	0.87	70	130	25
Tetrachloroethene	0.04	0.27	0.20	1.36	70	130	25
Toluene	0.04	0.15	0.20	0.75	70	130	25
trans-1,2-Dichloroethene	0.04	0.16	0.20	0.79	70	130	25
trans-1,3-Dichloropropene	0.04	0.18	0.20	0.91	70	130	25
Trichloroethene	0.04	0.21	0.20	1.07	70	130	25
Trichlorofluoromethane	0.04	0.22	0.20	1.12	70	130	25
Vinyl Chloride	0.08	0.20	0.20	0.51	70	130	25

TABLE 1
Former American Linen Supply Company Facility Remedial Investigation (RI)
Target Compound Quantitation Limits
Quality Control/Quality Assurance Sample (QA/QC) Criteria

USEPA Method 8270C (ug/kg)			LCS Limits (%)			MS/MSD Limits (%)		
Target Compound	**RL**	**MDL**	**LCL**	**UCL**	**RPD**	**LCL**	**UCL**	**RPD**
1,2,4,5-Tetrachlorobenzene	170	15	59	125	24	59	111	21
1,2,4-Trichlorobenzene	330	4.8	39	120	30	39	120	30
1,2-Dichlorobenzene	330	3.2	18	120	29	18	120	29
1,3-Dichlorobenzene	330	3.0	14	120	37	14	120	37
1,3-Dinitrobenzene	330	11	73	151	18	73	151	-
1,4-Dichlorobenzene	330	2.2	34	120	35	34	120	35
1,4-Dioxane	200	38	11	120	50	11	120	50
2,3,4,6-Tetrachlorophenol	170	170	71	150	16	50	158	33
2,4,5-Trichlorophenol	170	37	59	126	18	59	126	18
2,4,6-Trichlorophenol	170	11	59	123	19	59	123	19
2,4-Dichlorophenol	170	8.8	52	120	19	52	120	19
2,4-Dimethylphenol	170	46	36	120	42	36	120	42
2,4-Dinitrophenol	330	59	35	146	22	35	146	22
2,4-Dinitrotoluene	170	26	55	125	20	55	125	20
2,6-Dinitrotoluene	170	41	66	128	15	66	128	15
2-Chloronaphthalene	170	11	57	120	21	57	120	21
2-Chlorophenol	170	8.6	38	120	25	38	120	25
2-Methylnaphthalene	170	2.0	47	120	21	47	120	21
2-Methylphenol	170	5.2	48	120	27	48	120	27
2-Nitroaniline	330	54	61	130	15	61	130	15
2-Nitrophenol	170	7.7	50	120	18	50	120	18
3 & 4 Methylphenol	330	9.4	50	119	24	50	119	24
3,3'-Dichlorobenzidine	170	150	48	126	25	48	126	25
3-Methylphenol	330	9.4	50	119	24	50	119	24
3-Nitroaniline	330	39	61	127	19	61	127	19
4,6-Dinitro-2-methylphenol	330	58	49	155	15	49	155	15
4-Bromophenyl phenyl ether	170	54	58	131	15	58	131	15
4-Chloro-3-methylphenol	170	6.9	49	125	27	49	125	27
4-Chloroaniline	170	50	49	120	22	49	120	22
4-Chlorophenyl phenyl ether	170	3.6	63	124	16	63	124	16
4-Methylphenol	330	9.4	50	119	24	50	119	24
4-Nitroaniline	330	19	63	128	24	63	128	24
4-Nitrophenol	330	41	43	137	25	43	137	25
Acenaphthene	170	2.0	53	120	35	53	120	35
Acenaphthylene	170	1.4	58	121	18	58	121	18
Acetophenone	170	8.7	66	120	20	66	120	20
Aniline	330	92	45	120	30	45	120	30
Anthracene	170	4.3	62	129	15	62	129	15
Atrazine	170	7.5	73	133	20	73	133	20
Benzaldehyde	170	19	21	120	20	21	120	20
Benzidine	5000	2100	20	120	15	20	120	15
Benzo[a]anthracene	170	2.9	65	133	15	65	133	15
Benzo[a]pyrene	170	4.1	64	127	15	64	127	15
Benzo[b]fluoranthene	170	3.3	64	135	15	64	135	15
Benzo[g,h,i]perylene	170	2.0	50	152	15	50	152	15
Benzo[k]fluoranthene	170	1.9	58	138	22	58	138	22
Benzoic acid	4800	240	62	120	50	62	120	50
Benzyl alcohol	330	8.1	15	145	34	15	145	34
Biphenyl	170	11	71	120	20	71	120	20
Bis(2-chloroethoxy)methane	170	9.2	61	133	17	61	133	17
Bis(2-chloroethyl)ether	170	15	45	120	21	45	120	21
Bis(2-chloroisopropyl) ether	170	18	44	120	24	44	120	24
Bis(2-ethylhexyl) phthalate	170	54	61	133	15	61	133	15
Butyl benzyl phthalate	170	45	61	129	16	61	129	16
Caprolactam	170	73	54	133	20	54	133	20
Carbazole	170	2.0	59	129	20	59	129	20
Chrysene	170	1.7	64	131	15	64	131	15

TABLE 1
Former American Linen Supply Company Facility Remedial Investigation (RI)
Target Compound Quantitation Limits
Quality Control/Quality Assurance Sample (QA/QC) Criteria

USEPA Method 8270C (ug/kg) ***(cont.)***			**LCS Limits (%)**			**MS/MSD Limits (%)**		
Target Compound	**RL**	**MDL**	**LCL**	**UCL**	**RPD**	**LCL**	**UCL**	**RPD**
Dibenz[a,h]anthracene	170	2.0	54	148	15	54	148	15
Dibenzofuran	170	1.8	56	120	15	56	120	15
Dicyclohexylamine	330	130	81	113	14	81	113	-
Diethyl phthalate	170	5.1	66	126	15	66	126	15
Dimethyl phthalate	170	4.4	65	124	15	65	124	15
Di-n-butyl phthalate	170	58	58	130	15	58	130	15
Di-n-octyl phthalate	170	3.9	62	133	16	62	133	16
Diphenylamine	330	330	81	113	14	81	113	-
Fluoranthene	170	2.4	62	131	15	62	131	15
Fluorene	170	3.9	63	126	15	63	126	15
Hexachlorobenzene	170	8.4	60	132	15	60	132	15
Hexachlorobutadiene	170	8.6	45	120	44	45	120	44
Hexachlorocyclopentadiene	170	51	31	120	49	31	120	49
Hexachloroethane	170	13	41	120	46	41	120	46
Indeno[1,2,3-cd]pyrene	170	4.7	56	149	15	56	149	15
Isophorone	170	8.4	56	120	17	56	120	17
Naphthalene	170	2.8	46	120	29	46	120	29
Nitrobenzene	170	7.5	49	120	24	49	120	24
N-Nitrosodimethylamine	330	12	37	106	31	27	100	40
N-Nitrosodi-n-propylamine	170	13	46	120	31	46	120	31
N-Nitrosodiphenylamine	170	9.2	20	119	15	20	119	15
Pentachlorophenol	330	58	33	136	35	33	136	35
Phenanthrene	170	3.5	60	130	15	60	130	15
Phenol	170	18	36	120	35	36	120	35
Pyrene	170	1.1	51	133	35	51	133	35
Pyridine	330	95	8	120	49	8	120	49
Tetraethyl lead	1000	160	40	160	30	40	160	30
2,4,6-Tribromophenol (SURR)	NA	NA	52	132	NA			
2-Fluorobiphenyl (SURR)	NA	NA	48	120	NA			
2-Fluorophenol (SURR)	NA	NA	20	120	NA			
Nitrobenzene-d5 (SURR)	NA	NA	46	120	NA			
Phenol-d5 (SURR)	NA	NA	16	120	NA			
p-Terphenyl-d14 (SURR)	NA	NA	24	136	NA			

TABLE 1
Former American Linen Supply Company Facility Remedial Investigation (RI)
Target Compound Quantitation Limits
Quality Control/Quality Assurance Sample (QA/QC) Criteria

USEPA Method 6010B/7471 (ug/kg)				**LCS Limits (%)**			**MS/MSD Limits (%)**	
Target Compound	**RL**	**MDL**	**LCL**	**UCL**	**RPD**	**LCL**	**UCL**	**RPD**
Antimony	15.0	0.5	80	120	20	75	125	20
Arsenic	2.0	0.4	80	120	20	75	125	20
Beryllium	0.200	0.028	80	120	20	75	125	20
Cadmium	0.200	0.030	80	120	20	75	125	20
Chromium	0.500	0.200	80	120	20	75	125	20
Copper	1.0	0.2	80	120	20	75	125	20
Lead	1.0	0.2	80	120	20	75	125	20
Nickel	5.00	0.230	80	120	20	75	125	20
Selenium	4.0	0.6	80	120	20	75	125	20
Silver	0.500	0.200	80	120	20	75	125	20
Thallium	6.0	0.3	80	120	20	75	125	20
Zinc	2.0	0.2	80	120	20	75	125	20
Mercury	0.0200	0.0081	80	120	20	75	125	20

USEPA Method 8082 (ug/kg)				**LCS Limits (%)**			**MS/MSD Limits (%)**	
Target Compound	**RL**	**MDL**	**LCL**	**UCL**	**RPD**	**LCL**	**UCL**	**RPD**
Aroclor 1016	17	3.3	59	154	50	59	154	50
Aroclor 1221	17	3.3	-	-	-	-	-	-
Aroclor 1232	17	3.3	-	-	-	-	-	-
Aroclor 1242	17	3.6	-	-	-	-	-	-
Aroclor 1248	17	3.3	-	-	-	-	-	-
Aroclor 1254	17	3.5	-	-	-	-	-	-
Aroclor 1260	17	7.8	51	179	50	51	179	50
Aroclor 1262	17	3.5	-	-	-	-	-	-
Aroclor 1268	17	3.5	-	-	-	-	-	-
Total Polychlorinated Biphenyls	17	3.6	-	-	-	-	-	-
Decachlorobiphenyl	NA	NA	34	148	NA			
Tetrachloro-m-xylene	NA	NA	35	134	NA			

TABLE 2
FORMER AMERICAN LINEN SUPPLY COMPANY FACILITY REMEDIAL INVESTIGATION (RI)
SUMMARY OF ANALYTICAL METHOD, PRESERVATIVE, HOLDING TIME AND SAMPLE SIZE REQUIREMENTS

Analysis/Method	Sample Type	Preservation	Holding Time	Volume/Weight	Container
TCL & STARS Volatiles/8260	Soil	Cool, 4^oC	14 days	20 g	4.0 oz. Glass Jar*
TCL Semi-Volatiles/8270	Soil	Cool, 4^oC	14 days	20 g	4.0 oz. Glass Jar*
Priority Pollutant Metals/6010/7471	Soil	Cool, 4^oC	180 days (6010)/28 days (7471)	20 g	4.0 oz. Glass Jar*
PCBs/8082	Soil	Cool, 4^oC	1 Year	20 g	4.0 oz. Glass Jar*
TCL & STARS Volatiles/8260	Water	Cool, 4^oC, HCl to pH 2	14 days	120 ml	3 x 40 mL VOA Vials*
TO-15 Volatiles	Air	Do Not Chill	30 days	1 to 6 L	1 - 6 L Summa Canister

Notes:

1. * - Glass 4-oz. jar with septum sealed lid.
2. Methods derived from test methods for evaluating solid waste, U.S. EPA Office of Solid Waste document No. SW-846, revised 12/87.
3. Refer to text for additional information.

APPENDIX D

Health & Safety Plan

HALEY & ALDRICH, INC.
SITE-SPECIFIC HEALTH & SAFETY PLAN

For

Former American Linen Supply Company Facility

Remedial Investigation Work Plan

Buffalo, New York

Project/File No. 37319-020

Prepared by: Claire L. Mondello Date: 12/3/2010

Revised by: Enter Revisor's Name Date: Enter Date

APPROVALS: The following signatures constitute approval of this Health & Safety Plan

Margaret Holt - Local H&S Coordinator

12/9/10
Date

Date printed: 12/17/2010 at 2:16 PM

Note: This HASP has been developed for Haley & Aldrich purposes only and is not for use by others.

TABLE OF CONTENTS

1. PROJECT INFORMATION AND EMERGENCY RESOURCES

Project Name: Former American Linen Supply Company Facility RI Work Plan	**H&A File No.: 37319-020**
Location: 822 Seneca Street, Buffalo, New York	
Client/Site Contact: Phone Number: Emergency Phone Number:	Joe Peter (612) 676-8060 (612) 865-9193
H&A Contact: Phone Number: Emergency Phone Number:	Glenn White (585) 321-4239 (585) 370-2412
Local Health & Safety Coordinator: Phone Number: Emergency Phone Number:	Margaret Holt (585) 321-4214 (585) 721-2426
Nearest Hospital: Address: (see map on next page) Phone Number:	Buffalo General Hospital 100 High Street Buffalo, NY 14210 (716) 859-5600
Healthcare Clinic to be accessed in non-emergency incidents:	1-888-449-7787 (call and Workcare will make appointment at local clinic)
Emergency Response Number:	**911**
Other Local Emergency Response Number:	911
Other Ambulance, Fire, Police, or Environmental Emergency Resources:	911

Work Scope:

This Site-Specific Health and Safety Plan addresses the health and safety practices and procedures that will be employed by all Haley & Aldrich employees participating in the site characterization of the Project Site. This plan is based on an assessment of the site-specific health and safety risks available to Haley & Aldrich and Haley & Aldrich's experience with other project sites. The scope of work for the Remedial Investigation includes:

Task #1: Excavation Monitoring:

Haley & Aldrich personnel will oversee the removal of portions of the existing building slab, and subsurface features (e.g. – catch basins, sumps, etc.). Monitoring will include screening with a PID and logging daily field activities.

Task #2: Drilling and Test Pitting

- Soil Boring/Groundwater Well Installation:

Five soil borings to be converted into groundwater wells will be advanced in five locations at the Site as shown on the attached figure. Soil borings/wells will be installed using a hollow-stem auger. Haley & Aldrich responsibilities include drilling oversight, soil screening, soil sample collection, and documentation.

- Underground Storage Tank (UST) Investigation (Test Pitting/Soil Borings)

  Up to 11 test pits/soil borings will be advanced around existing closed in-place USTs as shown on the attached figure using either a hollow-stem auger, direct push (GeoProbe), and/or excavator. Haley & Aldrich responsibilities include drilling/excavation oversight, soil screening, and documentation.

- Test Pitting

  Test pits will be advanced on the northern portion of the Site for Fill Characterization and in the southeastern portion of the Site to characterize the former Dry Cleaning Area as shown on the attached figure. Test pits will be advanced using an excavator. Haley & Aldrich responsibilities include excavation oversight, soil screening, sample collection, and documentation.

- Soil Vapor Sampling Point Installation

  Four (4) soil vapor sampling points will be installed on the western side of the Site using a direct-push (GeoProbe) drill rig. Haley & Aldrich responsibilities include drilling oversight, soil screening, and documentation.

Task #3: Site-Wide Groundwater Sampling

One round of site-wide groundwater sampling will occur at both new and previously installed onsite wells following well installation using low-flow sampling techniques. Static water levels will also be collected.

Task #4: Soil Vapor Sampling

Four soil vapor samples will be collected from the installed soil vapor sampling points.

