Division of Environmental Remediation

Record of Decision
Lapp Insulator Site
Town and Village of LeRoy
Genesee County, New York
Site Number 819017

March 2009

New York State Department of Environmental Conservation
DAVID PATTERSON, *Governor*   ALEXANDER B. GRANNIS, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Lapp Insulator Inactive Hazardous Waste Disposal Site
Town and Village of LeRoy, Genesee County, New York
Site No. 819017

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Lapp Insulator site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Lapp Insulator inactive hazardous waste disposal site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and/or the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation and Feasibility Study (RI/FS) for the Lapp Insulator site and the criteria identified for evaluation of alternatives, the Department has selected targeted source area soil excavations, soil and asphalt covers, treatment of overburden groundwater using in-situ chemical oxidation, and groundwater monitoring.. The components of the remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. The targeted excavation and off-Site disposal of contaminated soil will occur in Areas A and C. The Area A soil excavation will be approximately 11,000 square feet in area and two feet in depth. The Area C soil contaminant mass will be approximately 27,300 square feet in area and target the four to six foot depth interval. Based on RI data, much of the Area C soil above four feet could be stockpiled on-Site and then placed back in the excavation upon removal of the four to six foot interval. The area and depth of soil to be excavated will be

confirmed during the design of the remedy. Clean soil will be brought on-Site to balance the excavation of the affected areas. Additional work associated with excavation in Area C will include removal and disposal of the concrete pad. The soils from the hot spots will be characterized prior to delivery to an off-Site landfill.

3. Installation of a soil or asphalt cover will occur in Areas A and C. The Area A soil barrier will be approximately 11,000 square feet in area. The Area C soil and asphalt barrier will be approximately 27,300 square feet in area. The soil cover constructed over Areas A and C to prevent exposure to residually contaminated soils will be one-foot thick and will consist of clean soil underlain by an indicator, such as orange plastic snow fence, to demarcate the cover soil from the subsurface soil. The top six inches of soil will be of sufficient quality to support vegetation. Clean soil will constitute soil that meets the Division of Environmental Remediation's criteria for backfill or local site background. Non-vegetated Area A areas (roadways, parking lots, etc.) will be covered by eight inches of stone, four inches of base, three inches of binder, and 1.5 inches of topcoat. The existing asphalt cover over Area C and the existing soil cover over Area D will be maintained.

4. An in-situ chemical oxidation system will be installed and implemented in Area C & D overburden groundwater. A more detailed design will be generated during the design phase.

5. Additional overburden and shallow bedrock groundwater monitoring wells will be installed. Specific quantities and locations will be evaluated during the remedy design.

6. A monitoring program will be implemented to track the groundwater conditions after the in-situ chemical oxidation in the overburden is complete.

7. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

8. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover system to restrict excavation below the soil cover's demarcation layer or pavement. (b) development and implementation of a site-specific health and safety plan to ensure that future excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the Department; (c) continued evaluation of the potential for vapor intrusion for any new buildings built on the site or change of use of existing buildings, and will include provisions for mitigation of any impacts identified; (d) monitoring of groundwater; (e) identification of any use restrictions on the site; and, (f) provisions for the continued proper operation and maintenance of the components of the remedy.

9. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable

to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; (c) certify that any new buildings or existing buildings with use changes had soil vapor intrusion evaluations performed and, if necessary, mitigation systems installed; and (d) state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

10. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

MAR 31 2009

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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RECORD OF DECISION

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Town and Village of LeRoy, Genesee County, New York
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SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected this remedy for the Lapp Insulator Company Site. The presence of hazardous waste has created significant threats to human health and/or the environment that are addressed by this proposed remedy. As more fully described in Sections 3 and 5 of this document, the use of solvents at the site have resulted in the disposal of hazardous wastes, including volatile organic compounds (VOCs) such as trichloroethene (TCE) and 1,1,1-trichloroethane (TCA). These wastes have contaminated the soil and groundwater at the site, and have resulted in:

- a significant threat to human health associated with the potential exposure to contaminated groundwater, soil and soil vapors.
- a potential environmental threat associated with the impacts of contaminants to Oatka Creek by VOCs in groundwater.

To eliminate or mitigate these threats, the Department has selected targeted source area soil excavations, soil and asphalt covers, treatment of overburden groundwater using in-situ chemical oxidation, and groundwater monitoring.

The selected remedy, discussed in detail in Section 8, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

The Lapp Insulator Site is located on Gilbert Street, south of Route 5, in the Village and Town of LeRoy, Genesee County (Figure 1). The site is located on the outskirts of the village in a mixed residential and industrial area. The site is comprised of approximately 66 acres and lies between a railroad line and Oatka Creek.

The Lapp Insulator Site is located within the flat-lying Erie-Ontario Lowlands. The Site topography is nearly flat, dipping slightly from west to east toward Oatka Creek. The maximum relief of the Site is a drop in elevation of approximately 30 feet at the steep rock bank at the adjacent Oatka Creek.

Overburden soil thickness at the Site ranges from approximately 10 to 30 feet. Fill material was used to level topographically low areas and provide support to the steep bank of Oatka Creek along the eastern edge of the property. Two distinct areas contain most of the fill material at the Site. These two areas are the Northeast and the South fill areas, illustrated on Figure 2. Where present, fill is the uppermost overburden unit and was encountered up to 30 feet thick in the South fill area. The fill material consists primarily of anthropogenic materials including brick, coal, cinders, and fragments of porcelain from insulators mixed with disturbed natural soil material of clay, silt, sand, and gravel. The native overburden material at the Site is glacial till which is composed of unsorted silt with clay, sand, and gravel. This till is deposited directly on the underlying bedrock and, where not covered by fill, is present at the ground surface.

Bedrock was measured at the Site at depths ranging from 10 to 30 feet below grade. A total of four distinct bedrock units were encountered during rock well drilling at the Site. These are, in descending order: Levanna Shale, Stafford Limestone, Oatka Creek Shale, and Onondaga Limestone. Levanna Shale is present directly beneath overburden deposits at the Site. Levanna Shale is a light olive gray shale near the top and weathered fissile dark gray or black shale near the base. Levanna Shale was observed along the eastern border of the Site at the western bank of Oatka Creek where it is exposed along a steep cliff approximately 30 feet high. This rock unit also underlies the creek by an estimated additional 50 feet. The thickness of this unit beneath the Site ranges from 50 to 70 feet.

Groundwater at the site flows from west to east toward the creek (see Figures 3 and 4) The creek is a discharge for the overburden, shallow rock, and intermediate zones. Groundwater in the deepest rock zone flows downward.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Since 1917 Lapp has been actively engaged in the manufacture and production of ceramic insulators and electrical transformer bushings. Lapp discontinued manufacture of bushings in 2004 (The bushings portion of the business is leased to PCore electronics, which continues to operate in the buildings on-site on the east side of Gilbert Street). Historical records indicate that oils, petroleum based products, and chlorinated solvents; including 1,l,l-trichloroethane (TCA), trichloroethene (TCE), and tetrachloroethene (PCE), were stored and utilized for production at the Lapp Site, primarily on the east side of Gilbert Street. Further, two areas of the Site, referred to as the Northeast and South fill areas have been used for the disposal of crushed ceramic insulators.

3.2: Remedial History

In 1996, the Department first listed the site as a Class 2a site in the Registry of Inactive Hazardous Waste Disposal Sites in New York (the Registry). Class 2a was a temporary classification assigned to a site that had inadequate and/or insufficient data for inclusion in any of the other classifications. In 1998, the Department listed the site as a Class 2 site in the Registry. A Class 2 site is a site where hazardous waste presents a significant threat to the public health or the environment and action is required.

Previous investigations conducted to assess environmental conditions at the Site include:

- Phase I Environmental Due Diligence Examination (ENSR, 1991)
- Phase II Environmental Due Diligence Examination (ENSR, 1992)
- Phase I Site Characterization Report (ENSR, 1995)
- Supplemental Site Soil Characterization (Haley & Aldrich, 1995)

Results indicated that the groundwater and soil were impacted with site-related volatile organic compounds.

A remedial measure was attempted by Lapp Insulator without Department concurrence or involvement in December 1995. The remedial measure consisted of a soil vapor extraction system with a single extraction well placed in each of three areas of concern (Areas A, B, and C). The system was deemed ineffective at adequately addressing the contamination at the Site and was ultimately shut down in September 1999.

An Order on Consent between Lapp Insulator and the Department was signed in 2001. RI work activities required under the 2001 Order on Consent are presented in the November 2000 RI/FS Work Plan (Malcolm Pirnie, Inc.).

The RI work activities began in October 2001 with Site characterization tasks, installation of an upgradient deep bedrock monitoring well, and sampling of several media including soil, groundwater, surface water and sediments. Results of the Phase I RI were submitted to the Department in the form of a Technical Memorandum in November 2002, (Malcolm Pirnie, Inc.).

A second phase of investigation was performed to confirm and expand upon the information obtained from the initial phase of investigation. The Phase II field program was performed in July and August 2003 and included installation of bedrock monitoring wells, and sampling of several media including sediment, surface water, water seep, and groundwater. The 2005 RI report (Malcolm Pirnie, Inc.) provides the results of both phases of remedial investigation at the Lapp Site. The March 2007 FS report provided the remedial alternatives described in this document.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Department and the Lapp Insulator Company entered into a Consent Order on August 21, 2001. The Order obligates the responsible parties to implement an RI/FS remedial program. After the remedy is selected, the Department will approach the PRPs to implement the selected remedy under an Order on Consent.

SECTION 5: SITE CONTAMINATION

A remedial investigation/feasibility study (RI/FS) has been conducted to evaluate the alternatives for addressing the significant threats to human health and/or the environment.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between October 2001 and August 2003. The field activities and findings of the investigation are described in the RI report.

Soil, soil gas, groundwater, surface water, water seep and sediment sampling occurred in several phases. In addition to the on-site sampling, adjacent homeowner drinking water supply wells were sampled several times.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the soil, groundwater, and surface water contains contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the Department's Soil Cleanup Objectives in 6 NYCRR Part 375-6.

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized in Section 5.1.2. More complete information can be found in the RI report.

5.1.2: Nature and Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated.

As described in the RI report, many soil, groundwater, surface water, soil gas, and sediment samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants that exceed their SCGs are volatile organic compounds (VOCs). For comparison purposes, where applicable, SCGs are provided for each medium. Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for soil and sediment.

The majority of the 66 acre site did not have contamination at levels of concern. As a result of soil, groundwater, surface water, and sediment sampling, as well as a site-wide soil gas survey, four "hot spot" areas of concern have been identified at the site (Areas A, B, C, and D - see Figure 2):

Area A is located near the southeast corner of Building 23, the former machine shop area. Historical information indicates that handling of solvents occurred at the loading dock at the southeast corner of the building and that underground storage tanks (USTs) containing TCA and TCE were formerly located here.

Area B is located east of Building 31, and is currently used as a storage warehouse. Past activities in this area included a shipping and receiving dock and warehouse area. A gasoline UST was formerly located at the southeast corner of Building 31. TCE was the primary VOC detected at Area B. 1,2-Dichloroethene (1,2-DCE) and 1,1-Dichloroethane (1,l-DCA) were also detected at the same locations as the TCE detections.

Area C is located at the former hazardous materials storage pad in the southern portion of the Site. The sampling program in this hot spot area encompassed the concrete storage pad and extended southeast to the top of the steep embankment adjacent to Oatka Creek. Overall the data collected from Area C indicated no well defined area of contamination from past use, but instead showed scattered detections of primarily chlorinated VOCs encompassing approximately 27,300 square feet. The primary VOCs detected in the soil samples collected from Hot Spot Area C are TCE, PCE, and TCA.

Area D is located adjacent to the south side of Area C in the northwest corner of the Southeast fill area. The primary VOCs detected (TCE and TCA) in the soil samples from Area D are similar to those detected at Area C.

Table 1 summarizes the degree of contamination for the contaminants of concern in surface soil, subsurface soil, sediment, groundwater, and surface water and compares the data with the SCGs for the site. Table 2 summarizes background sample data used for comparison to on-site detections. The following are the media which were investigated and a summary of the findings of the investigation.

Surface Soil 0-6 inches

Much of the site is covered with pavement or buildings; therefore, surface soil samples could not be obtained in many areas. In the hot spot areas, there were detections of VOC contaminants. Some semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and inorganic compounds were detected in surface soil site-wide, but not at levels of significant concern. Although no significant areas of surface soil contamination of concern were found at the site, the surface soil contamination identified during the RI/FS will be addressed in the remedy selection process.

Subsurface Soil

Subsurface VOC soil contamination at levels above unrestricted values occurred mainly in Areas A and C. Figure 5 depicts the areas of VOC impacted subsurface soils in Areas A and C. Areas B and D also had VOC contamination present, but at levels only slightly above unrestricted use SCGs. SVOCs and PCBs were not present above SCGs in subsurface soil at the site. There was only one detection of a pesticide slightly above unrestricted use SCGs. No inorganic compounds were detected at levels of significant concern. Table 1 compares detected levels with unrestricted use SCGs.

Subsurface soil contamination identified during the RI/FS will be addressed in the remedy selection process.

Groundwater

Groundwater contamination at the site consists mainly of VOCs, with the highest VOC levels in the four main areas of concern. Figures 6, 7, and 8 show maximum levels of groundwater contamination at the four areas of concern. The groundwater contaminant plumes extend to the cliff wall above Oatka Creek.

VOCs:

- Area A: Overburden groundwater was not present in Area A. In the shallow bedrock in Area A, VOC contamination was present at elevated levels. Intermediate and deep bedrock VOC contamination was also present, but at levels significantly less then the shallower bedrock.

- Area B: The highest VOC detections in the Area B overburden groundwater were found in a temporary micro-well (PMW-12) installed during a pre-RI investigation conducted by Lapp in 1995. The detections were not replicated, but a bedrock monitoring well slightly downgradient of Area B showed VOC contaminants at levels above groundwater standards. It is possible that the vapor extraction system that Lapp installed (described above) did address some overburden groundwater contamination in this area.

- Areas C & D: VOC contamination in Areas C and D groundwater is present in both the overburden and shallow bedrock groundwater at levels of concern. The intermediate groundwater well installed in Area D was dry.

SVOCs, Pesticides, PCBs, & Inorganics (metals):

- SVOCs were detected at only trace levels at the site, all below the groundwater standards.

- No pesticides were detected in site groundwater.

- There was only one low level detection of PCBs in groundwater; however, this detection was from a micro-well with high turbidity. Given the lack of any other discernable PCB contamination at the site and the very low level detected in this sample, PCBs are not considered a significant groundwater concern.

- Inorganics (metals) detected in site groundwater did not suggest any sources other than naturally occurring conditions.

Private groundwater supply wells near the site were sampled in 1995 and low level detections of VOCs were found in three of five wells sampled. Re-sampling in 1998 did not detect VOCs. As part of the RI, additional samples were obtained from the residential wells every three months for a year. No levels were detected. Given the lack of contaminants and the apparent location of the residential wells upgradient of the site, it does not appear that the site was the source of the short term contamination detected in 1995. Therefore, it does not appear that the site is impacting the private groundwater supply wells.

Groundwater contamination identified during the RI/FS will be addressed in the remedy selection process.

Surface Water

Two surface water sampling events were conducted to determine if any site contaminants have migrated to Oatka Creek. A total of ten samples were collected, two rounds from five locations; one upstream location, three locations adjacent to the site, and one location downstream of the site. Samples were also collected (once each round) from the only visible seep discharging from the steep embankment along the eastern side of the site, adjacent to Oatka Creek.

No VOCs, SVOCs, Pesticides, or PCBs were detected in the surface water samples at concentrations above the water quality standards. However, several VOCs that were detected in on-site groundwater samples (1,1,1-TCA, TCE, 1,l-DCA) were also detected in surface water samples at concentrations below the water quality standards for Class C surface waters.

The only metals detected in the surface water samples at concentrations above the surface water quality standards were iron and aluminum. Since the concentrations of these naturally occurring metals were relatively consistent upstream and downstream of the Site, it can be concluded that these concentrations are not due to an on-site source.

A single visibly flowing seep exists southeast of Area A, along the steep embankment adjacent to Oatka Creek. This location was sampled during both events. Several VOCs, including TCE and TCA, were detected at low concentrations in both seep samples; however, the concentrations were below the Department's Class C surface water criteria. No SVOCs, pesticides, or PCBs were detected in the seep samples, and no metals were detected at concentrations above the water quality standards.

Since the RI/FS did not detect surface water contamination of concern, surface water will not be addressed in the remedy selection process.

Sediments

Sediment samples were taken at approximately the same locations as the five surface water sampling locations in Oatka Creek. These samples were collected during each of two events for a total of ten samples plus duplicates (one each event). Results were compared to the sediment criteria from the Department's Technical Guidance for Screening Contaminated Sediments. Only one VOC, benzene, was detected above the sediment criteria. It was detected at the downstream sample location (SED-5) and only once, during the Phase I sampling event only. This benzene detection may be the result of runoff from street traffic, as SED-5 is located close to and downstream of the Munson Street Bridge. No other VOCs were detected above the sediment criteria; however, low levels of several other VOCs were detected in the sediment samples, including TCA, TCE, 1,1-DCA, and 1,2-DCE.

A total of nine SVOCs were detected at concentrations above the Department's Sediment Screening Criteria. However, these detections occurred in only one location (SED-3), and in only one round of samples collected at that location. These concentrations were not repeated in the other round from SED-3, or in any other sediment samples, indicating that the areal extent of elevated SVOCs is limited.

No pesticides were detected above the Department's Sediment Screening Criteria in any of the sediment samples.

PCBs were detected in the Phase I sampling event at the SED-3 and SED-4 sample locations at concentrations above the Department's Sediment Screening Criteria. However, the PCB detections could not be replicated in the second sampling event, even in samples collected from these same locations; implying that the areal extent of any potentially PCB contaminated sediment would be very limited.

The metals mercury, magnesium, cadmium, chromium, copper, lead, manganese, nickel, silver, and zinc were detected at concentrations above the Department's Sediment Screening Criteria in at least one of the ten sediment samples collected. All of the metals exceedances were either only slightly above criteria, or were consistent from upstream to downstream (implying that they are naturally occurring). Based on the analytical results and the locations at which they were found, no site-related source of metals contamination was indicated.

Since the RI/FS did not detect sediment contamination of concern, sediments will not be addressed in the remedy selection process.

Soil Vapor/Sub-Slab Vapor/Air

A site-wide soil gas survey was performed during the RI. The soil gas survey was used as a screening tool to attempt to identify previously unknown VOC source areas. The survey results confirmed that the four known hot spots (Areas A, B, C, and D) appear to be the only major sources of VOC contaminants at the Lapp Insulator Site. Other sporadic low level detections were identified around the hot spot areas and along the eastern site boundary. These lower level detections do not appear to indicate the presence of other major sources of VOC contamination. No known completed exposure pathways currently exist at the site. Given the levels of VOCs in the soil gas, soil vapor intrusion could become a potential pathway of concern at the site. The source of the VOCs and the potential for exposure will be addressed in the remedy selection and site management process.

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

Although Lapp installed and operated a soil vapor extraction system in Areas A, B, and C during the late 1990s, there were no Department approved IRMs performed at this site during the RI/FS.

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 8 of the RI report. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

As stated in the RI, contaminated soil and groundwater underlie the Site. In addition, elevated levels of VOCs were detected in the soil vapor, which could impact the indoor air quality via the soil vapor intrusion pathway.

