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WILLIAM F. COSULICH ASSOCIATES, P. C.
Environmental Engineers Scientists Planners
330 Crossways Park Drive, Woodbury, New York 11797-2015
516-364-9880 ▪ Fax: 516-364-8675

August 29, 1995

John B. Swartwout, P.E.
Chief
Eastern Investigation Section
Bureau of Hazardous Site Control
Division of Hazardous Waste Remediation
New York State Department
of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

Re: Utica Alloys Site
WFC No. 1194-G

Dear Mr. Swartwout:

In accordance with comments provided in your letter dated, August 18, 1995, and the previous letter which provided comments on the draft Supplemental Investigation Work Plan, please find enclosed the revised/final Supplemental Investigation Work Plan for the above referenced site.

Pending your review and written approval of this Work Plan, we will proceed (with provision of 5 working days notification to NYSDEC) with the field program.

If you have any questions or require additional information, please call me.

Very truly yours,

Thomas F. Maher, P.E.
Vice President

TFM/lah/ss
Enclosure
cc: J. Jiampietro (Universal Waste, Inc.)
M. Gerarrd (Arnold & Porter)
▲1194/TFM08285.JBS

SUPPLEMENTAL INVESTIGATION
WORK PLAN

UTICA ALLOYS SITE
LELAND AVENUE
UTICA, NEW YORK

PREPARED FOR

UTICA ALLOYS, INC.
UTICA, NEW YORK

BY

WILLIAM F. COSULICH ASSOCIATES, P.C.
WOODBURY, NEW YORK

AUGUST 1995

SUPPLEMENTAL INVESTIGATION
WORK PLAN
UTICA ALLOYS SITE
LELAND AVENUE
UTICA, NEW YORK

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1.0 INTRODUCTION

On May 3, 1995, William F. Cosulich Associates, P.C. (WFC) entered into a contract with Utica Alloys, Inc. (Utica Alloys) to perform a Supplemental Investigation at the Utica Alloys Facility on Leland Avenue in Utica, New York. This work authorization is the continuation of an evaluation for the potential for hazardous waste contamination on the site in response to an Order on Consent between the New York State Department of Environmental Conservation (NYSDEC) and Utica Alloys.

1.1 Purpose

The purpose of this work plan is to provide a scope and description of work to be performed during the Supplemental Investigation. Completion of the Supplemental Investigation will allow Utica Alloys to comply with NYSDEC requirements for investigation of this site and evaluate any areas of the property in need of possible remediation.

1.2 Scope

The scope of this project has been determined through negotiation between NYSDEC and Utica Alloys. The determination of sources of contaminants on the Utica Alloys site has been divided into two areas of responsibility. The first, belonging to NYSDEC, is to evaluate the potential for contamination entering the Utica Alloys site via a storm sewer system that serves the City of Utica with manholes and piping buried beneath the Utica Alloys site. The second portion of responsibility is for Utica Alloys to evaluate potential groundwater and soil contamination on its property due to on-site activities. The project has been divided into five tasks:

- Task 1 - Work Plan Preparation
- Task 2 - Field Investigation

- Task 3 - Report Preparation
- Task 4 - Monthly Progress Reports
- Task 5 - Additional Meetings and Site Visits

1.3 Work Plan Organization

This work plan is divided into sections describing the aspects of the Supplemental Investigation. Section 1 describes the project purpose and scope. Section 2 provides a brief summary of existing information about the Utica Alloys facility. Section 3 describes specific field procedures, sampling locations and analytical requirements. Section 4 lists the project organization and staffing provided by WFC. Section 5 provides the quality assurance/quality control plan for the project, and Section 6 contains the health and safety plan.

2.0 SUMMARY OF EXISTING INFORMATION

2.1 Site Location

The Utica Alloys, Inc. facility is located in an industrial section of Utica, New York. The site is located in the Mohawk River floodplain and is near the Erie Canal (see Figure 2-1). The site is located at the intersection of Wurz Avenue and Leland Avenue. The property is approximately 1.5 acres in size and consists largely of buildings and storage areas associated with facility operations. The site is bounded to the north and east by property leased by Universal Waste, Inc., and to the south and west by Leland Avenue. Immediately south of Leland Avenue is a large railroad yard. Figure 2-2 depicts the Utica Alloys property and identifies buildings on the property.

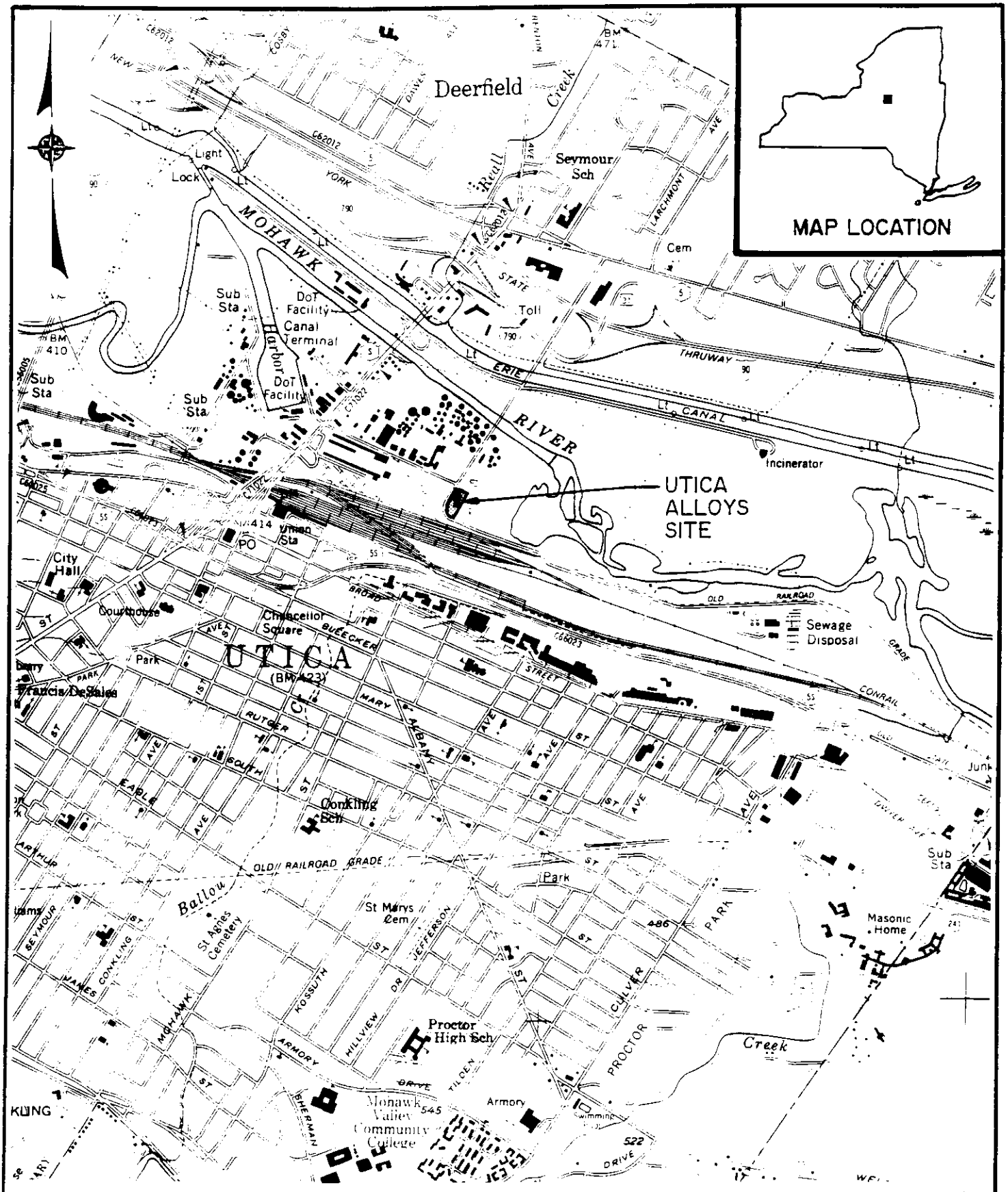
2.2 Site Background

Utica Alloys operations involve the recycling of nickel-cobalt metal turnings that have been generated off-site by machining operations used in the production of aerospace parts and equipment. Utica Alloys processes the alloys received in two distinct operations. The operations include processing metal turnings and solids processing. Details regarding site operation can be found in the November 1992 WFC Report "Environmental Audit Report Prepared for Utica Alloys, Inc."

The site is listed as Class 2 on the New York State Registry of Inactive Hazardous Waste Disposal Sites and has been assigned Registry Number 633009.

2.3 Previous Investigations

Previous investigations conducted at the Utica Alloys site are included in a report entitled, "Revised Report of the Waste Management Study at Utica Alloys, Inc." by Clayton Environmental Consultants dated March 21, 1984, and two reports by Northeastern



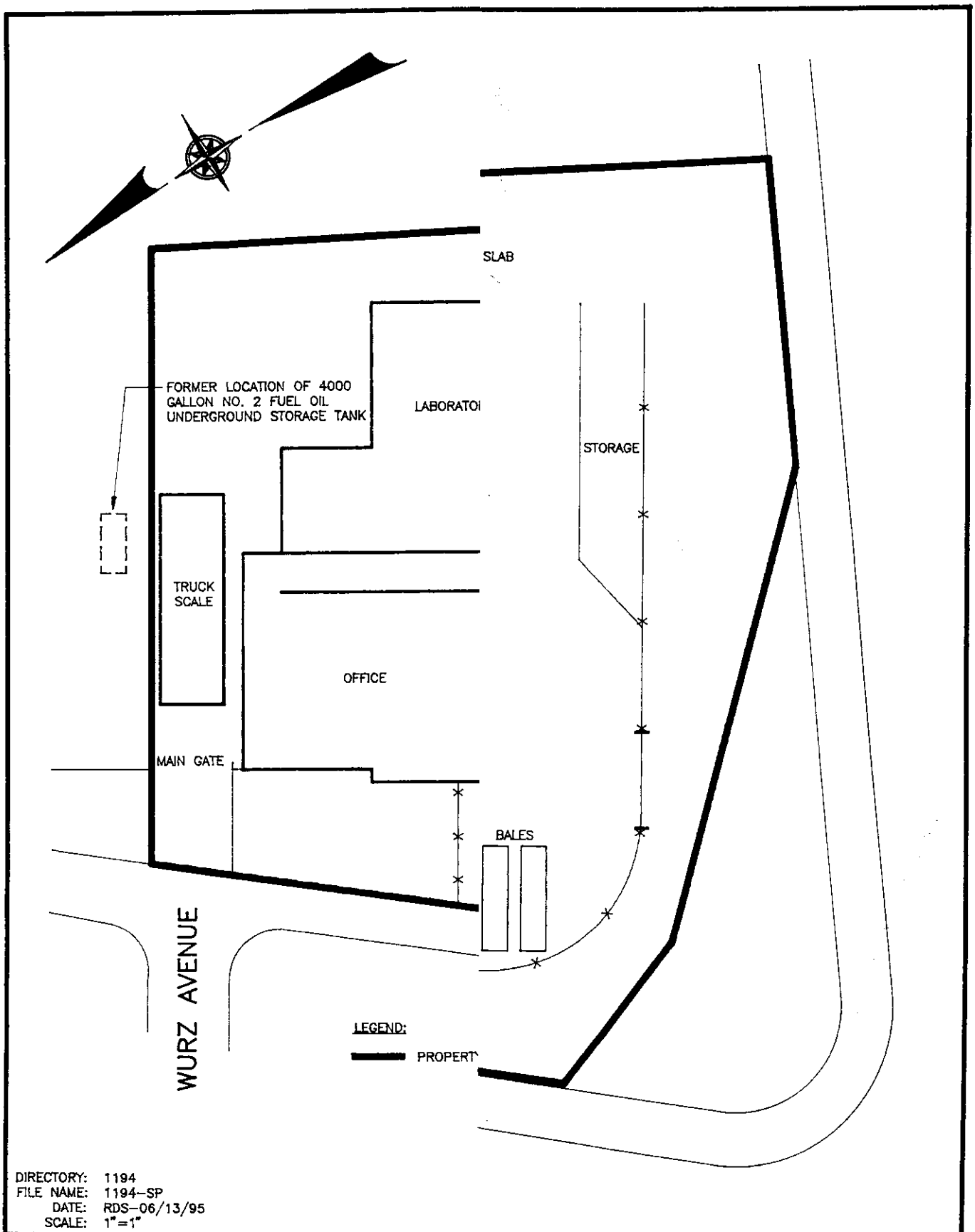
Source: NYSDOT UTICA EAST QUADRANGLE

UTICA ALLOYS, INCORPORATED
UTICA, NEW YORK

SITE LOCATION MAP

WILLIAM F. COBULICH ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

FIGURE 2 - 1



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William F. Cosulich Associat
Environmental Engineers

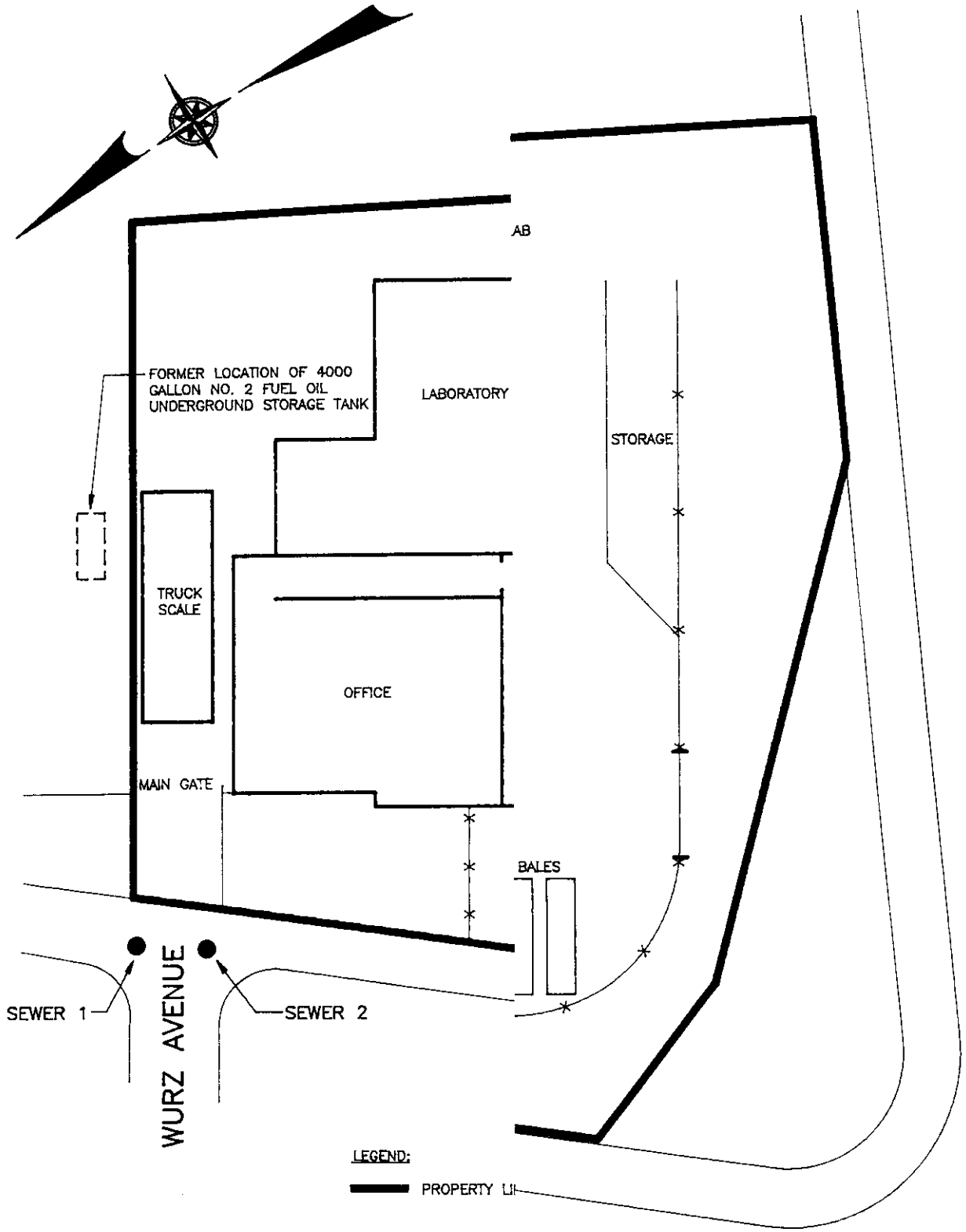
FIGURE 2-2

Environmental Technologies regarding tank closures and subsequent sampling. Results of laboratory analyses performed on various soil, sediment and water samples listed in these reports are provided in Appendices A and B, respectively. Figure 2-3 presents the locations of samples collected in previous investigations. Table 2-1 summarizes the sample results.

The results of the analysis of the soil samples collected at the site indicated the presence of trichloroethene (TCE) (concentrations up to a maximum of 48 mg/kg). No other contaminants in significant concentrations (greater than 1 mg/kg, except for one PCB [polychlorinated biphenyl] sample [1.1 mg/kg]) have been detected on the Utica Alloys site.

Previous investigations have also detected elevated levels of TCE (7,200 mg/l in liquid and 194 mg/kg in sediment) and PCB (730 mg/kg in sediment) in the sewer line immediately west/upgradient of the site. This sewer line receives storm water runoff from multiple industrial facilities in the vicinity of the Utica Alloys property. Periodic overflows of the sewer line have flowed across the Utica Alloys site which could cause TCE and PCB soil contamination at the site.

Low levels of TCE and PCB were detected in groundwater in a monitoring well located on the site.



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DATE: RDS-06/13/95
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William F. Cosulich Associates
Environmental Engineers

FIGURE 2-3

Table 2-1

SAMPLING RESULTS FROM PREVIOUS INVESTIGATIONS OF THE UTICA ALLOYS SITE

Location ID	Sample Matrix	Sample Location	Analyte*	Concentration	Source of Results***
SS-6	Soil	Drum Storage Area, surface soil	Aroclor 1254 TCE **	1.1 ppm 900 ppb	Clayton, 1984 Clayton, 1984 Clayton, 1984
Sewer-1	Liquid	Intersection of Wurz and Leland Avenues	Aroclor 1254 TCE **	<1 ppm 7,200 ppm	Clayton, 1984 Clayton, 1984 Clayton, 1984
Sewer-2	Liquid	Intersection of Wurz and Leland Avenues	Aroclor 1254 TCE **	<1 ppm 194 ppm	Clayton, 1984 Clayton, 1984 Clayton, 1984
Sewer-2	Sediment	Intersection of Wurz and Leland Avenues	Aroclor 1254 TCE 1,2 DCE **	730 ppm 3 ppm 950 ppm	Clayton, 1984 Clayton, 1984 Clayton, 1984 Clayton, 1984

*Analytes with concentrations below detection limits are not reported unless noted below.

**Other parameters reported, including pH and metals, see Appendices corresponding to source of results identified in adjacent column.

*** Clayton, 1984 = Revised report of the Waste Management Study at Utica Alloys, Inc., March 21, 1984 by Clayton Environmental Consultants, Inc.
Northeastern 1993 = May 28, 1993 Draft Letter from Northeastern Environmental Technologies Corp. to Steve Ritchin regarding Utica Alloys TCE and Waste Oil AST closure report.
AES, 1993 = Adirondack Environmental Services Laboratory Report for Utica Alloys, October 18, 1993.

Table 2-1 (continued)

SAMPLING RESULTS FROM PREVIOUS INVESTIGATIONS OF THE UTICA ALLOYS SITE

Location ID	Sample Matrix	Sample Location	Analyte*	Concentration	Source of Results***
B-2	Groundwater	Southwest corner of the site	Aroclor 1262 Aroclor 1254 TCE **	0.0011 ppm 0.0017 ppm 0.005 ppm	Clayton, 1984 Clayton, 1984 Clayton, 1984 Clayton, 1984
Tank-1	Soil Composite	TCE and Waste Oil Above Ground Storage Tank, former location	1,2 DCE TCE	120 ug/kg 19,000 ug/kg	Northeastern, 1993 Northeastern, 1993
Tank-2	Soil Composite	TCE and Waste Oil Above Ground Storage Tank, former location	1,2 DCE TCE	190 ug/kg 19,000 ug/kg	Northeastern, 1993 Northeastern, 1993
Comp-1	Soil Composite	TCE and Waste Oil Above Ground Storage Tank	TCE Tetrachlorethene	48,000 ug/kg 52 ug/kg	AES, 1993 AES, 1993
Comp-2	Soil Composite	TCE and Waste Oil Above Ground Storage Tank	TCE	29,000 ug/kg	AES, 1993

*Analytes with concentrations below detection limits are not reported unless noted below.

**Other parameters reported, including pH and metals, see Appendices corresponding to source of results identified in adjacent column.

*** Clayton, 1984 = Revised report of the Waste Management Study at Utica Alloys, Inc., March 21, 1984 by Clayton Environmental Consultants, Inc.
Northeastern 1993 = May 28, 1993 Draft Letter from Northeastern Environmental Technologies Corp. to Steve Ritchin regarding Utica Alloys TCE and Waste Oil AST closure report.
AES, 1993 = Adirondack Environmental Services Laboratory Report for Utica Alloys, October 18, 1993.

3.0 FIELD OPERATIONS

The following sections describe the field procedures to be used while conducting the Utica Alloys Supplemental Investigation. The field work has been divided into three tasks. The tasks are related to specific areas of the site or media of concern. Figure 3-1 shows the investigation areas and sampling locations.

3.1 Site Management

The Utica Alloys site is currently active and all work will be coordinated so as to efficiently access all areas of interest while minimizing disturbance to facility operations. The Region 6 Office of NYSDEC will be notified five working days in advance prior to the commencement of field work.

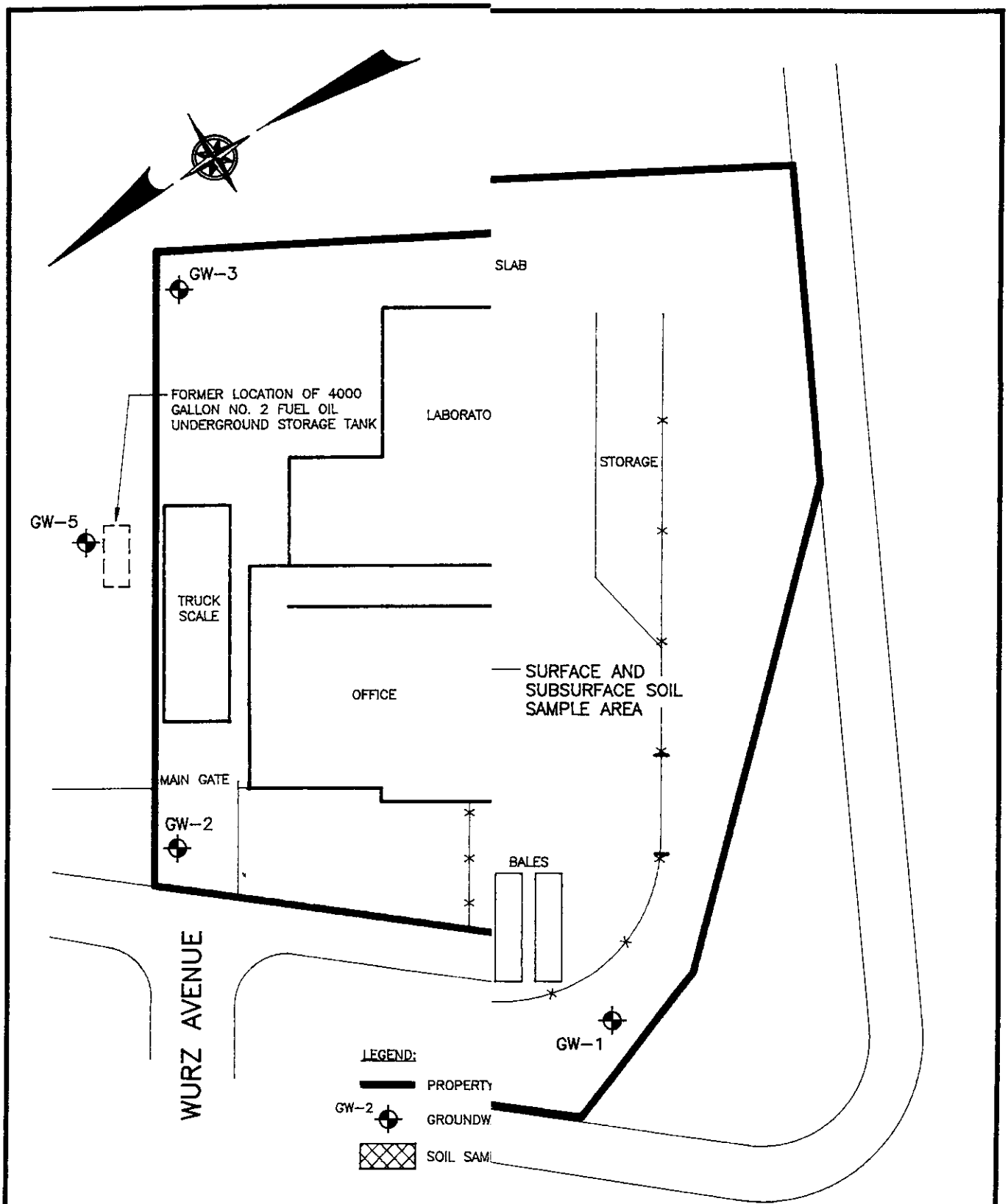
Access to the site is through an entrance at the intersection of Wurz Avenue and Leland Avenue. The site is fenced. All equipment, materials and supplies used in conjunction with the Supplemental Investigation, including the decontamination facility, will be securely stored within the site boundary during the investigation field program.

All correspondence and communication from Utica Alloys, Inc. will be sent to:

John B. Swartwout
Chief
Eastern Investigation Section
Division of Hazardous Waste Remediation
NYSDEC
50 Wolf Road
Albany, NY 12233-7010

Copies of all correspondence/communications will be sent to:

Director - Bureau of Environmental Exposure Investigation
NYSDOH
2 University Place
Albany, NY 12203



William F. Cosulich Associat
Environmental Engineers

FIGURE 3-1

Regional Director
NYSDEC, Region 6
State Office Bldg.
Watertown, NY 13601

Field Unit Leader
Division of Environmental Enforcement
NYSDEC, Region 4
1150 North West Cott Road
Schenectady, NY 12306

3.2 Groundwater Sampling

A total of four groundwater samples will be collected to determine and evaluate the presence of groundwater contamination on-site and one groundwater sample will be collected on the Universal Waste, Inc. (Universal Waste) property, located adjacent to the Utica Alloys site, in the vicinity of a former underground storage tank. The location of this former tanks is shown on Figure 2-2.

The groundwater samples will be collected using a direct push method equivalent to geoprobe or hydropunch technologies. Collection of the groundwater samples will consist of pushing a small sample barrel with an expendable point covering the bottom end of the barrel to the desired sample depth. A small PVC screen will be installed in the hole and allowed to fill with water. The desired depth will be at or just below the water table. A water sample will be collected using a small, decontaminated bailer or a pump.

The four on-site groundwater samples will be analyzed for volatile chlorinated hydrocarbons/trichloroethene (Method 601). In accordance with an agreement between Utica Alloys and NYSDEC Region 6, one sample will be obtained in the vicinity of the former underground fuel oil storage tank on the Universal Waste property. Before sampling occurs, the Region 6 spill unit will be notified. This sample will be analyzed for volatile aromatic hydrocarbons (benzene, toluene, ethylbenzene and xylenes) (Method 602) and total petroleum hydrocarbons (Method 418.1). The locations of the on-site groundwater samples will include one

upgradient sample and three downgradient samples. Based on available information, groundwater flows in an east-northeast direction in the vicinity of the site.

3.3 Former Above Ground Storage Tank Area

Surface and subsurface soil in the vicinity of the former trichloroethene above ground storage tanks will be sampled to determine the extent of TCE contamination in the vicinity of the tanks for the purpose of delineating an area for remediation, if required. Two concrete pads (approximately 10 feet by 10 feet each) remain in the location of the former tanks. Eight soil sample points will be located/attempted adjacent to the concrete (four at each pad) and 10 soil sample points will also be located/attempted at a distance of 3 to 5 feet away from the concrete pads.

Surface soil samples will be obtained at depths of 0 to 6 inches below ground surface and collected in soil jars. A total of 18 surface soil samples will be collected in the vicinity of the former tanks. Once the samples have been collected, the head space of each sample jar will be analyzed using a portable organic vapor analyzer (OVA).

Using the sampling points, approximately 18 subsurface soil samples will be collected at a depth of 18 to 24 inches below ground surface. (It should be noted that groundwater is reportedly located at about 2 feet below ground surface at the Utica Alloys site.) These subsurface samples will be collected using a drill rig and decontaminated split spoon sampler or a decontaminated stainless steel hand auger. Subsurface soil samples will be screened with a portable OVA and analyzed in the same manner as the surface samples.

A total of ten samples exhibiting the highest concentrations of organic vapors will be sent for laboratory analyses for volatile chlorinated hydrocarbons/TCE (Method 8010).

Stained soil samples will be analyzed for PCBs utilizing Method 8080 or a field/bioassay test kit.

3.4 Turnings Drum Storage Area

Five surface soil (0 to 6-inch) and five subsurface soil (18 to 24-inch) samples will be collected adjacent to the Turnings Drum Storage Area. Sample locations will be determined in the field based upon access to soil and visual appearance of the ground surface. The samples will be placed in a jar and screened using a portable OVA. Based on the results of the screening, a total of three samples with the highest readings will be sent to the laboratory for analysis for volatile chlorinated hydrocarbons (Method 8010).

Stained soil samples will be analyzed for PCBs utilizing Method 8080 or a field/bioassay test kit.

3.5 Empty Drum Storage Area

Ten surface soil samples (0 to 6 inches) will be collected in the empty drum storage area. Sample locations will be determined in the field based upon access to soil and visual appearance of ground surface. The samples will be screened using an OVA and a total of three samples will be sent to the laboratory for volatile chlorinated hydrocarbons/TCE analysis (Method 8010).

Stained soil samples will be analyzed for PCBs utilizing Method 8080 or a field/bioassay test kit.

3.6 Turnings Pile Area

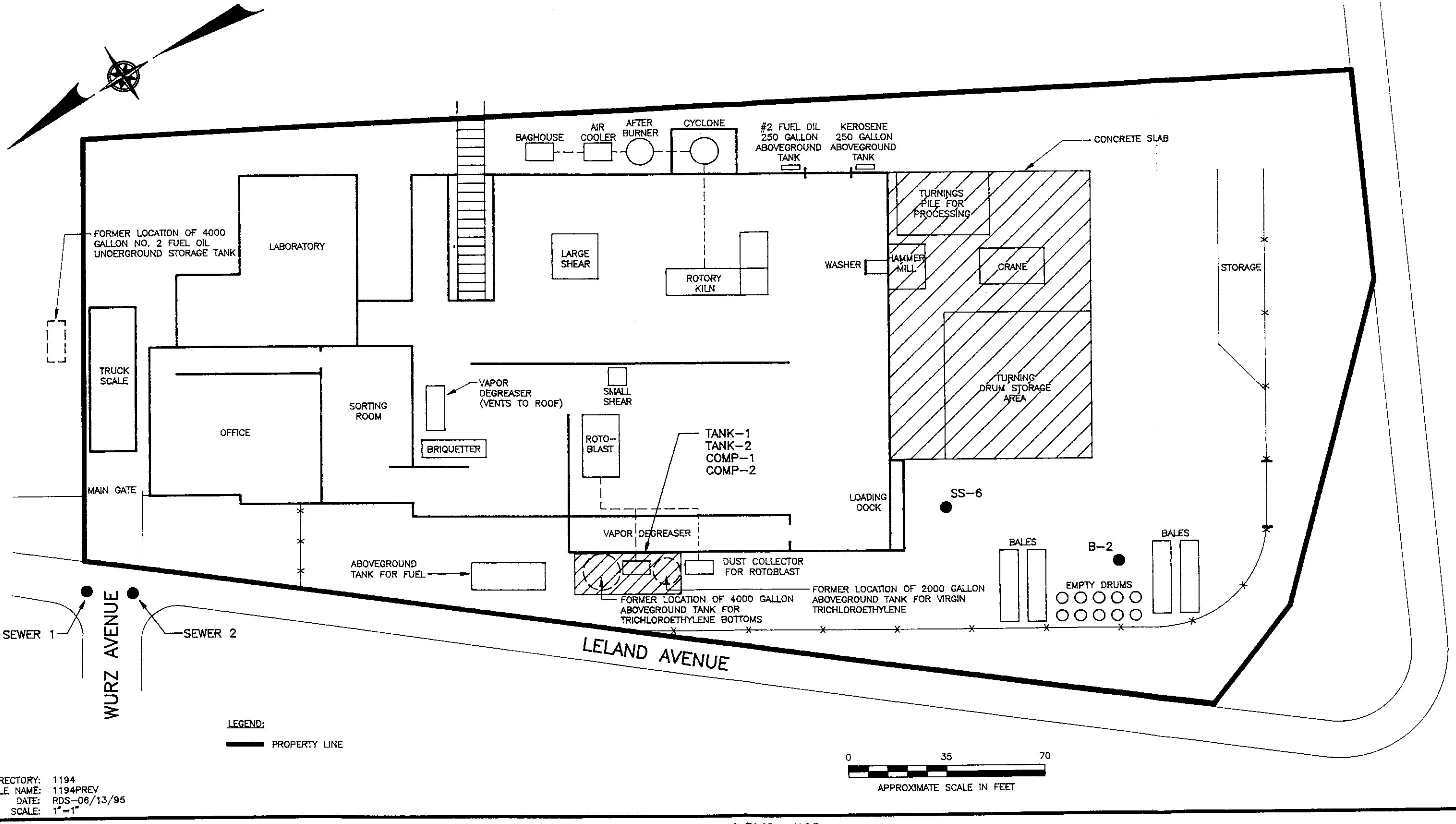
Five surface soil samples (0 to 6 inches) will be collected adjacent to the Turnings Pile Area. Sample locations will be determined in the field based upon access to ground surface and visual appearance of soils. The samples will be screened using an OVA and a total of two samples will be sent to the laboratory for volatile chlorinated hydrocarbons/TCE analysis (Method 8010).

Stained soil samples will be analyzed for PCBs utilizing Method 8080 or a field/bioassay test kit.

3.7 Underground Utility Survey

A survey will be conducted of all underground utilities on the Utica Alloys site. This survey will include mapping and identification of all drains, sumps, underground utility lines, storm drains, sewer lines and sewer connections. If possible, the site survey will be tied to a United States Geological Survey (USGS) bench mark for horizontal and vertical controls. Observations regarding flow direction, flow rates and discharge points, as well as exit points from the site, will be made.

Based upon the results of this visual survey, two sediment samples may be collected and analyzed for volatile chlorinated hydrocarbons/TCE (Method 8010). Stained sediment samples will be analyzed for PCBs utilizing Method 8080 or a field/bioassay test kit. These samples will be obtained if sediment is found in the drain or sewer lines. The results of the survey will be reported by indicating the locations of all identified utilities on a site map.



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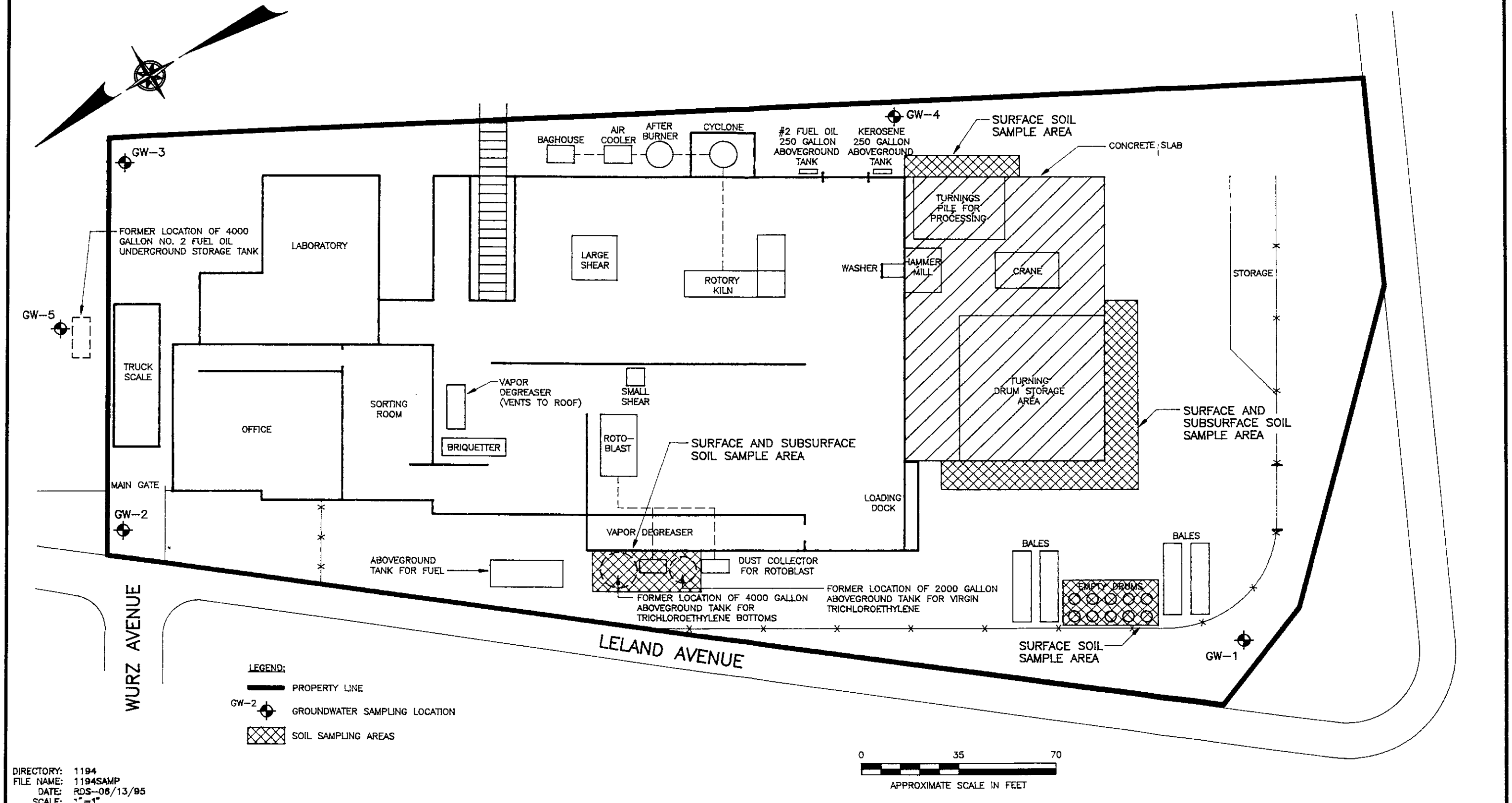
UTICA ALLOYS, INC.
UTICA, NEW YORK

APPROXIMATE SAMPLING LOCATIONS FROM PREVIOUS INVESTIGATIONS

William F. Cosulich Associates, P.C.
Environmental Engineers

FIGURE 2-3



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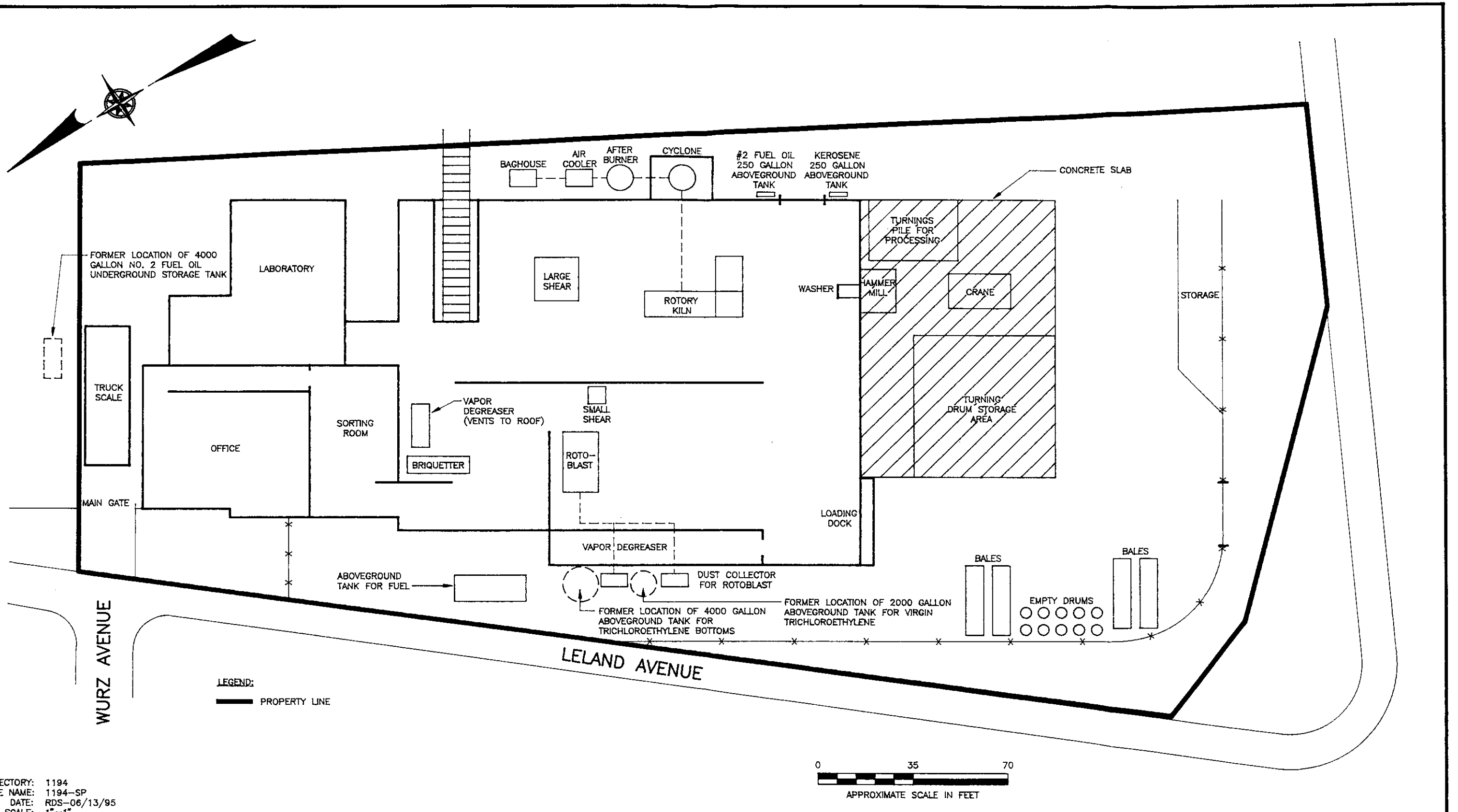
UTICA ALLOYS, INC.
UTICA, NEW YORK

SITE SAMPLING LOCATIONS

William F. Cosulich Associates, P.C.
Environmental Engineers

FIGURE 3-1



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DATE: RDS-06/13/95
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UTICA ALLOYS, INC.
UTICA, NEW YORK

SITE LAYOUT

William F. Cosulich Associates, P.C.
Environmental Engineers

FIGURE 2-2

4.0 PROJECT MANAGEMENT

4.1 Project Organization and Staffing Plan

William F. Cosulich Associates, P.C. (WFC) will be responsible for scoping and implementation of the Supplemental Investigation. The project organization chart for this investigation illustrating both management and technical responsibility functions for key personnel is provided on Figure 4-1. Management of the field investigation for the Supplemental Investigation will be from our Syracuse Office, which is located approximately one hour travel time from the Utica Alloy facility. The Project Director will be Mr. Thomas Maher (P.E.), who is the Principle in Charge of the Hazardous Waste Management Division of WFC. Project management and management of the Supplemental Investigation field program, as well as report preparation, will be the responsibility of Mr. Gerald Gould (C.P.G.), who will be the Project and Field Manager.