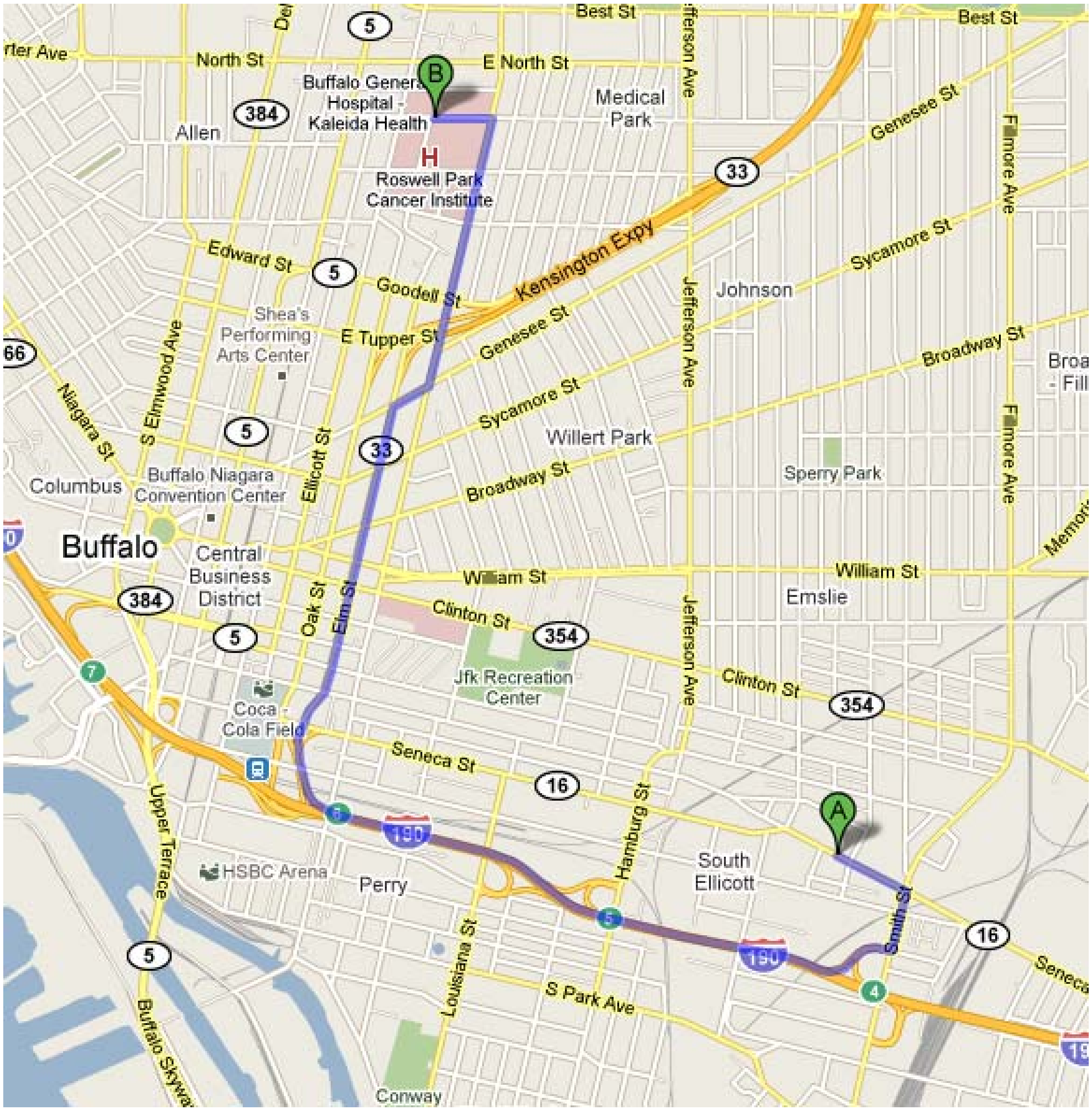
Subcontractor(s) to be involved in on-site activities:

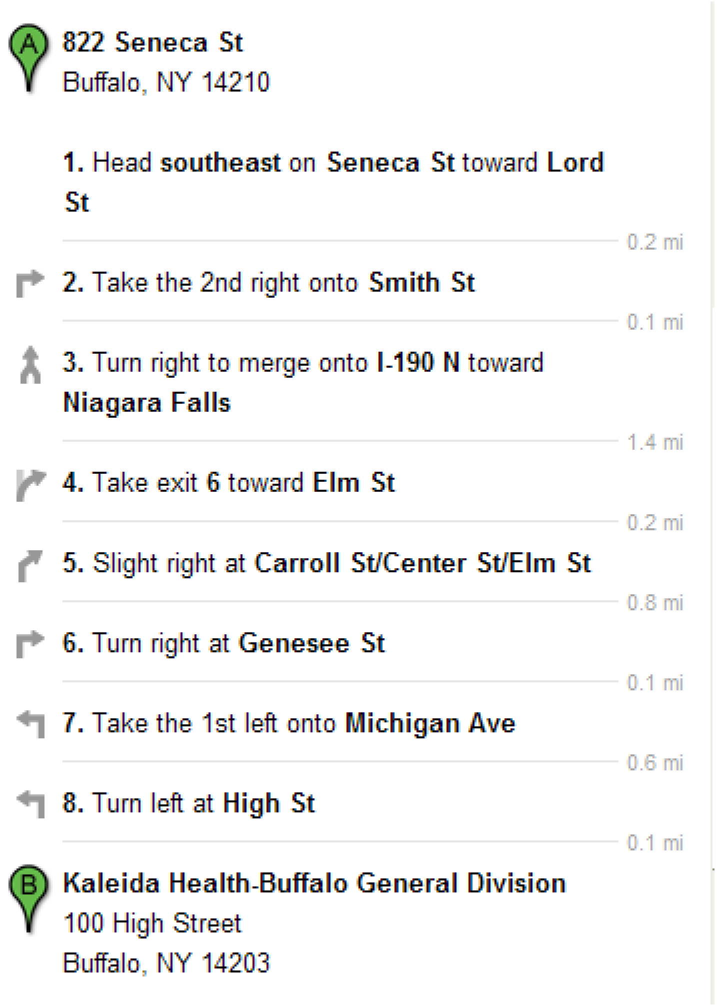
Firm Name	Work Activity
TBD	Slab and subsurface feature removal and test pitting.
TBD	Soil boring and monitoring well installation.

Projected Start Date: TBD
Projected Completion Date: TBD

Estimated Number of Days to Complete Field Work: 1 to 2 Months

Directions to the Nearest Hospital:





822 Seneca St
Buffalo, NY 14210

1. Head **southeast** on **Seneca St** toward **Lord St**

0.2 mi

2. Take the 2nd right onto **Smith St**

0.1 mi

3. Turn right to merge onto **I-190 N** toward **Niagara Falls**

1.4 mi

4. Take exit **6** toward **Elm St**

0.2 mi

5. Slight right at **Carroll St/Center St/Elm St**

0.8 mi

6. Turn right at **Genesee St**

0.1 mi

7. Take the 1st left onto **Michigan Ave**

0.6 mi

8. Turn left at **High St**

0.1 mi

Kaleida Health-Buffalo General Division
100 High Street
Buffalo, NY 14203

2. SITE DESCRIPTION

Site Classification:

☑ Industrial	☐ Commercial	✓ Vacant

General Description:

The Site is located at 822 Seneca Street in the City of Buffalo, Erie County, New York. The Site is identified on the City of Buffalo tax maps as the parcel with section 122.27, block 1, lot 4, and is approximately 2.91 acres. The Site is located on the west side of Lord Street and bound to the north by Seymour Street and the south by Seneca Street, and is approximately one mile north of the Buffalo River.

AmeriPride Services, Inc. has owned this property since approximately 1978 (formerly as American Linen Supply Company), and since 2005, the Site has been unoccupied. The site was most recently used as an industrial dry cleaner/launderer. The parcel is currently developed with a vacant industrial building. The Site is located in an urban area of mixed industrial, commercial land use. The Site is currently zoned for light industrial use.

Background and Historic Site Usage:

According to a Phase I Environmental Site Assessment Report by C.T. Male Associates, P.C., dated December 2004, the Site building was first developed in 1910. Prior to 1910, the Site is indicated to have been occupied by residential and commercial properties. Between 1910 and 1978, the Site appeared to be used as a book binding and printing facility.

Coverall Service and Supply Co., (Coverall) a uniform cleaning facility, reportedly first occupied the Site in 1978. The facility was used for dry cleaning operations until 1985. Available records indicate that dry-cleaning with tetrachloroethylene (PCE) was conducted at the Site between 1978 and 1985; use and/or storage of PCE were not reported after 1985. The laundry operations occupied the first floor of the Site building as well as portions of the basement. Thorner Sydney Press occupied the second floor of the Site building as well as portions of the basement until 1997. According to a purchase agreement dated 1977, Thorner Sydney Press' lease agreement was initiated in 1965.

In April 2004, operations ceased at the Site building, and it has been vacant since.

Phase II investigations conducted in 2005 and 2006 by ENSR International indicate that the Site is currently impacted by chlorinated solvent in groundwater and polycyclic aromatic hydrocarbons (PAHs) as part of historic urban fill. Additionally, due to historical underground petroleum storage, there is a potential for subsurface petroleum impacts.

Project Scope:

A Remedial Investigation Work Plan has been developed as part of the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). The purpose of the Work Plan is:

1. To define the nature and extent of contamination on the Site.
2. To identify if residual contaminant source areas are present on the Site.
3. To determine whether remedial action is needed to protect human health and the environment.
4. To produce data of sufficient quantity and quality to support the remediation of the Site, if warranted.

The project scope includes:

1. Slab and subsurface feature removal monitoring
2. Field explorations (soil borings, test pits, and monitoring well & soil vapor point installations).
3. Groundwater sampling
4. Soil vapor sampling

Overview of Hazards:

Potential hazards include the following:

- Drilling hazards
- Excavations (hazards from heavy equipment and falling)
- Extreme weather
- Heavy equipment
- Utilities
- Fumes & Dust
- Chemical hazards from onsite contamination
- Noise

Site Status: Indicate current activity status and describe operations at the site.

☐ Active

☐ Partially active

✓ Inactive

☐ Other

Site Plan:

Is a site plan or sketch available? YES

Work Areas:

List/identify each specific work area(s) on the job site and indicate its location(s) on the site plan:

1. AOC-1: Located on the western side of the Site near the former Gasoline UST.
2. AOC-2/AOC-3: Located on the southern portion of the Site near former underground storage tanks and near a former catch basin.
3. AOC-4: Located on the southeastern side of the site in the vicinity of the former dry cleaning operations.
4. Fill Characterization Area: The northern half of the Site.

3. PROJECT TASK BREAKDOWN

List and describe each distinct work task below.

Task No.	Detailed Task Description	Employee(s)	Work Date(s) or Duration
1	Slab and Subsurface Feature Removal Oversight	TBD	1 to 2 Months
2	Soil Boring/Test Pit/Monitoring Well/Soil Vapor Point Installation	TBD	1 Week
3	Groundwater Monitoring/Sampling	TBD	2 Days
4	Soil Vapor Sampling	TBD	1 Day

4. HAZARD ASSESSMENT

Material Safety Data Sheets (MSDS) of hazardous materials used during the execution of work shall be available on site. MSDSs are required for chemicals used to prepare samples, calibration gases, etc. MSDSs are not required for waste materials.

Chemical Hazards:

Does chemical analysis data indicate that the site is contaminated? YES

Indicate the potential physical state of the hazardous materials at the site.

✓ Gas/Vapor
✓ Liquid
☐ Sludge
✓ Solid

Indicate the anticipated or actual class of compounds at the site.

☐ Asbestos
✓ BTEX
✓ Chlorinated Solvents
☐ Heavy Metals
☐ Inorganics
☐ Pesticides
✓ Petroleum Products
✓ PAHs

Impacted Environments:

Indicate media in which contamination is expected.

✓ Air
✓ Soil
☐ Surface water
✓ Groundwater
☐ Sediment
☐ Other Specify

Estimated concentrations:

Indicate medium of major chemicals expected to be encountered by onsite personnel.

Work Activity	Media	Chemical	Anticipated Concentration
Excavation/Subsurface Feature Removal Oversight	SO	Chlorinated VOCs PAHs Petroleum VOCs	ND – 100 ppm ND – 150 ppm Unknown
	GW	Chlorinated VOCs Petroleum VOCs	ND – 200 ppb Unknown
	A	VOCs	Unknown
Field Explorations	SO	Chlorinated VOCs PAHs Petroleum VOCs	ND – 100 ppm ND – 150 ppm Unknown
	GW	Chlorinated VOCs Petroleum VOCs	ND – 200 ppb Unknown
	A	VOCs	Unknown
Groundwater Sampling	GW	Chlorinated VOCs Petroleum VOCs	ND – 200 ppb Unknown
Soil Vapor Sampling	A	VOCs	Unknown

(Media key: A = Air; GW = Groundwater; SW = Surface Water; SO = Soil; SE = Sediment)

Chemicals of Concern:

Trichloroethylene (TCE) is a colorless, nonflammable, non-corrosive liquid has a “sweet” odor characteristic of some chlorinated hydrocarbons.

The compound is incompatible with strong caustics, it reacts with aluminum when acidic, and it is incompatible with active metals - barium, lithium, sodium, magnesium, and titanium. Decomposition of TCE, due to contact with hot metal or ultraviolet radiation, forms products including chlorine gas, hydrogen chloride, and phosgene. Dichloroacetylene may be formed from the reaction of alkali with TCE.

The Cal-OSHA PEL for TCE is 25 PPM as an 8-hour TWA; an acceptable ceiling concentration of 300 PPM; and a STEL of 200 PPM. The OSHA PEL for TCE is 100 ppm as an 8-hour TWA; an acceptable ceiling concentration of 200 ppm; and an acceptable maximum peak ceiling of 300 ppm for no more than 5 minutes in any 2-hour period. The standard routes of entry in the body are through inhalation, percutaneous absorption, ingestion, skin and eye contact. The points of attack are the respiratory system, heart, liver, kidneys, central nervous system and skin.

Exposure to TCE vapor may cause irritation of the eyes, nose, and throat. The liquid, if splashed in the eyes, may cause burning irritation and damage. Repeated or prolonged shin contact with the liquid may cause dermatitis. Acute exposure to TCE depresses the central nervous system exhibiting such symptoms as headache, dizziness, vertigo, tremors, nausea and vomiting, irregular heart beat, sleepiness, fatigue, blurred vision, and intoxication similar to that of alcohol. Unconsciousness and death have been reported. Alcohol may make the symptoms of TCE overexposure worse. If alcohol has been consumed, the overexposed worker may become flushed. TCE addiction and peripheral neuropathy have been reported.

Tetrachloethylene (PCE)

Tetrachloroethylene (PCE) is a colorless, nonflammable liquid with a mild, chloroform-like odor.

PCE is incompatible with strong oxidizers and metals such as lithium, beryllium and barium, caustic soda, sodium hydroxide, and potash. Decomposition of PCE, due to fire, forms products including hydrogen chloride, and phosgene.

The OSHA PEL for PCE is 100 ppm as an 8-hour TWA; an acceptable ceiling concentration of 200 ppm; and an acceptable maximum peak ceiling of 300 ppm for no more than 5 minutes in any 3-hour period. The standard routes of entry in the body are through inhalation, percutaneous absorption, ingestion, skin and eye contact. The points of attack are the respiratory system, heart, liver, kidneys, central nervous system, eyes, and skin.

Symptoms that may occur as a result of exposure to PCE include irritation to the eyes, skin, nose, and throat; respiratory system distress; nausea; flushed face and neck; incoordination; headache; drowsiness; skin erythema; and liver damage.

1,1 and 1,2-Dichloroethylene (1,1-DCE; 1,2-DCE)

1,1 and 1,2-Dichloroethylene (1,1-DCE; 1,2-DCE) is a colorless, class IB flammable liquid with a slightly acrid, chloroform-like odor.

1,1 and 1,2-DCE is incompatible with strong oxidizers, strong alkalis, potassium hydroxide, and metals such as copper, and contains inhibitors to prevent polymerization.

The OSHA PEL for 1,2-DCE is 200 ppm as an 8-hour TWA. There is no OSHA PEL for 1,1-DCE. The 8-hour TWA for 1,1-DCE is 1.0 ppm. The standard routes of entry in the body are through inhalation, ingestion, skin and eye contact. The points of attack are the respiratory system, central nervous system, and eyes.

Symptoms that may occur as a result of exposure to 1,1 and 1,2-DCE include irritation to the eyes; respiratory system distress; central nervous system depression.

Vinyl Chloride (VC)

Vinyl Chloride (VC) is a colorless, liquid or flammable gas with a pleasant odor at high concentrations.

VC is incompatible with oxidizers, peroxides, and metals such as copper, aluminum, iron and steel. VC polymerizes in air, sunlight, or heat unless it is stabilized by inhibitors such as phenol. It attacks iron and steel in the presence of moisture.

The OSHA PEL for VC is 1 ppm as am 8-hour TWA, and an acceptable ceiling of 5 ppm in a 15 minute period. The standard routes of entry in the body are through inhalation, skin and eye contact. The points of attack are the respiratory system, central nervous system, liver, blood, and lymphatic system.

Symptoms that may occur as a result of exposure to VC include weakness and exhaustion; abdominal pain; gastrointestinal bleeding; enlarged liver; and pallor or cyanosis of the extremities. Liquid VC can cause frostbite. VC can also cause liver cancer.

PAHs

Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot.

Some PAHs are manufactured. These pure PAHs usually exist as colorless, white, or pale yellow-green solids. PAHs are found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides.

PAHs, as a group, are strongly hydrophobic, and therefore sorb to organic-based soil particles. Exposures to elevated levels of PAHs in the workplace could occur in coking, coal-tar, and asphalt production plants; smokehouses; and municipal trash incineration facilities.

Sorption of PAHs to soil and sediments increases with increasing organic carbon content and with increasing surface area of the sorbent particles. Lower molecular weight PAHs may also volatilize from soil. Due to this strong sorption to soil, PAHs do not tend to dissolve easily into and migrate with groundwater. Exposure from affected soil would tend to occur as a result of direct contact with affected soil or inhalation/ingestion of windborne affected soil.

