

PROPOSED REMEDIAL ACTION PLAN
Former Electruk Battery Site
Environmental Restoration Project
Town of Lockport, Niagara County, New York
Site No. E932132

February 2009



Prepared by:

Division of Environmental Remediation
New York State Department of Environmental Conservation

A 1996 Clean Water/Clean Air Bond Act **Environmental Restoration Project** **PROPOSED REMEDIAL ACTION PLAN**

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the Former Electruk Battery Site in the Town of Lockport.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

As more fully described in Sections 3 and 5 of this document, the manufacturing of lead acid batteries and subsequent building fire have resulted in the disposal of hazardous substances, including metals, primarily lead. These hazardous substances contaminated the surface soil, and the sediment and surface water within the concrete drainage features at the site, and resulted in:

- A threat to human health associated with potential exposure to contaminated surface soil, and sediments and surface water within the concrete drainage features.
- An environmental threat associated with the potential impacts of contaminants to wildlife living on and migrating through the project site, which have the potential to be exposed to the surface soil, sediments and surface water within the concrete drainage features.

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the Former Electruk Battery Site in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) report. The IRM undertaken at this site included the removal and off-site disposal of contaminated water and sediments from the two interior and one exterior concrete drainage trenches followed by power washing and backfilling the trenches.

Based on the implementation of the above IRM, the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action that includes the placement of an Environmental Easement on the property, development of and adherence to a Site Management Plan; and the annual certification of the Environmental Easement is proposed as the remedy for this site.

The proposed remedy, discussed in detail in Section 6, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform to 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.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy and discusses the reasons for this preference. The Department will select a final remedy for the site only after careful consideration of all comments received during the public comment period.

The Department has issued this PRAP as a component of the Citizen Participation Plan developed pursuant to the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375. This document is a summary of the information that can be found in greater detail in the January 2009 "Remedial Investigation (RI/AA), and other relevant documents. The public is encouraged to review the project documents, which are available at the following repositories:

Town of Lockport
6560 Dysinger Road
Lockport, N.Y. 14094
(716) 439-9520

NYSDEC Region 9 Office
270 Michigan Avenue
Buffalo, N.Y. 14203
Michael J. Hinton, P.E.
716-851-7220
9:00 am – 4:30 pm by appointment only
e-mail: mjhinton@gw.dec.state.ny.us

In addition, site related documents will be available at the Town of Lockport web page at www.elockport.com

The Department seeks input from the community on all PRAPs. A public comment period has been set from February 9, 2009 thru March 25, 2009 to provide an opportunity for public participation in the remedy selection process. A public meeting is scheduled for March 5, 2009 at the Lockport Town Hall beginning at 7:00 PM.

At the meeting, the results of the RI and IRM will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP. Written comments may also be sent to Mr. Michael J. Hinton P.E. at the above address through March 25, 2009.

The Department may modify the proposed remedy or select another based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

SECTION 2: SITE LOCATION AND DESCRIPTION

The project site consists of approximately 1.4 acres located at 4922 IDA Park Drive in the Lockport Industrial Park in the Town of Lockport, Niagara County New York, as shown on Figure 1. Figure 2 is the site survey which shows the layout of the project site, including the on-site structure. The project site is currently occupied by an approximately 14,000-square-foot building. The remaining portions of the project site are comprised of an open overgrown lawn, parking and a concrete paved area.

Immediately beyond IDA Park Drive, Polycom-Huntsman Inc., a plastics manufacturer is located across IDA Drive to the east of the project site. Enterprise Drive bounds the site to the south with vacant undeveloped land is located beyond this street. Undeveloped land and a commercial business lie to the north and west of the project site, respectively.

The topography of the project site is generally flat with a drainage ditch surrounding the property. The site has an approximate average elevation of 627 feet above mean sea level (AMSL) based upon the topographic survey performed at the site.

The results of the remedial investigation indicate that soil/fill overlies the native soil across the entire site. The overburden stratigraphy can be divided into three significant units, which are described in descending order and include a soil/fill material; a reworked native material; and native material.

A thin layer of soil/fill material that ranges in thickness from less than one inch to 2 feet was typically present as the uppermost overburden layer throughout the project site. The soil/fill material primarily consists of two types of material that include topsoil and gravel. The topsoil, which ranged in thickness from less than one inch to a foot, generally consisted of dark brown clayey silt with varying amounts of organic material and was observed generally in high grass areas located throughout the project site. Additionally, plastic pieces and pieces of metal siding were encountered within the topsoil layer in the southwest portion of the site. In areas not overlain by topsoil, the uppermost soil/fill material consisted of a thin layer of gray gravel. This material was located in low areas surrounding the concrete pad and near the driveway area along IDA Park Drive.

A layer of reworked native material was encountered immediately below the soil/fill material in more than half of the test pits. It was determined that this material was native material based on comparisons to subsurface soil encountered at greater depths and was determined to be reworked based on chaotic layering and the presence of anthropogenic materials (viz., concrete block, gravel, wood, metal, broken PVC pipes and floor mats). This material ranges in thickness from 0.2 to 1 foot and primarily consists of the native soils described in the following section, which were encountered during the subsurface investigation.

Native soil underlies the reworked native material or soil/fill material (where reworked native material was not present) and consists of a red to brown and sometimes gray silty clay with varying amounts of sand and/or gravel. The native material was found across the project site and was encountered at the majority of subsurface sampling locations.

Generally, the groundwater was present in the native soils at depths 1 to 2 feet below the existing ground surface. Static water levels in the wells were measured on April 30, 2008. These measurements and resulting groundwater contours are shown on Figure 5. The groundwater elevation data indicates that the groundwater flow direction is generally to the southwest.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The project site was first developed as the Electruk Battery Enterprises site that manufactured lead acid batteries from 1990 to 1996. The facility was damaged by a fire in January 1996, which caused a significant disruption to the business. Electruk Battery was not able to recover from the damages and filed for Chapter 7 bankruptcy in October 1996. In early October 1996, Key Bank was permitted by order of the US Bankruptcy Court to secure the site to preserve the assets and collateral in which it had security interests. Electruk Battery then abandoned the site, leaving behind numerous drums of acids, lead components, and solvents.