Ms. Robbin Petrella will be the Quality Assurance/Quality Control (QA/QC) Officer for this project. As such, Ms. Petrella will be responsible for the preparation and implementation of the QA/QC plan for the Supplemental Investigation, as well as data validation. Ms. Petrella is the Corporate QA/QC Officer and directs the firm's QA/QC and data validation program. She is responsible for assuring, when required, that each laboratory sample analyzed meets the specifications of the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP). Ms. Petrella has completed the USEPA training required for certification and data validation programs.

Subcontractors planned to be used for this Supplemental Investigation include Nytest Environmental, Inc. for sample analyses, and Parratt Wolff, Inc. for soil borings and collection of subsurface soil and groundwater samples. Nytest is a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory, and NYSDEC approved to perform sample analysis under the ASP. Parratt Wolff has substantial experience in performing drilling services at hazardous waste sites and sites in the Utica area.

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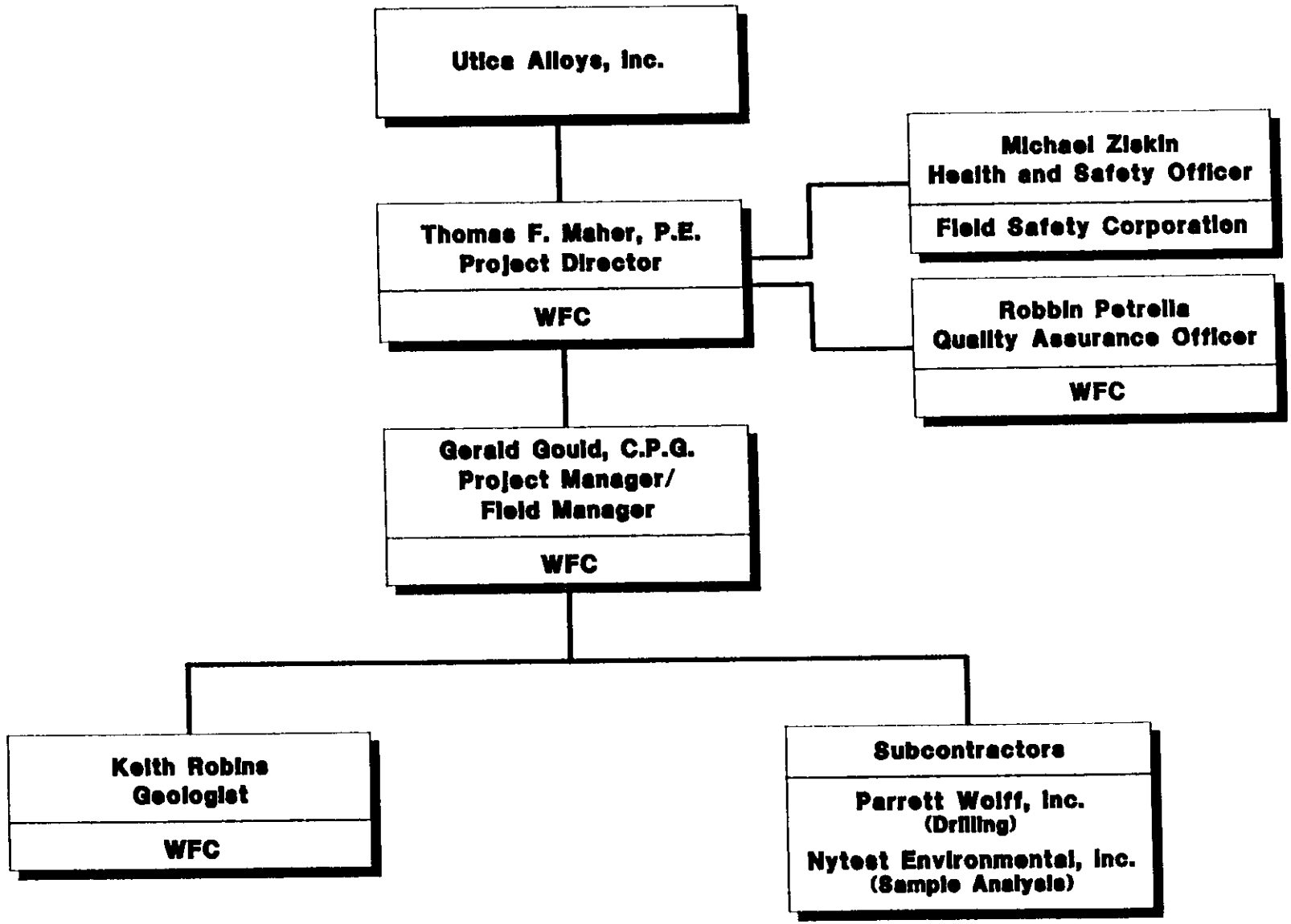
FIGURE 4-1

ORGANIZATION CHART
SUPPLEMENTAL INVESTIGATION
UTICA ALLOYS SITE



William F. Cosulich Associates, P.C.
Environmental Engineers

Field Safety Corporation, which serves as the Corporate Health and Safety consultant, will prepare the Health and Safety plan for this investigation.

4.2 Project Schedule

WFC understands the specific time constraints, as outlined in correspondence with NYSDEC regarding this Supplemental Investigation. The schedule provided on Figure 4-2 illustrates the duration and milestones for each task.

FIGURE 4-2

PROJECT SCHEDULE

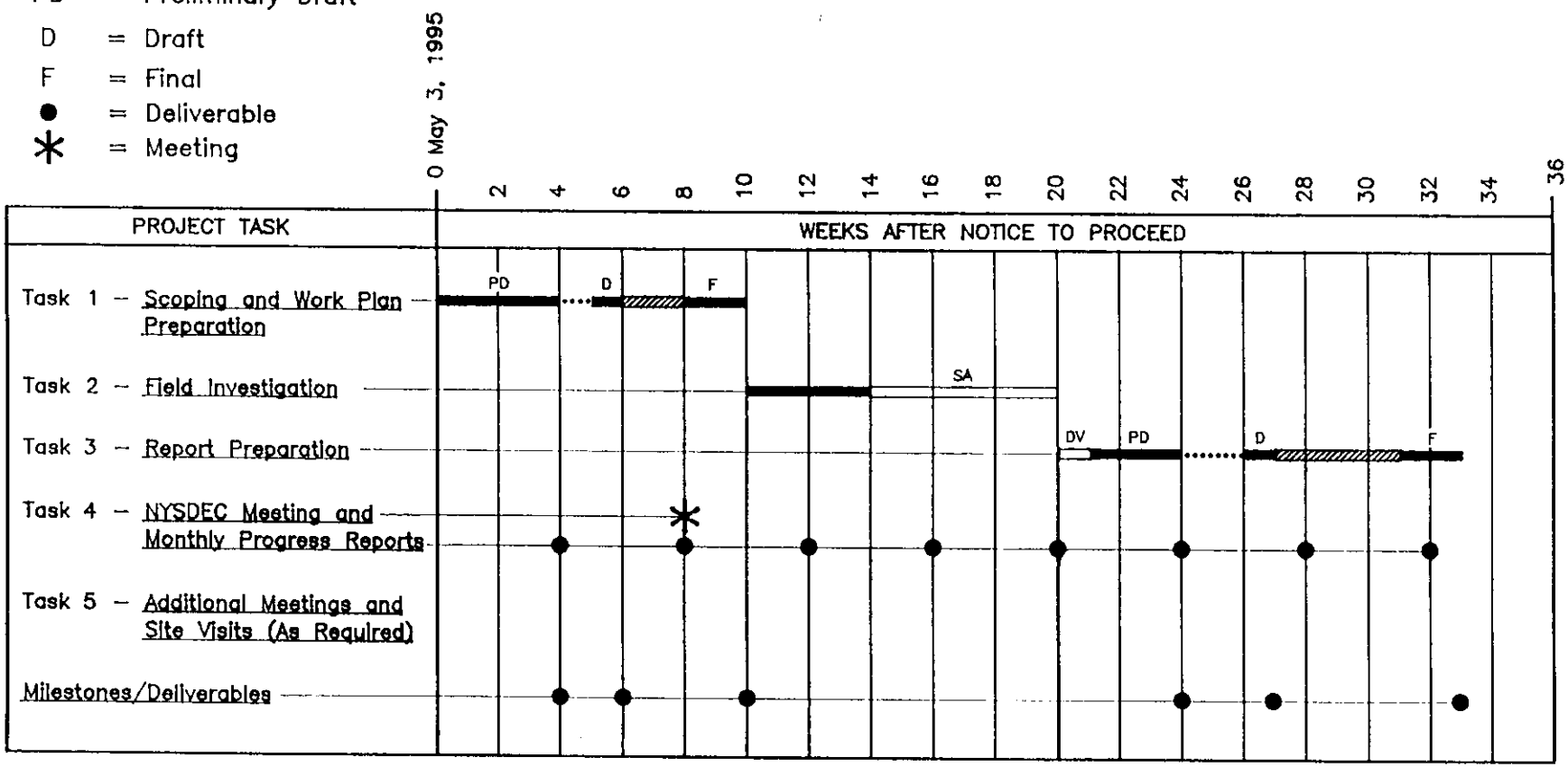
FOR

SUPPLEMENTAL INVESTIGATION

UTICA ALLOYS SITE

LEGEND

- ——— = Planned Activity
- ····· = Utica Alloys Review
- ▨ = NYSDEC Review
- SA = Sample Analysis
- DV = Data Validation
- PD = Preliminary Draft
- D = Draft
- F = Final
- ● = Deliverable
- ✱ = Meeting



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William F. Cosulich Associates, P.C.
Environmental Engineers

5.0 QUALITY ASSURANCE AND QUALITY CONTROL PLAN

5.1 Project Identification

Project Name:	Utica Alloys, Inc. Supplemental Investigation
Project Requested by:	New York State Department of Environmental Conservation (NYSDEC)
Project Manager:	Gerald Gould (William F. Cosulich Associates, P.C.)
Quality Assurance Officer:	Robbin Petrella (William F. Cosulich Associates, P.C.)
Field Manager:	Gerald Gould (William F. Cosulich Associates, P.C.)

5.2 Data Collection/Strategy

5.2.1 Data Usage

The purpose of this Supplemental Investigation is to collect additional information to confirm existing data and further delineate the extent of contamination at the Utica Alloys, Inc. site located in Utica, New York. The goals will be achieved by conducting a field sampling program as part of this Supplemental Investigation addressing the following matrices: soil, sediment (if present) and groundwater.

5.2.2 Analytical Methods

The methods utilized for this Supplemental Investigation will be taken from the most recent version of USEPA SW846 (November 1986, 3rd Edition). However, the methods used will follow the quality control requirements set forth in the NYSDEC 12/91 Analytical Services Protocol (ASP).

5.2.2.1 - Laboratory Selection

In order to ensure that proper methods are being followed, the laboratory selected to perform the analytical portion of this Supplemental Investigation shall be New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) and NYSDOH Contract Laboratory Program (CLP) certified. The contract to the laboratory will include this Quality Assurance and Quality Control Plan.

5.2.3 Monitoring Network Design and Rationale

The following presents a general discussion of the Supplemental Investigation.

The study area is subdivided into three matrices for sampling. The following list provides the matrix and the maximum number of samples to be collected. Actual numbers of samples may vary based upon field conditions.

1. Groundwater - Five geoprobes (or similar sampler) will be installed with one sample being collected from each.

2. Soil - 21 subsurface soil samples (2 feet below grade) and 38 surface soil samples (0 to 6 inches below grade) will be collected with 18 being selected for laboratory analysis.

3. Sediment - A survey will be conducted of drains, sumps and sewer lines with up to two samples being collected.

Air monitoring will be conducted during all field activities. Delineation of the sampling locations are illustrated on Figure 3-1.

Detailed discussion of the sampling program and selection of sample matrices and locations is contained in Section 3.0.

5.2.4 Data Comparability

All data will be presented in the units designated by the methods specified by a NYSDOH ELAP and CLP certified laboratory, and the NYSDEC 12/91 ASP. For this Supplemental Investigation, NYSDEC 12/91 ASP Category B Deliverables will be followed so that all raw data is submitted and formal validation can be performed.

5.2.5 Quality Assurance Reports

There should be periodic reporting of pertinent QA/QC information to the project management to allow assessment of the overall effectiveness of the QA program. There are three major types of QA reports to project management:

- Periodic Report on Key QA Activities - Provides summary of key QA activities during the period, stressing measures that are being taken to improve data quality; describes significant quality problems observed and corrective actions taken; reports information regarding any changes in certification/accreditation status; describes involvement in resolution of quality issues with clients or agencies; reports any QA organizational changes; and provides notice of the distribution of revised documents controlled by the QA organization (i.e., procedures).

- Report on Quality Measurement Indicators - Includes the assessment of QC data gathered over the period, the frequency of analyses repeated due to unacceptable QC performance, and, if possible, the reason for the unacceptable performance and corrective action taken.

- Reports of QA Assessment - Includes the results of the assessments and the plan for correcting identified deficiencies, submitted immediately following any internal or external on-site evaluation or upon receipt of the results of any performance evaluation studies, and includes results of the assessments and the plan for correcting identified deficiencies.

5.3 Sampling

5.3.1 Monitoring Parameters

Sample analysis for four of the groundwater samples, and all of the soil samples collected will consist of volatile chlorinated hydrocarbons (trichloroethene). One groundwater sample will be analyzed for volatile aromatic hydrocarbons (benzene, toluene, ethylbenzene and xylenes) and total petroleum hydrocarbons. Stained soil samples will be analyzed for PCBs.

Table 5-1 presents a summary of the parameters/sample fraction to be monitored together with the sample location, type of sample, sample matrix, number of samples, frequency of sample collection, type of sample container, method of sample preservation, holding time and analytical method.

5.3.2 Detailed Sampling Procedures

Four types of environmental samples will be collected from different locations as part of the Supplemental Investigation at the Utica Alloys site. These include groundwater, sediment, subsurface and surface soil. Sample locations will consist of drains, sumps, ditches, surface soil, soil borings, and geoprobes or similar samples. Actual locations are discussed in Section 3.0. General sampling approaches and equipment are described in this section. A summary of the Supplemental Investigation sampling program, including sample media, locations, depths, equipment, rationale and analytical parameters, is provided in Table 5-2. Sample collection will be performed in conformance with William F. Cosulich Associates, P.C. Quality Assurance Procedures and Field Investigations Manual for Hazardous Waste Sites, and Health and Safety Procedures Manual for Hazardous Waste Sites, both of which have been prepared in accordance with USEPA and NYSDEC requirements and guidelines, as well as the site specific Quality Assurance/Quality Control Plan and Health and Safety Plan prepared for this Supplemental Investigation (Section 5.0 and Section 6.0, respectively).

Table 5-1

SUMMARY OF MONITORING PARAMETERS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	Number of Samples	Frequency	Container Type/Size/No.	Sample Preservation	Maximum Holding Time	Analytical Method
Geoprobe (on site)	Grab	Groundwater	Volatile Organics	4	1	Glass, clear/40 ml/3 ICHEM 300 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	1991 NYSDEC ASP, Method 601
Geoprobe (off-site)	Grab	Groundwater	Volatile Organics	1	1	Glass, clear/40 ml/3 ICHEM 300 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	1991 NYSDEC ASP, Method 602
	Grab	Groundwater	Total Petroleum Hydrocarbons	1	1	Glass, clear/1 L/1 ICHEM 300 series or equivalent	Cool to 4°C H_2SO_4 to pH <2	26 days after VTSR for analysis	1991 NYSDEC ASP, Method 418.1

VTSR - Verified Time of Sample Receipt at the laboratory.

Table 5-1 (continued)

SUMMARY OF MONITORING PARAMETERS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	Number of Samples	Frequency	Container Type/Size/No.	Sample Preservation	Maximum Holding Time	Analytical Method
Surface and Subsurface Soil	Grab	Soil	Volatile Organics	18*	1	Glass, clear/4 oz/2 ICHEM 200 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	SW-846, Method 8010
			PCBs	18 (estimated)**		Glass, amber/8 oz/1 ICHEM 200 series or equivalent	Cool to 4°C	7 days after VTSR for extraction, 40 days after extraction for analysis	SW-846, Method 8080
Drain/Sewer	Grab	Sediment	Volatile Organics	2***	1	Glass, clear/4 oz/2 ICHEM 200 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	SW-846, Method 8010
			PCBs	2 (estimated)**		Glass, amber/8 oz/1 ICHEM 200 series or equivalent	Cool to 4°C	7 days after VTSR for extraction, 40 days after extraction for analysis	SW-846, Method 8080

*Eighteen Samples will be analyzed based on the PID readings obtained from the 23 subsurface and 38 surface soils collected.

**Based on stained soil observation.

***Up to two samples will be analyzed based upon presence of sediment and PID readings.

Note: Stained soil and sediment samples will be analyzed for PCBs utilizing either Method 8080 or a field/bioassay test kit.

Area	Samples to be Collected	Samples to be Analyzed for VOCs
Former Above Ground Storage Tank	18/18[(1)]	10
Turnings Drum Storage	5/5	3
Empty Drum Storage	10/0	3
Turnings Pile	5/0	2
	38/23	18

(1)Surface/subsurface.

VTSR - Verified Time of Sample Receipt at the laboratory.

Table 5-1 (continued)

SUMMARY OF MONITORING PARAMETERS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	Number of Samples	Frequency	Container Type/Size/No.	Sample Preservation	Maximum Holding Time	Analytical Method
Site/Study Area	Matrix Spike and Matrix Spike Duplicate	Soil	Volatile Organics	1*	1	Glass, clear/4 oz/1 ICHEM 200 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	SW-846, Method 8010
			PCBs	1*	1	Glass, amber/8 oz./1 ICHEM 200 series or equivalent	Cool to 4°C	7 days after VTSR for extraction, 40 days after extraction for analysis	SW-846, Method 8080***
Site/Study Area	Matrix Spike and Matrix Spike Duplicate	Water	Volatile Organics	1**	1	Glass, clear/4 ml/2 ICHEM 300 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	1991 NYSDEC ASP, Method 601/602

*One set of MS/MSD for volatile organics based on 18 soil samples and 2 sediment samples.

**One set of MS/MSD for volatile organics based on five groundwater samples.

***No MS/MSD required if samples analyzed utilizing field/bioassay test kit.

VTSR - Verified Time of Sample Receipt at the laboratory.

Table 5-1 (continued)

SUMMARY OF MONITORING PARAMETERS

Sample Location	Sample Type	Sample Matrix	Sample Fraction	Number of Samples	Frequency	Container Type/Size/No.	Sample Preservation	Maximum Holding Time	Analytical Method
Site/Study Area	Trip Blank	Water	Volatile Organics	2*	1	Glass, clear/4 ml/1 ICHEM 300 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	1991 NYSDEC ASP, Method 601/602

*One for every cooler containing liquid samples for volatile analysis (anticipate about two shipments).

VTSR - Verified Time of Sample Receipt at the laboratory.

Table 5-2

SUMMARY OF SAMPLING PROGRAM

Environmental Media	Sample Location	Sample Point	Sample Depth	Equipment	Rationale	Sample Analysis
Groundwater	On-site	Geoprobe	At surface of water in probe	Disposable dedicated polyethylene tubing equipped with a bottom check valve	To determine groundwater contamination	Volatile Organics and Total Petroleum Hydrocarbons 1991 NYSDEC ASP
Subsurface Soil	On-site	Soil Boring	18 to 24 inches below grade	Hand auger/wooden tongue depressor and/or disposable scoop	To determine subsurface soil contamination	Volatile Chlorinated Hydrocarbons and PCBs SW-846 (or field/bioassay test kit for PCBs)
Surface Soil	On-site	Surface	0 to 6 inches below grade	Disposable scoop and/or wooden tongue depressor	To determine surface soil contamination	Volatile Chlorinated Hydrocarbons and PCBs SW-846 (or field/bioassay test kit for PCBs)
Sediment	On-site	Drain or sewer lines	Below sediment surface	Decontaminated long handled scoop or disposable scoop	To characterize sediment	Volatile Chlorinated Hydrocarbons and PCBs SW-846 (or field/bioassay test kit for PCBs)

When collecting soil samples, an attempt will be made to maintain sample integrity by preserving its physical form and chemical composition to as great an extent as possible. First, the mechanism used to advance the hole must be properly decontaminated. An appropriate sampling device (i.e., decontaminated or dedicated equipment) should be utilized to transfer the sample into the sample container and the container should be filled completely (no headspace). The sample should reflect and contain a good representation of the matrix it was taken from.

The sample will be transferred into the sample container as quickly as possible, with no mixing, to minimize possible loss of the volatile fraction.

The materials involved in groundwater sampling are critical to the collection of high quality monitoring information, particularly where the analyses of volatile, pH sensitive or reduced chemical constituents are of interest. The materials for the geoprobe (or similar equipment) and bailers will be decontaminated or sterile. The bailer or tubing utilized to collect the sample will be constructed of polyethylene.

There will be several steps taken after the transfer of the soil or water sample into the sample container that are necessary to properly complete collection activities. Once the sample is transferred into the appropriate container, the container will be capped and, if necessary, the outside of the container will be wiped with a clean paper towel to remove excess sampling material. The container will not be submerged in water in an effort to clean it. Rather, if necessary, a clean paper towel moistened with distilled/deionized water will be used.

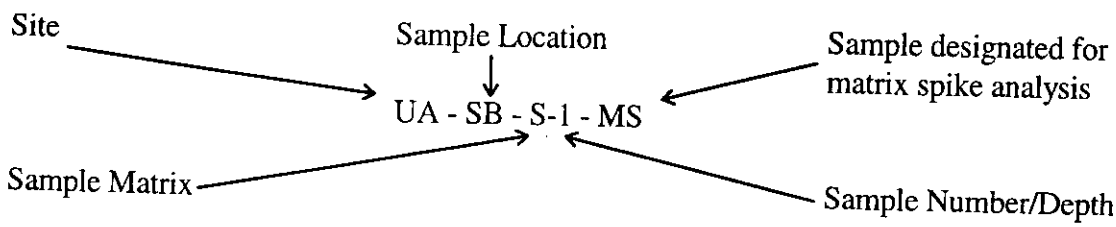
The sample container will then be properly labeled. Information such as sample number, location, collection time and sample description will be recorded in the field log book. Associated paper work (e.g., Chain of Custody forms) will then be completed and will stay with the sample. The samples will be packaged in a manner that will allow the appropriate storage temperature to be maintained during shipment to the laboratory. Samples will be delivered to the laboratory within 24 to 48 hours of collection.

5.3.2.1 - Sample Identification

All samples collected during the field investigation at the Utica Alloys site will be labeled with a sample identification code. The code will identify the site, sample location, sample matrix and series numbers for sample locations with more than one sample. Samples will be labeled according to the following system:

- Site: – Utica Alloys (UA)
- Sample Location:
  - Geoprobe (GP)
  - Soil Boring (SB)
  - Surface Soil (SS)
  - Drain (D)
- Sample Matrix:
  - Soil (S)
  - Sediment (SD)
  - Groundwater (GW)
- Sample Number: – For circumstances where more than one sample of the same type and/or from the same location will be collected, a consecutive sample number will be assigned. When more than one sample is collected from a borehole or test pit in a sampling round at different depths, the depth will be indicated on the sample container and in the field log book.
- Matrix Spike and Matrix Spike Duplicate: – Attach an "MS" or MSD" at the end of the sample ID name.

Based upon the above sample identification procedures, an example of a sample label may be:



5.3.2.2 - Sample Handling, Packaging and Shipping

All analytical samples will be placed in the appropriate sample containers as specified in the 1991 NYSDEC ASP. The holding time criteria identified in the 1991 NYSDEC ASP will be followed, as specified in Table 5-1.

Prior to packaging any samples for shipment, the sample containers will be checked for proper identification and compared to the field log book for accuracy. The samples will then be wrapped with a cushioning material and placed in a cooler (or laboratory shuttle) with a sufficient amount of bagged ice or "blue ice" packs in order to keep the samples at 4°C until arrival at the laboratory.

All necessary documentation required to accompany the sample during shipment will be placed in a sealed plastic bag and taped to the underside of the cooler lid. The cooler will then be sealed with fiber (duct) tape, and custody seals will be placed in such a manner that any opening of the cooler prior to arrival at the laboratory can be detected.

All samples will be shipped to ensure laboratory receipt within 48 hours of sample collection in accordance with NYSDEC requirements.

5.3.2.3 - Soil (Borehole)

As with the near-surface samples, all downhole devices will be thoroughly decontaminated. Once the desired depth is reached, a decontaminated sampling device (e.g., stainless steel scoop, hand auger, or split spoon) will be utilized to collect the sample. If a split spoon is utilized, upon retrieval, the split spoon will be opened, its contents logged, and then immediately transferred into a sample container using a decontaminated stainless steel or teflon scoop.

1. Be certain that the sample location is noted on Location Sketch (see Section 5.4.1).

2. Be certain that the sampling equipment has been decontaminated utilizing the procedures outlined in Section 5.3.3.

3. Remove laboratory precleaned sample containers from sample cooler, label container with an indelible marker, fill out Sample Information Record and Chain of Custody Form (see Section 5.4.1).

4. Auger into the soil to the desired depth and drive the split spoon sampler, if utilized.

5. Retrieve the split spoon and immediately after opening the split spoon, obtain an organic vapor measurement and fill out Boring Log Form (see Section 5).

6. Remove a sample aliquot from the split spoon using a tongue depressor, place into the open sample container for VOC analysis and replace the container cover.

7. Return the sample container to the cooler.

8. If reusable, decontaminate the sampling equipment according to the procedures described in Section 5.3.3.

9. Dispose of personal protective equipment and disposable sampling equipment properly.

5.3.2.4 - Soil (Surface)

1. Be certain that the sample location is noted on Location Sketch (see Section 5.4.1).

2. Be certain that the sampling equipment has been decontaminated, if necessary, utilizing the procedures outlined in Section 5.3.3.

3. Remove laboratory precleaned sample containers from sample cooler, label container with an indelible marker, fill out Sample Information Record and Chain of Custody Form (see Section 5.4.1).

4. At the desired location, clear surface debris (e.g., gravel, grass, rocks, twigs). Collect an adequate portion of soil from a depth of 0-6 inches using a decontaminated/sterile scoop and/or sterile wooden tongue depressor. Transfer the sample directly into the sample container.

5. Return the sample container to the cooler.

6. If reusable, decontaminate the sampling equipment according to the procedures described in Section 5.3.3.

7. Dispose of personal protective equipment and disposable sampling equipment properly.

5.3.2.5 - Sediment (Drain/Sewer)

1. Be certain that the sample location is noted on Location Sketch (see Section 5.4.1).

2. Be certain that the sampling equipment has been decontaminated, if necessary, utilizing the procedures outlined in Section 5.3.3.

3. Remove laboratory precleaned sample containers from sample cooler, label container with an indelible marker, fill out Sample Information Record and Chain of Custody Form (see Section 5.4.1).

4. Lower a decontaminated/sterile scoop below the surface of the sediment present in the drain or sewer line. Transfer the sample directly into the sample container.

5. Return the sample container to the cooler.

6. If reusable, decontaminate the sampling equipment according to the procedures described in Section 5.3.3.

7. Dispose of personal protective equipment and disposable sampling equipment properly.

5.3.2.6 - Groundwater (Geoprobe or Similar Sampler)

1. Be certain sample location is noted on Location Sketch (see Section 5.4.1).

2. Remove the laboratory pre-cleaned sample containers from sample cooler, label container with an indelible marker, fill out Sample Information Record and Chain of Custody Form (Section 5.4.1).

3. Prior to sample collection, obtain field measurements, including pH, conductivity, temperature, dissolved oxygen and turbidity, if appropriate depending on the sampling device.

4. Obtain a sample by using a disposable polyethylene bailer or dedicated polyethylene tubing equipped with a bottom check valve.

5. Gently pour the sample into the sample container taking care not to spill on the outside of the container, or overfill container and replace cover on the sample container. Samples for volatile organic analyses will have no air space in the sample vial prior to sealing. This is done by filling the vial such that there is a meniscus on top. Carefully slide the septum, teflon side down, onto the top of the vial and cap the vial. Check for

bubbles by turning the vial upside down and tapping it lightly. If bubbles appear, reopen the vial, remove the septum and add more sample (or resample). Replace the septum, recap and check for bubbles. Continue until vial is bubble-free.

6. Return sample container to sample cooler.

7. Dispose of personal protective equipment and disposable sampling equipment properly.

5.3.3 Decontamination Procedures

Whenever feasible, all field sampling equipment should be dedicated to a particular sampling point. In instances where this is not possible, a field cleaning (decontamination) procedure will be used in order to reduce the chances of cross-contamination between sample locations. A decontamination station will be established for all field activities. This will be an area located away from the source of contamination so as not to adversely impact the decontamination procedure but close enough to the sampling teams to keep equipment handling to a minimum.

5.3.3.1 - Field Decontamination Procedures

All nondisposable equipment will be decontaminated at appropriate intervals (e.g., prior to initial use, prior to moving to a new sampling location and prior to leaving the site). Different decontamination procedures are used for various types of equipment that perform the field activities. When using field decontamination, it is advisable to start sampling in the area of the site with the lowest contaminant probability and proceed through to the areas of highest suspected contamination.

5.3.3.2 - Decontamination Procedures for Drilling Equipment

All equipment such as drill rigs, backhoes and other mobile equipment should receive an initial cleaning prior to use at a potentially hazardous waste site. The frequency of subsequent cleanings while on-site will depend on how the equipment is actually used in relation to taking environmental samples. Unless otherwise specified and approved, all wash/rinse solutions should

be collected and contained on-site. The actual fate of this material will be determined after review of analytical data generated from samples and on-site discharge impacts have been evaluated.

After the initial washing, cleaning may be reduced to those areas that are in close proximity to materials being sampled. Drill rig items such as auger flights, drill rods and drill bits will be cleaned in between sample locations.

All decontamination generated wastes will be contained in 55-gallon drums and stored in a secure location.

Drilling equipment will be decontaminated in the following manner:

- Wash thoroughly with nonresidual detergent (alconox) and tap water using a brush to remove particulate matter or surface film. This is necessary in order to remove any solids buildup on the back of the rig, auger flights, drill rods, drilling head, etc. Any loose paint chips, paint flakes and rust must also be removed.
- Steam clean (212°F).

Also, following the general cleaning procedures described above, all downhole/drilling items, such as split spoon samplers, Shelby tubes, hand augers, or any other item of equipment which will come in direct contact with a sample during drilling, will be decontaminated by the method listed in Section 5.3.3.3.

5.3.3.3 - Decontamination Procedure for Sampling Equipment

Teflon, PVC, HDPE and stainless steel sampling equipment decontamination procedures will be the following:

- Wash thoroughly with nonresidual detergent (alconox) and clean potable tap water using a brush to remove particulate matter or surface film.
- Rinse thoroughly with tap water.

- Rinse thoroughly with distilled water.
- Rinse in a well ventilated area with methanol (pesticide grade) and air dry.
- Rinse thoroughly with distilled water and air dry.
- Wrap completely in clean aluminum foil with dull side against the equipment. For small sampling items, such as scoops, decontamination will take place over a drum specifically used for this purpose.

The first step, a soap and water wash, is to remove all visible particulate matter and residual oils and grease. This is followed by a tap water rinse and a distilled/deionized water rinse to remove the detergent. Next, a high purity solvent rinse is designated for trace organics removal. Methanol has been chosen because it is not an analyte of concern in the Target Compound List (TCL). The solvent must be allowed to evaporate and then a final distilled/deionized water rinse is performed. This rinse removes any residual traces of the solvent. The aluminum wrap protects the equipment and keeps it clean until it is used at another sampling location.

5.3.4 Laboratory Sample Custody Procedures

A NYSDOH ELAP and CLP certified laboratory meeting the requirements for sample custody procedures, including cleaning and handling sample containers and analytical equipment will be used. The laboratory's standard operating procedures will be available upon request.

5.4 Field Measurements

5.4.1 Field Management Documentation

Proper management and documentation of field activities is essential to ensure that all necessary work is conducted in accordance with the sampling plan and QA/QC Plan in an efficient and high quality manner. Field management procedures include following proper chain of custody procedures to track a sample from collection through analysis, noting when and how samples are

split (if required), preparing a Sample Location Sketch, completing Sample Information Record Forms, Chain of Custody Forms and Boring Logs, maintaining a daily Field Log Book, preparing Daily Field Activity Reports, completing Field Change Forms and filling out a Daily Air Monitoring Form. Copies of each of these forms, are provided in Section 5.6. Proper completion of these forms and the field log book are necessary to support the consequent actions that may result from the sample analysis. This documentation will support that the evidence was gathered and handled properly.

5.4.1.1 - Sample Location Sketch

Each sampling point shall have its own location sketch (found in Section 5.6) with permanent references, if possible.

5.4.1.2 - Location and Sample Photographs

All sampling points should be documented on film. A film record of a sampling event allows positive identification of the sampling point. Photographs are the most accurate and convenient demonstration of the field personnel's observations. Photographs taken to document sampling points should include two or more reference points to facilitate relocating the point at a later date.

Keeping a record of photographs taken is crucial to their validity as a representation of an existing situation. Therefore, for each photograph taken, several items should be noted in the field notebook:

1. Date
2. Time
3. Photographed by (signature)
4. Name of site

5. General direction faced and description of the subject taken

6. Sequential number of the photograph and the roll number.

Photo documentation can be used as a record of site conditions and can give those who have not been on-site an idea of the circumstances.

5.4.1.3 - Sample Information Record

At each sampling location, the Sample Information Record Form is filled out and maintained including, but not limited to, the following information:

- Site name
- Sample crew
- Sample location
- Field sample identification number
- Date
- Time of sample collection
- Weather conditions
- Temperature
- Sample matrix
- Method of sample collection and any factor that may affect its quality adversely
- Well information (groundwater only)
- Field test results
- Constituents sampled
- Remarks (i.e., Preservation)

5.4.1.4 - Chain of Custody

The Chain of Custody (COC) is initiated at the laboratory with container preparation and shipment to the site. The COC remains with the sample at all times and bears the name of the person assuming responsibility for the samples. This person is tasked with ensuring secure and appropriate handling of the containers and samples. When the form is complete, it should indicate that there was no lapses in sample accountability.

A sample is considered to be in an individual's custody if any of the following conditions are met:

- It is in the individual's physical possession, or
- It is in the individual's view after being in his or her physical possession, or
- It is secured by the individual so that no one can tamper with it, or
- The individual puts it in a designated and identified secure area.

In general, Chain of Custody Forms are provided by the laboratory contracted to perform the analytical services. At a minimum, the following information shall be provided on these forms:

- Project name and address
- Project number
- Sample identification number
- Date
- Time of sample collection
- Sample location
- Sample type/matrix

- Analysis requested
- Number of containers and volume taken
- Remarks (i.e., Preservation)
- Type of waste
- Sampler(s) name(s) and signature(s)
- Spaces for relinquished by/received by signature and date/time.

For this particular study, forms provided by the laboratory will be utilized. A copy of this form is contained in Section 5.6.

The Chain of Custody Form is filled out and signed by the person performing the sampling. The original of the form travels with the sample and is signed and dated each time the sample is relinquished to another party, until it reaches the laboratory or analysis is completed. The field sampler keeps one copy and a copy is retained for the project file. The sample container must also be labeled with an indelible marker with a minimum of the following information:

- Sample number
- Analysis to be performed
- Date of collection

A copy of the completed form is returned by the laboratory with the analytical results.