BTEX

BTEX is the common abbreviation for benzene, toluene, ethyl benzene and xylene. OSHA has set permissible exposure limits for all of these contaminants that may be found at this worksite during your work activity. The levels that are set are based on an 8-hour time weighted average. Below are those values-

Benzene	1 ppm / 8 TWA
Toluene	200 ppm / 8 TWA
Ethyl Benzene	100 ppm / 8 TWA
Xylene	100 ppm / 8 TWA

TABLE 1
OCCUPATIONAL EXPOSURE LIMITS (CONCENTRATIONS IN AIR)

(CIRCLE CONTAMINANTS OF CONCERN, WRITE ADDITIONAL CONTAMINANTS AND EXPOSURE ON LAST PAGE)

CHEMICAL	ROUTES OF EXPOSURE	IDLH	Ceiling	STEL	PEL	TLV	REL	PID (IP eV)	FID	ODOR THRES-HOLD	IRRITATION THRESHOLD	ODOR DESCRIPTION
VAPORS & GASES												
Acetone	R, I, C	2500	-	750 [ACGIH]	1000	500	250	9.69	60	13	-	fragrent, mint-like
Ammonia	R, I, C	300	-	35 [NOSH, ACGIH]	50	25	25	10.18**	-	0.5-2	10	Pungent suffocating odor
Benzene	R,A,I,C	Ca [500]	-	1 [NIOSH]; 2.5 {ACGIH]	1	0.5	0.1	9.24	150	4.68	-	Solvent, aromatic
Carbon tetrachloride (Tetrachloromethane)	R,A,I,C	Ca [200]	25 [instantaneous] 200 [5 min peak in any 4 hrs]	2 [NIOSH, 60-min]; 10 [ACGIH]	2	5	Ca	11.47**	10	50	-	Sweet, pungent, ether-like
Chlorobenzene	R,I,C	1000	-	-	75	10	-	9.07	200	0.68	-	Almond-like
Chloroform	R,I,C	Ca [500]	50 [OSHA]	2 [NIOSH, 60-min]	-	10	-	11.42**	65	50	-	Sweet, pleasant
o-Dichlorobenzene	R,A,I,C	200	50 [NIOSH, OSHA]	50 [ACGIH]	-	25	-	9.06	50	0.3	E 20-30	Pleasant, aromatic
p-Dichlorobenzene	R,A,I,C	Ca [150]	-	-	75	10	Ca	8.98	-	0.18	E 80-160	Distinct, aromatic, mothball-like
Dichlorodifluoromethane (Freon 12)	R,C	15000	-	-	1000	1000	1000	11.75**	15	-	-	Ether-like when at very high concs.
1,1-Dichloroethane	R,I,C	3000	-	-	100	100	100	11.06**	80	200	-	Distinct, chloroform-like
1,2-Dichloroethane (Ethylene dichloride)	R,I,A,C	Ca [50]	100 [OSHA]	2 ppm [NIOSH]; 200 ppm [OSHA, 5-min max peak in any 3 hours]	50	10	1	11.05**	80	88	-	Chloroform-like
1,1-Dichloroethylene (1,1-DCE, Vinylidene chloride)	R,A,I,C	Ca [ND]	-	-	-	5	Ca	10.00**	40	190	-	Chloroform-like
1,2-Dichloroethylene	R,I,C	1000	-	-	200	200	200	9.65	50	0.85	-	Bitter, chloroform-like
Ethanol	R,I,C	3300	-	-	1000	1000	1000	10.47**	25	10	-	Weak, ether-like, wine-like
Ethylbenzene	R,I,C	800	-	125 [NIOSH; ACGIH]	100	100	100	8.76	100	2.3	E 200	Aromatic
Ethylene Glycol	R,I,C	ND	50 [OSHA]; 100 mg/m^3 [ACGIH]	-	-	-	-	-	-	-	-	Odorless
Formaldehyde	I,C	Ca [20]	0.1 [NIOSH, 15-min]; 0.3 [ACGIH]	2	0.75	-	Ca [0.016]	10.88**	-	0.83	-	Pungent, suffocating
Gasoline	R,I,A,C	Ca [ND]	-	500 [OSHA; ACGIH]	300	300	-	-	-	-	E 0.5	Petroleum-like
n-Hexane	R,I,C	1100	-	-	500	50	50	10.18	70	130	E.T 1400-1500	Gasoline-like
Hydrogen Cyanide	R,A,I,C	50	4.7 [ACGIH; Skin]	4.7 [NIOSH - skin]	10 [skin]		-	-	-	0.58	-	Bitter almond
Hydrogen peroxide	R,I,C	75	-	-	1	1	1	10.54**	-	-	-	Sharp
Methanol	R,I,A,C	6000	-	250 [NIOSH; ACGIH; skin]	200	200 [skin]	200	10.84**	12	1000	-	Pungent
Methyl Ethyl Ketone Peroxide	R,I,C	ND	0.2 [NIOSH; ACGIH] 0.7 [OSHA]	-	-	-	-	-	-	-	-	Characteristic odor
Methyl Chloroform (1,1,1-TCA)	R,I,C	700	350 [NIOSH, 15-min]	450 [ACGIH]	350	350	Ca	11.00**	105	20-100	-	Chloroform-like
Methylene Chloride (Dichloromethane, Methylene dichloride)	R,I,A,C	Ca [2300]	-	125	25	50	Ca	11.32**	100	25-50	E 5000	Chloroform-like
Methyl Mercaptan	R,C	150	10 [OSHA] 0.5 [NIOSH, 15-min]	-	-	0.5	-	9.44	-	-	-	Garlic, rotten cabbage
MIBK (Hexone)	R,I,C	500	-	75 [NIOSH; ACGIH]	100	50	50	9.30	-	-	-	Pleasant
Naptha (coal tar)	R,I,C	1000	-	-	100	400	100	-	-	-	-	Aromatic
Naphthalene	R,A,I,C	250	-	15 [NIOSH; ACGIH]	10	10	10	8.12	-	0.3	E 15	Mothball-like
Octane	R,I,C	1000	385 [NIOSH, 15-min]	-	500	300	75	9.82	80	48	-	Gasoline-like
Pentachlorophenol	R,A,I,C	2.5 mg/m^3	-	-	0.5 mg/m^3 [skin]	0.5 mg/m^3 [skin]	0.5 mg/m^3 [skin]	-	-	-	-	Pungent when hot, benzene-like
Phenol	R,A,I,C	250	15.6 [NIOSH, 15-min]	-	5 [skin]	5 [skin]	5 [skin]	8.50	-	0.04	E.N.T. 68	Sweet, acrid
Propane	R,C	2100	-	-	1000	1000	1000	11.07**	80	1600	-	Odorless (commonly smells foul due to additive for odor detection)
Stoddard Solvent (Mineral Sprits)	R,Cl,I	20000 mg/m^3	1800 mg/m^3 [NIOSH, 15-min]	-	500	100	350 mg/m^3	-	-	1	E 400	Kerosene-like
Styrene	R,I,A,C	700	200 [OSHA]	100 [NIOSH]; 600 [OSHA, 5-min max peak in any 3 hours]; 40 [ACGIH]	100	20	50	8.40	85	0.047	E 200-400	Sweet, floral
1,1,2,2-Tetrachloroethane	R,I,A,C	Ca [100]	-	-	5 [skin]	1 [skin]	1 [skin]	11.10**	100	1.5	-	Pungent, chloroform-like
Tetrachloroethylene (Perchloroethylene, Perc, PCE)	R,I,A,C	Ca [150]	200 [OSHA]	300 [OSHA, 5-min max peak in any 3-hours]; 100 [ACGIH]	100	25	Ca	9.32	70	4.68	N.T513-690	Chloroform-like
Toluene	R,A,I,C	500	300 [OSHA]	150 [NIOSH]; 500 [OSHA, 10-min max peak]	200	50	100	8.82	110	2.14	E300-400	Sweet, pungent, benzene-like
Trichloroethylene (TCE)	R,I,A,C	Ca [1000]	200 [OSHA]	300 [OSHA, 5-min max peak in any 2-hours]; 100 [ACGIH]	100	50	Ca	9.45	70	21.4	-	Chloroform-like
1,2,3-Trimethylbenzene	R,I,C	ND	-	-	-	-	25	8.48	-	-	-	Distinctive, aromatic
1,2,4-Trimethylbenzene	R,I,C	ND	-	-	-	-	25	8.27	-	-	-	Distinctive, aromatic
1,3,5-Trimethylbenzene	R,I,C	ND	-	-	-	-	25	8.39	-	-	-	Distinctive, aromatic
Turpentine	R,A,I,C	800	-	-	100	20	100	-	-	200	E.N 200	Pine-like
Vinyl Chloride	R,C	Ca [ND]	5 [OSHA, 15-min]	-	1	1	Ca	9.99	-	3000	-	Pleasant odor at high concs.
Xylenes	R,A,I,C	900	-	150 [NIOSH, ACGIH]	100	100	100	8.56 (m- and o-) 8.44 (p-)	111/116	1.1	E.N.T. 200	Aromatic

TABLE 1
OCCUPATIONAL EXPOSURE LIMITS (CONCENTRATIONS IN AIR)

(CIRCLE CONTAMINANTS OF CONCERN, WRITE ADDITIONAL CONTAMINANTS AND EXPOSURE ON LAST PAGE)

CHEMICAL	ROUTES OF EXPOSURE	IDLH	Ceiling	STEL	PEL	TLV	REL	PID (IP eV)	FID	ODOR THRES-HOLD	IRRITATION THRESHOLD	ODOR DESCRIPTION
DUSTS, MISTS, FUMES, AND MISCELLANEOUS COMPOUNDS												
Asbestos	R	Ca (ND)	-	-	0.1 fiber/cc	0.1 fiber/cc	0.1 fiber/cc	-	-	-	-	-
PCBs-42% Chlorine	R,A,I,C	Ca [5 mg/m^3]	-	-	1 mg/m^3 [skin]	1 mg/m^3 [skin]	0.001 mg/m^3	-	-	-	-	Mild, hydrocarbon
PCBs-54% Chlorine	R,A,I,C	Ca [5 mg/m^3]	-	-	0.5 mg/m^3 [skin]	0.5 mg/m^3 [skin]	0.001 mg/m^3	-	-	-	-	Mild, hydrocarbon
Aluminum - metal dust	R,C	ND	-	-	15 mg/m^3 (total); 5 mg/m^3 (respirable)	10 mg/m^3	10 mg/m^3 (total); 5 mg/m^3 (respirable)	-	-	-	-	-
Aluminum - soluble salts	R,I,C	ND	-	-	2 mg/m^3	2 mg/m^3	2 mg/m^3	-	-	-	-	-
Arsenic- inorganic	R,A,I,C	Ca [5 mg/m^3]	0.002 mg/m^3 [NIOSH, 15-min]	-	0.01 mg/m^3	0.01 mg/m^3	Ca	-	-	-	-	-
Barium:soluble compounds	R,I,C	50 mg/m^3	-	-	0.5 mg/m^3	0.5 mg/m^3	0.5 mg/m^3	-	-	-	-	-
Beryllium	R,C	Ca [4 mg/m^3]	0.005 mg/m^3 [OSHA]; 0.025 mg/m^3 [OSHA, 30-min max peak]; 0.0005 mg/m^3	0.01 mg/m^3 [ACGIH]	0.002 mg/m^3	0.002 mg/m^3	Ca	-	-	-	-	-
Cadmium dusts	R,I	Ca [9 mg/m^3]	-	-	0.005 mg/m^3	0.01 mg/m^3	Ca	-	-	-	-	-
Chromates (Cr(VI) Compounds) & Chromic Acid	R,I,C	Ca [15 mg/m^3]	0.1 mg/m^3 [OSHA]	-	0.001 mg/m^3	0.05 mg/m^3 [water soluble]; 0.01 mg/m^3 [insoluble]	Ca	-	-	-	-	-
Chromium (III) Compounds	R,I,C	25 mg/m^3	-	-	0.5 mg/m^3	0.5 mg/m^3	0.5 mg/m^3	-	-	-	-	-
Chromium Metal	R,I,C	250 mg/m^3	-	-	1 mg/m^3	0.5 mg/m^3	0.5 mg/m^3	-	-	-	-	-
Copper - dust & mist	R,I,C	100 mg/m^3	-	-	1 mg/m^3	1 mg/m^3	1 mg/m^3	-	-	-	-	-
Lead	R,I,C	100 mg/m^3	-	-	0.050 mg/m^3	0.05 mg/m^3	0.050 mg/m^3	-	-	-	-	-
Manganese (compounds and fume)	R,I	500 mg/m^3	5 mg/m^3 [OSHA]	3 mg/m^3 [NIOSH]	-	0.2 mg/m^3	1 mg/m^3	-	-	-	-	-
Mercury & Inorganic Mercury Compounds	R,I,A,C	10 mg/m^3	0.1 mg/m^3 [NIOSH, Skin]; 0.1 mg/m^3 [OSHA]	-	-	0.025 mg/m^3	0.05 mg/m^3 [skin]	-	-	-	-	-
Organo-Mercury Compounds	R,A,I,C	2 mg/m^3	0.04 mg/m^3 [OSHA]	0.03 mg/m^3 [NIOSH]	0.01 mg/m^3	0.01 mg/m^3 [alkyl]; 0.1 mg/m^3 [aryl]	0.01 mg/m^3	-	-	-	-	-
Nickel (metal and compounds)	R,I,C	Ca [10 mg/m^3]	-	-	1 mg/m^3	1.5 mg/m^3 [metal]; 1 mg/m^3 [soluble inorganic compounds]; 1 mg/m^3 [insoluble	0.015 mg/m^3	-	-	-	-	-
Particulate (Not otherwise regulated)	R, C	ND	-	-	15 mg/m^3 (total); 5 mg/m^3 (respirable)	10 mg/m^3 (inhalable); 3 mg/m^3 (respirable)	-	-	-	-	-	-
Portland cement	R,I,C	5000 mg/m^3	-	-	50 mppcf	10 mg/m^3	10 mg/m^3 (total); 5 mg/m^3 (respirable)	-	-	-	-	-
Selenium compounds	R,I,C	1 mg/m^3	-	-	0.2 mg/m^3	0.2 mg/m^3	0.2 mg/m^3	-	-	-	-	-
Silica, crystalline	R, C	Ca [25 mg/m^3 (cristobalie, tridymite) ; 50 mg/m^3 (quartz, tripoli)]	-	-	Dependent on silicon dioxide content of silica (see Appendix C of the NIOSH Pocket Guide to Chemical Hazards, 2005)	Dependent on minerology [see ACGIH 2005 TLVs and BEIs Handbook]	0.05 mg/m^3	-	-	-	-	-
Silver (metal and soluble compounds)	R,I,C	10 mg/m^3	-	-	0.01 mg/m^3	0.1 mg/m^3	0.01 mg/m^3	-	-	-	-	-
Thallium, soluble	R,A,I,C	15 mg/m^3	-	-	0.1 mg/m^3 [skin]	0.1 mg/m^3 [skin]	0.1 mg/m^3 [skin]	-	-	-	-	-
Tin (metal)	R,C	100 mg/m^3	-	-	2 mg/m^3	2	2 mg/m^3	-	-	-	-	-
Tin (organic compounds)	R,A,I,C	25 mg/m^3	-	-	0.1 mg/m^3	0.1 mg/m^3 [skin]	0.1 mg/m^3 [skin]	-	-	-	-	-
Zinc oxide dust & fume	R	500 mg/m^3	15 mg/m^3 [NIOSH, dust]	10 mg/m^3 [NIOSH; ACGIH; fume]	15 mg/m^3 (total dust); 5 mg/m^3 [respirable dust]; 5 mg/m^3 [fume]	2 mg/m^3 [respirable]	5 mg/m^3 (total dust); 5 mg/m^3 [fume]	-	-	-	-	-

NOTES & ABBREVIATIONS:

All units in parts per million (ppm) unless otherwise noted.	IDLH: Immediately dangerous to life and health
R = Respiratory (Inhalation)	Ceiling: Highest allowable instantaneous C = Skin and/or Eye Contact
I = Ingestion	STEL: Short-term exposure limit. Exposure period is 15 minutes unless otherwise indicated
A = Skin Absorption	PEL: OSHA Permissible Exposure Limit (legally-enforceable)
C = Skin Contact	REL: NIOSH Recommended Exposure Limit
-: Not available	PID: Photoionization Detector
ND: Not detectable.	OSHA: United States Occupational Safety and Health Administration
Ca = Carcinogen	NIOSH: National Institute of Occupational Safety and Health
** = Use 11.7 eV lamp	TLV: ACGIH Threshold Limit Value
IP: Ionization potential	ACGIH: American Conference of Governmental Industrial Hygienists
eV: Electrovolts	

Physical Hazards:

Indicate all hazards that may be present for each task. If any of these potential hazards are checked, it is the project manager's responsibility to determine how to eliminate/minimize the hazard to protect onsite personnel.

Copy and paste a checkmark "✓"into appropriate boxes.

Physical Hazard Checklist				
Potential Job Hazards	**Task 1** Excavation Monitoring	**Task 2** Subsurface Exploration	**Task 3** Groundwater Sampling	**Task 4** Soil Vapor Sampling
Confined space entry*				
Underground utilities	✓	✓		
Overhead utilities	✓	✓		
Electrical hazards				
Excavations greater than 4' depth	✓			
Open excavation fall hazards	✓			
Heavy equipment	✓	✓		
Drilling hazards		✓		
Noise (above 85 dBA)	✓	✓		
Traffic concerns				
Extreme weather conditions	✓	✓	✓	✓
Rough terrain for drilling equipment				
Buried drums				
Heavy lifting (more than 50 lbs)			✓	✓
High risk fire hazard				
Poisonous insects or plants				
Water hazards				
Use of a boat				
Lockout/Tagout requirements				
Other: Chemical Exposure	✓	✓	✓	✓

***CONFINED SPACE ENTRY REQUIRES SPECIAL PROCEDURES, PERMITS AND TRAINING AND MUST BE APPROVED BY THE CORPORATE HEALTH & SAFETY MANAGER.**

Potential Activity Hazards and Hazard Controls:

Copy and paste a checkmark “✓” adjacent to potential activity hazards and relevant hazard controls.