3.2: Remedial History

In October 1996, Key Bank retained an environmental consultant to performed a Phase I Environmental Site Assessment (ESA) at the property. A Phase II ESA was then performed in June 1997 by the same consultant on behalf the Town of Lockport Industrial Development Agency. The Phase II ESA revealed approximately twenty 55-gallon drums and two vats identified as containing lead sludge located outside of the building which were left open to the elements along with four 30-gallon drums of sulfuric acid, one of which was cracked and only half full. The interior of the building was found to be covered with lead dust and several areas of lead contaminated surface soil were documented. The 1995 fire had exacerbated the spread of lead contamination throughout the facility, which likely had already been contaminated with lead from the battery manufacturing process. Inside the building were drums of methyl ethyl ketone, sulfuric acid, and xylene along with many smaller containers of paint-related items. Two bulk acid storage tanks were also present.

In June 1998, the Niagara County Health Department requested that the Department consider the site for an emergency removal action under the State Superfund Program. In July 1998, the Department requested that the U.S. Environmental Protection Agency (EPA) perform an emergency removal at the site. Under Superfund, EPA is charged with responding to the release or threatened release of contamination into the environment with enforcement responsibilities, including the recovery of costs associated with its response. After performing a removal assessment in August 1998, EPA confirmed the presence of hazardous materials on the property.

EPA subsequently commenced a Superfund removal action to address the contamination. That action was completed in June 1999. The removal action included the identification, removal, and

disposal of all hazardous substances from the property, with the exceptions noted below. Material removed from the property included 24 roll-off containers (695 cubic yards) of building debris and contaminated equipment, 99 drums of miscellaneous wastes, nine roll-off containers (180 cubic yards) of lead contaminated soil, three tanker loads (8,634 gallons) of hazardous liquids, 21 pallets (27.45 tons) of batteries and battery components and 3 cubic yards of spent sorbent and personal protective equipment. All materials were transported to permitted off-site disposal facilities.

Wipe sampling data collected by EPA after the decontamination of the building floor and ceiling beams confirmed the removal of gross contamination. However, some residual lead concentrations that meet EPA's removal criteria but exceed the residential guidelines used by the U.S. Department of Housing and Urban Development remain on the floor and ceiling beams. The lead concentrations remaining are indicative of lead bonded to surfaces in a manner that would require extensive, repetitive cleaning for removal, or encapsulation prior to reuse of the building. It was therefore recommended that potential buyers or renters be informed that these surfaces should be encapsulated (e.g., by application of paint and/or insulation on the ceiling beams and either painting the floor or covering it with a fresh layer of concrete or other material) prior to utilizing the building.

EPA's action level for excavation of lead contaminated soil at industrial sites was 750 parts per million (ppm). EPA removed all identified lead contaminated soil with concentrations above that level. Lead contamination at concentrations exceeding the Department's soil cleanup objective for Unrestricted Use, which is 63 ppm, remains in the on-site soils. The highest levels remaining are found against the building foundation and concrete storage pad. Figure 3 depicts the locations and analytical results of the post excavation sampling performed by the EPA. After reviewing the 1999 Final Report of the EPA, the NYS Department of Health (NYSDOH) concluded that the remaining lead levels should not pose any exposure problems as long as the site remains in its current intended use (commercial/industrial) and the areas remain undisturbed. Because the lead concentrations remain above Unrestricted Use cleanup guidelines, the NYSDOH also recommended the placement of a formal deed restriction on the property to prevent the use of the site for residential or day care purposes.

EPA determined that no further Superfund action by EPA was needed and that it would not seek to recover the costs incurred while performing the removal action from the Town of Lockport.

SECTION 4: ENFORCEMENT STATUS

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

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified.

The Town of Lockport will assist the state in its efforts by providing all information to the state which identifies PRPs. The Town of Lockport will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 5: SITE CONTAMINATION

The Town of Lockport has recently completed a remedial investigation report (RI) to determine the nature and extent of any contamination by hazardous substances at this environmental restoration site.

5.1: Summary of the Site Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI was conducted between April and August 2008. The field activities and findings of the investigation are described in the SI report.

The following activities were conducted during the RI:

- Review of historical environmental investigations;
- Completion of a title search in accordance with the requirements of the ERP;
- Completion of a boundary and topographic survey of the project site to establish the boundaries of the site and to locate on-site structures with respect to site boundaries. The surveying work also included locating the test pits, monitoring wells, surface sampling points and determining the monitoring well riser elevations;
- Collection and analysis of on-site surface soil samples to classify and characterize the surface soil;
- Completion of test pits to enable the classification, screening, sampling and chemical characterization of subsurface soil;
- Collection and analysis of sediment and surface water grab samples from the site's exterior including: a perimeter drainage ditch south of the building and low area northeast of the building;
- Collection of sediment samples from building trenches and the collection of a water sample from a trench inside the building;
- Collection of soil samples from beneath the concrete floor adjacent to the two trenches within the building and the trench located in the concrete pad north of the building; and
- Installation, development and sampling of groundwater monitoring wells to enable the determination of groundwater flow direction and gradient, as well as the collection and chemical analysis of groundwater samples.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the surface and subsurface soil, groundwater, surface water and sediments (collected from the trenches and drainage ditches) contain 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 and sediments SCGs are based on the NYSDEC's December 2006 6NYCRR Part 375 Soil Cleanup Objectives (SCOs) (Part 375 - Subpart 6.8).
- Soil/Fill analyzed by TCLP: 40 CFR Part 261.24: Maximum Contaminant Levels for Toxicity Characteristic.

Based on the RI results, and in comparison to the SCGs, certain media and areas of the site required 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 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 inorganics (metals). 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 waste, soil, and sediment.

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

Waste Materials

No waste disposal was identified during the RI.