As a result, under the existing and potential uses of the Site, potentially exposed populations and their related exposure pathways include:

Lapp Employees:

- Exposure to contaminated surface soil via incidental ingestion and dermal contact by site workers whose work responsibilities involve work outdoors or who may take breaks outdoors is minimal since much of the Site is covered.

- The potential for soil vapor intrusion to impact indoor air exists near the hot spot areas. Low levels of site-related VOCs were detected in soil vapor near some regularly occupied buildings; however, given the low levels and the large, open, industrial usage of these buildings, even though this pathway was not evaluated, these levels are not expected to impact indoor air quality.

Trespassers:

- As the Site is not fenced and would likely not be in the future, trespassers may gain access to the Site. Since their activities would not typically involve digging, and because gravel and/or vegetation cover the hot spot areas, the risk associated with this potential pathway is minimal.

Construction/Utility Workers:

- Construction/utility workers who may be required to open a utility excavation on-Site could be exposed to VOCs in surface and subsurface soil via direct contact or incidental ingestion, and to VOCs in soil and groundwater via inhalation of VOCs volatilized from these media.

Public:

- Most of the community is served by public water and thus do not drink the groundwater. For those few homes which use a private well for drinking water, the water was tested and it was determined that the site has not contaminated their drinking water. Therefore, groundwater contamination is not a public health concern. Furthermore, the surface water and sediment in Oatka Creek are not contaminated at levels of concern by the Site. Based on the very low concentrations of VOCs in soil vapor on the site boundary and the hydrogeologic conditions, including a gully separating the Site from the nearest offsite receptor, the potential for soil vapor intrusion into off-site structures is not expected.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

The Fish and Wildlife Impact Analysis, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

Oatka Creek, adjacent to the site, receives surface water and groundwater discharge from the site. Although VOCs in groundwater discharge do not appear to be adversely affecting surface water and sediment in Oatka Creek at this time, the potential for future impacts remains.

Moderate levels of some SVOCs, metals and PCBs were identified in Oatka Creek sediments; however, no active sources of these compounds were identified on-site. The levels present in the sediments are not at levels of concern.

Site contamination has impacted the groundwater resource in the overburden and bedrock aquifer. The overburden/shallow bedrock aquifer is a source of drinking water in the area. Quarterly sampling of the closest private wells did not indicate impacts.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- potential exposures of persons at or around the site to volatile organic compounds in soil, soil vapor, and groundwater;
- environmental exposures of flora or fauna to volatile organic compounds in surface water;
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards; and,
- Soil SCGs based on remedial program soil cleanup objectives.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Lapp Insulator Site were identified, screened and evaluated in the FS report which is available at the document repositories established for this site. For the purposes of this PRAP, an additional alternative (Alternative 3A) is presented as a modification of Combination Alternative 3 proposed in the FS.

A summary of the remedial alternatives that were considered for this site is discussed below. The present worth represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved.

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated soils, groundwater, and soil vapor at the site.

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

No Action Alternative: No Action - with Groundwater Monitoring

Present Worth: *$410,000*
Capital Cost: *$71,000*
Annual Costs:
(Years 1-30): *$22,000*

This alternative would consist of annual monitoring of 15 groundwater monitoring wells. The capital costs also include the cost of decommissioning 26 other monitoring wells on site. This monitoring program assumes 5 overburden and 10 bedrock monitoring wells would be monitored.

Alternative #1: (FS Remedial Combination 1) Protective Soil Cover with Downgradient Phytoremediation

Present Worth: *$1,400,000*
Capital Cost: *$770,000*
Annual Costs:
(Years 1-30): *$39,000*

This alternative would include the installation of a soil cover over the soil hot spots and a phytoremediation system downgradient from groundwater hot spots. A site-wide groundwater monitoring program would be implemented.

The soil cover would be placed over Areas A and C (areas shown in Figure 5) to eliminate direct contact of impacted soils in those areas. The Area A cover would consist of a clean soil cover with a demarcation layer in vegetated areas and asphalt paving in parking lot/driveway areas. A clean soil cover with a demarcation layer would act as a cover for Area C.

The phytoremediation system would consist of approximately 5000 hybrid-poplar tree cuttings extending from hot spot A to hot spot D along the creek drop-off. The intent of the trees would be to capture contaminants from the groundwater via the tree roots. These trees are very fast growing and should begin to have an effect on groundwater within the first few growing seasons.

The installation of additional sub-slab soil vapor mitigation systems has not been deemed necessary at this time for the current use of the on-site buildings. However, the Site Management Plan would require a soil vapor intrusion evaluation if building use changes were proposed (e.g. - new office space in a basement, etc.). The periodic certification would certify that such an evaluation occurred if any building use changes were made.

The groundwater monitoring program would monitor the effectiveness of the remedy and track contaminant levels site-wide over time. This monitoring program assumes 5 overburden and 10 bedrock monitoring wells would be monitored.

Alternative #2: (FS Remedial Combination 2) Targeted Excavation and Soil Cover with Downgradient Phytoremediation

Present Worth: *$2,900,000*
Capital Cost: *$2,300,000*
Annual Costs:
(Years 1-30): *$39,000*

This alternative would include targeted soil excavation and off-Site disposal of accessible soil contamination in Areas A and C (areas shown in Figure 5), installation of covers over Areas A and C, and installation of a phytoremediation system downgradient of groundwater hot spots. A site-wide groundwater monitoring program would be implemented.

A total of approximately 3,000 cubic yards of soil would be excavated. The Area A soil excavation would be approximately 11,000 square feet in area and two feet in depth. This was determined during the FS to represent the removal of approximately 80% of the mass of VOC contamination in Area A. The Area C soil excavation is estimated to be approximately 27,300 square feet in area and target the four to six foot depth interval. This was determined during the FS to represent the removal of approximately 90% of the mass of VOC contamination in Area C. The precise area and depth of the targeted excavations would be better defined during the design of the remedy.

The Area A cover would consist of a clean soil cover with a demarcation layer in vegetated areas and asphalt paving in parking lot/driveway areas. A clean soil cover with a demarcation layer would act as a cover for Area C.

The phytoremediation system would consist of approximately 5,000 hybrid-poplar tree cuttings extending from hot spot A to hot spot D along the creek drop-off. The intent of the trees would be to capture contaminants from the groundwater via the tree roots. These trees are very fast growing and should begin to have an effect on groundwater within the first few growing seasons.

The installation of additional sub-slab soil vapor mitigation systems has not been deemed necessary at this time for the current use of the on-site buildings. However, the Site Management Plan would require a soil vapor intrusion evaluation if building use changes were proposed (e.g. - new office space in a basement, etc.). The periodic certification would certify that such an evaluation occurred if any building use changes were made.

The groundwater monitoring program would monitor the effectiveness of the remedy and track contaminant levels site-wide over time. This monitoring program assumes 5 overburden and 10 bedrock monitoring wells would be monitored.

Alternative #3: (FS Remedial Combination 3) Targeted Excavation and Soil Cover with Targeted Groundwater Chemical Oxidation

Present Worth: *$12,200,000*
Capital Cost: *$11,200,000*
Annual Costs:
(Years 1-30): *$68,000*

This combination alternative would include targeted soil excavation and off-Site disposal (areas shown in Figure 5), installation of covers over Areas A and C and targeted in-situ chemical oxidation treatment in overburden and bedrock groundwater Hot Spots A, C and D. A site-wide groundwater monitoring program would be implemented.

A total of approximately 3,000 cubic yards of soil would be excavated. The Area A soil excavation would be approximately 11,000 square feet in area and two feet in depth. This was determined during the FS to represent the removal of approximately 80% of the mass of VOC contamination in Area A. The Area C soil excavation is estimated to be approximately 27,300 square feet in area and target the four to six foot depth interval. This was determined during the FS to represent the removal of approximately 90% of the mass of VOC contamination in Area C. The precise area and depth of the targeted excavations would be better defined during the design of the remedy.

The Area A cover would consist of a clean soil cover with a demarcation layer in vegetated areas and asphalt paving in parking lot/driveway areas. A clean soil cover with a demarcation layer would act as a cover for Area C.

In-situ chemical oxidation would be used to target the portion of groundwater that contains the highest concentration of contaminants (see Figure 9).

The installation of additional sub-slab soil vapor mitigation systems has not been deemed necessary at this time for the current use of the on-site buildings. However, the Site Management Plan would require a soil vapor intrusion evaluation if building use changes were proposed (e.g. - new office space in a basement, etc.). The periodic certification would certify that such an evaluation occurred if any building use changes were made.

The groundwater monitoring program would monitor the effectiveness of the remedy and track contaminant levels site-wide over time. This monitoring program assumes 5 overburden and 10 bedrock monitoring wells would be monitored.

Alternative #3A: Targeted Excavation and Soil Cover with Targeted Overburden Groundwater Chemical Oxidation

Present Worth: *$3.4M*
Capital Cost: *$2.9M*
Annual Costs:
(Years 1-30): *$30,000*

This combination alternative would include targeted soil excavation and off-Site disposal (areas shown in Figure 5), installation of covers over Areas A and C and targeted in-situ chemical oxidation treatment in overburden groundwater in Hot Spots C and D. A site-wide groundwater monitoring program would be implemented. Furthermore, the existing asphalt cover over Area C and the existing soil cover over Area D would be maintained.

A total of approximately 3,000 cubic yards of soil would be excavated. The Area A soil excavation would be approximately 11,000 square feet in area and two feet in depth. This was determined during the FS to represent the removal of approximately 80% of the mass of VOC contamination in Area A. The Area C soil excavation is estimated to be approximately 27,300 square feet in area and target the four to six foot depth interval. This was determined during the FS to represent the removal of approximately 90% of the mass of VOC contamination in Area C. The precise area and depth of the targeted excavations would be better defined during the design of the remedy.

The Area A cover would consist of a clean soil cover with a demarcation layer in vegetated areas and asphalt paving in parking lot/driveway areas. A clean soil cover with a demarcation layer would act as a cover for Area C.

In-situ chemical oxidation would be used to target the portions of overburden groundwater in Areas C & D that contain the highest concentration of contaminants (see Figure 9). The in-situ chemical oxidation costs in Alternative 3A are based on an average of similar treatments at other Department sites.

The groundwater monitoring program would monitor the effectiveness of the remedy and track contaminant levels site-wide over time. This monitoring program assumes 5 overburden and 10 bedrock monitoring wells would be monitored.

The installation of additional sub-slab soil vapor mitigation systems has not been deemed necessary at this time for the current use of the on-site buildings. However, the Site Management Plan would require a soil vapor intrusion evaluation if building use changes were proposed (e.g. - new office space in a basement, etc.). The periodic certification would certify that such an evaluation occurred if any building use changes were made.

Alternative #4: (FS Remedial Combination 4) Targeted Excavation and Soil Cover with In-Well Air Stripping

Present Worth: *$5,700,000*
Capital Cost: *$4,000,000*
Annual Costs:
(Years 1-30): *$117,000*

This combination alternative would include targeted soil excavation and off-Site disposal (areas shown in Figure 5), installation of covers over Areas A and C, and groundwater treatment using in-well air stripping. A site-wide groundwater monitoring program would be implemented.

A total of approximately 3,000 cubic yards of soil would be excavated. The Area A soil excavation would be approximately 11,000 square feet in area and two feet in depth. This was determined during the FS to represent the removal of approximately 80% of the mass of VOC contamination in Area A. The Area C soil excavation is estimated to be approximately 27,300 square feet in area and target the four to six foot depth interval. This was determined during the FS to represent the removal of approximately 90% of the mass of VOC contamination in Area C. The precise area and depth of the targeted excavations would be better defined during the design of the remedy.

The Area A cover would consist of a clean soil cover with a demarcation layer in vegetated areas and asphalt paving in parking lot/driveway areas. A clean soil cover with a demarcation layer would act as a cover for Area C.

The in-well air stripping remediation would be designed to treat the groundwater in-situ (in place). The proposed treatment would consist of installing up to 97 wells in the overburden and shallow bedrock in Areas A and C (see Figure 9). This approach would target the portion of groundwater where the highest contaminant concentrations were identified.

The installation of additional sub-slab soil vapor mitigation systems has not been deemed necessary at this time for the current use of the on-site buildings. However, the Site Management Plan would require a soil vapor intrusion evaluation if building use changes were proposed (e.g. - new office space in a basement, etc.). The periodic certification would certify that such an evaluation occurred if any building use changes were made.

The groundwater monitoring program would monitor the effectiveness of the remedy and track contaminant levels site-wide over time. This monitoring program assumes 5 overburden and 10 bedrock monitoring wells would be monitored.

Alternative #5: (FS Remedial Combination 5) Targeted Excavation and Soil Cover with Targeted Groundwater Chemical Oxidation followed by Bioaugmentation/Enhancement

Present Worth: *$12,700,000*
Capital Cost: *$11,700,000*
Annual Costs:
(Years 1-30): *$68,000*

This combination alternative would include targeted soil excavation and off-Site disposal (areas shown in Figure 5), installation of covers over Areas A and C, and targeted in-situ chemical oxidation treatment in groundwater Hot Spots A, C and D, followed by bioaugmentation / enhancement "polishing" once groundwater contaminant levels are sufficiently reduced though chemical oxidation. A site-wide groundwater monitoring program would be implemented.

A total of approximately 3,000 cubic yards of soil would be excavated. The Area A soil excavation would be approximately 11,000 square feet in area and two feet in depth. This was determined during the FS to represent the removal of approximately 80% of the mass of VOC contamination in Area A. The Area C soil excavation is estimated to be approximately 27,300 square feet in area and target the four to six foot depth interval. This was determined during the FS to represent the removal of approximately 90% of the mass of VOC contamination in Area C. The precise area and depth of the targeted excavations would be better defined during the design of the remedy.

The Area A cover would consist of a clean soil cover with a demarcation layer in vegetated areas and asphalt paving in parking lot/driveway areas. A clean soil cover with a demarcation layer would act as a cover for Area C.

In-situ chemical oxidation would be used to target the portion of groundwater that contains the highest concentration of contaminants (see Figure 9). Bioaugmentation and/or nutrient enhancement would then be applied within the same footprint in order to enhance the bio-degradation of residual VOCs.

The installation of additional sub-slab soil vapor mitigation systems has not been deemed necessary at this time for the current use of the on-site buildings. However, the Site Management Plan would require a soil vapor intrusion evaluation if building use changes were proposed (e.g. - new office space in a basement, etc.). The periodic certification would certify that such an evaluation occurred if any building use changes were made.

The groundwater monitoring program would monitor the effectiveness of the remedy and track contaminant levels site-wide over time. This monitoring program assumes 5 overburden and 10 bedrock monitoring wells would be monitored.

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of inactive hazardous waste disposal sites in New York.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards

and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision. The costs for each alternative are presented in Table 3.

This final criterion is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the Department addressed the concerns raised.

In general, the public comments received expressed concern over the ability of Lapp to fund the remediation. As discussed in the responsiveness summary, the Department will work with Lapp to develop the most effective approach to funding the remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the Department has selected Alternative #3A: targeted soil excavation, targeted groundwater treatment, soil/asphalt cover, and enhanced groundwater monitoring as the remedy for this site. The elements of this remedy are described at the end of this section.

The selected remedy is based on the results of the RI and the evaluation of alternatives as outlined in Section 7.2 above.

Alternative 3A was selected because, as described below, it satisfies the threshold criteria and provides the best balance of the primary balancing criteria described in Section 7.2. It will achieve the remediation goals for the site by removing source area soils and also by remediating the groundwater contamination to the maximum extent technically feasible. This remedy will best create the conditions needed to restore groundwater quality to the extent practicable. Alternatives 3, 4, and 5 would also comply with the threshold selection criteria but to a lesser degree or with lower certainty due to concerns over technical practicability.

The No Action Alternative and Alternatives 1 and 2 would not satisfy the two threshold criteria. Since the groundwater in the source areas (hot spots) would not be addressed at all, compliance with SCGs for groundwater would not be obtained (threshold criteria #2). Further, installation of a phytoremediation system downgradient of these source areas, as proposed in Alternatives 1 and 2, has the potential to treat or contain only very shallow groundwater migration toward Oatka Creek. Deeper overburden and bedrock groundwater would not be significantly affected, possibly resulting in continued contaminant migration toward Oatka Creek (threshold criteria #1).

Although Alternative 3A will not directly remediate the bedrock groundwater at the site, it will remediate overburden groundwater to the extent technically feasible, and may have an impact on shallow bedrock contaminant levels in portions of the site.

Alternatives 3, 4, and 5 were designed to actively target the highest levels of overburden and bedrock groundwater contamination in the source areas. Alternative 3A was designed to actively target the highest levels of overburden groundwater contamination in source areas C & D. Given the size of the site, there would still be areas on-site with groundwater contamination that would not be directly addressed by these alternatives. These areas would need to be addressed by groundwater use restrictions and would require monitoring to ascertain the extent to which the remediation of the source areas improves the groundwater quality site-wide.

Because Alternatives 3, 3A, 4, and 5 satisfy the threshold criteria, the five balancing criteria are particularly important in selecting a final remedy for the site.

Alternatives 3, 3A, 4, and 5 have essentially the same short-term effectiveness and impacts. The targeted excavation and cover installation work is the same for each. Alternatives 3, 3A, 4, and 5 also have similar soil boring installation requirements, with Alternatives 3, 3A, and 5 requiring borings and Alternative 4 requiring specially designed wells. Alternative 3A will require fewer and shallower wells, resulting in marginally less short term impacts. Short-term effectiveness for meeting groundwater SCGs is poor for each alternative. Both in-situ chemical oxidation and in-well air stripping take time to effectively address high levels of groundwater contamination.

The long term effectiveness of Alternative 4 is questionable. There is a strong tendency at sites with low groundwater permeability (such as Lapp) for the in-well air stripping technology in Alternative 4 to create preferential pathways, limiting the effectiveness of the remediation. Only the groundwater in the immediate areas around the wells would be effectively addressed.

Alternatives 3 and 5 have similar long term effectiveness in that they would attempt to address the most significant groundwater contamination, with Alternative 5 adding bioremediation in an attempt to continue to address residual contamination after the in-situ chemical oxidation has been completed. However, the technical practicability, and hence the long-term effectiveness, of the bedrock groundwater remediation portions of Alternatives 3 and 5 is questionable. It has been the Department's experience that in-situ chemical oxidation of bedrock at sites with similar conditions to Lapp is not effective. The main problem with in-situ chemical oxidation in bedrock at these sites is the difficulty with adequately disbursing the chemical reagents throughout the bedrock fracture network. Additionally, there are concerns over whether there would be adequate residence time (the amount of time needed for the chemical reagent to be in direct contact with the contaminants). These same concerns (disbursing the reagents and residence time) also apply to the application of the follow-up bioremediation in Alternative 5.

The long term effectiveness of Alternative 3A will be slightly less than Alternatives 3 & 5. Also, no bioremediation would be attempted (as in Alternative 5). Further, no attempt would be made to address bedrock groundwater contamination due to technical impracticability. Alternative 3A will best address the long-term effectiveness by remediating the overburden groundwater to the extent feasible and monitoring bedrock groundwater.

Both in-situ chemical oxidation (Alternatives 3, 3A, and 5) and in-well air stripping (Alternative 4) are subject to "rebound" of contaminant levels after treatment. However, due to the potential for establishing preferential pathways (and missing areas of contamination) the in-well air stripping is particularly susceptible to rebound.