POTENTIAL ACTIVITY HAZARDS

Abrasions and Cuts ✓
Access
Asphyxiation
Bacteria
Biological Hazards
Bloodborne Pathogens
Cave Ins
Chemical/Thermal Burns
Chemicals✓
Cold Stress✓
Compressed Gases
Confined Spaces
Congestion
Defective Equipment
Dermatitis
Dropping Materials/Tools to Lower Levels
Drowning or Flowing Water
Electrical Shock
Energized Equipment
Equipment Misuse ✓
Ergonomics
Excavations ✓
Explosions
Fatigue
Fire
Flammability
Flying debris ✓
Foreign Body in Eye ✓
Frostbite/Cold ✓
Fueling and Fuel Storage ✓
Fugitive Dust ✓
Fumes ✓
Generated Wastes ✓
Guards removed
Hazardous Materials ✓
Heat Stress (cramps, exhaustion, stroke)
Heavy Equipment Operation ✓
Heavy Equipment/Stability ✓
Heavy Lifting ✓
High crime area (violence)
High Winds
Hoists, Rigging, Slings, Cables
Housekeeping – Improper ✓
Illumination - Poor
Impact ✓
Inability to Maintain Communication
Inclement Weather ✓
Inclines
Insects/Reptiles
Mold
Moving Equipment, Conveyors or Vehicles ✓
Muddy Site Conditions
New Personnel
Noise ✓
Odor ✓
Overhead Utilities ✓
Overhead Work ✓
Overloaded Equipment
Oxygen deficiency
Pinch Points ✓
Poisonous Plants
Pressure
Pressurized Lines
Radiation
Repetitive Motion ✓
Rigging - Improper ✓
Sharp Objects ✓
Silicosis
Slips, Trips, and Falls ✓
Sprains and Strains ✓
Steam
Sunburn ✓
Surface Water Run-off
Toxicity ✓
Traffic
Underground Utilities ✓
Uneven Terrain
Unsafe Atmosphere
Vibration
Visibility - Poor
Visitors Known/Unknown ✓
VOC Emissions ✓
Weight ✓
Work at Depth
Work at Heights
Work over Water
Working on Ice

HAZARD CONTROLS

Air Monitoring ✓
Appropriate Clothing/Monitoring Of Weather ✓
Appropriate Labels/Signage ✓
Barricades/Fencing/Silt Fencing ✓
Buddy System - Attendant
Chock Blocks ✓
Confined Space Procedures
Decontamination Procedures✓
Derived Waste Management Plan
Drinking Water/Fluids
Dust Abatement Measures ✓
Emergency Action Plan Procedures
Equipment Inspection
Equipment Manuals/Training✓
Exclusion/Work Zones ✓
Exhaust Ventilation
Eye Protection ✓
Fall Protection
Fire Extinguisher ✓
Flotation Devices/Lifelines
Gloves ✓
Ground Fault Interrupter
Grounded Hydraulic Attachments
Grounded Equipment/Tanks
Hand Signal Communication
Hard Hat ✓
Hazardous/Flammable Material Storage
Hearing Protection ✓
High Visibility Safety Vest ✓
Hoses, Access to Water
Hotwork Procedures
Isolation of Energy Sources(Lockout/Tagout)
Machine/Equipment Guards
Manual Lifting Equipment
Police Detail
Proper Lifting Techniques ✓
Proper Tool for Job ✓
Proper Work Position/Tools
Protective Equipment ✓
Radio Communication
Respirator, (Specify Type)
Safety Harness /Lanyard/Scaffold
Security Escort
Sloping, Shoring, Trench Box
Spill Prevention Measures
Spill Kits
Stormwater Control
Traffic Controls Procedures/Methods
Vehicle Inspection
Visitor Orientation Escort
Window Cleaning/Defrost

Safety Meetings

All H&A personnel visiting the site will be given an orientation safety meeting and are required to read and sign this HASP. Daily safety meetings will be conducted onsite and documented on a Health & Safety Tailgate Meeting Form.

Utility Locators and Underground Hazards

Prior to drilling or excavating, Haley & Aldrich staff members will ensure that permission has been gained from the property owner to access the property. Contact site facilities personnel to assist with location of underground utilities. Before marking any proposed exploration location, it is critical that all readily available information on underground utilities and structures be obtained. The estimated location of utility installations, such as gas, electric, fuel, steam, sewer, telephone, fiber optic, water, drainage or any other underground installation that may be expected to be encountered during drilling work, will be identified with the appropriate authority. Appropriate authorities include client representatives, utility companies, nonprofit organizations (e.g., "Dig-Safe), and others.

Heavy Equipment

Staff Members must be especially careful and alert when working with contractors who use heavy equipment, since equipment failure or breakage can lead to accidents and worker injury. Cranes and equipment for drilling, pile driving, test pitting and coring is of special concern. Should these devices fail during operation the likelihood of worker injury is high. Equipment of this nature should be visually inspected and checked for proper working order prior to the commencement of field work. Those that operate heavy equipment must meet all of the requirements to operate heavy equipment. Haley & Aldrich, Inc. staff members that supervise projects or are associated with such high risk projects that involve digging should use due diligence when working with a construction firm. Maintain visual contact with operators at all times and keep out of the strike zone whenever possible. Always approach heavy equipment with an awareness of the swing radius and traffic routes of each piece of equipment and never go beneath a hoisted load. High-visibility safety vests must be worn onsite at all times. Avoid fumes created by heavy equipment exhaust.

Noise Reduction

Site activities in proximity to heavy equipment often expose workers to excessive noise. It is anticipated that situations may arise when noise levels may exceed the OSHA Action Level of 85 dBA in an 8-hour time-weighted average (TWA). An example of this possibility is working in close proximity to the subcontractor during drilling activities onsite. If excessive noise levels occur, efforts will be made to control this by issuance of earplugs to all personnel and by implementing a system of hand signals understood by all.

Work Site Access & Controls (Standard Precautions)

The work area is restricted to authorized personnel. Clearly define the work area before beginning activities for the day. Caution tape and safety cones must be provided as necessary for vehicular traffic concerns and to protect passers-by. Proper housekeeping is essential to avoid creating hazards to pedestrian and vehicular traffic. Excavations in progress will not be left unattended at any time. Running equipment will not be left unattended at any time. Test borings and test pits will be backfilled upon completion and the area restored. Drilling equipment will be secured above test borings during work stoppages and at the end of the workday.

Site Security

The site will be restricted by a locked chain-link fence.

Weather Related Hazards

H&A employees and their subcontractors should be aware of potential health effects and/or physical hazards of working during inclement weather. Refer to OP1003-Cold Stress and OP1015-Heat Stress for discussion on weather hazards.

5. PROTECTIVE MEASURES

Personal Protective Equipment Requirements:

Copy and paste a checkmark "✓"into appropriate boxes.

Required PPE	**Task 1**	**Task 2**	**Task 3**	**Task 4**
	Excavation Monitoring	Subsurface Exploration	Groundwater Sampling	Soil Vapor Sampling
Hard hat	✓	✓		
Safety glasses w/side shields	✓	✓	✓	✓
Steel-toe footwear	✓	✓	✓	
Hearing protection (plugs, muffs)	✓	✓		
Tyvek ™ coveralls			✓	
PE-coated Tyvek™ coveralls				
Boots, chemical resistant	✓	✓	✓	
Boot covers, disposable				
Leather work gloves	✓	✓		
Inner gloves - Nitrile	✓	✓	✓	✓
Outer gloves - Enter material here				
Tape all wrist/ankle interfaces				
Half-face respirator*				
Full-face respirator*				
Organic vapor cartridges				
Acid gas cartridges				
Other cartridges: Enter type here				
P-100 (HEPA) filters				
Face shield				
Personal Flotation Device (PFD)				
High-Visibility Safety Vest	✓	✓		
Other:				
Level of protection required [C or D]:	D Mod.	D Mod.	D Mod.	D Mod.

* In the event of respirator use, H&A staff must be medically qualified, fit tested and clean shaven with no facial hair that will interfere with the seal.

The required PPE checked in any box above must be on site during the task being performed. Work shall not commence unless the required PPE is present.

Site Safety Equipment Requirements:

Check all items that are required to be on site.

Site Safety Equipment

☐ Fire Extinguisher
☐ Air horn/signaling device
☐ Ladder
☐ Two-way radio
☐ Other Specify

✓ First Aid Kit
✓ Cellular Phone
☐ Barricade tape
✓ Safety Cones

☐ Flashlight
☐ Duct tape
☐ Drum dolly
☐ Harness/Lanyard

The required equipment checked in any box above must be on site during the task being performed. Work shall not commence unless the equipment is present.

6. MONITORING PLAN AND EQUIPMENT

Is air/exposure monitoring required at this work site for personal protection? YES

Is perimeter monitoring required for community protection? YES

Monitoring/Screening Equipment **Requirements:**

Check all items that are required to be on site.

Required Monitoring/Screening Equipment

✓ Photo-Ionization Detector (PID) 10.6eV
☐ Photo-Ionization Detector (PID) 11.7eV
☐ Photovac Micro Tip (PID) 10.6eV
☐ Organic Vapor Monitor (FID)
☐ Photovac Gas Chromatagraph (GC)
☐ Combustible Gas Indicator (CGI) (LEL)
☐ Multiple Gas Detector LEL/O2/H2S/CO
✓ Dust Monitors (RAMs)
☐ Colorimetric tubes
☐ Other

The required equipment checked in any box above must be on site. Work shall not commence unless the equipment is present.

Standard Action Levels and Required Responses:

Exposure Guidelines for common contaminants are listed in Table 1 - Occupational Exposure Limits in the Chemical Hazards section above.

Requirements for PPE upgrades based on monitoring are in Table 2 - Monitoring Methods, Action Levels and Protective Measures following the Specific Monitoring Requirements section below.

Action levels for readings obtained with a multiple gas detector are listed below.

Instrument	Normal	Operating levels	Action levels – required responses
Oxygen Meter	20.9%	Between 19.5-23.5%	Below 19.5 %: leave area, requires supplied air Above 23.5%: leave area, fire hazard
CGI	0%	Less than 10%	Greater than 10%: fire/explosion hazard; cease work
Hydrogen Sulfide	0%	Less than 10 ppm.	Greater than 15 ppm (or 10 ppm for 8 hrs) requires supplied air respirator
Carbon Monoxide	0%	Less than 25 ppm	Greater than 200 ppm for 1 hour (or 25 ppm for 8 hrs) requires supplied air respirator

Standard Air Monitoring Plan (Volatiles):

- Prior to the beginning of work obtain background readings with the PID away from the site.
- Monitor the breathing zone when site soil is exposed (e.g., while drilling or excavating is occurring, etc.) with the PID.
- Monitoring should be conducted most frequently (e.g., every 15-30 minutes) when drilling or excavation first begins in a particular area and when soil is removed from the hole. After this, and if no exceedances of exposure limits are noted (see below), monitoring may be conducted less frequently (e.g., every 60 minutes).
- H&A general exposure limits will be used when a mixture of potentially volatile chemicals are suspected to be present in soil at the site.

In summary, if a reading of 10 ppm above background is detected with the PID for 5 minutes or longer, back away for a few minutes. Screen the air again after any vapors/gases have been given a chance to dissipate. If 10 ppm above background is still noted, evacuate the area and call the LHSC and PM for further guidance.

- Record monitoring data and PPE upgrades in field book or on Record of Field Monitoring form and maintain with project files.

- Air monitoring for exposure should be based on the frequency established under the Standard Air Monitoring Plan or under the Specific Monitoring Requirements. Record time, location and results of monitoring and actions taken based upon the readings.

Standard Dust Control Measures and Monitoring Plan:

Dust Control Measures:

It is anticipated that exposure to airborne dust can be mitigated during work operations as necessary to control dust emissions by means of limiting the area of exposed soils and through the use of water sprays. If dust emissions cannot be controlled by these standard measures, additional measures may be employed such as the use of a tackifier (if approved) to stabilize soil exposures or by covering exposed soil and stockpiles with tarpaulins, plastic sheeting or geotextile fabric. Otherwise cease work immediately and contact the Project Manager or the Corporate Health & Safety Manager for assistance. It is not permissible for dust emissions to escape from the site at any time and perimeter dust monitoring may be required to insure public safety.

Dust Monitoring:

Respirable Aerosol Monitors (RAM) can be used to monitor total dust levels in work zones and/or at the site perimeter. These instruments do not give specific readings of contaminant concentration (e.g. metals, asbestos, etc.). Depending upon the contaminants present, it may be mandatory for all workers to upgrade to level C protection using a half-face air-purifying respirator with HEPA (P-100) filters if dust levels cannot be adequately controlled during any of the on-site tasks. The H&A Site Safety Officer (SSO) will determine PPE upgrades based upon visual determination as necessary and the OSHA PEL for each known or suspected contaminant. The OSHA PEL/STEL for Respirable Nuisance Dust is 5 mg/m^3 (8 hour TWA).

Action levels for fugitive dust at the site perimeter are based upon the daily PM_{10} dust standard of 0.15 mg/m^3 in the National Ambient Air Quality Standard for Inhalable Dust (NAAQS).

Personal dust monitoring using an industrial hygiene pump and a filter cassette may be conducted on each day of operations. In such cases samples are collected from workers with the greatest potential dust exposure and analyzed by an accredited laboratory for specific contaminants.

Specific Monitoring Requirements:

Monitoring requirements and frequency is indicated by task and location below.

VOC Monitoring:
Applicable tasks: # 1, 2
Frequency: Continuously in worker breathing space when soil is disturbed.
Description: In the event that soil excavation occurs, the soils will be screened using a PID (Mini Rae 2000) for the presence of volatiles

VOC Monitoring:
Applicable tasks: # 3
Frequency: Continuously in worker breathing space during groundwater sampling.
Description: Air will be screened using a PID (Mini Rae 2000) for the presence of volatiles

Community Particulate and VOC Monitoring:
Applicable tasks: # 1, 2
Frequency: 1 reading every 15 minutes from each monitoring station.
Description: In accordance with NYSDOH generic CAMP guidance for both VOCs and particulates. Refer to the site-specific Community Air Monitoring Program

TABLE 2
Last Revised September 2002

MONITORING METHOD, ACTION LEVELS AND PROTECTIVE MEASURES

INSTRUMENT	HAZARD	ACTION LEVEL	ACTION RESPONSE
Respirable Dust Monitor	Total Particulates	> 5 mg/m^3	Upgrade to Level C Protection
OVA, HNU(2), Photovac Microtip	Total Organic Vapors	Background 10 ppm > background or lowest OSHA permissible exposure limit, whichever is lower, or as modified for this task. Sustained for >5 minutes in the breathing zone. 50 ppm over background, unless lower values required due to respirator protection factors	Level D Protection Upgrade to Level C - site evacuation may be necessary for specific compounds Cease work; upgrade to Level B(3) may be required
Explosimeter(4) (LEL)	Flammable/Explosive Atmosphere	<10% Scale Reading 10-15% Scale Reading >15% Scale Reading	Proceed with work Monitor with extreme caution Evacuate site
0xygen Meter(5)	Oxygen-Deficient Atmosphere	19.5% - 23.5% 0_2 < 19.5% 0_2 > 23.5% 0_2	Normal - Continue work Evacuate site; oxygen deficient Evacuate site; fire hazard
Radiation Meter(6)	Ionizing Radiation	0.1 Millirem/Hour > 1 Millirem/Hour	If > 0.1, radiation sources may be present(7) Evacuate site; radiation hazard
Drager Tubes	Vapors/Gases	Species Dependent > 1 ppm vinyl chloride > 1 ppm benzene > 1 ppm 1,1-DCE	Consult Table 1 or other resources for concentration toxicity/detection data. Upgrade to Level C if concentration of compounds exceed thresholds shown at left; May need to cease work if other levels exceeded - site specific
Gas Chromatograph (GC)	Organic Vapors	3 ppm total OV > background or > lowest specific OSHA permissible exposure limit, whichever is lower	On-site monitoring or tedlar bag sample collection for off-site/laboratory analysis

Notes:

1. Monitor breathing zone.
2. Can also be used to monitor some inorganic species.
3. Positive pressure demand self contained breathing apparatus
4. Lower explosive limit (LEL) scale is 0-100%. LEL for most gasses is 15%.
5. Normal atmospheric oxygen concentration at sea level is 20%
6. Background gamma radiation is ~0.01-0.02 millirems/hour.
7. Contact H&A Health and Safety staff immediately.

Calibration and Use of Equipment:

Calibrate all monitoring equipment in accordance with manufacturers requirements, H&A calibration (OP) standards and site specific requirements (e.g., at the beginning and end of each work day). Calibration of equipment shall be documented in the field notes or Daily Field Report (DFR). Documentation should include:

- Date/time
- Zero reading before calibration
- Concentration of calibration gas
- Reading obtained with calibration gas before adjusting span\
- Final reading obtained with calibration gas after adjusting span

7. DECONTAMINATION AND DISPOSAL METHODS

Personal Hygiene Safeguards:

The following minimum personal hygiene safeguards shall be adhered to:

- No smoking or tobacco products on any Hazwoper project.
- No eating or drinking in the exclusion zone.
- It is required that personnel present on site wash hands before eating, smoking, taking medication, chewing gum/tobacco, using the restroom, or applying cosmetics and before leaving the site for the day.
- It is recommended that personnel present on site shower or bathe at home at the end of each day of working on the site.

Standard Personal Decontamination Procedures:

Outer gloves and boots should be decontaminated periodically as necessary and at the end of the day. Brush off solids with a hard brush and clean with soap and water or other appropriate cleaner whenever possible. Remove inner gloves carefully by turning them inside out during removal. Wash hands and forearms frequently. It is good practice to wear work-designated clothing while on-site which can be removed as soon as possible. Non-disposable overalls and outer work clothing should be bagged onsite prior to laundering. If gross contamination is encountered on-site contact the Project Manager and LHSC to discuss proper decontamination procedures. The steps required for decontamination will depend upon the degree and type of contamination but will generally follow the sequence below.

1. Remove and wipe clean hard hat
2. Rinse boots and gloves of gross contamination
3. Scrub boots and gloves clean
4. Rinse boots and gloves
5. Remove outer boots
6. Remove outer gloves
7. Remove Tyvek coverall
8. Remove respirator, wipe clean and store
9. Remove inner gloves

Location of Decontamination Station:

N/A

Disposal of PPE:

PPE that is not grossly contaminated can be bagged and disposed in regular trash receptacles. PPE that is grossly contaminated must be bagged (sealed) and field personnel should communicate with the Project Manager to determine proper disposal.

Tools & Equipment Decontamination:

All decontamination should be conducted at the site and not at the office or lab.

Check all equipment and materials needed for decontamination of tools and other equipment.

☐ Acetone
✓ Alconox Soap
✓ Brushes
✓ Disposal Bags
✓ 5 gal. Buckets
✓ Distilled Water
✓ Drums for Water
☐ Hexane
☐ Methanol
✓ Paper towels
☐ Poly sheeting
☐ Steam cleaner
☐ Tap water
☐ Washtubs

Standard Equipment Decontamination Procedures:

Air monitoring instrumentation and delicate instruments that are difficult to decontaminate or sensitive to water should be protected from contamination during use through the use of plastic sheeting. To the extent possible, efforts should be taken to limit the degree of contamination to hand tools and sampling equipment during use. Proper PPE must be worn while performing decontamination, including the wearing of chemical safety goggles and gloves. Storage or transport of decontamination solvents in squirt bottles is not permitted as they may discharge their contents upon ambient temperature change or leak if overturned. Standard equipment decontamination procedures are as follows. Any additional requirements are listed under Specific Equipment Decontamination Procedures below.