5.4.1.5 - Field Log Book

Field log books must be bound and should have consecutively numbered, water resistant pages. All pertinent information regarding the site and sampling procedures must be documented. Notations should be made in log book fashion, noting the time and date of all entries. Information recorded in this notebook should include, but not be limited to, the following:

The first page of the log contains the following information:

- Project name and address
- Name, address and phone number of field contact
- Waste generator and address, if different from above
- Type of process (if known), generating waste
- Type of waste
- Suspected waste composition, including concentrations

Daily entries are made for the following information:

- Purpose of sampling
- Location of sampling point
- Number(s) and volume(s) of sample(s) taken
- Description of sampling point and sampling methodology
- Date and time of collection, arrival and departure
- Collector's sample identification number(s)
- Sample distribution and method of storage and transportation
- References, such as sketches of the sampling site or photographs of sample collection
- Field observations, including results of field analyses (e.g., pH, temperature, specific conductance), water levels, drilling logs, and organic vapor and dust readings
- Signature of personnel responsible for completing log entries.

5.4.1.6 - Daily Field Activity Report

At the end of each day of field work, the Field Manager, or designee, completes this form noting personnel on-site and summarizing the work performed that day, equipment, materials and supplies used, results of field analyses, problems and resolutions. This form is then signed and is subject to review. A copy of the Daily Field Activity Report form is contained in Section 5.6.

5.4.1.7 - Field Changes and Corrective Actions

Whenever there is a required or recommended investigation/sampling change or correction, a Field Change Form must be completed by the Field Manager and NYSDEC on-site supervisor, and approved by WFC and the NYSDEC Project Managers.

5.4.2 Calibration Procedures and Preventive Maintenance

The following information regarding equipment will be maintained at the project site:

1. Equipment calibration and operating procedures which will include provisions for documentation of frequency, conditions, standards and records reflecting the calibration procedures, methods of usage and repair history of the measurement system. Calibration of field equipment will be done daily at the sampling site so that any background contamination can be taken into consideration and the instrument calibrated accordingly.

2. A schedule of preventive maintenance tasks, consistent with the instrument manufacturer's specific operation manuals, that will be carried out to minimize down time of the equipment.

3. Critical spare parts, necessary tools and manuals will be on hand to facilitate equipment maintenance and repair.

5.4.3 Performance of Field Audits

During field activities, the QA/QC officer may accompany sampling personnel into the field if requested by the Project Manager to verify that the site sampling program is being properly

implemented and to detect and define problems so that corrective action can be taken. All findings will be documented and provided to the Field Manager.

5.4.4 Control and Disposal of Contaminated Material

During construction and sampling of the soil borings installed during the sampling visit, possibly contaminated waste, soil and water may be generated from drill cuttings, drilling fluids, water, development water and purge water. All soil and water associated with the wells will be contained in US Department of Transportation (DOT) drums and stored in a designated area for subsequent determination of contamination. Each drum will be identified by sample/boring location and type of material.

Decisions regarding drummed soil disposal will be made, at least in part, based on subsurface soil samples.

Decontamination water and sediment will be contained. A decision regarding disposal of this material will be made after receipt of the soil sample results. Analysis of "decon" water/sediment is not presently contained in the work plan. All decisions regarding the disposal of investigation derived material will be made in consultation with Utica Alloys and the NYSDEC.

DOT-approved 55-gallon drums will be available for disposal of soiled protective clothing, and disposable sampling equipment (i.e., bailers). These drums will be marked and labeled as containing personnel protective equipment. These drums will not be sampled. All drums will be sealed and stored on-site in the fenced area.

5.4.5 Field QA/QC Samples

5.4.5.1 - Field Blank (Field Rinsate Blank)

The primary purpose of this type of blank is to provide an additional check on possible sources of contamination beyond that which is intended for trip blanks. A field blank is used to

indicate potential contamination from ambient air and from sampling instruments used to collect and transfer samples from point of collection into sample containers.

A field blank is conducted using two identical sets of laboratory cleaned sample containers. One set of containers is empty and will serve as the sample containers to be analyzed. The second set of containers is filled at the laboratory with laboratory demonstrated analyte free water. Field blanks should be handled, transported and analyzed in the same manner as the samples acquired that day. At the field location, preferably in the most contaminated area, this analyte free water is passed through clean/decontaminated sampling equipment and placed in the empty sample container for analysis. (Note: It may be necessary for the laboratory to provide extra full volatile organics vials to ensure sufficient volume of blank water to eliminate headspace.) The reason for suggesting that field blanks be performed in the most contaminated area is to attempt to simulate a worst case scenario regarding field ambient air and equipment contributions to sample contamination. Field blanks must be performed daily or for each "batch" of samples that were collected in the same manner up to a maximum of 20 samples. Field blanks must return to the laboratory with the same set of sample containers they accompanied to the field. Field blanks must be packaged with their associated matrix. They are analyzed for the same range of compounds as the environmental samples collected in each "batch."

5.4.5.2 - Trip Blanks (Travel Blanks)

The primary purpose of this type of blank is to detect additional sources of contamination that might potentially influence contaminant values reported in actual samples, both quantitatively and qualitatively. The following have been identified as potential sources of contamination:

- Laboratory reagent water.
- Sample containers.
- Cross-contamination in shipment.

- Ambient air or contact with analytical instrumentation during preparation and analysis at the laboratory.

- Laboratory reagents used in analytical procedures.

A trip blank consists of a set of 40 ml sample vials filled at the laboratory with laboratory demonstrated analyte free water. Trip blanks should be handled, transported and analyzed in the same manner as the samples acquired that day, except that the sample containers themselves are not opened in the field. Rather, they just travel with the sample cooler. The temperature of the trip blanks must be maintained at 4°C while on-site during shipment. Trip blanks must return to the laboratory with the same set of bottles they accompanied in the field.

The purpose of a trip blank is to control sample bottle preparation and blank water quality, as well as sample handling. Thus, the trip blank travels to the site with the empty sample bottles, and back from the site with the collected samples in an effort to simulate sample handling conditions. Contaminated trip blanks are implemented only when collecting water samples, including field blanks, and analyzed for volatile organic compounds only.

5.5 Sample Analysis

5.5.1 Chain of Custody Procedures

As stated in Section 5.4.4.4 - Chain of Custody (COC), the COC is initiated at the laboratory and accompanies the sample containers into the field. The field team completes the COC and returns it to the laboratory with the samples.

COC procedures, as well as sample storage and sample preparation methods undertaken at the laboratory will be performed in accordance with the NYSDEC 12/91 ASP and is contained in the laboratory's standard operating procedures (SOP) which is available upon request.

5.5.2 Analytical Methods

The analytical methods which will be used for this Supplemental Investigation are contained in the USEPA SW-846 3rd Edition, and NYSDEC 12/91 ASP. The parameters to be analyzed for include volatile chlorinated hydrocarbons (trichloroethene), volatile aromatic hydrocarbons (benzene, toluene, ethylbenzene and xylenes), and total petroleum hydrocarbons and possibly polychlorinated biphenyls. Table 5-1, which was included in Section 5.3.1 - Monitoring Parameters, summarizes the samples to be collected along with the analytical requirements. The laboratory selected to perform the analytical portion of this project will supply their quarterly method detection limit studies for the above methods.

5.5.2.1 - Data Quality Requirements and Assessment

Data quality requirements and assessments are provided in Section 5.7 at the end of this section, which includes the detection limit for each parameter and sample matrix. Note that quantification limits, estimated accuracy, accuracy protocol, estimate precision and precision protocol are determined by the laboratory and will be in conformance with the requirements of the NYSDEC 12/91 ASP, where applicable. Table 5-3 presents a summary of the data quality requirements.

5.5.3 Calibration Procedures

Calibration procedures and preventive maintenance, in accordance with the NYSDEC 12/91 ASP, for laboratory equipment is contained in the laboratory's SOP and is available upon request. The calibration procedures for the field equipment will be in accordance with the manufacturer's specifications which are listed in the equipment manuals.

Table 5-3

DATA QUALITY REQUIREMENTS
OBJECTIVES FOR PRECISION, ACCURACY, AND COMPLETENESS

Matrix/Parameter	Precision (%)[c]	Accuracy (%)
Soils		
VOCs[a]	See Table 5-3a	See Table 5-3a
Metals[b]	± 25	75-125
PCBs	See Table 5-3b	See Table 5-3b
Groundwater		
VOCs[a]	See Table 5-3a	See Table 5-3a
Metals[b]	± 25%	75-125

NOTES:

(a) Accuracy will be determined as percent recovery of surrogate spike compounds and matrix spike compounds. Surrogate and matrix spike compounds for VOCs are listed in Tables 6-2a. Precision will be estimated as the relative standard deviation of the percent recoveries per matrix.

(b) Accuracy will be determined as percent recovery of matrix spikes when appropriate or the percent recovery of a QC sample if spiking is inappropriate. Precision will be determined as relative percent difference of matrix spike duplicate samples, or duplicate samples if spiking is inappropriate.

(c) Precision will be determined as the average percent difference for replicate samples. Accuracy will be determined as the percent recovery of matrix spike samples or laboratory control samples, as appropriate.

Source: NYSDEC ASP

Table 5-3a

DATA QUALITY REQUIREMENTS
ACCURACY REQUIREMENTS FOR VOLATILE ORGANIC COMPOUNDS

	Spike Recovery Limits (%)	
	Water	Low/Medium Soil
Surrogate Compound		
Toluene-d8	88-110	84-138
4-Bromofluorobenzene	86-115	59-113
1,2,Dichlorethane-d4	76-114	70-121
Matrix Spike Compound		
1,1-Dichloroethene	61-145	59-172
Trichloroethane	71-120	62-137
Chlorobenzene	75-130	60-133
Toluene	76-125	59-139
Benzene	76-127	66-142

Source: NYSDEC ASP

Table 5-3b

DATA QUALITY REQUIREMENTS
ACCURACY REQUIREMENTS FOR PCBs*

Surrogate Compound	Advisory Recovery Limits (%) Low/Medium Soil
Decachlorobiphenyl	60-150

*Samples do not have to be reanalyzed if these recovery limits are not met.

Source: NYSDEC ASP

5.5.4 Data Reduction and Reporting

An NYSDOH ELAP and CLP certified laboratory meeting requirements for documentation, data reduction and reporting will be used. All data will be cataloged according to sampling locations and sample identification nomenclature which is described in Section 5.3.2.1 of the QA/QC plan.

5.5.5 Data Validation

Data validation will be performed in order to define and document analytical data quality in accordance with NYSDEC requirements that project data must be of known and acceptable quality. The analytical and validation processes will be conducted in conformance with the NYSDEC 12/91 ASP and USEPA CLP SOW dated March 1990. The validation will be performed by an individual meeting the qualification requirements for a data validator for the NYSDEC and USEPA.

The USEPA Functional Guidelines for Evaluating Organics and Inorganics Analyses for the Contract Laboratory Program (CLP) will be used as a guideline for the data validation process. The data validation process will ensure that all analytical requirements specific to this work plan, including the QA/QC Plan are followed. Procedures will address validation of routine analytical services (RAS) results based on the NYSDEC Target Compound List (TCL) for standard sample matrices as well as nonroutine (TPHC) special analytical services (SAS) methodology.

The data validation process will provide an informed assessment of the laboratory's performance based upon contractual requirements and applicable analytical criteria. The report generated as a result of the data validation process will provide a base upon which the usefulness of the data can be evaluated by the end user of the analytical results. The overall level of effort and specific data validation procedure to be used will be equivalent to a "100% validation" of all analytical data in any given data package.

During the review process, it will be determined whether the contractually required laboratory submittals for sample results are supported by sufficient back-up data and QA/QC results to enable the reviewer to conclusively determine the quality of data. Each data package will be checked for completeness and technical adequacy of the data. Upon completion of the review, the reviewers will develop a QA/QC data validation report for each analytical data package.

"Qualified" analytical results for any one field sample are established and presented based on the results of specific QC samples and procedures associated with its sample analysis group or batch. Precision and accuracy criteria (i.e., QC acceptance limits) are used in determining the need for qualifying data. Where test data have been reduced by the laboratory, the method of reduction will be described in the report. Reduction of laboratory measurements and laboratory reporting of analytical parameters shall be verified in accordance with the procedures specified in the USEPA program documents for each analytical method (i.e., recreate laboratory calculations and data reporting in accordance with the method specific procedure). The standard operating guideline manuals and any special analytical methodology required are expected to specify documentation needs and technical criteria and will be taken into consideration in the validation process. Copies of the complete data package and the validation report, including the laboratory results data report sheets, with any qualifiers deemed appropriate by the data reviewer, and a supplementary field QC sample result summary statement, will be submitted to the NYSDEC, if requested.

Examples of standard organics and inorganics data validation reporting formats and completeness inventory lists which are proposed for use on this project are contained in Section 5.8. These report forms will be modified as necessary and appropriate for any project specific or NYSDEC requirements.

The following is a description of the two-phased approach to data validation planned to be used in this project. The first phase is called checklisting and the second phase is the analytical quality review, with the former being a subset of the latter.

- Checklisting - The data package is checked for correct submission of the contract required deliverables, correct transcription from the raw data to the required deliverable summary forms and proper calculation of a number of parameters.

- Analytical Quality Review - The data package is closely examined to recreate the analytical process and verify that proper and acceptable analytical techniques have been performed. Additionally, overall data quality and laboratory performance is evaluated by applying the appropriate data quality criteria to the data to reflect conformance with the specified, accepted QA/QC standards and contractual requirements.

At the completion of the data validation, a Summary Data Validation/Usability Report will be prepared and submitted to the NYSDEC.

5.5.6 Internal Quality Control

The laboratory shall adhere to certain internal quality control procedures as stipulated in the NYSDEC 12/91 ASP. They include, but are not limited to the following subsections.

5.5.6.1 - Method Blanks/Holding Blanks

A method blank is an aliquot of laboratory water or soil which is spiked with the same internal and surrogate compounds as the samples. Its purpose is to define and determine the level of laboratory background contamination. Frequency, procedure and maximum laboratory containment concentration limits are specified in the NYSDEC 12/91 ASP.

A holding blank is an aliquot of analyte-free water that is stored with the environmental samples in order to demonstrate that the samples have not been contaminated during laboratory storage. It is analyzed using the same analytical procedure as the samples.

5.5.6.2 - Laboratory Control Sample

A laboratory control sample is a sample with a known composition and purchased from an approved source (i.e., USEPA or NYSDEC). This sample is analyzed in the same manner as the

samples in order to check the precision and accuracy of the analytical method. The frequency for analyzing the laboratory control sample is specified in the NYSDEC 12/91 ASP.

5.5.6.3 - Calibration Check Samples

The calibration check sample is a sample which contains all compounds being looked for in a particular method. This sample is analyzed prior to sample analysis in order to ensure proper instrument calibration. The frequency, procedure and method requirements are specified in the NYSDEC 12/91 ASP.

5.5.6.4 - Replicate Samples

Replicate samples are collected in the field and analyzed along with the other samples. The purpose is to determine the accuracy of duplicating samples results in both sampling and analysis procedures. The frequency for these samples is specified in the NYSDEC 12/91 ASP.

5.5.6.5 - Matrix Spikes/Matrix Spike Duplicates

Matrix spike samples and blanks are quality control procedures, consistent with NYSDEC 12/91 ASP specifications, used by the laboratory as part of its internal quality assurance/quality control program. The matrix spike (MS) and matrix spike duplicates (MSD) are aliquots of a designated sample (water or soil) which are spiked with known quantities of specified compounds. They are used to evaluate the matrix effect of the sample upon the analytical methodology as well as to determine the precision of the analytical method used. The procedure and frequency regarding the MS and MSD are defined in the NYSDEC 12/91 ASP.

5.5.6.6 - Surrogates

Surrogates are compounds which have a known concentration and are specified in the analytical methods. Surrogates are spiked into all samples prior to analysis in order to determine the

accuracy of the analytical method. Procedure and quality control recovery limits for each surrogate are specified in the NYSDEC 12/91 ASP.

5.5.7 Preventive Maintenance

The laboratory's schedule and documentation procedures for preventive maintenance on their equipment is contained in the laboratory's SOP which is available upon request.

5.5.8 Corrective Action

An NYSDOH ELAP and CLP certified laboratory shall meet the requirements for corrective action protocols, including sample "clean up" to attempt to eliminate/mitigate "matrix interference."

5.5.9 Turnaround Time

Turnaround time is the time allotted to the laboratory to submit a complete data package to the client. This time frame begins at the validated time of sample receipt (VTSR). The standard turnaround time as specified in the NYSDEC 12/91 ASP is 30 days from VTSR.

5.6 Field Management Forms

WILLIAM F. COSULICH
ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

LOCATION SKETCH

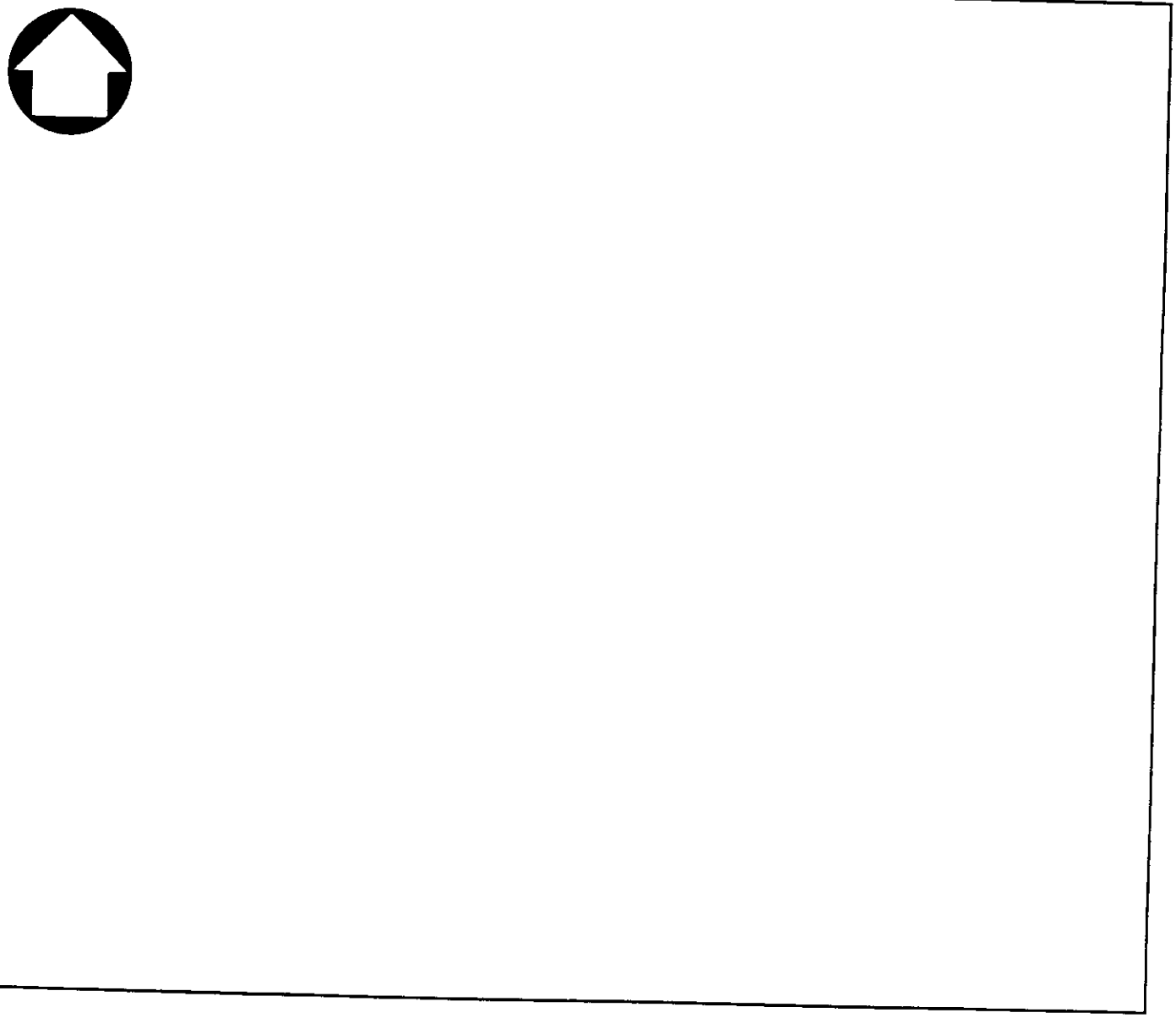
Project _____ Sample Crew _____

Sample(s) Location(s) _____

Sample(s) and/or Well Number(s) _____

_____

Location of sample points, wells, borings, etc., with reference to three permanent reference points. Measure all distances, clearly label roads, wells and permanent features.



Sketch of Lot, Building, and Well and Septic System Location

Sketch of Water Treatment System and Sampling Locations

Photograph of Water Treatment System

WILLIAM F. COSULICH
ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

SAMPLE INFORMATION RECORD

SITE _____ SAMPLE CREW _____

SAMPLE LOCATION/WELLNO. _____

FIELD SAMPLE I.D. NUMBER _____ DATE _____

TIME _____ WEATHER _____ TEMPERATURE _____

SAMPLE TYPE:

GROUNDWATER _____ SEDIMENT _____

SURFACE WATER/STREAM _____ AIR _____

SOIL _____ OTHER (Describe, i.e., septage, leachate) _____

WELL INFORMATION (fill out for groundwater samples):

DEPTH TO WATER _____ MEASUREMENT METHOD _____

DEPTH OF WELL _____ MEASUREMENT METHOD _____

VOLUME REMOVED _____ REMOVAL METHOD _____

FIELD TEST RESULTS:

COLOR _____ pH _____ ODOR _____

TEMPERATURE (°F) _____ SPECIFIC CONDUCTANCE (umhos/cm) _____

OTHER (OVA, Methane meter, etc.) _____

_____

CONSTITUENTS SAMPLED:

_____ _____ _____ _____

_____ _____ _____ _____

REMARKS: _____

_____

_____

_____

WELL CASING VOLUMES

GAL/FT	1-1/4" = 0.077	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.10	2-1/2" = 0.24	3-1/2" = 0.50	6" = 1.46

SIR

TOTAL ANALYTICAL SERVICES FOR A SAFE ENVIRONMENT

nytest environmental.

(516) 625-5500 FAX: (516) 625-1274

Chain of Custody Record

page # : ____ of ____

Client Name

Address

Project Manager

Phone ____ FAX ____

Project Name

Project Number

P.O. #

Analytical Protocol

Sampled By ____ Deliverables ____

Analysis Requested

No. of Containers

Bin #'s In / Out (For Lab Use Only)

Login #:

Ship to:
Nytest Environmental Inc.
60 Seaview Blvd
Port Washington N.Y. 11050
Attn.: Sample Control

Date Shipped:

Carrier:

Air Bill #:

Cooler #:

C of C #:

SDG #:

NEI QT #:

Comments

Lab ID (Lab Use Only)	Sample ID (Maximum of 6 Characters)	Date Sampled	Time Sampled	Sample Location

Relinquished by:

Name:

Date / Time

Received by:

Print Name:

Date / Time

Relinquished by:

Name:

Date / Time

Received by:

Print Name:

Date / Time

Relinquished by:

Name:

Date / Time

Received by Laboratory

Print Name:

Date / Time

Special Instructions :

CLIENT RETAINS YELLOW COPY ONLY

Lab Use Only

Custody Seals: Intact Broken Absent

Sample Rec'd in Good Condition? : Y N

Sample Temperature: ____ Degrees Celcius

INSPECTED BY: ____

COMMENTS: ____

WILLIAM F. COSULICH
ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

FIELD CHANGE FORM

Project Name: _____

Project Number: _____ Field Change Number: _____

Location: _____ Date: _____

Field Activity Description: _____

_____

_____

_____

Reason for Change: _____

_____

_____

_____

Recommended Disposition: _____

_____

_____

_____

_____ _____

Field Operations Officer (William F. Cosulich Associates, P.C.) (Signature) Date

Disposition: _____

_____

_____

_____

_____ _____

On-site Supervisor (NYSDEC) (Signature) Date

_____

Distribution: Project Manager (WFC)
Project Manager (NYSDEC)
Field Operations Officer
On-site Supervisor (NYSDEC)

Others as Required: _____
_____
_____
_____

WILLIAM F. COSULICH
ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

DAILY FIELD ACTIVITY REPORT

Report Number: _____ Project Number: _____ Date: _____

Field Log Book Page Number: _____

Project: _____

Address: _____

Weather: (AM) _____ Rainfall: (AM) _____ Inches
(PM): _____ (PM) _____ Inches

Temperature: (AM) _____ °F Wind Speed: (AM) _____ MPH Wind Direction: (AM) _____
(PM) _____ °F (PM) _____ MPH (PM) _____

Site Condition: _____

Personnel On Site:

Name	Affiliation

Subcontractor
Work Commencement: (AM) _____ (PM) _____

Subcontractor
Work Completion (AM) _____ (PM) _____

WILLIAM F. COSULICH
ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

DATE: _____

DAILY FIELD ACTIVITY REPORT

General work performed today by WFC Engineers: _____

List specific inspection(s) performed and results (include problems and corrective actions):

List type and location of tests performed and results (include equipment used and monitoring results):

Verbal comments received from subcontractor (include construction and testing problems, and recommendations/resulting actions):

Prepared by: _____ Reviewed by: _____

WILLIAM F. COSULICH
ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

DATE: _____

DAILY FIELD ACTIVITY REPORT

Work performed today by subcontractor(s) (includes equipment and labor breakdown):

WILLIAM F. COSULICH
ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

DAILY EQUIPMENT CALIBRATION LOG

Project Name: ______________________________ Date: ______________________

Project Number: ____________________________ Calibrated By: _________________

Instrument Name and Model Number	Calibration Method	Time	Readings and Observations

DECL

5.7 Detection Limits

40CFR Part 136 Parameters
Target Compound List (TCL) and
Contract Required Quantitation Limit
(Continued)

Parameter		CAS Number	Contract Required Quantitation Level (µg/L)
Volatile Organics (Method 624 cont.)			
14.	1,1,2,2-Tetrachloroethane	79-34-5	5
15.	1,2-Dichloropropane	78-87-5	5
16.	trans-1,3-Dichloropropene	10061-02-6	5
17.	Trichloroethene	79-01-6	5
18.	Dibromochloromethane	124-48-1	5
19.	1,1,2-Trichloroethane	79-00-5	5
20.	Benzene	71-43-2	5
21.	cis-1,3-Dichloropropene	10061-01-5	5
22.	2-Chloroethyl vinyl ether	110-75-8	10
23.	Bromoform	75-25-2	5
24.	Tetrachloroethene	127-18-4	5
25.	Toluene	108-88-3	5
26.	Chlorobenzene	108-90-7	5
27.	Ethyl Benzene	100-41-4	5
28.	1,3-Dichlorobenzene	541-73-1	10
29.	1,4-Dichlorobenzene	106-46-7	10
30.	1,2-Dichlorobenzene	95-50-1	10
31.	Trichlorofluoromethane	75-69-4	10
Volatile Organics (Method 601)			
1.	Chloromethane	74-87-3	0.5
2.	Bromomethane	74-83-9	5
3.	Vinyl chloride •	75-01-4	1.0
4.	Chloroethane •	75-00-3	5
5.	Methylene chloride	75-09-2	1.0
6.	1,1-Dichloroethene	75-35-4	0.1
7.	1,1-Dichloroethane	75-35-3	0.5
8.	trans-1,2-Dichloroethene •	156-60-5	0.5
9.	Chloroform	67-66-3	0.5
10.	1,2-Dichloroethane	107-06-2	0.1
11.	1,1,1-Trichloroethane •	71-55-6	0.1
12.	Carbon tetrachloride	56-23-5	0.5
13.	Bromodichloromethane	75-27-4	0.5

40CFR Part 136 Parameters
Target Compound List (TCL) and
Contract Required Quantitation Limit
(Continued)

Parameter	CAS Number	Contract Required Quantitation Level (µg/L)
Volatile Organics (Method 601 cont.)		
14. 1,1,2,2-Tetrachloroethane	79-34-5	0.1
15. 1,2-Dichloropropane	78-87-5	0.5
16. trans-1,3-Dichloropropene	10061-02-6	1.0
17. Trichloroethene	79-01-6	0.5
18. Dibromochloromethane	124-48-1	0.5
19. 1,1,2-Trichloroethane	79-00-5	0.1
21. cis-1,3-Dichloropropene	10061-01-5	0.5
22. 2-Chloroethyl vinyl ether	110-75-8	0.5
23. Bromoform	75-25-2	1.0
24. Tetrachloroethene	127-18-4	0.1
25. Chlorobenzene	108-90-7	1.0
26. 1,2-Dichlorobenzene	95-50-1	1.0
27. 1,3-Dichlorobenzene	541-73-1	1.0
28. 1,4-Dichlorobenzene	106-46-7	1.0
29. Trichlorofluoromethane	106-46-7	2.0
Volatile Organics (Method 602)		
1. Benzene	71-43-2	1.0
2. Toluene	108-88-3	1.0
3. Chlorobenzene	108-90-7	1.0
4. Ethyl Benzene	100-41-4	1.0
5. 1,3-Dichlorobenzene	541-73-1	1.0
6. 1,4-Dichlorobenzene	106-46-7	1.0
7. 1,2-Dichlorobenzene	95-50-1	1.0
Semivolatile Organics (Method 625)		
1. N-Nitrosodimethylamine	62-75-9	10
2. Phenol	108-95-2	10
3. bis(2-Chloroethyl) ether	111-44-4	10
4. 2-Chlorophenol	95-57-8	10
5. 1,3-Dichlorobenzene	541-73-1	10

5.8 Data Validation Forms

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

I. Data Deliverable Requirements

A.	Legible	Yes	No
B.	Paginated	Yes	No
C.	Arranged in order	Yes	No
D.	Consistent dates	Yes	No
E.	Case Narrative	Yes	No
F.	Chain-of-Custody Record	Yes	No
G.	Sample Data Complete	Yes	No
H.	Standard Date Complete	Yes	No
I.	Raw QC Data Complete	Yes	No

Comments:_____

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

II. Holding Times

Sample I.D.	Date Received	Date Extracted	Date Analyzed	Holding Time Exceeded ?

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

Fraction:_____

III. Tune Summary

Tune File I.D. Number	Acceptable ?	Comments
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

Fraction:_____

IV. Initial Calibration Summary (GC/MS)

Date of Calibration:_____

A. Standard Data Files

Standard 1 ID:_____ Conc:_____

Standard 2 ID:_____ Conc:_____

Standard 3 ID:_____ Conc:_____

Standard 4 ID:_____ Conc:_____

Standard 5 ID:_____ Conc:_____

B. 1. All SPCC met Criteria ?

Yes No

2. Calculate a SPCC average RRF .

Comments:_____

_____

_____

_____

_____

_____

_____

_____

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

Fraction:_____ Date of Calibration:_____

IV. Initial Calibration Summary (continued)

2. All CCC met Criteria ?

Yes No

Comments:_____

_____

Calculate a CCC % RSD

C. 1. Was the tune for the initial calibration acceptable ?

Yes No

2. Was the calibration conducted within 12 hours of the tune ?

Yes No

Comments:_____

_____

_____

D. Overall assessment of the initial calibration:
(list the associated samples)

_____

_____

_____

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

Fraction:_____

VI. Continuing Calibration Summary (GC/MS)

Date of Initial Calibration:_____

Date of Continuing Calibration:_____ File ID:_____

A. 1. All SPCC met criteria ?

Yes No

Calculate a SPCC RRF

Comments:_____

_____

2. All CCC met criteria ?

Yes No

Calculate a CCC % D

Comments:_____

_____

B. Overall assessment of Continuing Calibration
(list associates samples)

_____

_____

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

Fraction:_____

VIII. Internal Standard Area Summary (GC/MS)

Were all internal standard peak areas within the contract limits ?

Yes No

If No, please note below.

Sample	Internal Standard Outside Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

Fraction:_____

IA. Blank Summary

Date/Time of Analysis:_____ File ID:_____

Compound	Concentration	< CRQL	Comments

List the samples associated with this method blank.

_____

_____

_____

_____

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

Fraction:_____

X. Surrogate Recovery Summary

Were all surrogate recoveries within the contract limits ?

Yes No

If No, please note below.

Sample	Surrogate Compound Outside Recovery Limits	Amount Above Contract Requirement	Comments

DATA VALIDATION-ORGANICS

Site Name:_____ Laboratory Name:_____

Reviewer:_____ Date of Review:_____

Fraction:_____

XI. Matrix Spike/Matrix Spike Duplicate Summary

Sample ID:_____ Matrix:_____

Did the MS/MSD recovery data meet the contract recommended requirements ?

Yes No

If No, please note below.

_____

_____

_____

_____

SITE SPECIFIC HEALTH AND SAFETY PLAN

for

Utica Alloys, Inc. Site
Utica, New York

Prepared by:

Field Safety Corporation
28 Magee Avenue
Stamford, CT 06902
(203) 964-9199

June 7, 1995

APPROVAL PAGE

This Site Specific Health and Safety Plan (SHSP) has been prepared and reviewed in accordance with the minimum requirements of 29CFR1910.120.

Prepared by: _____ Date: _____
Mary A. Healy, CIH

and _____ Date: _____
Michael H. Ziskin, CHCM, CHMM

Approval: _____
William F. Cosulich Associates, P.C.

DISCLAIMER

This Site Specific Health and Safety Plan (SHSP) has been prepared exclusively for use by William F. Cosulich Associates, P.C. for the express purpose of conducting a Supplemental Investigation at the subject property. Due to the potential for errors, omissions or inaccuracies which may exist from obtaining information from several sources, there is some risk associated with reliance on such information and Field Safety Corporation cannot be responsible for the accuracy or completeness of the information.

Information may be gathered in the future which may modify the contents of the SHSP, and such changes will be presented in the form of an addendum. Use by others is not condoned and the information contained herein is deemed copyrighted. Field Safety Corporation does not warrant its use by others, nor is Field Safety Corporation responsible for its unintended use by others. No other warranty, expressed or implied, is made.

TABLE OF CONTENTS

1.0 GENERAL

This Site Specific Health and Safety Plan (SHSP) was prepared in conformance with the William F. Cosulich Associates, P.C. (WFC) Health and Safety Program and is intended to meet the requirements found in 29 CFR §1910.120 and §1926, the NIOSH/OSHA/USCG/EPA Guidance Manual for Hazardous Waste Site Activities (NIOSH No. 85-115), and US EPA "Standard Operating Safety Guides". The SHSP addresses hazardous activities associated with the supplemental investigation and sampling activities at the Utica Alloys, Inc. Site (UAI) in Utica, New York. (see Figure 2-1 and 2-2). Compliance with the SHSP is required of all on-site personnel entering the site. Visitors to the UAI Site shall be subject to the requirements of this SHSP and be accountable to the authorities having jurisdiction at the site.

1.1 Site Information

Site Name:	Utica Alloys, Inc.
Address:	Leland Avenue Utica, New York
Date of SHSP Preparation:	June 7, 1995

2.0 PURPOSE AND SCOPE

2.1 Purpose and Scope of the Field Investigation

A supplemental investigation will be performed by William F. Cosulich Associates, P.C. (WFC) at the Utica Alloys Facility on Leland Avenue in Utica, New York. The purpose of this investigation is to continue the evaluation for the potential for hazardous waste contamination on the site in response to an Order of Consent between the New York State Department of Environmental Conservation (NYSDEC) and Utica Alloys, Inc.

Successful completion of the Supplemental Investigation will allow UAI to evaluate any areas of the property in need of remediation, and to comply with NYSDEC requirements for investigation and remediation of this site.

The scope of this project has been determined through negotiation between the NYSDEC and UAI. The determination of sources of contaminants on the UAI Site has been divided into two areas of responsibility. The first, belonging to NYSDEC, is to evaluate potential for contamination entering the UAI Site via a storm sewer system that serves the City of Utica with manholes and piping buried beneath the UAI Site. The second portion of responsibility is for UAI to evaluate potential groundwater and soil contamination on its property due to on-site activities.

2.2 Purpose and Scope of this SHSP

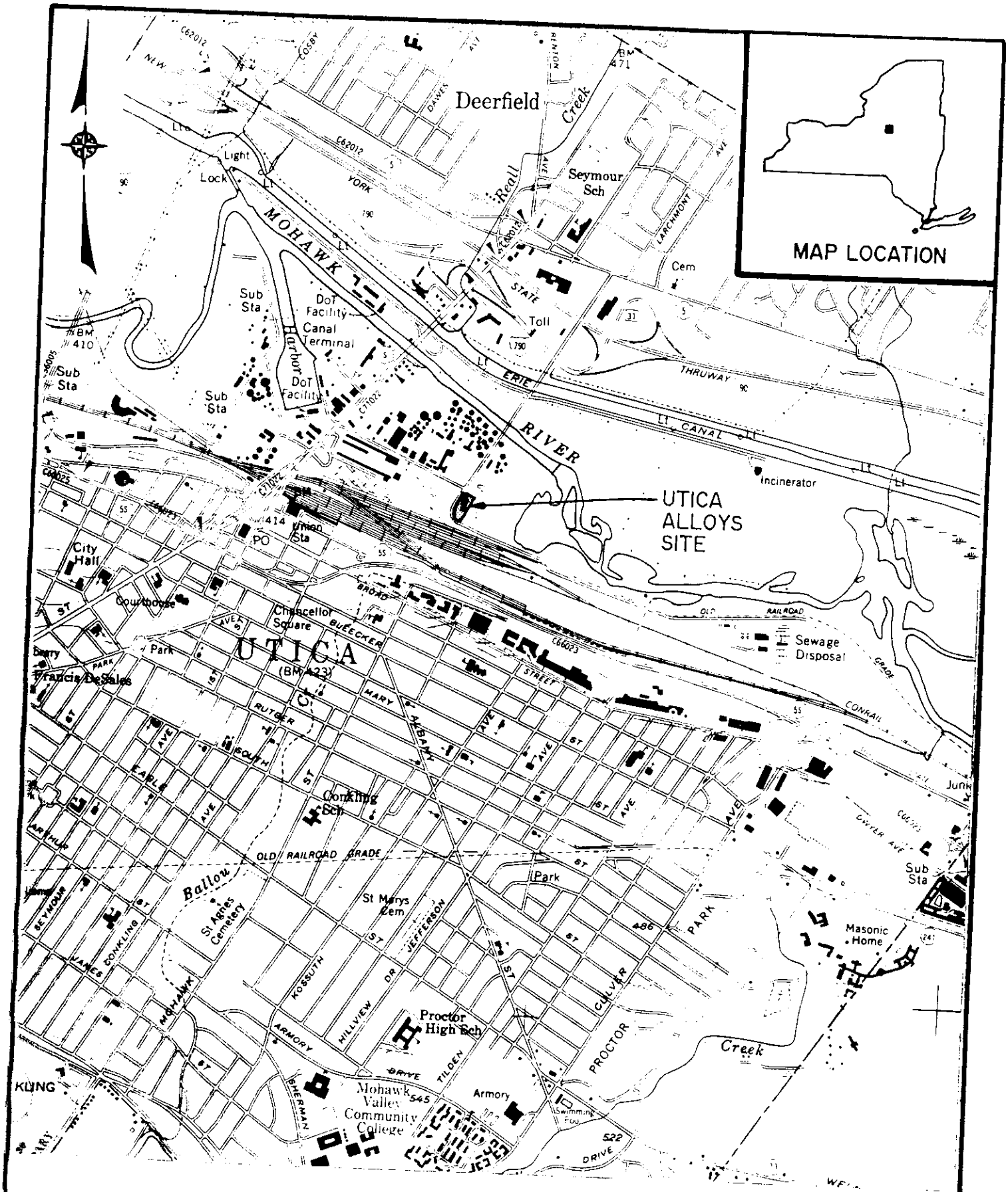
To ensure health and safety during sampling, drilling, and related investigative activities by setting forth requirements for on-site health and safety supervision, air monitoring, medical monitoring, personal protective equipment, controls, safe work practices, and proper decontamination.

