Department of Environmental Conservation

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Division of Environmental Remediation

NORTHEAST ALLOYS AND METALS SITE
UTICA, ONEIDA COUNTY, NEW YORK
Site No. 6-33-45
February 23, 1998

PROPOSED REMEDIAL ACTION PLAN

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN D. CAHILL, *Commissioner*

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SITE NO. 6-33-045

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NORTHEAST ALLOYS AND METALS

Utica, Oneida County, New York
Site No. 633045
February 23, 1998

SECTION 1: PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) is proposing to implement a groundwater collection and treatment system and an in situ soil vacuum extraction system to control and treat volatile organic compounds (VOCs) found at the Northeast Alloys and Metals Site. In addition, a small area of VOC contaminated soils located near the east gate, will be excavated for off-site disposal. This remedy is proposed to address the threat to human health and the environment created by the presence of soil and groundwater contaminated with volatile organic compounds.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy, summarizes the other alternatives considered, and discusses the rationale for this preference. The NYSDEC will select a final remedy for the site only after careful consideration of all comments submitted during the public comment period.

The NYSDEC has issued this PRAP as a component of the citizen participation plan developed pursuant to the New York State Environmental Conservation Law (ECL) and 6 NYCRR Part 375. This document summarizes the information that can be found in greater detail in the Remedial Investigation (RI)/Feasibility Study (FS) report available at the document repositories.

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

To better understand the site, and the alternatives evaluated, the public is encouraged to review the project documents which are available at the following repositories:

New York State Department of Environmental Conservation - Region 6 Utica Sub Office
State Office Building, 14 th. Floor
207 Genesse Street
Utica, New York 13503
Contact: Jack Marsch
(315) 793-2554

New York State Department of Environmental Conservation - Region 6 Headquarters
State Office Building, 7 th Floor
317 Washington Street
Watertown, New York 13601
Contact: Peter S. Ouderkirk
(315) 785-2513

Written comments on the PRAP can be submitted to Mr. Peter S. Ouderkirk, P.E. at NYSDEC.

DATES TO REMEMBER:

Public comment period on RI/FS Report, PRAP, and preferred alternative.

February 23, 1998 through March 25, 1998

Public Meeting:

Date/Time: March 12, 1998 at 7:00 pm

Location: Utica City Hall, Common Council Chamber, 1 Kennedy Plaza, Utica, New York, 13502

SECTION 2: SITE LOCATION AND DESCRIPTION

The Northeast Alloys and Metals Site is located between State Route 5S and Dwyer Street in Utica,

Oneida County, New York. The property is located in a mixed industrial/commercial area just inside the city limits, which forms the boundary between Oneida and Herkimer County (Figure 1-1). The New York Central Railroad runs in an east-west direction approximately 1500 feet north of the site. The Mohawk River flows in an easterly direction and is located approximately 1800 feet to the north.

The facility occupies about 3.9 acres and consists of a plant building, asphalt parking area, and loading dock area which occupy the southwest portion of the property. The plant building, which occupies approximately 21,000 square feet, is a one story masonry block structure. A small portion of the paved parking lot area, which contains the former underground storage tank (UST) and former drum storage area, is referred to as the "Courtyard" (Figure 1-2).

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The property and buildings have been used for the manufacturing of electronic components in the 1950's, a machine shop in the 1960's, and as a commercial laundry in the 1970's. Northeast Alloys & Metals purchased the facility in April of 1986 and used the facility to recycle specialty metal parts. In January 1989 Northeast Alloys and Metals leased the property to ELG Haniel Trading's ("Trading") to perform the metal recycling operations. Trading ceased operations at the facility in October of 1991. The facility is currently unoccupied.

Chlorinated solvents were initially discovered during a post-closure investigation. The investigation was for a 10,000 gallon UST located in the Courtyard area and contained fuel oil.

As part of the tank removal, a 24 inch sump was placed in the vicinity of the tank removal area in order to collect contaminated groundwater and/or product. The water found in the sump contained Trichloroethene.

The use of chlorinated solvents was prevalent at the site, particularly in the metal degreasing operation. In addition, past employees stated that spent solvents were released to the environment when a forklift accidentally punctured a 55 gallon drum which was being loaded onto a truck for off site disposal.

3.2 Environmental Investigation History

In 1989 a spill was recorded with the NYSDEC (# 89-04225) for the Northeast Alloys and Metals Division. A 10,000 gallon fuel oil storage tank and 55.68 tons of contaminated soils were removed from the tank area. Empire Soils Investigation installed four monitoring wells and twelve borings at the site to determine the impacts associated with the leaking tank.

In October 1989, a Hydrologeologic Investigation Report for the Northeast Alloys and Metals Site was submitted to the Department by Empire Soils Investigation Inc. The report summarized the tank removal and the subsequent analytical data. Water found in the sump installed in the former UST area was found to contain 70.8 ppb Trichloroethene.

In 1992, Huntingdon- Empire Soils Investigations Inc., conducted a follow up investigation to evaluate whether soil or groundwater in the immediate vicinity of the former UST had been impacted by solvents. Four borings were advanced and groundwater was found to contain Vinyl Chloride (Non Detect - 17 ppb) and 1,2-Dichloroethene (1 ppb). Water found in the sump installed in the former UST area was found to contain 1,055 ppb total VOC's.

In 1993, ERM Northeast conducted an investigation to further evaluate the extent of VOC contamination in soil and groundwater. Six borings and two monitoring wells (MW-5 and MW-6) were installed in the Courtyard. Chlorinated solvents up to 29,000 ppb were found in the newly installed groundwater wells.

In 1994, Harress Pickel Consultants conducted a soil gas and groundwater investigation to further evaluate the extent of VOCs in soil and groundwater. Soil gas was gathered from 16 locations on site and elevated levels of TCE and TCA were documented on site and an additional area to the north of the main building was found. This correlated with the historic location of the degreasing operation.

SECTION 4: CURRENT STATUS

The presence of hazardous waste at the site presents a significant threat to human health and the environment and the site was placed on the Registry of Inactive Hazardous Waste Sites as a class "2" in 1994. Civil and Environmental Consultants, Inc. has recently completed and revised a Remedial Investigation/Feasibility Study (RI/FS), dated February 12, 1998.

4.1: Summary of the Remedial Investigation

The purpose of the RI was to further define the nature and extent of any contamination resulting from previous activities at the site, and to collect data necessary to screen remedial alternatives.

A report entitled "Remedial Investigation/ Feasibility Study - Former Northeast Alloys and Metals Site, Utica, New York", dated January 1998 has been prepared describing the field activities and findings of the Remedial Investigation in detail. The RI activities includes the following:

- **A review of all existing data.**
- **A soil gas survey.**
- **Sampling and analysis of water and sediments.**
- **Installation of soil borings and monitoring wells for analysis of soil and groundwater as well as physical properties of soil and hydrogeologic conditions.**
- **Investigation of historic underground storage tank locations.**
- **Investigation of the extent of migration of contaminated groundwater from the site.**

The analytical data obtained during the RI was compared to environmental Standards, Criteria and Guidance (SCGs). Groundwater, drinking water, and surface water SCGs identified for the Northeast Alloys and Metals site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the NYS Sanitary Code. Soil SCGs are based on NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046 soil cleanup guidelines for the protection of groundwater and background conditions.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure routes, certain areas of the site require remediation. These are summarized below. More complete information can be found in the RI Report. The following outlines the specific information gathered during the RI for each medium of concern.

4.1.1 Geological Features

The site is located in the Hudson Lowlands Physiographic province of New York State, within the floodplain of the Mohawk River which is approximately 1,800 feet to the north. The geology in the area of the Mohawk River Drainage Basin consists of unconsolidated sediments of glacio-fluvial and alluvial origin overlying bedrock of the Utica Shale Formation. The unconsolidated deposits in the vicinity of the site are classified as a principal aquifer. Well yields in the vicinity of the site are typically between 10 and 100 gallons/minute. The regional direction of groundwater flow in the unconsolidated deposits is to the east, following the direction of flow of the Mohawk River.