Pretreatment of heavily contaminated equipment may be conducted as necessary:

1. Remove gross contamination using a brush or wiping with a paper towel
2. Soak in a solution of Alconox and water (if possible)
3. Wipe off excess contamination with a paper towel
4. Clean with hexane or acetone and allow to dry

Standard decontamination procedure:

1. Wash using a solution of Alconox and water
2. Rinse with potable water
3. Rinse with methanol
4. Rinse with distilled water

Specific Equipment Decontamination Procedures:

1. Wash using a solution of Alconox and water
2. Rinse with potable water
3. Dispose of dedicated sampling equipment in drums

Standard Disposal Methods for Contaminated Materials:

Excess sample solids, decontamination materials, rags, brushes, poly sheeting, etc. that are determined to be free of contamination through field screening can usually be disposed into client-approved, on-site trash receptacles. Uncontaminated wash water may be discarded onto the ground surface away from surface water bodies in areas where infiltration can occur. Contaminated materials must be segregated into liquids or solids and drummed separately for off site disposal. Any additional requirements are listed under Specific Disposal Methods for Contaminated Materials below.

Specific Disposal Methods for Contaminated Materials:

If onsite trash receptacles are not available, excess sample solids, decontamination materials, rags, brushes, poly sheeting, etc. that are determined to be free of contamination through field screening will be disposed of in drums staged onsite for future disposal.

Disposal Methods for Contaminated Soils:

Contaminated soil cuttings and spoils must be drummed for disposal off-site unless otherwise specifically directed. Soil cuttings and spoils determined to be free of contamination through field screening can usually be returned to the boreholes or excavations from which they came. Any additional requirements are listed under Specific Disposal Methods for Contaminated Soils below.

Specific Disposal Methods for Contaminated Soils:

Large quantities of soils removed for excavation purposes will be staged on and beneath poly-sheeting prior to characterization and offsite disposal.

8. CONTINGENCY PLANNING

How H&A responds to an emergency depends on whether we are at an active facility or another other location. Many active facilities have very stringent requirements for the mitigation of emergencies. Therefore, the PM is responsible for identifying any specific requirements from the client contact.

As a rule of thumb, the following are H&A's basic responses to handling Emergencies. Typically, H&A does not mitigate emergencies. When Clients request or require specific functions such as First Aid/CPR trained personnel on site, we typically conform. Before any Project Manager or LHSC agrees to something more stringent, many issues should be considered such as training, safety, feasibility of an adequate response, insurance requirements, and much more.

Fire:

- Major Fires - Major fires will be mitigated by the local fire departments or by client's on-site fire/emergency response departments.
- Incipient Stage Fires -Incipient stage fires will be extinguished by on-site personnel using fire extinguishers. Only those who have received annual training may use an extinguisher.

Medical:

All H&A employee injuries and illnesses will be documented using the Supervisor's Accident / Injury / Near Miss Report (SAIR). This form is available on the Intranet.

- First Aid - First aid will be addressed using the on-site first aid kit. H&A employees are not required or expected to administer first aid/CPR to any H&A, Contractor, or Civilian personnel at any time and it is H&A's position that those who do are doing it on their behalf and not as a function of their job.
- Trauma - Based upon the nature of the injury, the injured party may be transported to the nearest hospital or emergency clinic by on-site personnel or by ambulance. First response to a trauma incident is to call 911 or facility security. H&A staff members are expected to assist in ancillary roles only such as directing ambulances to the scene. It is the discretion of the staff member on site whether an ambulance should be procured in remote locations where ambulance services will not be effective.

Hazardous Materials Spill:

- Small incidental spills (e.g. pint of motor oil) caused by H&A employees and/or by the contractor will be mitigated by the H&A staff member and/or the contractor.
- Large spills (e.g. large leak from heavy equipment fuel tank). The contractor is responsible for cleanup. In the event that it posses a serious human or environmental threat, the local Fire Department and/or client emergency response department will be contacted. Once emergency has been mitigated typically clean up will be provided by a vendor.

Rescue:

H&A employees will not enter any confined spaces for rescue purposes.

Weather Related Emergencies:

H&A employees and their subcontractors should be aware of potential health effects and/or physical hazards of working during inclement weather. If applicable, safeguards against the effects and hazards of heat stress, cold stress, frostbite, thunderstorms, and lightning, etc., should be included with the section pertaining to physical hazards in this HASP.

Evacuation Alarms:

Evacuation alarms and/or emergency information will be communicated among personnel on site through verbal communication.

Emergency Services:

Emergency services will be summoned via on-site or cellular phone.

Emergency Evacuation Plan:

The site evacuation plan is as follows:

1. Establish a designated meeting area to conduct a head count in the event of an emergency evacuation.
2. If the work area is not near an emergency exit, exit via the closest route and meet at the designated meeting area.
3. Notify emergency response personnel (fire, police and ambulance) of the number of missing or unaccounted for employees and their suspected location.
4. Administer first aid will in the meeting area as necessary.

Under no circumstances should any personnel re-enter the site area without the approval of the corporate H&S manager, the H&S coordinator, and the fire department official in charge.

9. HEALTH & SAFETY PLAN ACKNOWEDGMENT FORM

Note: Only H&A employees sign this page.

I hereby acknowledge receipt and briefing on this Health & Safety Plan prior to the start of on-site work and declare that I understand and agree to follow the provisions and procedures set forth herein while working on this site.

PRINTED NAME	SIGNATURE	DATE

10. PRE-JOB SAFETY CHECKLIST

The following checklist is designed to help Project Managers verify that all Health & Safety requirements are satisfied for projects involving site work and to aid in the preparation of the site-specific HASP.

Please initial and date the appropriate box once each requirement has been satisfied prior to commencement of site work.

#	Project H&S Requirements	Approval by PM or LHSC (initial each box or place NA)	Date Approved
1	Project site history has been researched and summarized, current site conditions have been determined and documentation of previous investigations, risk analyses and chemical data has been assembled and summarized.		
2	Project work scope has been outlined and potential chemical and physical hazards associated with work tasks have been identified.		
3	Task Safety Analysis has been performed and attached to the HASP.		
4	H&A personnel to be involved with the project have been identified and are current with medical surveillance, OSHA 40 hour and 8 hour refresher training. Hazwoper site supervisor requirements are satisfied.		
5	Additional training requirements have been met: e.g. nuclear density gauge, DOT, Confined Space Entry, Competent Person Training for Excavation, OSHA 10 hour certification, Railway Safety Training, etc.		
6	H&A personnel that may be required to wear a respirator are medically qualified and have current certification of fit testing.		
7	Client's additional H&S requirements have been met: e.g. facility safety orientations, safety documentation, meetings, special PPE requirements		
8	H&A subcontractors have met H&A's minimum requirements including: current OSHA 40 hour training, medical surveillance, written HASP, insurance, MSDSs.		
9	MSDSs are on site and available for chemicals on site.		
10	Safety equipment is available: e.g. flashlight, telephone, ladders, traffic cones, barricade tape, fire extinguisher, first aid kit, PPE, respiratory protection, air and dust monitoring instrumentation (calibrated), personal flotation device (PFD), 90' life line with ring, decontamination equipment, etc.		
11	HASP and supporting documentation is complete and signed by all members.		

APPENDIX A
HASP Amendment Form

This Appendix is to be used whenever there is an immediate change in the project scope that would require an amendment to the HASP. For project scope changes associated with “add-on” tasks, the changes must be made in the body of the HASP. Before changes can be made, a review of the potential hazards must be initiated by the H&A Project Manager.

Amendment No.	
Site Name:	
Work Assignment No.:	
Date:	
Type of Amendment:	
Reason for Amendment:	
Alternate Safeguard Procedures:	
Required Changes in PPE:	

Project Manager Signature: ________________________________ Date: __________________

Local Health and Safety Coordinator: ________________________ Date: __________________

This original form must remain on site with the original HASP. If additional HASPs are in the field, it is the Project Manager’s responsibility to forward a signed copy of this amendment to those who have copies.

APPENDIX B
Issuance and Compliance
Site Safety Officer Role and Responsibilities
Training Requirements

This Health & Safety Plan (HASP) has been prepared in accordance with the requirements of Title 29 the Code of Federal Regulations (CFR) Section 1910.120/1926.65 to provide guidance for the protection of onsite personnel from physical harm and chemical exposure while working at the subject site.

The specific requirements of this HASP include precautions for hazards that exist during this project and may be revised as new information is received or as site conditions change.

- This HASP must be signed by all Haley & Aldrich (H&A) staff members who will work on the project, including H&A visitors. By signing the Health and Safety Plan Acknowledgement Form personnel are acknowledging that they are aware of the specific hazards of the site and agree to follow the provisions and procedures required to safeguard themselves and others from those hazards.
- This HASP or a current signed copy must be retained at the site at all times when H&A staff members are present.
- Deviations from this HASP are not permitted without prior approval from the above signed. Unauthorized deviations may constitute a violation of H&A company procedures/policies and may result in disciplinary action.
- Revisions to this HASP must be outlined within the contents of the HASP. If immediate or minor changes are necessary, the LHSC and H&A Project Manager may use Appendix A (HASP Amendment Form), located in the back of this HASP. Any revision to the HASP requires personnel to be informed of the changes and that they understand the requirements of the change.
- This HASP is not for H&A Subcontractor use. Each subcontractor engaged is responsible for all matters relating to the health and safety of their personnel and the safe operation of their equipment. This HASP will be made available as a reference so that subcontractors are informed of the potential hazards associated with the site to the extent we are aware. Subcontractors must develop their own HASP which must be, at a minimum, at least as protective as this HASP.
- This Site Specific HASP provides only site-specific descriptions and work procedures. General safety and health compliance programs in support of this HASP (e.g., injury reporting, medical surveillance, personal protective equipment (PPE) selection, etc. are described in detail in the H&A Corporate Health and Safety Program Manual and within Standard Operating Procedures (OPs). Both the manual and OPs can be located on the Company Intranet. When appropriate, users of this HASP should always refer to these resources and incorporate to the extent possible. The manual and OPs are available to clients and regulators per request.

Site Safety Officer:

The site safety officer (SSO) is defined as the individual responsible to the employer with the authority and knowledge necessary to implement the HASP and verify compliance with applicable health and safety requirements.

The H&A Project Manager may designate any person as the site safety officer (SSO) and determines the order of authority on site. Usually the highest ranking person on site is the SSO. A site safety officer must be on site at all times. When none of the designated SSOs are present on site, the senior person for H&A on site will default to the SSO. This project has identified the following hierarchy for SSO.

1. TBD

2. Enter name of site safety officer here

Site Safety Officer Roles and Responsibilities:

The SSO is responsible for field implementation of this HASP and enforcement of safety rules and regulations. SSO functions include:

- Act as H&A's liaison for health and safety issues with client, staff, subcontractors, and agencies.
- Verify that utility clearance has been performed by H&A subcontractors.
- Oversee day-to-day implementation of the HASP by H&A employees on site.
- Interact with subcontractor project personnel on health and safety matters.
- Verify use of required PPE as outlined in the HASP.
- Inspect and maintain H&A safety equipment, including calibration of air monitoring instrumentation used by H&A.
- Perform changes to HASP and document in Appendix A of the HASP as needed and notify appropriate persons of changes.
- Investigate and report on-site accidents and incidents involving H&A and its subcontractors.
- Verify that site personnel are familiar with site safety requirements (e.g., the hospital route and emergency contact numbers).
- Report accidents, injuries, and near misses to the H&A PM and Local Health and Safety Coordinator (LHSC) as needed.

The SSO will conduct initial site safety orientations with site personnel (including subcontractors) and conduct toolbox and safety meetings thereafter with H&A employees and H&A subcontractors at regular intervals and in accordance with H&A policy and contractual obligations. The SSO will track the attendance of site personnel at H&A orientations, toolbox talks, and safety meetings. Subcontractors will document training and provide training rosters to the H&A SSO.

The SSO will report accidents such as injury, overexposure, or property damage to the Local Health and Safety Coordinator, to the Project Manager, and to the safety managers of other on-site consultants and contractors. The SSO will consult with the safety managers of other on-site consultants and subcontractors on specific health and safety issues arising over the course of the project, as needed.

Health and Safety Training Requirements:

Personnel will not be permitted to supervise or participate in field activities until they have been trained to a level required by their job function and responsibility. H&A staff members, contractors, subcontractors, and consultants who have the potential to be exposed to contaminated materials or physical hazards must complete the training described in the following sections.

The H&A Project Manager/LHSC will be responsible for maintaining and providing to the client/site manager documentation of H&A staff members' compliance with required training as requested. Records shall be maintained per OSHA requirements.

40-Hour Health and Safety Training

The 40-Hour Health and Safety Training course provides instruction on the nature of hazardous waste work, protective measures, proper use of personal protective equipment, recognition of signs and symptoms which might indicate exposure to hazardous substances, and decontamination procedures. It is required for all personnel working on-site, such as equipment operators, general laborers, and supervisors, who may be potentially exposed to hazardous substances, health hazards, or safety hazards consistent with 29 CFR 1910.120.

8-hour Annual Refresher Training

Personnel who complete the 40-hour health and safety training are subsequently required to attend an annual 8-hour refresher course to remain current in their training. When required, site personnel must be able to show proof of completion (i.e., certification) at an 8-hr refresher training course within the past 12 months.

8-Hour Supervisor Training

On-site managers and supervisors directly responsible for, or who supervise staff members engaged in hazardous waste operations, should have eight additional hours of Supervisor training in accordance with 29 CFR 1910.120. Supervisor Training includes, but is not limited to, accident reporting/investigation, regulatory compliance, work practice observations, auditing, and emergency response procedures.

Additional Training for Specific Projects

H&A personnel will ensure their personnel have received additional training on specific instrumentation, equipment, confined space entry, construction hazards, etc., as necessary to perform their duties. This specialized training will be provided to personnel before engaging in the specific work activities including:

- Client specific training or orientation
- Competent person excavations
- Confined space entry (entrant, supervisor, and attendant)
- Heavy equipment including aerial lifts and forklifts
- First aid/ CPR
- Diving certification
- Use of fall protection
- Commercial drivers license
- Use of nuclear density gauges
- Asbestos awareness

APPENDIX E

Community Air Monitoring Plan

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

June 20, 2000

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APPENDIX F

Citizen Participation Plan

New York State Department of Environmental Conservation

Brownfield Cleanup Program

Citizen Participation Plan

for the

Former American Linen Supply Company Facility

822 Seneca Street
City of Buffalo
Erie County, New York

May 2011

Contents

* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **AmeriPride Services, Inc.**
Site Name: **Former American Linen Supply Company Facility**
Site Address: **822 Seneca Street**
Buffalo, New York 14210
Site County: **Erie**
Site Number: **C915241**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants that conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at: http://www.dec.ny.gov/chemical/8450.html .

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interest in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment

- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process

- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process

- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community

- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods. The site contact list includes, at a minimum:

- federal representative (U.S. House of Representatives)
- NYS Senator and Assemblyperson
- chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- county and/or municipal agency directors of health, emergency services, economic development, and planning departments
- industrial development agency directors
- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- location(s) of reports and information;
- local print, radio, and television media.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

For more information about TAGs, go online at http://www.dec.ny.gov/regulations/2590.html

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page. *Note that for the Former American Linen Supply Company Facility Brownfield site, the Brownfield Cleanup Application and Remedial Investigation Work Plan will be submitted to the NYSDEC concurrently at the approval of the NYSDEC. Therefore, in accordance with the Draft Brownfield Cleanup Guidance, one 45-day public comment period will be conducted for the public's review of both documents in lieu of two 30-day public comment periods).*

Citizen Participation Requirements (Activities)	Timing of CP Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repositories	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period*	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement:	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period*	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about proposed RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that summarizes the Final Engineering Report • Distribute fact sheet to site contact list announcing issuance of Certificate of Completion (COC)	At the time NYSDEC approves Final Engineering Report. These two fact sheets are combined if possible if there is not a delay in issuing the COC.

**** The Application and RI Work Plan were submitted to the NYSDEC concurrently per NYSDEC approval. As such, only one 45-day public comment period is being conducted for the review of both documents (per the 2004 Draft Brownfield Cleanup Guidance).***

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

Based on investigations conducted at the site to-date, two general environmental concerns have been identified:

- Low levels of Polycyclic Aromatic Hydrocarbons (compounds typically associated with petroleum products) have been identified in urban fill at the site. The presences of these compounds are likely the result of typical constituents found in urban fill and/or possible former site uses. The presence of these chemicals in urban fill does not at this time present a significant health risk to neighboring properties. During investigation and remediation activities, there is potential for these chemicals to migrate via dust; however during the course of those activities, a community air monitoring plan will be enacted to mitigate dust migration.

- Chlorinated volatile organic compounds (dry-cleaning related chemicals) have been identified in groundwater on the southern portion of the site. The presence of these chemicals are anticipated to be the result of former dry cleaning operations at the site and release of chemicals potentially due to releases from storage tanks, surface releases, and/or poor housekeeping. The City of Buffalo is connected to municipal water and sewer and therefore groundwater is not used as a potable water source. There is potential for impacted vapor to be released from the impacted groundwater plume, which could impact the indoor air in nearby properties. The potential for vapor migration and intrusion is being investigated as part of site investigation activities.