Surface Soil

Ten surface soil samples were collected from areas of concern as well as areas representative of the site during the RI. Additionally, the results of the 221 post excavation samples collected by the EPA following the 1999 removal action were reviewed and incorporated in the RI. The locations of the samples collected by the EPA and during the RI are depicted on Figures 3 and 4, respectively. The analytical results indicate that the contaminant of concern in the surface soil is lead. Concentrations ranged from 19.4 to 1,180 ppm. The location of the sample with the concentration of 1,180 ppm was detected in EPA sample CC3 which was collected from 9 to 12 inches below the ground surface in the north east corner of the site. However, sample SS-10 collected in August 2008 from the same location and depth as CC3 attempted to identify and verify the reported lead concentration, revealed a lead concentration of 48.4 ppm, below the Unrestricted Use SCO. Therefore, while lead concentrations in the surface soil exceed the Unrestricted Use SCO, these concentrations are below the Commercial Use SCO. The extent of lead contaminated surface soil based on the EPA and NYSDEC investigations exceeding the Unrestricted Use SCOs are depicted on Figure 6.

The slightly elevated surface soil lead concentrations found in EPA confirmation samples and the RI investigation are likely related to historical operations involving lead-acid battery manufacturing and releases caused by a combination of the 1995 fire and poor housekeeping practices.

Subsurface Soil

Fourteen (14) test pits were excavated across the 1.4 acre property. Based on the observations during the test pit work four (4) subsurface soil samples were collected from the test pits to characterize the subsurface soil. The locations of subsurface investigation points are depicted on Figure 5.

Few volatile organic compounds (VOCs) and semi volatile organic compounds (SVOCs) were detected; these contaminants were detected at concentrations well below Unrestricted Use SCOs. The concentrations of metals were below the applicable SCGs.

Four sub-slab soil samples were collected from the locations depicted on Figure 4. As reflected in the summary table the concentrations of lead detected the sub-slab soil samples ranged from 12.1 - 174 ppm and were well below the Commercial Use SCO.

No site-related subsurface soil contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for subsurface soil.

Groundwater

Groundwater samples were collected from the three newly installed monitoring wells. The locations of monitoring wells are depicted on Figure 5. Based on the elevation data collected from the site, groundwater flows in a south western direction across the site.

Analysis of the samples collected, one or more VOCs were detected in each of the groundwater samples; however, only the concentrations of benzene (4.2 ppb) and toluene (6 ppb) detected in MW-2 minimally exceeded the applicable SCGs. The only two SVOCs detected were 3+4-methylphenol (2.5 ppb), detected in MW-1 at a concentration slightly above the applicable SCG, and bis(2-ethylhexyl)phthalate, detected in MW-3 at a concentration below the applicable SCG. The concentrations of metals were well below the applicable SCGs. The groundwater contaminants detected during the RI are not related to site activity.

No site-related groundwater contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for groundwater.

Surface Water

Four (4) surface water samples were collected from the locations depicted on Figure 4. Two (2) samples, SW-1 and SW-3, were collected from the site drainage pathways and two (2), SW-2 and SW-4, were collected from concrete trench drains found both outside and inside the site building. SVOCs were identified in SW-1, SW-2 and SW-3 at concentrations below applicable SCGs. With the exception of lead in SW-4, which was detected at 302 ppb, a concentration more than six times the applicable SCG, the concentrations of other metal parameters in the surface water samples were

well below the applicable SCGs. Sample SW-4 was collected from Trench 3 inside the building near the south building wall.

Surface water contamination identified during the RI was addressed during the IRM removal action described in Section 5.2.

Soil/Sediments

Five (5) soil/sediment samples were collected from the locations depicted on Figure 4. Two (2) soil/sediment samples, SED-1 and SED-3, were collected from the site drainage ditches and three (3) soil/sediment samples, SED-2, SED-4 and SED-5 were collected from concrete trench drains. These sediments are not associated with creek or stream habitats and the data was compared to the Part 375 SCO's. VOCs were found in the concrete trench drains both outside and inside the site building. However, the VOC concentrations in the drainage pathways were well below the Unrestricted Use SCOs. Each of the sediment samples contained one or more SVOCs, however, the detected concentrations were well below Unrestricted Use SCOs.

The concentrations of metals in SED-1 and SED-3, collected from the exterior ditches, were below the Unrestricted Use SCOs. The concentrations of arsenic (18.2 to 77.5 ppm), barium (491 – 839 ppm) and lead (45,700 to 74,900 ppm) in SED-2, SED-4 and SED-5 exceeded Commercial Use SCOs, while the concentrations of cadmium (3.1 to 6.54 ppm), chromium (59.8 to 91.3 ppm) and mercury (0.907 to 2.6 ppm) in these three samples exceeded Residential Use SCOs. The elevated metals concentrations, specifically lead, are likely related to historical operations involving lead-acid battery manufacturing and releases caused by a combination of the 1995 fire and poor housekeeping practices. The results of the TCLP analysis (64.4 ppm) revealed that SED-5 contained a hazardous concentration of lead. Figure 6 depicts the locations of the samples and lists contaminants of concern detected in these samples.

Sediment contamination identified during the SI/RAR was addressed during the IRM removal action described in Section 5.2.

Soil Vapor/Sub-Slab Vapor/Air

No soil vapor or indoor air evaluation was performed during the RI. Soil vapor was to be evaluated during the RI, however, after evaluation of data from the soil and groundwater sampling the soil vapor evaluation was eliminated. Soil and groundwater sampling did not indicate the presence of VOCs that would indicate a soil vapor or indoor air concern. The condition of the building, abandoned, unheated and open to the elements would make an indoor air analysis meaningless.

No site-related sub-slab soil contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for sub-slab soil. Because sub-slab soil contamination identified lead concentrations above the Unrestricted Use SCOs but below the Commercial Use SCOs, the sub-slab soil will be addressed by placing an environmental easement on the site to restrict future use to commercial or industrial uses. This is consistent with the intended use of the property as a commercial/light industrial property located in the Town of Lockport Industrial Park and the existing Industrial zoning. Also, a site management plan will be required to be developed, implemented and maintained by future site owners to minimize the risk of exposure during site activities

Therefore, with no site-related soil vapor or indoor air evaluated during the RI, no remedial alternatives need to be evaluated for this medium.

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.