4.1.2 Hydrogeologic Features

Fill ranged from 4 feet at MW-1 to 12 feet at MW-3. Beneath the fill at MW-2 and MW-4, a grey brown silt and clay unit with some to little fine to coarse sand were encountered. In boring MW-2, this unit became more granular at depth and extended to the bottom of the boring at 18.0 feet. At MW-4 the silt and clay unit changed to silt with some fine to coarse sand at a depth of 11 feet below grade. Groundwater was encountered at depths ranging from 6.1 feet at MW-1 to 9.0 feet below grade at MW-3. The primary water bearing unit is the upper interbedded silt and sand units. The average horizontal hydraulic gradient between MW-1 and MW-3 is 0.016 feet/feet. The hydraulic conductivity of the unconsolidated water bearing materials at the site, based on the field tests, is between 6.8×10^{-5} and 1.2×10^{-4} cm/sec. An estimate of the average linear velocity of groundwater flow at the site is 0.1 feet/day or 40 feet per year. The glacial till unit found beneath

the upper unconsolidated layer has an estimated permeability of $7x10^{-5}$ cm/sec. Bedrock is found at approximately 27 feet below grade.

4.1.3 Physical Features

The most significant features which may influence groundwater flow and contaminant migration are the building foundation and the stormwater sewer system. The foundation of the building separates the Courtyard from the northern portion of the site where elevated levels of soil gas were recorded. Seasonal changes in groundwater elevations have produced changing groundwater flow patterns from north-northeast to north-northwest (Figure 3-6). Underground utilities exist upgradient of the site which include gas, water, storm sewer and sanitary sewer lines. A storm sewer system exists in the courtyard and to the east of the building, however, the direction which the storm sewer transects the site is not known.

4.1.4 Surface Water

The Mohawk River is located approximately 1,800 feet to the north of the site. No other surface water bodies exist on or near the site.

4.1.5 Contaminants

The following is a description of impacts from the disposal of hazardous waste and past practices at the Northeast Alloys and Metal Site. Based on the results of the RI in comparison to SCGs and potential for public health and environmental exposure rates, certain areas and media require remediation.

4.1.5 (a) Groundwater

Generally groundwater contamination found at the site is related to and found in proximity to the former UST and the drum spillage area in the Courtyard and downgradient of the degreaser area.

A second area has been found near the east gate, where groundwater was found to only slightly exceed groundwater quality standards.

Groundwater quality standards were exceeded in 5 out of 12 wells installed on site. The highest concentrations of VOCs were found in MW-6, RW-2, RW-1, MW-5, Sump, MW-9 and MW-3, in that order. Levels of contaminants were found in the following ranges: 1,1,1-Trichloroethane(4-29,000 ppb), 1,1-Dichloroethane(35 ppb - 14,634 ppb), 1,2-Dichloroethene(28 ppb - 41,000 ppb), Trichloroethene(47 ppb - 3,900 ppb), 1,1-Dichloroethene (17 ppb - 560 ppb), and Vinyl Chloride (11 ppb - 280 ppb).

Groundwater contamination near the east gate, at MW-9 was found to be 47 ppb for TCE and 199 ppb for 1,2- DCE.

Groundwater contained elevated levels of metals which include aluminum, antimony, arsenic, calcium, chromium, cobalt, iron, magnesium, and vanadium. However, given the historic use as a scrap yard, the elevated levels of metals are not unexpected. The highest levels of metals found in the groundwater at MW-2 were located at the old scrap storage area.

RW-1 had a significant level of sodium, however, it was determined that the drillers put salt in the well to melt ice. This would account for this unusually high level. Other levels of sodium found at the site are within normal limits.

Semi-volatile organic compounds (SVOC) were not prevalent at the site. Only MW-6 and RW-1 contained estimated levels of Bis (2-Ethylhexyl) phthalate (80 ppb), Benzo(a) anthracene (2 ppb) and Chrysene (2 ppb).

No PCBs were detected in site groundwater or soils.

There are no known users of groundwater within a 1.5 miles radius of the site and the area is serviced by a public water supply.

4.1.5 (b) Soil Gas

Previous investigations utilized soil gas to delineate VOC contamination found at the site. Sixteen soil borings were advanced to depth ranging from 1 to 4 feet below grade. Detectable levels of TCA and TCE were identified which correlated with the former drum area and the former degreaser locations. Levels ranged from ND - 780 mgg/M^3 for Trichloroethene and ND - 96 mgg/M^3. The highest concentrations were found at the same location, SG7. SG7 is just to the north of the

building area where the former degreasing operation was conducted (Figure 1-4).

4.1.5 (c) Soil

As part of the RI, shallow soil samples were taken from across the site in order to determine if other areas had been effected by past practices.

Several semivolatile organics and metals were detected in the shallow soil samples in both background and on-site samples. Levels of PAHs are believed to be associated with asphalt and other roadway contaminants. Metals are also believed to be associated with the surrounding roads and historical use of the site. These semivolatiles and metals are not deemed to be a significant threat.

Soil sampling and historic soil gas sampling in the vicinity of the courtyard and down gradient of the building, indicates that an area of approximately 16,000 square feet exists which exhibits elevated levels of VOCs. Soils samples in this area exhibited total VOCs in the range of 1846 ppb to non detect. The majority of the contamination found in the soils exists just above the groundwater table which is found approximately 8-10 feet below grade.

Soil sampling conducted near the east gate have identified a small area contaminated with Trichloroethene (8,200 ppb to 790 ppb), Benzo (a) anthracene (570 ppb), Benzo (a) pyrene (570 ppb) and Chrysene (630 ppb). Approximately 200 cubic yards of soils are believed to be contaminated above cleanup goals.

Downgradient wells and soil samples confirm that the contamination has not migrated to other areas.

4.1.5 (d) Air

Soil sampling and screening for the preliminary organic compounds of concern have not indicated the presence of target compounds at measurable levels near the surface of the site and, therefore, airborne contamination, measured in the breathing zone, is not anticipated.

4.2 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 in the absence of site remediation.

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathway are: 1) source of contamination; 2) environmental media and transport mechanisms; 3) point of exposure; 4) route of exposure; and 5) receptor population. These elements may be based on past, present, or future events.

Completed pathways which are known to, or may, exist at the site include ingestion and dermal contact.

There is a future potential for ingestion of contaminated groundwater. However, no potable supply wells operate on the site and the area is supplied by public water.

There is a potential for dermal contact or incidental ingestion exposures due to contaminated surface and sub-surface soils.

4.3 Summary of Environmental Exposure Pathways:

Because the site is fully developed, there are few, if any, on-site ecological receptors (i.e., terrestrial flora and fauna) to be evaluated. Except for the Mohawk River to the north, surrounding areas are developed and have minimal ecological receptors. Potential risks to ecological receptors to the north would be from contaminated groundwater, however, the documented groundwater contamination is predominantly confined near the site and the Mohawk River is over 1,800 feet from the site. If left un-remediated, contaminated surface soils could enter the storm sewer system and then migrate to the Mohawk River. However, most underground utilities are upgradient of the impacted areas.

SECTION 5: ENFORCEMENT STATUS

The NYSDEC and Mrs. Joyce A. Rossi entered into a Consent Order on January 28, 1997. The

Order obligated the responsible parties to develop and implement a remedial program for the Northeast Alloys Site. The remedial program includes the development and implementation of a remedial investigation/feasibility study, an interim remedial measure (if warranted) and a remedial/ remedial construction program.

Upon issuance of the Record of Decision, the remedial design/remedial construction program would be implemented.

Under a separate agreement between Mrs. Joyce A. Rossi and ELG Haniel Trading's, the environmental consulting firm of Civil and Environmental Consultants Inc., was procured to develop and implement the required programs.

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 375-1.10. The overall remedial goal is to meet all Standards, Criteria, and Guidance (SCGs) and be protective of human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Reduce, control, or eliminate, to the extent practicable, the contaminated soil present on site .
- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Mitigate the impacts of contaminated groundwater to the environment.
- Provide for attainment of SCGs for groundwater quality to the extent practicable.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Northeast Alloys and Metal Site were identified, screened and evaluated in a feasibility study. This evaluation is presented in the report entitled "Remedial Investigation/Feasibility Study", dated February 12, 1998.

A summary of the detailed analysis follows. As used in the following text, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the remedy, procure contracts for design and construction.

7.1: Description of Alternatives

Potential remedial alternatives for the Northeast Alloys and Metals Site were identified, screened and evaluated in a three phase feasibility study. This evaluation is presented in the report entitled "Remedial Investigation/Feasibility Study".

It is proposed, as part of each alternative, that contaminated soils in the vicinity of the east gate would be excavated for off site disposal in order to meet soil cleanup objectives. Approximately 200 cubic yards of soils would require excavation and disposal at an estimated cost of $ 60,000. This would return this small area to unrestricted use.

The following alternatives address the groundwater and remaining soil contamination found in the vicinity of the on-site building. A summary of the detailed analysis follows.