During investigation and remediation activities, multiple efforts will be made to prevent migration of impacted site materials. Those efforts include but are not limited to:

- Fencing the site to restrict access
- Having dedicated ingress and egress points with decontamination stations for trucks entering and existing the site
- Dust control measures
- Monitoring the surrounding breathing zone via a Community Air Monitoring Plan
- Covering excavated soil piles, and not allowing pools of standing water (groundwater) to be exposed.

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

The Site is owned by AmeriPride Services, Inc. (formerly American Linen Supply Company), is located at 822 Seneca Street in the City of Buffalo, Erie County, New York and is identified on the City of Buffalo tax maps as being within the parcel with section 122.27, block 1, lot 4. The Site is located on the west side of Lord Street and bound to the north by Seymour Street and the south by Seneca Street. Maps showing the location of the Site are included in Appendix C.

The Site is approximately 2.9 acres and is located in an urban area of mixed use including industrial, commercial, and residential areas. The site is currently zoned for light industrial use. The property is surrounded to the north, west, and portions of the south by residential single and multi-family homes. Industrial/commercial properties exist to the east and remaining southern portions.

The Site itself consists of a vacant industrial building formerly used as an industrial dry cleaning facility and surrounding parking and pavement areas. The building was first developed in 1910 and has been vacant since 2005. Refer to the section below for additional information regarding historical site use.

History of Site Use, Investigation, and Cleanup

The Site building was first developed in 1910. Prior to 1910, the Site is indicated to have been occupied by residential and commercial properties. Between 1910 and 1978, the Site appeared to be used as a book binding and printing facility.

Coverall Service and Supply Co., (Coverall) a uniform cleaning facility, reportedly first occupied the Site in 1978. The facility was used for dry cleaning operations until 1985. Available records indicate that dry-cleaning with tetrachloroethylene (PCE) was conducted at the Site between 1978 and 1985; use and/or storage of PCE were not reported after 1985. The laundry operations occupied the first floor of the Site building as well as portions of the basement. Thorner Sydney Press occupied the second floor of the Site building as well as portions of the basement until 1997. According to a purchase agreement dated 1977, Thorner Sydney Press' lease agreement was initiated in 1965.

In April 2004, laundering operations ceased at the Site building. It was used as a laundry depot from April 2004 to spring 2005 and then as a fleet vehicle maintenance shop until July 2005. Operations moved out of the building at the end of July 2005, and it has been vacant since.

Phase I, Phase II, and groundwater investigation activities were conducted at the site between 2004 and 2009. Investigations were conducted to evaluate the impact from historical industrial operations and the utilization of multiple underground storage tanks. Based on the results of those investigations, the primary impacts to the Site include Polycyclic Aromatic Hydrocarbons (compounds typically associated with petroleum products) identified in urban fill material and dry cleaning-related solvents identified in groundwater on the southern portion of the site.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a **Participant**. This means that the Applicant was the owner of the site at the time of the disposal or discharges of contaminants, or was otherwise liable for the disposal or discharge of the contaminants. The Participant must fully characterize the nature and extent of contamination onsite, as well as the nature and extent of contamination that has migrated from the site. The Participant also must conduct a qualitative exposure assessment, a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for **restricted** purposes. *Note that at this time future property use (commercial, industrial, etc) has not yet been defined.*

To achieve this goal, the Applicant will conduct investigation and cleanup (if necessary) activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant has completed a "partial" site investigation before it entered into the BCP. For the partial investigation, NYSDEC will determine if the data are useable.

The Applicant will conduct an investigation of the site officially called a "remedial investigation" (RI). This investigation will be performed with NYSDEC oversight. The Applicant must develop a remedial investigation workplan, which is subject to public comment.

The site investigation has several goals:

1) define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
2) identify the source(s) of the contamination;
3) assess the impact of the contamination on public health and the environment; and

4) provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

When the investigation is complete, the Applicant will prepare and submit a report that summarizes the results. This report also will recommend whether cleanup action is needed to address site-related contamination. The investigation report is subject to review and approval by NYSDEC.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a Asignificant threat,@ it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a Certificate of Completion (described below) to the Applicant.

or

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a Remedial Work Plan. The Remedial Work Plan describes the Applicant’s proposed remedy for addressing contamination related to the site.

   When the Applicant submits a proposed Remedial Work Plan for approval, NYSDEC would announce the availability of the proposed plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a final engineering report that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the final engineering report. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management may be conducted by the Applicant under NYSDEC oversight, if contamination will remain in place. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An institutional control is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An engineering control is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that is pumping and treating groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A – Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Mr. Jaspal S. Walia, P.E.
Project Manager
NYSDEC Region 9
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, New York 14203
(716) 851-7220

Mr. Mark Baetzhold
Citizen Participation Specialist
NYSDEC Region 9
270 Michigan Avenue
Buffalo, New York 14203

New York State Department of Health (NYSDOH):

Mr. Matthew Forcucci
Project Manager
NYSDOH
584 Delaware Avenue
Buffalo, New York 14202
(716) 847-4385

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Buffalo and Erie County Public Library
1 Lafayette Square
Buffalo, New York 14203
(716) 858-8900
Monday – Friday 8:30am – 3:00pm
Saturday 8:30am – 2:00pm

NYSDEC Region 9 Office
270 Michigan Avenue
Buffalo, New York 14203
(716) 851-7220
(Please Call for Appointment)

Appendix B – Site Contact List

1. **Federal Representative**

U.S. Representative Brian Higgins
Erie County Office
Larkin at Exchange
726 Exchange Street
Suite 601
Buffalo, New York 14210
Phone: 716-852-3501
Fax: 716-852-3929

2. **New York State Senator and Assemblyperson**

New York State Senator Antoine M. Thompson
Walter J. Mahoney State Office Building
65 Court Street, Room 213
Buffalo, New York 14202
Phone: 716-854-8705
Fax: 716-854-3051

New York State Assemblywoman Crystal D. Peoples-Stokes
District Office
792 E. Delavan Avenue
Buffalo, New York 14215
Phone: 716-897-9714

3. **Chief Executive Officer, Planning Board Chairperson**

City of Buffalo

Office of the Mayor
Mayor Byron W. Brown
201 City Hall
Buffalo, New York 14202
(716) 852-3300

Office of the City Administrator
Janet Penska
203 City Hall
Buffalo, New York 14202
(716) 851-5922

Office of the Planning Board
James A. Morrell - Chairman
201 City Hall
Buffalo, New York 14202
(716) 852-3300

Erie County

Erie County Executive
Christopher Collins
95 Franklin Street
16th Floor
Buffalo, New York 14202
(716) 858-8500

Erie County Clerk
Honorable Kathy Hochul
92 Franklin Street
Buffalo, New York 14202
(716) 858-8865

Commissioner of Environment and Planning
Kathy Konst
Edward A. Rath County Office Building
95 Franklin Street
10th Floor
Buffalo, New York 14202
(716) 858-8390

4. County and/or Municipal Agency Directors

Erie County

Erie County Commissioner of Health
Anthony J. Billittier, MD, FACEP
Rath Building
95 Franklin Street
Buffalo, New York 14202
(716) 858-7690

Emergency Services Commissioner
Gregory W. Skibitsky
Rath Building
95 Franklin Street
Buffalo, New York 14202
(716) 858-6365

Peter Cammarata
Erie County Industrial Development Agency
275 Oak Street, Suite 150
Buffalo, New York 14203
(716) 856-6525

City of Buffalo

Economic Development, Permit and Inspection Department
James W. Comerford
324 City Hall
Buffalo, New York 14202
(716) 851-4972
jcomerford@city-buffalo.com

Emergency Management Services
Roger Lander
222 City Hall
Buffalo, New York 14202
(716) 851-6510
Fax: (716) 851-4360
rlander@city-buffalo.com

Office of Strategic Planning
Brendan R. Mehaffy
Executive Director
901 City Hall
Buffalo, New York 14202
(716) 851-5277

5. Residents/Owners of the Property and Adjacent Properties

See Attached Table

6. Local News Media

Buffalo News
One News Plaza
P.O. Box 100
Buffalo, New York 14240
(716) 849-4444

WJJL 1440 AM
920 Union Road
West Seneca, New York 14224
(716) 674-9555

WGRZ-NBC (Channel 2)
259 Delaware Avenue
Buffalo, New York 14202
(716) 849-2222

WIVB-CBS (Channel 4)
2077 Elmwood Avenue
Buffalo, New York 14202
(716) 874-4410

WKBW-ABC (Channel 7)
7 Broadcast Plaza
Buffalo, New York 14202
(716) 845-6100

WUTV-FOX (Channel 29)
699 Hertal Avenue, Suite 100
Buffalo, New York 14207

7. Public Water Supply

Buffalo Water Authority
281 Exchange Street
Buffalo, New York 14202

8. Persons Requesting to be on Mailing List

None identified

9. Administrator of Schools and Daycare Facilities Near the Property

Sweet Home Childcare Center
Operated by The Valley Community Association
726 Exchange Street
Buffalo, New York 14210
(716) 819-2870

Adjacent Property Owners
Former American Linen Supply Company Facility

May 2011

598 Main Street LLC
c/o Cityview Properties
726 Exchange Street
Buffalo, New York 14210

A. Guido LLC
775 Seneca Street
Buffalo, New York 14210

Susan Baker
134 Seymour Street
Buffalo, New York 14210

Henry Brodka
146 Seymour Street
Buffalo, New York 14210

Christine Caple
152 Seymour Street
Buffalo, New York 14210

Vilma Dicenso
123 Seymour Street
Buffalo, New York 14210

Dixon Enterprises Inc.
412-414 Virginia Street
Buffalo, New York 14201

Friars Minor Province
102 Seymour Street
Buffalo, New York 14210

Andrew Ganetsos
11901 Rising Sun Way
Gold River, CA 95670

Alba C. Gomez
131 Seymour Street
Buffalo, New York

Anthony L. Guido, Jr.
775 Seneca Street
Buffalo, New York 14210

Charles Herbert
4536 Gravel Road
Medina, New York 14103

Ibrahim Hernandez
125 Seymour Street
Buffalo, New York 14210

Lloyd Hogan
1929 South Park Avenue
Buffalo, New York 14220

Wayne H. Klepas
117 Seymour Street
Buffalo, New York 14210

Bryant A. Kopnak
121 Seymour Street
Buffalo, New York 14210

Anne Matuszewski
168 Seymour Street
Buffalo, New York 14210

David Matuszewski
164 Seymour Street
Buffalo, New York 14210

Gerald M. Obrien
792 Carroll Street
Buffalo, New York 14210

John Przepasniak
156 Seymour Street
Buffalo, New York 14210

Luis F. Rodriguez
103 Seymour Street
Buffalo, New York 14210

Raymond A. Rodriguez
141 Swan Street
Lackawanna, New York 14218

Virginia C. Rzadkiewicz
2973 Paxon Road
Eden, New York 14057

Michael Szlis
150 Seymour Street
Buffalo, New York 14210

Nancy A. Tortorice
158 Seymour Street
Buffalo, New York 14210

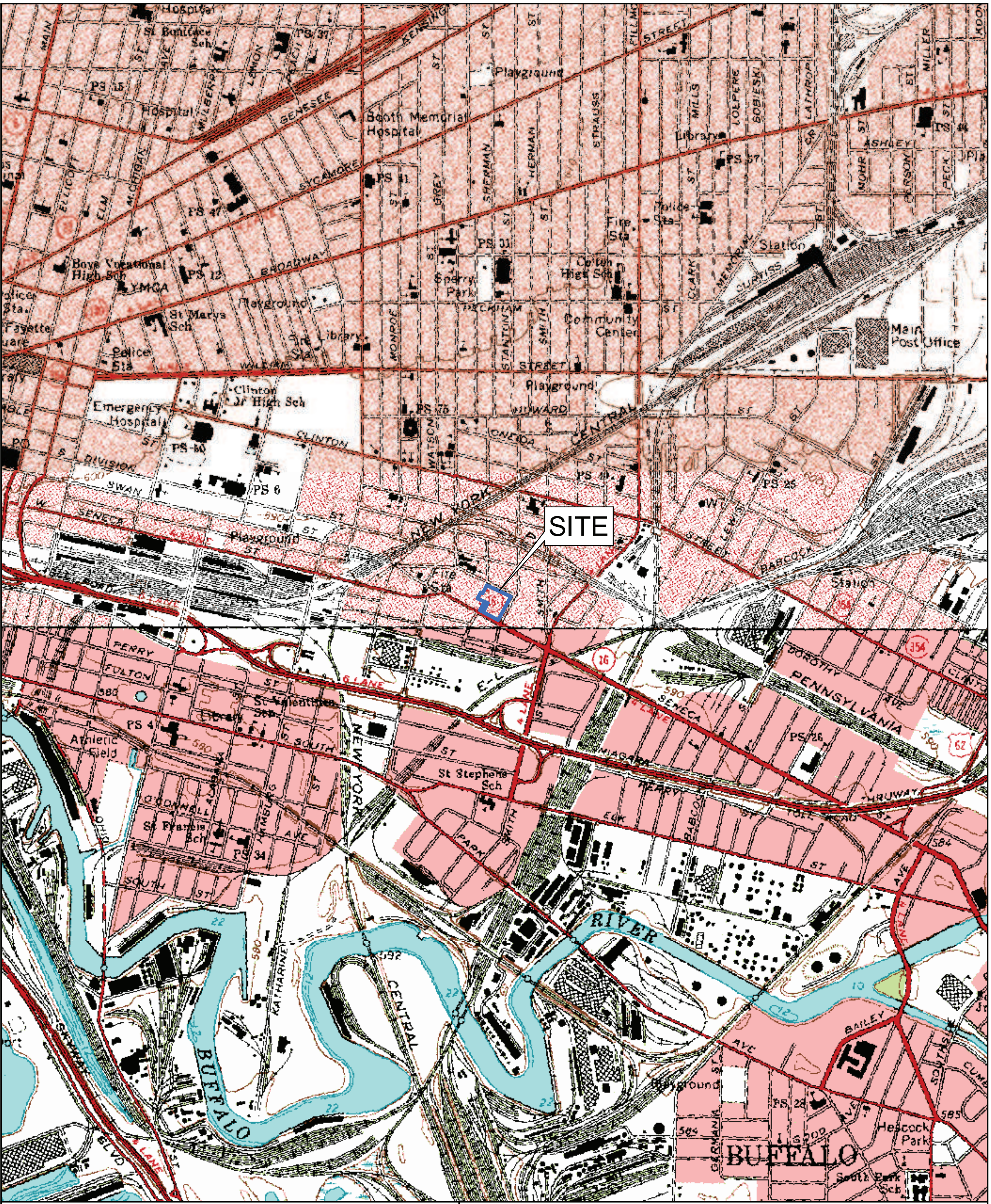
Unilock Inc.
510 Smith Street
Buffalo, New York 14210

Alexandria Wojtulski
16 Lord Street
Buffalo, New York 14210

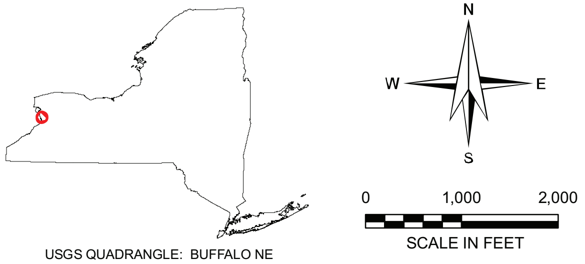
** Note that the following list was provided by the NYSDEC in January 2011.*

Appendix C - Site Location Map

See Attached Page



COORDINATES: 78° 50' 48.28' W, 42° 52' 34.00"



USGS QUADRANGLE: BUFFALO NE

HALEY & ALDRICH

FORMER AMERICAN LINEN SUPPLY CO.
822 SENECA STREET
BUFFALO, NEW YORK

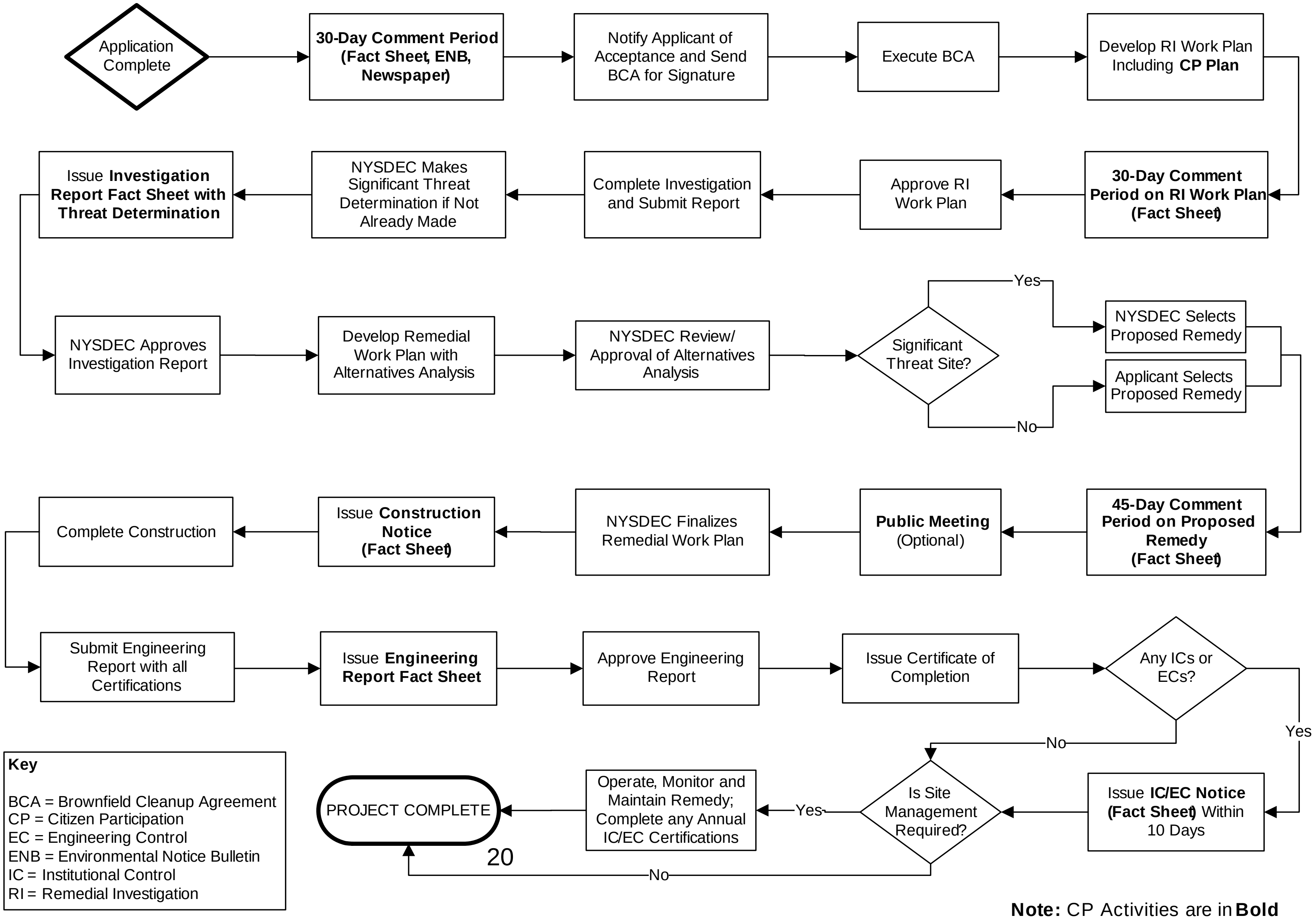
PROJECT LOCUS

SCALE: AS SHOWN
MAY 2011

FIGURE 1

G:\37319 (AmeriPrideSOQ, 8 Lord Street, Buffalo)\GIS\MapProjects\2011_0523_TJV_LocusAP_D3.mxd