3.0 SITE DESCRIPTION AND HISTORY

3.1 The UAI facility is located in an industrial section of Utica, NY. The site is located in the Mohawk River floodplain and is near the Erie Canal (see Figure 2-1). The site is located at the intersection of Wurz Avenue and Leland Avenue. The property is approximately 1.5 acres in size and consists largely of building and storage areas associated with facility operations. The site is bounded to the north and east by property owned by Universal Waste, Inc. and to the south and west by Leland Avenue. Immediately south of Leland Avenue is a large railroad yard. Access to the site is through an entrance at the intersection of Wurz Avenue and Leland Avenue.

UAI operations involve the recycling of nickel-cobalt metal turnings that have been generated off-site by machining operations used in the production of aerospace parts and equipment. UAI processes the alloys received in two distinct operations. The operations include processing metal turnings and solids processing.

The site is listed on the NYS Registry of Inactive Hazardous Waste Disposal Sites and has been assigned Registry Number 63009.

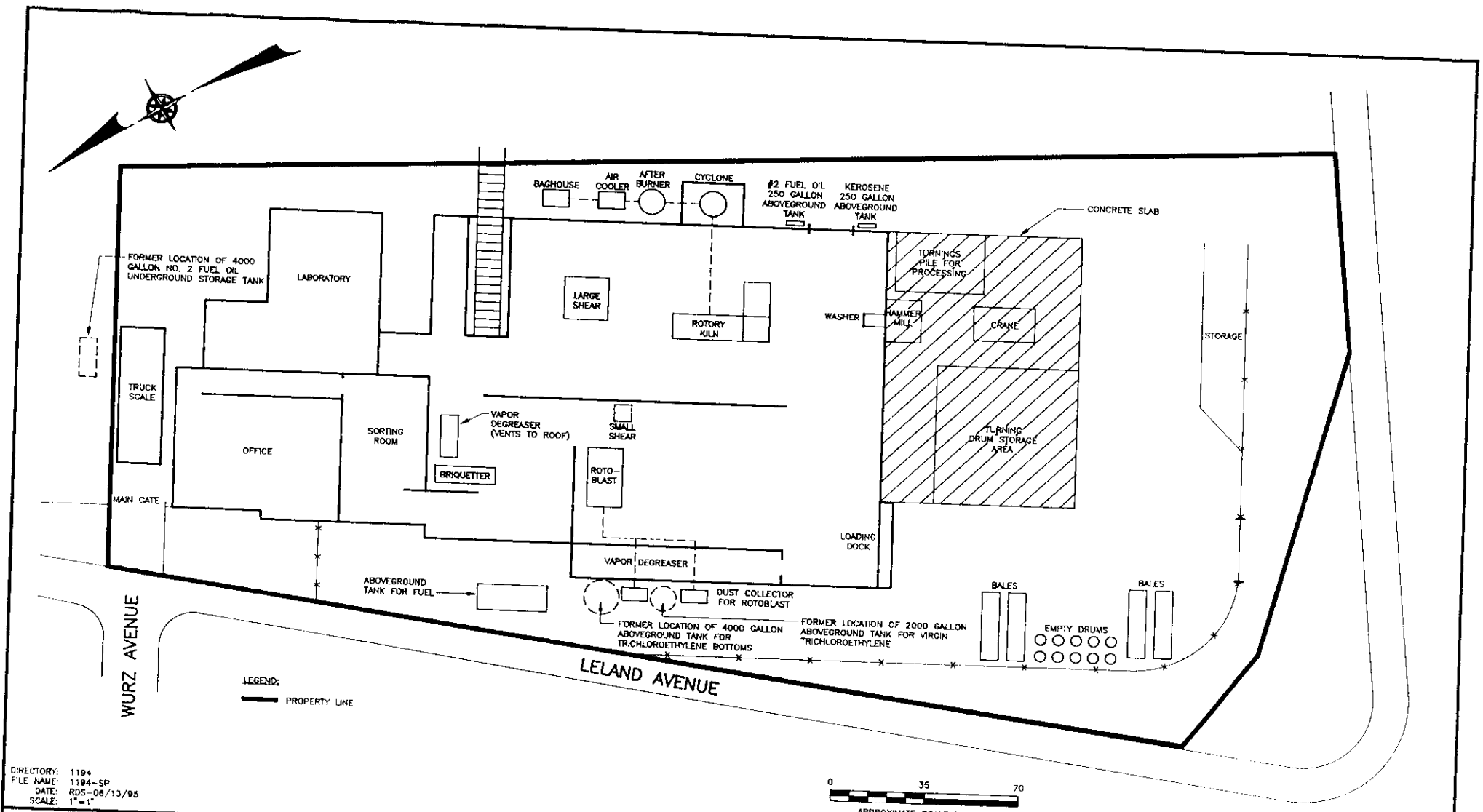


UTICA ALLOYS, INCORPORATED
UTICA, NEW YORK

SITE LOCATION MAP

WILLIAM F. COGULICH ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

FIGURE 2 - 1



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FILE NAME: 1194-SP
DATE: RDS-08/13/95
SCALE: 1"=1'

William F. Cosulich Associates, P.C.
Environmental Engineers

UTICA ALLOYS, INC.
UTICA, NEW YORK

SITE LAYOUT

FIGURE 2-2

4.0 PERSONNEL ORGANIZATION AND RESPONSIBILITIES

This project will require the interaction of government agencies, contractors, site facility operators and technical specialists, both on-site and off-site. The project team will be composed of representatives of the New York State Department of Environmental Conservation (NYSDEC), WFC, and various subcontractors.

4.1 WFC Project Director

The WFC Project Director will have overall responsibility for ensuring that the policies and procedures of the corporate and site-specific health and safety plan are implemented, and for the overall supervision and monitoring of WFC employees and drilling subcontractors.

4.2 WFC Project Manager

The WFC Project Manager will assure that all elements of this SHSP are implemented where applicable and that all project staff are protected and working in a safe manner.

4.3 Site Safety Officer (SSO) and Alternate SSO

The SSO has the final authority to resolve health and safety issues at the site. The SSO is responsible for implementing and enforcing the policies and procedures of this SHSP at the site.

The SSO shall provide regular support for all health and safety activities, including upgrading or downgrading the level of personal protection, as needed.

The SSO is on-site full time for the duration of the project. The SSO has the authority to stop work at any time unsafe work conditions are present. Any potentially hazardous condition posing a risk beyond the defined role or mission which WFC anticipates will require the SSO to consult with the WFC Field Operations Manager (FOM) and Project Director.

The SSO shall document daily, activities with health and safety relevance including references to maintenance and calibration of health and safety equipment. See Supplement A for SSO qualifications.

4.4 WFC Field Operations Manager (FOM) and Alternate SSO

The WFC FOM, or designee, will be responsible for conducting the work and for assuring that the work is conducted in accordance with the requirements of the Contract Document. The FOM is on-site for the duration of the project and will manage all day-to-day activities of all parties on this project.

The FOM will be responsible for implementing safety precautions and procedures during all investigation phases.

The FOM has final authority to resolve health and safety issues at the site when the SSO or Alternate SSO is not on-site.

4.5 Certified Industrial Hygienist (CIH)

The Certified Industrial Hygienist (CIH) or designee shall remain available off-site on an as-needed basis to provide technical support to the SSO. Any decisions requiring use or selection of personal protective equipment (PPE) or monitoring devices other than those in this plan must be approved by the CIH.

4.6 Security Officer

The Site Security Officer will be responsible for maintaining the security of the site.

4.7 Physician

The Physician will be responsible for all medical review, diagnosis, and certification of all WFC site personnel.

4.8 Designations of Personnel

Site Safety Officer (SSO)
Gerald Gould, CPG, William F. Cosulich Associates
(315) 451-2811

Alternate Site Safety Officer
Keith Robins, Jr. Geologist, William F. Cosulich Associates

Certified Industrial Hygienist
Mary A. Healy, CIH, Field Safety Corporation
(203) 964-9199

WFC Project Director
Thomas F. Maher, P.E.
(516) 364-9880

WFC Project Manager
Gerald Gould, CPG
(315) 451-2811

WFC Field Operations Manager
Gerald Gould, CPG
(315) 451-2811

Physician (on-call)
Dr. Ronald E. Rosen, MD
269-11 76th Avenue
CCC Building, Third Floor Room 313
New Hyde Park, NY 11042
(718) 470-4435

Medical Assistance
Utica Ambulance - 911

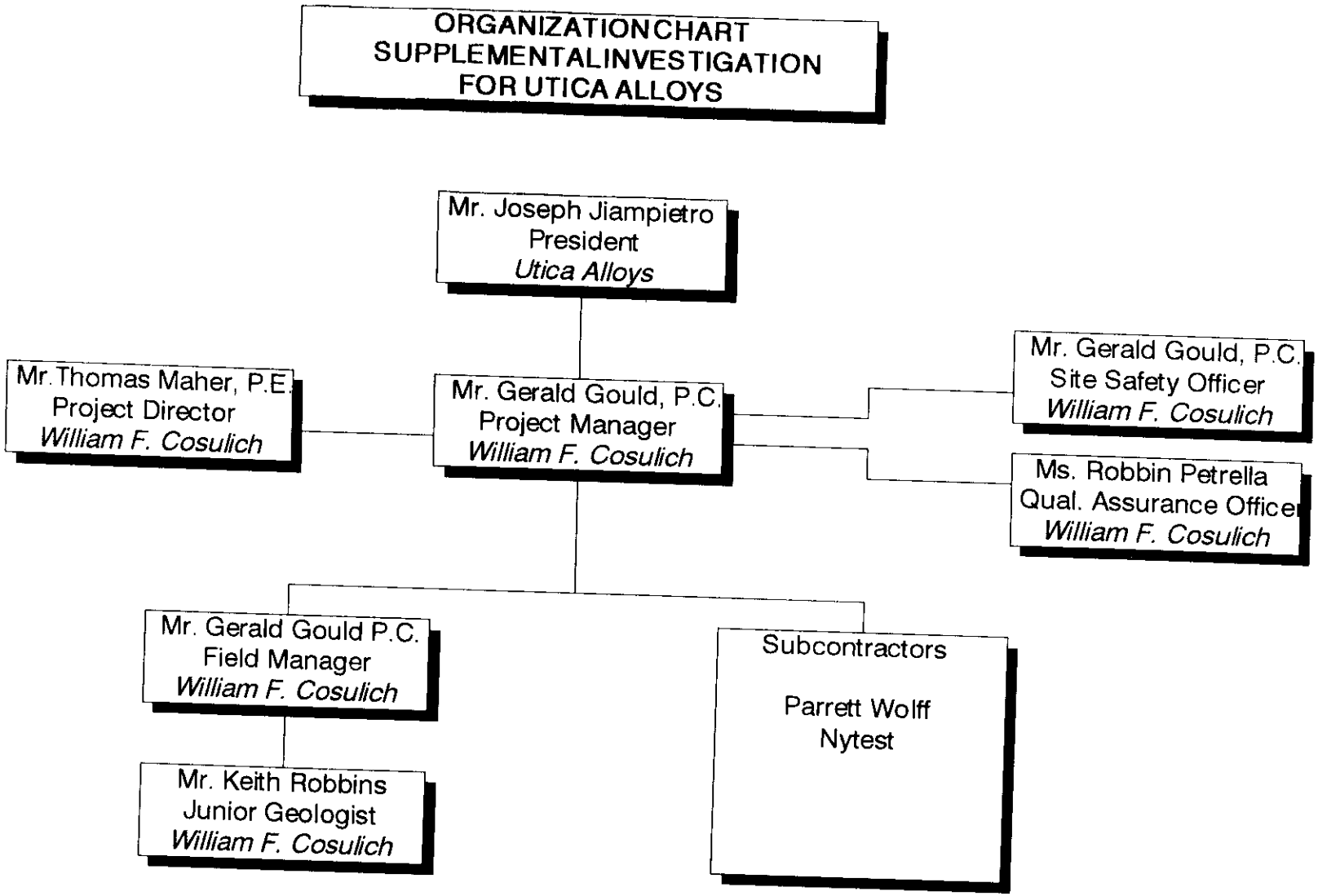
4.9 General Health and Safety Requirements for all Employees

The following general health and safety requirements will apply to all persons working at the site:

1. All persons working on the investigation team shall read, sign and become familiar with this SHSP (a copy of the Field Team Review Form is provided in Appendix E). If any information is unclear, the reader shall contact the SSO for clarification prior to any field work. A copy of the plan will be available for review through the Project Manager, FOM, or his designee.
2. No employee will be allowed in active investigation areas without the prior knowledge and approval of the SSO, Project Manager or FOM. All active areas shall be fenced or designated with warning tape to prevent access by other site personnel or the public.
3. Sufficient backup personnel will be available for all site activities. At a minimum, two persons shall be present at any location during investigation activities.

4. All personnel involved in the investigation at the site will notify the SSO, Project Manager or FOM of any unsafe conditions or activities.
5. Standard hygiene practices will be implemented such as no smoking, eating or drinking during site investigation work activities, and requiring a thorough washing of hands and face prior to smoking, eating, or drinking. These activities will only occur inside the site trailer. At all times, personnel should perform investigative activities from upwind directions.
6. Workers will avoid unnecessary contamination such as walking through, sitting on, leaning on or kneeling in areas that are known or suspected to be hazardous.
7. All site personnel shall observe their partners for any signs of adverse effects associated with the work activity and will inform their partner or supervisor of any unusual signs or symptoms that they are experiencing themselves.

FIGURE 4-1


ORGANIZATION CHART
SUPPLEMENTAL INVESTIGATION
FOR UTICA ALLOYS
Mr. Joseph Jiampietro
President
Utica Alloys
Mr. Thomas Maher, P.E.
Project Director
William F. Cosulich
Mr. Gerald Gould, P.C.
Project Manager
William F. Cosulich
Mr. Gerald Gould, P.C.
Site Safety Officer
William F. Cosulich
Ms. Robbin Petrella
Qual. Assurance Officer
William F. Cosulich
Mr. Gerald Gould P.C.
Field Manager
William F. Cosulich
Mr. Keith Robbins
Junior Geologist
William F. Cosulich
Subcontractors
Parrett Wolff
Nytest

5.0 HAZARD ASSESSMENT AND RISK ANALYSIS

5.1 Potential Health Hazards

Potential health hazards which are most likely to be encountered during field operations include:

5.1.1 Heat Stress

See Attachment A for Heat Stress

5.1.2 UAI Site Soil and Groundwater Constituents

- Various chlorinated and aromatic volatile organic compounds (VOCs) may release vapors
- Trichloroethylene
- Metals (Nickel and Cobalt)
- PCB's

5.1.3 Health Hazard Evaluation of Soil Constituents

A Health Hazard Evaluation was performed on those constituents listed in Section 5.1.2 above based on limited groundwater sampling data, work tasks and operations expected to be performed during this investigation, and site history. The purpose of the evaluation was to identify the potential health risks to on-site personnel. The personnel and environmental protection strategy contained in the SHSP will be implemented to control on-site hazards to personnel and the environment. In order to accomplish this, an assessment had to first be made of the likelihood that on-site personnel would be exposed to constituents found at the UAI Site. Based upon a review of existing information for the UAI Site it has been found that the hazardous constituents represent a low to moderate health risk to site workers.

5.2 Activity Safety and Health Hazard Analysis

Activities which will be performed by WFC at the UAI Site are described and summarized in Figure 5-1.

5.2.1 Drilling and Related Activities for Soil/Water Sample Collection

Hazardous Substances and Conditions

Exposures to surface and/or subsurface contaminants (VOCs, SVOC's and Metals) are possible. Slips/trips/falls, heavy equipment, excessive noise, spillage of fuel, heat stress as well as sunlight and UV radiation. Gases such as methane or hydrogen sulfide may be encountered in drains, sump pits or ditches.

Initial Level of Protection and Monitoring Equipment

Initial work conducted in Level D. Monitoring equipment to be used includes: portable PID, combustible gas and oxygen indicator. Other instrumentation and sampling systems may be utilized if deemed necessary by the SSO. The SSO may modify these requirements as deemed necessary.

Site Risks

Health Hazards

The presence of contaminated particulate and chemical vapors pose a potential for inhalation, ingestion, dermal absorption to VOCs, SVOCs, PCBs and Metals. UV radiation and heat stress also pose potential health hazards.

Safety Hazards

Drilling and related operations pose potential hazards to site personnel. There is the potential for mechanical and physical striking and struck-by hazards associated with drilling equipment and sampling activities, and potential electrical hazards from underground power lines, overhead lines, and use of electrical equipment and tools.

Conclusion/Risk Assessment

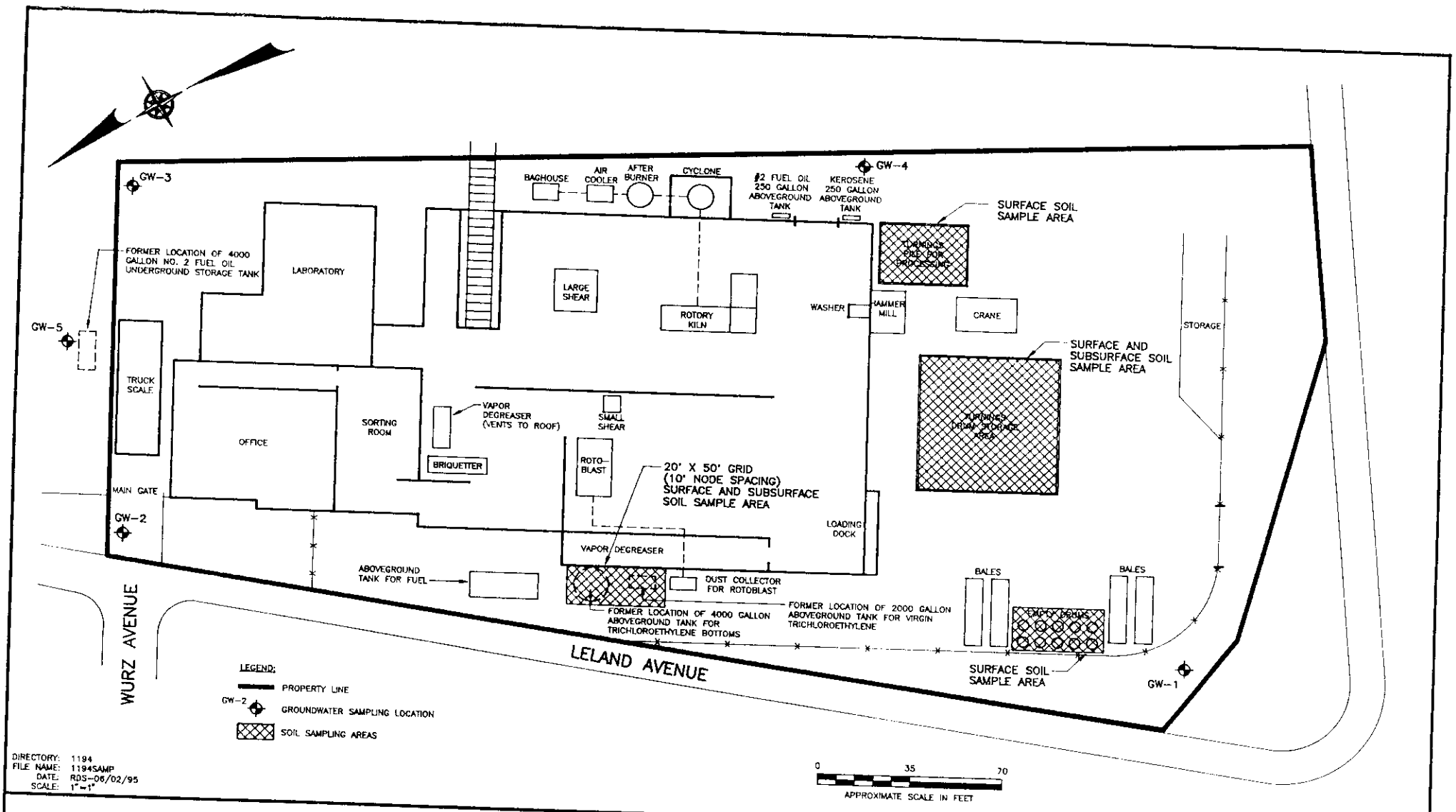
This task represents a low moderate health risk given the potential to encounter contaminated material. The risk associated with safety hazards is moderate to high. Potential levels of airborne contaminants may dictate use of appropriate personal protective equipment as deemed necessary by the SSO.

Proper wearing of protective equipment and employment of stringent personal hygiene practices should reduce potential health hazards.

Restricting access of on-site personnel to all heavy equipment operations, maintaining safe distances from heavy equipment, and wearing proper safety equipment will reduce risk of injuries.

FIGURE 5-1
UTICA ALLOYS, INC. SUPPLEMENTAL INVESTIGATION SAMPLING ACTIVITIES SUMMARY

Sampling Location	**Description**: **Groundwater samples** will be collected below the water table, not deeper than 10', using the direct push method equivalent to geoprobe or hydropunch technologies. 1 upgradient and 4 downgradient will be collected at the following locations:	No. of Samples	Analysis
GW1	West corner near empty drum storage	1	Volatile chlorinated hydrocarbons and trichloroethylene by method 601; BETX by method 602, total petroleum hydrocarbons by method 418.1
GW2	Area next to above ground tank for fuel, Leland Avenue	1	
GW3	North corner next to Main Gate	1	
GW4	Northeast corner	1	
GW5	Area near 250 gallon above ground tank for kerosene storage	1	
Sampling Location	**Description**: **Surface** soil samples will be obtained at depths 0" - 6" below ground surface and collected in soil jars. Head space will be analyzed using a portable OVA. Highest concentration will be sent for laboratory analyses. **Subsurface** soil samples will be collected at a depth between 2' and 4' using a drill rig and decontaminated split spoon sampler, and screened with a portable OVA. Soil samples will be collected at the following locations:	**No. of Samples**	**Analysis**
Empty drum storage area	Surface soil samples	10	TCE Analysis
Turning pile area	Surface soil samples	5	TCE Analysis
Former above ground storage tank	Surface soil samples Subsurface soil samples	20 20	TCE Analysis TCE Analysis
Turnings drum storage area	Surface and subsurface soil samples	> 35	TCE Analysis
Underground utility survey	**Sediment samples** may be collected based upon results of a visual survey of underground utilities, including drains, sumps, underground utility lines, storm drains, sewer lines, and sewer connections		Volatile chlorinated hydrocarbons/TCE by Method 8010



DIRECTORY: 1194
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SCALE: 1"=1'

William F. Cosulich Associates, P.C.
Environmental Engineers

UTICA ALLOYS, INC.
UTICA, NEW YORK

SITE SAMPLING LOCATIONS

FIGURE 3-1

6.0 TRAINING REQUIREMENTS

6.1 General Health and Safety Training

6.1.1 All on-site personnel assigned to or regularly entering areas of the site other than the Support Zone (once established) must be trained in accordance with 29 CFR 1910.120. This training will be required for personnel performing or supervising work; for health, safety, security, or administrative purposes; for maintenance; or for any other site related function. These training requirements also apply to site visitors who enter the Exclusion Zone or the Contaminant Reduction Zone (see Section 10.0 for clarification).

6.1.2 The training shall include a minimum of forty hours of general health and safety training and three days of on-site supervised experience. Documentation of all such training shall be made available to the SSO before any person shall be allowed to enter any potentially contaminated area (namely, the Exclusion Zone or the Contaminant Reduction Zone).

6.2 Site Specific Training

6.2.1 All site personnel shall attend a site specific refresher training program and become familiar with the SHSP and certify their understanding of this plan (see Appendix E). This training program shall include, at a minimum, training in the following areas:

- Hazard analysis (chemical/physical hazards).
- Standard safety operating procedures.
- Personal hygiene.
- Safety equipment to be used.
- Personal protective equipment to be worn including care, use, and proper fitting.
- Decontamination procedures.
- Areas of restricted access and prohibitions in work areas.
- Emergency procedures and plans.
- Respiratory equipment training and qualitative fit-testing protocols (banana oil and irritant smoke).
- First aid procedures.
- On-site and off-site communications.
- Hazardous materials handling procedures.
- Air monitoring instrumentation use and calibration.
- Confined space entry and rescue operations.

- Sample collection.
- Hazardous materials recognition.
- The "Buddy System" to be used at the site.

6.2.2 Training sessions for visitors entering the Exclusion and Contaminant Reduction Zones shall be conducted by the SSO. See Section 10.1 for descriptions of the exclusion and contaminant reduction zones. Abbreviated awareness training for visitors who remain in the Support Zone will also be provided by the SSO.

6.2.3 Safety and health meetings shall be conducted at least weekly by the SSO for all personnel assigned to work at the site. (See Appendix B-1 for Weekly Safety Meeting record.)

6.2.4 Proof of training for all on-site personnel can be found in Appendix C. Personnel who have not successfully completed the required training shall not be permitted to enter the Exclusion Zone or the Contaminant Reduction Zone.

6.2.5 Daily "Tool Box" safety meetings shall be conducted to keep all on-site personnel aware of current safety and health hazards and changes to work site conditions. Any modifications that the SSO makes to the SHSP will be communicated to personnel at this time (see Appendix D for the Daily "Tool Box" Safety Meeting Record).

6.2.6 New Employees involved in hazardous activities shall be indoctrinated by the SSO prior to entering the site to work. All training requirements must be completed by a new employee prior to indoctrination. Indoctrination will be comprised of the site-specific refresher training program, the task/operation safety and health risk analysis, and the phased accident prevention plan. This training shall be documented in the Site Worker Training and Medical Examination Record (Appendix C), and on the Daily "Tool Box" Safety Meeting Record (Appendix D).

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 General

All on-site personnel shall be issued appropriate PPE. All PPE is to be used properly and protective clothing is to be kept clean and well maintained. The SSO shall use "action levels", specified in this SHSP to determine whether the specified minimum levels of protection should be upgraded or downgraded based upon air monitoring results and direct contact potential. The SSO has the authority to require the use of additional equipment, if necessary, for specific operations.

7.2 General Site Safety Equipment Requirements

This is the basic work uniform and will primarily be worn outside the Exclusion Zone and the Contaminant Reduction Zone at the UAI Site.

7.2.1 Equipment

- Coveralls. (Optional, may be disposable type).
- Boots/shoes - (OSHA compliant construction footwear)
- Hard hat with splash shield - ANSI approved.
- Gloves (optional).
- Safety glasses - ANSI approved.

7.3 Level D Protection

Level D protection initially shall be worn in the Exclusion Zone and Contaminant Reduction Zone during non-intrusive sampling and investigative activities.

7.3.1 Equipment

- One or two piece disposable suit, tyvek or equivalent.
- Gloves - Outer (neoprene, nitrile, or equivalent); Inner (latex).
- Boots - Outer (vulcanized rubber or equivalent); Inner (steel toe and shank) or equivalent combination (ANSI approved).
- Safety glasses or goggles (ANSI approved).
- Hard hat with splash shield, if needed (ANSI approved).
- Hearing protection (if work is near heavy or noisy equipment)

7.4 Level C Protection

Level C protection shall be selected when a modified level of respiratory protection is needed. Selection shall be made when air monitoring results of the site or individual work areas exceed the action level criteria.

7.4.1 Equipment

- Full facepiece, air purifying respirator with combination organic vapor and high efficiency particulate air (HEPA) cartridges (OSHA/NIOSH approved).
- Hooded one or two piece chemical resistant suit, PE - Tyvek or equivalent (modification of protective suits may be made upon the approval of the SSO).
- Gloves - Outer (nitrile or equivalent); Inner (latex).
- Boots - Outer (neoprene or equivalent); Inner (steel toe and shank) or equivalent combination (ANSI approved).
- Two way radio communications (for remote operations).
- Hard hat with splash shield (ANSI approved).
- Hearing protection (if work is near heavy or noisy equipment)

7.5 Confined Spaces

The Underground Utility Survey may involve entering confined spaces. All confined spaces will be identified prior to conducting the survey. The confined spaces will only be entered upon authorization by the SSO or competent designee, and only after atmospheric testing has been performed for confined space hazards. Confined Space Procedures are contained in Supplement B.

7.6 Standing Orders

7.6.1 All prescription eyeglasses in use on the site shall be safety glasses. Prescription lens inserts shall be provided or personal contact lenses may be used for full-face respirators. All eye and face protection shall conform to OSHA 1910.133.

7.6.2 Programs for respiratory protection shall conform to OSHA 1910.134 and ANSI Z88.2-1980. A respiratory program addressing site specific respirator care and cleaning is described in Attachment B.

7.6.3 Personnel unable to pass a fit-test shall not enter or work in the Exclusion Zone or Contaminant Reduction Zone.

7.6.4 Each respirator shall be individually assigned and not interchanged between workers without cleaning and sanitizing. Cartridges/canisters and filters shall be changed daily or upon breakthrough, whichever occurs first. If breakthrough occurs, a reevaluation by the SSO of the protection level is warranted. A procedure for assuring periodic cleaning, maintenance, and change of filters shall be followed by each respirator wearer. This procedure is described in Attachment B - Respiratory Cleaning and Maintenance Procedure.

7.6.5 A hard hat shall be worn by all personnel. All head protection shall conform to the requirements in OSHA 1910.135.

7.6.6 All Level D or C personal protective equipment worn on-site shall be decontaminated before being reissued. Disposable equipment shall be properly disposed of (as contaminated solid waste) at the end of the work day in the Personnel Decontamination Area. The SSO is responsible for ensuring all personal protective equipment is decontaminated before being reissued (see Section 11.0).

7.6.7 All safety boots shall conform to OSHA 1910.136.

7.6.8 Power equipment may generate excessive noise levels (in excess of 85 decibels). Proper ear protection shall be provided and used in accordance with OSHA 1926.52.

8.0 MEDICAL SURVEILLANCE

All on-site personnel involved in hazardous waste operations must have satisfactorily completed a comprehensive medical examination prior to the initiation of hazardous waste operations at the UAI Site. Medical examinations are required for any and all personnel entering Exclusion or Contamination Reduction Zones (with the exception of visitors wearing respiratory protection as deemed necessary by the SSO).

Medical examinations are not required for people making periodic deliveries provided they do not enter Exclusion or Contamination Reduction Zones.

The date of physical examination of each site worker is documented in Appendix C - Site Worker Training and Medical Examination Record. A specific Medical Data Sheet for each individual will be filed with the SSO on-site prior to commencing operations. See Appendix F-1 for Medical Data Sheet.

All contractor personnel who will enter the Exclusion Zone or the Contaminant Reduction Zone shall be provided with medical surveillance prior to their participation in work (entrance examination), and after the conclusion of the on-site personnel's participation in work (exit examination). No personnel shall perform work on another hazardous waste site between entrance and exit examinations, unless specifically approved by the SSO.

8.1 Medical Surveillance Protocol

8.1.1 Medical surveillance protocol is the physician's responsibility but shall meet the requirements of OSHA Standard 29 CFR 1910.120 for all personnel. The protocol shall be selected by the physician.

8.1.2 Additional clinical tests may be included at the discretion of the attending Physician performing the medical examination.

8.2 Non-Scheduled Medical Examinations

The scope of the Non-Scheduled Medical Examinations shall be determined by the physician.

8.2.1 Non-scheduled medical examinations shall be conducted under the following circumstances:

- After acute exposure to any toxic or hazardous material.
- At the discretion of the SSO and/or the Physician, when an employee has been exposed to potentially dangerous levels of toxic or hazardous materials.
- At the discretion of the SSO and/or the Physician, and at the request of an employee with demonstrated symptoms of exposure to toxic or hazardous materials.

8.3 Documentation and Recordkeeping

8.3.1 The examining Physician shall notify the SSO in writing that the individual has received a medical examination and shall advise as to any specific limitations upon such individual's ability to work at the project site which were identified as a result of the examination. Appropriate action shall be taken in light of the advice given pursuant to this paragraph.

8.3.2 The ability of on-site personnel to wear respiratory protection during hazardous waste activities shall be certified by the Physician. Cardiopulmonary system examination and pulmonary function testing are minimum requirements.

8.3.3 The Physician shall maintain and provide access for employees to his medical surveillance records according to OSHA requirement (29 CFR 1910.20). These records shall be maintained for a period of 40 years.

9.0 ENVIRONMENTAL AND PERSONAL MONITORING PROGRAM

9.1 General

In order to protect site workers from harmful levels of airborn toxic materials, potentially explosive or oxygen deficient environments, or heat stress, regular environmental and personnel monitoring may be accomplished to document exposures and to decide when to increase protective measures.

9.2 Air Monitoring

Particular phases of work or tasks may require the utilization of specific air monitoring equipment to detect relative levels of contaminants or identify unknown environments.

Air monitoring will be conducted by the WFC Air Tester for the express purpose of safe-guarding the health and welfare of site workers and the general public residing in the vicinity of the UAI Site. The WFC Air Tester will maintain constant communication with the SSO. The on-site air monitoring will include using direct reading air monitoring equipment.

9.2.1 Air Monitoring Instrumentation

On-site air monitoring will be performed using the following direct reading instruments:

- Century OVA-128 portable flame ionization device for detection of volatile organic vapors (with and without a methane filter)
- PhotoVac Microtip portable photoionization device for the detection of organic vapors
- Portable combustible gas/oxygen/hydrogen sulfide detector will be available for determining lower explosive limits, oxygen and hydrogen sulfide levels in any identified confined spaces. Under no circumstances shall confined spaces be entered unless discussed with the WFC Project Director and this plan is revised to incorporate additional safety requirements and all personnel are trained appropriately to deal with confined space hazards
- Draeger gas detector tubes for detecting specific hydrocarbons (e.g. TCE and BETX) should OVA/TIP readings exceed 1 ppm.
- Digital dust indicator for monitoring of particulate emissions.

All monitoring and surveillance equipment will be operated, maintained and calibrated each working day in accordance with the manufacturer's instructions and WFC's quality assurance procedures. Organic vapor monitoring will be conducted by trained WFC field staff prior to, during and following sampling, and disturbance of soils or sediments at a sampling site. Should contamination levels indicated high hazard potential, the SSO will review monitoring procedures and results.

A daily air monitoring for will be used to record monitoring data (See App. H).

9.2.2 Contaminants of Concern

VOCs (TCE, BETX), Oxygen, Combustible Gas as Methane, Hydrogen Sulfide (H_2S), Respirable Dusts.

9.2.3 Air Monitoring Protocol

Air monitoring protocols for each area will differ since target populations, contaminant concentrations, and atmospheric conditions will vary. Monitoring will be conducted within the work zones described below and at site perimeters.

Air monitoring conducted at the sampling locales will focus on workers' breathing zones and thus may include personal breathing zone samples. Air monitoring just outside of these locations will consist of instruments attempting to quantify the types and degrees of emissions originating from sampling sites.

Changes in he wind direction will require reassessment of air monitoring locations. Wind directions may be determined with the aid of wind sock. Levels of contaminants that warrant use of respiratory protection by site workers may require initiation of site perimeter and personal sampling as deemed necessary by the SSO.

9.2.3.1 Air Monitoring Locations

The primary areas or zones to be monitored during the project are:

- Groundwater sampling locations
- Empty drum storage area
- Turning pile area
- Former above ground storage tank
- Turnings drum storage area
- Underground utility survey

9.2.3.2 Duration and Frequency

Monitoring is required daily or as deemed necessary by the SSO, during all activities in the Exclusion Zone, particularly during intrusive activities. The SSO may modify the work zone sampling frequency upon review of previously analyzed work zone samples.

9.2.3.3 Background Air Monitoring

Background monitoring for contaminants must occur at the upwind perimeter of the Exclusion Zone, at the start of each day, prior to allowing workers to enter the Exclusion Zone. Data must be annotated in the Air Monitoring Form for that day.

9.2.3.4 Perimeter Air Monitoring

Air monitoring will be accomplished at the upwind and downwind perimeter of the drilling and sampling locations, if deemed necessary by the SSO, to document real time levels of contaminants which might be moving off-site.

9.2.3.5 Exclusion Zone Air Monitoring

Air monitoring conducted in the Exclusion Zone will focus on real time measurement of toxic compounds that pose inhalation hazards, levels of flammable compounds for explosive hazards, and oxygen deficient atmospheres.

9.2.3.6 Vapor Emission

If the ambient air concentration of organic vapors exceeds 5 ppm (or 5 units) above background at the perimeter of the Exclusion Zone, work at that location will be stopped, and the area evacuated until a review of work procedures, air monitoring needs, and use of appropriate respiratory protection and equipment is performed by the SSO. In addition, downwind monitoring at the site perimieter will be performed to determine whether off-site contaminant migration is occurring. Work will proceed only after review and approval by the SSO and the appropriate corrective action is taken or level of protection established. More frequent intervals of monitoring will be conducted as directed by the SSO including Draeger screening for specific contaminants.

If the organic vapor level decreases below 5 ppm (or units) activities can resume but more frequent intervals of monitoring, as directed by he SSO, must be conducted. If the organic vapor levels are greater than 5 ppm but less than 25 ppm over background at the perimeter of he Exclusion Zone, activities can resume provided Level B protection is worn until levels fall below background.

If the organic vapor level is above 25 ppm at the perimeter of the Exclusion Zone, work activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the SSO will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

9.2.3.7 Respirable Dust Action Levels

Dust may have the potential to be generated during field investigation activities. It may also be generated by activities not related to the investigation such as vehicle traffic or other site activities. Dust suppression techniques including the wetting of surface areas or the use of cover material will be implemented should the digital dust monitor indicate action is required **or** visible emissions can be avoided and dust may be as a result of investigative activities of contaminated areas. Vehicle speeds in unpaved areas of the site will be restricted to 5 mph.

Any dust generated will be monitored for the presence of respirable particles (<10 um) in order to preclude potential hazards. Background and work area dust particulate levels will be determined prior to and during field activities that may generate dust. If respirable dust particulate levels exceed 2.5 times background or 150 $\mu g/m^3$, then corrective action will be required. If the above action levels are exceeded, all operations will stop as required by NYSDEC.

A report on the incident will be made to the NYSDEC Project Manager within seven days, stating the particulate (or organic vapor) levels, wind direction and the corrective actions taken (See Community Air Monitoring Plan, Section 9.2.3.8).

9.2.3.8 Community Air Monitoring Plan

Air monitoring for volatile compounds and particulates will be accomplished at the upwind and downwind perimeter of the Exclusion Zone to document real time levels of contaminants which might be moving off-site. The plan must include the following:

- VOCs must be monitored at the downwind perimeter of the Exclusion Zone daily at 2-hour intervals. If total organic vapor levels exceed 5 ppm above background, activities must be halted and monitoring continued under the provisions of Major Vapor Emission Response Plan (see below). All readings must be recorded and be available for NYSDEC and NYSDOH personnel to review.
- Particulates should be continuously monitored downwind of the Exclusion Zone with a portable monitor that would have an alarm set at 150 $\mu g/m^3$. If downwind particulate levels, integrated over a period of 15 minutes, exceed 150 $\mu g/m^3$ than particulate levels upwind of the survey or work site would be measured. If the downwind particulate levels is more than 100 $\mu g/m^3$ greater than the upwind particulate level, then activities must be stopped and corrective action taken. All readings must be recorded and be available for NYSDEC and NYSDOH personnel to review.

9.2.3.9 Major Vapor Emission

If organic levels greater than 5 ppm (or 5 units) above background are identified 200' downwind from the Exclusion Zone, or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If the following cessation of work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200' downwind or half the distance to the nearest residential or commercial property from the Exclusion Zone, then air quality must be monitored within 20' of the perimeter of the nearest residential or commercial structure (10' zone).