Alternative #1
No Action

The No Action Alternative is typically 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 and the environment.

A groundwater monitoring program would be developed to track the contaminated groundwater trends and movement. A deed restriction would be placed on the site to prevent future use of on-site groundwater and to limit contact with contaminated soils. A security fence would be erected and maintained.

Present Worth:	$ 138,000
Capital Costs:	$ 10,000
Annual O&M:	$ 8,000
Time to implement	3 months

Alternative #2
Groundwater Extraction and Treatment

This Alternative includes the extraction of groundwater using well points and treatment on site prior to disposal at the POTW. A monitoring and maintenance program would be developed to insure that the groundwater system was operating effectively, and to monitor contaminated groundwater to insure that levels of VOCs were being reduced and that off site migration was mitigated. The anticipated length of time required to remediate the site is ten (10) years.

Present Worth:	$ 291,000
Capital Costs for Groundwater and Soil:	$ 104,000
Annual O&M:	$ 24,000
Time to implement	6 - 12 months

Alternative #3
Groundwater Extraction and Treatment with Soil Vapor Extraction

This Alternative is the same as Alternative #2, except that vapor extraction will also be performed in RW-1 and RW-2 to enhance remediation. The combined groundwater extraction and soil vapor extraction system would enhance contaminant mass removal from the impacted area. The anticipated length of time required to remediate the site is six (6) years.

Present Worth:	$ 254,000
Capital Costs for Groundwater and Soil:	$ 117,000
Annual O&M:	$ 27,000
Time to implement	6 - 12 months

7.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study. The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection. The last five evaluation criteria are termed "primary balancing criteria" and are used to compare the positive and negative aspects of each of the remedial strategies.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

Alternative #1 would not meet SCGs for groundwater or soils because the contaminated materials would be allowed to stay in place and exceed standards and guidance values. Contaminated materials could continue to migrate and impact off site receptors.

Alternatives #2 and Alternative #3 would meet SCGs for groundwater over time. These alternatives both include the removal of contaminated groundwater from the site, therefore SCGs for groundwater would be obtained eventually. Alternative #3, which includes the soil vapor extraction, would most likely obtain SCGs for soils as well.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Alternative #1 would not be considered to be protective of human health and the environment since site related contamination above cleanup goals would remain in-place and would continue to impact groundwater and migrate off-site.

Alternative #2 is considered to be protective of human health and the environment due to the active removal of contaminated water from the site.

Alternative #3 is considered to be the most protective of human health and the environment due to the aggressive remediation of both contaminated groundwater and soils.

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.

Alternative #1 would not cause any short-term impacts due to the lack of disturbance of the site and it would take the least time to implement.

The remaining two alternatives could create potential short term impacts to workers and the public from the installation of remedial systems and the exposure to contaminated groundwater and soils. However, these impacts would be mitigated by implementing readily available safety procedures, including air monitoring, the wearing of protective equipment, decontamination of equipment prior to leaving the site, and implementation of engineering controls which may include, but are not limited to covering soils, installing migration barriers to keep contaminants from migrating beyond the work site boundaries, and the use of dust suppression techniques. Alternatives # 2 and # 3 are considered to have the same level of short-term impacts and are considered to take approximately the same time to implement.

4. Long-term Effectiveness and Permanence. This criteria 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 controls intended to limit the risk, and 3) the reliability of these controls.

Alternative #1 would not provide long-term effectiveness or permanence because contamination would remain in place.

Alternative #2 would provide a higher degree of long-term effectiveness and permanence because contaminated groundwater would be actively collected and treated.

Alternative #3 would provide the highest level of long-term effectiveness and permanence because both contaminated groundwater and contaminated soil gas would be actively removed from the site and treated.

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.

Alternative #1 would provide no reduction in toxicity, mobility or volume as it pertains to contaminated wastes or media.

Alternative #2 would provide a higher degree of reduction compared to Alternative #1.

Alternative #3 is considered to provide the highest degree of reduction based upon the quantity of contaminated mass which will be removed from the groundwater and the soil.

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

The No Action Alternative would be considered to be implementable.

Alternatives #2 and #3 are also considered to be the implementable overall, because standard construction and administrative techniques would be utilized.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criteria evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be

used as the basis for the final dec. n. The costs for each alternative are presented in Table 3

8. **Community Acceptance** - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan are evaluated. A " Responsiveness Summary" will be prepared that describes public comments received and how the Department will address the concerns raised. If the final remedy selected differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

SECTION 8: SUMMARY OF THE PREFERRED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is proposing Alternative #3, along with removal of contaminated soil near the east gate, as the remedy for this site.

The elements of the proposed remedy are as follows:

1. Installation of a groundwater collection and treatment system based on the remedial design program.

2. Installation of a soil vapor extraction system at RW-1 and RW-2.

3. Excavate contaminated soil in the vicinity to meet soil clean up goals.

4. Implementation of a site-wide operation, monitoring and maintenance program to insure that the remedial program is effective and remedial action goals are obtained.

5. Institutional controls such as deed restrictions on groundwater use will be implemented until groundwater standards are obtained.

The remedial design would verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS would be resolved. This would include the determination of the size, location and number of groundwater and soil gas extraction wells.

The estimated present worth cost to implement the remedy is $254,000. The cost to construct the remedy is estimated to be $117,000 and the estimated average annual operation and maintenance cost for 6 years is $27,000.

The following is the basis for the Department's proposal:

- The removal of contaminated soils near the east gate will remove the source of contamination which has impacted groundwater in the vicinity of MW #9 and return the entrance roadway to unrestricted use.

- The installation of a groundwater collection and treatment system will meet SCGs for groundwater within an acceptable time frame.

- The installation of a soil vacuum extraction system will facilitate the remediation of the site and will expedite the attainment of SCGs and remedial goals.

- The monitoring and maintenance of the systems and groundwater at the site will insure a successful remediation.

APPENDIX A

Appendix A - Table 1
New York State Standards, Criteria and Guidance Applications

U.S. Environmental Protection Agency (EPA)
- Toxic Substance Control Act (TSCA)
- USEPA Health Based Soil Criteria for Systemic Toxicant and Carcinogens

New York State Department of Environmental Conservation (NYSDEC)

NYSDEC - Division of Environmental Remediation
- 6NYCRR Part 375-Inactive Hazardous Waste Disposal Site Remedial Program

Hazardous Waste Technical and Administrative Guidance Memoranda (TAGMs)
- TAGM 4030 - Selection of Remedial Actions at Inactive Hazardous Waste Sites
- TAGM 4046 - Determination of Soil Cleanup Objectives and Cleanup Levels
- TAGM 4031 - Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites

NYSDEC - Division of Hazardous Substance Regulations
- 6NYCRR Part 370 - Hazardous Waste Management System - General
- 6NYCRR Part 371 - Identification and Listing of Hazardous Wastes
- 6NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporter, and Facilities
- 6NYCRR Part 376 - Land Disposal Restrictions

NYSDEC - Division of Solid Waste
- 6NYCRR Part 360 - Solid Waste Management Facilities
- 6NYCRR Part 364 - Waste Transporters Permits

NYSDEC - Division of Water
- 6NYCRR Part 700-705 - Water Quality Regulations for Surface Water and Groundwater
- 6NYCRR Part 750-757 - Implementation of NYPDES in New York State
- Technical and Operation Guidelines (TOGS) 1.1.1-Ambient Water Quality Standards and Guidance Values

NYSDEC - Division of Spill Management
- STARS Memo # 1: Petroleum-Contaminated Soil Guidance Policy
- State Navigation Law - Article 12 (Oil Spill Prevention, Control and Compensation)

NYSDEC - Division of Fish and Wildlife
- Technical Guidance for Screening Contaminated Sediments (Nov 1993)