The implementability of Alternatives 3, 3A, 4, and 5 is similar. The excavation of soil, installation of covers, and drilling of borings are all common construction practices. Disruption to site manufacturing activities would also be similar, with Alternative 3A causing the least initial disruptions.

Alternatives 3, 3A, 4, and 5 would all reduce the volume of contaminated soil by excavation and off-site disposal. Of Alternatives 3, 3A, 4, and 5, Alternative 5, if successful, would best reduce the volume and mobility of both the most significantly contaminated groundwater and some remaining residual groundwater contamination in the source areas. However, as discussed above, the Department believes the remediation of the bedrock groundwater at this site to be technically impracticable. The Department also believes the in-well air stripping technology to be technically impracticable at this site.

The costs for Alternatives 3 and 5 would be similar at $12,200,000 to $12,700,000, respectively, with the additional cost for Alternative 5 consisting of the bioremediation of the residual contaminants. Alternative 4 would cost approximately $5,700,000, about half as much as Alternatives 3 and 5. Alternative 3A will cost approximately $3,400,000.

The estimated present worth cost to implement the selected remedy is $3,400,000. The cost to construct the remedy is estimated to be $2,900,000 and the estimated average annual costs for 30 years is $30,000.

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. The targeted excavation and off-Site disposal of contaminated soil will occur in Areas A and C. The Area A soil excavation will be approximately 11,000 square feet in area and two feet in depth. The Area C soil contaminant mass will be approximately 27,300 square feet in area and target the four to six foot depth interval. Based on RI data, much of the Area C soil above four feet could be stockpiled on-Site and then placed back in the excavation upon removal of the four to six foot interval. The area and depth of soil to be excavated will be confirmed during the design of the remedy. Clean soil will be brought on-Site to balance the excavation of the affected areas. Additional work associated with excavation in Area C will include removal and disposal of the concrete pad. The soils from the hot spots will be characterized prior to delivery to an off-Site landfill.

3. Installation of a soil or asphalt cover will occur in Areas A and C. The Area A soil barrier will be approximately 11,000 square feet in area. The Area C soil and asphalt barrier will be approximately 27,300 square feet in area. The soil cover constructed over Areas A and C to prevent exposure to residually contaminated soils will be one-foot thick and will consist of clean soil underlain by an indicator, such as orange plastic snow fence, to demarcate the cover soil from the subsurface soil. The top six inches of soil will be of sufficient quality to support vegetation. Clean soil will constitute soil that meets the Division of Environmental Remediation's criteria for backfill or local site background. Non-vegetated Area A areas (roadways, parking lots, etc.) will be covered by eight inches of stone, four inches of base, three inches of binder, and 1.5 inches of topcoat. The existing asphalt cover over Area C and the existing soil cover over Area D will be maintained.

4. An in-situ chemical oxidation system will be installed and implemented in Area C & D overburden groundwater. A more detailed design will be generated during the design phase.

5. Additional overburden and shallow bedrock groundwater monitoring wells will be installed. Specific quantities and locations will be evaluated during the remedy design.

6. A monitoring program will be implemented to track the groundwater conditions after the in-situ chemical oxidation in the overburden is complete.

7. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as

determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

8. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover system to restrict excavation below the soil cover's demarcation layer or pavement. (b) development and implementation of a site-specific health and safety plan to ensure that future excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community, and will be properly managed in a manner acceptable to the Department; (c) continued evaluation of the potential for vapor intrusion for any new buildings built on the site or change of use of existing buildings, and will include provisions for mitigation of any impacts identified; (d) monitoring of groundwater; (e) identification of any use restrictions on the site; and, (f) provisions for the continued proper operation and maintenance of the components of the remedy.

9. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; (c) certify that any new buildings or existing buildings with use changes had soil vapor intrusion evaluations performed and, if necessary, mitigation systems installed; and (d) state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

10. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

Since the remedy results in untreated hazardous waste remaining at the site, a long-term monitoring program will be instituted. Additional overburden and shallow bedrock groundwater monitoring wells will be installed. Specific locations will be further evaluated during the remedy design. This program will allow the effectiveness of the soil removal and in-situ chemical oxidation to be monitored and will be a component of the long-term management for the site.

SECTION 9: <u>HIGHLIGHTS OF COMMUNITY PARTICIPATION</u>

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- Fact Sheets were distributed to the public contact list.
- A public meeting was held on February 9, 2009 to present and receive comment on the PRAP.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

TABLE 1
Nature and Extent of Contamination
(October 2001 Sampling Dates)

SURFACE SOIL

Surface Soil	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1,1-Trichloroethane	0.009-100	0.68	3 of 11
	1,1-Dichloroethane	0.002-6.7	0.27	3 of 11
	Cis-1,2-Dichloroethene	0.002-3.2	0.25	3 of 11
	Trichloroethene	0.002-23	0.47	6 of 11
	Xylene	0.003-0.26	0.26	4 of 11
Semivolatile Organic Compounds (SVOCs)	None above SCG			
PCB/Pesticides	PCBs (total)	0.15 - 1.4	0.1	4 of 8
Inorganic Compounds	Calcium	23,000-95,000	SB[d]	3 of 4
	Iron	23,000	SB[d]	1 of 4
	Lead	14-160	63	2 of 4
	Sodium	ND-250	SB[d]	1 of 4
	Zinc	47-4,500	109	2 of 4
	Antimony	ND-0.6	DL[e]	1 of 4
	Cadmium	0.1-5.9	2.5	1 of 4
	Chromium	9.7-89	30	1 of 4
	Magnesium	4,300-10,000	SB[d]	1 of 4
	Thallium	ND-0.2	DL[e]	2 of 4

TABLE 1
Nature and Extent of Contamination (Continued)

SUBSURFACE SOIL

Subsurface Soil	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1,1-Trichloroethane	0.002-110	0.68	5 of 43
	1,1-Dichloroethane	0.25-2	0.27	4 of 43
	1,1-Dichloroethene	0.001-0.63	0.33	1 of 43
	Acetone	0.005-0.12	0.05	2 of 43
	Benzene	0.004-0.065	0.06	1 of 43
	Trichloroethene	0.001-45	0.47	8 of 43
	Xylene	0.001-0.7	0.26	3 of 43
Semivolatile Organic Compounds (SVOCs)	None above SCG			
PCB/Pesticides	4,4'-DDE	ND-0.016	0.0033	1 of 9
Inorganic Compounds	Antimony	ND-0.3	DL[c]	1 of 9
	Calcium	1,300-88,000	SB[d]	5 of 9
	Copper	9.7-65	50	1 of 9
	Lead	5-67	63	1 of 9
	Magnesium	1,000-17,000	SB[d]	5 of 9
	Thallium	0.2-0.4	DL[c]	5 of 9

TABLE 1
Nature and Extent of Contamination (Continued)

GROUNDWATER

Groundwater	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
OVERBURDEN GROUNDWATER				
Volatile Organic Compounds (VOCs)	Chloroethane	ND-22	5	2 of 12
	1,1-Dichloroethane	5-3,200	5	9 of 17
	1,2-Dichloroethane	ND-5	0.6	1 of 12
	1,1-Dichloroethene	72-690	5	8 of 17
	cis-1,2-Dichloroethene	6-35	5	6 of 12
	Trans-1,2-Dichloroethene	2-6	5	1 of 12
	Methylene Chloride	14-60	5	2 of 12
	1,1,1-Trichloroethane	23-49,000	5	10 of 17
	1,1,2-Trichloroethane	4-65	1	5 of 17
	Trichloroethene	2-76,000	5	10 of 17
	Vinyl Chloride	4-12	2	3 of 12
Semivolatile Organic Compounds (SVOCs)	None above SCG			
PCB/Pesticides	Aroclor	ND-0.15	0.09	1 of 3
Inorganic Compounds	Iron	110-14,000	300	2 of 3
	Magnesium	25,000-40,000	35,000	2 of 3
	Sodium	58,000-590,000	20,000	3 of 3
	Antimony	3-6	3	1 of 3
	Manganese	86-1,000	300	1 of 3

TABLE 1
Nature and Extent of Contamination (Continued)

Groundwater	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
SHALLOW BEDROCK GROUNDWATER				
Volatile Organic Compounds (VOCs)	Acetone	8-3,900	50	1 of 14
	Benzene	ND-18	1	1 of 14
	Chloroethane	18-36	5	2 of 14
	1,1-Dichloroethane	29-30,000	5	8 of 14
	1,1-Dichloroethene	15-1,000	5	5 of 14
	cis-1,2-Dichloroethene	33-1,900	5	7 of 14
	Trans-1,2-Dichloroethene	2-100	5	2 of 14
	tetrachloroethene	4-6	5	1 of 14
	Toluene	4-15	5	1 of 14
	1,1,1-Trichloroethane	410-120,000	5	6 of 14
	1,1,2-Trichloroethane	ND-2	1	1 of 14
	Trichloroethene	15-37,000	5	8 of 14
	Vinyl Chloride	7-14	2	3 of 14
	m&p-Xylene	1-13	5	1 of 14
	o-Xylene	2-5	5	1 of 14
Semivolatile Organic Compounds (SVOCs)	None above SCG			
PCB/Pesticides	None above SCG			
Inorganic Compounds	Iron	2,500-6,800	300	3 of 3
	Magnesium	47,000-77,000	35,000	3 of 3
	Sodium	22,000-160,000	20,000	3 of 3

TABLE 1
Nature and Extent of Contamination (Continued)

Groundwater	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
INTERMEDIATE BEDROCK GROUNDWATER				
Volatile Organic Compounds (VOCs)	Acetone	9-52	50	1 of 8
	Benzene	9-17	1	5 of 8
	Chloroethane	ND-5	5	2 of 8
	1,1-Dichloroethane	56-190	5	4 of 8
	cis-1,2-Dichloroethene	2-47	5	2 of 8
	Ethylbenzene	4-13	5	2 of 8
	Toluene	2-7	5	2 of 8
	1,1,1-Trichloroethane	13-77	5	4 of 8
	Trichloroethene	3-110	5	2 of 8
	Vinyl Chloride	ND-5	2	1 of 8
	m&p-Xylene	3-13	5	4 of 8
Semivolatile Organic Compounds (SVOCs)	None above SCG			
PCB/Pesticides	None above SCG			
Inorganic Compounds	Iron	680-1,500	300	2 of 2
	Magnesium	47,000-120,000	35,000	2 of 2
	Sodium	90,000-300,000	20,000	2 of 2
	Barium	ND-1,100	1,000	1 of 2

TABLE 1
Nature and Extent of Contamination (Continued)

Groundwater	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
DEEP BEDROCK GROUNDWATER				
Volatile Organic Compounds (VOCs)	Acetone	11-300	50	3 of 4
	Benzene	17-63	1	4 of 4
	2-Butanone	6-51	50	1 of 4
	Chloroethane	ND-29	5	1 of 4
	Chloroform	ND-11	7	1 of 4
	1,1-Dichloroethane	ND-24	5	1 of 4
	Ethylbenzene	7-29	5	4 of 4
	Toluene	7-100	5	4 of 4
	m&p-Xylene	27-130	5	4 of 4
	o-Xylene	4-46	5	3 of 4
Semivolatile Organic Compounds (SVOCs)	None above SCG			
PCB/Pesticides	None above SCG			
Inorganic Compounds	Iron	5,700	300	1 of 1
	Magnesium	320,000	35,000	1 of 1
	Sodium	3,900,000	20,000	1 of 1

TABLE 1
Nature and Extent of Contamination (Continued)

SURFACE WATER

Surface Water	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	None above SCG			
Semivolatile Organic Compounds (SVOCs)	None above SCG			
PCB/Pesticides	None above SCG			
Inorganic Compounds	Iron	34-1,200	300	6 of 12
	Aluminum	46-390	100	9 of 12

SEDIMENTS

SEDIMENTS	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND-0.009	0.006	1 of 10
Semivolatile Organic Compounds (SVOCs)	Acenaphthene	0.96-1.7	1.4	1 of 10
	Phenanthrene	0.053-13	1.2	2 of 10
	Fluoranthene	0.093-18	10.2	2 of 10
	Benzo(a)anthracene	0.11-7.8	0.013	4 of 10
	Chrysene	0.14-8.1	0.013	8 of 10
	Bis(2-ethylhexyl)phthalate	ND-4,500	1.995	1 of 10
	Benzo(b)fluorathene	0.14-6.7	0.013	8 of 10
	Benzo(k)fluorathene	0.066-4.1	0.013	3 of 10
	Benzo(a)pyrene	0.092-6.3	0.013	6 of 10
	Indeno(1,2,3-cd)pyrene	0.12-4.3	0.013	4 of 10

TABLE 1
Nature and Extent of Contamination (Continued)

SEDIMENTS	**Contaminants of Concern**	**Concentration Range Detected (ppm)[a]**	**SCG[b] (ppm)[a]**	**Frequency of Exceeding SCG**
PCB/Pesticides	PCBs	0.07-0.28	0.000008	2 of 10

TABLE 1
Nature and Extent of Contamination (Continued)

SEDIMENTS (Continued)

Inorganic Compounds	Mercury	0.02-0.27	SEL[c] -1.3	0 of 10
			LEL -0.15	1 of 10
	Cadmium	0.1-0.92	SEL -9	0 of 10
			LEL -0.6	2 of 10
	Chromium	4-48.8	SEL -110	0 of 10
			LEL -26	1 of 10
	Silver	0.1-7.4	SEL -2.2	0 of 10
			LEL -1	6 of 10
	Copper	11.9-173	SEL -110	2 of 10
			LEL -16	8 of 10
	Lead	7.3-210	SEL -110	0 of 10
			LEL -31	5 of 10
	Manganese	160-487	SEL - 1,100	0 of 10
			LEL -460	1 of 10
	Nickel	6.7-32.7	SEL -50	0 of 10
			LEL -16	9 of 10
	Zinc	28-286	SEL -270	1 of 10
			LEL -120	3 of 10

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
ug/m^3 = micrograms per cubic meter

[b] SCG = standards, criteria, and guidance values (soil levels are compared to unrestricted use soil cleanup objectives from Part 375-6)

[c] LEL = Lowest Effects Level and SEL = Severe Effects Level. A sediment is considered to be contaminated if either of these criteria is exceeded. If both criteria are exceeded, the sediment is severely impacted. If only the LEL is exceeded, the impact is considered to be moderate.

[d] SB = Site Background. See Table 2 below.

[e] DL = Detection Limit - Antimony & Thallium levels were compared to detection limits since neither was detected in background samples

ND = Not Detected

Table 2
Background Sampling Results

Sample Location	TAGM 4046	Eastern USA Background	Part 375 un-restricted	BKGRND-1	BKGRND-2	BKGRND-2 Duplicate	BKGRND-3
Depth (feet)				0-2	0-2	0-2	0-2
Date				10/19/01	10/19/01	10/19/01	10/19/01
VOCs (mg/kg)							
Toluene	1.5	-	0.7	0.002 J	0.003	0.001 J	0.012
Benzene	6	-	0.06				0.003
Ethylbenzene	5.5	-	1				0.001
m&p-Xylene	1.2	-	0.26				0.007
o-xylene	1.2	-	0.26				0.002 J
SVOCs (mg/kg)							
Carbazole	-	-	-				0.18 J
2-Methylnaphthalene	36.4	-	-				0.035 J
Dibenzofuran	6.2	-	-				0.048 J
1,2,4-Trichlorobenzene	-	-	-	0.035			
Naphthalene	13	-	12				0.07 J
4-Chloro-3-Methylphenol	0.24	-	-	0.12 J			
Acenaphthylene	41	-	20				0.44 J
Fluorene	50	-	30				0.18 J
Diethylphthalate	7.1	-	-	0.09 J	0.096 J	0.024 J	0.068 J
Phenanthrene	50	-	100				3.2
Anthracene	50	-	100				0.3
Fluoranthene	50	-	100			0.033 J	6.1
Pyrene	50	-	100	0.25 J		0.22 J	4.1
Benzo(a)anthracene	0.224	-	1				3.1
Chrysene	0.4	-	1				4.1
Benzo(b)fluoranthene	1.1	-	1				5.2
Benzo(k)fluoranthene	1.1	-	0.8				1.9 J
Benzo(a)pyrene	0.061	-	1			0.17 J	1.2 J

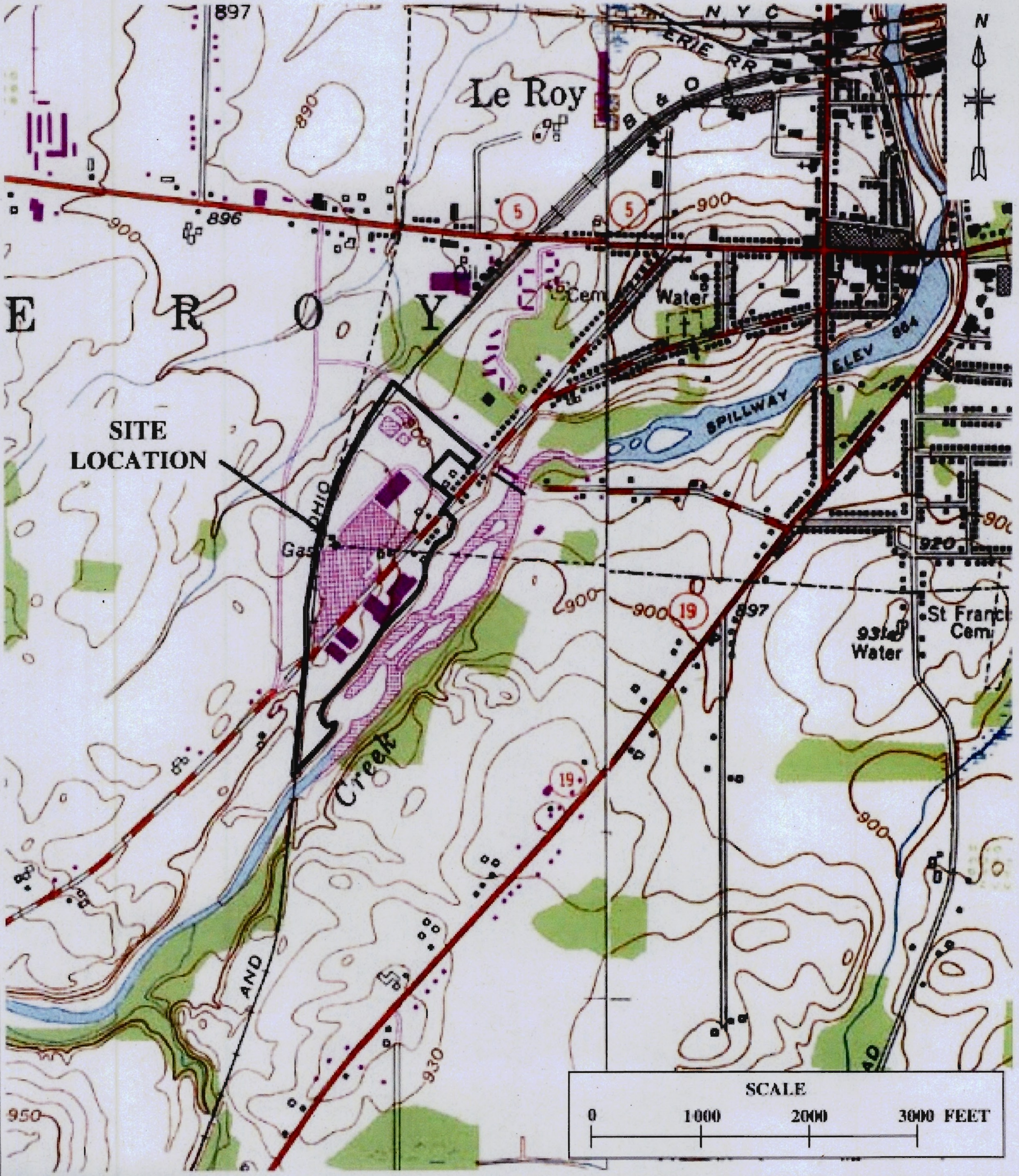
Table 2 (cont.)
Background Sampling Results