If either of the following criteria are exceeded in the 20' zone, then the Major Vapor Emission Response Plan shall be automatically implemented:

- organic vapor levels approaching 5 ppm above background for more than 30 minutes
- organic vapor levels greater than 10 ppm above background for any time period

9.2.3.10 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. The local police authorities will immediately be contacted by the SSO and advised of the situation.
2. Frequent air monitoring will be conducted at 30 minute intervals within the 20' zone. If two consecutive readings below action levels are measures, air monitoring may be halted or modified by the SSO.
3. All emergency contacts will go into effect as appropriate.

9.2.3.11 Off-Site Migration Procedures

The same procedures and protocol practices by on-site workers will aid in preventing any potential adverse conditions with respect to areas adjacent to the site. That is, these procedures are designed to assist in eliminating or minimizing the potential for extensive off-site migration. In the unlikely event that such migration occurs, the following notification procedures and work procedures are listed below:

1. Notification of local police, fire and rescue personnel advising them of the remedial investigation activities and the schedule of events on-site.
2. Immediate notification of NYSDEC, NCHD, NYSDOH, and local officials in the event of a threatening hazardous condition that may effect the health and safety of on-site workers and the surrounding community.
3. Decontamination procedures for equipment to prevent off-site migration of contaminants.
4. Use of a flame or photoionization detector to monitor volatile organic vapors and potential off-site migration of contaminants.
5. Use of a digital dust indicator or monitor dust particulate levels and potential off-site airborne migration of contaminants.
6. Wetting down the ground surface or using clean cover material or calcium chloride to suppress particulate dust in the event that dust levels in the air of the work area are exceeded.

9.2.4 Action Level Criteria

ACTION LEVEL	ACTION TO BE TAKEN
OVA/TIP	
Background	**Level D**
Above background to 5 units* at breathing zone	Halt work, evacuate area and allow area to ventilate prior to resuming work. Contact WFC SSO. Upgrade to **Level C** pending approval by SSO.
Above 5 units* at breathing zone	Halt work, evacuate work area and allow area to ventilate prior to resuming work. Contact WFC SSO. **Level B** protection is required.
DIGITAL DUST INDICATOR	
Respirableble dust $\geq$ 0.15 $\mu g/m^3$	Halt work, evacuate area and allow to ventilate prior to resuming work. Should levels persist, upgrade to **Level C** protection is required. Resume work pending approval by SSO.
COMBUSTIBLE GAS METER	
Greater than 10% LEL scale	Halt work, evacuate area and allow area to ventilate to below 10% LEL prior to resuming work. Contact WFC SSO.
OXYGEN	
Less than 20.5%	Continuous monitoring. Consider engineering controls.

Less than 19.5%	Evacuate work area. Institute ventilation & engineering controls. Maintain site conditions for at least 15 min. before proceeding. Contact WFC SSO.
Greater than 22%	Continuous monitoring. Identify combustion sources.
Greater than 23.5%	Evacuate. Institute engineering controls as necessary before proceeding. Explosive condition may be present. Contact WFC SSO.
HYDROGEN SULFIDE	
Less than 10 ppm at breathing zone	**Level D**, cont. monitoring
Above 10 ppm at	Halt work, evacuate area & breathing zone allow area to ventilate to below 10 ppm. Contact WFC SSO.

* **Units equal total ionizable organic/inorganic vapors and gases**
** **Reading sustained for one (1) minute (60 seconds) or longer**

General visual observation shall also be used during all intrusive activities to identify airborne releases (vapors, smoke, etc.) changes in the coloration of excavated materials, changes to the structural integrity of the surface or mechanical integrity of the equipment. Should such conditions be noticed or encountered, work shall be halted, and the area evacuated until such time the SSO can be contacted and specific procedures for characterizing and handling the hazard can be developed.

The SSO, or his on-site designee, shall observe site conditions daily with special attention to the aforementioned conditions. Depending on site conditions, additional personal protection measures shall be implemented during the course of site work.

9.2.5 Personal Exposure Monitoring

In addition to direct reading measurements, personal sampling may be conducted as deemed necessary by the SSO and CIH. The results of personal monitoring will be evaluated by the CIH. If results are above the Permissible Exposure Limits (PELs), OSHA Actions Levels, or ACGIH Threshold Limit Values (TLVs), an exposure monitoring program will be set up, as required by the applicable OSHA Standard, for the duration of the project.

9.3 Quality Assurance and Control

All monitoring instruments will be protected from surface contamination during use to allow easy decontamination. All instrumentation shall be calibrated before and after use and operational checks conducted periodically in the field over the duration of the day's field activities.

9.3.1 The following data shall be recorded by the WFC Air Tester on the Air Monitoring Data form:

- Date and time of monitoring;
- air monitoring location;
- instrument, model #, serial #;
- calibration/background levels;
- results of monitoring; and
- SSO signature.

Note: See Appendix H for Air Monitoring Results Form

9.3.2 Interpretation of the data and any further recommendations shall be made by the SSO.

9.3.3 Air monitoring results shall be given verbally to SSO following each site scan that indicates volatile organic vapor concentrations in excess of the action levels. Results will then be documented in writing and provided to the SSO by the WFC Air Tester at the end of that work day.

9.4 Heat Stress Monitoring

Heat Stress guidelines are described in detail in Attachment A.

10.0 SITE CONTROL MEASURES

10.1 Work Zones

Those tasks discussed previously in Section 5.0 will be subject to zonation. The Restricted Zone (RZ) will be identified by WFC as the area within which all project operations take place. At each drilling and sampling site, three work areas shall be established: the Exclusion Zone (EZ), Contaminant Reduction Zone (CRZ), and Support Zone (SZ). Only authorized personnel will be allowed in the RZ. As long as an Exclusion Zone exists, a five foot wide (or distance determined by the SSO) strip of land bordering the EZ will be considered the CRZ if applicable. In addition to this strip of land, a specially demarcated area that connects the decontamination area to the CRZ will also be treated as an extension of the CRZ. All other areas inside the restricted area that are not an active Exclusion or Contaminant Reduction Zone will be treated as a Support Zone. Detailed explanations of each Zone are provided below.

10.1.1 Exclusion Zone

The Exclusion Zone includes the intrusive activities and isolates the area of contaminant generation and restricts (to the extent possible) the spread of contamination from active areas of the site to support areas and off-site locations. This area will encompass all intrusive work. The Exclusion Zone is demarcated by the Hot Line (i.e.; a tape or rope line or physical barrier). Personnel entering the Exclusion Zone must:

- enter through a controlled access point (the Contaminant Reduction Zone),
- wear the prescribed level of protection (see Section 7.0), and
- be authorized to enter the Exclusion Zone (see Section 4.0, 6.0, and 8.0).

Any personnel, equipment, or materials exiting the Exclusion Zone will be considered contaminated. Personnel will be subject to decontamination; equipment and materials will either be subject to decontamination or containerized in uncontaminated devices.

Specific access for emergency services to areas of specific site operations will be established by the SSO prior to commencing any operation. The delineated area of the Exclusion Zone may vary with task. (See Section 5.0 for specific task descriptions and the levels of protection used will range from Level D to Level B.)

10.1.2 Contaminant Reduction Zone

Moving upwind from the Exclusion Zone, starting at the Hot Line and continuing to the Contaminant Control Line is the Contaminant Reduction Zone. This zone will border the Exclusion Zone and extend a distance of 20 feet in width, or as deemed necessary by the SSO. The Contaminant Reduction Zone is a transition zone between contaminated and uncontaminated areas of the site. When contaminated personnel, equipment, or materials cross the Hot Line, they are assumed to be contaminated from site operations. Being subjected to the decontamination process, they become less contaminated; when they reach the Contaminant Control Line, they are considered clean and can exit this zone without spreading contamination.

Within the Contaminant Reduction Zone is the Contaminant Reduction Corridor (CRC), where materials necessary for personnel and equipment decontamination are kept. A separate area shall be established for heavy equipment decontamination. In addition, certain safety equipment (e.g.; emergency eye wash, fire extinguisher, and first aid kit) are staged in this zone.

The level of protection to be used within the Contaminant Reduction Zone will normally be Level D. However, the SSO shall determine appropriate levels of protection based upon air monitoring readings, and visual inspection of personnel, and equipment operations in the Contaminant Reduction and Exclusion Zones. Equipment operators (cranes & trucks) physically performing tasks outside the CRC may be exempt from this requirement as approved by the SSO.

10.1.3 Support Zone

The Support Zone is the outermost zone of the site, separated from the Contaminant Reduction Zone by the Contamination Control Line; it is considered a clean area. Movement of personnel and materials from this zone into restricted areas and the Contaminant Reduction Zone will be through access points controlled by the SSO.

The Support Zone contains the necessary storage of equipment, stockpiling of material and support facilities (including personal hygiene facilities) for site operations. Eating, drinking, and smoking will be allowed only in this zone. It also contains the command post, communications center, security check point and source of emergency assistance for operations in the Exclusion Zone and Contaminant Reduction Zone. A log of all persons entering the site will be maintained by the SSO.

The level of protection used in this zone is general site safety equipment (see Section 7.0).

10.2 Drilling Operations Start-up

10.2.1 The location and depth of each bore hole will be determined on-site.

10.2.2 Staging for excavation material will be determined prior to commencing drilling operations.

10.2.3 No personnel will be positioned downwind of Exclusion Zone during drilling operation.

10.2.4 Location of staging area for support equipment (i.e.; air bottles) will be determined on-site however, it must be upwind and in close proximity to the Exclusion Zone.

10.2.5 The hollow-stem augers, drilling rods and drill cuttings shall be thoroughly wetted with water to limit airborne releases.

10.2.6 The driller will then decontaminate equipment and the SSO will survey the rig for any contamination prior to drilling the next hole.

10.3 Buddy System

10.3.1 All on-site personnel shall utilize a buddy system when any task performed at the UAI Site requires:

- Personnel to assist in completing an activity.
- Intrusive work performed in the Exclusion Zone (e.g.; drilling, boring, compacting or backfilling material, etc.).
- The use of protective clothing.
- Communication between the Exclusion Zone and confined space work and the Command Post (e.g.; security, safety, WFC trailer).

10.3.2 The SSO shall enforce the buddy system and has the authority to modify the criteria stated above to deal with changing site specific and environmental conditions.

10.3.3 In order to ensure that help will be provided in an emergency, all on-site personnel shall be in line-of-sight contact or in communication with the SSO when working in the Exclusion Zone.

10.4 Site Communications Plan

10.4.1 Internal communications (within the UAI Site and adjacent office trailer area) on-site should be instituted prior to initiating any task in the Exclusion Zone or the Contaminant Reduction Zone.

10.4.2 Internal communications will be used by on-site supervisory personnel.

10.4.3 The SSO shall ensure all site personnel are trained to use internal communications to:

- alert personnel on-site of emergencies;
- pass along safety information (such as for heat stress, cold stress control, or rest period time, etc.);
- changes in work scope, scheduling or sequencing of operations; and
- maintain site control (such as notification of vandalism, intruders, or violations of SHSP protocol).

10.4.4 Verbal communications and hand signals shall be used for all tasks of the UAI Project. However, for those tasks performed in Level D or Level C, radio communications may be used (see Appendix I).

10.4.5 Any Exclusion Zone work activity being performed out of the line of sight of the SSO, may require use of radio communications. The SSO may designate a radio operator at the location where the work activity is being performed.

10.4.6 Air horns shall be positioned at any Exclusion Zone work area to be used for emergency response only. The SSO shall designate air horn blast sequences for identification of work location, type of emergency, and need for evacuation of all personnel (see Appendix I).

10.4.7 Wind direction indicators shall be installed such that a line-of-sight is maintained with all personnel in all work zones. The SSO shall designate specific locations for wind direction indicators.

10.4.8 All moving machinery, bulldozers, cranes, dump trucks, etc. shall have working backup alarms.

10.4.9 External communications (outside the UAI Site and adjacent trailer area) shall be maintained at the on-site trailer and be used to coordinate emergency response, report to management, and maintain contact with essential off-site personnel.

10.4.10 All on-site personnel shall be informed of external communications hardware (such as telephone, etc.) and the necessary telephone numbers to contact in the event of an emergency situation (fire, police, ambulance, etc.).

10.4.11 All emergency numbers shall be posted in the command post (see Appendix A for listing of important telephone numbers).

10.4.12 Appropriate action shall be taken should any hazardous environmental condition be observed on site. These conditions and the appropriate action to be taken as follows:

OBSERVATION	ANTICIPATED HAZARD	ACTION
Muddy condition	Personnel/slip equipment instability	Monitor work until condition improves
Lighting	Electrocution	Stop work until condition subsides
Horn blasts or other notification by site personnel	Site emergency	Stop work - evacuate to trailer - follow emergency notification procedures
Personal injury	Other personnel may be affected	Follow emergency notification procedures
Personal fatigue	Heat stress	Follow heat stress guidelines
Windy condition	Overhead hazards, visual impariment	Stop work until condition subsides
Train accident overhead	Site emergency	Stop work - evacuate to trailer - follow emergency notification procedures

10.5 Medical Assistance (see Appendix A for complete listing of emergency contacts)

The primary source of medical assistance for the UAI Site is:
St. Elizabeth Hospital
Location: 2209 Genessee Street
Telephone: (emergency room) 315-798-8111
Directions: Leland Avenue to Wurtz Avenue to Genessee Street

EMERGENCY TELEPHONE NUMBERS

AGENT/FACILITY	TELEPHONE	EMERGENCY
EMS (Ambulance)		911
Utica Police Department		911
Utica Fire Department		911
St. Elizabeth Hospital		315/798-8111
WFC Project Director	516/364-9880	
FSC Headquarters	203/964-9199	

ON-SITE FIRST AID EQUIPMENT

A first aid kit will be available at the site

EMERGENCY MEDIAL INFORMATION FOR SUBSTANCES PRESENT

SUBSTANCE	EXPOSURE SYMPTOMS	FIRST AID
VOCs	Dermal: irritation Inhalation: dizziness, nausea	Rinse affected area with water Ventilate, artificial respiration
H_2S	Inhalation: irritation	Ventilate, artifical respiration
Methane	Inhalation: dizziness, nausea	Ventilate, artifical respiration

GENERAL EMERGENCY PROCEDURES

The following standard emergency procedures will be used by on-site personnel. The SSO shall be notified of any on-site emergencies and shall be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury: Administer first aid and/or CPR, and arrange for medical attention

Fire/Explosion: The fire department shall be alerted by the field engineer. Personnel shall move a safe distance form the involved area.

10.6 Safe Work Practices

Workers are expected to adhere to established safe work practices for their respective specialties. The need to exercise caution in the performance of specific work tasks is made more acute due to:

- physical, chemical, and toxicological properties of contaminated material present;
- other types of hazards present, such as heavy equipment, falling objects, loss of balance or tripping;
- weather restrictions;
- restricted mobility and reduced peripheral vision caused by the protective gear itself;
- the need to maintain the integrity of the protective gear; and
- the increased difficulty in communicating caused by respirators.

Work at the site will be conducted according to established protocols and guidelines for the safety and health of all involved. Among the most important of these principles for working at the UAI Site are the following:

10.6.1 General

- In any unknown situation, always assume the worst conditions and plan responses accordingly.
- Because no personal protective equipment is 100 percent effective, all personnel must minimize contact with contaminated materials. Plan work areas, decontamination areas, and procedures accordingly.
- Smoking, eating, chewing gum or tobacco, or drinking in the Contaminant Reduction Zone and the Exclusion Zone will not be allowed. Oral ingestion of contaminants is the second most likely means of introducing toxic substances into the body (inhalation is the first).
- Work breaks should be planned to prevent stress related accidents or fatigue related to wearing protective gear.
- Medicine and alcohol can potentiate the effects from exposure to toxic chemicals and cold stress. Prescribed drugs should not be taken if working in the Contaminant Reduction Zone or Exclusion Zone, unless approval has been given by the physician. Alcoholic beverage consumption shall be prohibited on the site.
- Personnel must be observant of not only one's own immediate surrounding, but also those of others. Everyone will be working under constraints, therefore, a team effort is needed to notice and warn of impending dangerous situations. Extra precautions are necessary when working near heavy equipment and while utilizing personal protective gear because vision, hearing, and communication will be restricted.
- Contact lenses are not allowed to be worn on site; if corrosive or lachrymous substances enter the eyes, proper flushing is impeded.
- All facial hair that interferes with the respirator facepiece fit, must be removed prior to donning a respirator for all tasks requiring **Level C** or **Level B** protection.
- Personnel must be aware that chemical contaminants may mimic or enhance symptoms of other illnesses or intoxication. Avoid excess use of alcohol or working while ill during the duration of task assignment.

- The SSO will maintain records in a bound notebook (e.g.; daily activities, meetings, incidents, and data). Notebooks will remain on-site for the duration of the project so that other safety and health personnel may add information, thereby maintaining continuity. These notebooks and daily records will become part of the permanent project file.

10.6.2 Site Personnel

- All personnel at the UAI Site shall be identified to the SSO.
- All personnel operating in respective work zones shall dress according to the protection levels set forth in this SSHP (see Section 7.0).
- No red head wooden matches or lighters of any kind will be allowed in the Contaminant Reduction Zone or Exclusion Zone.
- All personnel will have their buddy with them when the buddy system is in effect.
- All personnel will notify the SSO of any unusual occurrences that might effect the overall safe operation of the site.
- Any time a fire extinguisher is used, personnel shall notify the SSO of what took place.
- All injuries and accidents shall be immediately reported to the SSO and the appropriate reports filed (see Appendix K-1 and K-2).

10.6.3 Traffic Safety Rules

- Any vehicles that will not be involved in the site operations will be secured and the motor shut down.
- Only personnel assigned to this job will be allowed to enter the site. Any other people, whether from OSHA, EPA, or vendors supplying equipment, etc., will have to be met prior to entering the site.
- At no time will any equipment be allowed to block any access road. If in the moving of said equipment, a temporary blockage will exist, that equipment will have an operator available to move that equipment.
- The locations of all fire fighting equipment, valves, hydrants, hose storage places, and fire extinguishers will be indicated to all personnel so that they will not be inadvertently blocked at any time.
- All deliveries by outside personnel will be met at the gate and escorted by personnel onto the site.

10.6.4 Equipment Safety Rules

- Proper loading and operation of trucks on-site shall be maintained in accordance with DOT requirements covering such items as grounding, placarding, driver qualifications and the use of wheel locks.
- Operation of heavy construction equipment shall be in accordance with OSHA regulations 29 CFR 1910 and 1926.
- All equipment that is brought on-site will be available for inspection by the SSO.
- The SSO, or designee, will assign protective equipment to all site personnel and this equipment will be made available for inspection at anytime.
- All equipment shall be installed with appropriate equipment guards and engineering controls. These include rollover protective structures.
- Safe distances will be maintained when working around heavy equipment.
- All equipment and tools to be operated in potentially explosive environments must be intrinsically safe and not capable of sparking or be pneumatically or hydraulically driven. Portable electric tools and appliances can be used (where there is no potential for flammable or explosive conditions use three-wire grounded extension cords to prevent electric shocks.) Ground fault interrupters shall be used as well.
- With hydraulic power tools, fire-resistant fluid that is capable of retaining its operating characteristics at the most extreme temperatures shall be used.
- Cutting or welding operations shall not be carried out without the approval of the SSO and WFC FOM.
- At the start of each work day and on a weekly basis, inspection of brakes, hydraulic lines, light signals, fire extinguishers, fluid levels, steering, and splash protection shall be made by the equipment operators (see Appendix L for the Daily Safety Inspection Check List).
- All non-essential people shall be kept out of the work area.
- Loose-fitting clothing or loose long hair around moving machinery shall be prohibited.
- Cabs shall be free of all non-essential items and all loose items shall be secured.
- The rated load capacity of a vehicle shall not be exceeded.

- Dust control measures shall be employed by WFC to prevent the movement of dusts from contaminated areas to clean areas. The method employed shall be determined by WFC and reviewed by the SSO and the WFC FOM.
- Equipment operators shall report to their supervisor(s) any abnormalities such as equipment failure, oozing liquids, unusual odors, etc.
- When an equipment operator must negotiate in tight quarters, a second person shall be used to ensure adequate clearance.
- A signalman shall be used to direct backing as necessary.
- Refueling shall be done in safe areas. Engines should not be fueled while vehicle is running. Ignition sources near a fuel area shall be prohibited.
- All blades and buckets shall be lowered to the ground and parking brakes set before shutting off the vehicles.
- An ongoing maintenance program for all tools and equipment shall be implemented by WFC or the responsible subcontractor equipment supervisor. All tools and moving equipment shall be regularly inspected to ensure that parts are secured and intact with no evidence of cracks or areas of weakness, that the equipment turns smoothly with no evidence of wobble, and that it is operating according to manufacturer's specifications.
- Tools shall be stored in clean, secure areas so that they will not be damaged, lost, or stolen.
- All heavy equipment that is used in the Exclusion Zone shall be kept in that zone until the project is done or the equipment is decontaminated. Completely decontaminate such equipment before moving it into the Support Zone.

10.6.5 Drilling Equipment Safety Rules

Drill rig maintenance and safety is the responsibility of the drill rig operator. The following is provided as a general guideline for safe drilling practices on-site:

Off-Road Movement of Drill Rigs

The following safety guidelines relate to off-road movements:

- Before moving a drill rig, first walk the route of travel, inspecting for depressions, slumps, gullies, ruts and similar obstacles.

- Always check the brakes of a drill rig carrier before traveling, particularly on rough, uneven or hilly ground.
- Discharge all passengers before moving a drill rig on rough or hilly terrain.
- Engage the front axle (for 4X4, 6X6, etc. vehicles or carriers) when traveling off highway on hilly terrain.
- Use caution when traveling side-hill. Conservatively evaluate side-hill capability of drill rigs, because the arbitrary addition of drilling tools may raise the center of mass. When possible, travel directly uphill or downhill.
- Attempt to cross obstacles such as small logs and small erosion channel or ditches squarely, not at an angle.
- Use the assistance of someone on the ground as a guide when lateral or overhead clearance is close.
- After the drilling has been moved to a new drilling site, set all brakes and/or locks. When grades are steep, block the wheels.
- Never travel off-road with the mast (derrick) of the drill rig in the raised or partially raised position.
- Tie down loads on the drill rig/support trucks during transport.

Overhead and Buried Utilities

- The use of a drill rig near electrical power lines and other utilities requires that special precautions be taken by both supervisors and members of the exploration crew. Electricity can shock, it can burn, and it can cause death!
- Overhead/buried utilities should be located, noted and emphasized on all boring location plans and boring assignment sheets.
- Before raising the drill rig mast (derrick) on a site in the vicinity of power lines, walk completely around the drill rig. Determine what the minimum distance from any point on the drill rig to the nearest power line will be when the mast is raised and/or being raised. Do not raise the mast or operate the drill rig if this distance is less than 20 feet. In general, the distance between the overhead power line and the boom should be no less than the height of the boom.
- Keep in mind that both hoist and overhead power lines can be moved toward each other by the wind.

- Drilling personnel should double-check any side underground electrical and piping drawings prior to initiating drilling. If an obstruction is encountered during drilling, proceed with extreme caution until the possibility of an exposed electrical line or combustible product pipe line is excluded.

Clearing the Work Area

- Prior to drilling, adequate site cleaning and leveling should be performed to accommodate the drill rig and supplies and provide a safe working area.
- Drilling should not be commenced when tree limbs, protruding objects, unstable ground or site obstructions or debris cause unsafe tool handling conditions and/or limited, awkward work spaces.
- An area clear of obstruction or debris should be maintained 180 degrees around the drilling or sampling activities, where practical.

NOTE: In coordination with the Drilling Crew, the WFC FOM will review the precautions taken to insure that the drill rig is leveled and stabilized.

Housekeeping On and Around the Drill Rig

- The first requirement for safe field operations is that the drilling crew safety supervisor understands and fulfills the responsibility for maintenance and "housekeeping" on and around the drill rig.
- Suitable storage locations should be provided for all tools, materials, and supplies so that they can be conveniently and safely handled without hitting or falling on a member of the drill crew or a visitor, without creating tripping hazards and without protruding at eye or head level.
- Avoid storing or transporting tools, materials, or supplies within or on the mast (derrick) of the drill rig.
- Pipe, drill rods, bit casings, augers and other drilling tools should be orderly stacked on racks or sills to prevent spreading, rolling, and sliding.
- Penetration of other driving hammers should be placed at a safe location on the ground or be secured to prevent movement when not in use.

- Work areas, platforms, walkways, scaffolding and other access ways should be kept free of materials, obstructions and substances such as ice, excess grease or oil that could cause a surface to become slick or otherwise hazardous.
- Keep all controls, control linkages, warning, and operation lights and lenses free of oil, grease and/or ice.
- Do not store gasoline in any portable container other than a non-sparking, red container with a flame arrester in the fill spout and having the word "gasoline" easily visible.
- Welding gas cylinders should be stored in an upright position to avoid gas leaks.

Safe Use of Hand Tools

There are almost an infinite number of hand tools that can be used on or around a drill rig. "Use the tool for its intended purpose" is the most important rule. The following are a few specific and some general suggestions which apply to the safe use of several hand tools that are often used on and around drill rigs:

- When a tool becomes damaged, either repair it before using it again or dispose of it.
- When using a hammer or a chisel, any kind of hammer or chisel, for any purpose, wear safety glasses and require all others around you to wear safety glasses.
- Keep all tools clean and orderly stored when not in use.
- Replace hook and heel jaws when they become visibly worn.
- When breaking tool joints on the ground or on a drilling platform, position your hands so that your fingers will not be smashed between the wrench handle and the ground or the platform, should the wrench slip or the joint suddenly let go.

Safe Use of Wire Line Hoists, Wire Rope and Hoisting Hardware

- The use of wire line hoists, wire rope and hoisting hardware should be as stipulated by the American Iron and Steel Institute's Wire Rope Users Manual.

- All wire ropes and fittings should be visually inspected during use and thoroughly inspected at least once a week for: abrasion, broken wires, wear, reduction in rope diameter, reduction in wire diameter, fatigue, corrosion, damage from heat, improper weaving, jamming, crushing, bird caging, kinking, core protrusion and damage to lifting hardware and any other feature that would lead to failure. Wire ropes should be replaced when inspection indicates excessive damage according to the wire rope users manual.
- If a ball-bearing type hoisting swivel is used to hoist drill rods, swivel bearings should be inspected and lubricated daily to assure that the swivel freely rotates under load.
- If a rod slipping device is used to hoist drill rods, do not drill through or rotate drill rods through the slipping device, do not hoist more than 1-foot (o.3m) of the drill rod column above the top of the mast (derrick), do not hoist a rod column with loose tool joints and do not make up, tighten or loosen tool joints while the rod column is being supported by a slipping device. If drill rods should slip back into the borehole, do not attempt to break the fall of the rods with your hands.
- Most sheaves on drill rigs are stationary with a single part line. The number of parts of line should not ever be increased without first consulting with the manufacturer of the drill rig. Wire ropes must be properly matched with each sheave.
- The following procedures and precautions must be understood and implemented for safe use of wire ropes and rigging hardware.
- Use tool handling hoists only for vertical lifting of tools (except when angle hole drilling). Do not use tool handling hoists to pull on objects away from drill rig; however, drills may be moved using the main hoist as the wire rope is pulled through proper sheaves according to the manufacturer's recommendations.
- When stuck tools or similar loads cannot be raised with a hoist, disconnect the hoist line and connect the stuck tools directly to the feed mechanisms of the drill. Do not use hydraulic leveling jacks for added pull to the hoist line or the feed mechanisms of the drill.

- When attempting to pull out a mired down vehicle or drill rig carrier, only use a winch on the front or rear of the vehicle or drill rig carrier and stay as far as possible away from the wire rope. Do not attempt to use tool hoists to pull out a mired down vehicle or drill rig carrier.
- Minimize shock loading of a wire rope - apply loads smoothly and steadily.
- Protect wire rope from sharp corners or edges.
- Replace faulty guides and rollers.
- Replace worn sheaves or worn sheave bearings.
- Replace damaged safety latches on safety hooks before using.
- Know the safe working load of the equipment and tackle being used. Never exceed this limit.
- Clutches and brakes of hoists should be periodically inspected and tested.
- Know and do not exceed the rated capacity of hooks, rings, links, swivels, shackles and other lifting aids.
- Always wear gloves when handling wire ropes.
- Do not guide wire ropes or hoist drums with your hands.
- Follow the installation of a new wire rope, first life a light load to allow the wire rope to adjust.
- Never carry out any hoisting operations when the weather conditions are such that hazards to personnel, the public, or property are created.
- Never leave a load suspended in the air when the hoist is unattended.
- Keep your hands away from hoists, wire rope, hoisting hooks, sheaves and pinch points as slack is being taken up and when the load is being hoisted.
- Never hoist the load over the head of the clutch, or leave the hydraulic rotation control disengaged, or the transmission in low gear, or the engine running at low RPM.
- The operator and tool handler should establish a system of responsibility for the series of various activities required for auger drilling, such as connecting and disconnecting auger sections, and inserting and removing the auger fork. The operator must insure that the tool handler is well away from the auger column and that the auger fork is removed before starting rotation.
- Only use the manufacturer's recommended method of securing the auger to the power coupling. Do not touch the coupling or the auger with your hands, a wrench or any other tool during rotation.

- Whenever possible, use tool hoists to handle auger sections.
- Never place hands or fingers under the bottom of an auger section when hoisting the auger over the top of the auger section in the ground or other hard surfaces such as the drill rig platform.
- Never allow feet to get under the auger section that is being hoisted.
- When rotating augers, stay clear of the rotating auger and other rotating components of the drill rig. Never reach behind or around a rotating auger for any reason whatsoever.
- Never place your hands between the drill rig and an auger, even when attempting to free a damaged or bound Shelby tube from the auger.
- Never use your hands or feet to move cuttings away from the auger.
- Augers should be cleaned only when the drill rig is in neutral and the augers are stopped from rotating.

Safety During Drilling

Drilling tools should be safety checked prior to drilling:

- Water swivels and hoisting plugs should be lubricated and checked for "frozen" bearings before use.
- Drill rod chuck jaws should be checked periodically and replaced when necessary.
- The capacities of hoists and sheaves should be checked against the anticipated weight of the drill rod string plus other expected hoisting loads. All cables should be inspected daily.
- Special precautions that should be taken for safety rotary or core drilling involve chucking, joint break, hoisting and lowering of drill rods:
- Drill rods should not be braked during lowering into the hole with drill rod chuck jaws.
- Drill rods should not be held or lowered into the hole with pipe wrenches.
- If a string of drill rods are accidentally or inadvertently released into the hole, do not attempt to grab the falling rods with your hands or a wrench.
- In the event of a plugged bit or other circulations blockage, the high pressure in the piping and hose between the pump and the obstruction should be relieved or bled down before breaking the first tool joint.

- When drill rods are hoisted from the hole, they should be cleaned for safe handling with a rubber or other suitable rod wiper. Do not use your hands to clean drilling fluids from drill rods.
- If work must progress over a portable drilling fluid (mud) pit, do not attempt to stand on narrow sides or cross members. The mud pit should be equipped with a rough surface, fitted cover panels of adequate strength to hold drill rig personnel.
- Drill rods should not be lifted and leaned unsecured against the mast. Either provide some method of securing the upper ends of the drill rods sections for safe vertical storage or lay the rods down.
- All hydraulic lines should be periodically inspected for integrity and replaced as needed.

Start Up

- All drill rig personnel and visitors should be instructed to "stand clear" of the drill rig immediately prior to and during starting of an engine.
- Make sure all gear boxes are in neutral, all hoist levers are disengaged, all hydraulic levers are in the correct non-actuating positions and the cathead rope is not on the cathead before starting a drill rig engine.

General Safety During Drilling Operations

- Safety requires the attention and cooperation of every worker and site visitor.
- Do not drive the drill rig from hole to hole with the mast (derrick) in the raised position.
- Before raising the mast (derrick) look up to check for overhead obstructions. (Refer to previous Section on overhead and buried utilities.)
- Before raising the mast (derrick), all drill rig personnel and visitors (with exception of the operator) should be cleared from the areas immediately to the rear and the sides of the mast. All drill rig personnel and visitors should be informed that the mast is being raised prior to raising it.

- Before the mast (derrick) of a drill rig is raised and drilling is commenced, the drill rig must first be leveled and stabilized with leveling jacks and/or solid cribbing. The drill rig should be re-leveled if it settles after initial set up. Lower the mast (derrick) only when leveling jacks are down and do not raise the leveling jack pads until the mast (derrick) is lowered completely.
- Before starting drilling operations, secure and/or lock the mast (derrick), if required, according to the drill manufacturer's recommendations.
- The operator of a drill rig should only operate a drill rig from the position of the controls. The operator should shut down the drill engine before leaving the vicinity of the drill rig.
- Do not consume alcoholic beverages or other depressants or chemical stimulants prior to starting work on a drill rig or while on the job.
- Watch for slippery ground when mounting and dismounting from the platform.
- All unattended boreholes must be adequately covered or otherwise protected to prevent drill rig personnel, site visitors or animals from stepping or falling into the hole. All open boreholes should be covered, protected or backfilled adequately and according to local or state regulations on completion of the drilling project.
- "Horsing around" within the vicinity of the drill rig and tool and supply storage areas should never be allowed, even when the drill rig is shut down.
- Be careful when lifting heavy objects. Before lifting a relatively heavy object, approach the object by bending at the knees, keeping your back vertical and unarched while obtaining a firm footing. Grasp the object firmly with both hands and stand slowly and squarely while keeping your back vertical and unarched. In other words, perform the lifting with the muscles in your legs, not the muscles in your lower back.
- Drilling operations should be terminated during an electrical storm.
- The minimum number of personnel necessary to achieve the objectives shall be within 25 feet of the drilling or sampling activity. Back-up personnel should remain at least 25 feet from the drilling or sampling activity, where practical.

- Hard hats and steel boots are to be worn by all personnel in the vicinity of the drilling activities. Drilling personnel should not wear loose-fitting or baggy clothing which may be awkward or get caught on equipment. Jewelry, including rings and necklaces, should not be worn around electrical wires or rotating equipment.

10.6.6 Daily Housekeeping

The site and all work zones shall be kept in an orderly fashion and the site is to be left safe and secure upon completion of each day's work.

10.6.7 Site Personnel Conduct

- All site personnel shall conduct themselves properly and in accordance with generally accepted good work practice.
- At all times, the SSO will monitor all safe operations at the site. Any operation not within the scope of the SHSP will be discussed fully before that operation begins.

10.7 Temporary Structures

Temporary structures on the UAI Site will include an office trailer for WFC and subcontractors. In addition, personal hygiene and decontamination facilities may also be located on-site. Only the decontamination area will be accessible through the Contaminant Reduction Zone.

11.0 PERSONAL HYGIENE AND DECONTAMINATION

11.1 General

11.1.1 All personnel performing or supervising remedial work within a hazardous work area, or exposed or subject to exposure to hazardous chemical vapors, liquids, or contaminated solids, will observe and adhere to the personal hygiene-related provisions of this section.

11.1.2 Any personnel found to be repeatedly disregarding the personal hygiene-related provisions of the SHSP shall be barred from the site by the SSO.

11.1.3 All on-site personnel shall wear personal protective equipment as required at all times whenever entering the Contaminant Reduction Zone or the Exclusion Zone.

11.1.4 Personal hygiene and decontamination facilities, in accordance with OSHA 29 CFR 1910.120 (N), will be provided on-site and include the following:

- Storage and disposal containers for used disposable outerwear.
- Hand washing facilities.
- An uncontaminated lunch area.
- An uncontaminated rest/break area.
- Chemical toilet.

11.1.5 All personnel must enter and leave the work site through the facilities. The portable chemical toilet are located in the Support Zone.

- The personal hygiene and decontamination facilities are provided so that any personnel leaving the Exclusion Zone and the Contaminant Reduction Zone may perform decontamination, safely remove all protective outer clothing, and wash face and hands.
- Decontamination shall be performed prior to taking breaks, eating lunch, or leaving the work site.
- All site personnel will be given orientation training to the use and operation of the personal hygiene and decontamination facilities.

11.2 Contamination Prevention

To minimize contact with contaminated substnaces and lessen the potential for contamination, the following will be adhered to during all phases of site entry and excavation.

- Personnel will make every effort not to walk through any areas of obvious contamination (i.e., liquids, discolored surfaces, smoke/vapor clouds, etc.).
- Personnel will not kneel or sit on the ground in the Exclusion Zone and/or the Contaminant Reduction Zone.

11.3 Personal Hygiene Policy

11.3.1 Smoking and chewing tobacco shall be prohibited except in a designated break area within the Support Zone.

11.3.2 Eating and drinking shall be prohibited except in the designated lunch or break area within the Support Zone.

11.3.3 All outer protective clothing (e.g.; chemically protective suits, gloves, and boots) shall be removed and personnel shall thoroughly cleanse their hands and other exposed areas before entering the break or lunch area.

11.3.4 Drinking of replacement fluids shall be permitted in a designated area of the Contaminant Reduction Zone. Personnel shall, as a minimum, remove outer and inner gloves, respirator and coverall top, and wash hands prior to drinking replacement fluids.

11.3.5 All personnel returning from the Contaminant Reduction Zone or the Exclusion Zone should change into fresh clothing after each working period or shift. Showering is mandatory upon return to each individuals' rest place.

11.4 Personnel Decontamination Procedures

Decontamination procedures are followed by all personnel leaving the Exclusion Zone. Under no circumstances (except emergency evacuation) will personnel be allowed to leave the Exclusion Zone prior to decontamination. Generalized procedures for decontamination follow. All procedures apply for Level C, however for Level D only steps 2, 3, and 8 apply. The SSO may modify these procedures based on site conditions.

Step 1 Drop tools, monitors, samples, and trash at designated drop stations (i.e.; plastic containers or drop sheets). See Section 9.4 for equipment decontamination specifics.

Step 2 Scrub outer boots and outer gloves with decon solution or detergent and water. Rinse with water.

Step 3 Remove tape from outer boots (if applicable) and remove boots; discard tape in disposal container. Place boots on boot rack.

Step 4 Remove tape from outer gloves (if applicable) and remove only outer gloves; discard in disposal container.

Step 5 This is the last step in the decontamination procedure if the worker has left the Exclusion Zone to exchange the cartridges on his/her air purifying respirator. The cartridges should be exchanged, new outer gloves and boot covers donned, the joints taped, if necessary, and the worker returns to duty.

Step 6 Remove outer garments and discard in disposal container. New outer garments shall be issued at the beginning of each work day or as deemed necessary by the SSO.

Step 7 Remove respirator and place or hang in the designated area.

Step 8 Remove inner gloves and discard in disposal container.

Note: Disposable items (i.e.; coveralls, gloves, and boots) will be changed on a daily basis unless there is reason to change sooner. Dual respirator cartridges will be changed daily, unless more frequent changes are deemed appropriate by site surveillance data or by assessments made by the SSO.

Pressurized sprayers or other designated equipment will be available in the decontamination area for wash down and cleaning of personnel, samples, and equipment.

A waterless hand cleaner and paper towels may be used for hands, arms, and any other skin surfaces potentially in contact with contaminated material.

Respirators (if used) will be decontaminated daily and taken from the drop area. The masks will be disassembled, the cartridges set aside, and all other parts placed in a cleansing solution. After an appropriate time in the solution, the parts will be removed and rinsed with tap water. Old cartridges will be discarded in the contaminated trash container for disposal. In the morning, the masks will be reassembled and new cartridges installed, if appropriate. Personnel will inspect their own masks and readjust the straps for proper fit.