New York State Department of Labor
- 12 NYCRR Part 56-Asbestos

Occupational Safety and Health Administration
- 29 CFR 1900-1999

Appendix A - Table 2
Representative Contamination

Medium	Class	Contaminant of Concern	Concentration Range	Frequency of Exceedances	SCG *
Groundwater (Shallow)	Volatile Organic Compounds	1,1,1-Trichloroethane	Non Detect - 29,000 ppb	9 out of 32	5 ppb
		1,1,2-Trichloroethane	Non Detect - 19 ppb	2 out of 32	5 ppb
		1,1-Dichloroethane	Non Detect - 14,634 ppb	9 out of 32	5 ppb
		1,1-Dichloroethene	Non Detect - 560 ppb	6 out of 32	5 ppb
		1,2-Dichloroethane	Non Detect - 37,000 ppb	5 out of 32	5 ppb
		1,2-Dichloroethene	Non Detect - 41,000 ppb	10 out of 32	5 ppb
		Trichloroethene	Non Detect - 2100 J ppb	11 out of 32	5 ppb
		Vinyl Chloride	Non Detect - 280 J ppb	8 out of 32	2 ppb
	Semi Volatile Organic Compounds	Bis(2-Ethylhexyl) phthalate	Non Detect - 80 J ppb	1 out of 11	50 ppb
		Benzo(a)anthracene	Non Detect - 2 J ppb	1 out of 11	.002 ppb
		Chrysene	Non Detect - 2 J ppb	1 out of 11	.002 ppb
	Metals	Antimony	Non Detect - 17.8 J ppb	2 out of 13	3 ppb
		Arsenic	Non Detect - 70.4 ppb	4 out of 13	25 ppb
		Beryllium	Non Detect - 5.73 ppb	3 out of 13	3 ppb
		Chromium	Non Detect - 202 J ppb	3 out of 13	50 ppb
		Copper	Non Detect - 703 J ppb	2 out of 13	200 ppb
		Lead	Non Detect - 1740 R ppb	3 out of 13	25 ppb
		Manganese	642 ppb - 230,000 ppb	13 out of 13	300 ppb
		Mercury	Non Detect - 3.9 ppb	1 out of 13	2 ppb
		Sodium	1250 ppb - 201,000	6 out of 13	20,000 ppb
		Zinc	36.2 ppb - 571 J ppb	3 out of 13	300 ppb
Soils	Volatile Organic Compounds	Acetone	ND - 1700 J ppb	3 out of 15	200 ppb
		Trichloroethene	ND - 8200 J ppb	3 out of 15	700 ppb
		1,2-Dichloroethene	ND - 190 ppb	1 out of 11	100 ppb
	Semi Volatile Organic Compounds	Benzo(a)anthracene	Non Detect - 570 ppb	3 out of 5	224 ppb or MDL
		Chrysene	Non Detect - 430 ppb	1 out of 5	400 ppb
		Benzo(a)pyrene	Non Detect - 570 ppb	3 out of 5	61 ppb or MDL
		Benz(a,h)anthracene	Non Detect - 1,200 ppb	2 out of 17	14 ppb or MDL

Appendix A - Table 2
Representative Contamination

Medium	Class	Contaminant of Concern	Concentration Range	Frequency of Exceedances	SCG *
	Metals	Aluminum	Non Detect - 0.66 ppm	1 out of 5	0.16 ppm
		Beryllium	Non Detect - 33 ppm	1 out of 5	30 ppm
		Copper	6.6 ppm - 149 ppm	3 out of 5	25 ppm
		Iron	6,870 ppm - 47,000 ppm	1 out of 5	21,000 ppm

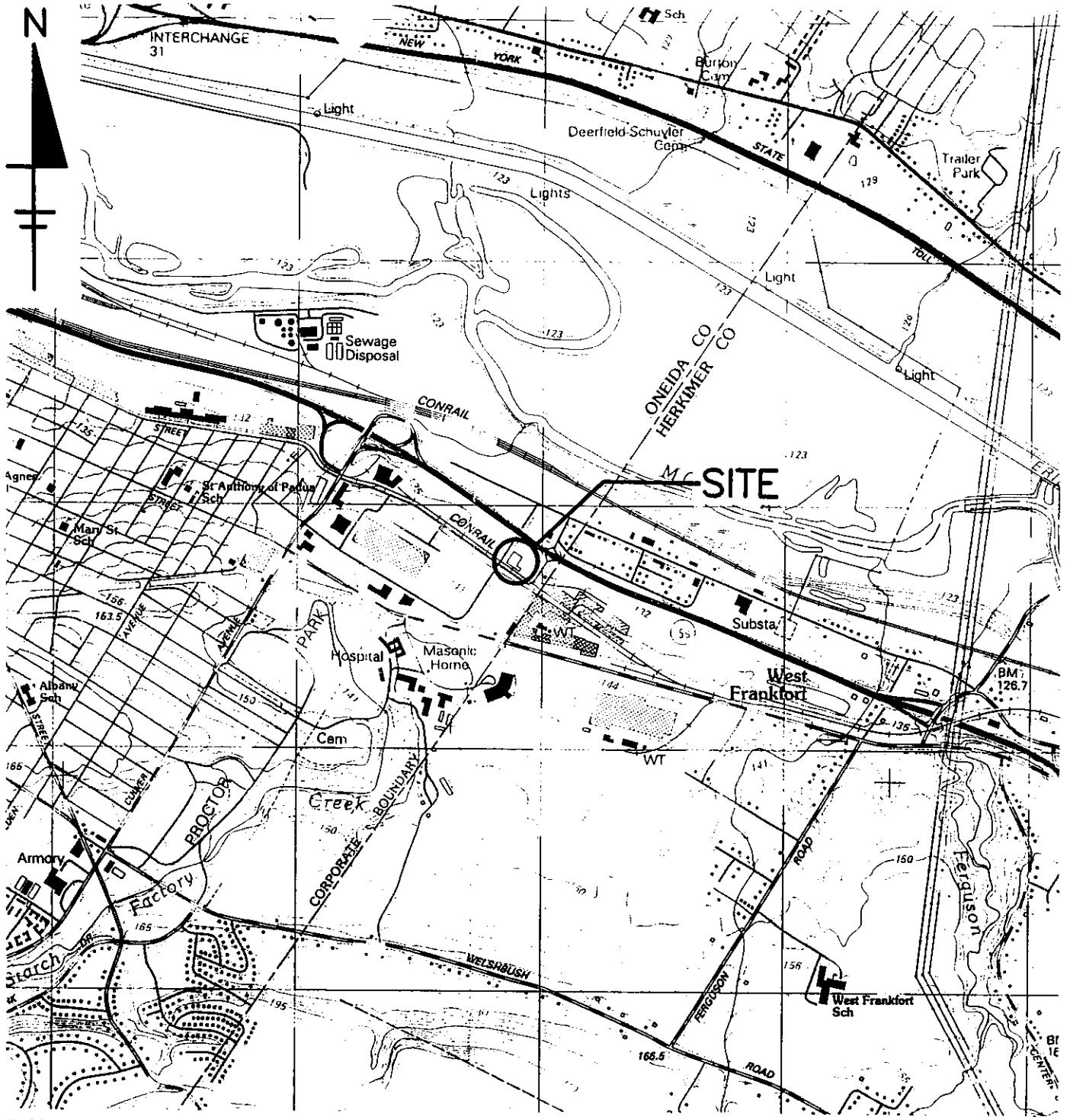
* SCG's for groundwater is standard in 6 NYCRR PART 703
SCG's for soil is objectives in NYSDEC TAGM 4046
SCG's for metals in soil are based on average site background

Appendix A - Table 3
Northeast Alloys and Metals
Remedial Alternative Costs

Remedial Alternative	Capital Costs	Annual O&M	Total Present Worth
Alternative # 1 No Action	$ 10,000.00	$ 8,000.00	$ 138,000.00
Alternative # 2 Groundwater Extraction and Treatment & Soil Removal	$ 104,000.00	$ 24,000.00	$ 291,000.00
Alternative # 3 Groundwater Extraction and Treatment and Soil Vacuum Extraction & Soil Removal	$ 117,000.00	$ 27,000.00	$ 254,000.00