Indeno(1,2,3-cd)pyrene	3.2	-	0.5			0.12 J	1.4 J
Dibenzo(a,h)anthracene	0.014	-	0.33				0.062 J
Benzo(ghi)perylene	50	-	100				0.075 J
Pesticides / PCBs							
PCBs (total) - mg/kg	1	-	0.1				
Inorganics (mg/kg)							
Cyanide (total)	-	-	27				
Mercury	0.1	0.001 - 0.2	0.18				0.005 J
Calcium	SB	130 - 35,000	-	1,800 J	1,600 J	1,7000 J	21,000 J
Iron	2,000 or SB	2,000-550,000	-	4,400 J	11,000 J	12,000 J	15,000 J
Magnesium	SB	100 - 5,000	-	1,200 J	1,300 J	1,400 J	5,900 J
Potassium	SB	8,500 - 43,000	-	220 J	300 J	300 J	800 J
Sodium	SB	6,000 - 8,000	-				87 J
Aluminum	SB	33,000	-	3,800 J	6,400 J	6,200 J	7,100 J
Arsenic	7.5 or SB	3 - 12	13		1.8 J	1.8 J	3.5 J
Barium	300 or SB	15 - 600	350	43 J	40 J	40 J	47 J
Beryllium	0.16 or SB	0 - 1.75	7.2	0.2 J	0.3 J	0.3 J	0.4 J
Cadmium	1 or SB	0.1 - 1	2.5				0.2 J
Chromium	10 or SB	1.5 - 40	30-tri 1-hex	4.8 J	8.2 J	8 J	9.1 J
Cobalt	30 or SB	2.5 - 60	-	2.3 J	3.1 J	3.1 J	5.9 J
Copper	25 or SB	1 - 50	50	4.3 J	6.3 J	6.4 J	15 J
Lead	SB	4 - 500	63	5.4 J	8.6 J	8.6 J	23 J
Manganese	SB	50 - 5,000	1600	38 J	160 J	170 J	360 J
Nickel	13 or SB	0.5 - 25	30	6.8 J	6.9 J	6.8 J	13 J
Vanadium	150 or SB	1 - 300	-	6.0 J	13 J	13 J	13 J
Zinc	20 or SB	9 - 50	109	27 J	29 J	29 J	59 J

Table 3
Remedial Alternative Costs *

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Further Action - Groundwater Monitoring	$71,000	$22,000	$410,000
Alternative 1: Protective soil cover with downgradient phytoremediation	$770,000	$39,000	$1.4 M
Alternative 2: Targeted excavation and soil cover with downgradient phytoremediation	$2.3 M	$39,000	$2.9 M
Alternative 3: Targeted excavation and soil cover with targeted groundwater chemical oxidation	$11.2 M	$68,000	$12.2 M
Alternative 3A: Targeted excavation and soil cover with targeted overburden groundwater chemical oxidation	$2.9M	$30,000	$3.4M
Alternative 4: Targeted excavation and soil cover with in-well air stripping	$4.0 M	$117,000	$5.7 M
Alternative 5: Targeted excavation and soil cover with targeted groundwater chemical oxidation followed by bioaugmentation/enhancement	$11.7 M	$68,000	$12.7 M

* Alternative costs presented in this table are based on the Feasibility Study, March 2007. Additionally, in-situ chemical oxidation costs in Alternative 3A are based on an average of similar treatments at other Department site



MALCOLM PIRNIE

January 2007

Project No.: 2932-031

LAPP INSULATATORS, LLC
LEROY, NEW YORK
FEASIBILITY STUDY

Figure 1
Site Location

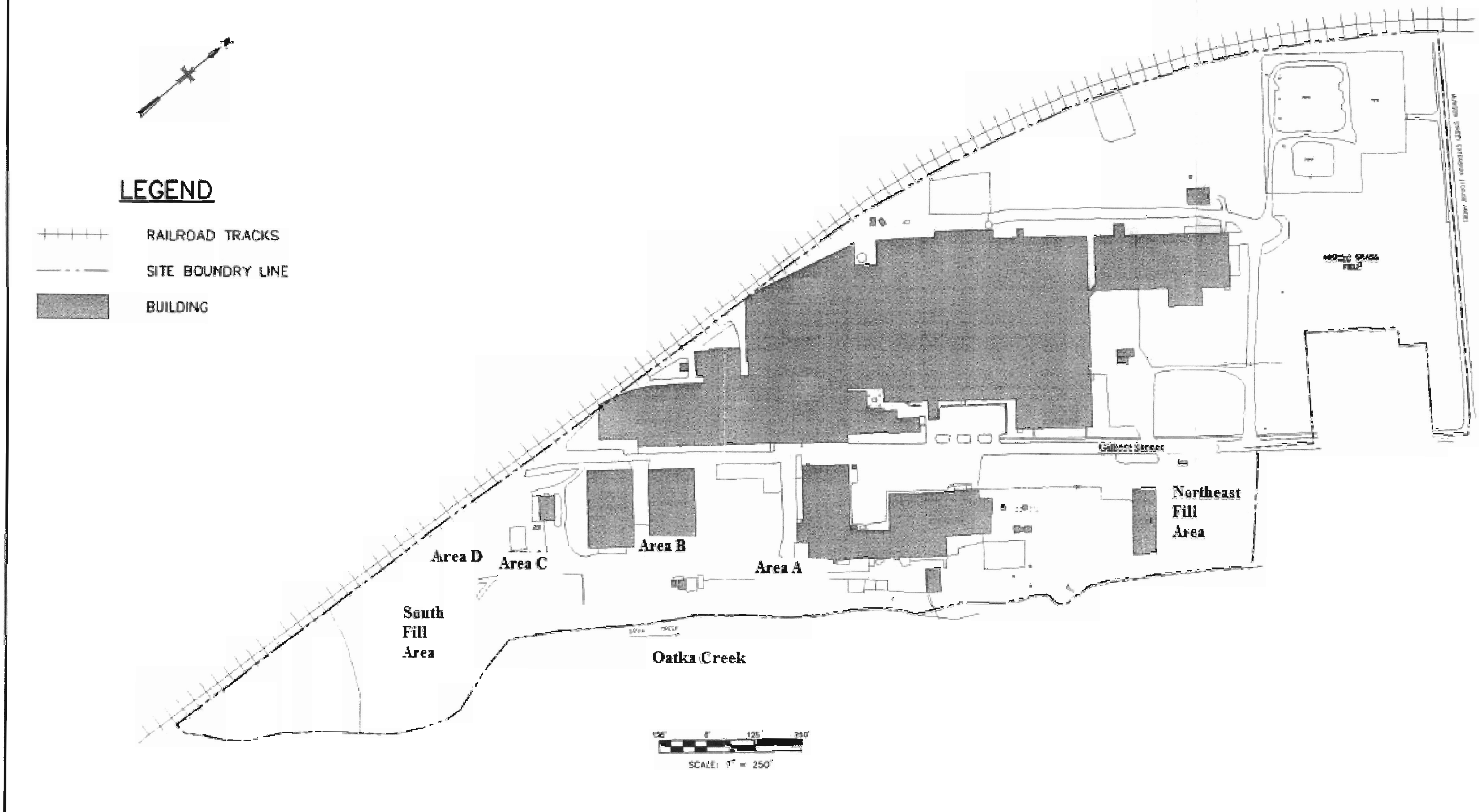


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Figure 2
Site Layout

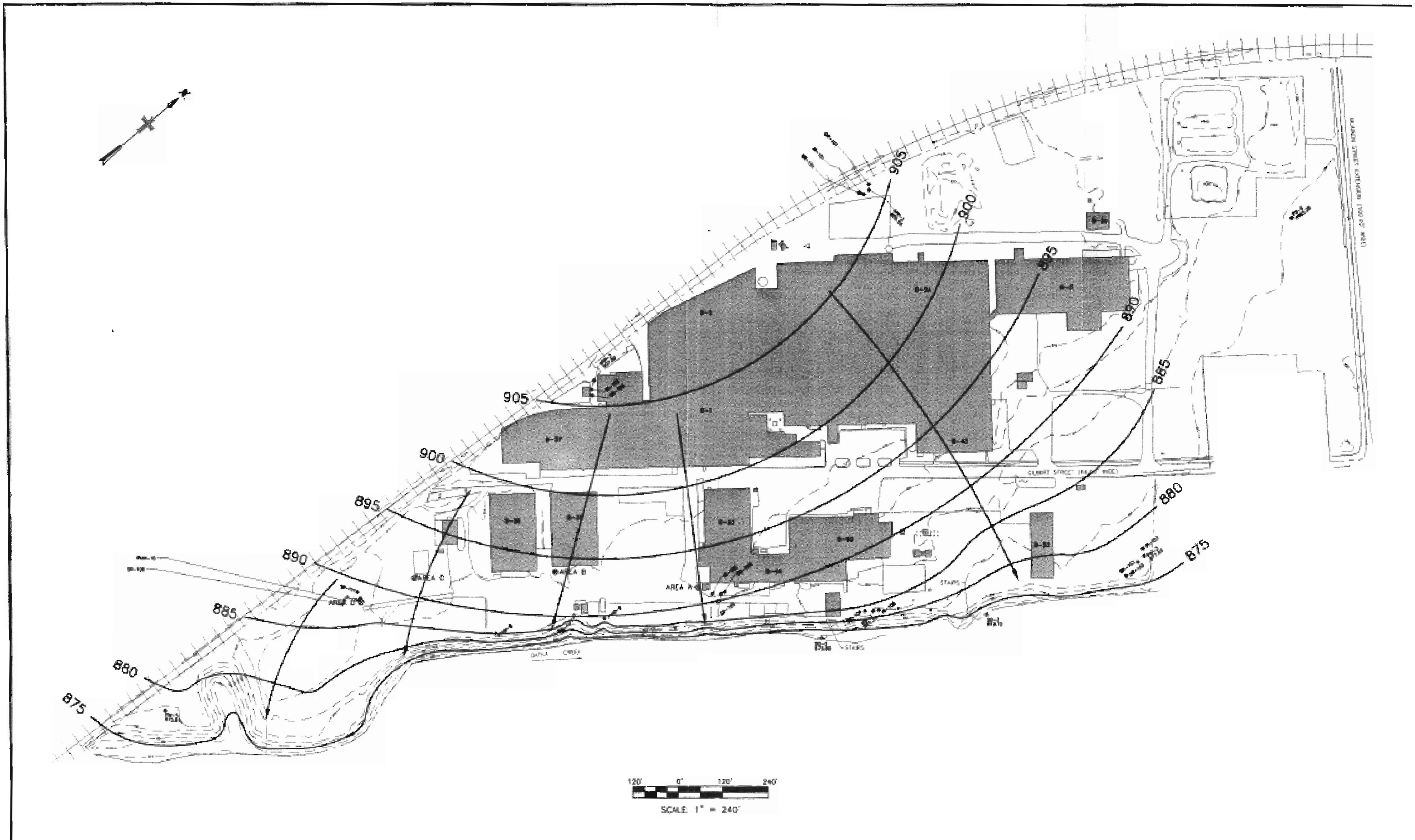

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FIGURE 3
OVERBURDEN (WATERTABLE) GROUNDWATER EQUIPOTENTIAL MAP
AUGUST 26, 2003

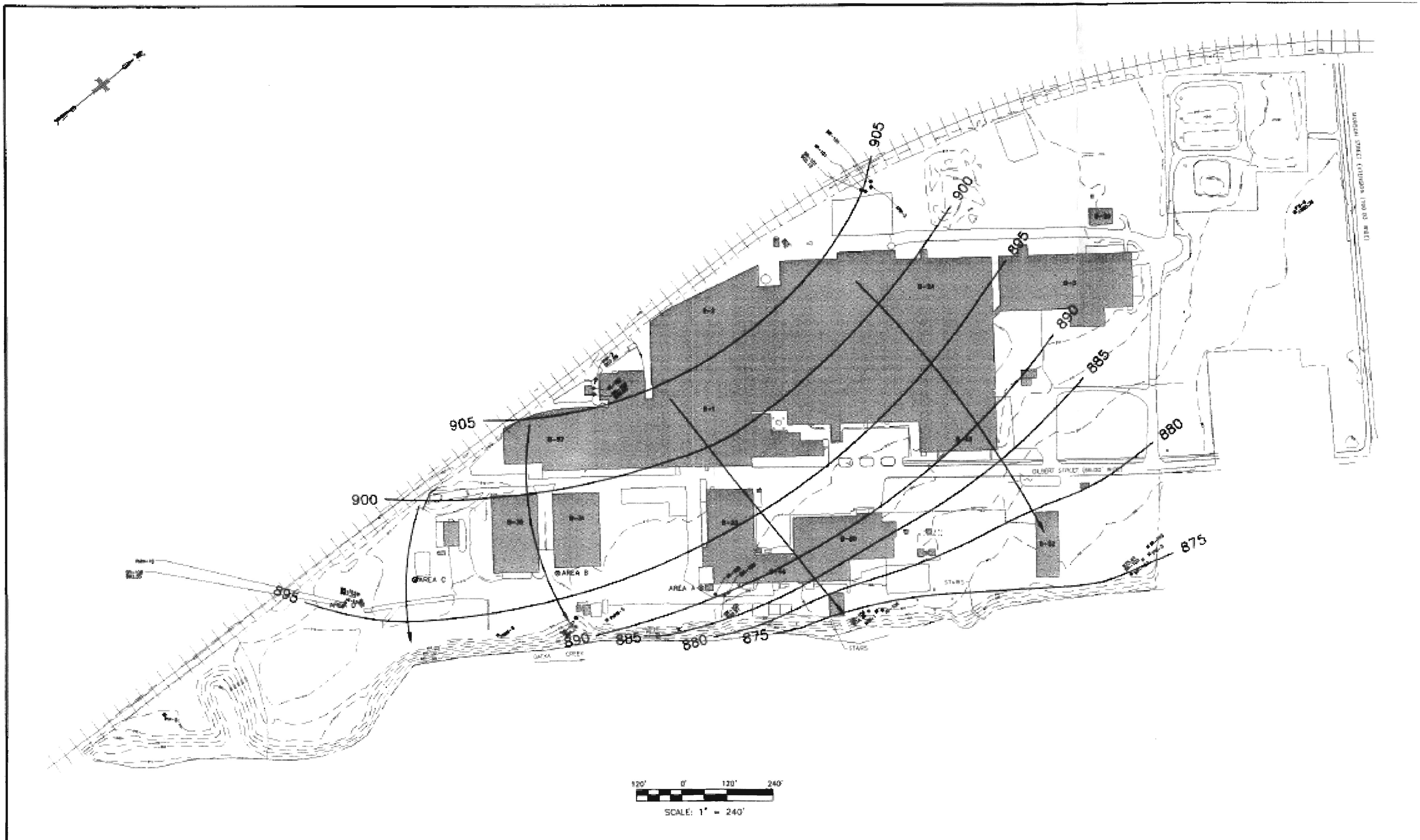

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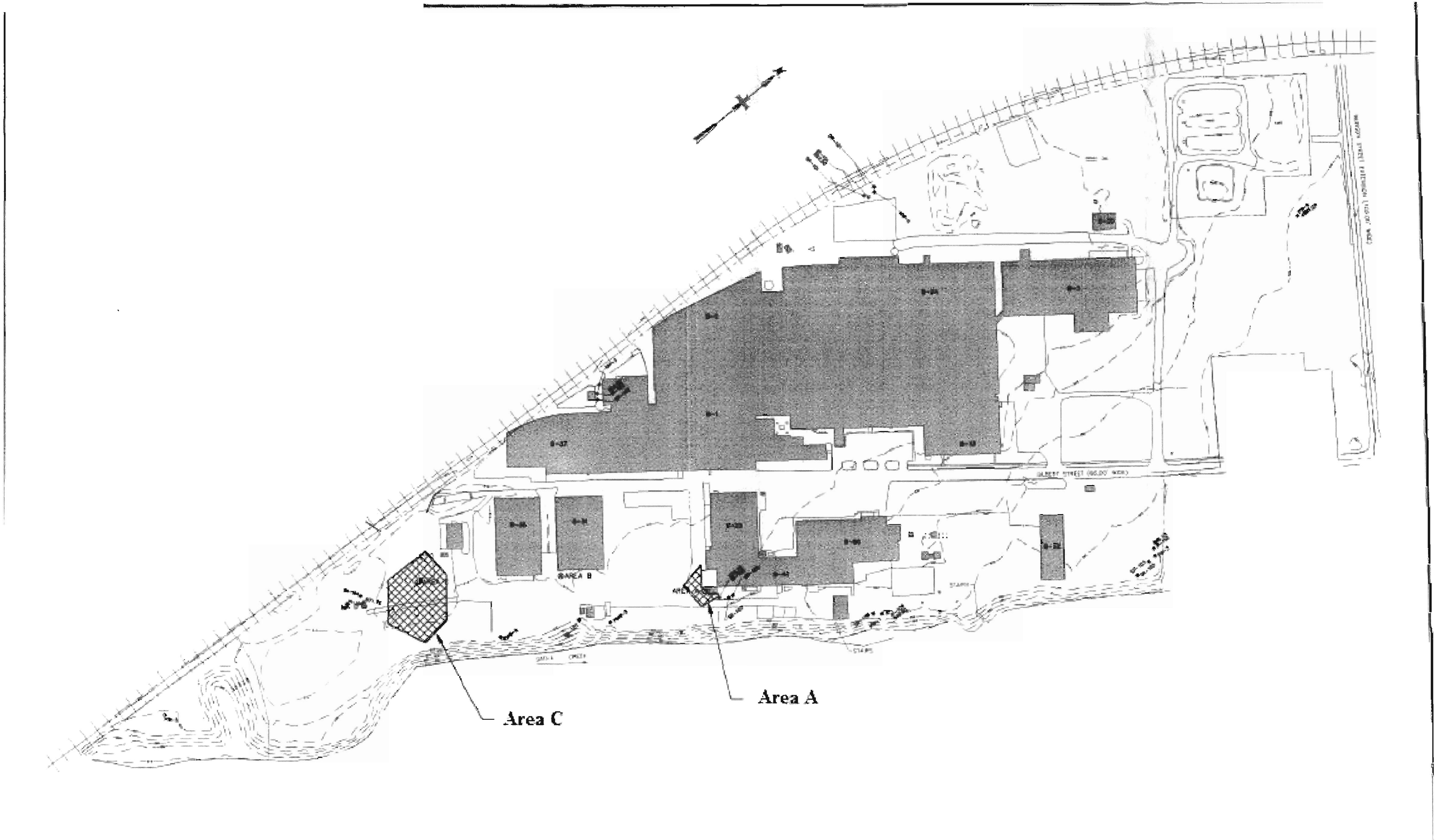
FIGURE 4
SHALLOW BEDROCK GROUNDWATER EQUIPOTENTIAL MAP AUGUST 26, 2003