Appendix D– Brownfield Cleanup Program Process



Key

BCA = Brownfield Cleanup Agreement
CP = Citizen Participation
EC = Engineering Control
ENB = Environmental Notice Bulletin
IC = Institutional Control
RI = Remedial Investigation

Note: CP Activities are in **Bold**

APPENDIX G

Owner/Consultant Contact Information

Contact Information

Property Owner

AmeriPride Services, Inc.
Joseph Peter
Environmental Manager
650 Industrial Boulevard, NE
Minneapolis, MN 55413
(612) 676-8060
Fax (952) 738-3161
Joe.Peter@ameripride.com

Consultant

Haley & Aldrich
Lisa Turturro
Vice President
200 Town Centre Drive, Suite 2
Rochester, NY 14623
(585) 359-9000
lturturro@haleyaldrich.com

Haley & Aldrich
Glenn M. White
Senior Scientist
200 Town Centre Drive, Suite 2
Rochester, NY 14623
(585) 359-9000
gwhite@haleyaldrich.com

Haley & Aldrich
Mark N. Ramsdell, P.E.
Senior Engineer
200 Town Centre Drive, Suite 2
Rochester, NY 14623
(585) 359-9000
mramsdell@haleyaldrich.com

Haley & Aldrich
Claire L. Mondello
Assistant Project Manager
200 Town Centre Drive, Suite 2
Rochester, NY 14623
(585) 359-9000
cmondello@haleyaldrich.com

Subcontractors

** Subcontractors are to-be-determined.*

APPENDIX H

RIWP Correspondence

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York 14203-2915
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.ny.gov

Joe Martens
Commissioner

March 10, 2011

Ms. Claire L. Mondello
Haley & Aldrich of New York
200 Town Centre Drive - Suite 2
Rochester, New York 14623-4264

Dear Ms. Mondello:

Remedial Investigation Work Plan
Former American Linen Supply Laundry Facility
Buffalo, Erie County, New York
Site #C915241

The draft Remedial Investigation Work Plan dated January 6, 2011 has been reviewed by the New York State Department of Health (NYSDOH) and this Department and we have the following comments:

1. The groundwater conditions near the residence on Seymour Street next to the asphalt parking area are not currently known. To determine the groundwater quality, it is recommended that another overburden well should be installed along the fence line approximately 45 feet N-E of SB-34.

2. All the new wells shall be tested for all VOC parameters by EPA Method 8260.

3. Section 2.3.4: Identify all the pre-existing wells which will be sampled during this investigation.

4. It is our understanding that water elevations will be taken at all the on-site existing and newly installed monitoring wells. In order to determine the groundwater flow direction in the bedrock, it is recommended that access be acquired to gauge water elevations from the bedrock wells located on the Hydraulic Street site (C915235).

5. No sampling is proposed in the on-site storm sewers, sumps, and drains. Please include testing of water and sediment samples from these structures or explain why no sampling is necessary.

6. Additional surface soil samples shall be collected from the unpaved areas. If there are no unpaved areas, please indicate.

7. Sections 2.4.1 and 2.4.2: The field decision not to collect samples from any of the test pits or soil borings shall be done in concurrence with the NYSDEC representative.

8. If during test pits or soil borings different type of wastes are encountered, those shall also be tested for the full list of TCL parameters.

9. NYSDEC may split any samples in the field. For NYSDEC split samples, the glassware shall be provided by the sampling party.

10. For demolition of the building, all necessary permits shall be obtained from the appropriate local government agencies. Copies of those permits shall be provided to this office prior to work starting as well as being included in the Final Engineering Report.

11. Section 4: The Remedial Investigation Report shall also include a draft Alternatives Analysis Report and shall be submitted by December 2011.

12. Pg. 13, 3rd paragraph: Typo - Figure 5 shows test pits TP- UST -1 through TP- UST -10.

13. A fact sheet is required to be mailed out 14 days prior to start of any field work. Please coordinate with this office for the proper template.

14. Public comments: The enclosed comment letter from AFI was received during the comment period. These comments are deemed pertinent to the project and will require a response.

Please incorporate our comments and address the public comments in the Remedial Investigation Work Plan and resubmit the revised Work Plan for our review by April 8, 2011. Also please note that for any future submittals, the Department requires that all reports and data conforms to the Department's electronic data deliverable format (see enclosed information).

Should you have any questions relative to this letter, please feel free to call me at (716) 851-7220.

Sincerely,

Jaspal Singh Walia

Jaspal S. Walia, P.E.
Project Manager

JSW:sz

Enclosure: AFI Comments Letter
Electronic Data Deliverable

ec: Mr. Martin Doster, NYSDEC
Teresa Mucha, Esq., NYSDEC
Mr. Matthew Forcucci, NYSDOH
Mr. Joseph Peter, AmeriPride Services, Inc.

JSW ___
edoc ___

AFI
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Mr. Jaspal S. Walia, P.E.
NYSDEC
270 Michigan Avenue
Buffalo, NY 14203

SENT VIA RETURN RECEIPT AND EMAIL

RECEIVED
NYSDEC - REGION 9
MAR 04 2011
✓ REL FOIL ___ UNREL

RE: 598 Main Street LLC's Comment on:
Draft Remedial Investigation Work Plan for the:
Former American Linen Supply Laundry Facility
Located at 822 Seneca Street, Buffalo, New York
NYSDEC Project No. C915241

Dear Mr. Jaspal Walia, P.E.;

On behalf of: **598 Main Street LLC**, AFI Environmental (AFI) is responding to the NYSDEC's request for Public Comment on the '*Draft Remedial Investigation Plan' (RIWP) for the Former American Linen Supply Laundry Facility, Project No. C915241, located at 822 Seneca Street, Buffalo, New York* as part of the February 2 through March 3, 2011 public comment period.

Due to the proximity of 598 Main Street LLC's property (which is located directly due south of the Former American Linen Supply Company Facility (**ALSCF**)), our client is making comment as an Interested Party.

AFI has reviewed the aforementioned document and our client would like to make comment on the upcoming project with regard to the following three areas:

1. Groundwater concerns,
2. Airborne concerns,
3. Concerns related to the planned Basement Pump-out.

GROUNDWATER CONCERNS

598 Main Street, LLC. has concerns that there is the potential for ground water contamination, in the overburden and in the bedrock beneath the ALSCF, site to migrate south and create off site impacts. We consider this a real issue in that the contaminant plume has the potential, now and in the future to impact the recently remediated 111 Hydraulic Brownfield Cleanup site (C915235) directly to the south.

AFI and others have calculated normal groundwater flow direction as generally south with an interpreted gradient of 0.05 feet per foot (ft/ft) from the ALSCFs site. Based on this calculation and analytical results contained in Table I of the applicant's RIWP, AFI postulates that the leading edge of the contamination plume may have already migrated off the ALSCF site and is potentially a contributing factor to elevated levels of Benz(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, and Chrysene on our site. These chemical parameters were recorded on the ALSCF site in August 2005 (see Figure #5 of the above referenced RIWP for the location of AOC-4).

The exact same constituents have recently been detected in low levels in groundwater samples collected on January 10, 21 and February 4, 2011 at our clients 111 Hydraulic Street site, directly south of the ALSCF site.

With this, our client's concern is focused on the proper documentation of the chemical constituents that are currently or could potentially leave the site now, during, and after the Remedial Investigation Work Plan.

As such, AFI recommends the ALSCF further investigate the potential of offsite migration of groundwater contaminants through the overburden and bedrock. We suggest ALSCF expand the chemical parameters for the proposed down gradient monitoring wells MW-102, MW-104, MW-105, and BMW-106 to include these chemical parameters as well as other chemicals of concern identified at the site.

BUIDLING DEMOLITION (AIRBORNE) CONCERNS

The current RIWP is limited to the removal of only flaking lead based paint (LBP). The RIWP does not define what standards or methods will be used to verify that the lead hazard has been properly removed and if third party project monitoring or testing will be conducted to provide 3rd party verification to document the proper response and or removal of all lead hazards.

As such, there is legitimate concern for human health impacts and for contamination to downwind sites resulting from airborne lead dust generated during the demolition of LBP building materials at the site. Engineering controls should be evaluated and documented to provide neighbors assurance that lead dust particles are not migrating offsite, resulting in the potential for health impacts and/or soil contamination.

BASEMENT PUMPOUT CONCERNS

The RIWP states that the standing water in the basement of the ALSCF has been sampled as per Buffalo Municipal Sewer discharge permit requirements. It also state that the applicant plans pump-out activities in the basement of the ALSCF. A review of this data, as presented in Table IV of ALSCF's RIWP, documents that the water in the basement of the ALSCF is in excess of the NYS TOGS Water Quality Standards. No indication is provided as to the rate of pumping, testing frequency and response to elevated levels if detected. A more detailed pumping and test procedure is warranted due to the age and fragile nature of the receiver system. (surcharging and damage may occur).

Has any consideration been given or studies conducted with respect to the competence of the receiving capacity of the sewer system? Our client has a legitimate concern that the contaminated water in the basement, when pumped into antiquated or leaking pipes; will have the potential to leak out and migrate offsite causing possible contamination down gradient to the 111 Hydraulic BCP site.

We also have had discussions with the Buffalo Sewer Authority's contractors and their site engineers; and have observed the installation of increased back flow weirs inside the proposed receiving system (Dec-Jan 2011).

There is legitimate concern that the synergistic result of the current condition of the receiving system, the modified design of the overflow weirs (creating additional ponding and hydraulic pressure upgradient of the weirs), along with the surcharge of pumping activities at the ALSCF which might result in breakouts or increased leakage from this antiquated system resulting in downgradient impacts to the areas south of the project.

In addition, to evaluation of these systems prior to discharge, we would request an updated profile of the water chemistry; for all chemicals of concern, and continuous monitoring of the system and any existing and proposed monitoring wells during discharge and for a reasonable time subsequent of the discharge; to allow for resident time and in-situ flow restrictions.

Thank you for allowing us to provide our Client's concerns on the proposed BCP Cleanup project.

Should you have any questions or require additional information please contact: Bill Heitzenrater (716-940-2725), or Geoff Heitzenrater at (716) 283-7645.

Sincerely,

WILLIAM L. HEITZENRATER
Sr. Environmental Professional

GEOFFREY S. HEITZENRATER
Project Engineer

The DEC has implemented an Environmental Information Management System (EIMS). The EIMS uses the database software application EQuIS^{TM} from EarthSoft® Inc. In an effort to better manage environmental data and expand the Department of Environmental Conservation's (DEC) goal of reducing paper, DEC is reminding you of the regulatory requirement pursuant to 6 NYCRR 375-1.11(a); which states:

> **(a) Submissions to the Department. All work plans; reports, including all attachments and appendices, and certifications, submitted by a remedial party shall be submitted in print, as well as in an electronic format acceptable to the Department.**

In addition, remedial orders, agreements and contracts frequently provide for submission in an electronic format acceptable to the Department. In addition, the Department has the authority to request amendments to work plans.

This requirement extends to all data submissions. Effective immediately, all data submitted to the DER must be in the DEC-approved Electronic Data Deliverable (EDD). Moreover, new data must be submitted on a continuous basis immediately after data validation occurs but in no event more than 90 days after the data has been submitted to the remedial party or its consultant(s). In other words, data is not to be held and submitted with the related reports. Additionally, DER will provide templates to use for presenting data in reports and documents, as soon as they are available.

The Department will not approve a report or submission unless the data for the site has been submitted in the EDD format and approved.

The DER project manager is the point of contact for project specific questions regarding this issue. Historical data will also be entered into EQuIS. The DER project manager will work with you relative to what historic data needs to be provided in the required EDD format. Technical questions regarding DEC's EDD format that cannot be answered by the project manager should be directed to Elaine Zuk the Chief of DER's Information Management Section by e-mail at NYENVDATA@gw.dec.state.ny.us . Please refer to DEC's website for additional information.

> Information on the format of data submissions can be found at:
> http://www.dec.ny.gov/chemical/62440.html
>
> Information on electronic document submissions can be found at:
> http://www.dec.ny.gov/regulations/2586.html

The website will be updated continuously.

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7 April 2011
File No. 37319-021

Mr. Jaspal S. Walia, P.E.
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2915

Subject: Response to Remedial Investigation Work Plan Comments
Former American Linen Supply Laundry Facility
Buffalo, Erie County, New York
Site #C915241

Dear Mr. Walia:

This letter is provided in response to your 10 March 2011 letter regarding the Draft Remedial Investigation Work Plan (RIWP) for the Former American Linen Supply Laundry Facility. Responses to your comments and proposed text revisions to the Draft RIWP are provided below.

In addition, Haley & Aldrich has attached a response to a letter from AFI Environmental on behalf of 598 Main Street LLC received by the NYSDEC on 4 March 2011. The response letter to AFI Environmental is attached.

NYSDEC Comment #1: The groundwater conditions near the residence on Seymour Street next to the asphalt parking area are not currently known. To determine the groundwater quality, it is recommended that another overburden well should be installed along the fence line approximately 45 feet N-E of SB-34.

Response: As indicated by the 2005 and 2009 analytical result from wells MW-1 and MW-2, the northern extent of groundwater impacts near the residence on Seymour Street has been identified. Target compounds (tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-DCE), and vinyl chloride (VC)) were not detected in groundwater in either of those wells in previous sampling events. Other VOCs were detected below NYS Ambient Water Quality Standards and Guidance.

Based on historical research, industrial activity was not conducted on the northern portion of the property, and it is therefore unlikely that a source of groundwater contamination is present in that location. Furthermore, groundwater is interpreted to flow south and southwest towards Seneca Street; therefore, it is unlikely that the chlorinated solvent contamination identified on the southern portion of the Site would be impacting the northern portion of the Site.

Based on the existing data from wells MW-1 and MW-2, the absence of a historical source in the northern area of the site, and the south/southwest groundwater flow, an additional well along the northern portion of the Site and in general close proximity to existing well MW-1 will not provide additional information in support of site characterization.

Proposed RIWP Text Revisions: None

NYSDEC Comment #2: All new wells shall be tested for all VOC parameters by EPA Method 8260.

Response: We agree and will modify the report in various sections as noted below to indicate that groundwater samples will be analyzed for TCL VOCs via EPA Method 8260 (as well as other analytes) as indicated in Section 2.3.4 (Site-Wide Groundwater Sampling) and Table V of the work plan.

Proposed Text Revisions:

The last sentence of the first paragraph in Section 2.3.1.1 will now read:

> *Groundwater sampling and analysis is discussed in Section 2.3.4 and summarized on Table V. Groundwater well installation procedures are discussed in Section 2.6.4.*

The last sentence of Section 2.3.2.2 will now read:

> *Groundwater sampling and analysis is discussed in Section 2.3.4 and summarized on Table V. Groundwater well installation procedures are discussed in Section 2.6.4.*

The last sentence of the first paragraph in Section 2.3.3.1 will now read:

> *Groundwater sampling and analysis is discussed in Section 2.3.4 and summarized on Table V. Groundwater well installation procedures are discussed in Section 2.6.4.*

NYSDEC Comment #3: Section 2.3.4: Identify all pre-existing wells which will be sampled during this investigation.

Response: We agree with this comment and will clarify the pre-existing wells in the text. The text will be modified as shown below.

Proposed Text Revisions:

The first sentence of the first paragraph of Section 2.3.4 will now read:

> *Groundwater samples will be collected from the pre-existing monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6) and newly installed monitoring wells (MW-101, MW-102, MW-103, MW-104, MW-105, and BMW-106).*

NYSDEC Comment #4: It is our understanding that water elevations will be taken at all the on-site existing and newly installed monitoring wells. In order to determine the groundwater flow direction in the bedrock, it is recommended that access be acquired to gauge water elevations from the bedrock wells located on the Hydraulic Street site (C915235).

Response: We agree with this recommendation. We request that the NYSDEC assist us in getting access from the adjacent property and their wells located on the American Linen Supply Site, on the Hydraulic Street site (C915235), and in the Seneca Street right-of-way.