***Note**: Present Worth Value is based upon a 5 % Present Work Factor using continuous compounding.*

APPENDIX B



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

SCALE IN FEET
0 2000 4000

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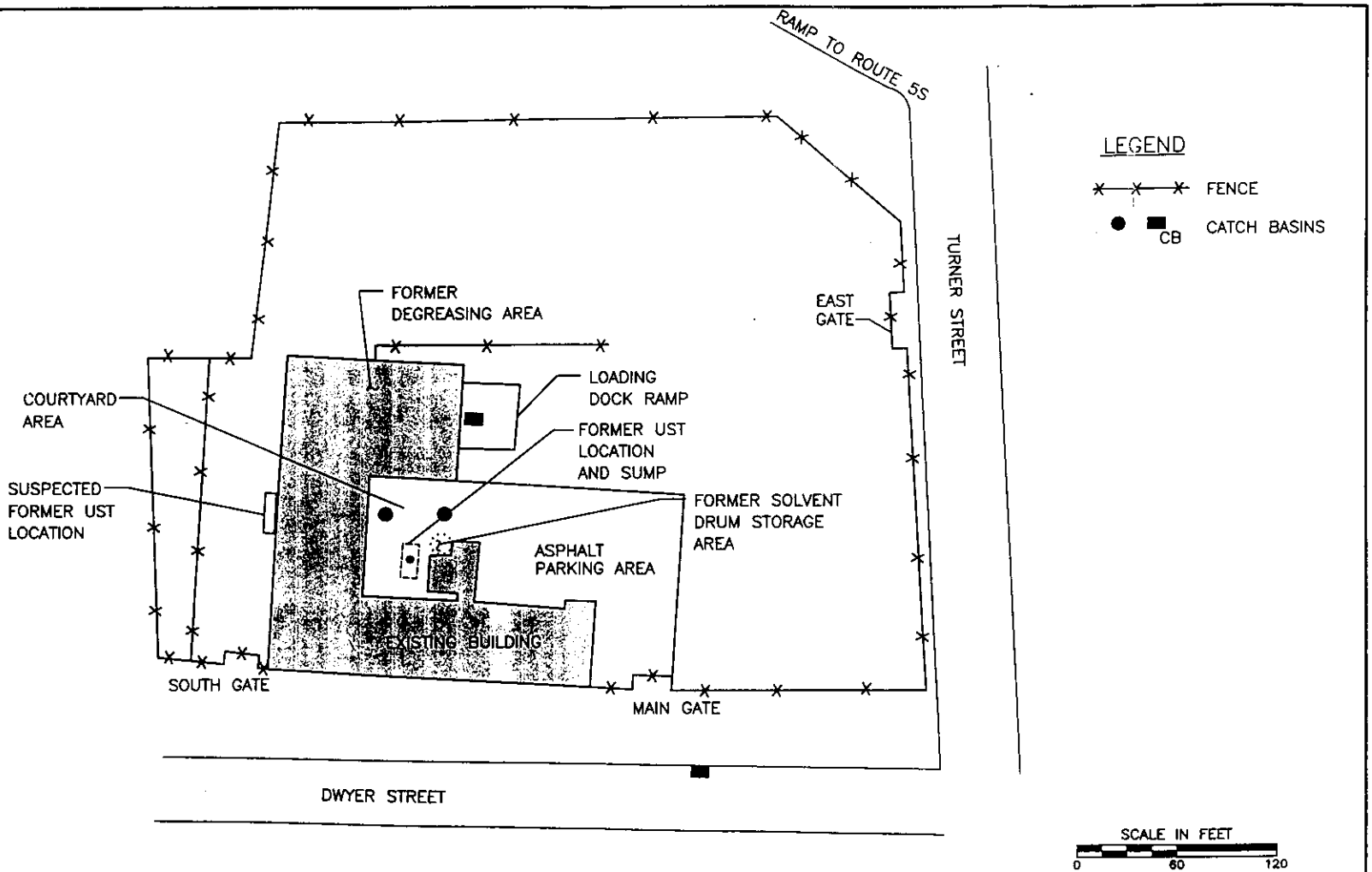
Cincinnati, OH (513) 985-0226 • (800) 759-5614
Cleveland, OH (412) 963-1063 • (800) 494-0252

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

DWN. BY: M.T.M.	ACAD FILE:	SCALE:	DATE:		
CHKD. BY:	94502F11	1"=2000'	4/1/97	94502	FIGURE 1-1

G:\PROJECTS\94502\DWG\94502F11.DWG (M. MARKS) - APR 02, 1997 - 09:42:50



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

Civil & Environmental Consultants, Inc. Pittsburgh, PA (412) 921-3402 • (800) 365-2324 Cincinnati, OH (513) 985-0226 • (800) 759-5814			SITE LAYOUT RI/FS REPORT NORTHEAST ALLOYS AND METALS UTICA, NEW YORK		
DWN. BY: M.T.M. CHKD. BY: TAV	ACAD FILE: 94502RF2	SCALE: 1"=60'	DATE: 4/1/97	94502	FIGURE 1-2

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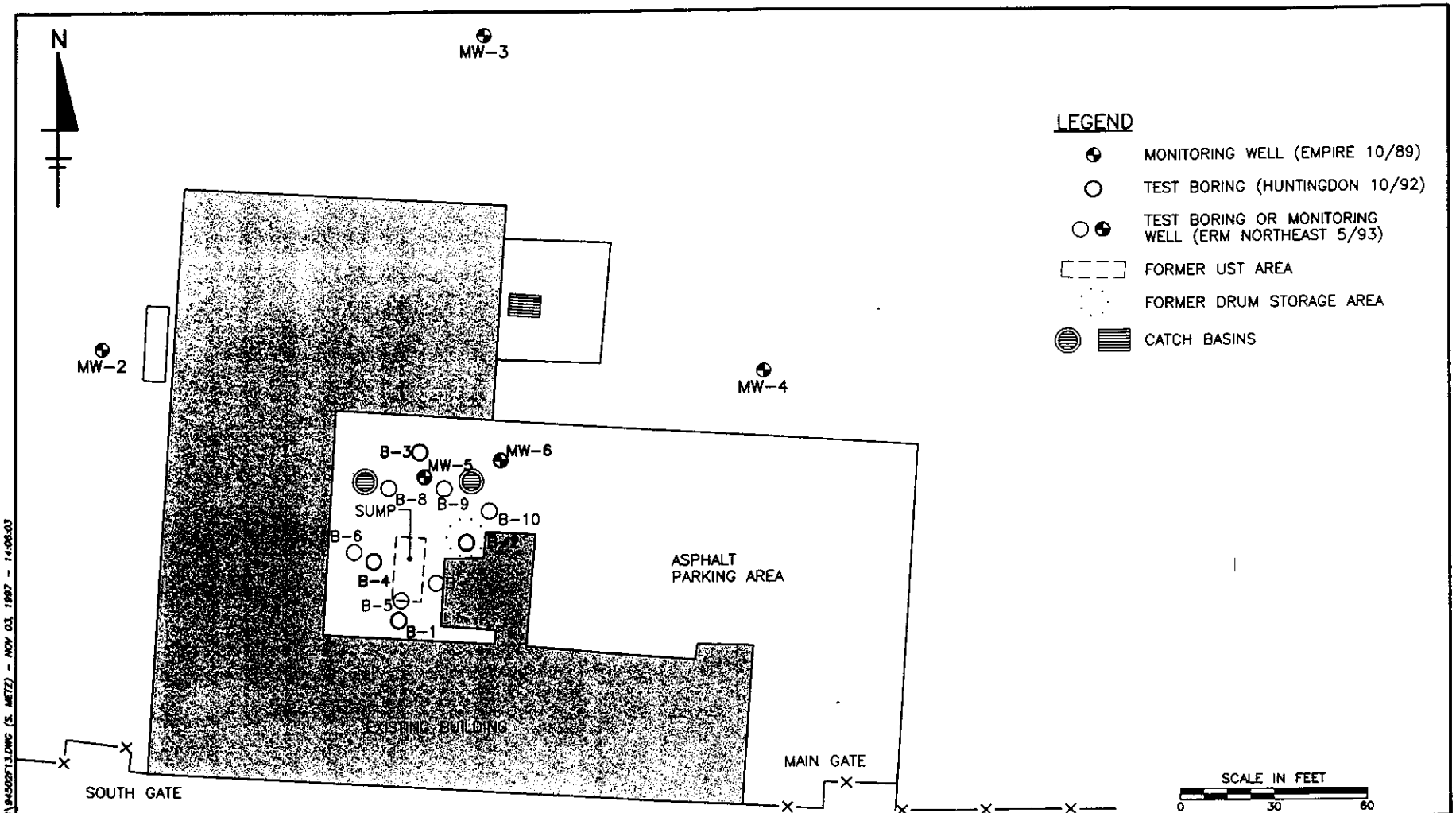

REFERENCE:
BASE MAP FROM HUNTINGDON EMPIRE SOILS INVESTIGATIONS, INC. ENVIRONMENTAL INVESTIGATION, FORMER NORTHEAST METALS SITE, OCTOBER 1992.