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SCALE: 1" = 240'

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Figure 5

VOC Impacted Subsurface Soil

Area A Data - Highest Groundwater Detections

Overburden GW - Dry

Shallow Bedrock: (17.5 - 28.2 feet below grade)

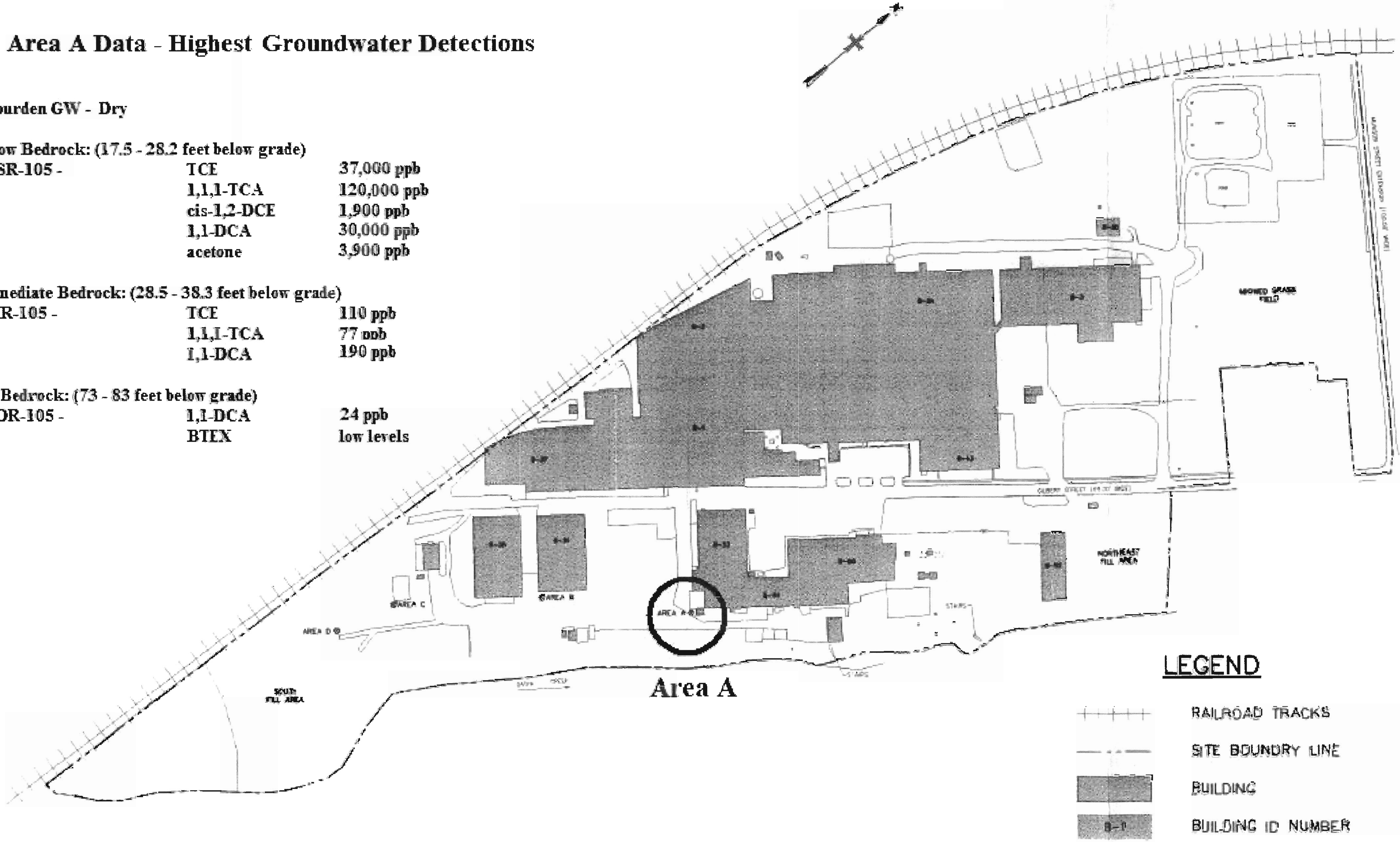
MW SR-105 -	TCE	37,000 ppb
	1,1,1-TCA	120,000 ppb
	cis-1,2-DCE	1,900 ppb
	1,1-DCA	30,000 ppb
	acetone	3,900 ppb

Intermediate Bedrock: (28.5 - 38.3 feet below grade)

MW IR-105 -	TCE	110 ppb
	1,1,1-TCA	77 ppb
	1,1-DCA	190 ppb

Deep Bedrock: (73 - 83 feet below grade)

MW DR-105 -	1,1-DCA	24 ppb
	BTEX	low levels



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SCALE: 1" = 250'

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Figure 6
Area A Groundwater Data

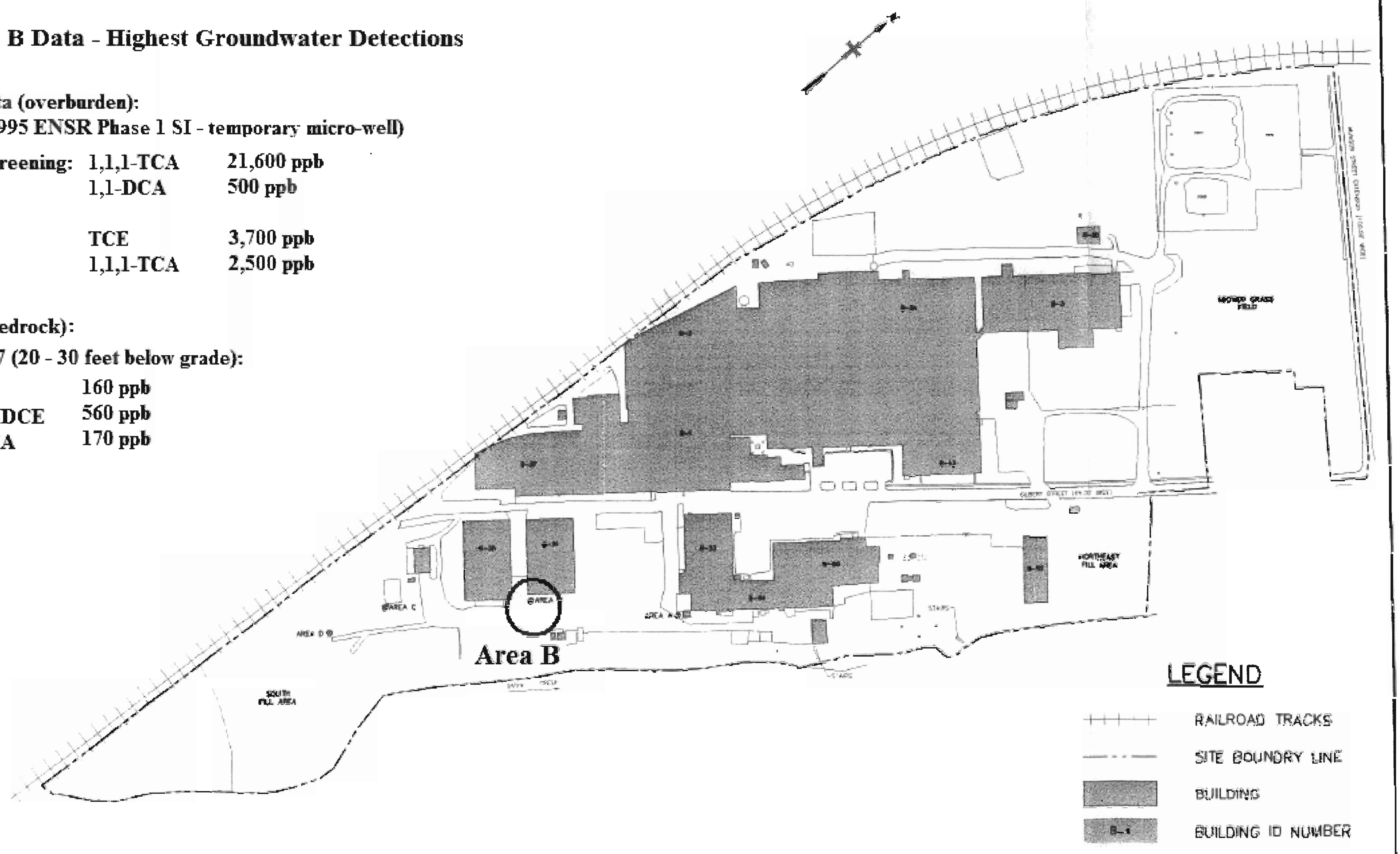
Area B Data - Highest Groundwater Detections

Historic Data (overburden):
PMW-12 (1995 ENSR Phase 1 SI - temporary micro-well)

Field Screening:	1,1,1-TCA	21,600 ppb	
	1,1-DCA	500 ppb	
Lab:	TCE	3,700 ppb	
	1,1,1-TCA	2,500 ppb	

RI Data (Bedrock):
MW SR-107 (20 - 30 feet below grade):

TCE	160 ppb
cis-1,2-DCE	560 ppb
1,1-DCA	170 ppb



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SCALE: 1" = 250'

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Figure 7
Area B Groundwater Data

Areas C & D - Highest Groundwater Detections

- Overburden GW:

PMW-10I	**TCE**	**76,000 ppb**
	1,1,-DCE	**690 ppb**
	1,1,1-TCA	**49,000 ppb**
	1,1-DCA	**310**

- Shallow bedrock:

MW SR-104 (17 - 27 feet below grade):

	TCE	**12,000 ppb**
	cis-1,2-DCE	**57 ppb**
	1,1,1-TCA	**950 ppb**
	1,1-DCA	**410 ppb**

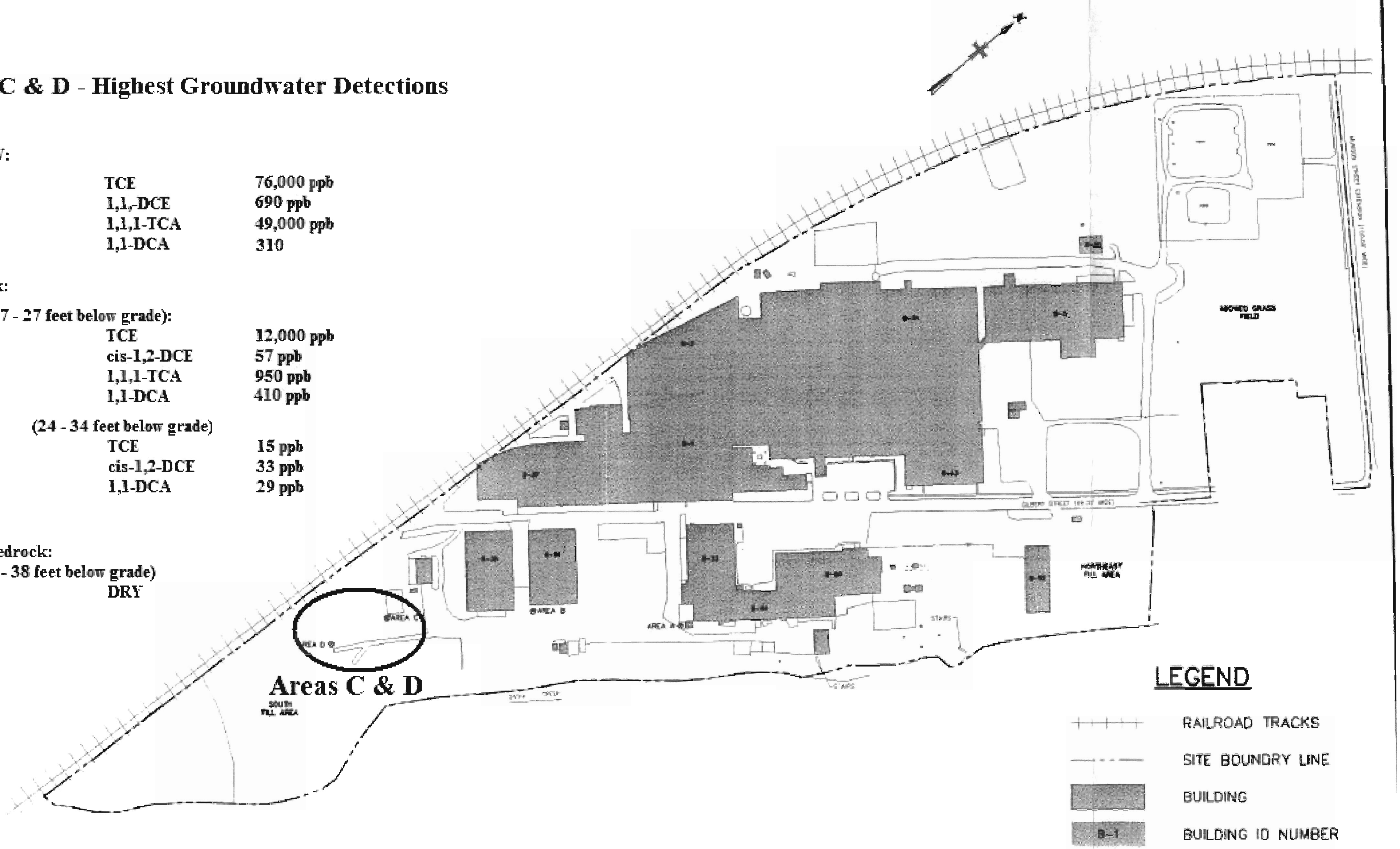
MW SR-108 (24 - 34 feet below grade)

	TCE	**15 ppb**
	cis-1,2-DCE	**33 ppb**
	1,1-DCA	**29 ppb**

- Intermediate bedrock:

MW IR-104 (28 - 38 feet below grade)

DRY



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SCALE: 1" = 250'

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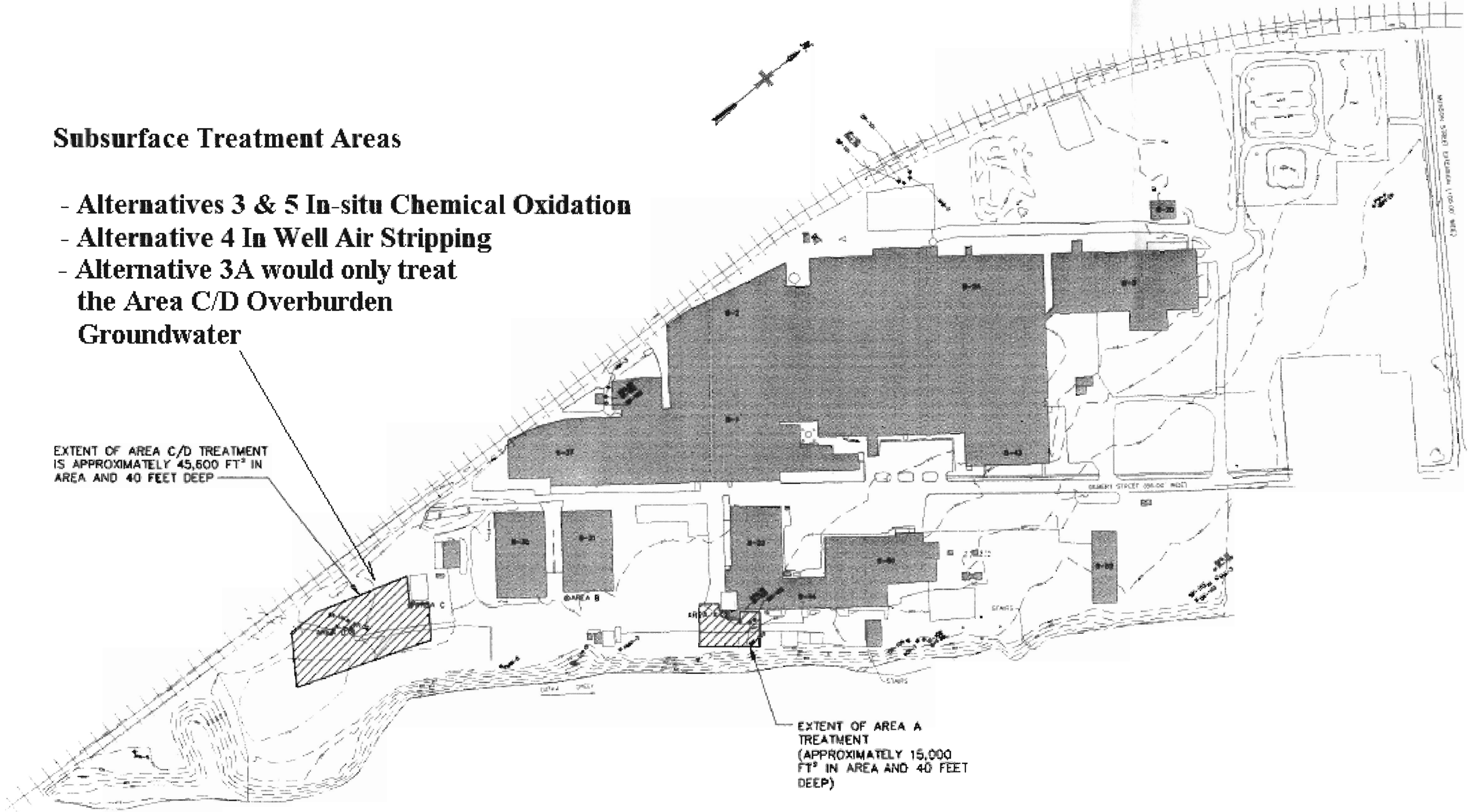
Figure 8
Areas C & D Groundwater Data

Subsurface Treatment Areas

- Alternatives 3 & 5 In-situ Chemical Oxidation
- Alternative 4 In Well Air Stripping
- Alternative 3A would only treat the Area C/D Overburden Groundwater



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SCALE: 1" = 240'

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Figure 9
Subsurface Treatment Areas

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Lapp Insulator
Town and Village of LeRoy, Genesee County, New York
Site No. 819017

The Proposed Remedial Action Plan (PRAP) for the Lapp Insulator site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 27, 2009. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the Lapp Insulator site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 9, 2009, which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 28, 2009.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

The following letters contained similar comments:

- Supporting Lapp Insulator's proposed Phytoremediation alternative (Comment 1, below)
- Expressing concern regarding the ability of Lapp to stay in business if the State selects another, more expensive remedy (Comment 2, below)
- Questioning the need for such an expensive remedy if the threats to human health, wildlife and the environment are so low (Comment 3, below). It is felt that Lapp's proposed alternative is equally protective at a lower cost.

In addition, Comments 1, 2, and 3 were received verbally during the Public Meeting on March 9, 2009.