The IRM involved the removal and off-site disposal of 1,114 gallons of contaminated water, eight 55 gallon drums of contaminated sediments and four 55 gallon drums of hazardous waste from the two interior and one exterior concrete drainage trenches followed by power washing and backfilling the trenches with 15 cy of “flowable” fill. Flowable fill is a low strength concrete material designed to fill or flow into voids such as trenches. All sediments were removed during the performance of the IRM in January 2009. Removed water and sediments were disposed off site at approved disposal facilities. Refer to Figure 4 and Figure 6 for trench locations and contaminant data.

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 5.0 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.

Because surface soil contamination identified during the RI and the EPA removal action was detected at concentrations above the Unrestricted Use SCOs but below the Commercial Use SCOs, the surface soil will be addressed by placing an environmental easement on the site to restrict future use to commercial or light manufacturing uses. This is consistent with the intended use of the property as a commercial/light industrial property located in the Town of Lockport Industrial Park and the existing Industrial zoning. Also, a site management plan will be required to be developed, implemented and maintained by the site owner to minimize the risk of exposure during construction or other site activities. There are no groundwater impacts and the area is served by public water.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site prior to the IRM. 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.

A potential threat to the environment existed at the site with the presence of contaminated sediment, some of which exhibited hazardous waste characteristics, and the associated contaminated water found in the on-site trenches. The IRM performed in January 2009 removed any potential threat.

No wetlands or other protected areas are on or near the Former Electruk site. The site is located in a partially developed industrial park with the current land use zoned Industrial. Potential environmental receptors include wildlife utilizing the project site (e.g., rodents, birds, etc.). Under the current and future use scenarios, environmental receptors could be exposed to lead in the exposed surface soil via inhalation of airborne particles, the incidental ingestion of or dermal contact with the contaminated soil.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS, PROPOSED REMEDY, AND THE PROPOSED USE OF THE SITE

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 substances disposed at the site through the proper application of scientific and engineering principles.

Prior to the completion of the IRM described in Section 5.2, the remediation goals for this site were to eliminate or reduce to the extent practicable:

- exposure of human and environmental receptors to lead-contaminated surface soil via dermal contact, incidental ingestion or inhalation of particulates, and to prevent lead in the surface soil from impacting surface water runoff quality;
- exposure of human and environmental receptors to metals in the trench sediments via dermal contact, incidental ingestion or inhalation of particulates, and to prevent metals in the sediment within Trench 1 from impacting surface water runoff quality; and
- exposure of humans and environmental receptors to contaminated surface water via dermal contact with or incidental ingestion of contaminated surface water.

The main SCGs applicable to this project are as follows:

- Soil/Fill: 6NYCRR Part 375
- Groundwater: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations in the Technical and Operational Guidance Series (TOGS) 1.1.1
- Soil/Fill analyzed by TCLP: 40 CFR Part 261

Because surface soil contamination identified during the RI and the EPA removal action was detected at concentrations above the Unrestricted Use SCOs but below the Commercial Use SCOs, the surface soil will be addressed by placing an environmental easement on the site to restrict future use to commercial or industrial uses. This is consistent with the intended use of the property as a commercial/light industrial property located in the Town of Lockport Industrial Park and the existing Industrial zoning. Also, a site management plan will be required to be developed, implemented and maintained by future site owners to minimize the risk of exposure during remediation and/or construction activities.

The Department believes that the IRM has accomplished the remediation goals and satisfied the SCGs for the site provided that the environmental easement be placed on the site and periodically certified and that a site management plan be developed and implemented to minimize the risk of exposure during future site activities.

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department is proposing No Further Action with continued annual certification of the environmental easement and the development and implementation of a site management plan as a prerequisite to site reuse/redevelopment, as the preferred alternative for the site. The site is located in a partially developed industrial park and is zoned industrial. The current and future use of the site is for commercial and light industrial uses. Remediation to achieve unrestricted use of the site is not warranted to protect human health and the environment. The Department believes that this alternative would be protective of human health and the environment and would satisfy all SCGs as described above. Overall protectiveness is achieved through meeting the remediation goals listed above.

Therefore, the Department concludes that No Further Action is needed; other than operation, maintenance, and institutional controls. The elements of the IRM already completed and the institutional and engineering controls are listed below:

1. An IRM was completed in January 2009 that;
 - Removed and properly disposed of contaminated water found in the three on-site concrete trenches,
 - Removed and properly disposed of contaminated sediments found in the three on-site concrete trenches,
 - Pressure washed the concrete surfaces of the three on-site concrete trenches, and
 - Filled the concrete trenches with a flowable fill to prevent re-accumulation of water and sediment.

2. Imposition of an institutional control in the form of an environmental easement that would require (a) limiting the use and development of the property to commercial use, which would also permit 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 controls.

3. Development of a site management plan which would include the following institutional and engineering controls (a) Excavated soil would be tested, properly handled to protect the health and safety of workers and the nearby community, and would be properly managed in a manner acceptable to the Department; and (b) identification of any use restrictions on the site.
4. The property owner would provide a periodic certification of institutional 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 would (a) contain certification that the institutional 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; and (c) state that nothing has occurred that would 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.

The proposed future use for the Former Electruk Battery Site is commercial or light industrial uses.

TABLE 1
Nature and Extent of Contamination

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)^a	SCG^b (ppm)^a	Frequency of Exceeding SCG
	pH	6.8 – 7.7		
	Lead (RI Samples)	19.4 – 296	63	4/10
	Lead (EPA samples) ^c	93 to 1,180	63	221/221

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)^a	SCG^b (ppm)^a	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Carbon Disulfide	ND -0.013	100	0/4
	TICs	0.013 – 0.041	NS	
Semivolatile Organic Compounds (SVOCs)	TICs	0.160 – 0.770	NS	
Metals	Arsenic	3.1 – 4.2	16	0/4
	Barium	78.9 - 161	350	0/4
	Chromium	9.3 – 27.4	36	0/4
	Lead	7.8 – 12.9	400	0/4
	Mercury	0.014 – 0.039	.81	0/4
	Selenium	ND – 3.1	36	0/4
pH	pH	7.2 - 8		

TABLE 1
Nature and Extent of Contamination (cont.)