Civil & Environmental Consultants, Inc.
Pittsburgh, PA (412) 921-3402 • (800) 365-2324
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BORING AND MONITORING WELL LOCATIONS
FROM PREVIOUS INVESTIGATIONS
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

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

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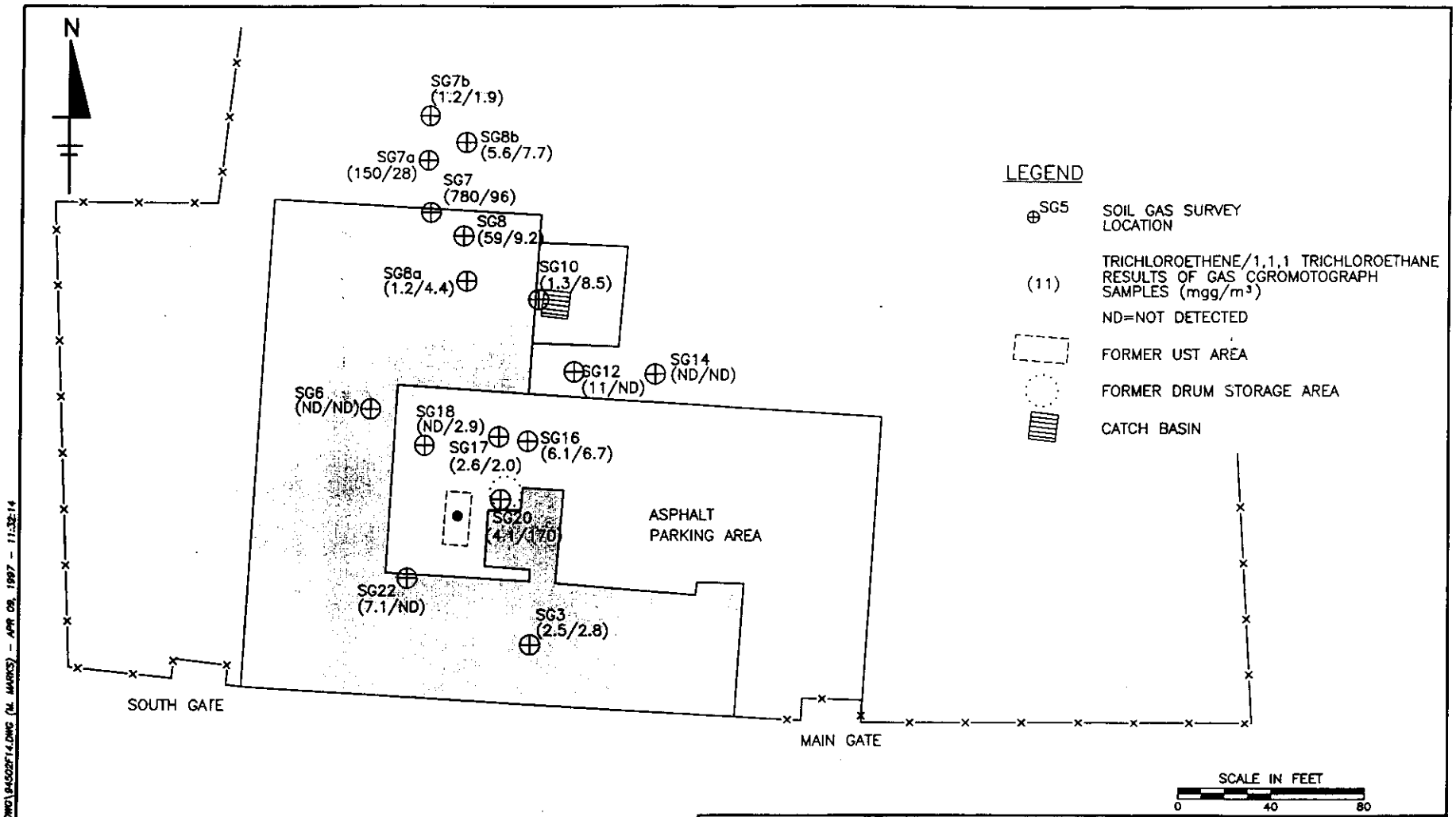

REFERENCE:
HARRESS PICKEL CONSULTANTS, SOIL GAS & GROUNDWATER INVESTIGATION AT THE FORMER NORTHEAST ALLOYS & METALS SITE, DECEMBER 1993.

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

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

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

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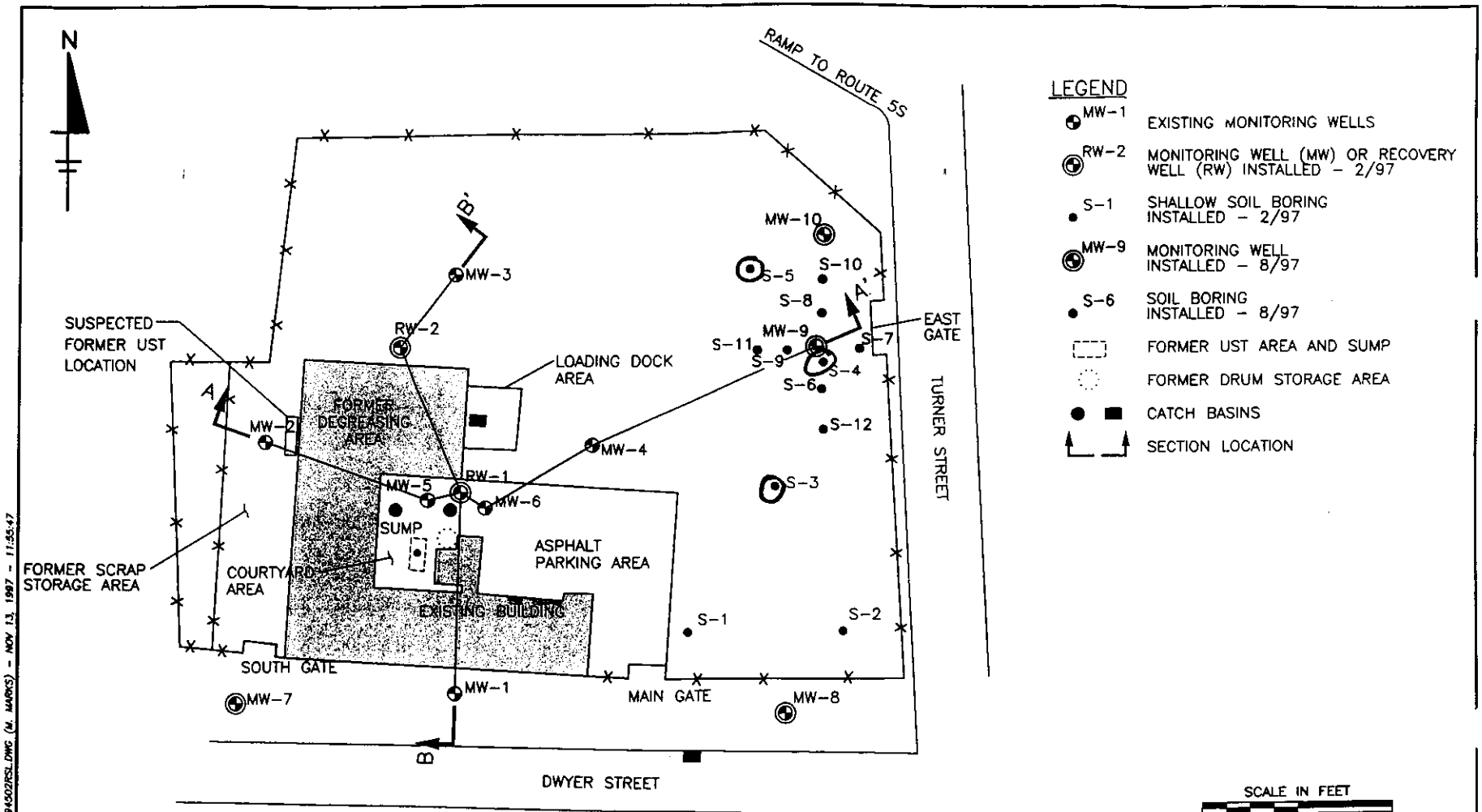

G:\PROJECTS\94502\DWG\94502RSL.DWG (M. MARKS) - NOV 13, 1997 - 11:55:47

REFERENCE:

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

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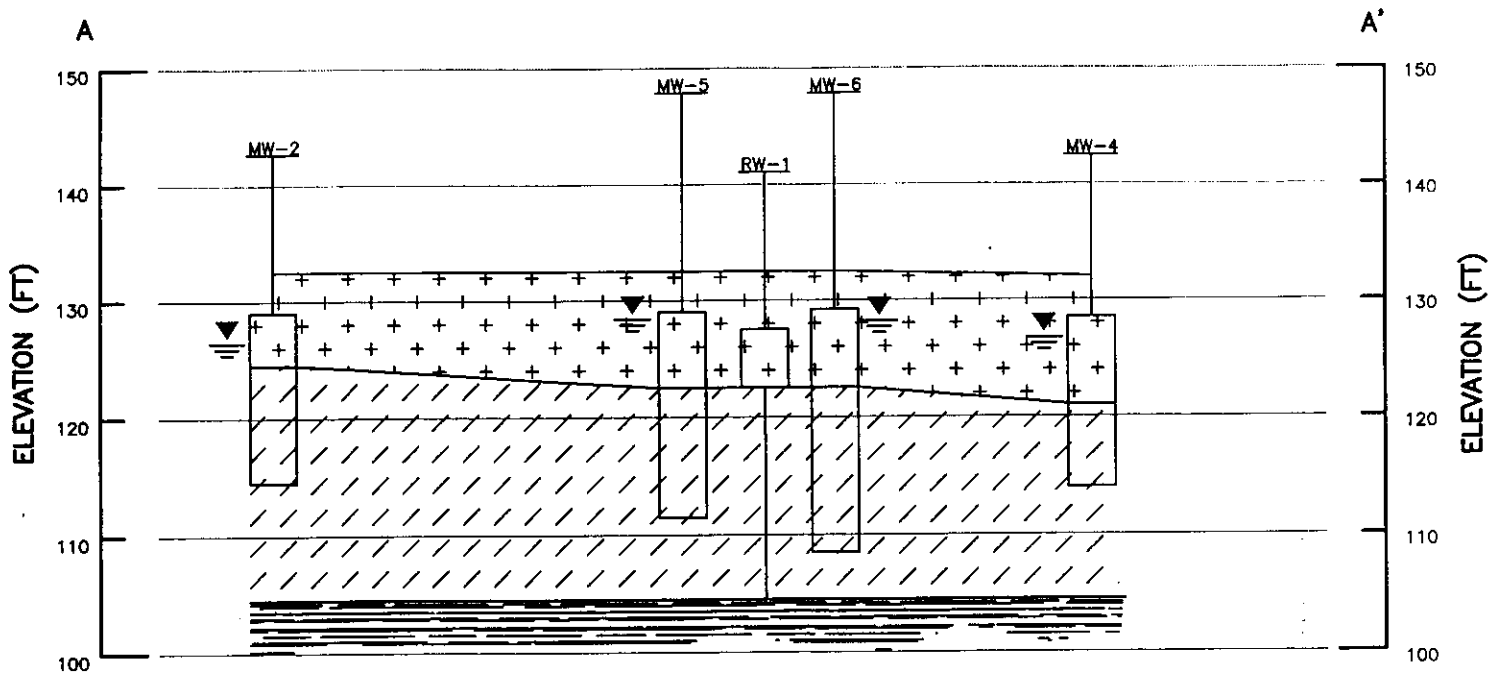
SOIL BORING AND WELL INSTALLATION PLAN
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

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



LEGEND

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

GEOLOGIC CONDITIONS

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

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

VERTICAL SCALE IN FEET
0 10 20

HORIZONTAL SCALE IN FEET
0 60 120

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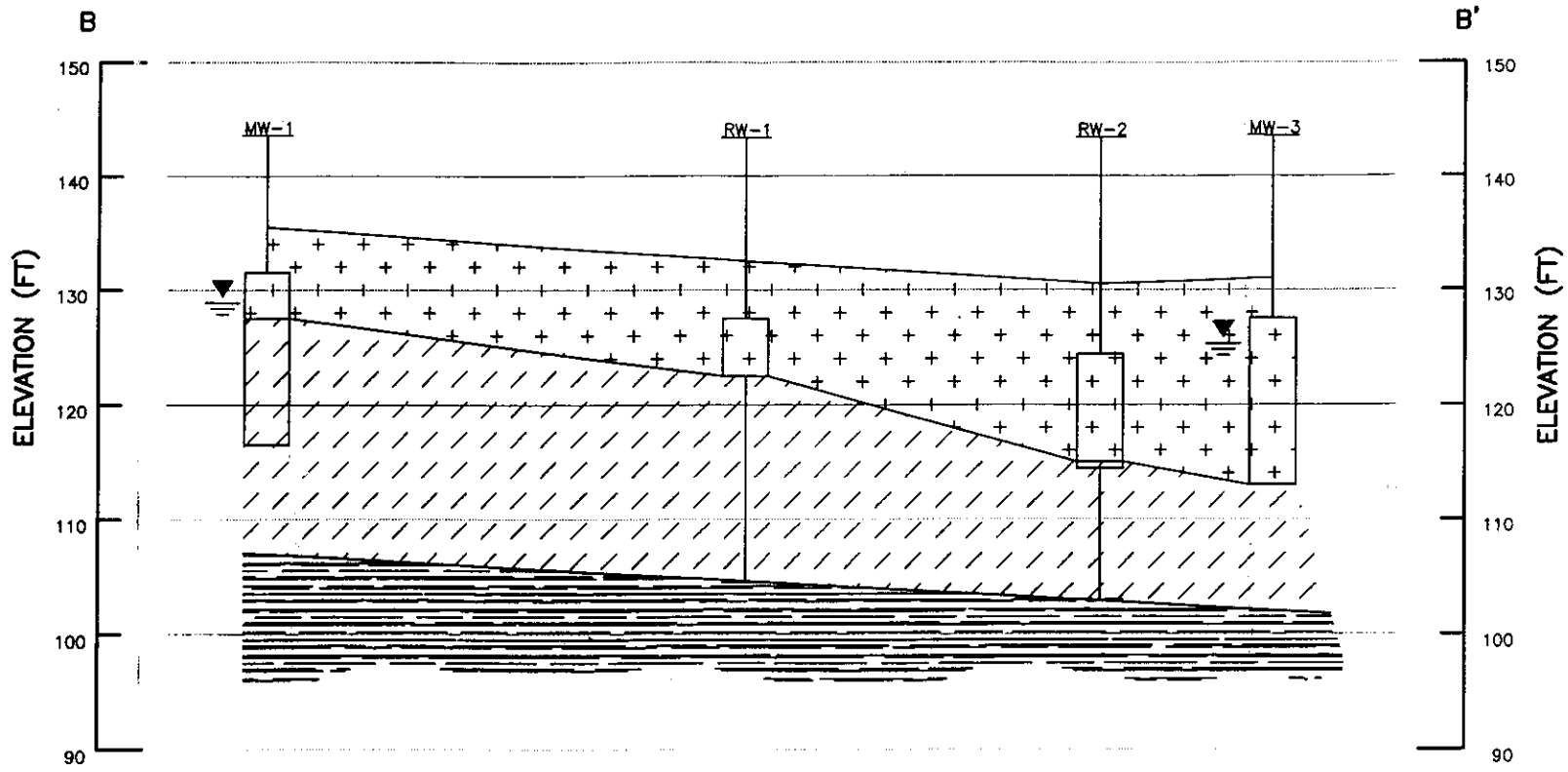
CROSS SECTION A-A'
RI/FS REPORT
NORTHEAST ALLOYS AND METALS
UTICA, NEW YORK