11.5 Emergency Decontamination

Decontamination will be delayed if immediate medical treatment is required to save a lift. Decontamination will then be done after the victim is stabilized. When decontamination can be performed without interfering with medical treatment, or a worker has been contaminated with an extremely toxic or corrosive material that could cause additional injury or loss of life, decontamination will be performed immediately.

When decontamination cannot be done, the victim will be wrapped in a chemical protective barrier (clothing or sheeting) to reduce contamination of other personnel. Emergency and off-site medical personnel will be informed of potential contamination and will be instructed about specific decontamination procedures. When the victim is transported off the site, personnel knowledgeable of the incident, the site, and decontamination procedure will accompany with victim.

11.6 Equipment Decontamination - General

11.6.1 Work crews exiting from the Exclusion Zone must pass through the Contaminant Reduction Zone. All vehicles and equipment used in the Exclusion Zone shall be decontaminated in the Contaminant Reduction Zone prior to leaving the site.

11.6.2 No vehicles shall leave the Contaminant Reduction Zone until they are properly inspected and approved by the SSO for general cleanliness of frame and tires.

11.6.3 No vehicle shall leave the site unless it is in a broom-clean condition; free of loose dirt or material on tailgates, axles, wheels, etc.

11.6.4 The SSO will monitor all vehicles to confirm proper decontamination prior to exiting. Approval shall be based on visual inspection of all exposed surfaces.

11.6.5 Equipment decontamination wash water residues shall be collected for disposal.

11.6.6 Personnel engaged in vehicle decontamination shall wear Level C or Level D equipment with respiratory protection consistent with the air monitoring results collected by the SSO, and perform personal decontamination at the completion of equipment decontamination.

11.6.7 An equipment decontamination area will be located within the Contaminant Reduction Zone for removing soil from all equipment leaving the work area. It will include a wash area for equipment and vehicles. This area is to be used when personnel are required, by normal practices, to come in contact with soil (i.e.; vehicle repair and refueling). All equipment being decontaminated by wash down will be located in the Contaminant Reduction Zone prior to maintenance work or refueling.

11.6.8 Only clean water will be used for personnel, equipment, and vehicle decontamination.

11.7 Small Equipment Decontamination Procedures

Small equipment should be protected from contamination as much as possible by draping, masking, or otherwise covering the instruments with plastic (to the extent feasible) without hindering operation of the unit. For example, the Photoionization Detector can be placed in a clear plastic bag to allow reading the scale and operation of the controls.

Step 1 Remove coverings from equipment left in the drop area and place the coverings in appropriate waste containers.

Step 2 Any soil or moisture will be brushed or wiped with a disposal paper wipe. Place soiled wipes in appropriate containers.

Step 3 Bare units will then be placed in a clean plastic tub and wiped off with a damp, clean, disposable wipe. Equipment will then be allowed to air dry.

Step 4 Following decontamination, equipment will be checked and recharged, as necessary, for the next day's operations.

Step 5 Prior to entering the Exclusion Zone, all small equipment will be recovered with new, protective coverings, if necessary.

11.8 Heavy Equipment Decontamination Procedures

The decontamination area for the drill rig will be set up in close proximity to the Exclusion Zone (preferably uphill). A wash/rinse will be done to all surfaces that came in contact with contaminants (e.g., augers). Prior to removing any heavy equipment or vehicles from the Exclusion Zone, they must be thoroughly decontaminated. Specific procedures are as follows:

Step 1 Initially, inspect equipment/vehicles to determine if gross decontamination is required first. Particular attention must be paid to tires, under surfaces, points of contact with the ground, and horizontal surfaces where dusts or aerosols might settle.

Step 2 If visible contamination is present, the equipment/vehicle must be moved to the decontamination pad where gross contamination will be scraped, brushed, or swept off.

Step 3 Following gross decontamination, or if visible contamination is no longer present, wash the equipment/vehicle with high pressure washer as deemed necessary by the SSO. Efforts should be made to minimize water usage to reduce wastewater quantities.

Step 4 Prior to releasing any heavy equipment or vehicles from the Contaminant Reduction Zone, decontamination personnel will contact the SSO for final approval.

12.0 EMERGENCY RESPONSE AND CONTINGENCY PLAN

12.1 General: This plan has been prepared in accordance with 29 CFR 1910.120 (l) and will address the following potential emergencies:

- Emergencies outside the UAI Site.
- Emergencies within the UAI Site.
- Chemical exposures.
- Site Evacuation.

12.2 Emergency Equipment: Specially marked and readily accessible emergency equipment will be provided as depicted in Table III.

12.3 Special Requirements

12.3.1 The UAI Project Superintendent will be on-call for any after hour emergencies resulting from adverse weather conditions. Incidents resulting from adverse weather will be reported via the Security Officer to UAI Project Superintendent who in turn will contact the SSO.

12.3.2 First aid kit locations will be specially marked and have adequate water and other supplies necessary to cleanse and decontaminate burns, wounds, or lesions. First aid stations will also stock buffer solutions for treating acid and caustic burns.

12.4 Emergency/Accident Reporting and Investigation

In the event of an emergency associated with the site work, the SSO will, without delay take: 1) diligent action to remove or otherwise minimize the cause of the emergency, 2) alert the WFC FOM, and 3) institute whatever measures are necessary to prevent any repetition of any conditions or actions leading to, or resulting in, the emergency. Notification of the WFC FOM will occur immediately and initially be verbal with written notification occurring within 24 hours of the incident (i.e.; accident, explosion, serious exposure, etc.). The Incident Notification Form and the OSHA 200 Form, provided in Appendix K-1 and K-2, will be used for written notifications and documentation.

12.5 Emergency Medical Care

12.5.1 Emergency medical care will be provided to site workers and visitors by St. Elizabeth Hospital. The specific emergency route to St. Elizabeth Hospital is shown on the map provided in Supplement C - Emergency Route to Hospital.

12.5.2 The Hospital will be informed by the SSO or WFC FOM of potential medical emergencies that could result from site operations and have been advised on the types of hazardous materials that are on site. In the event of an incident requiring their assistance, specific details of hazardous materials should be provided to St. Elizabeth Hospital medical staff, if available.

12.5.3 A list of Emergency Information will be posted at every work site telephone.

12.6 Emergencies Outside the UAI Site

12.6.1 All work in the UAI area will stop when advised by any authorized personnel and will remain so until otherwise instructed.

12.6.2 WFC will keep the SSO fully advised of any work that may affect the safety of on-site employees or property.

12.6.3 Actions to be taken by WFC personnel in the event of an outside emergency will include:

- Cease all operations immediately; shut all equipment down and secure that equipment.
- All personnel will leave vehicles in work zone in a safe manner making sure any remaining vehicles will not hamper any emergency traffic in the area or block any fire hydrants or foam supply systems.
- All personnel will evacuate to a prearranged muster area.
- All personnel will remain in the muster area to await further instructions.

12.7 Emergencies Within UAI Site

12.7.1 As stated, the UAI Site will be the site that WFC will be operating in. The SSO will monitor all operations from the roadway and assist any emergency personnel responding to an emergency within this work zone.

12.7.2 In the event of an emergency within the work zone at the UAI Site, the emergency notification procedures shall be followed as described in Section 12.0 and Appendix A of this SHSP.

12.7.3 In all emergency situations, it will be the responsibility of the SSO, to ensure that all site personnel are accounted for.

12.8 Personnel Exposures

The emergency procedures to be used in the event of acute exposure (eyes, skin contact, inhalation) are described in Appendix A.

12.9 Site Evacuation

The site area will be evacuated and fire and police departments will be notified in the event of fire, explosion or their potential. Depending on the cause and magnitude of the conditions requiring evacuation, three stages have been designated. See Appendix A for details.

13.0 POSTED REGULATIONS

Regulations will be posted in the on-site trailer and at the entrance to the site. The posted regulations will cover three specific areas:

- Use of personal protective equipment.
- Personal hygiene.
- Provisions for smoking, eating, chewing, and drinking.

These regulations may be added to based on need to disseminate information or policy. All regulations will be coordinated through William F. Cosulich Associates, P.C. for approval prior to posting. The three specified regulations are shown as Attachments C, D, and E.

14.0 LOGS, REPORTS, AND RECORDKEEPING

As part of the site control process, various logs, reports and records must be completed, coordinated, and maintained. Particular examples to be addressed in this section include:

- Training Logs - Initial, Site Specific, and Refresher.
- Daily Safety Logs.
- Employee and Visitor's Log.
- Weekly Reports.
- Phase-Out Report.

All chemical exposure records and/or medical records will be maintained by the Physician for no less than 40 years following completion of the project.

14.1 Initial Site-Specific Training Log

The intent of this log is to document that site-specific training was initially provided to workers or visitors prior to their entering regulated areas. Included in the training and on the log is:

- employee/visitor names,
- time allocation in training session,
- topics covered,
- materials used,
- equipment demonstrated,
- equipment practice for each employee,
- prohibitions covered,
- other,
- buddy-system explanation, and
- signature of trainer and date.

See Appendix D - Daily Toolbox Safety Meeting Record to document initial site-specific training.

14.2 Refresher Training Log

Refresher training will be conducted as needed. Minimum elements of refresher training include:

- employee/visitor name,
- time allocation in training session,
- date and place of training,
- topics covered,

- materials used, and
- signature of trainer and date.

See Appendix C for the documentation of Refresher Training.

14.3 Daily Safety Logs

Everyday a new Daily Safety Log will be completed by the SSO. One copy will be completed for each of the work areas reviewed. Copies of the daily logs will be provided to the WFC FOM for review and comment. These daily logs will be maintained for use during preparation of the Weekly Report. Specific elements of the Daily Safety Log include:

- date prepared;
- area (site specific) checked;
- number of employees in area;
- equipment in use in area;
- protective clothing worn by employees;
- protective devices in use by employees;
- visitors (if any), and State/Federal representatives (if any);
- daily safety briefing and training meetings (attach Daily Toolbox Safety Meeting Record);
- air monitoring data (attach Data Sheets);
- heat/cold stress data (attach Data); and
- SSO signature and date.

See Appendix L for the log sheets to be used to document Daily Safety Inspections.

14.4 Employee/Visitor Log (Site Entry and Exit Log)

Each time an employee or visitor enters or exits the UAI Site, he/she will sign the Employee/Visitor Log. This log not only documents when personnel are present on-site but, also provides a rapid means for accounting personnel whereabouts during emergencies. Specific elements of the Employee/Visitor Log include:

- date of log,
- name of employee/visitor,
- address of employee/visitor,
- agency or company representing,
- time entering site, and
- time exiting site.

See Appendix J for the Site Entry and Exit Log to be used.

14.5 Weekly Safety Reports

Weekly Safety Reports will be prepared by the SSO to summarize weekly safety meetings, inspections, work activities, and incidents where site policies, regulations, or SHSP directives have been violated. Copies of weekly safety meetings, weekly inspections, as well as, Daily Safety Logs, and Daily Toolbox Safety Meeting Records will be attached to the Weekly Safety Report. The Weekly Safety Report will be submitted to WFC no later than close of business the following Monday. Specific elements of the Weekly Safety Report will include:

- Summary sheet covering range of work performed.
- Any incidents of:
  - non-use of protective devices where required;
  - non-use of protective equipment;
  - disregard of buddy system;
  - eating, smoking, or chewing where prohibited;
  - misuse of any of the above;
  - job related injuries and illness; and
  - heat stress or cold stress.
- SSO signature and date.

See Appendix B-2 for the Weekly Safety Report format.

TABLE I-A

UAI Site Potential Health Hazards

Hazardous Chemicals	OSHA PEL - TWA in Air (ppm)	IDLH[1] (ppm)	Signs/Symptoms of Exposure
Hydrogen Sulfide	10	300	Apnea, coma, convulsions, conjunctivitis, lacrimation, photosensitivity, respiratory system irritation, dizziness, headache, fatigue, irritability, insomnia, GI disorders
Methane	simple asphyxiant[2]	≤ 19.5%	Drowsiness, slight difficulty breathing, confusion, euphoria, inactivity, ringing in the ears
VOCs		variable depending on composition	Irritation of eyes, nose, throat, dizziness, headache, fatigue, nausea, incoordination, narcosis, coma

[1] Immediately Dangerous to Life or Health concentration (National Institute for Occupational Safety and Health

[2] No PEL can be set as the limiting factor is available oxygen (American Conference of Governmental Industrial Hygienists). Signs/ symptoms are those of an oxygen deficient atmosphere.

TABLE II

EMERGENCY SIGNALS

In most cases, field personnel will carry portable radios for communications. If this is The case, a transmission that indicates an emergency will take priority over all other transmissions. All other site radios will yield The frequency to The emergency transmissions.

Where radio communication is not available, The following air-horn and/or hand signals will be used:

EMERGENCY AIR-HORN SIGNALS

HELP!	Three short blasts	. . .
EVACUATION!	Three long blasts	— — —
ALL CLEAR!	Alternating long and short blasts	— . — .

EMERGENCY HAND SIGNALS

OUT OF AIR, CAN'T BREATH	Hand gripping throat
LEAVE AREA IMMEDIATELY, NO DEBATE!	Grip partner's wrist or place both hands around waist
NEED ASSISTANCE	Hands on top of head
OKAY! - I'M ALRIGHT! - I UNDERSTAND!	Thumbs up
NO! - NEGATIVE!	Thumbs down

TABLE III

LOCATION OF EMERGENCY EQUIPMENT

EQUIPMENT	TYPE	LOCATION(S)
Fire Extinguisher Dry Chemical	20A-80B:C	WFC Trailer
First Aid Kit		WFC Trailer
Eye Wash	Portable	WFC Trailer
Emergency Sprayer	Portable	WFC Trailer
Communication	Air Horns	WFC Trailer Each work area.
Map (Figure 10-1)	Hospital Route	WFC Trailer Each work area

TABLE IV
PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Level of Work Task	Level of Protection[3]	Specific PPE[4]
Restricted zone/support zone operations	D	Work clothes, hard hat, safety glasses with side shields, steel toe work shoes or boots
Drilling/sampling/air monitoring inside exclusion zone	D, C, or B	Same level as above but with liquid proof resistant coverall, gloves, rubber boots, full-face air purifying respirators with organic vapor/HEPA cartridges
Emergency entry	B	Same protective clothing, gloves and boots as above but with self-contained breathing apparatus (SCBA) pressure demand

[3] Level of protection may be modified by the SSO dependent upon air monitoring and visual observations.

[4]Specific combinations of PPE will be determined by the SSO and will depend upon specific job assignment of worker. Proper use of respiratory protection, including mask cleaning, disinfection, inspection, and maintenance, will be enforced. All contaminated clothing will be disposed of in accordance with the procedures in Section 11.0 of this SHSP.

TABLE V
ACCIDENT PREVENTION

Observation	Potential Hazard	Action
Muddy condition	Personnel/slip, equipment instability	Monitor work until condition improves
Lighting	Electrocution	Stop work until condition subsides
Horn blasts or other notification by site personnel	Site emergency	Stop work - evacuate to trailer - follow emergency notification procedures
Personal injury	Other personnel may be affected	Follow emergency notification procedures
Personal fatigue	Cold stress	Follow cold stress guidelines
Windy condition	Overhead hazards, visual impairment	Stop work until condition subsides
Train accident overhead	Site emergency	Stop work - evacuate to trailer - follow emergency notification procedures

TABLE VI
DECONTAMINATION

Station 1	Equipment/sample drop	Deposit equipment used on-site (tools, sampling devices and monitoring instruments, etc) in plastic tray or on plastic sheets.
Station 2	Wash outer garments, boots, and gloves	Scrub outer boots, outer gloves, and chemical suit with decon solution of detergent water[5]
Station 3	Rinse out garments, boots, and gloves	Rinse off using water[6]
Station 4	Outer boots and glove removal	Remove outer boots and gloves. Deposit in container with plastic liner.
Station 5	Boot, gloves and outer garment removal	Boots, chemical suit, inner gloves removed and deposited in container lined with plastic.
Station 6	Air purifying respirator (APR) (use same procedure for SCBA)	APR facepiece is removed. Avoid touching face with hands. APR is deposited on designated receptacle (SCBA doffed)
Station 7	Field wash	Hands and face are thoroughly washed. Shower as soon as possible.

[5] Use detergent mix with water

[6] All liquids and disposable equipment gathered from decontamination will be properly collected and disposed. All liquids will be put into proper disposal receptacles.

APPENDIX A

EMERGENCY INFORMATION

A-1 EMERGENCY TELEPHONE NUMBERS

Agent/Facility	Telephone	Emergency Number
EMS - Ambulance		911
Police Department		911
Fire Department		911
St. Elizabeth Hospital		315/798-8111
Poison Control Center		800/252-5655
On-call physician	718/470-4435	718-470-4435
William F. Cosulich	516/364-9880	
Field Safety Corp.	203/964-9199	
NYS DEC	518/457-0639	
Oneida County Health Dept.	315/798-5070	
NYS DOH	516/458-6305	

A-2 EMERGENCIES WITHIN THE BAF SITE

- Contact the SSO On-Site
- Contact the WFC FOM
- Report the following:
  - Location of emergency in relation to a specific recognizable landmark.
  - Nature of emergency:
    - **FIRE**, if so of what kind and what equipment is involved.
    - **EMERGENCY MEDICAL INCIDENT, ALL INJURIES, ACCIDENTS) OR FIRES.**

      Communication will include:
      - Number of injured people.
      - Nature of injuries.
      - If Project Field Team Members can't handle injuries with its resources, what emergency medical services will be needed.

    - If any outside personnel must enter the UAI site, any hazards will be communicated and those people will be supervised by the SSO.
    - In the event that any site personnel wearing protective equipment in the Exclusion Zone becomes injured, the SSO or designated individual will do whatever decontamination is necessary to remove that equipment.
    - Any emergency treatment information dealing with the injury will accompany the injured party so that those treating that person will have any and all information.

    - **REQUEST FOR UTICA POLICE**. If any person entering the UAI Site who does not belong there becomes a problem, Utica Police will be notified. If that person either endangers the safe operation of Project Field Team members or himself, the SSO will suspend all work until that person can be removed.

  - If site personnel will be evacuating the UAI Site due to emergency.

A-3 PERSONNEL EXPOSURES WITHIN THE UAI SITE

- Contact the SSO On-Site
- Contact the WFC FOM
- Provide Treatment as follows:

  - Eye Exposure - treat by immediate flushing with distilled water (portable eyewash). Transport for examination and treatment. A map depicting the route to St. Elizabeth Hospital is included in Supplement C.
  - Skin Exposure - remove contaminated clothing and treat by washing with soap and water.
  - Inhalation - if a person inhales a large amount of organic vapor, the person will be removed from the work area to fresh air and artificial respiration will be administered if breathing has ceased. The affected person will be transported to St. Elizabeth Hospital by ambulance or emergency vehicle if overexposure to lungs has occurred.
  - Personal Injuries - in case of severe injury, the victim will receive emergency first aid at the site, as appropriate, and will be transported by ambulance or emergency vehicle to St. Elizabeth Hospital. An accident form must be completed for any accident or occupational exposure and forwarded to the WFC FOM and SSO.

A-4 EVACUATING THE UAI SITE

- Contact the SSO On-Site
- Contact the WFC FOM
- Follow the directions below:

  - Upwind withdrawal - withdraw to a safe upwind location if:

    - Air quality concentration contain excessive concentrations of volatile organics, combustible gases, particulates, or oxygen percentage above or below safe levels for the level of protection being worn. The field team will withdraw to a safe upwind location determined by the SSO.
    - A minor accident occurs. The victim will undergo decontamination procedures and be transported to a safe upwind location. Field operations will resume after first aid and/or decontamination procedures have been administered to the affected individual.
    - Protective clothing and/or respirator malfunctions.

  - Withdrawal from site - evacuate the site if:

    - Explosive levels of combustible gases, toxic gases, or volatile organics are recorded.
    - A major accident or injury occurs.
    - Fire and/or explosion occurs.
    - Shock-sensitive, unstable, or explosive materials are discovered.
    - High levels of radioactive materials are discovered.

  - Evacuation of nearby facilities - a continuous release of toxic, flammable, or explosive vapors from the site could affect people off-site. Air quality should be monitored downwind to assess the situation. The WFC FOM, or his on-site designee, is responsible for determining if circumstances exist for any level of off-site contamination warranting concern for people off-site. he should always assume worst case conditions until proven otherwise. If conditions are marginal, evacuation should be conducted until acceptable conditions resume. Key personnel identified in the SHSP should be contacted when evacuation of nearby facilities becomes necessary.

PID - Photoionization Detector
PPE - Personal Protective Limit
ppm - Parts Per Million
RCRA - Resource Conservation and Recovery Act
RG&E- Rochester Gas and Electric Corporation
SARs - Supplied Air Respirators
SCBA - Self Contained Breathing Apparatus
SMAC-25 - Trade Name for a Blood Analyzer Measuring Twenty-Five Constituents in Blood
SS# - Social Security Number
SSHP Site Safety & Health Plan
SSO - Site Safety Officer
STEL - Short Term Exposure Limit
SVOC- Semivolatile Organic Compound
SWMU- Solid Waste Management Unit
TLVs - Threshold Limits Values
TSP - Total Suspended Particulates
TWA - Time Weighted Average
UAI - Utica Alloys, Inc.
UL - Underwriters Laboratories
USEPA- United States Environmental Protection Agency
UST - Underground Storage Tank
VOCs - Volatile Organic Compounds
WFC - William F. Cosulich Associates, P.C.

APPENDIX B-1

WEEKLY SAFETY MEETING

DATE HELD _____ Time _____

1. The weekly safety meeting was held this date for the following personnel:

   (CONTRACTOR) _____

   (SUB-CONTRACTOR) _____

   (SSO) _____

   (OTHER) _____

2. Subjects discussed (note, delete, or add):

   Accident trends/new hazards -
   Individual protective equipment -
   Back injury, safe lifting techniques -
   Fire prevention -
   Sanitation, first aid, waste disposal -
   Tripping hazards -
   Staging -
   Equipment inspection & maintenance (zero defects) -
   Hoisting equipment -
   Ropes, hooks, chains, and slings -
   Trucks, tractors, front-end loaders, scrapers, graders, gradall -
   Electrical grounding, temporary wiring, GFCI -
   Lockouts for safe clearance procedures: electrical, pressure moving parts -
   Steep slopes -
   Toxic materials: hazards, MSDS, respiratory, ventilation -
   Other -

3. Forwarded _____

   Prepared by _____

   Signature _____

APPENDIX B-2
WEEKLY SAFETY REPORT

Week Ending: _____

Summary of Any Violations of Procedures Occurring That Week:

_____

_____

_____

Summary of Any Job Related Injuries or Illnesses That Week:

_____

_____

_____

Summary of Air Monitoring Data That Week (Include any sample analyses, action levels exceeded, and actions taken):

_____

_____

_____

Comments:

_____

_____

Attach Meterological Station Data.

_____ _____

Name Title

Signature _____

APPENDIX B-3

WEEKLY SAFETY INSPECTION LIST

Project Name/Number:_____ Date:_____

Superintendent's Name:_____ Title:_____

This safety inspection list is to be completed by the SSO on a weekly basis and turned into the WFC Project Manager with the week's paperwork. Any deficiencies found are to be corrected immediately.

1. Is the OSHA Safety and Health protection poster on the job? _____
2. Are emergency telephone numbers conspicuously posted? _____
3. Are first-aid kits and supplies on the job? _____
4. Are there first-aid trained personnel on the job? _____
5. Are warning signs and posters adequate? _____
6. Is there an adequate supply of personal protective gear available?
   a. Hard Hats _____
   b. Hearing Protection _____
   c. Eye and Face Protection _____
   d. Respiratory Protection _____
7. Are all personnel wearing the appropriate personal protective gear? _____
8. Is there an adequate slope or support provided for all trenches and excavations? _____
9. Is temporary electrical service grounded and is all other electrical equipment grounded? _____
10. Is the housekeeping adequate-are all aisles, passageways, and stairways clear of obstructions? _____

11. Are there any fire hazards on the job that could be eliminated? _____

12. Have heavy equipment been thoroughly inspected and is there a record of the inspections on file? _____

13. Is the job site fire protection adequate?

    a. Fire Extinguishers - have they been checked? _____

    b. Available Water Hoses? _____

    c. Barrels of Water with Buckets? _____

14. Is there adequate clearance between equipment or machinery and energized power lines? _____

15. Is the record of injuries and illnesses properly maintained and on file? _____

16. Are there jobsite safety meetings being held at least once/week? _____

17. Are all new employees indoctrinated with respect to their individual safety responsibilities? _____

18. Do my personal safety practices set a good example for all employees? _____

19. Misc.: _____

_____

_____

_____

_____ _____

Signature Date

APPENDIX C
SITE WORKER TRAINING AND MEDICAL EXAMINATION RECORD

SITE: UAI Site, Utica, NY

Name	Date Training Completed Initial	Refresher*	Date of Last Physical Examination
Ed Aldrich		7/94	Spring 94
Fred Brown		11/93	no record
Gerald Gould		7/94	10/92
Tom Maher		3/94	5/87
David Obradovich		11/93	4/94
Robbin Petrella		3/94	9/92
Eli Prichard		3/94	1990?
Keith Robins		3/94	9/93
Mark Rauber		11/93	12/91
Bill Roesch		3/93	5/92
Rich Russell		3/94	6/94
Ed Santoro		4/91	10/92
Randy Suba		3/94	7/93
Bob Tschiember		3/94	> 3 years ago
Mike Volz		5/94	5/94
Chuck Wachsmuth		7/94	7/93
Rich Walka		3/94	1/89
Maria Wright		3/94	9/93
Caroline Yates		3/94	8/92

*Refresher training on-site is documented on the following page.

REFRESHER TRAINING DOCUMENTATION

EMPLOYEE/VISITOR NAME	REPRESENTING
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____

TOTAL TIME ALLOCATED TO REFRESHER TRAINING: _____

DATE OF TRAINING: _____

LOCATION: _____

TOPICS COVERED (describe clearly):

_____

_____

_____

MATERIALS USED (if any):

_____

_____

_____ _____ _____

Trainer Signature Trainer Name Printed Date

APPENDIX D

DAILY TOOL BOX SAFETY MEETING RECORD

Date: _____ Work Period Covered: _____

Weather Conditions: _____

Employee in Attendance

Name	Company	Name	Company

Summary of Day's Work Activity:

_____

_____

Monitoring/Sampling Equipment Utilized by SSO/Air Sampling Technician:

_____

_____

Protective Clothing and Equipment Being Used by Personnel:

_____

_____

Physical Condition of Workers (any heat or cold stress or other medical problems):

_____

_____

DAILY TOOL BOX SAFETY MEETING RECORD

Accidents or Breach of Procedures:

Description of Monitoring and Air Samples to be Taken:

Description of Training Activity/Topics Covered:

Equipment Demonstrated (if applicable):

Special Training and Other Comments:

Name of Person Conducting Training

Title

Signature

Date

APPENDIX E

FIELD TEAM REVIEW FORM

PROJECT HEALTH AND SAFETY PLAN

INSTRUCTIONS: This form is to be completed by each person working on the subject work-site. Upon completion, this form is to be given to the SSO.

JOB NUMBER: _____

CLIENT/PROJECT: Utica Alloys, Inc., Utica, New York

DATE: _____

I represent that I have read and understand the contents of the above mentioned Plan and agree to perform my work in accordance with it:

_____
Signature

_____
Name Printed

_____
Company/Office

_____
Date Signed

APPENDIX F

MEDICAL DATA SHEET

This Medical Data Sheet will be completed by all on-site personnel and will be kept in the Support Zone during site operations.

Project:_____

Name:_____

Address:_____

Home Telephone: Area Code ( )_____

Date of Birth:_____ Height:_____ Weight:_____

In case of Emergency, contact:_____
(name and relationship)

Address:_____

Telephone: Area Code ( )_____

Do you wear contact lenses? ( ) Yes ( ) No

Allergies:_____

List medication taken regularly:_____

Particular sensitivities:_____

Previous/recent illnesses or exposures to hazardous chemicals:_____

_____

_

Name of Personal Physician:_____

Telephone: Area Code ( )_____

APPENDIX G

RESPIRATORY CERTIFICATION RECORDS

RESPIRATORY PROTECTION PROGRAM
RECORD OF RESPIRATOR USE

Name _____ Date _____

Social Security Number _____ Age _____

Location _____

Department _____ Supervisor _____

Area to be used in _____

Type of Respirator _____ Fitted By _____

Medical Approval Date _____

Medical Facility/Physician _____

Specific contaminants for which respiratory protection is necessary:

EMPLOYEE STATEMENT

I, an employee of _____ have received the above referenced respirator. I have been fitted and properly instructed on its uses and limitations. I, also, understand that it is my responsibility to properly clean, maintain and store my respirator in a clean area unless other arrangements have been made to assure maintenance and care of the respiratory protection.

Signature _____

Date _____

APPENDIX H

AIR MONITORING RESULTS REPORT

Date: _____

Duration of Monitoring: _____

Work Location and Task: _____

_____

Instrument Reading _____ (Time)	Instrument Reading _____ (Time)	Instrument Reading _____ (Time)
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Note: If instruments have recorders, just attach tape to report. Also note any action levels when exceeded.)

Instrument Calibration: _____

Perimeter Samples Collected: _____

_____

Personnel Samples Collected: _____

_____

Perimeter and Personnel Sample Results From Previous Day (attach data once received):

_____

Comments: _____

_____

_____ _____

Name Title (Site Safety Officer)

Signature _____

APPENDIX I

UAI SITE ENTRY AND EXIT LOG

SITE: Utica Alloys, Inc.

Date	Name	Representing	Date/Time In	Date/Time Out

APPENDIX J

INCIDENT NOTIFICATION FORM

TO: WFC Project Superintendent

Date:_____

FROM: SSO and/or_____
(someone who has direct knowledge of the incident)

1. Contractor's Name:_____
2. Organization:_____
3. Telephone Number:_____
4. Location:_____
5. Reporter Name:_____
6. Name of Injured:_____ Birthdate_____
7. Company Employing Injured:_____
8. Date of Incident:_____
9. Company Employing Injured:_____
10. Location of Incident:_____
11. Brief Summary of Incident (provide pertinent details including type of operation at time of incident):

_____

_____

_____

12. Cause, if known:_____

13. Casualties, if any:_____

14. Details of Any Existing Chemical Hazards or Contamination:

_____

_____

15. Estimated Property Damage:_____

16. Affect on Contract Schedule:_____

17. Actions Taken by Contractor:_____

18. What Medical Help was Given:_____

_____

_____

19. Doctor and/or Hospital (if known):_____

_____

20. When did Employee Return to Work:_____

21. Other Damages/Injuries Sustained (public or private):

_____

_____

_____

22. Additional Information:

_____

_____

_____

_____

_____

_____

APPENDIX K

DAILY UNIT INSPECTION REPORT

EQUIPMENT #:_____ DATE: _____

TYPE: _____

LOCATION:_____ OPERATOR: _____

CHECK **(X)** FOR UNSATISFACTORY CONDITIONS AND/OR LEAKING

CLUTCH	☐	CABLE	☐
TRANSMISSION	☐	CHASSIS	☐
BRAKES	☐	TIRES, WHEELS, RIMS	☐
STEERING	☐	TRACKS	☐
LINING	☐	FANBELTS	☐
CONTROLS	☐	LEAKS - AIR	☐
OIL PRESSURE LEAKS	☐	LIGHTS & REFLECTORS	☐
WATER TEMP	☐	HORN	☐
LOW ENGINE RPM	☐	WINDSHIELD WIPERS	☐
GENERATOR	☐	MIRRORS	☐
EXCESSIVE EXHAUST SMOKING	☐	COUPLING DEVICES	☐
STARTER	☐	ENGINE OIL	☐
FUEL PRESSURE	☐	HYDRAULIC OIL/HOSES	☐
EMERGENCY EQUIPMENT	☐	MISCELLANEOUS	☐

REMARKS/CORRECTIVE ACTION TAKEN:_____

APPENDIX L

ACRONYMS

ACGIH - American Conference of Governmental Industrial Hygienists
AIHA - American Industrial Hygiene Association
AOC- Area of Concern
ANSI - American National Standards Institute
AST - Air Sampling Technician
BG - Background
Ca - Carcinogen
CBC - Complete Blood Count
CFR - Code of Federal Regulations
CEMT - Certified Emergency Medical Technician
CHMT - Certified Hazardous Materials Technician
CIH - Certified Industrial Hygienist
CRZ - Contaminant Reduction Zone
DECON - Decontamination
DOT - Department of Transportation
EMT - Emergency Medical Technician
EPA - Environmental Protection Agency
eV - Electron Volt
FEV1 - Forced Expiratory Volume at One Second
FID - Flame Ionization Detector
FM - Factory Mutual
FSC - Field Safety Corporation
FVC - Forced Vital Capacity
HDPE - High Density Polyethylene
HEPA - Common use: "HEPA Filter" High Efficiency Particulate Air Filter
HMT - Hazardous Materials Technician
HSWA- Hazardous Solid Waste Amendment
IDLH - Immediately Dangerous to Life or Health
IP - Ionization Potential
mg/m^3 - Milligrams Per Cubic Meter
MPH - Miles Per Hour
MSL - Mean Sea Level
NIOSH - National Institute for Occupational Safety and Health
NYSDEC- New York State Department of Environmental Conservation
O&R - Overhaul and Repair
OSHA - Occupational Safety and Health Administration
PEL - Permissible Exposure Limit

ATTACHMENT A

HEAT STRESS

1.0 WORKING CONDITIONS AS RELATED TO HEAT STRESS

Operations at the DBC Site are scheduled for start up in early fall. Since all operations will be done in some level of personal protection, consideration of the effects of heat stress is in order.

1.1 Personal Protective Clothing

All of the protective ensemble does not lend itself to the release of body heat generated during work. With this in mind, the following will be taken into consideration during the work schedule so as to minimize the heat stress to all personnel:

A. All personnel will be advised to wear lightweight undergarments with short sleeves, under the chemical protective coverall.

B. Personnel will be advised that extra clothing be on-site for use as the workday progresses due to the clothing becoming wet from perspiration.

C. Dressing-out will be done in a designated trailer and be scheduled so as not to extend time in the protective ensembles.

D. The dress-out area will have a table with fresh water and/or other water replenishing liquids along with disposable cups. All personnel will be expected to drink liquids before each work cycle. The SSO will supervise the dressing and water intake.

E. As the job progresses and more information becomes available as to the materials that the workers are coming in contact with, consideration as to modifications to the protective ensemble will be examined. Such things as allowing personnel to keep the protective garment's hood down allowing for the release of heat. All decisions regarding the protective ensemble will be the SSO's decision based on available information.

F. After completion of each work cycle, personnel will pass through personnel decontamination and remove their protective ensembles in the designated area. All personnel will then be medically monitored, if deemed necessary by the SSO. Liquid replenishment will be mandatory after each work cycle.

G. Eating facilities will allow for meal periods to be taken in the designated lunch area. On days of extreme temperatures, the use of air conditioning in the decontamination trailer will be limited so as not to have personnel exposed to temperature extremes.

1.2 Causes of Heat Stress

Wearing the expected levels of protection on-site can put personnel at risk of developing heat stress. This section will discuss heat stress and what steps will be taken to monitor personnel for the signs of it.

The body's chemical activities take place in a limited temperature range. Heat is generated by these processes. Any heat not needed to sustain the activities must be lost from the body to maintain a balance. HYPERTHERMIA is an abnormally high body temperature. The three main avenues for the release of body heat are:

A. Respiration is our breathing pattern. Care should be taken that the body is not fooled into believing it is cool based on skin temperature.

B. Radiation is how heat is released from the skin. Blood will pool on the surface of the skin as body temperatures increase. The protective ensemble specified for this site will not allow for this type of heat release.

C. Evaporative Heat Loss normally allows for a body to cool itself by the evaporation of perspiration. Because the protective ensemble stops any contact with moving air the sweat coming off of the body will not evaporate.

If any of these release mechanisms is out of balance, the following conditions can occur and may be considered emergencies needing care:

A. **HEAT RASH** is a common occurrence in areas where body parts rub causing friction. The level of protection will heighten its effects. Proper treatment would be personal washing of the affected areas and administering powder to help healing.

B. **HEAT CRAMPS** occur when people are exposed to heat for extended periods of time. Due to the wearing of the required protective ensemble, this will be expected. The person will sweat heavily and drink large quantities of water. The more the person sweats, the more electrolytes are lost. If enough body salts are lost, the individual will begin to experience body cramps and pain in the extremities.

Proper treatment includes slow replenishment of body fluids augmented by a proper salt solution along with cooling the individual down, taking care not to expose the person to extreme cooling measures. The worker will not be allowed to return to work until the SSO has monitored and approved re-entry.

C. **HEAT EXHAUSTION** occurs as the blood pools at the skin surface in an attempt to cool the body. Sweating is profuse, skin is moist and cool, and the patient will experience dizziness, nausea, or fainting. This condition is an indicator of overwork in the environmental conditions. Treatment includes all for heat cramps with an extended rest period before re-entry. Depending on the worker's physical condition, rest periods may be from 30-60 minutes. After experiencing heat exhaustion, the worker should be closely monitored for symptoms reoccurring.

D. **HEAT STROKE** can occur if heat exhaustion is not cared for. This occurs when the body loses its ability to regulate its temperature. Sweating stops and, if not treated, can lead to death. Signs and symptoms include dry red skin with no perspiration along with nausea, dizziness and confusion. A strong, rapid pulse should be carefully monitored as this condition can lead to coma. Proper treatment begins by understanding that this is a true medical emergency and requires activating the emergency medical system as covered in other sections. When notifying the Emergency Medical Response organization, emphasis should be placed on the words HEAT STROKE and the need for rapid transportation to the medical facility. (See Appendix A of the SSHP). Emergency medical treatment in the field includes immediate cooling of the body with total body immersion preferable. Water temperature should be cool enough to absorb the high body heat but not cold. Ice packs can be applied to the person's head area and under the arms. Due to the personnel needed to treat the patient while awaiting emergency medical care, all work will stop and all attention will be devoted to the person in stress. The First Aid Technician will evaluate all personnel after the patient is transported to determine if they also are showing signs of heat stroke.

To facilitate treatment of all of the above, the trailer, with its air conditioning, fresh water supply and shower, will be used if necessary. In all cases requiring treatment, emergency decontamination procedures based on the individual's degree of contamination will be done before entry into the trailer. Remember: *You* are your own best indicator of signs of heat stress.

ATTACHMENT B

CARE AND CLEANING OF RESPIRATORS

General Requirements

Any organization using respirators on a routine basis should have a program for their care and cleaning. The purpose of a program is to assure that all respirators are maintained at their original effectiveness. If they are modified in any way, their Protection Factors may be voided. Usually one person in an organization is trained to inspect, clean, repair, and store respirators.

The program should be based on the number and types of respirators, working conditions, and hazards involved. In general, the program should include:

- Inspection (including a leak check)
- Cleaning and Disinfection
- Repair
- Storage

Inspection

Inspect respirators after each use. Inspect a respirator that is kept ready for emergency use monthly to assure it will perform satisfactorily.

On air-purifying respirators, thoroughly check all connections for gaskets and "O" rings and for proper tightness. Check the condition of the facepiece and all its parts, connecting air tubes, and headbands. Inspect rubber or elastomer parts for pliability and signs of deterioration.

Maintain a record for each respirator inspection, including date, inspector, and any unusual conditions for findings.