SEDIMENTS	Contaminants of Concern	Concentration Range Detected (ppm)^a	SCG^b (ppm)^a	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Carbon Disulfide	ND – 0.013	200	0/5
	Methylene Chloride	ND – 0.032	0.05	0/5
	TICs	ND – 0.046	NS	
Semivolatile Organic Compounds (SVOCs)	Acetophenone	ND -0.210	500	0/5
	Benzaldehyde	ND – 0.320	500	0/5
	bis(2-ethylhexyl)phthalate	ND – 15	500	0/5
	Dimethylphthalate	ND – 0.560	500	0/5
	Fluoranthene	ND – 0.180	100	0/5
	Phenol	ND – 0.140	0.33	0/5
	Pyrene	ND – 0.140	100	0/5
	TICs	0.390 – 10.82	NS	
Metals	Arsenic	3 – 77.5	13	3/5
	Barium	90.5 - 839	350	3/5
	Cadmium	.614 – 6.54	2.5	3/5
	Chromium	14.8 – 91.3	30	3/5
	Lead	39.5 – 74,900	63	3/5
	Mercury	0.019 – 2.6	0.18	3/5
	Selenium	ND – 12.8	3.9	1/5
	Silver	ND – 11.7	2	2/5
	Lead (TCLP) mg/l	4.03 – 64.4	5	1/2
pH	pH	6.5 – 8.8		

TABLE 1
Nature and Extent of Contamination (cont.)

SURFACE WATER	Contaminants of Concern	Concentration Range Detected (ppb)^a	SCG^b (ppb)^a	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	TICs	ND – 52.3	NS	
Metals	Barium	15.1 – 31.4	1,000	0/4
	Chromium	1.4 – 4.22	50	0/4
	Lead	7.4 - 302	50	1/4
	Silver	ND – 8.26	50	0/4
pH	pH	6.88 – 8.24		

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)^a	SCG^b (ppb)^a	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Acetone	ND - 22	50	0/3
	Benzene	ND – 4.2	1	1/3
	Bromodichloromethane	ND - 0.75	50	0/3
	Chloroform	ND - 6.1	7	0/3
	2-Butanone	ND – 4.2	50	0/3
	Cyclohexane	ND – 1.8	NS	0/3
	Toluene	ND - 6	5	1/3
	m/p-Xylenes	ND – 3.2	5	0/3
	o-Xylene	ND – 1.4	5	0/3
Semivolatile Organic Compounds (SVOCs)	3+4-Methylphenols	ND – 2.5	1	1/3
	Bis(2-ethylhexyl)phthalate	ND – 4.1	5	0/3
	TICs	ND - 23	NS	

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb) ^a	SCG ^b (ppb) ^a	Frequency of Exceeding SCG
Metals	Barium	43.7 - 87	1,000	0/3
	Chromium	2.56 – 2.87	50	0/3
	Lead	ND – 6.74	25	0/3
	Silver	ND – 2.42	50	0/3
pH	pH	7.11 – 7.97		

SUB-SLAB	Contaminants of Concern	Concentration Range Detected (ppm) ^a	SCG ^b (ppm) ^a	Frequency of Exceeding SCG
Metals	Lead	12.1 - 174	63	1/4

^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/m³ = micrograms per cubic meter

^b SCG = standards, criteria, and guidance values for surface and sub-surface soil are from 6NYCRR Part 375.68(b) Environmental Remediation Programs December 2006 Edition using the Unrestricted Use Soil Cleanup, SCG for groundwater were derived from NYS Ambient Water Quality Standards TOGS 1.1.1 (Source of Drinking Water, Groundwater); for soil samples analyzed for TCLP metals 40 CRF Part 261.24 is the source of the regulatory value, which lists the maximum contaminant levels for the toxicity characteristic for determining if a solid waste is defined as a hazardous waste.

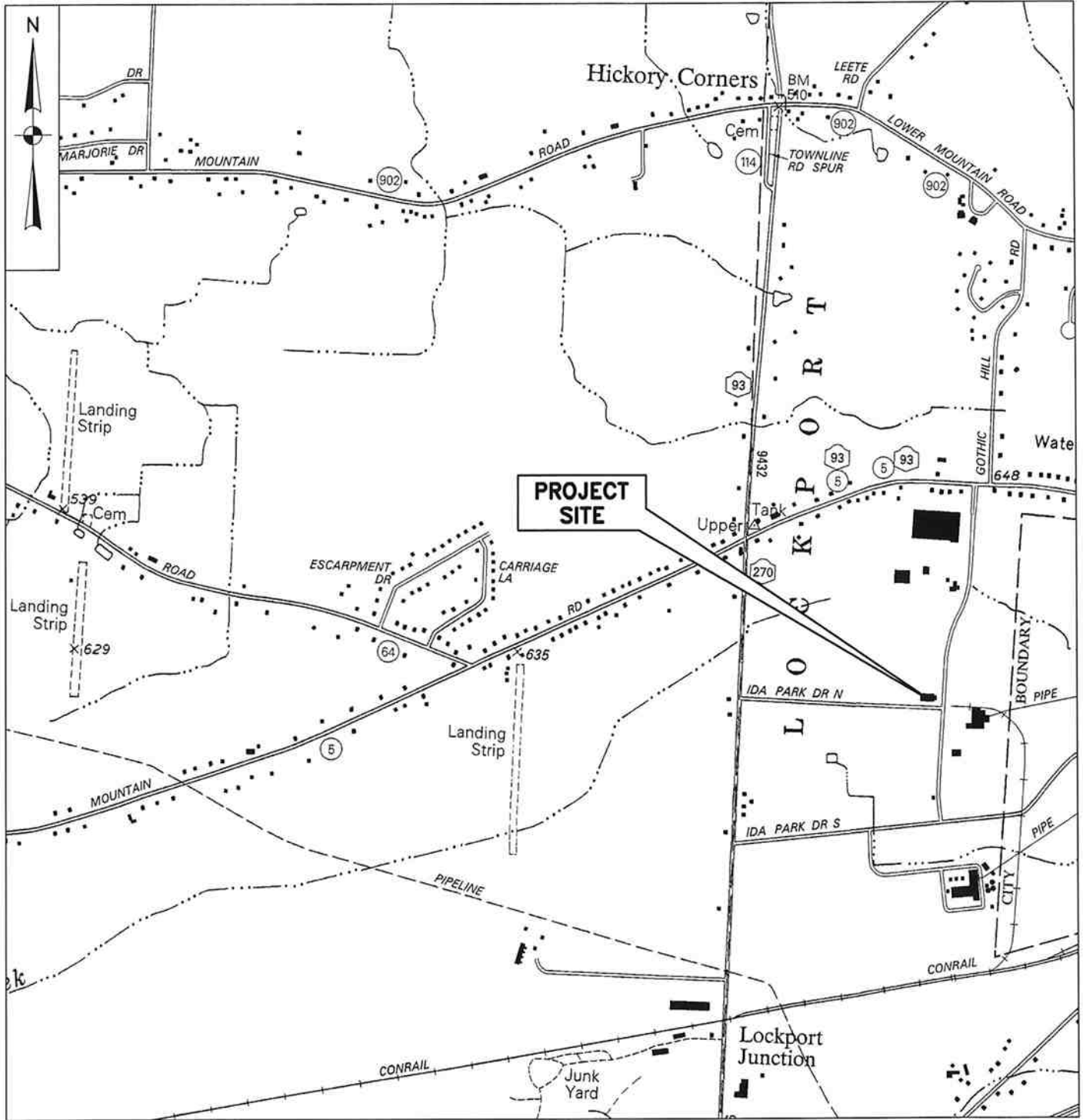
^c The EPA sample results were obtained from July 22, 1999 *Delineation of Lead Contamination by X-Ray Fluorescence* letter report prepared by Roy F. Weston Inc.