Proposed RIWP Text Revisions:

The following paragraph will be added to Section 2.3.4:

> *Prior to purging and sampling the wells, site-wide groundwater levels will be collected in order to evaluate groundwater flow. In addition, and if practicable pending receipt of a signed access agreement, groundwater levels will be collected from both onsite and offsite wells installed by others in connection with remediation of the adjacent property to the southwest (Site Number C915235) during the same event in order to further evaluate groundwater flow. It is anticipated that the NYSDEC will assist in obtaining a signed access agreement.*

The following sentence will be added to the end of the first paragraph in Section 2.6.4.

> *In addition, water level readings will be collected from onsite and offsite wells installed by others in connection with remediation of the adjacent property to the southwest (Site Number C915235) pending a signed access agreement as noted in Section 2.3.4.*

NYSDEC Comment #5: No sampling is proposed in the on-site sewers, sumps, and drains. Please include testing of water and sediment samples from these structures or explain why no sampling is necessary.

Response: We have not proposed sampling of on-site sewers, sumps, and drains for the following reasons:

- Interior sumps and drains: It is our understanding that drains and sumps within the building discharge to the sanitary sewer system. Per section 2.2.5 of the RI Work Plan, interior drains and sumps that are encountered, if any, will be decommissioned and/or removed by the contractor during building demolition activities. During demolition activities, the integrity of the drains and sumps will be observed. If the integrity appears compromised, the drain or sump will be removed, otherwise the sump/drain will be filled. During removal, Haley & Aldrich will provide for oversight of removal activities and screen the adjacent soils during removal. The removed feature and its contents will be characterized for disposal purposes and removed from the Site, if necessary. If there is evidence of contamination associated with the feature, additional investigation for potential adjacent impacts will be conducted.

  Because those features will be decommissioned and/or removed as described above, testing the contents of the sumps and drains for investigation purposes will not be applicable.

- Exterior sewers and drains: One large subsurface drainage feature is located on the exterior of the Site. That feature is also being removed as described in section 2.2.5, and for similar reasons as described above, additional investigation sampling will not be conducted. It is also noted that there is one subsurface tank vault located on the eastern side of the building that houses the closed former heating oil tank. If upon inspection of that vault, standing water is noted, a sample of the water will be collected if evidence of potential impacts are observed.

  Other exterior features include catch basins associated with the storm sewer system. Because the storm sewer collects water runoff and sediment from a variety of sources and it would not be feasible to distinguish the origin of compounds detected, if any, in those locations, sampling the contents of the storm sewers would not provide meaningful information regarding the nature and extent of contamination at the Site.

Proposed RIWP Text Edits:

The following will be added after the fourth sentence in the introductory paragraph of Section 2.3:

> *Sampling of interior and exterior drainage features have not been proposed as part of this work plan because they will either be decommissioned/removed as part of demolition activities (interior drains and sumps, and exterior subsurface drainage feature), or the results of such sampling would not provide meaningful evidence regarding the nature and extent of Site impacts (exterior storm sewer catch basins).*

NYSDEC Comment #6: Additional surface soil samples shall be collected from the unpaved areas. If there are no unpaved areas, please indicate.

Response: The Site is covered by either the Site building or cracked pavement and some very small overgrown grass areas near sidewalks, immediately adjacent to buildings, etc. There are no open unpaved or landscaped areas that would be conducive to collection of a meaningful surface soil sample.

Proposed RIWP Text Edits:

The following will be added prior to the second to last sentence in the introductory paragraph of Section 2.3:

> *Additionally, surface soil sampling has not been proposed because open unpaved or landscaped areas are not present on the Site. The Site is primarily covered with the Site building, cracked pavement and/or sidewalk areas.*

NYSDEC Comment #7: Sections 2.4.1 and 2.4.2: The field decision not to collect samples from any of the test pits or soil borings shall be done in concurrence with the NYSDEC representative.

Response: We agree and will modify the text to reflect this. A sample will be collected from all test pits and soil borings advanced in the field. At the end of the work day, we will discuss with the NYSDEC which samples we plan to submit to the laboratory and which we plan to discard, and the rationale for doing so.

Proposed RIWP Text Edits:

The following will be added to the end of Section 2.4.1:

> *A sample will be collected from all test pits. At the end of the work day, samples that do not require analysis per Section 2.3.5 will be discarded upon concurrence from the NYSDEC.*

The following will be added to the end of Section 2.4.2:

> *A sample will be collected from all soil borings. At the end of the work day, samples that do not require analysis per Section 2.3.5 will be discarded upon concurrence from the NYSDEC.*

NYSDEC Comment #8: If during excavation of test pits or installation of soil borings, different types of wastes are encountered; those shall also be tested for the full TCL parameters.

Response: We agree and will modify the text to reflect this. We understand that the phrase “different types of wastes” indicates a layer of non-soil material encountered in a boring or test pit (e.g. free product layer, buried solid waste material, etc.). A section will be added to Section 2.4 describing a sampling procedure for different types of wastes.

Proposed RIWP Text Revisions:

Section 2.4.3 will be added as follows:

> *Section 2.4.3 Investigation of Non-Homogenous Non-Soil Waste Layers in Soil Borings and Test Pits*
>
> *If during soil boring and test pit investigation, an independent layer of waste that does not appear to be soil or fill material is encountered (e.g. free product layer, buried solid waste, etc.), a sample of the material will be collected and analyzed for the following: TPH via EPA Method 8015, TCL VOCs via EPA Method 8260, TCL SVOCs via EPA Method 8270, TAL Metals via EPA Methods 6010/7471, PCBs via EPA method 8082, and Pesticides EPA Method 8081 unless otherwise directed by the NYSDEC.*

NYSDEC Comment #9: NYSDEC may split any samples in the field. For NYSDEC split samples, the glassware shall be provided by the sampling party.

Response: We agree that the NYSDEC may split samples in the field per applicable regulations and guidance. Haley & Aldrich will provide glassware for soil and groundwater samples. If the NYSDEC wishes to split a soil vapor sample, the NYSDEC will have to provide their own SUMMA canisters and flow controllers. We request that the NYSDEC provide us with advanced notice of their desire to collect split samples so that we have an adequate amount of sample bottles onsite.

Proposed RIWP Text Revisions:

The following will be added to the end of the introductory paragraph in Section 2.4:

> *It is noted that split soil samples may be collected by the NYSDEC. Should the NYSDEC require a split sample, glassware will be provided given that adequate notice is provided by the NYSDEC prior to the sampling event.*

The following will be added to the end of Section 2.6.4:

> *It is noted that split groundwater samples may be collected by the NYSDEC. Should the NYSDEC require a split sample, glassware will be provided given that adequate notice is provided by the NYSDEC prior to the sampling event.*

NYSDEC Comment #10: For demolition of the building, all necessary permits shall be obtained from the appropriate local government agencies. Copies of those permits shall be provided to this office prior to starting as well as being included in the Final Engineering Report.

Response: We agree and will modify the text to reflect this requirement.

Proposed RIWP Text Revisions:

The following will be added to the end of the second paragraph under Section 2.2:

> *The Site Contractor will obtain applicable permits from local government agencies prior to building demolition activities. Those permits will be provided to the NYSDEC prior to commencement of Site work and will also be included in the Final Engineering Report for the Site.*

NYSDEC Comment #11: Section 4: The Remedial Investigation Report shall also include a draft Alternatives Analysis Report and shall be submitted by December 2011.

Response: We agree and will modify the schedule in Section 4 both to reflect this change and to reflect modifications to the current schedule.

Proposed RIWP Text Revisions:

The last three items in the schedule in Section 4 will be modified as follows:

Second Quarter 2011	*Final Remedial Investigation Work Plan is approved by NYSDEC.* *Abatement/demolition of Site structures begins.*
Second/Third Quarter 2011	*Additional remedial investigation field work commences.*
December 2011	*Draft Remedial Investigation Report/Alternatives Analysis Report submitted to NYSDEC.*

NYSDEC Comment #12: Pg. 13, 3rd paragraph: Typo – Figure 5 shows test pits TP-UST-1 through TP-UST-10.

Response: Figure 5 actually shows TP-UST-1 through TP-UST-11. The text will be modified to be consistent with Figure 5.

Proposed RIWP Text Revisions:

The first sentence of the fourth paragraph in Section 2.3.2.1 will be modified to read:

> *To assess potential impacts related to the closed in-place USTs, test pits will be conducted at the locations shown on Figure 5 (TP-UST-1 through TP-UST-11).*

NYSDEC Comment #13: A fact sheet is required to be mailed out 14 days prior to start of any field work. Please coordinate with this office for the proper template.

Response: Please provide us with the necessary fact sheet templates for building demolition and remedial investigation. We anticipate that work will begin the week of 23 May 2011.

Proposed RIWP Text Revisions: None

NYSDEC Comment #14: Public Comments: The enclosed comment letter from AFI was received during the comment period. These comments are deemed pertinent to the project and will require a response.

Response: A response letter has been prepared and is attached.

Proposed RIWP Text Revisions: None

Please do not hesitate to contact us if you have any questions or comments. When the proposed text revisions are approved, we will incorporate them into the January 2011 Draft RIWP and re-submit a RIWP.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Claire L. Mondello　　Lisa Turturro

Claire L. Mondello
Senior Scientist/Assistant Project Manager

Lisa Turturro
Vice President

Attachment: Response Letter to the NYSDEC regarding the March 2011 AFI Environmental Comment Letter

c: Glenn M. White; Haley & Aldrich
Eric Davis; AmeriPride Services, Inc.
Rojean Rada; AmeriPride Services, Inc.
Scott Turner; Nixon Peabody LLP
Joseph Peter; URS Corporation

G:\37319 (AmeriPride, 8 Lord Street, Buffalo)\020 & 021 - RI Work Plan\Response to Comments\2011_0407_Response to RIWP Comments_F.docx

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7 April 2011
File No. 37319-021

Mr. Jaspal S. Walia, P.E.
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2915

Subject: Response to 598 Main Street LLC Letter Regarding
Former American Linen Supply Laundry Facility
Buffalo, Erie County, New York
Site #C915241

Dear Mr. Walia:

Haley & Aldrich is providing this response to the comments from AFI Environmental ("AFI") received by the New York State Department of Environmental Conservation on 4 March 2011 during the public comment period for the Former American Linen Supply Laundry Facility (the "Site") comment period related to the Brownfield Cleanup Program Application and Draft Remedial Investigation Work Plan (RIWP). The letter was sent on behalf of 598 Main Street LLC, the property owner the adjacent property to the south of the Site, also involved in the BCP (Site #C915235) located at 111 Hydraulic Street.

In summary, three areas of potential concern were noted in the letter: 1) potential southerly groundwater migration; 2) air impacts during building demolition; 3) concerns regarding discharge of water from the Site building. Haley & Aldrich has provided a response to the first concern. Concerns #2 and #3 have been addressed by Asbestos & Environmental Consultant Corporation (AECC), who is coordinating building demolition and site preparation activities. Haley & Aldrich's response and AECC's summarized responses are below.

Response to Concerns Regarding Groundwater Migration:

The letter indicated that elevated levels of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene detected at 111 Hydraulic Avenue in January and February 2011 may have migrated to that property due to the those chemicals also being detected on the Site in August 2005 and to the inferred southerly groundwater flow direction. It was recommended in the letter that in order to document those potential contaminants in groundwater, proposed Site groundwater wells MW-102, MW-104, MW-105, and BMW-106 include analysis of those parameters.

Table V in the RIWP (Sampling and Analysis Plan) indicates that all groundwater samples collected at the Site will be analyzed for the polycyclic aromatic hydrocarbon (PAH) compounds identified in the letter. As noted in Table V, all wells will be analyzed for STARS Memo #5 List Semi-Volatile Organic Compounds (SVOCs), which has recently been replaced by the Commissioners Policy #51 (CP-51) list for fuel oil contamination (Table 3), and includes the four PAHs identified in the letter.

The PAH compounds identified on the 111 Hydraulic Street site are often associated with urban fill that contains byproducts of historical fuel burning, ash, and other debris. Urban fill has been identified at the Site, is ubiquitous in the region, and likely is present at the 111 Hydraulic Street site as well.

It is unlikely that PAHs from the Site would move with groundwater to the 111 Hydraulic Street site. PAHs adhere tightly to soil particles and are relatively hydrophobic and insoluble in groundwater. The octanol-water partition coefficient (K_{ow}) of the four PAHs noted is between $1.45x10^5$ and $1.15x10^6$. Compounds with a high K_{ow} (e.g. - greater than $1.00x10^4$) are considered hydrophobic. Furthermore, the solubility in water of the four compounds noted is between $7.6x10^{-4}$ and $1.0x10^{-2}$ mg/L. Compounds with a low solubility value (e.g. - less than 1 mg/L) are considered to have relatively low solubility. As such, PAHs detected in groundwater are typically due to suspended particles in unfiltered groundwater samples. In order to evaluate PAHs in groundwater, NYSDEC guidance indicates that low-flow sampling methods should be used and that turbidity levels below 50 NTU are achieved prior to sample collection to reduce the likelihood of entraining soil particles in the groundwater sample.

Due to the prevalence of urban fill in the region and the low solubility of PAHs, the elevated levels of PAHs detected in the groundwater at 111 Hydraulic Street are likely due to soil particles entrained in the groundwater samples and not to a dissolved plume of PAHs migrating from the Site. This tentative conclusion could be further supported by reviewing AFI's laboratory analytical data, groundwater sampling method, and sampling logs (including turbidity levels at the time of sampling).

Responses to Concerns Regarding Air Impacts from Demolition

The letter indicated there are concerns regarding building demolition, building materials impacted with lead-based paint (LBP), and third party monitoring during demolition. AECC is coordinating building demolition on behalf of AmeriPride Services, Inc. and will be conducting the following:

- As described in the RIWP, loose and flaking LBP will be scraped, containerized, and sent for proper disposal in order to comply with NYSDEC regulations. It is not required that non-loose and flaking paint be removed prior to demolition work.

- The demolition contractor will be responsible for HEPA vacuuming and/or damp mopping to clean the floor surface of the building and remove lead-based paint and/or dust. Use of excessive water for cleaning by the contractor is prohibited.

- AECC will oversee the demolition contractor and verify that the work has been completed prior to demolition-related activities.

- During demolition and building slab removal activities, AECC will conduct Community Air Monitoring in accordance with the New York State Department of Health Community Air Monitoring Plan (NYSDOH CAMP). The demolition contractor for minimizing fugitive dust generated as a result of demolition activities. If respirable dust levels exceed the CAMP action levels, the demolition contractor will stop work and employ engineering controls (e.g. – additional fire hoses, misting/fogging machings, etc.) to reduce dust levels to acceptable levels.

Response to Concerns Regarding Basement Water Pumpout and Discharge

The letter indicated there are concerns about the quality of the water currently contained within the basement of the Site building and the plans to pump the water into the municipal sewer system. the potential for antiquated pipes of poor integrity to leak was noted and additional information on how the discharging would be conducted was requested (e.g. – periodic sampling, pumping rate, etc.).

As described in the RIWP, the water will be discharged to the municipal sewer provided approval is granted by the City of Buffalo under a temporary discharge permit. The water quality and discharge procedure will be defined by the Buffalo Municipal Sewer Authority (BMSA) during the permitting application process. If additional analytical testing is required by the BMSA, it will be provided during the application process. If discharge is approved by the BMSA, the integrity of the sewer system to which the water is discharged and the condition of the receiving system is the responsibility of the City of Buffalo and the BMSA. Appropriate discharge locations will be cleared with the BMSA prior to commencement of discharge, and discharging will be overseen by AECC.

The specific requirements for pumping rate, filtering, periodic sampling, etc. will be included in the discharge permit, and those provisions are not known at this time. In addition to filtration requirements that may be dictated by the permit, the water will be sent through 5-micron filters prior to discharge to mitigate the potential for demolition debris to be discharged from the site. Due to the filtering process required, the exact flow rate cannot be known or measured until the work is performed.

Please feel free to contact us should you have additional questions or comments.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Claire L. Mondello

Claire L. Mondello
Senior Scientist/Assistant Project Manager

Glenn M. White
Senior Scientist

Lisa Turturro

Lisa Turturro
Vice President

G:\37319 (AmeriPride, 8 Lord Street, Buffalo)\020 & 021 - RI Work Plan\Response to Comments\2011_0407_Response_to_AFI_Letter_F.docx

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2915
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
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Joe Martens
Commissioner

H&A OF NY
APR 18 2011
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April 15, 2011

Ms. Claire L. Mondello
Haley & Aldrich of New York
200 Town Centre Drive, Suite 2
Rochester, NY 14623-4264

Dear Ms. Mondello:

Re: Draft Remedial Investigation Work Plan
Former American Linen Supply Laundry Facility
Buffalo, Erie County, New York
Site # C915241

The Department has reviewed your response letter dated April 7, 2011 to the Department's comments on the Draft Remedial Investigation Work Plan for the subject site.

All responses except for comment #5 are acceptable.

Please revise the work plan to address the following concerns:

a. In order to be certain that the structures left in place are free of contamination, the sewers, drains, sumps, vaults, etc. which are not to be removed must be tested.
b. The bedding materials around the structures to be left in place shall also be evaluated for possible contamination due to any leaks.

Should there be any questions relative to this letter, please feel free to call me at (716) 851-7220. Upon receipt of an acceptable final Work Plan and execution of the Brownfield Cleanup Agreement the Department would be in a position to approve the document.

Sincerely,

Jaspal Singh Walia

Jaspal S. Walia, P.E.
Project Manager

JSW:jaf
cc: Mr. Martin Doster, NYSDEC
Mr. Mathew Forcucci, NYSDOH
Mr. Joseph Peter, AmeriPride Services, Inc.