Cleaning and Disinfection

Collect respirators at a central location. Brief employees required to wear respirators on the respirator program and assure them that they will always receive a clean and sanitized respirator. Such assurances will boost morale. Clean and disinfect respirators as follows:

- Remove all cartridges, canisters, and filters, plus gaskets or seals not affixed to their seats.
- Remove elastic headbands.
- Remove exhalation cover.
- Remove speaking diaphragm.
- Remove inhalation valves.
- Wash facepiece and breathing tube in cleaner/sanitizer powder mixed with warm water, preferably at 120% to 140% F.
  Wash components separately from the facemask, as necessary. Remove heavy soil from surfaces with a hand brush.
- Remove all parts from the wash water and rinse twice in clean, warm water.
- Air dry parts in a designated clean area.
- Wipe facepieces, valves, and seats with a damp lint-free cloth to remove any remaining soap or other foreign material.

NOTE: Most respirator manufacturers market their own cleaners/sanitizers as dry mixtures of a bactericidal agent and a mild detergent. One-ounce packets for individual use and bulk packages for quantity use are usually available.

Repairs

Only a trained person with proper tools and replacement parts should work on respirators. No one should ever attempt to replace components or to make adjustments or repairs beyond the manufacturers' recommendations. It may be necessary to send high pressure side components of SCBA's to an authorized facility for repairs.

Make repairs as follows:

- Disassemble and hand clean the pressure-demand and exhalation valve assembly (SCBA's only). Exercise care to avoid damage to the rubber diaphragm.
- Replace all faulty or questionable parts or assemblies. Use parts only specifically designed for the particular respirator.
- Reassemble the entire respirator and visually inspect the completed assembly.
- Insert new filters, cartridges, or canisters, as required. Make sure that gaskets or seals are in place and tightly sealed.

Storage

Follow manufacturers' storage instructions, which are always furnished with new respirators or affixed to the lid of the carrying case. In addition, these general instructions may be helpful:

- After respirators have been inspected, cleaned, and repaired, store them so to protect against dust, excessive moisture, damaging chemicals, extreme temperatures, and direct sunlight.
- Do not store respirators in clothes lockers, bench drawers, or tool boxes. Place them in wall compartments at work stations or in a work area designated for emergency equipment. Store them in the original carton or carrying case.
- Draw clean respirators from storage for each use. Each unit can be sealed in a plastic bag, placed in a separate box, and tagged for immediate use.

ATTACHMENT C

Regulation 1 - Use of Personal Protective Equipment

WHO This regulation applies to all site workers, supervisors, and visitors, *without exception.*

WHEN Prior to entering the Contaminant Reduction Zone (CRZ) or Exclusion Zone (EZ) provisions of this regulation will be followed.

WHAT This regulation outlines the initial forms of PPE required to be worn while working in the CRZ and EZ. Particular types or forms of PPE may be altered based on the authority of the SSO. Specific guidelines are provided in Section 7.0 of this SHSP. Disposable PPE will not be worn more than one workshift of workday. In some instances disposable PPE may have to be replaced more than once during a workday. The SSO shall determine the frequency of replacing disposable PPE. Reusable PPE will be properly decontaminated, cleaned, sterilized (if appropriate), and stored. Doubts regarding what to wear shall be directed to the SSO for resolution.

WHY The levels of protection specified in the SSHP were chosen to protect individuals from potentially harmful exposures to chemicals or physical hazards. No changes to PPE specifications are authorized without the permission of the SSO.

ATTACHMENT D

Regulation 2 - Personal Hygiene

WHO This regulation applies to all site workers, supervisors, and visitors, but is intended primarily for site workers.

WHEN Before beginning work, during scheduled breaks, and at the end of a workday.

WHAT This regulation summarizes the policy on personal hygiene that applies to all site personnel. Personal hygiene includes those activities such as washing hands, showering, shaving, etc., that are conducive to keeping one's body clean and mind refreshed. For the individual's sake, and his/her coworkers, each worker will be responsible for maintaining a high level of personal hygiene. This is especially critical prior to breaks where food, beverages, or smoking will occur. If proper personal hygiene is not followed, potential ingestion, absorption, or inhalation of toxic materials may occur. Particular attention must be paid to close shaving whenever respirators are worn. Facial hair and long hair will interfere with respirator fit and will allow excessive contaminant penetration.

WHY To avoid accidental ingestion, absorption, or inhalation of hazardous materials. To maintain an elevated state of awareness, thus reducing potential mental errors and accidents.

ATTACHMENT E

Regulation 3 - Provisions for Smoking, Eating, Chewing, and Drinking

WHO This regulation applies to all site workers, supervisors, and visitors, *without exception.*

WHEN At all times personnel are on-site. This regulation will specifically apply during breaks and rest periods.

WHAT Site personnel are forbidden to smoke, eat, chew, or drink in the Exclusion Zone or Contaminant Reduction Zone. Only those areas specified as break areas or common areas in the Support Zone may be used for smoking, eating, chewing, or drinking. The rest/break facility and office trailers in the Support Zone may be used. Individuals found to be repeatedly disregarding these provisions will be released.

The only exception to this regulation involves access to electrolytic fluids in the Contaminant Reduction Zone when the SSO has determined heat stress warrants regular replenishing of lost body fluids.

WHY To protect personnel from accidental exposures to hazardous materials, smoking, eating, chewing, and drinking is prohibited everywhere except designated break areas. To avoid potential fires and explosions, smoking is prohibited everywhere except designated break areas and office trailers.

ATTACHMENT F

AUTHORIZED PERSONNEL

The following personnel are authorized to be on the UAI site:

William F. Cosulich Associates, P.C.

Ed Aldrich
Fred Brown
Gerald Gould
Tom Maher
David Obradovich
Robbin Petrella
Eli Prichard
Keith Robins
Mark Rauber
Bill Roesch
Rich Russell
Ed Santoro
Randy Suba
Bob Tschiember
Brian Veith
Mike Volz
Chuck Wachsmuth
Rich Walka
Maria Wright
Caroline Yates

Field Safety Corporation

Michael Ziskin, CHCM, CHMM
Mary Healy, CIH
Bruce Kelly, CHMT, EMT

NYSDEC personnel

WFC Subcontractors - Parrett Wolff
Nytest

ATTACHMENT G

SITE SAFETY OFFICER QUALIFICATIONS

SUPPLEMENT A

SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN (SPCC)

AND

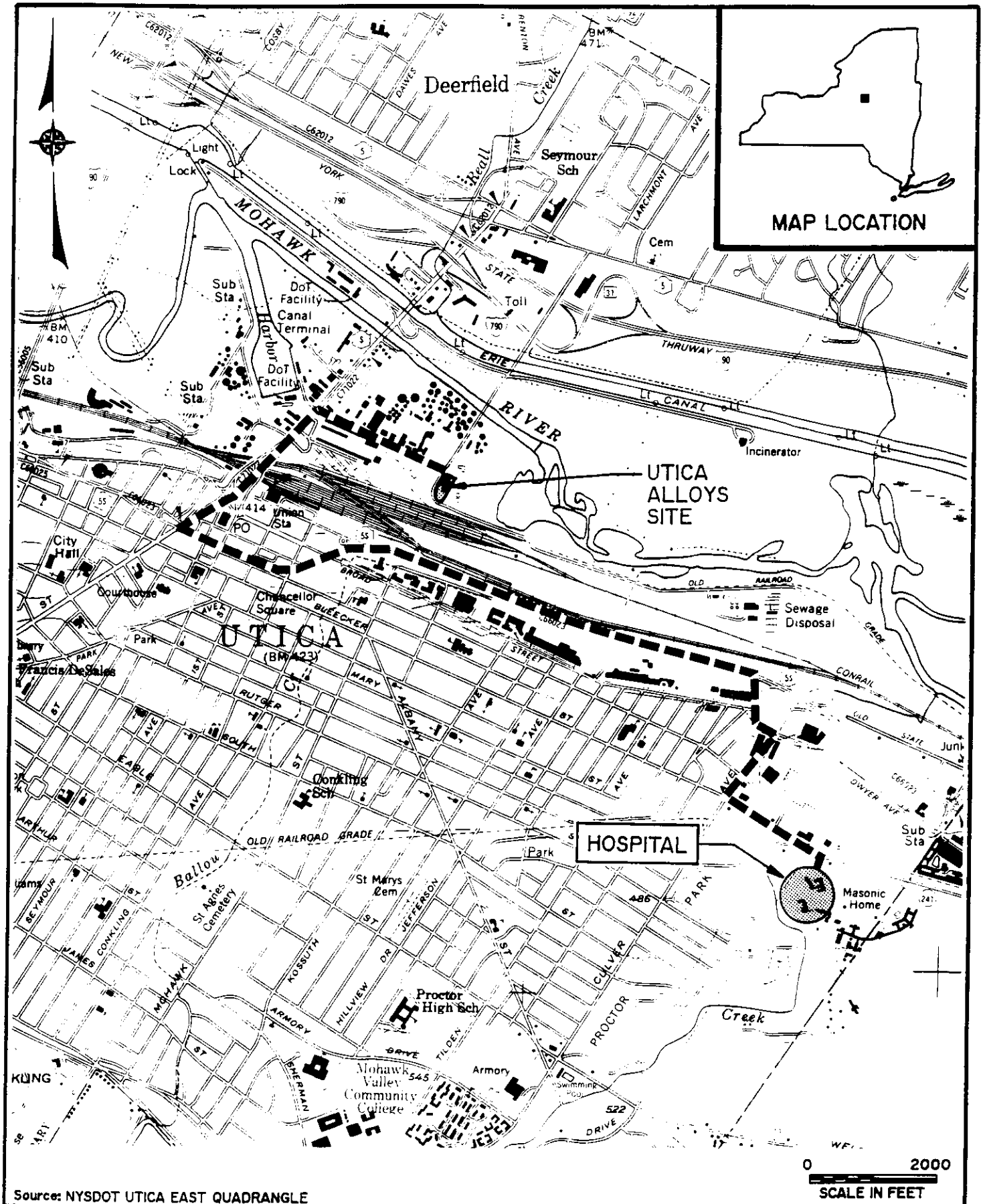
HAZARDOUS WASTE CONTINGENCY PLAN

FOR

UTICA ALLOYS, INC.
LELAND AVENUE
UTICA, NY

SUPPLEMENT B
CONFINED SPACE PROCEDURES

SUPPLEMENT C
EMERGENCY ROUTE TO HOSPITAL



Source: NYSDOT UTICA EAST QUADRANGLE

UTICA ALLOYS, INCORPORATED
UTICA, NEW YORK

HOSPITAL EMERGENCY ROUTE

WILLIAM F. COSULICH ASSOCIATES, P.C.
ENVIRONMENTAL ENGINEERS

FIGURE 7 - 1

APPENDIX A

Selected Pages

"Revised Report of the Waste Management Study at Utica Alloys, Inc."

March 21, 1984

Clayton Environmental Consultants, Inc.

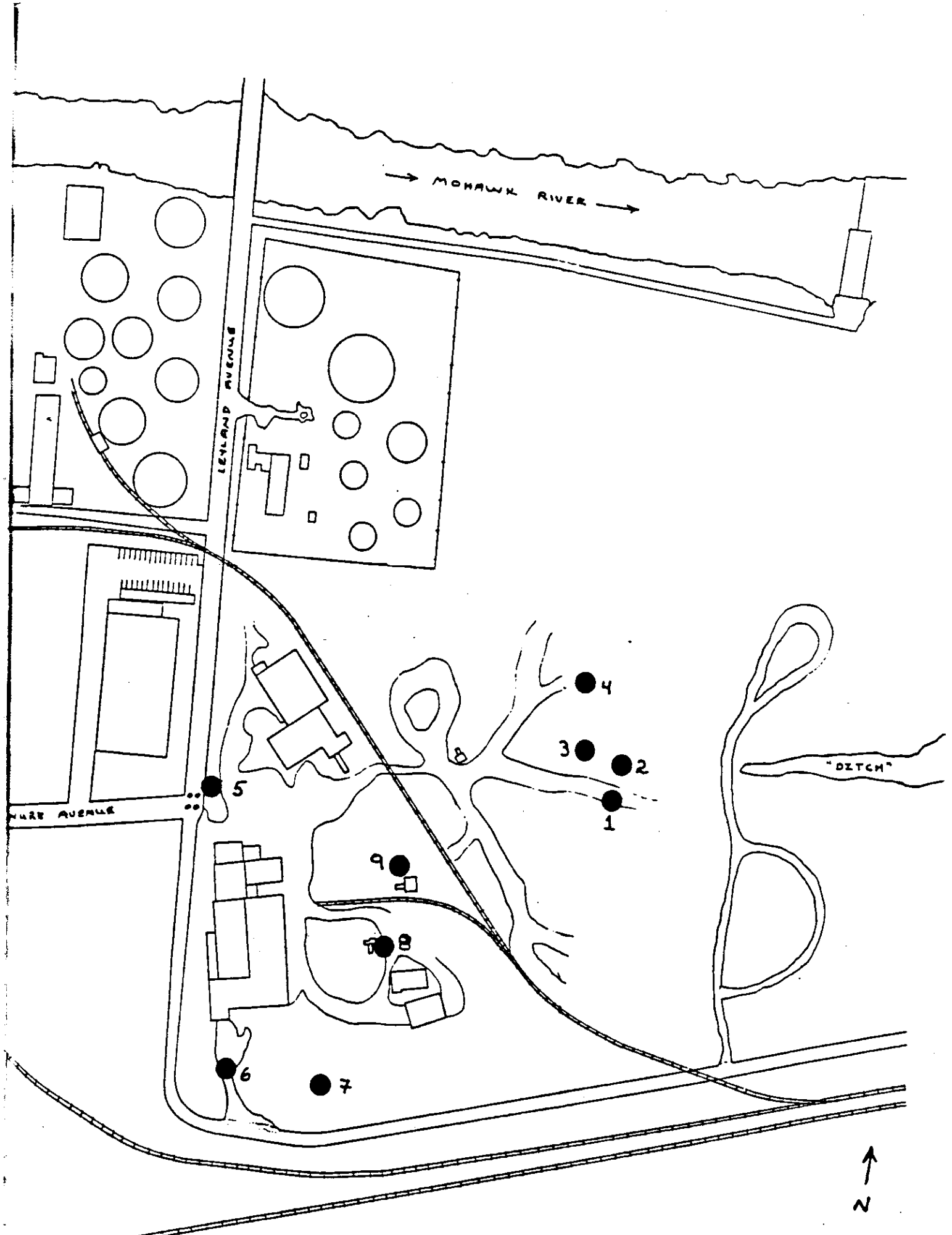


Figure 2. Utica Alloys: Surface Soil Sampling Locations

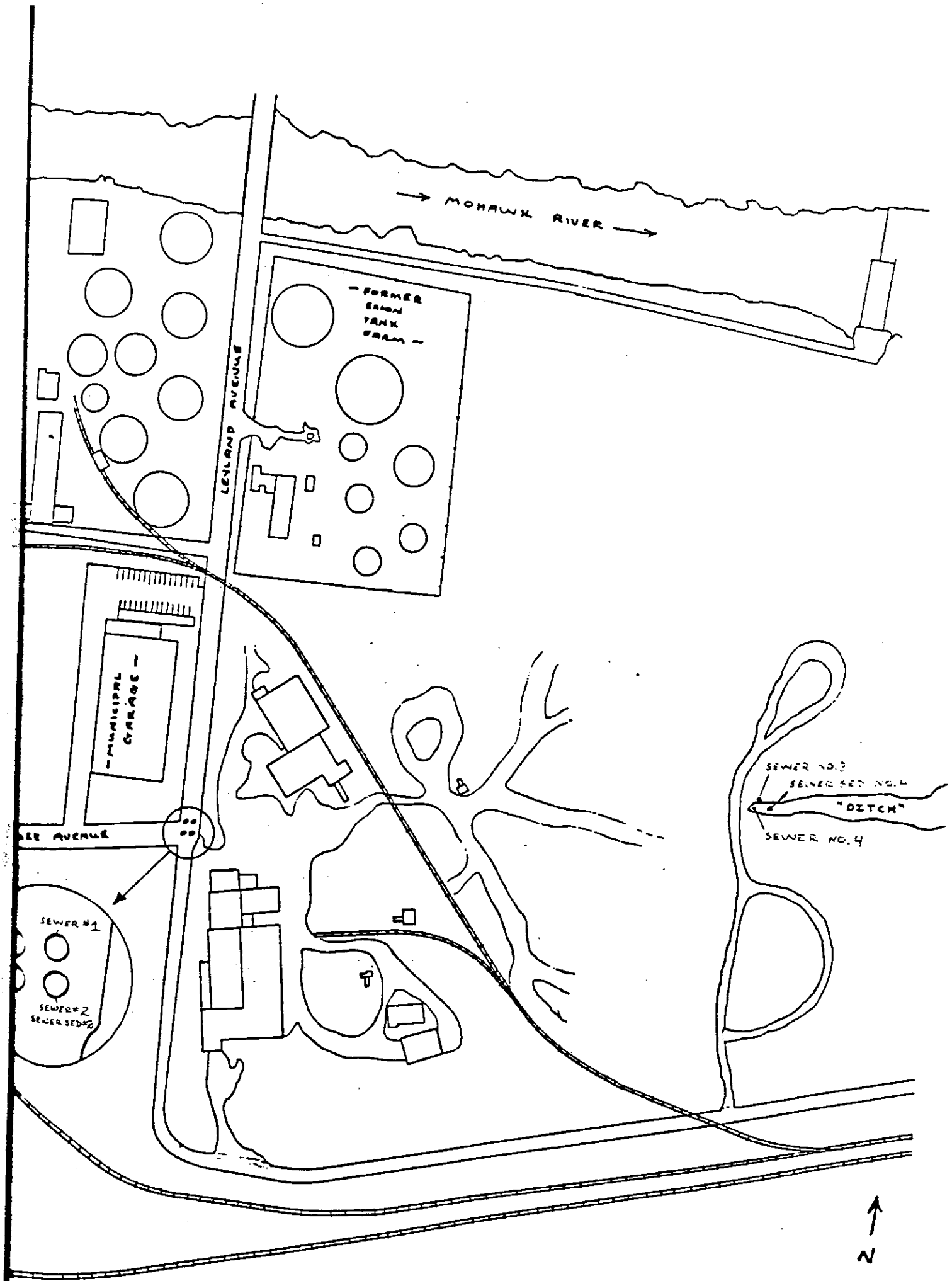


Figure 3. Utica Alloys: Sewer and Surface Waters Sampling

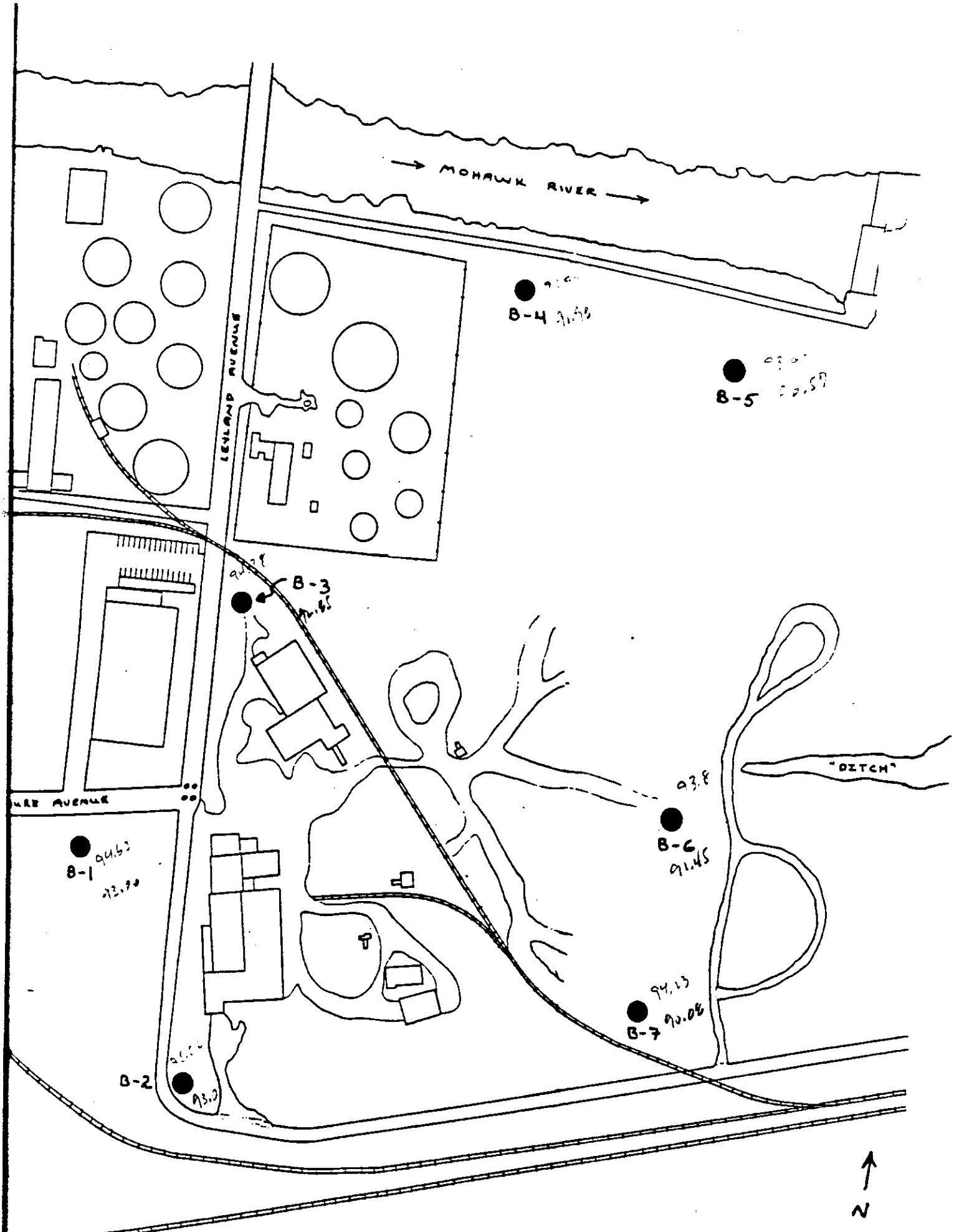


Figure 4. Utica Alloys: Well Locations (See also Appendix C)

Table A

Surface Soil Analysis
for the
Utica Alloys Project

Location Number	PCB* (ppm)	Trichloroethylene (ppb)	pH	Lead** (mg/L)	Barium** (mg/L)	Cadmium** (mg/L)
1	3.3	ND	7.4	0.9	5.9	0.07
2	36,000	ND	7.6	1.9	19	0.06
3	230	ND	7.2	2.3	8	0.09
4	lt 1.0	ND	8.0	2.9	14	0.1
5	lt 1.0	66.9	8.4	0.043	32	0.03
6	1.1	900	8.2	0.012	32	0.0023
7	lt 20	6480	8.3	0.01	30	0.007
8	16	115	7.0	0.37	32	0.09
9	10	ND	7.0	0.07	35	0.011

lt = less than value shown; only Aroclor type 1254 was observed

*ND = not detected; detection limit = 6.0 micrograms/kg
** analysis per EP Toxicity procedure; average of duplicate analysis

Table B

Sewer Water and Sediment Analyses
for
Utica Alloys Project
Contaminant Concentration (ppm)

Parameter	Sewer* No.1	Sewer No. 2	Sewer No. 3	Sewer No. 4	Sewer Sed No. 2	Sewer Sed No. 4
PCB**(ppb)	lt 1.0	lt 0.1	lt 0.1	lt 1.0	730	1,100
Trichloroethylene	7,200	194	57	2,300	3	52,000
1,2-Trans dichloroethylene	ND	2.1	ND	ND	950	68
METALS:***						
Arsenic	0.009/0.0016	0.006	0.006	0.011		
Barium	3.5/1.1	2.0	2.4	2.6	30	29
Cadmium	0.017/0.017	0.0017	0.0005	0.0015	0.019	0.014
Chromium	0.0062/2.2	0.0043	lt 0.0020	0.023		
Lead	0.9/0.043	0.053	0.006	0.015	0.070	0.12
Mercury	lt 0.001	lt 0.001	lt 0.001	lt 0.001		
Selenium	0.01/lt 0.02	0.01	lt 0.01	0.01		
Silver	lt 0.05/lt 0.1	lt 0.05	lt 0.05	lt 0.05		

lt = less than value shown

*Sewer No. 1 sample contained two phases. Metals analysis was run separately on each fraction. Values shown are water phase/organic phase.

**Only Aroclor Type 1254 was detected.

***Values shown are averages from duplicate analyses.

Table C

In-Situ Parameters
of
Sewers and Ditch
Utica Alloys Project

Parameter	Sewer No. 1	Sewer No. 2	Ditch
Temp. (°C)	21.1	20.8	21.8
pH	6.65	6.57	6.57
Specific Conductance (umho/cm)	900	1000	1000
Dissolved Oxygen (ppm)	5.1	4.6	4.4
Oxidation-Reduction Potential	201	243	291

All measurements taken in the field with Hydrolab-8000 instrument.

Table E
In-Situ Parameters
of
Wells Installed
Utica Alloys Project

Well No.	Temp. (°C)	Specific Conductance (umho/cm)	Dissolved Oxygen (mg/L)	pH (s.u.)	red/ox potential (mv)
1	19.2	1000	10.3	6.45	249
2	13.8	1200	1.27	6.25	262
3	19.8	400	10.2	6.00	279
4	14.3	1900	2.76	6.30	312
5	15.4	2000	4.3	5.99	247
6	14.3	2900	3.5	6.09	268
7	18.8	1600	5.2	6.37	290

Table F
Analysis of Groundwater
for
Utica Alloys Project
Concentration (ppm)

Analyte	Well Number 1	2	3	4	5	6	7	
PCB (Aroclor 1254)	0.0020	0.0017	0.0008	0.0003	0.10	0.018	0.017	0.001
PCB (Aroclor 1262)	0.0011	0.0011	0.0005	0.0002	ND	0.0046	ND	0.001
Trichloroethylene	lt 0.005	0.005	lt 0.005	lt 0.005	lt 0.005	lt 0.005	lt 0.005	0.005
Phenols	0.018	0.010	0.012	0.011	0.009	0.008	0.004	—
Sulfate	0.04	0.03	0.03	0.09	0.02	0.65	0.03	250
Chloride	34	50	28	60	140	84	110	250
Iron	31	80	34	34	85	73	20	0.3
Manganese	2.5	2.7	0.90	3.0	2.6	6.7	3.4	0.3
Arsenic	0.006	0.015	0.006	0.006	0.028	0.006	0.007	0.025
Barium	2.0	2.9	1.4	5.7	3.5	3.9	3.1	1.0
Cadmium	0.02	0.0041	0.021	0.0011	0.0094	0.0099	0.015	0.01
Chromium	0.0038	0.029	0.014	0.012	0.022	0.021	0.014	0.05
Lead	0.020	0.10	0.17	0.015	0.23	0.075	0.08	0.025
Mercury	lt 0.001	lt 0.001	lt 0.001	lt 0.001	0.0016	lt 0.001	lt 0.001	0.002
Selenium	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01
Sodium	36	32	18	66	180	250	43	20
Silver	lt 0.05	lt 0.05	lt 0.05	lt 0.05	lt 0.05	lt 0.05	lt 0.05	0.05
Chloroform	0.014	lt 0.005	0.04	lt 0.005	lt 0.005	lt 0.005	lt 0.005	0.007
Tetrachloroethylene	lt 0.005	0.010	lt 0.005	lt 0.005	lt 0.005	lt 0.005	lt 0.005	0.005
1,1,1-Trichloroethane	lt 0.005	0.005	lt 0.005	lt 0.005	lt 0.005	lt 0.005	lt 0.005	0.005

APPENDIX B

Tank Closure Report and Sampling Results
for Utica Alloys Site
by
Northeast Environmental Technologies Corp.

NORTHEASTERN
ENVIRONMENTAL
TECHNOLOGIES CORP.

P.O. BOX 2167 • BALLSTON SPA, NEW YORK 12020
518/899-9684

May 28, 1993

Mr. Steven Ritchin
Berle, Kass & Case P.C.
45 Rockefeller Plaza
N.Y, N.Y. 10111

RE: UTICA ALLOY TCE & WASTE OIL ABOVE GROUND STORAGE TANK CLOSURE REPORT

Dear Mr. Ritchin:

The following information is presented for your consideration and represents the recently completed above ground tank (AST) closure work performed at the Utica Alloy site specifically the removal of (1) 3000 gallon 1,1,1 TCE AST and (1) 4000 gallon waste oil AST. This work has been performed to formally eliminate the bulk storage of 1,1,1 TCE and associated TCE waste on site and to provide a general site assessment report of the AST closure work. West Central Environmental (WCE) was retained by Utica Alloy and has preformed all AST cleaning and the associated waste transportation and disposal services. Northeastern Environmental Technologies Corporation (NE) was retained by WCE on behalf of Utica Alloy to document select AST closure activities and assimilate visual and geochemical data from the area surrounding the AST's. The methods used to accomplish the closure program were based on: DEC ASSESSMENT GUIDANCE FOR PETROLEUM TANK CLOSURES & SPILL PREVENTION OPERATION TECHNICAL SERIES (SPOTS NO. 14), SITE ASSESSMENTS AT BULK STORAGE FACILITIES. In order to address the issues germane to the AST closure work, available facility information, soil, ground water and local hydrogeologic information were reviewed and or considered. A discussion of the activities completed during the AST closure are included for consideration.

DRAFT

Utica Alloy Inc. is located at Leland and Wurtz Ave. Utica, N.Y. The study area is a industrial / commercial section of the city of Utica, N.Y adjacent to the Mohawk River Barge canal (see figure 1). The surrounding area is heavily industrialized and is currently used by various manufacturing, waste management, warehousing and petroleum bulk storage groups. Utcia Alloy's use of 1,1,1 TCE and generation of waste oil relate to the cleaning of precious (nickel based) scrap metals prior to sale. The cleaning process at the time of this investigation consisted of a rotary type separator and conveyor system located along the western portion of the industrial complex adjacent to the AST's. The AST's were of single wall steel construction each located on a concrete pad. All piping and related distribution lines were above ground and manifolded directly to the mechanized cleaning system. An associated bag house ventilation system also existed adjacent to the AST's. The AST's cleaning services described herein have been documented by Mr. William Goodine Operation Supervisor, WCE. All AST infrastructure were cleaned of residual liquids and sludge. The AST closure work was initiated on March 30 & 31, 1993 by removing all residual waste liquids from the waste oil AST. The 1,1,1 TCE AST was empty at the time the closure work was initiated. A combination of pressure washing (2800psi), manual hand cleaning and drying work was performed on each AST. All confined space cleaning services were performed with modified Level B protective clothing and breathing equipment.

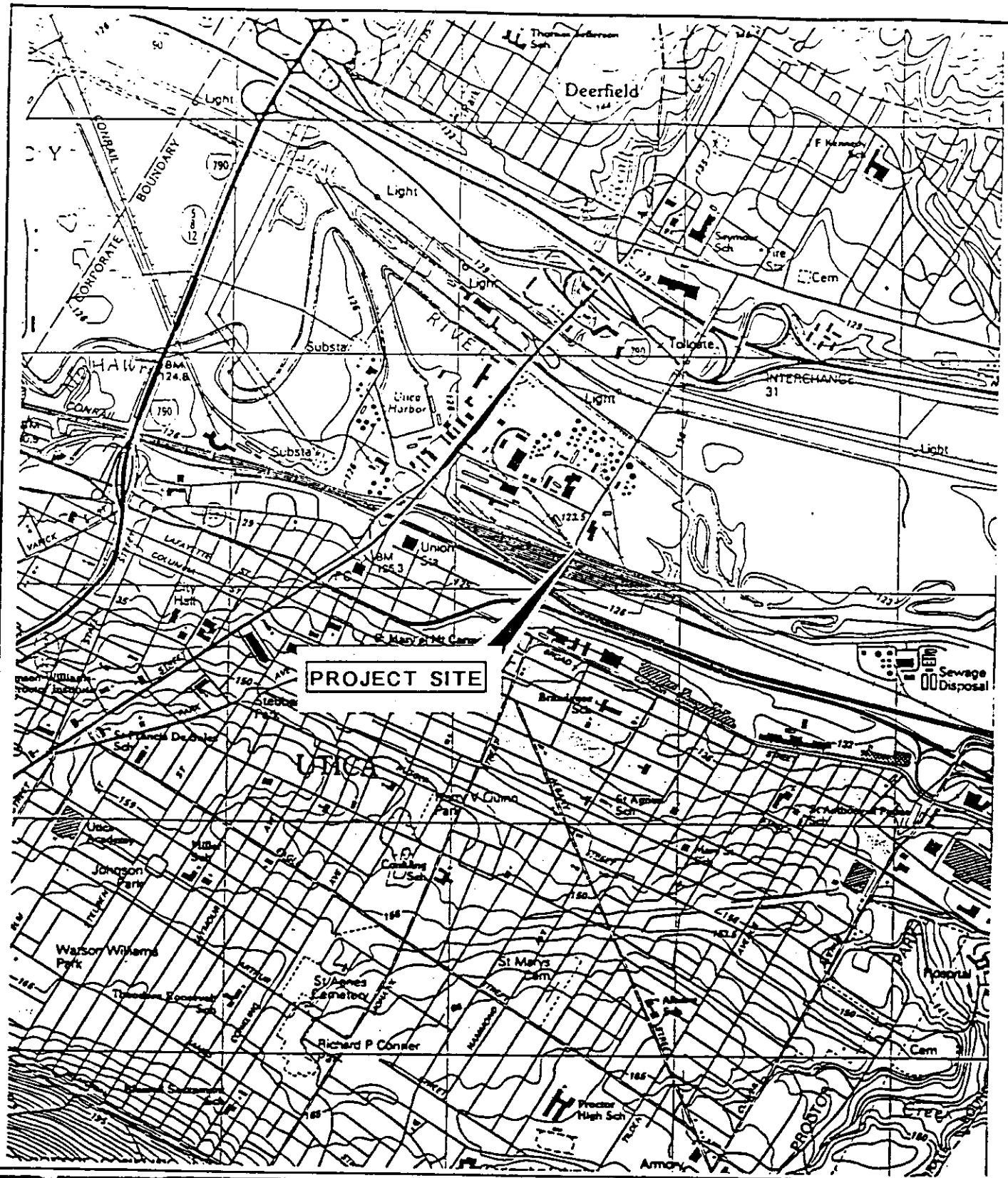


Figure # 1	LOCATION MAP
Schematic Diagram	
Project Name:	UTICA ALLOY INC., LELAND & WERTZ AVE. UTICA, N.Y.
Project Number:	93.030075
Scale:	1.0 INCH = 2000 FEET

NORTHEASTERN ENVIRONMENTAL TECHNOLOGIES CORPORATION

Box 2167 • Ballston Spa, NY • 12020 • (518) 899-9684

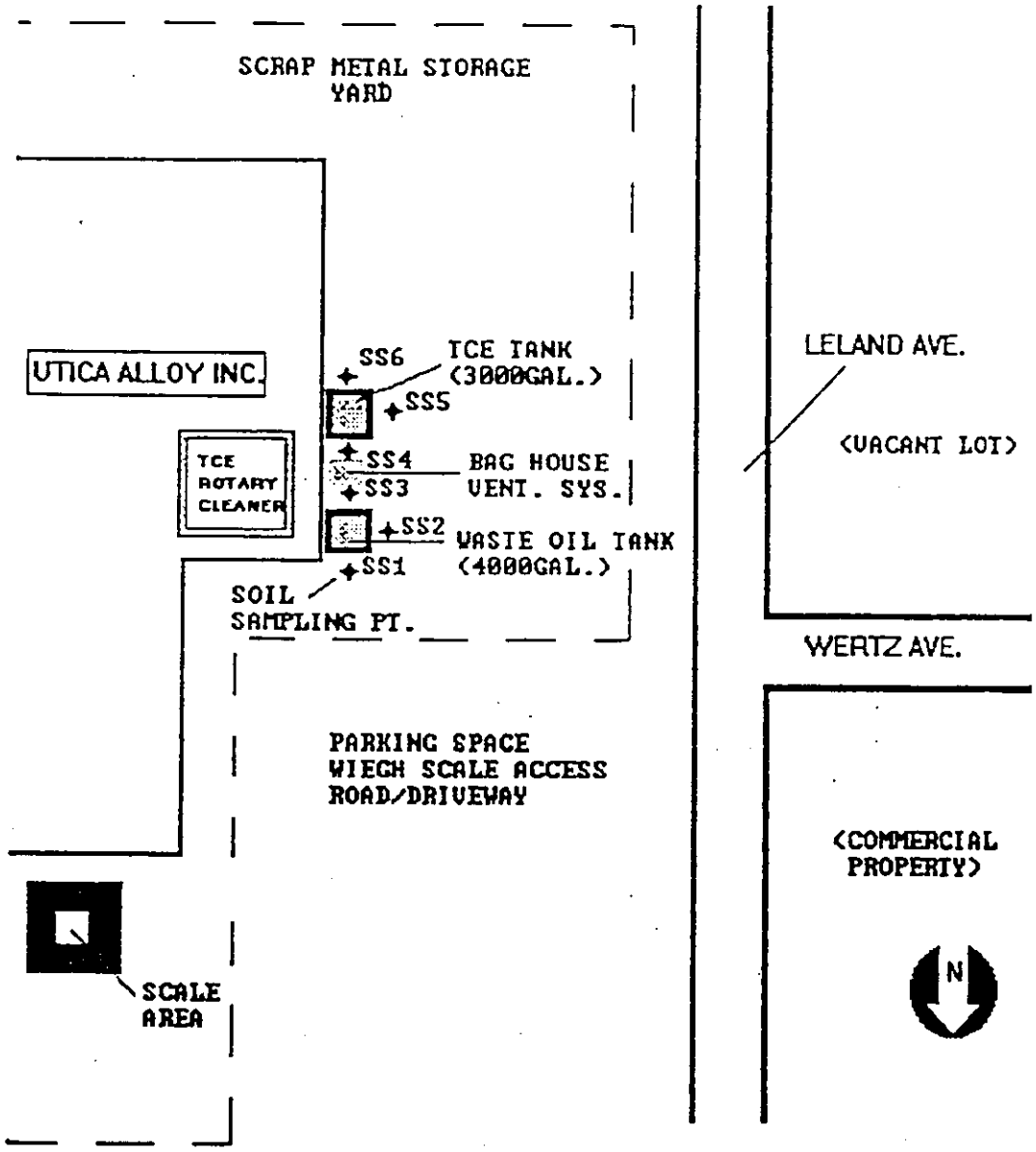
Environmental Liability Assessments • Contaminant Hydrology • Hazardous Material Management • Geotechnical Evaluations • Site Remediation and Monitoring Services • Environmental Impact Statements • Expert Testimony • OSHA Field Certified

A total of 2065 gallons of F001/D039 RQ Hazardous Waste liquid was generated by the closure work. The liquid waste was transported to Environmental Waste Resources (EWR) located in Waterbury Connecticut on March 31, 1993 by WCE. Copies of the waste manifests have been enclosed as Attachment A. Subsequent to the cleaning process the AST' were allowed to vent for a period of ± 8 hours prior to sealing each AST.