ND Compound not detected
NS No Standard

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost (\$)	Annual Costs (\$)	Total Present Worth (\$)
No Action	\$0	\$0	\$0
Alternative B – IRM: Removal of contaminated sediment and water from on-site trenches	\$22,500	\$500	\$30,000
Alternative C: Removal of contaminated surface soil and contaminated sediment and water from on-site trenches to meet unrestricted SCOs	\$92,000	\$0	\$92,000

File: N:\2007.0262.00-500 for Electruk Site Grant Application\Engineering\CADD\PRAP FIGURES\FIGURE 1.dwg, Plot Date: 1/28/2009, By: O'DONOGHUE TIMOTHY S., Plot Style: HALF-BLACK.CTB



U.S.G.S LOCKPORT QUADRANGLE
CAMBRIA QUADRANGLE

PROJECT SITE LOCATION MAP

TVGA
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ELMA, NEW YORK 14059-9530
P. 716.655.8842
F. 716.655.0937
www.tvga.com

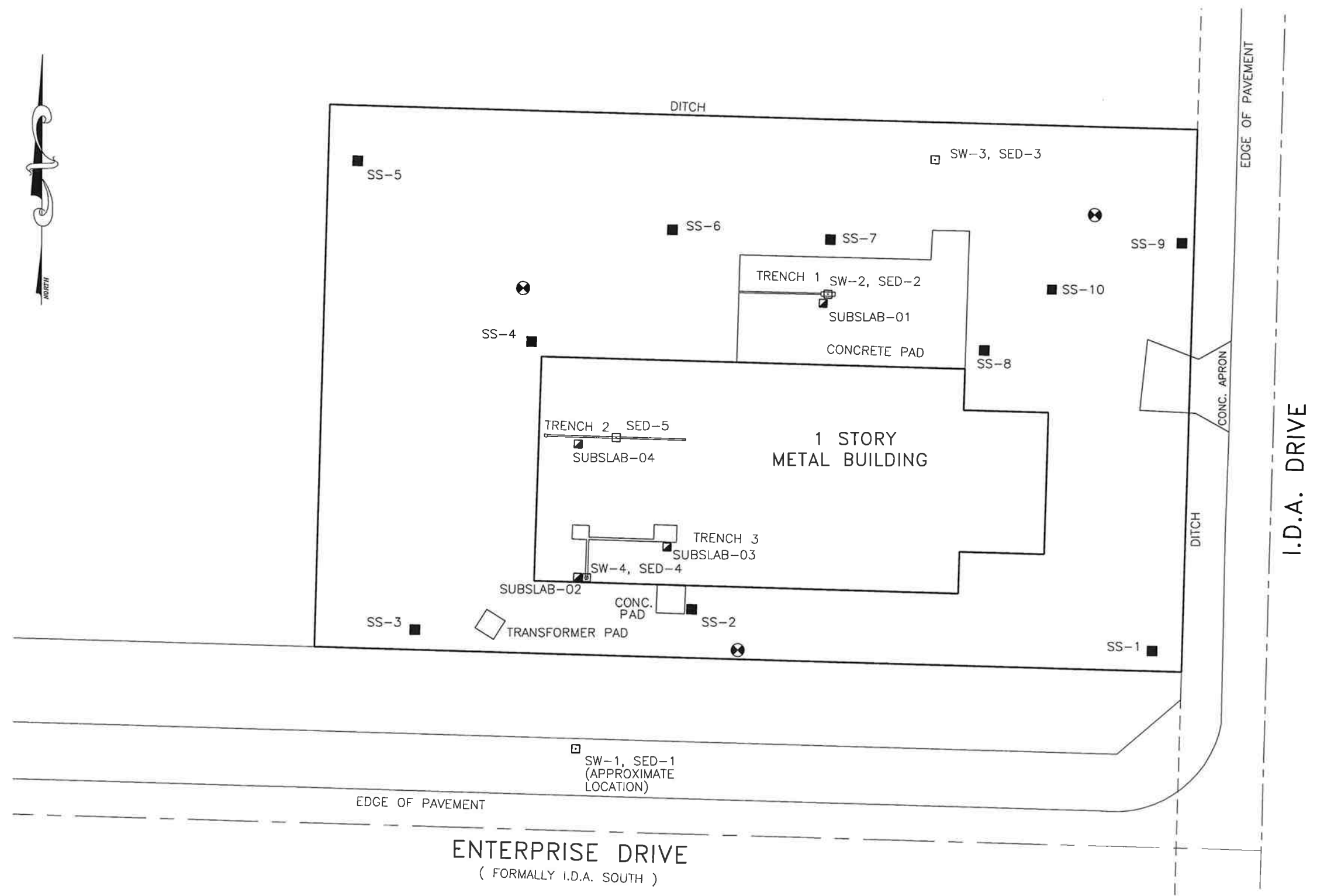
REMEDIAL INVESTIGATION/ALTERNATIVES ANALYSIS PROGRAM
FORMER ELECTRUK BATTERY SITE
4922 IDA DRIVE
LOCKPORT, NEW YORK 14094