DWN. BY: M.T.M.	ACAD FILE: 94502AA	SCALE: AS NOTED	DATE: 4/2/97	94502	FIGURE 3-1
CHKD. BY: KAV					



LEGEND

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

GEOLOGIC CONDITIONS

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

VERTICAL SCALE IN FEET
0 10 20

HORIZONTAL SCALE IN FEET
0 60 120

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

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

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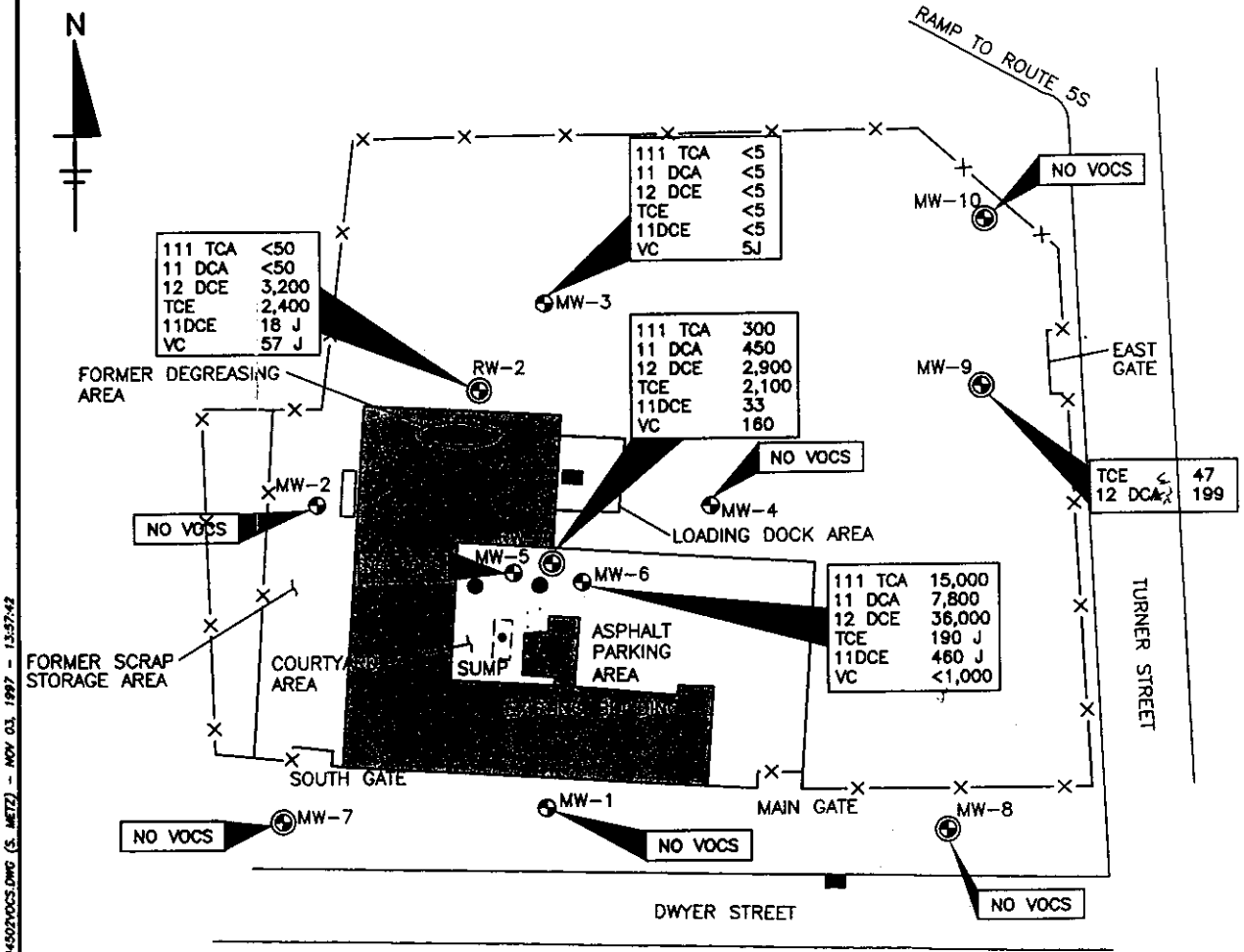

CHEMICAL CONDITIONS LIMITATIONS

- MW-1 — EXISTING MONITORING WELLS
- RW-2 — MONITORING WELL (MW) OR RECOVERY WELL (RW) INSTALLED BY CEC – 2/97
- CATCH BASINS
- GROUNDWATER SAMPLING RESULTS

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

RESULTS IN ug/l

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

SCALE IN FEET
0 60 120

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

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

DWN. BY: R.E.P.	ACAD FILE: 94502VOCS	SCALE: 1"=60'	DATE: 10/20/97	94502	FIGURE 3-4
CHK'D. BY: TCV					

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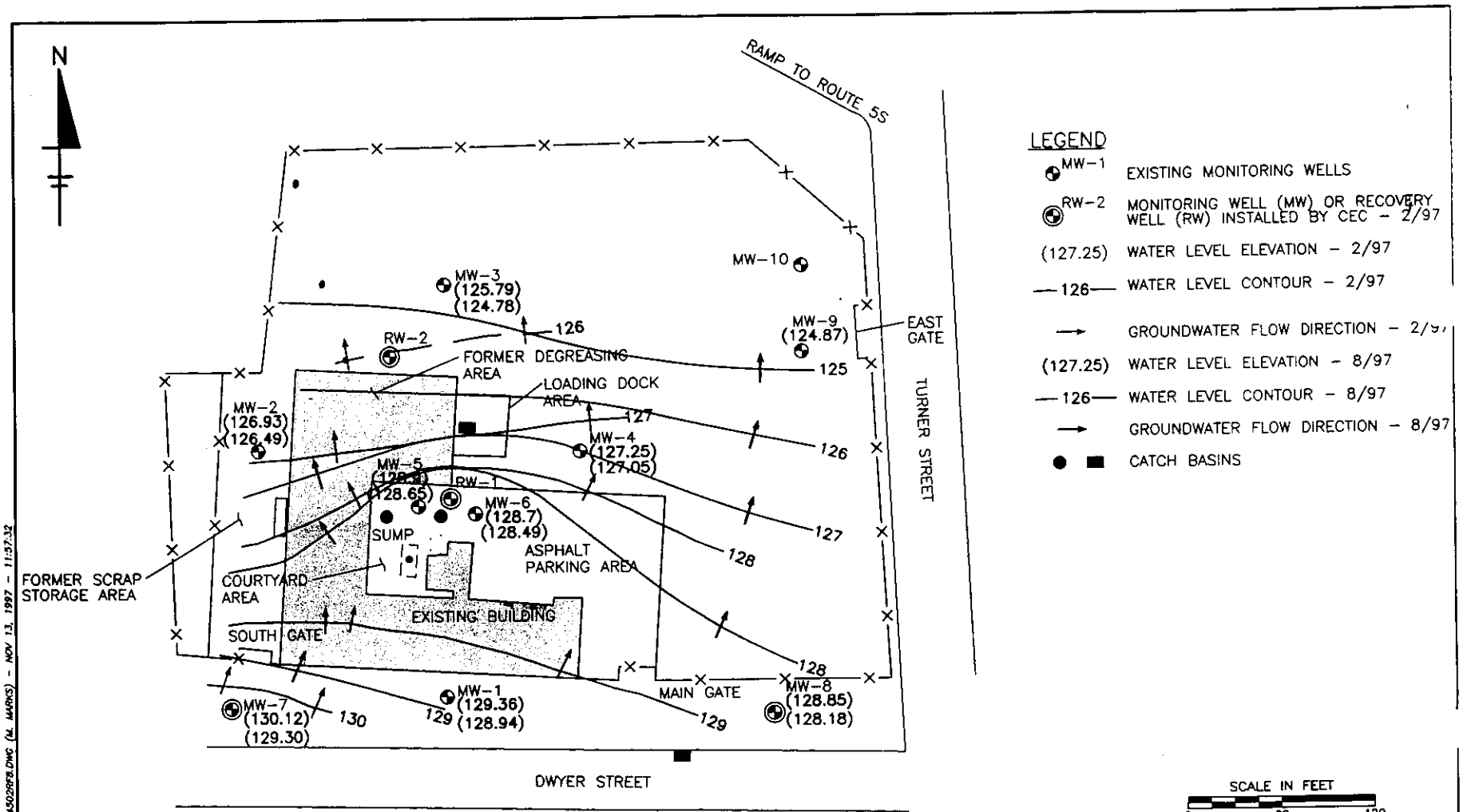

REFERENCE:
ERM - NORTHEAST, SOIL AND GROUNDWATER INVESTIGATION AT THE FORMER NORTHEAST ALLOYS & METALS SITE, MAY 1993.

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DWN. BY: M.T.M.	ACAD FILE: 94502RF8	SCALE: 1"=60'	DATE: 10/21/97	94502	FIGURE 3-6
CHKD. BY: TSV					

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

G:\PROJECTS\94502\DWG\94502RF8.DWG (M. MARKS) - NOV 13, 1997 - 11:57:32

APPENDIX C

Administrative Record
Northeast Alloys and Metals Inc.
Site No. 6-33-045

Title of Document	Author	Date
Hydrogeologic Investigation	Empire Soils Investigations, Inc.	1989
Environmental Investigation	Huntingdon Empire Soils Investigations Inc.	1992
Soil and Groundwater Investigations	ERM Northeast	1993
Soil Gas and Groundwater Investigation	Harress Pickel Consultants	1994
Remedial Investigation/Feasibility Study Work Plan	Civil and Environmental Consultants, Inc.	Revised October 3, 1997
Remedial Investigation/Feasibility Study Report	Civil and Environmental Consultants, Inc.	Revised: February 12, 1998