- Letter dated March 5, 2009 from Brian Dudley, Lapp Insulator employee
- Letter dated March 6, 2009 from Steve Hawley, NYS Assembly
- Letter received March 9, 2009 from Marilyn Robbins
- Letter dated March 10, 2009 from Maureen Z. Eadie, Lapp employee & LeRoy resident
- Letter received March 11, 2009 from Richard Brandes, Lapp Insulator employee
- Letter dated March 12, 2009 from Daniel Skivington, former Lapp Insulator employee

- Letter dated March 12, 2009 from Eric Smith, Lapp Insulator employee
- Letter dated March 15, 2009 from Thomas and Judith Heaman, Lapp Insulator neighbors
- Letter dated March 17, 2009 from Julie Roth
- Letter dated March 18, 2009 from Sue Ann Weir, Lapp Insulator Employee
- Letter dated March 19, 2009 from IUE-CWA, Union representing Lapp Employees
- Letter received March 19, 2009 from LaRea Taylor
- Letter received March 19, 2009 from Gail A. Titus
- Letter dated March 20, 2009 from Marilyn Robbins
- Letter received March 20, 2009 from Todd M. Holly, Lapp Insulator employee
- Letter received March 20, 2009 from Gayle Young, Lapp Insulator employee & LeRoy resident
- Letter dated March 22, 2009 from John N. Bradbury
- Letter received March 23, 2009 from Marilyn Brassie, Lapp employee
- Letter received March 24, 2009 from Steve Hull
- Letter received March 24, 2009 from Carm Brown, Lapp insulator employee
- Letter received March 24, 2009 from Michael W. Traczyk, Lapp employee
- Petition received March 24, 2009 - 99 signatures
- Letter dated March 25, 2009 from Joseph Burns, Lapp Insulator employee
- Petition received March 26, 2009 - 28 signatures
- Letter dated March 26, 2009 from Mark S. Peterson, Greater Rochester Enterprise
- Letter received March 30, 2009 from Joyce M. Booher

COMMENT 1:
Many comments were received asking why the Department did not choose Lapp's preferred Phytoremediation alternative.

RESPONSE 1:

The Department worked with Lapp to fully characterize the site. After the investigation was complete, staff reviewed the data and evaluated options in accordance with the regulatory remedy selection criteria listed in the ROD in Section 7.2 "Evaluation of Remedial Alternatives."

During the remedy selection process, these evaluation criteria are considered in distinct groups, which play specific roles in working toward the selection of a remedy that satisfies the goal of the State Superfund Program. The eight evaluation criteria include two "threshold" criteria and six "balancing" criteria (one of the six is cost).

Lapp's proposed remedy is inadequate primarily because it does not meet the threshold criteria. Specifically, it does not strive to remediate source area contamination. The regulations implementing the State Superfund Program require that source areas be addressed and provide a hierarchy in addressing these areas. The regulations provide that removal or treatment is the best solution for source areas.

Lapp's proposal does not attempt to remediate any source areas. The Phytoremediation that Lapp proposes is strictly for use as a groundwater flow barrier downgradient of the sources. Moreover, the Department is certain that Phytoremediation, as proposed by Lapp, will not be successful in containing groundwater contamination to any meaningful degree. Additionally, if Phytoremediation was implemented and subsequently failed, then another remedy would need to be implemented at a greater cost and over a longer period of time. The Department's proposed remedy best satisfies the remedy selection criteria - including cost effectiveness.

COMMENT 2:
Many comments were received expressing concern over the ability of Lapp to pay for the remedy and still remain in business, ***including the following from Rob Johnson, in letters dated March 24, 2009, on behalf of the management and local ownership group of Lapp Insulator***:

> I am writing this letter on behalf of the management and local ownership group of Lapp Insulators LLC. Over the course of what has now been 10 years since we purchased Lapp Insulators from Eagle, we have gone through several periods of good and bad economic times. Through the fortitude of our employees, the commitment of our ownership, and the confidence of our investors, we have sustained a great company that has a history of excellence that is un-paralleled in our industry.
>
> The VOC's that contaminated the soil and ground water is an issue that, at its roots, started 60 years ago and has not been contributed to in over 25 years. This issue has been a cloud over our company since it was identified in the early 1990's. The issue has resulted in countless constraints on the company. In our attempts to secure and improve our financial condition and attempt to grow, this existence of VOC's on our site has prevented at least 10 occurrences of expansion projects, bank refinancing, acquisitions, and capital expenditure projects. We are again in the situation where we need to consolidate our operations to save cost, but are concerned that moving product lines to LeRoy will result in investing good money after bad,
>
> We are all proud of what has been accomplished at Lapp, However, we again find that we are fighting for survival. It is not an exaggeration for us to describe our current financial position as dire. From the period starting in December of 2008 through end of the first half of 2009, Lapp will have been forced to reduce our employee base from 249 to 156, a 37% reduction. During 2008 our net income was a loss of over $3.5 million and during 2009 we will lose over $1 million. As bad as the situation is, after a 2009 restructuring, we do have a line of site to profitability and sustainability in 2010. We recognize that New York State Department of Environmental Conservation has a very important job to do. We also recognize that the department has guidelines that often define the remedia1 direction chosen. The technical and practical discussions that we have had over the years leaves Lapp and the Department with the same conclusions as to the risk to health and the environment but

different conclusions on what to do next. We are very concerned that a Record of Decision that legally exposes Lapp to a $3.4 million liability will result in a series of events that we will not be able to manage.

These events could unfold as follows: our auditors will withhold offering a sustainability opinion on our audit, this could result on our bank foreclosing on our loan, and our equity sponsor could choose to reduce their risk by not funding additional equity to keep the business going. A ROD with a conclusion of $1.4 million would likely have the opposite effect as the money is funded in an escrow account.

We at Lapp Sincerely hope that the Department will conclude that the proposal of soil barriers, phytoremediation, ground water monitoring, institutional controls and an environmental easement are in balance to the state guidelines and the cost to remediate.

RESPONSE 2:
When selecting a remedy, the Department must follow the guidelines set forth in response to Comment 1. The ability of a responsible party to pay is not among the guidelines and, therefore, is not a factor in selecting the remedy. However, the ability of a responsible party to fund the remedy *is* taken into consideration when negotiations for the implementation of the remedy occurs. In fact, the State Superfund was created to pay for investigation and remediation of sites where there is no viable responsible party or where the responsible party can not fund all or part of the project.

After a remedy is selected in a Record of Decision, the Department routinely contacts a responsible party and offers such party the opportunity to enter into a consent order to perform the remedy using its own funds. These discussions result in consent orders being issued providing for responsible party funded cleanups. In some cases, a responsible party will agree to implement the remedy over a longer time period acceptable to the Department to lessen its financial burden. In other cases, a responsible party will be unwilling or unable to perform the work. In that event, the Department will use State Superfund moneys to perform the work and attempt to recover the costs from that responsible party.

Lapp has indicated in this case that there are unusual circumstances involving a need for Lapp's liability to be characterized as soon as possible. In an effort to accommodate Lapp, Department staff have already had preliminary discussions with Lapp regarding the possibility of an "up front cash-out." If Lapp submits documented current financial information supporting its inability to fund the cleanup, the Department may consider negotiation of such an up front settlement. The Department remains willing to continue exploring this option with Lapp.

COMMENT 3:
There is minimal risk to human health, wildlife and the environment resulting from the contamination on the Lapp site in LeRoy. Lapp's proposed alternative is equally protective at a lower cost.

RESPONSE 3:
The State considers the presence of *sources* of contamination in natural resources (such as soil and groundwater) to be a threat. In this case, the levels in the soil in Areas A and C indicate a source of contamination to groundwater. Further, the levels of contamination in Area A bedrock groundwater and Areas C and D overburden and bedrock groundwater are indicative of the presence of non-aqueous phase liquids (NAPLs). Groundwater contaminated with NAPL is considered a source since NAPLs continue to leach contamination into groundwater. Therefore, these areas of highly contaminated groundwater are considered source areas. As discussed above, the regulations implementing the State Superfund Program require the Department to select a remedy that removes or otherwise remediates sources of contamination to the extent technically practicable. At this site, the Department acknowledges that remediation of the bedrock groundwater

contamination is not likely to be technically practicable. However, the other sources of contamination can be remediated using existing technology.

In summary, unmitigated source areas are considered a threat. The selected remedy is consistent with state regulations which do not allow sources of contamination to remain in the environment if they can be remediated using existing technology. Lapp's proposal does not attempt to remediate source areas and is therefore not equally protective of natural resources.

The following comments were either received verbally during the Public Meeting on March 9, 2009, or they were received from the referenced letter. They have been grouped into categories:

PHYTOREMEDIATION:

COMMENT 4:

There is a lot of flooding now. There tends to be huge water interfaces here. Ask any drillers around here. I wonder how well the Phytoremediation would be, as a barrier, with all the high water flows and paths? Is it proven in other areas? Will water move laterally? What will run -off do? Is there a flow path by the highly fractured zone, overburden and impervious surface?

RESPONSE 4:

There are no clear answers to these questions. The potential effects of Phytoremediation on Lapp site hydrology is a matter of disagreement between the Department and Lapp's consultants. The Department does not believe that the Phytoremediation, as proposed, will treat, capture, or contain contaminated groundwater to any meaningful degree. It therefore was not selected as part of the chosen remedy.

Marilyn Robbins submitted a letter dated March 20, 2009 with the following comment:

COMMENT 5: Removal of contaminants from the soil is a much more responsible solution than moving the contaminated soil to someone else's back yard to make a larger pile, where it may be mixed with contaminants that are more dangerous and more difficult to remove.

RESPONSE 5: The comment refers to Phytoremediation and its ability to destroy contaminants in soil versus excavating contaminated soil and moving it to another location. As proposed, the Phytoremediation alternative is not designed to remediate soil at the site. The placement of the trees as proposed by Lapp would be downgradient of the contaminated soil areas. The intent of Lapp's proposal is not to remediate contaminated soil, but rather to intercept contaminated groundwater flowing from the source areas prior to it reaching the drop-off over Oatka Creek.

The potential use of Phytoremediation in the actual source areas was eliminated from consideration in the Feasibility Study prepared by Lapp. The reason for not evaluating Phytoremediation in the source areas was the current, active use of two of the four areas of concern. Planting of trees in these areas would not be feasible.

Soil excavated from the site will be removed to secure, permitted landfills.

Marilyn Robbins submitted a letter dated March 20, 2009 with the following comment:

COMMENT 6: What harm would there be in proceeding with Lapp's proposal involving Phytoremediation? The site is stable, and no matter what method of cleanup is chosen, the site will continue to be monitored. Soil extraction could always be done at a later date. (A similar comment was asked during the public meeting as:

Since this product has been in the ground for 50 years, what harm is there in trying Phytoremediation prior to removing the soils?)

RESPONSE 6:
The exact length of time the contaminants have been in the ground is not known. The Department was made aware of the contamination in the 1990s.

If Phytoremediation was attempted, a contingency plan would be required in case the technology fails. If it failed, then the contingency plan would need to be implemented at a greater cost to taxpayers and over an even longer period of time. If Lapp spends all of their resources attempting a remedy that fails, then State taxpayers would ultimately have to fund the entire remedy. Since the Department does not believe Phytoremediation, as proposed by Lapp, will be effective, this approach was not selected.

Marilyn Robbins submitted a letter dated March 20, 2009 with the following comment:
COMMENT 7:
There is much research in support of successful removal of Volatile Organic Compounds with Phytoremediation & Bioremediation. With some searching, the Lapp site could become a valuable part of a current research project. I don't think that it is out of the question, that the researcher may be willing to match the funds already set aside by Lapp for this research. I believe that this site could be a valuable asset to ongoing research because of the following factors:

- the researcher would be able to have use of extensive data going back 17 years, collected at an expense of 1 million dollars.
- Contaminants have been identified and have been determined to be of minimal risk to human health, wildlife and environment.
- Locations of contaminants have already been narrowed down to a few specific areas.
- The site is not active - no new contaminants are bing added.
- Lapp has 1.4 million in an escrow account specifically for this cleanup. They are going to do something. It seems to me that this site might be very appealing to someone who is already researching this field. (17 years and 1 million $ of research already completed).
- The money Lapp puts in might be matched by federal grants if it is for research. In fact, the timing might be good because there is probably some stimulus money for this type of research.

Similarly, Steve Hull, in his letter received March 24, 2009 stated: Using a low risk site to test the capabilities [of Phytoremediation] is exactly what the State should be promoting.

RESPONSE 7:
The Department is supportive of innovative technologies where there is a solid basis to believe they will be successful. In this case, however, we do not believe that Phytoremediation, as proposed, is applicable (see Response 1). Phytoremediation activities would need to occur *in the source areas* – a concept that Lapp has not proposed. In addition, Lapp's financial situation, as noted in the various submissions to the Department, does not indicate that it has the ability to fund a contingency plan – which the Department would require.

COMMENT 8:
Does Phytoremediation really clean soils?

RESPONSE 8:

In certain conditions, Phytoremediation has been shown to remediate VOCs in soil. As proposed, however, Phytoremediation would not have been used to clean soil, but to act as a groundwater barrier downgradient of the contamination areas.

COMMENT 9:
During dormant growing season, how would Phytoremediation trees work? Wouldn't there be no water pulling up the tree?

RESPONSE 9:
The activity of Phytoremediation would be reduced during dormant periods.

COMMENT 10:
Trees are hard to grow here, poplars don't grow well here. What happens if these Phytoremediation trees die?

RESPONSE 10:
Dead trees would need to be routinely replaced.

COMMENT 11:
How would you monitor a hardy stand of trees?

RESPONSE 11:
For the proposed application (groundwater flow barrier), monitoring would have had to include groundwater monitoring wells. Positive impacts to groundwater flow rates and/or contaminant levels would need to be proven.

COMMENT 12:
How would you chose what trees to use?

RESPONSE 12:
Experts in Phytoremediation recommend "hybrid poplars" as the preferred tree for the volatile organic compound contaminants present at this site.

COMMENT 13:
Are trees part of the monitoring program?

RESPONSE 13:
No, trees are not part of the remedy selected for this site.

COMMENT 14:
Is Phytoremediation a sufficient barrier? Can we put trees in instead of soil caps and asphalt on the other area?

RESPONSE 14:
Area A consists of an active loading dock area. Trees would interfere with the day to day operations. The installation of trees in the other areas was not proposed or evaluated. However, as described above, a contingency plan would need to be in place if Phytoremediation failed. If Phytoremediation was implemented and subsequently failed, then the contingency plan would need to be implemented at a greater cost to taxpayers and over an even longer period of time.

REMEDY SELECTION:

Sue Ann Weir, in her letter dated March 18, 2009 offered the following comment:
COMMENT 15:
The Lapp presenter gave some options that were interesting and well thought-out and more environmentally friendly. It seemed that the Lapp "option" would be adequate to get to the source of the problems, without adding additional chemicals into the ground as the DEC option would.

RESPONSE 15:
The comment refers to the use of in-situ chemical oxidation (ISCO). As part of the ISCO process, a chemical oxidant will be injected into the overburden groundwater for the purpose of transforming groundwater contaminants into less harmful compounds. There are several oxidants that can be used. The specific oxidant in this case will be determined during the design phase of the remedy. Oxidants are chosen based upon the ability to destroy the contamination, the residence time (amount of time the oxidant remains in the contaminant zone before being broken down), and the mobility of the oxidant.

The largest concern surrounding ISCO oxidants is the handling of the oxidant by workers implementing the injections. These concerns will be addressed by implementation of proper health and safety work practices. Once injected, the oxidant will react with the contamination to form less harmful compounds. Any excess oxidant in the soil/groundwater will be used up in reactions with naturally occurring substances. ISCO is a well proven technology that has been implemented successfully across the State.

Comment received both at public meeting and in a letter from Marilyn Brassie dated March 23, 2009:
COMMENT 16:
It is also important to take into account that if Lapp were to currently self-report these findings under the Brownfield program, the current situation would not be of such concern. Unfortunately, this is not the case and Lapp is a victim of doing the right thing too soon. This hardly seems a reason for a company to be treated any differently than those who currently self-report environmental contamination.

RESPONSE 16:
The comment refers to the Brownfield Cleanup Program. While there are some differences in how the programs are implemented, it should be noted that Class 2 Registry sites (such as Lapp) are not eligible for the Brownfields program. However, even if this site was being addressed under the Brownfield program, the Department would still have selected the final remedy. Further, the same remedy would have been selected.

OATKA CREEK:

COMMENT 17:
We live next to the site. Kids play in the creek. What are the levels in the creek? Should we be concerned?

RESPONSE 17:
Oatka Creek, adjacent to the site, receives surface water (e.g., rain run-off) and groundwater discharge from the site. Low levels of some site-related volatile organic compounds (VOCs) have been detected in the creek; however the levels detected do not represent a threat to human health. In addition, VOC levels in the creek are not at levels of significant concern to fish and wildlife resources; the remedy selected will help to minimize the potential for future impacts.

Low levels of some semi-volatile organic compounds (SVOCs), metals and polychlorinated biphenyls (PCBs) were also detected in Oatka Creek sediments. No active sources of these compounds were identified on-site. The levels present in the sediments do not represent a threat to human health or fish and wildlife resources.

COMMENT 18:
Will the insulators dumped into the creek from past operations be taken out? Are they a concern?

RESPONSE 18:
Lapp Insulators did not use PCB-contaminated oil in manufacturing the insulators and thus the insulators discarded in the creek are not a hazardous waste concern. Since they are not considered a hazardous waste, they will not be removed as part of this remedy.

COMMENT 19:
Are you finding TCE from discarded materials in the creek?

RESPONSE 19:
No. Any insulators in the creek would have been placed there a long time ago. Since TCE is a VOC, any TCE residue that may have been on them would have volatilized/dissipated long ago.

COMMENT 20:
Can we eat the fish from the creek?

RESPONSE 20:
Yes. There are no fish advisories in Oatka Creek due to contamination from this site; however, the New York State Department of Health's general advisory for eating sportfish is that no one should eat more that one meal (one-half pound) per week of fish taken from the State's freshwaters. For more information regarding fish advisories, please visit the NYSDOH's website at
http://www.health.state.ny.us/environmental/outdoors/fish/fishengl.htm.

<u>EXCAVATION:</u>

Carm Brown submitted a letter received March 24, 2009 which commented:
COMMENT 21:
The removal of dirt from the site not only would be expensive but it could also be a hazard. There could be spillage or even a possible accident involving the transportation vehicles.

RESPONSE 21:
Spillage of materials from trucks is prevented by using proper covers. The risks of accidents involving transportation vehicles are similar to other common construction projects.

Gayle Young submitted a letter date March 20, 2009 which commented:
COMMENT 22:
The comment referenced 800 trucks being necessary to transport the excavated soil

RESPONSE 22:
It is unlikely that 800 trucks would be necessary to transport excavated material off the site and backfill material on to the site. Less than 3000 cubic yards of material is being excavated and subsequently backfilled. If standard 18 wheeled trucks are used, then, depending on the density of the soil removed, as few as 300 trucks

may be required. Regardless, the resulting traffic would be spread out over time and would be similar to other construction projects.

Steve Hull, in his letter received March 24, 2009 also offered the following concern:
COMMENT 23:
I believe that the removal of contaminated soils from the Lap site is unnecessary and overly disruptive and costly (for Lapp or taxpayers).

RESPONSE 23:
Disruptions to site industrial activity and to the community in general will be minimized as much as practical, similar to other construction projects.

Attempts will be made to minimize the cost of the excavations by further defining the areas to be excavated during the design of the remedy. Further, the cost estimates for disposal of the excavated soil assumed all soil will have to go to a hazardous waste landfill. It is likely that much of the soil will be able to go to a solid waste landfill at a much lower cost.

Joseph Burns, in his letter dated March 25, 2009, commented:
COMMENT 24:
Excavation will not remove every bit of contamination

RESPONSE 24:
The intent of excavation is to remove the source areas. Residual levels of contamination will remain; however, soil contamination at levels considered to be a potential source of groundwater contamination will be removed. Remaining residual contamination will be addressed by the installation of soil or asphalt covers.

Joseph Burns, in his letter dated March 25, 2009, commented:
COMMENT 25:
By disturbing the soil, a path to the creek may be created that did not exist before and the problem could worsen.