PROJECT NO. 2007.0262.00

SCALE: 1" = 500'

DATE: JANUARY 2009

FIGURE NO. 1



LEGEND

- SURFACE SOIL (SS) LOCATION
- SURFACE WATER (SW) / SEDIMENT (SED) LOCATION
- ▣ SUBSLAB SOIL (SUBSLAB) LOCATION

SURFACE INVESTIGATION MAP

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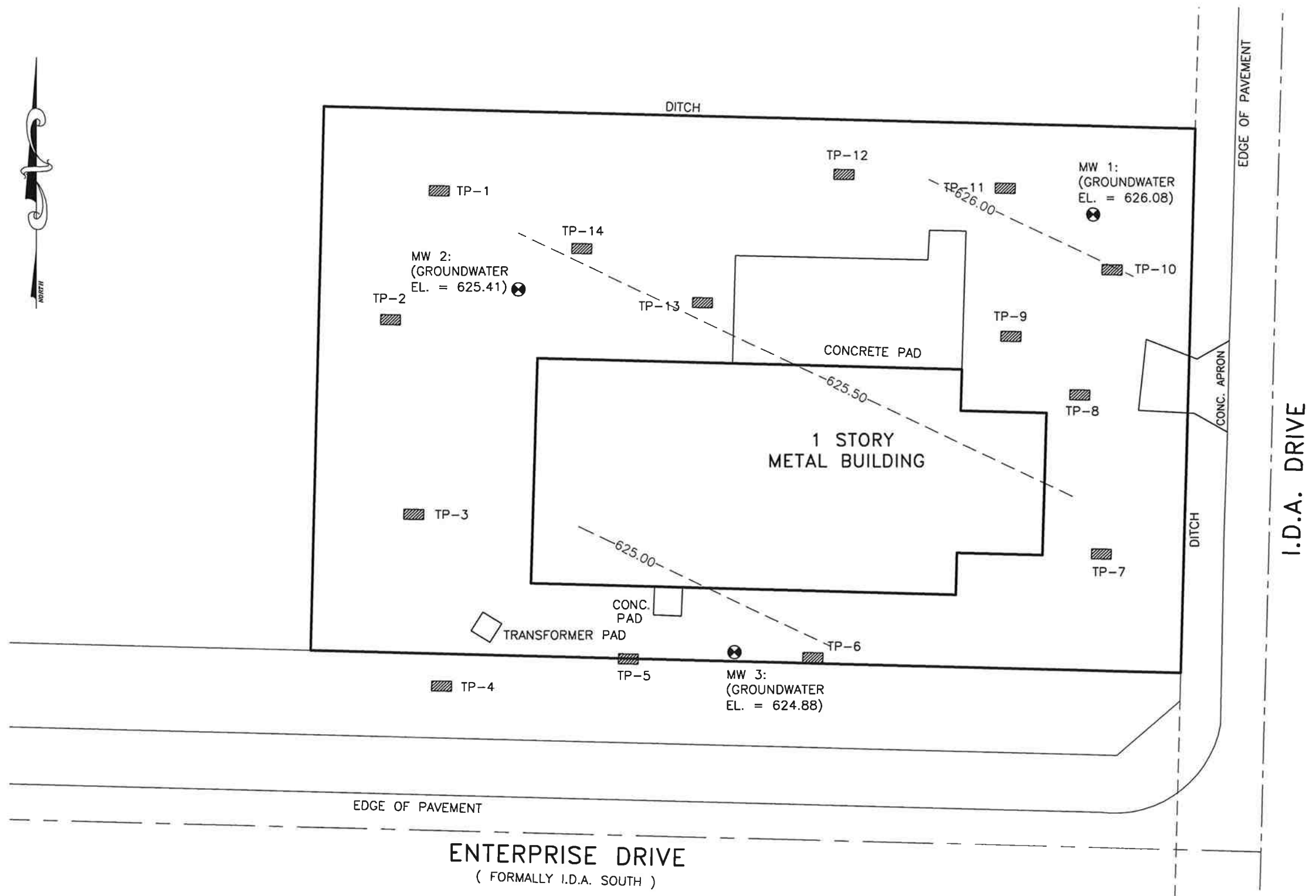
REMEDIAL INVESTIGATION/ALTERNATIVES ANALYSIS PROGRAM
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4922 IDA DRIVE
LOCKPORT, NEW YORK 14094

PROJECT NO. 2007.0262.00



SCALE: 1" = 40'

DATE: JAN. 2009

FIGURE NO. 4



LEGEND

-  TEST PIT (TP) LOCATION
-  MONITORING WELL (MW) LOCATION
- 626.00— GROUNDWATER COUNTOUR LINE

NOTE:

GROUNDWATER ELEVATIONS ARE BASED ON NAVD88 DATUM. BENCHMARK DESCRIPTION NORTH BONNETT BOLT OF FIRE HYD AT SOUTHWEST CORNER OF I.D.A. DRIVE AND ENTERPRISE DRIVE. ELEVATION = 630.34'. THE GROUNDWATER ELEVATIONS ARE MEASURED FROM THE TOP OF THE PVC RISER PIPE BY SUBTRACTING THE DEPTH TO GROUNDWATER.