RESPONSE 25:
Soil excavation is a routine construction practice. Precautions will be taken to prevent surficial runoff from the excavations to the creek. The comment may refer to subsurface conditions following excavation. If this is the concern, it should be noted that the source of contamination will have been removed; therefore, water flow through the area would not be a concern.

Joyce M. Booher, in her letter received March 30, 2009, commented:
COMMENT 26:
The State's method of excavating the contaminated soil and depositing of it elsewhere, raises other questions: Where? What is done to it there? What happens to it eventually? (Similarly, the following were asked during the public meeting: Where does the excavated soil go? How far off site will it be taken?)

RESPONSE 26:
Soil considered to be hazardous waste will go to a permitted hazardous waste landfill. The closest hazardous waste landfill is near Niagara Falls, NY. Much of the soil may be allowed to go to a permitted solid waste landfill. There are many local solid waste landfills that could accept this waste. The soil will remain secured in the landfills.

COMMENT 27:
How deep into the ground will you excavate?

RESPONSE 27:
Area A excavations will be two feet in depth. Area C excavations will extend to six feet in depth.

COMMENT 28:
Wouldn't you monitor and go further down than 2 feet if necessary?

RESPONSE 28:
It is standard field practice to continue excavating if significant unforeseen contamination is encountered. At a minimum, contractors will be instructed to consult with NYSDEC to determine how to address any additional contamination discovered during remedial operations.

COMMENT 29:
If you don't remove the source area, can you guarantee this source won't seep into the water systems?

RESPONSE 29:
No. The selected remedy represents the approach that the Department believes will best accomplish the reduction of contaminant infiltration into groundwater and surface water. The remedy will include monitoring to ensure the contaminated groundwater plume does not expand. If such monitoring indicates a problem, further remedial actions will be required.

SOIL/ASPHALT COVERS:

COMMENT 30:
The asphalt cap–is that a parking lot? Does it actually help with the clean up? Will it increase run off?

RESPONSE 30:
An asphalt cover will be placed in areas that require paving because of site use (eg: parking areas, driveways, etc.). The purpose of both the soil and asphalt covers is strictly to prevent contact with contaminated subsurface soil. The covers will not clean up any soil contamination. However, the asphalt cover will reduce surface water infiltration and increase surface water runoff in that immediate area. It is anticipated that the only areas where asphalt will be installed are already paved, so there should be no net difference in surface water runoff compared to current conditions.

NEIGHBORING PROPERTIES:

COMMENT 31:
Is there any testing on properties touching or around Lapp? I've planted pine trees and they have died. Also, there is a discharge that runs along my land –are you sampling there? It really floods there and normally it is dry.

RESPONSE 31:

Although public water serves most of the area, some neighboring properties use private drinking water wells. Some surrounding properties had their drinking water supply wells tested. No site-related contaminants of concern were identified.

A comprehensive soil vapor evaluation was conducted on the site; the data indicated that under current conditions, the potential for soil vapor intrusion on-site did not exist. Furthermore, the data indicated that the potential for soil vapor intrusion to impact off-site properties does not exist.

The property in question was not sampled as part of the investigations since it did not have a drinking water supply well and was not considered to be at risk for soil vapor intrusion.

The property in question is adjacent to one of Lapp's "State Pollutant Discharge and Elimination Systems (SPDES)" permitted discharge points. That discharge is routinely sampled as part of the permit conditions. The discharge will continue to be sampled for as long as the company has a SPDES permitted discharge at that location. The SPDES permit is part of normal industrial practice and is not related to the inactive hazardous waste site investigation. We have no indication that the conditions described have to do with hazardous waste from the site.

MISCELLANEOUS:

COMMENT 32:
Will PCORE Electric be affected or get hurt by this clean up action?

RESPONSE 32:
It is our understanding that PCORE Electric acquired the bushings portion of Lapp in 2004. PCORE Electric may have successor liability for contamination at the site. After the ROD, PCORE Electric will be given an opportunity to participate in the remedial design / remedial action phase of the project.

Remedy implementation may disrupt some of PCORE's operations. Efforts will be made to minimize such disruptions.

COMMENT 33:
Are you familiar with the Lehigh Valley Railroad derailment and clean up in this area? Our wells are only 70 feet deep.

RESPONSE 33:
The Lehigh Valley Railroad Derailment site consists of a bedrock groundwater contaminant plume that extends for miles. The comment appears to express concern that such conditions exist at this site and could potentially affect the private supply well. There is no indication that the bedrock groundwater contamination conditions at this site are comparable to those at the Lehigh Valley Railroad Derailment site.

As previously stated, the private water supply wells have been tested and no site-related contamination was found. Since the general groundwater flow direction is away from these private supply wells, we do not anticipate the site's groundwater contamination to impact these wells. The public water supply well which serves the area is not downgradient of the site and is routinely tested. Should any contamination, site-related or not, be detected in the well, actions (e.g., treatment) would be taken.

In addition, the selected remedy will continue to monitor the groundwater conditions and, if necessary, actions will be taken to reduce the potential for exposure.

COMMENT 34:
Is there an end date to all of this monitoring and clean up?

RESPONSE 34:
Implementation of the remedy will occur after a new consent order is negotiated or, if such negotiations fail, after the state takes over. The negotiation process could take months. Depending on budgetary restraints (either for responsible parties or for the State), the remedy implementation could take one construction season, or it could be spread out over several years. Groundwater monitoring will continue as long as there is contamination present in groundwater.

COMMENT 35:
Did you monitor when the gas line was put in? If so, did you find anything there?

RESPONSE 35:
Yes, NYSDEC representatives were present when the gas line was installed through the southern fill area. Nothing other than discarded ceramic products was apparent.

Joyce M. Booher, in her letter received March 30, 2009, commented:
COMMENT 36:
(Mrs. Booher included a copy of a March 26, 2009 editorial from the Batavia Daily News) This editorial appeared tonight in the Batavia Daily News. Suggesting that comments must reach you by Sat. is really calling it close.

RESPONSE 36:
The Batavia Daily News received a copy of the Fact Sheet that was mailed February 27, 2009. The Department has no control over when the newspaper prints its editorial.

A second letter on behalf of Lapp Insulator was provided by Paul D. Sylvestri of Harter Secrest & Emery. The full text is presented below. Comments within the document are addressed either by referencing a comment above, or, if not addressed previously, are addressed within the text, italicized and bold:

Dear Mr. Pratt:

We represent Lapp Insulator Company with regard to environmental matters at its LeRoy, New York facility. This letter sets forth written comments and concerns related to the New York State Department of Environmental Conservation's ("DEC") Proposed Remedial Action Plan ("PRAP") for the Lapp Insulator Company site located in the Village of LeRoy, Genesee County, New York ("Site"). Lapp Insulator Company ("Lapp") objects to the PRAP because it proposes a remedy that is far more expensive than is necessary to be protective of public health and the environment and meet DEC's legal requirements. Lapp wants to make the Department aware that it will not be able to afford the proposed remedy so a substantial portion of the cost for the proposed remedy will need to be paid by the State of New York.

CORPORATE INFORMATION

Lapp, founded in 1917, has been a part of the LeRoy, New York community for over 90 years and hopes to be operating in this community for as many more. Lapp is the largest supplier of high voltage insulators for the power industry based in the United States. There are only two other manufacturers of this product in the United States. Lapp currently employs 155 people in New York State (down from 233 employees a year ago) with a total annual payroll of greater than $14 million. The hourly work force is made up of 103 people represented by the International Union of Electrical Workers-Communication Workers of America. A management team purchased Lapp in 1999 and has invested $3.3M in plant improvements and equipment over the past four years.

As of December 31, 2008, Lapp had $23,000 in cash and $1.21 million available to borrow under its secured line of credit. Due to the losses generated during 2008, Lapp Insulators LLC has a total owner's equity of negative $2.3 million. During 2009, Lapp can only achieve positive cash flow through the reduction of inventory and a significant restructuring. As you can see, a $3.4M liability associated with funding the proposed remediation has the likely outcome of bankruptcy. Thus, if the PRAP is approved, the State of New York will be left paying for much, if not all of, the work. ***[SEE RESPONSE 2]***

BRIEF ENVIRONMENTAL HISTORY

The Site was listed on the Department's Inactive Hazardous Waste Site Registry as a "Class 2a" site on February 26, 1996. On June 20, 1998, the Department reclassified the Site to a "Class 2".

The constituents of concern at the Site are the result of operations conducted more than 20 years ago. The constituents of concern have not been used on the Site for about 10 years and handling procedures related to these constituents were much improved during the 10 years before that time. Lapp entered into an Order on Consent with the Department on August 8, 2001 to complete a Remedial Investigation and Feasibility Study. Prior to that date, Lapp had voluntarily performed investigations in the early 1990's that revealed most of the impact addressed by the PRAP. The results of these earlier investigations were reported to the Department. Based on these investigations, Lapp implemented an Interim Remedial Measure ("IRM") in 1996 that consisted of a soil vapor extraction system. The IRM focused remedial efforts at three of the areas of concern (now referred to as Areas A, B, and C). After a time, the IRM's effectiveness plateaued and Lapp ultimately shut down the IRM in September of 1999. Under the Order on Consent, Lapp completed the remedial investigation with an approved Remedial Investigation Report in 2005 ("RI").

The conclusions of the Remedial Investigation Report included:

• No additional constituents of concern were discovered other than the presence of VOC contamination in soil and groundwater (which were known prior to the RI);

• risks to public health and wildlife was minimal under existing conditions; and

• that the constituents of concern at the Site do not appear to be adversely affecting fish, wildlife, plant life or the surface water and sediment of adjacent Oatka Creek. Even though the RI concluded that the Site did not pose a significant threat to public health or the environment, ***[SEE RESPONSE 3]*** Lapp performed a feasibility study (as they had committed to in the Order on Consent) and evaluated remedial alternatives to meet New York State's standards criteria and guidelines (SCG's) and provided a recommended remedial alternative in a Feasibility Study report dated March 2007.

Lapp spent well over one million dollars performing the work described above.

COMMENTS TO THE PRAP

Lapp's extensive analysis of potential remedial alternatives for the Site concluded that there are more cost-effective alternatives to eliminate the significant threat to the environment at the Site than the one set forth in the Department's PRAP that should be selected by the Department. Pursuant to ECL § 27-1 313(5)(d), the Department is to develop a cost-effective remedial program at an inactive hazardous waste site. Statutory factors to be considered by the Department to determine whether it can implement such a remedial program include: (1) whether the elimination of irreversible or irreparable damage to the environment can be achieved through **limited actions**; (2) the ability to identify a responsible party with "**sufficient financial resources**" to develop and implement the proposed remedial program; (3) the nature of the danger to human health and the environment which the actions are designed to address; and (4) the extent to which the actions will reduce such danger or would otherwise benefit human health or the environment. ECL § 27-1313 (emphasis added). Thus, there is a statutory directive for the Department to be: (1) mindful of the ability for a responsible party to pay for the remedial program; (2) fiscally practical; and (3) cost-effective when selecting a remedy.

[RESPONSE 37: A portion of the above-referenced statute (ECL § 27-1 313(5)(d)), which refers to responsible party funded sites, reads:

> ***"...the department shall be authorized to develop and implement an inactive hazardous waste disposal site remedial program at the site pursuant to this subdivision if, <u>in the discretion of the department,</u> (emphasis added) it is cost-effective for the department to develop and implement such a remedial program. The goal of any such remedial program shall be a <u>complete cleanup</u> (emphasis added) of the site through the elimination of the significant threat to the environment posed by the disposal of hazardous wastes at the site and of the imminent danger of irreversible or irreparable damage to the environment caused by such disposal. The factors to be considered by the department in determining whether it is cost-effective to develop and implement an inactive hazardous waste disposal site remedial program at a site pursuant to this subdivision shall include, among others:..."***

The three criteria listed above (and as stated: "among others") have been addressed appropriately by the Department:

> ***(1) All portions of the remedy are already limited in scope. The Feasibility Study (FS) itself refers to "targeted" excavations and "targeted" groundwater remedies. During negotiations with Lapp during the FS development, the Department, in the exercise of its scientific judgment, allowed Lapp to focus remedial alternatives on the highest contamination present at the site.***
>
> ***(2) When the "ability to identify a responsible party with sufficient financial resources" is lacking, then this section defaults back to the previous section (ECL § 27-1 313(5)(c)) where the criteria for the Department to pay for remedies using State money is described. The department has complied with the applicable criteria. As explained in Response 2 above, the ability of a responsible party to pay for the remedy is not a factor in the <u>selection</u> of the remedy, only in the <u>implementation</u> of the remedy.***
>
> ***(3) Cost effectiveness was considered by the Department. For example, the Department determined not to proceed with remediation of the bedrock groundwater even though, technically, it may have been possible to improve bedrock groundwater quality with an in-situ chemical oxidation approach. The Department, using the above guidelines, determined that it is not cost-effective to do so. In addition , as implied in Response 1 above, the Phytoremediation alternatives are unrealistic in that***

they do nothing to address source areas at the site. It is misleading to compare the costs of Lapp's proposed Phytoremediation alternative with alternatives that do attempt to remediate the source areas.

The Department believes that the most cost-effective, viable remedy has been selected.]

The regulations further specify that:

> [t]he **goal** of the remedial program for a specific site is to restore that site to pre-disposal conditions, **to the extent feasible**. At a minimum, the remedy selected shall eliminate or **mitigate** all significant threats to the public health and to the environment presented by contaminants disposed at the site ..."

6 NYCRR § 375-2.8(a)(emphasis added). The term "feasible" means "suitable to site conditions, capable of being successfully carried out with available technology, implementable, and **cost effective**". 6 NYCRR §375-1 .2(s) (emphasis added).

[RESPONSE 38: Phytoremediation, as proposed, and following the above definitions, is not feasible. It does nothing to restore the site to pre-disposal conditions. Since the proposed alternative does not attempt to remediate source areas, other alternatives that do attempt to remediate source areas are given consideration first. Of the other alternatives, the selected alternative is best suited to site conditions, capable of being successfully carried out with available technology, implementable, and cost effective.]

The Department does not give sufficient consideration to the cost-effectiveness of the proposed alternatives resulting in its selection of a more costly alternative (Alternative 3A) than other available alternatives that also meet the legal requirement's of the remedial program. ***[SEE RESPONSE 2]*** The Department states at page 16 of the PRAP that cost-effectiveness is the "last balancing criterion evaluated" and is only considered when two or more alternatives have met all of the other criteria. Nowhere do the regulations explicitly make such a statement or otherwise rank the criteria set forth on pages 15 and 16 of the PRAP in order of importance.

[RESPONSE 39: The PRAP language stating that cost-effectiveness is the "last balancing criterion evaluated" relates only to its position on the list of balancing criteria. Further, the PRAP does not state that the "only" time cost is considered is when two or more alternatives have met all of the other criteria. Instead, the PRAP states that cost can be the deciding factor in that circumstance. All of the six balancing criteria are given equal consideration, after the first two threshold criteria have been met. Again, since the Phytoremediation alternative presented by Lapp does not even attempt to remediate source areas to meet compliance with New York State Standards, Criteria, and Guidance, it was screened out prior to evaluation of the next six balancing criteria. Of the remaining alternatives, the selected alternative best met all of those criteria.]

Protection of Health and Environment

Lapp's recommended alternative (Alternative 1 as presented in the PRAP) meets all the necessary criteria of the remedial program while having the important advantage over Alternative 3A of being far more cost-effective. The Department incorrectly states that Alternative 1 would not satisfy the criteria of being protective of human health and the environment and complying with New York State standards, criteria, and guidance ("SCG"). The PRAP provides no rationale as to why Alternative 1 would not be protective of human health and the environment. Alternative 1 includes the installation of an engineered clean soil barrier with a demarcation layer in those areas of concerns that are vegetative or do not currently have asphalt and a demarcation layer and asphalt in those areas of concern that currently have asphalt.

[RESPONSE 40: Contrary to the comment, these issues were addressed in the PRAP: "Since the groundwater in the source areas (hot spots) would not be addressed at all, compliance with SCGs for groundwater would not be obtained (threshold criteria #2). Further, installation of a phytoremediation system downgradient of these source areas, as proposed in Alternatives 1 and 2, has the potential to treat or contain only very shallow groundwater migration toward Oatka Creek. Deeper overburden and bedrock groundwater would not be significantly affected, possibly resulting in continued contaminant migration toward Oatka Creek (threshold criteria #1)."]

It is important to remember that the RI report examined human exposure pathways and assessed existing and potential future environmental impacts presented by the Site. The analysis concluded that risks to humans and wildlife was minimal under existing conditions and that the constituents of concern at the Site do not appear to be adversely affecting fish, wildlife, plant life and the surface water and sediment of Oatka Creek. This is after more than 20 years of the impacts being present in the environment. ***[SEE RESPONSE 3]***

The proposed capping under Alternative 1 would further reduce any risk to humans and wildlife by blocking exposure pathways. Alternative 1 would be more protective of human health than the Department's proposed Alternative 3A because excavation and off site disposal of impacted soil increases the possibility of human exposure to the impacted soil and merely relocates it from one site to another. ***[RESPONSE 41: The balancing criteria referred to by this comment (Short Term Impacts and Reduction of Toxicity, Mobility or Volume) were evaluated among alternatives that passed the Threshold Criteria.]*** Under Alternative 3A, an estimated 810 truckloads of impacted soil would be passing through the Village of LeRoy and surrounding community and excavation would adversely impact the product shipping activities of the neighboring industry on-site, PCore. ***[SEE RESPONSE 22]***

Contrary to the Department's comments in the PRAP, Alternative 1 will also mitigate groundwater impacts in the "hot spot" areas thereby further mitigating impacts to the environment, e.g., Oatka Creek. The mechanism for transport of constituents of concern into groundwater from impacted soils is rainwater infiltration. Maintaining asphalt or engineered soil caps will minimize infiltration of rainwater through the impacted soils thus reducing the potential for further migration of contaminants into the groundwater. ***[RESPONSE 42: The comment appears to refer to the selection of soil excavation over covers alone. Asphalt would reduce groundwater infiltration, but the soil covers will do little do reduce infiltration – nor is it intended to. The purpose of these covers is only to reduce the potential for contact with contaminated subsurface soil. An impermeable barrier which would eliminate water infiltration was not evaluated; however, it is likely it would not have been selected since the contaminated soils are shallow and easily removed using existing technology.]***

Compliance with SCGs

By applying the unrestricted use soil cleanup objective in tandem with an environmental casement that will keep the property industrial, the Department ignores its statutory responsibility to be cost-effective and to consider whether a responsible party has the ability to perform the remedial program. While the regulations state that soil cleanup objectives for unrestricted use are to be representative of pre-disposal conditions, clean up to pre-disposal conditions is only a goal not a requirement - and a goal that is rarely achieved at inactive hazardous waste sites in New York. See 6 NYCRR § 375-2.8(b)(2). The regulations allow for the feasibility study, and thus the ultimate remedy to evaluate alternatives that achieve a restricted use of the site in the event the remedial party is willing to allow such a restriction. 6 NYCRR § 375-2.8(c)(2)(ii). Lapp has expressed the willingness to allow an environmental easement that restricts the use of the property to industrial. The property has been industrial for over 90 years. Lapp expects to continue to use it as an active industrial facility and it would be impractical to use it for anything else. Therefore, the more appropriate soil cleanup objectives to apply are those for industrial restricted use found at 6 NYCRR § 375-6.8(b).

In addition, protection of groundwater soil cleanup objectives need not apply at this site because: (1) the on site source of groundwater contamination would be addressed under Alternative 1 by the fact that the chemicals are no longer used at the property and the proposed barriers will greatly reduce infiltration and migration of contaminants into the groundwater; (2) Lapp will agree to an environmental easement that will not allow the use of groundwater; (3) the proposed soil and asphalt barriers will further reduce the likelihood of migration off-site and phytoremediation proposed under Alternative 1 employs a means of treating the most significant part of the groundwater plume prior to any off-site migration; and (4) with the steps mentioned above and natural attenuation, the groundwater quality will improve over time. See 6 NYCRR § 375-6.5(a)(1).

By applying the appropriate soil cleanup standard, i.e., for restricted industrial use, excavation of the soils would not be necessary. The concentrations of the constituents of concern in each of the hot spots are **far below** the industrial SCG for soils and, in fact, are **far below** the SCGs for a site restricted to commercial use. Eliminating excavation from the proposed remedial program and replacing it with the proposed protective barriers would be a far more cost-effective solution resulting in a savings of approximately $1.5 million.

[RESPONSE 43: The above three paragraphs discuss the selection of the appropriate soil cleanup objectives. 6 NYCRR § 375-6.5(a) states that the protection of groundwater soil cleanup objectives must be used on sites where contamination has been identified in on-site soil and groundwater standards are, or are threatened to be, contravened. 6 NYCRR § 375-6.5(a) also outlines four criteria that must be met before the department may forego using groundwater protection soil cleanup standards:

> ***(I) the groundwater standard contravention is the result of an on-site source which is addressed by the remedial program;***
>
> ***(ii) an environmental easement will be put in place which provides for a groundwater use restriction on the site as set forth in paragraph 375-1.8(h)(2);***
>
> ***(iii) the Department determines that contaminated groundwater at the site:***
>
> > ***(a) is not migrating, or likely to migrate, off-site; or***
> >
> > ***(b) is migrating, or is likely to migrate, off-site, however, the remedy includes controls or treatment to address off-site migration; and***
>
> ***(iv) the Department determines the groundwater quality will improve over time.***

The Department believes that section (I) would not be met with simply a cover and a downgradient barrier. Further, section (iii) would not be met since site related VOCs were detected off-site in the creek. Also, the Department disagrees that the Phytoremediation alternative proposed by Lapp would contain groundwater flow to any meaningful degree. Thus, requirement (iv) for groundwater quality improvement over time is not met in a reasonable time frame.

Groundwater Remediation

The Department's PRAP erroneously states that phytoremediation, proposed as part of Alternative 1, has the potential to treat or contain only very shallow groundwater. Case studies refute that statement. There is a trend toward natural treatment technologies and the proposed use of hydrophilic trees such as hybrid poplars, black locust, or willow trees in a 1200 foot line two deep (approximately 2,000 to 2,500 trees) would be very effective at treating and containing that portion of the groundwater table that contains the most significant amounts of constituents of concern. In addition, the regulations state that remedy selection may consider "innovative technologies". 6 NYCRR 375-1.8(a)(4).

Phytoremediation, which complies with New York State SCGs by actively remediating the groundwater, employs seven physical and chemical mechanisms:

• **Phytohydraulics**: The use of plants to rapidly uptake groundwater to contain or control the migration of subsurface water.

• **Phytoaccumulation**: The uptake of a contaminant by plant roots and the translocation of that contaminant into the aboveground portion of the plants; the contaminants generally are removed by harvesting the plants. This technology is applied most often to soil or water contaminated with metals.

• **Phytovolatization**: The uptake and transpiration of a contaminant by a plant, with release of the contaminant or a modified form of the contaminant to the atmosphere from the plant.

• **Phytodegradation**: The breakdown of contaminants taken up by the plant through metabolic processors within the plant, or the breakdown of contaminants external to the plant through the effect of compounds (such as enzymes) produced by the plant.

• **Rhizodegradation**: The breakdown of a contaminant in soil through microbial activity that is enhanced by the presence of the root zone.

• **Rhizofiltration**: The adsorption or precipitation onto plant roots or the absorption into the roots of contaminants that are in solution in the root zone.

• **Phytostabilization**: The immobilization of a contaminant through absorption and accumulation by roots, adsorption onto roots, or precipitation within the root zone of plants.

The controlling processes for remediation of chlorinated solvents include rhizodegradation, phytodegradation, phytovolatization, and phytohydraulics, each of which has been historically shown to affect chlorinated organic compounds in groundwater.

The roots extend from the tree as far as the tree is high, 20 to 30 feet. At the Lapp Site, depth to groundwater varies from 4 to 10 feel bgs (seasonally) and depth to shallow bedrock varies from near the surface along Oatka Creek to greater than 10 feet bgs near the building line (approximately 200 feet away from the creek). Field observations reveal that the top 1 to 5 feet of the shallow bedrock is typically heavily fractured, and is then followed by relatively more competent bedrock at depth which does not allow off-site groundwater migration. The highly fractured shallow bedrock will not present resistance to the root system. This shallow depth to groundwater and shallow bedrock means that tree root growth would be able to extend throughout the impacted overburden soils capturing at least 60% of the mass flux of constituents of concern towards Oatka Creek and may well extend beyond that.

These trees can transpire (pump) from between 20 to several hundred gallons per day per tree and therefore have the potential to apply significant hydraulic control when planted in tight formations. Studies have shown groundwater gradient shifts at depths of 25 feet and significant hydraulic interception, largely limiting groundwater pass through. Depth to shallow rock near Oatka Creek is significantly less than 25 feet and preliminary calculations indicate that this proposed approach would create a substantial water demand (20 to 200 gallons per day per tree) when compared to the estimated groundwater flux to the creek (ranging from 0.7 to 0.10 gallons/day/square foot).

Hybrid poplar and willow trees are fast growing, with typical growth rates of six or more feet per year. Hybrid poplars grow so quickly that they are sometimes "farmed" as a crop for various end uses. Their high growth rate (i.e., ability to produce biomass quickly) drives their high water uptake, plus their remediation ability is immediate, increasing with time; not only at full maturity. The trees will only uptake significant quantities of water during the growing season. However, the growing season is also the season when rainfall actively drives groundwater flow. As previously described, because of the pumping ability of the trees during the growing season to reverse the hydraulic gradient, and the very slow rate of natural groundwater recovery; it will take much of the dormant season for groundwater to stabilize to levels that would allow off-site migration. In addition, during the winter months when the ground is frozen, there is less water infiltration to further drive groundwater migration.

The rationale for how phytoremediation meets the remaining criteria is presented in the Feasibility Study and do not appear to be refuted by the Department in the PRAP.

[RESPONSE 44 The Department continues to believe that Phytoremediation, as proposed, will not contain or treat groundwater to any meaningful degree. Regardless, as proposed, Phytoremediation does not meet the Threshold Criteria in that it does not attempt to remediate source areas. See again Response 1.]

Chemical Oxidation as a Remedy for Groundwater

The Department proposes using in-situ chemical oxidation to target the portions of overburden groundwater in Areas C & D that contain the highest concentrations of constituents of concern. The PRAP simply states that the costs presented in Alternative 3A are based on an average of similar treatments at other Department sites. However, there is no information provided to indicate which sites the Department refers to allow Lapp and the public to determine whether those sites are truly similar to the conditions and constituents of concern at the Lapp site. The Department has also not made available critical information such as how many injections were necessary at these sites, the areal extent of injections, over what period of time, and whether a rebound effect has occurred that would require additional treatments and therefore increase costs.

The Department has unreasonably rejected the in-situ chemical oxidation information Lapp has submitted through the feasibility study process in its effort to push this technology as the answer for ground water treatment. Lapp sought input from three vendors of this technology. Vendors indicated that wells would need to be installed on 15-foot to 30-foot centers. Experience illustrates that one round of in-situ chemical oxidation would not be sufficient to successfully remediate groundwater. Experience indicates that the injection program would minimally require two injection rounds each year for a five-year period (i.e., 10 rounds total) to begin to move towards groundwater clean-up standards. The Department proposes merely two rounds of injections in Alternative 3A when developing its costs estimate. Lapp's technical consultant's experience has been that after only two rounds of injection the volatile organic compound concentrations would rebound to their original concentration quickly and completely - within a month.

As a result, Lapp has no confidence in the implementation costs presumed by the Department. Lapp's extensive analysis as well as their consultant's direct experience with this technology at other sites with similar hydrogeologic conditions to the Lapp site, revealed that this is an ineffective technology even when aggressively applied. The abbreviated application proposed by the State can simply not be considered cost-effective and has little likelihood of approaching the SCGs for groundwater in New York State.

[RESPONSE 45: As stated in the PRAP, the Department utilized costs from an average of other sites. The two sites with the closest volume of groundwater to be treated were: 123 Post Avenue (Site No. 130088 - 36,000 cubic yards at $875,000) and National Heatset Printing Co. (Site No. 152140 - 30,000 cubic yards at $847,100). The estimated volume of overburden groundwater to be treated at the Lapp site (~45,600 square feet x ~15 feet overburden aquifer) is ~ 26,000 cubic yards. Therefore, the Department utilized $875,000 as a starting point for cost estimation purposes.

In addition, the Department believes that the cost estimates provided by Lapp for the excavation and disposal of soil are much higher than will be necessary. The Department believes that the majority of soil may go off-site to a solid waste landfill instead of a hazardous waste landfill. This will result in a significant cost reduction. Therefore, the Department made an assumption throughout the cost estimates of all the alternatives that the amount of the soil excavations were lower and the costs of the associated groundwater remedial technologies were higher (due in part to the amount of time that passed since the feasability study estimates, and also due to the increase in fuel prices).

Therefore, the projected in-situ chemical oxidation costs for Alternative 3A are closer to ~$1.5M for the capital costs and first year injections. In conjunction, in its cost projections, the Department allotted $30,000 per year for 30 years for soil/asphalt cover maintenance, groundwater monitoring, and additional injections of oxidant as necessary.

Regarding the effectiveness of the proposed remedy: this technology is well proven and has been successfully implemented at a significant number of sites.

The Department believes its overall cost estimate for the selected remedy to be reasonable for comparative purposes. A more accurate estimate of cost will be determined during the design phase.]

CONCLUSION

Alternative 1 is a more cost-effective solution than Alternative 3A proposed in the Department's PRAP and for the reasons stated herein and the Feasibility Study, meets all of the necessary criteria. In particular, excavation of the impacted soils creates needless additional risk of exposure from transporting the material, will greatly interfere with tenant's operations and merely moves the impacts from one site to another. The impacts in soils have long existed and there is yet to be any significant impacts to Oatka Creek nor is there reasonable concern that impacts will occur to Oatka Creek in the future. The added costs of approximately $1.5 million for excavation of soils for such a minimal reduction in risk violates the statutory directive of correcting damage to the environment through "limited actions". ECL § 27-1313(5)(b).

The Department has also unreasonably dismissed Lapp's proposed groundwater remedy and its consultants' and vendors' experience with in-situ chemical oxidation. The Department's proposed groundwater remedy has been demonstrated as ineffective at sites with similar hydrogeologic conditions to the Lapp site. For the reasons stated herein and in the Feasibility Study, the Department should reconsider using the advantages of a natural treatment technology, phytoremediation.

Lapp is an almost 100 year old company, competing in the global economy while committed to LeRoy and New York State. Lapp has and continues to accept its responsibility to protect the environment. The Department should not allow expensive remedial measures that add no significantly greater protection or reduction of risk because it is driven by unrealistic goals such as pre-disposal conditions.

Thank you for the opportunity to comment on the PRAP. We look forward to the Department's final determination on this matter and we trust the Department will think carefully about the impacts this decision has not only on the environment, but also on an important business to the community. We trust that after doing so, the Department will revise its remedy.

Very truly yours,

Paul D. Sylvestri
Harter Secrest & Emery LLP

[NOTE: All of the points made in the "conclusion" section were addressed in the body of the letter.]

Paul Richards submitted a letter (received March 27, 2009) with the following comments:
Dear Mr. Pratt,

I had the opportunity of attending the public meeting on the remediation action for Lapp Insulator. I have also had the opportunity of actually reading both volumes of the phase 2 investigation report. I have some familiarity of the hydrogeology of the area since I am conducting an ongoing hydrology investigation that includes the area where Lapp insulator is located. I would like to offer some comments for the state and the consultants to consider as they deliberate on what should be done.

1) I enjoyed the talks by all the presenters at the meeting. I thought your presentation was very well done. The presentation was articulated clearly using terms that were understandable to most of the audience. The choice of data presented was appropriate and balanced. Data was not cherry-picked to heighten concern, but was rather presented in the context of the issues involved. It was clear from your presentation that the problem at Lapp insulator is mild when compared to other industrial sites, but because of its potential to impact Oatka Creek, a high quality fishery, a tougher set of regulations need to come into play. The talk by Ann Marie (the consultant for Malcolm-Pirnie who works for the Lapp Insulator) was also good, however I do have issues with some of her comments regarding the economics of the soil excavation plan proposed by the state and the effectiveness of the phytoremediation plan they offer in its place. I will discuss these issues in the paragraphs below. The talk by the CEO of Lapp insulator was effective and I get the sense the company is a responsible, ethical and upstanding stakeholder who is willing to work with the state to do the right thing. I implore the state to be reasonable when executing the remediation plan and to schedule it in phases where it will not produce undo hardship for the company. It has been close to ten years since the data was initially collected for the phase II investigation report, I should think the remediation plan should follow this time scale of implementation which would effectively reduce the costs to a manageable level for the company.
(SEE RESPONSE 2)

2) The cost estimate for the excavation of contaminated soil seemed excessive and Anne Marie's comments on the approach were obviously designed to solicit a negative opinion of the approach from the audience. Anne Marie's comments were that the energy costs of moving the contaminated material to a treatment center or hazardous waste landfill would be excessive. She quoted it would take 800 trucks to carry 9000 cubic yards of contaminated soil. Why use trucks when there is an active railroad at the site. A standard railroad hopper car can hold 104.1 cubic yards of material. Thus delivery of 9000 cubic yards of material will only take 86 railroad cars to move. Upon talking to you after the meeting I learned that it may only be 3000 cubic yards of material that have to be moved and that the concentrations of the soil present may be low enough to be treated as standard waste. Thus delivery to a hazardous waste landfill may not be necessary. Given these questions I think the cost estimate of this approach should be reduced. Although I realize the benefit of making an overestimate for planning purposes, I think the economic conditions of the company and the obvious benefits of permanently removing the source require that accurate estimates be used in deciding what plan to go with.

[RESPONSE 46: Thank you for the comment on the use of the adjacent railroad. We will evaluate this during design. See also RESPONSE 22. Regarding hazardous waste versus solid waste, and the related disposal costs, see RESPONSE 45.]

3) The Phytomediation plan proposed by the consultant is intriguing. I took the opportunity of reading an EPA white paper on the approach written by Chappell (Chappell, 1998) Its low cost, and documented effectiveness in some studies combined with the fact that it's a natural approach is attractive. However I do have reservations in how the consultant proposes to implement it. Although its true that the method works because of a biochemical reaction with roots (and not because of transpiration), the roots still need to intercept contaminated groundwater. This can only happen if the groundwater is upwelling in the vicinity of the roots. As I recall the water levels indicated on the stratigraphic cross sections in the remediation report, the bedrock soil interface is located a significant distance from the water table. I do not see how the trees could draw water from such depths 100% of the time. While the poplar tree does have high evapotranspiration rates that have been documented to draw groundwater from great depths, this can still ONLY occur in the growing season, and I believe the bedrock will provide a tough barrier for the roots to break through. So as I see it, the approach at best would only work during one season. A better way to implement phytoremediation is by planting the trees directly on the contaminated soils. The shallow nature of the contaminated soils (less than two feet) makes it ideal for this approach. Plus, the esthetics of having vegetation cover rather than an impermeable cap makes it attractive. Implementation of this approach would require some assurance that it is properly working so that if it does not, the site can be treated appropriately. This may not be as expensive as you think. Eager water resource students in nearby local universities like Brockport are available. Graduate students are mandated to do thesis projects and have the laboratory resources and field instrumentation to implement an assessment plan of the approach.

[See RESPONSES 4 through 14 above]

Thank you for considering my thoughts and I wish the State and the Company the best of luck in implementing a remediation plan. I am positive that both entities will move forward in a productive manner.

Sincerely,

Paul Richards
Assistant Professor of Earth Science
The College at Brockport

APPENDIX B

Administrative Record

Administrative Record

Lapp Insulator
Site No. 819017

1. Proposed Remedial Action Plan for the Lapp Insulator site, dated February 2009, prepared by the Department.

2. Order on Consent, Index No. B8-0548-99-02, between the Department and Lapp Insulator, executed on August 21, 2001.

3. Phase I Environmental Due Diligence Examination (ENSR, 1991)

4. Phase II Environmental Due Diligence Examination (ENSR, 1992)

5. Phase I Site Characterization Report (ENSR, 1995)

6. Supplemental Site Soil Characterization (Haley & Aldrich, 1995)

7. Remedial Investigation / Feasibility Study Work Plan (Malcolm Pirnie, November 2000)

8. Final Remedial Investigation Report (Malcolm Pirnie, September 2005)

9. Final FS Report (Malcolm Pirnie, March 2007

10. Fact Sheet Sent September 2001 announcing Consent Order and start of the Remedial Investigation

11. Fact Sheet sent February 2009 regarding Proposed Remedial Action Plan

12. Letter dated March 5, 2009 from Brian Dudley, Lapp Insulator employee

13. Letter dated March 6, 2009 from Steve Hawley, NYS Assembly

14. Letter received March 9, 2009 from Marilyn Robbins

15. Letter dated March 10, 2009 from Maureen Z. Eadie, Lapp employee & LeRoy resident

16. Letter received March 11, 2009 from Richard Brandes, Lapp Insulator employee

17. Letter dated March 12, 2009 from Daniel Skivington, former Lapp Insulator employee

18. Letter dated March 12, 2009 from Eric Smith, Lapp Insulator employee

19. Letter dated March 15, 2009 from Thomas and Judith Heaman, Lapp Insulator neighbors

20. Letter dated March 17, 2009 from Julie Roth

21. Letter dated March 18, 2009 from Sue Ann Weir, Lapp Insulator Employee

22. Letter dated March 19, 2009 from IUE-CWA, Union representing Lapp Employees

23. Letter received March 19, 2009 from LaRea Taylor

24. Letter received March 19, 2009 from Gail A. Titus

25. Letter dated March 20, 2009 from Marilyn Robbins

26. Letter received March 20, 2009 from Todd M. Holly, Lapp Insulator employee

27. Letter received March 20, 2009 from Gayle Young, Lapp Insulator employee & LeRoy resident

28. Letter dated March 20, 2009, from Paul D. Sylvestri, Harter Secrest & Emery

29. Letter dated March 22, 2009 from John N. Bradbury

30. Letter received March 23, 2009 from Marilyn Brassie, Lapp employee

31. Letter received March 24, 2009 from Steve Hull

32. Letter received March 24, 2009 from Carm Brown, Lapp insulator employee

33. Letter received March 24, 2009 from Michael W. Traczyk, Lapp employee

34. Petition received March 24, 2009 - 99 signatures

35. Letter dated March 25, 2009 from Joseph Burns, Lapp Insulator employee

36. Petition received March 26, 2009 - 28 signatures

37. Letter dated March 26, 2009 from Mark S. Peterson, Greater Rochester Enterprise

38. Letter received March 27, 2009 from Paul Richards, College at Brockport

39. Letter received March 30, 2009 from Joyce M. Booher