SUBSURFACE INVESTIGATION MAP

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REMEDIAL INVESTIGATION/ALTERNATIVES ANALYSIS PROGRAM
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LOCKPORT, NEW YORK 14094

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SCALE: 1" = 40'

DATE: JAN. 2009

FIGURE NO. 5

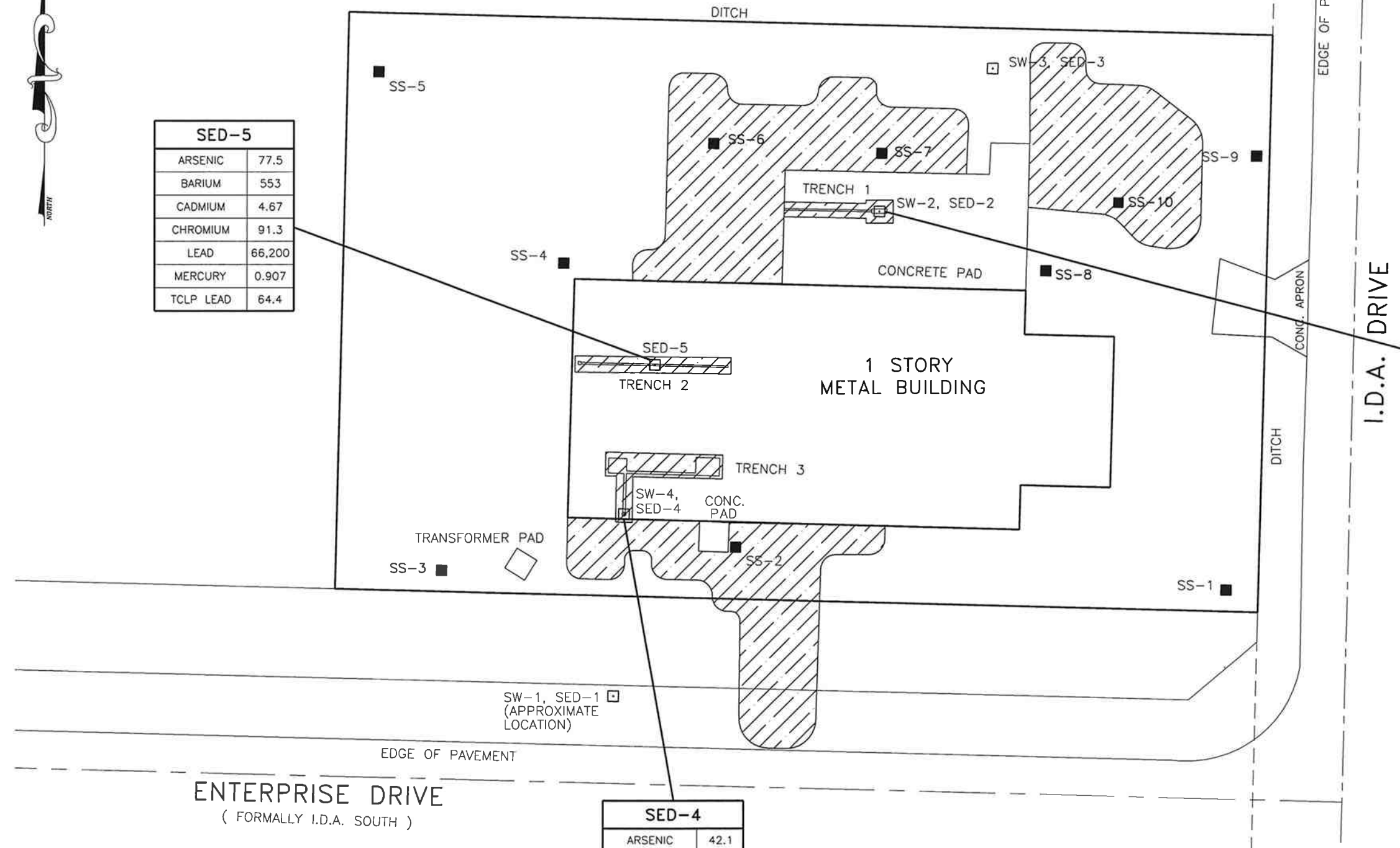


SED-5	
ARSENIC	77.5
BARIUM	553
CADMIUM	4.67
CHROMIUM	91.3
LEAD	66,200
MERCURY	0.907
TCLP LEAD	64.4

RESIDENTIAL USE SOIL CLEANUP OBJECTIVES (mg/Kg)	
ARSENIC	16
BARIUM	350
CADMIUM	2.5
CHROMIUM	36
LEAD	400
MERCURY	0.81
THE REGULATORY VALUE FOR LEAD IN SURFACE WATER IS 50 ug/L	
THE REGULATORY VALUE FOR TCLP LEAD IS 5 mg/L	

SED-2	
ARSENIC	18.2
BARIUM	491
CADMIUM	3.1
CHROMIUM	77.3
LEAD	45,700
MERCURY	2.6

SED-4	
ARSENIC	42.1
BARIUM	839
CADMIUM	6.54
CHROMIUM	59.8
LEAD	74,900
MERCURY	1.1
TCLP LEAD	4.03
SW-4	
LEAD	302



LEGEND

- SURFACE SOIL (SS) LOCATION
- SURFACE WATER (SW) / SEDIMENT (SED) LOCATION
- ▨ HATCHED AREAS REPRESENT AREAL EXTENT OF SUSPECTED SURFACE SOIL CONTAMINATION

NOTES:

- SOIL AND SEDIMENT RESULTS ARE REPRESENTED IN mg/Kg, SURFACE WATER IN ug/L, AND TCLP IN mg/L
- THE AERIAL EXTENT OF SUSPECTED SURFACE SOIL CONTAMINATION ARE BASED ON THE RESULTS OF THE 1999 USEPA REMOVAL ACTION SAMPLING INCLUDED IN FIGURE 3.

SURFICIAL CONTAMINANTS OF CONCERN

<p>1000 MAPLE ROAD ELMA, NEW YORK 14059-9530 P. 716.655.8842 F. 716.655.0937 www.tvga.com</p>	<p>REMEDIAL INVESTIGATION/ALTERNATIVES ANALYSIS PROGRAM FORMER ELECTRUK BATTERY SITE 4922 IDA DRIVE LOCKPORT, NEW YORK 14094</p>		
	PROJECT NO. 2007.0262.00	SCALE: 1" = 40'	DATE: JAN. 2009