On April 6, 1993 a joint site inspection was performed by this firm and WCE to document the conditions of the subject AST's and associated infrastructure prior to Utica Alloy personnel permanently removing and disposing of the AST's. Each AST was removed from its concrete pad and transported to an associated scrap metal yard (i.e., Universal Empire). The AST's were then each cut on site and staged with similar ferrous metal. General inspection of the AST's found them to be in structurally sound condition. No visual evidence of metal fatigue and / or corrosion was apparent during our inspection. Similar inspection of the concrete pads did not suggest a release from the bulk storage activities or recent cleaning work. Soil stained ground surfaces were apparent within areas proximal to the AST's and the associated ventilation bag house system. To evaluate the significance and chemical quality conditions inherent to the soil stained areas a series of surface soil samples were collected. Significant flooding and similar precipitation at the site delayed the soil sampling work until April 23, 1993. A total of (6) soil samples were collected from the site using a precleaned 2 3/4-inch hand auger. The cleaning process involved a three step procedure of liquinox soap and water wash, methanol rinse and deionized water rinse. The cleaning procedure was repeated between each sample collection point. Three samples were collected adjacent to each tank pad from the upper 1.5-2.0 foot soil horizon (See figure 2). One composite sample was manufactured in the field and containerized in 40 ml. zero head space volatile organic analysis (VOA) bottles for subsequent laboratory chemical analysis. The composite soil samples collected adjacent to the 1,1,1 TCE tank (i.e., TANK 2 COMP) was chemically analyzed pursuant to total matrix EPA method 8240. The composite soil samples collected adjacent to the waste oil tank (i.e., TANK 1 COMP) was chemically analyzed pursuant to total matrix EPA method 8240, as well as TCLP EPA method 8021 and 8270 in accordance with DEC's petroleum bulk storage closure guidance policy. Total volatile organic compound (VOC) head space measurements and visual observations were recorded at each hand auger boring at 0.5 foot increments. The VOC monitoring was performed using an HNu IS-101/10.2ev. photoionization field meter (PID). The results of the soil sampling work performed during this site assessment have been summarized below for consideration.

SAMPLE NO.	SOIL TYPE	DEPTH (FT.)	PID DATA (ppm)
SS1	SILTY CLAY FILL W/BRICKS & STONE	0.5	19.0
		1.0	19.0
		1.5	50.0
		2.0	70.0
SS2	SILTY CLAY FILL W/BRICKS & STONES	0.5	9.0
		1.0	19.0
		1.5	20.0
SS3	SILTY CLAY FILL W/BRICKS & STONES	0.5	15.0
		1.0	NA
		1.5	NA

(SOIL STAINING MOST APPARENT IN UPPER 1.0 FOOT SOIL HORIZON, GROUND WATER ENCOUNTERED @ ± 1.5 FEET BELOW GROUND LEVEL)



THIS SCHEMATIC IS NOT DRAWN TO SCALE AND IS INTENDED EXCLUSIVELY TO ILLUSTRATE THE SOIL SAMPLING POINTS SELECTED DURING THE CLOSURE OF (1) TCE AND (1) WASTE OIL ABOVE GROUND TANK (AST). THE LOCATIONS OF THE AST's AND OTHER SITE FEATURES HAVE BEEN APPROXIMATED.

Figure # 2	SITE MAP
Title	AST CLOSURE/ SITE ASSESSMENT
Project Name:	UTICA ALLOY INC., LELAND & WERTZ AVE. UTICA, N.Y.
Project Number:	93.030075
Scale:	NONE

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SAMPLE NO.	SOIL TYPE	DEPTH (FT.)	PID DATA (ppm)
SS4	SILTY CLAY FILL W/BRICKS & STONE	0.5	NA
		1.0	NA
		1.5	NA
		2.0	NA
SS5	BROWN SANDY FILL W/BRICKS & STONES	0.5	9.0
		1.0	NA
		1.5	NA
		2.0	NA
SS6	LIGHT BROWN ASH W/BRICKS & STONES	0.5	NA
		1.0	NA
		1.5	NA
		2.0	NA

(SOIL STAINING MOST APPARENT IN UPPER 1.0 FOOT SOIL HORIZON; PID MALFUNCTION POSSIBLY DUE TO SOIL MOISTURE; TAN ASH FILL ENCOUNTERED IN SAMPLES FROM 1.0-2.0 FEET BELOW GROUND LEVEL)

The results of laboratory testing of soil samples collected from areas adjacent to the AST's identify detectable concentrations of TCE and 1,2 DCE at both locations. The concentrations identified are generally consistent at both locations (i.e., WASTE OIL AST/TANK COMP 1; TCE 19000ppb & 1,2 DCE 190ppb AND TCE AST/TANK COMP 2; 19000ppb TCE & 1,2 DCE 190ppb). At this time the cause for the soil contamination is attributed to the use of 1,1,1 TCE, the generation of a related liquid waste stream and the biodegradation of 1,1,1 TCE in the environment. The similarity in the soil quality data, the lack of other waste oil type contaminants and the soil stained areas proximity to the bag house ventilation system may suggest an emission source for this occurrence. At this time the vertical and areal extent to which this condition exists is at this time unknown. The shallow nature of the sites ground water table combined with the "fill" and similar debris create a potential for similar ground water contamination.

The commercial / industrial nature of the study area may lessen regulatory concerns with respect to the indigenous ground water resource. Similar off site areas of soil and ground water contamination are known to exist, consequently any on site contamination should not be considered by the DEC as unique or a-typical for the study area. The affected unconsolidated formation and associated shallow ground water table are not expected to represent a "GA" drinking resource for the study area. The use of municipal water and sewer systems in the study area also limits the impact of the observed soil and any associated ground water contamination.

At this time the appropriateness for additional site characterization and / or remediation should be based on input received from the DEC. It is our understanding that the results of this work will be made available to the DEC to allow their consideration of this information. It is our opinion that the closure activities performed to date have not fully characterized the extent to which soil and / or ground water contamination may exist in the area historically used for 1,1,1 TCE and waste oil storage.

The historical storage of 1,1,1 TCE and related waste oils may necessitate more in depth analysis of the sites geotechnical / geochemical condition pursuant to 6NYCRR PART 595 and 373-3.10. . Determination of this nature would likely necessitate soil gas, soil and ground water sampling work that are beyond the scope of this initial site assessment. It is opinion that disclosure of any pre-existing geotechnical/geochemical information be made prior to any future site characterization so as to avoid duplication of existing work. At which time this information becomes available an addendum to this report can be provided, as necessary.

Factors that have limited this site assessment include: Utica Alloy's request to minimize disruption and removal of the concrete tank pads and shallow ground water. Copies of the laboratory reports have been enclosed for your consideration.

If you have any questions regarding this transmittal please contact our office in Ballston Spa at (518) 899-9694. Northeastern remains available to assist Utica Alloy Inc., West Central Environmental Corp. and Berle, Kass & Case P.C. in this and related matters, as necessary.

Sincerely,
Northeastern Environmental Technologies Corporation

Jeffrey T. Wink, President

JTW/sbs
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ATTACHMENT A

DRAFT

Adirondack Environmental Services, Inc.

314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

A full service analytical research laboratory offering solutions to environmental concerns

LABORATORY REPORT

for

Northeastern Environmental

PO Box 2167
Ballston Spa, NY 12020

Attention: Jeff Wink

Report date: 05/12/93
Number of samples analyzed: 6
AES Project ID: 930426 T
Invoice #: 124668

Adirondack Environmental Services, Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

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CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: Tank 1 Comp
AES sample #: 930426 T01
Samples taken by: Jeff Wink
MATRIX: soil
Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
composite

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
Chloromethane	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Bromomethane	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Vinyl Chloride	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Chloroethane	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Methylene Chloride	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Trichlorofluoromethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1 Dichloroethene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1 Dichloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,2-Dichloroethene Total	EPA-8240	120	ug/kg	MT-AJ-23	05/03/9
Chloroform	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,2 Dichloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1,1 Trichloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Carbon Tetrachloride	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Bromodichloromethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,2 Dichloropropane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
t-1,3 Dichloropropene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Trichloroethene	EPA-8240	19,000	ug/kg	MT-AJ-23	05/03/9
Benzene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/93
Dibromochloromethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1,2 Trichloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9

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Albany, New York 12207
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CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: Tank 1 Comp
AES sample #: 930426 T01
Samples taken by: Jeff Wink
MATRIX: soil
Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
composite

continued:

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DAT
cis-1,3-Dichloropropene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
2-Chloroethylvinylether	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Bromoform	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1,2,2 Tetrachloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Tetrachloroethene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Toluene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Chlorobenzene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Ethylbenzene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Xylenes,Total	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
TCLP Extraction	EPA-1311	Complete		TCLP-B-5	04/29/9
Acenaphthene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Anthracene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Benzo(a)anthracene-TCLP Ext.	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Benzo(a)pyrene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Benzo(b)fluoranthene-TCLP Ext.	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Benzo(k)fluoranthene-TCLP Ext.	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Crysene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Dibenz(a,h)anthracene-TCLP Ext	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Fluoranthene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/9
Fluorene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/9

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CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: Tank 1 Comp
AES sample #: 930426 T01
Samples taken by: Jeff Wink
MATRIX: soil
Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
composite

continued:

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
Phenanthrene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/93
Pyrene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/93
Benzo(g,h,i)perylene-TCLP Ext.	EPA-8270	<10	ug/l	BC-AK-9	05/10/93
Indeno(1,2,3-cd)pyrene-TCLP Ex	EPA-8270	<10	ug/l	BC-AK-9	05/10/93
Napthalene-TCLP Extraction	EPA-8270	<10	ug/l	BC-AK-9	05/10/93
TCLP Extraction - ZHE	EPA-1311	Complete		BW-W	05/10/93
Benzene-TCLP Extract	EPA-8021	<0.5	ug/l	BW-W	05/10/93
Ethylbenzene-TCLP Extract	EPA-8021	<1	ug/l	BW-W	05/10/93
Toluene-TCLP Extract	EPA-8021	<1	ug/l	BW-W	05/10/93
o-Xylene-TCLP Extract	EPA-8021	<1	ug/l	BW-W	05/10/93
m-Xylene-TCLP Extract	EPA-8021	<1	ug/l	BW-W	05/10/93
p-Xylene-TCLP Extract	EPA-8021	<1	ug/l	BW-W	05/10/93
Isopropyl Benzene-TCLP Extract	EPA-8021	<1	ug/l	BW-W	05/10/93
n-Propylbenzene-TCLP Extract	EPA-8021	<1	ug/l	BW-W	05/10/93
p-Cymene-TCLP Extract	EPA-8021	<1	ug/l	BW-W	05/10/93
1,2,4-Trimethylbenzene-TCLP Ex	EPA-8021	<1	ug/l	BW-W	05/10/93
1,3,5-TMB & Sec-BB TCLP Ext.	EPA-8021	<1	ug/l	BW-W	05/10/93
n-Butylbenzene-TCLP Extraction	EPA-8021	<1	ug/l	BW-W	05/10/93
Napthalene-TCLP Extract	EPA-8021	<5	ug/l	BW-W	05/10/93
Methyl-t-Butyl Ether-TCLP Ext.	EPA-8021	<10	ug/l	BW-W	05/10/93

Adirondack Environmental Services, Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

A full service analytical research laboratory offering solutions to environmental concerns

CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: Tank 2 Comp
AES sample #: 930426 T02
Samples taken by: Jeff Wink
MATRIX: soil
Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
composite

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DAT
Chloromethane	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Bromomethane	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Vinyl Chloride	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Chloroethane	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Methylene Chloride	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Trichlorofluoromethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1 Dichloroethene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1 Dichloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,2-Dichloroethene Total	EPA-8240	190	ug/kg	MT-AJ-23	05/03/9
Chloroform	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,2 Dichloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1,1 Trichloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Carbon Tetrachloride	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Bromodichloromethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,2 Dichloropropane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
t-1,3 Dichloropropene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Trichloroethene	EPA-8240	19,000	ug/kg	MT-AJ-23	05/03/9
Benzene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Dibromochloromethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1,2 Trichloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9

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Albany, New York 12207
518-434-4546/434-0891 FAX

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CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: Tank 2 Comp
AES sample #: 930426 T02
Samples taken by: Jeff Wink
MATRIX: soil
Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
composite

continued:

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
cis-1,3-Dichloropropene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
2-Chloroethylvinylether	EPA-8240	<250	ug/kg	MT-AJ-23	05/03/9
Bromoform	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
1,1,2,2 Tetrachloroethane	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Tetrachloroethene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Toluene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Chlorobenzene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Ethylbenzene	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9
Xylenes,Total	EPA-8240	<120	ug/kg	MT-AJ-23	05/03/9

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CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: SS #1
AES sample #: 930426 T03
Samples taken by: Jeff Wink
MATRIX: soil
Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
grab

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DAT
HOLD		Hold			04/26/9

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CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: SS #4
AES sample #; 930426 T04
Samples taken by: Jeff Wink
MATRIX: soil
Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
grab

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DAT
HOLD		Hold			04/26/9

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CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: SS #5
AES sample #: 930426 T05
Samples taken by: Jeff Wink
MATRIX: soil
Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
grab

PARAMETER	PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DAT
HOLD			Hold			04/26/9

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CLIENT: Northeastern Environmental
CLIENT'S SAMPLE ID: SS #6
AES sample #: 930426 T06
Samples taken by: Jeff Wink
MATRIX: soil

Date Sampled: 04/23/93
Date sample received: 04/26/93
Location: Utica NY
grab

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DAT
HOLD		Hold			04/26/9

APPROVED BY:
Report date: 05/12/93

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CHAIN OF CUSTODY RECORD

CLIENT NAME	PROJECT NAME (Location)	SAMPLERS' (Names)
NORTHEASTERN ENV.	UTICA ALLOY, UTICA N.Y.	[signature]
ADDRESS	**PO NUMBER**	**SAMPLERS: (Signature)**
P.O. BOX 2167 BALLSTON SPA, N.Y. 12020	—	JEFF WINK

AES SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION & LOCATION	DATE SAMPLED	TIME	A=a.m. P=p.m.	MATRIX	COMP	GRAB	NUMBER OF CONT'S	ANALYSIS REQUIRED
930426-T01	TANK #1 Comp	4-23-93	10:30	A	Soil	X		2	EPA 8240
↓	TANK #1 Comp	"	10:30	A	Soil	X		3	EPA 8270 TCLP - [illegible] EPA 8021 TCLP - TO65/[illegible]
T02	TANK #2 Comp	"	1:30	P	Soil	X		2	EPA 8240
T03	S.S. #1	"	10:30	A	Soil		X	2	EPA 8240 (HOLD)
T04	S.S. #2	"	12:30	P	Soil		X	2	" (HOLD)
T05	S.S. #5	"	1:00	P	Soil		X	2	" (HOLD)
T06	S.S. #6	"	1:30	P	Soil		X	2	" (HOLD)

NOTE: HOLD S.S. #1, 2, 5 & 6 UNTIL NOTIFIED By NE!

Turnaround Time: NORMAL

Laboratory Approval:

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	**Received by:** (Signature)	**Date/Time**
Relinquished by: (Signature)	**Received by:** (Signature)	**Date/Time**

Dispatched by: (Signature)	Date/Time	Received for Laboratory by:	Date/Time
[signature]	4 26 93	[signature]	4/26/93 1:00

Method of Shipment:	Send Report To:	Client Phone No.:
"	NORTHEASTERN	518-899-9684

The Laboratory reserves the right to return hazardous samples to the client or may levy a fee of $10.00 per container for disposal.

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

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Environmental Services, Inc.

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TERMS, CONDITIONS & LIMITATIONS

All Services rendered by **Adirondack Environmental Services, Inc.** are undertaken and all rates are based upon the following terms:

(a) Neither **Adirondack Environmental Services, Inc.**, nor any of its employees, agents or sub-contractors shall be liable for any loss or damage arising out of **Adirondack Environmental Services, Inc.'s** performance or non-performance, whether by way of negligence or breach of contract, or otherwise, in any amount greater than twice the amount billed to the customer for the work leading to the claim of the customer. Said remedy shall be the sole and exclusive remedy against **Adirondack Environmental Services, Inc.** arising out of its work.

(b) All claims made must be in writing within forty-five (45) days after delivery of the **Adirondack Environmental Services, Inc.** report regarding said work or such claim shall be deemed as irrovacably waived.

(c) **Adirondack Environmental Services, Inc.** reports are submitted in writing and are for our customers only. Our customers are considered to be only those entities being billed for our services. Acquisition of an **Adirondack Environmental Services, Inc.** report by other than our customer does not constitute a representation of **Adirondack Environmental Services, Inc.** as to the accuracy of the contents thereof.

(d) In no event shall **Adirondack Environmental Services, Inc.**, its employees agents or sub-contractors be responsible for consequential or special damages of any kind or in any amount.

(e) No deviation from the terms set forth herein shall bind **Adirondack Environmental Services, Inc.** unless in writing and signed by a Director of **Adirondack Environmental Services, Inc.**

WEST CENTRAL ENVIRONMENTAL CORP.

Poughkeepsie, N.Y.
(914) 471-1400
Binghamton, N.Y.
(607) 722-6400

WCE

P.O. BOX 83
Rensselaer, N.Y. 12144
Phone (518) 272-6891
Syracuse, N.Y.
(315) 472-6500

Tues. 3-30-93

JOB REPORT JOB NO. 12586-3-93

Date 3/29/93

Customer Utica Alloy   C/o Tony Marzino PO# 02111

Billing Address

Location of Work Utica NY [illegible]

Job Description [illegible] and Clean TCE Tanks
Remove all liquids and sludges. Via VAC Unit
Pressure Wash Tank with Pressure Washer

Date Started 3-30-93   Date Completed

Extra Work Involved (if any)
Pump Additional drums of TCE per (Tony Marzino)

Materials	
2 pair Boots	TAPE 2 Rolls
3 Gloves	20'x20' Poly FWR - out
2 Rain coat	MISC. Hand Tools in
1 Box of Rags	Explosion Meter (4)

Equipment 087-092 (R)   Mileage in 135143
096 (R)   out 134839
304
1 Pressure Washer 3000 PSI (4)
Breathing Air - 4-Bottles

Names (Men On Job)	Total Hours	Names (Men On Job)	Total Hours
(1) W. Gordon 0600-1400	8		
(1) [illegible] 0600-1400	8		
(1) D. [illegible] 0600-1400	8		
(1) [illegible] 0600-1400	8		

Manifest #(s) CTF 0188236

Number of Disposal Loads (Gals.) 24 3/4" → 2065 gal For Disposal 3-31-93

Foreman Bill Gordon 3-30-93

Approved (Customer)   Date

WEST CENTRAL ENVIRONMENTAL CORP.

Jed's
3-31-93

Poughkeepsle, N.Y.
(914) 471-1400
Binghamton, N.Y.
(607) 722-6400

WCE

P.O. BOX 83
Rensselaer, N.Y. 12144
Phone (518) 272-6891
Syracuse, N.Y.
(315) 472-6500

JOB REPORT JOB NO. 18586-3-93 C/O Tony Marino PO# 00111

Date 3-31-93

Customer Utica Alliens

Billing Address

Location of Work Utica NY.

Job Description Continued Cleaning of Tanks
Sterilized Tanks Empty Clean with Date, Close Tank's and Secure
Travel to Albany Tanks visual Inspected By Tony Marino
Transport all waste To Disposal ~~Fac~~ Facility

Date Started 3-30-93 Date Completed

Extra Work Involved (if any)

Materials
Rubber Boots — 0 Breathing Air - (1) Bottle
Gloves — 0
Tyvek — 1

Mileage is on work sheet 3-30-93

Manifest #(s) CTF0188336 (2065 gallons)

Equipment
087-092 (3.5 on site)
096 - Day
1 Pressure Washer ½ Day

Names (Men On Job)	Total Hours	Names (Men On Job)	Total Hours
T Bill Goodine 0700-1500	8		
R Warren Rifenburg 0700-1500	8		
R Dan Dangneault 0700-1500	8		
(O) Jim Rodgers 0700-1030	3.5	on site	
		(see Drivers Sheet)	
		(For Trans. to EWR)	

Number of Disposal Loads (Gals.) 2065 gallons to EWR for disposal

Foreman Bill Goodine 3-31-93

Approved (Customer) Date

JCE# 12586-3-93 CLIENT Utica Alloys DATE 3-30-93
3-31-93

SUPERVISOR B. Goodine

SAFETY & HEALTH OFFICER SAME-B Goodine

OTHER PERSONNEL:

NAME	JOB/FUNCTION	OSHA TRAINING YES	OSHA TRAINING NO
W. Rifenburg	Entry and outside	✓	
D. Daigrault	Entry and outside	✓	
J. Rodgers	VAC unit/outside	✓	

CONFINED SPACE ENTRY — APPROVED — YES — NO

CONDITIONS -
Horizontal Entry on 5th Tanks..
Clean all Still Bottoms From 1st Tank (TCE)
Remove Rust and Pressure wash ~~5~~ Tanks 2nd Tank
Last Contained TCE Vising in

HOT WORK NONE — APPROVED — YES — NO

CONDITIONS -

AIR MONITORING — APPROVED — YES — NO

RESULTS -
LEL 0-1% yes
O_2 20.7% yes

COMMENTS/NOTES
Read MSDS Sheet Attached.
No Smoking in Tank Area

WEST CENTRAL ENVIRONMENTAL CORP.

MATERIAL INFORMATION SHEET

DATE: 3-30-93
3-31-93

CLIENT NAME: Utica Alloys

JOB # 1886-3-93

CHEMICAL NAME: (Still Bottoms) Sludge (TCE) Trichloroethylene

SYNONYM: TCE

HAZARDOUS INGREDIENTS
Trichloroethylene + oils
From Degreasing operation

PHYSICAL DATA
Sludge and liquid
Insoluble in Water

FIRE & EXPLOSION DATA
Autoignition Temperature > 700°
HAP: Not Listed

HEALTH HAZARDS
Avoid Breathing
Avoid Skin Contact

REACTIVITY DATA
Keep Away From Strong Alkalines

SPILL OR LEAK PROCEDURES
Clean up Immediately
contact authorities

PERSONAL PROTECTION
In case of Emergency call (911)
Rain Gear, Boots, Gloves,
Breathing gear, Respirators
(Tyvec Suits, outside)

SPECIAL PRECAUTIONS
Do Not Spill
Do Not Smoke or Eat
In Work Area
Avoid Skin Contact

OTHER PERTINENT INFO' DISCUSSED
Trichloroethylene is a toxic solvent
and a suspected occupational carcinogen.

IT IS THE POLICY OF YOUR EMPLOYER TO INFORM YOU OF THE POTENTIAL DANGERS AND PROPER METHODS OF HANDLING EVERY HAZARDOUS MATERIAL YOU ENCOUNTER. PLEASE ASK ANY QUESTIONS YOU HAVE AND SIGN THIS FORM AFTER YOU ARE AWARE OF THE POTENTIAL DANGERS AND PROPER HANDLING METHODS FOR THE MATERIAL YOU ARE HANDLING TODAY.

PRINTED NAME	SIGNATURE
Bill Goodine	Bill Goodine 3-30-31-93
Warren Ritenbaugh	Warren Ritenbaugh 3-30-31-93
David Daugherty	David Daugherty
Jim Rodgers	Jim Rodgers

Material Safety Data Sheet

From Genium's Reference Collection
Genium Publishing Corporation
1145 Catalyn Street
Schenectady, NY 12303-1836 USA
(518) 377-8855

GENIUM PUBLISHING CORP.

No. 312
TRICHLOROETHYLENE
(Revision E)

Issued: July 1979
Revised: August 1987

SECTION 1. MATERIAL IDENTIFICATION

MATERIAL NAME: TRICHLOROETHYLENE

DESCRIPTION (Origin/Uses): Prepared from *sym*-tetrachloroethane by way of eliminating HCl by boiling with lime. Used to manufacture organic chemicals, pharmaceuticals; in degreasing and dry cleaning; and as a solvent for fats, waxes, rubbers, oils, paints, varnishes, ethers, and cellulose esters.

OTHER DESIGNATIONS: Ethylene Trichloride; TCE; Trichloroethene; 1,1,2-Trichloroethylene; C_2HCl_3; NIOSH *RTECS* #KX4550000; CAS #0079-01-6

MANUFACTURER/SUPPLIER: Available from several suppliers, including: Dow Chemical USA, 2020 Dow Center, Midland, MI 48640; Telephone: (517) 636-1000; (800) 258-CHEM

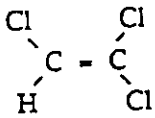
COMMENTS: Trichloroethylene is a toxic solvent and a suspected occupational carcinogen.

HMIS
H 2
F 1
R 1
PPE*
* See sect. 8

R 1
I 3
S 1
K 0

SECTION 2. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Trichloroethylene, CAS #0079-01-6; NIOSH *RTECS* #KX4550000	100	ACGIH Values 1987-88 TLV-TWA*: 50 ppm, 270 mg/m^3 TLV-STEL**: 200 ppm, 1080 mg/m^3 OSHA PEL 1986*** 8-Hr TWA: 100 ppm Ceiling: 200 ppm NIOSH REL 1986 10-Hr TWA: 25 ppm TOXICITY DATA Human, Oral, LD_{Lo}: 7 g/kg Human, Inhalation, TC_{Lo}: 6900 mg/m^3 (10 Min) Human, Inhalation, TC_{Lo}: 160 ppm/83 Min Human, Inhalation, TD_{Lo}: 812 mg/kg



* The TLV-TWA is set to control subjective complaints such as headache, fatigue, and irritability.

** The TLV-STEL is set to prevent incoordination and other beginning anesthetic effects from TCE. These levels should provide a wide margin of safety in preventing liver injury.

*** The OSHA PEL is 300 ppm for 5 minutes in any 2 hours.

SECTION 3. PHYSICAL DATA

Boiling Point ... 188.6°F (87°C)
Vapor Pressure ... 58 Torr at 68°F (20°C)
Water Solubility ... Insoluble
Vapor Density (Air = 1) ... 4.53
Evaporation Rate ... Not Listed
Specific Gravity ... 1.4649 at 68°F (20°C)
Melting Point ... -120.64°F (-84.8°C)
Molecular Weight ... 131.40 Grams/Mole

Appearance and odor: Colorless, nonflammable mobile liquid; sweetish odor like chloroform.

COMMENTS: TCE is highly soluble in lipids. A high vapor pressure at room temperature provides the potential for TCE vapors to contaminate use areas.

SECTION 4. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temperature	Flammability Limits in Air	LOWER	UPPER
		% by Volume		
Not Listed	770°F (410°C)		8%	10.5%

EXTINGUISHING MEDIA: TCE has no flash point in a conventional closed tester at room temperature, but it is moderately flammable at higher temperatures. Use dry chemical, carbon dioxide, alcohol foam, or other extinguishing agents suitable for the surrounding fire.

OSHA Flammability Class (29 CFR 1910.106): Not Regulated

UNUSUAL FIRE/EXPLOSION HAZARDS: During fire conditions TCE emits highly toxic and irritating fumes, including hydrochloric acid and phosgene. SPECIAL FIRE-FIGHTING PROCEDURES: Wear a self-contained breathing apparatus with a full facepiece operated in a pressure-demand or another positive-pressure mode. At TCE vapor levels of 300-1000 ppm, fire fighters who lack the proper respiratory equipment may experience incoordination and impaired judgment.

DOT Flammability Class (49 CFR 173.115): Not Regulated

SECTION 5. REACTIVITY DATA

Trichloroethylene is stable. Hazardous polymerization can occur under certain circumstances (see Conditions to Avoid and Comments, below).

CHEMICAL INCOMPATIBILITIES include magnesium or aluminum powder, NaOH, KOH, or other strong alkaline materials. Reactions with alkaline materials may lead to the formation of dangerous explosive mixtures of chloroacetylenes.

CONDITIONS TO AVOID: When TCE is heated (as in the case with vapor degreasers) or exposed to sunlight, it requires extra stabilization against oxidation, degradation, and polymerization. It is slowly decomposed by light when moist.

PRODUCTS OF HAZARDOUS DECOMPOSITION include hydrochloric acid and phosgene under certain conditions at elevated temperatures.

COMMENTS: TCE is stable under normal handling and storage conditions, and hazardous polymerization is not expected to occur. However, failure of the stabilizer at elevated temperatures or other extreme conditions may allow polymerization to take place.

SECTION 6. HEALTH HAZARD INFORMATION

Trichloroethylene is listed as a carcinogen by the NTP, IARC, and OSHA. NIOSH recommends that trichloroethylene be treated as an occupational carcinogen. IARC carcinogenic results are animal suspect, animal positive, and human indefinite. SUMMARY OF RISKS: Moderate exposures to TCE cause symptoms similar to those of alcohol inebriation. Higher concentrations cause narcotic effects. Ventricular fibrillation has been cited as the cause of death following heavy exposures. TCE-induced hepato cellular carcinomas have been detected in mice during tests conducted by the National Cancer Institute (*Chem & Eng News* 54 [April 5, 1976]:4). Organ systems affected by overexposure to TCE are the central nervous system (euphoria, analgesia, anesthesia), degeneration of the liver and kidneys, the lungs (tachypnea), heart (arrhythmia) and skin (irritation, vesication, and paralysis of fingers when immersed in liquid TCE). Contact with the liquid defats the skin, causing topical dermatitis. Certain people appear to experience synergistic effects from TCE exposure concomitant with exposure to caffeine, alcohol, and other drugs. When combined with alcohol intake, toxic effects are increased and may cause a red, blotchy facial and upper body rash commonly called "degreaser's flush." Other reported symptoms of TCE exposure include abnormal fatigue, headache, irritability, gastric disturbances, and intolerance to alcohol. Toxic effects from testing of TCE on humans include hallucination, distorted perception, somnolence (general depressed activity), and jaundice. TARGET ORGANS: Respiratory system, central nervous system, heart, liver, kidneys, and skin. PRIMARY ENTRY: Ingestion, inhalation, skin contact. ACUTE EFFECTS: Headache, vertigo, visual disturbance, tremors, nausea, vomiting, dermatitis, dizziness, drowsiness, and irritation to the eyes, nose, and throat. CHRONIC EFFECTS: None Reported. MEDICAL CONDITIONS AGGRAVATED BY LONG-TERM EXPOSURE: Diseases of the liver, kidneys, lungs, and central nervous system. FIRST AID: EYE CONTACT: Immediately flush eyes, including under the eyelids, gently but thoroughly with plenty of running water for at least 15 minutes. Get medical help.* SKIN CONTACT: Wash thoroughly with soap and water. Remove and launder contaminated clothing before wearing it again; clean material from shoes and equipment. Get medical help.* INHALATION: Remove victim to fresh air; restore and/or support his breathing as needed. Do not give adrenalin to the victim. Get medical help.* INGESTION: Call a poison control center. Never give anything by mouth to someone who is unconscious or convulsing. A professional decision regarding whether or not to induce vomiting is required. Do not give adrenalin to the victim. Get medical help.*

*GET MEDICAL ASSISTANCE - IN PLANT, PARAMEDIC, COMMUNITY. Get prompt medical assistance for further treatment, observation, and support after first aid.

COMMENTS: Workers' responses to TCE vary significantly because of many factors, including age, health status, nutrition, and intake of alcohol, caffeine, and medicines. Do not use these substances before, during, or after exposure to TCE. If a worker displays any of the symptoms of exposure to TCE, thoroughly investigate all the possible contributing factors to determine, if possible, how much the work environment levels of TCE are responsible.

SECTION 7. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL/LEAK: Inform safety personnel of any trichloroethylene spill or leak and evacuate the area for large spills. Cleanup personnel must use respiratory and liquid contact protection. Adequate ventilation must be provided. Confine the spilled TCE to as small an area as possible. Do not allow it to run off to sewers or open waterways. Pick up spilled TCE with a vacuum cleaner or an absorbent such as vermiculite.

DISPOSAL: Consider reclamation, recycling, or destruction rather than disposal in a landfill.

Trichloroethylene is designated as a hazardous substance by the EPA (40 CFR 116.4).

Trichloroethylene is reported in the 1983 EPA TSCA Inventory.

EPA Hazardous Waste Number (40 CFR 261.33): U228

EPA Reportable Quantity (40 CFR 117.3): 1000 lbs (454 kgs)

Aquatic Toxicity Rating, TLm 96: Not Listed

SECTION 8. SPECIAL PROTECTION INFORMATION

GOGGLES: Always wear protective eyeglasses or chemical safety goggles. Follow the eye and face protection guidelines of 29 CFR 1910.133. GLOVES: Wear impervious gloves. RESPIRATOR: Use a NIOSH-approved respirator per the *NIOSH Guide to Chemical Hazards* (Genium ref. 88) for the maximum-use concentrations and/or the exposure limits cited in section 2. Follow the respirator guidelines in 29 CFR 1910.134. Any detectable concentration of TCE requires an SCBA, full facepiece, and pressure-demand/positive-pressure modes. WARNING: Air-purifying respirators will not protect workers from oxygen-deficient atmospheres. OTHER EQUIPMENT: Wear rubber boots, aprons, and other suitable body protection appropriate to the existing work environment. VENTILATION: Install and operate general and local exhaust ventilation systems of sufficient power to maintain airborne concentrations of TCE below the OSHA PEL standards cited in section 2. SAFETY STATIONS: Make eyewash stations, washing facilities, and safety showers available in areas of use and handling. Contact lenses pose a special hazard; soft lenses may absorb irritants, and all lenses concentrate them. OTHER SPECIAL MODIFICATIONS IN THE WORKPLACE: Because of the unresolved controversy about the carcinogenic status of TCE, all existing personal protective equipment and engineering technology should be used to prevent any possibility of worker contact with this material.

COMMENTS: Practice good personal hygiene. Keep material off of your clothes and equipment. Avoid transfer of material from hands to mouth while eating, drinking, or smoking. Adhere to the sanitation requirements of 29 CFR 1910.141 and 29 CFR 1910.142.

SECTION 9. SPECIAL PRECAUTIONS AND COMMENTS

STORAGE SEGREGATION: Prevent TCE from coming into contact with strong caustics such as NaOH; KOH; chemically active metal like Ba, Li, Na, Mg, Ti; and powdered aluminum or magnesium in acidic solutions. SPECIAL HANDLING/STORAGE: Store this material in a cool, dry, well-ventilated area. Avoid elevated temperatures because products of toxic and corrosive decomposition from TCE may form. Monitor the level of any stabilizer component that may be added to the TCE. (Consult the technical data from the supplier to determine the specifics of any added stabilizer.) If applicable, follow the supplier's recommendation concerning proper rotation of stock, shelf-life requirements, and levels of stabilizers. ENGINEERING CONTROLS IN THE WORKPLACE: Avoid collecting aluminum fines (very small particles) or chips in a TCE vapor degreaser. Monitor TCE stabilizer levels regularly. Only trained personnel should operate vapor degreasers.

TRANSPORTATION DATA (per 49 CFR 172.101-2):

DOT Hazard Class: ORM-A — DOT ID No. UN1710 — IMO Class: 6.1

IMO Label: St. Andrew's Cross (X)* — DOT Shipping Name: Trichloroethylene — DOT Label: None

* Harmful - Stow away from foodstuffs (IMO Label, Materials of Class 6.1 Packaging Group III).

References: 1-9, 12, 14, 21, 73, 87-94. PI

Approvals JO Recrocco

Indust. Hygiene/Safety 11-19-87

Medical Review

5-3-93
5-31-93

WEST CENTRAL ENVIRONMENTAL CORP.

Poughkeepsie, N.Y.
(914) 471-1400
Binghamton, N.Y.
(607) 722-6400

WCE

P.O. BOX 83
Rensselaer, N.Y. 12144
Phone (518) 272-6891
Syracuse, N.Y.
(315) 472-6500

Date

JOB REPORT JOB NO. 12586-5-93

Customer Utica Alloys c/o Tony Marino

Billing Address

Location of Work Utica N.Y.

Job Description
Trans port Load to EWK

Transportation only

Date Started Date Completed

Extra Work Involved (if any)

Materials

Manifest #(s)

Ct out 1915
IN 1430

Equipment 087 + 092

Mileage IN 135255
out 135743

Names (Men On Job)	Total Hours	Names (Men On Job)	Total Hours
① J. Rodgers			

Number of Disposal Loads (Gals.) 2065 gallons

Foreman

Approved (Customer) Date

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Hazardous Waste MANIFEST PROGRAM, State Office Building
Hartford, CT 06106

FOR STATE USE ONLY

Please type (or print) *(Form designed for use on elite (12-pitch) typewriter.)*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N.Y.D.0.0.2.2.5.2.5.9.4 — Manifest Document No.: 3.31.93
2. Page 1 of

Information in the shaded areas is not required by Federal law, but may be required by State law.

3. Generator's Name and Mailing Address: UTICA ALLOYS, P.O. BOX 53, UTICA, N.Y. 13503
4. Generator's Phone (315) 733-0475

A. State Manifest Document Number: CT F 0188236
B. G.S.I. (Gen. Site Address): CORNER OF LELAND AND BURZ AVE., UTICA, N.Y. 13502

5. Transporter 1 Company Name: WEST CENTRAL ENVIRONMENTAL CORP.
6. US EPA ID Number: N.Y.D.0.0.0.7.0.5.2.7.1
C. S.T.I. (Trans. Lic. Plate #) 75 202 NY
D. Tran. Phone (518) 272-5201

7. Transporter 2 Company Name
8. US EPA ID Number
E. S.T.I. (Trans. Lic. Plate #)
F. Tran. Phone ( )

9. Designated Facility Name and Site Address: ENVIRONMENTAL WASTE RESOURCES, 130 FREIGHT STREET, PROJ. 10009, WATERBURY, CT 06702
10. US EPA ID Number: C.T.D.0.7.2.1.3.8.9.5.9
G. State Facility's ID (Not Required)
H. Facility's Phone (203) 755-2283

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ HAZARDOUS WASTE LIQUID NOS (TETRACHLOROETHYLENE) ORM-E NA9189	001	TT	02045	G	EPA F001/D039 STATE
b.					EPA STATE
c.					EPA STATE
d.					EPA STATE

J. Additional Descriptions for Materials Listed Above
a.
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a. Interim / Final
b.
c.
d.

15. Special Handling Instructions and Additional Information
WASTE STREAM # A35450
24 HOUR EMERGENCY PHONE # (315) 733-0475
DOT E-8423
EMERGENCY RESPONSE GUIDE #31
Point of Departure:

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, and all applicable State laws and regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: ANTHONY MARINO — Signature: Anthony Marino — Month Day Year: 3 31 93

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAMES P ROGERS — Signature: James P Rogers — Month Day Year: 03 31 93

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Bill Cooke — Signature: Bill Cooke — Month Day Year: 4 3 93

GENERATOR / TRANSPORTER / FACILITY

FOR SPILLS WITHIN CONNECTICUT, CONTACT CT DEP OIL AND CHEMICAL — IN THE EVENT OF A SPILL, CONTACT THE NATIONAL RESPONSE CENTER, U.S. COAST GUARD 1-800-424-8802.

6-93
TUES.

WEST CENTRAL ENVIRONMENTAL CORP.

Poughkeepsie, N.Y.
(914) 471-1400
Binghamton, N.Y.
(607) 722-6400

WCE

P.O. BOX 83
Rensselaer, N.Y. 12144
Phone (518) 272-6891
Syracuse, N.Y.
(315) 472-6500

Date

JOB REPORT JOB NO. 12686-3-93

c/o Tony Marino

Customer Utica Alloys

Billing Address

Location of Work Utica New York

Job Description Documentation for Final Report, Call UFFC for Utilities. Travel to Site from Albany to observe The Removal of Two Tanks and also inspected Site with Jeff Wink and owner. Witnessed the cutting of the Tanks for final Report.

Date Started

Date Completed

Extra Work Involved (if any)

Materials

Manifest #(s)

Equipment P/U 096

Names (Men On Job)	Total Hours	Names (Men On Job)	Total Hours
(3) Bill Goodline 0600-1300	7		
Jeff Wink 0600-1300	7	(Sub) Northernstrand	

Number of Disposal Loads (Gals.) N/A

Foreman Bill Goodline

Approved (Customer) Date

...WORK PERFORMED, PERSONNEL, MATERIAL...

1-25-93

WEST CENTRAL ENVIRONMENTAL CORP.

Poughkeepsie, N.Y.
(914) 471-1400
Binghamton, N.Y.
(607) 722-6400

WCE

P.O. BOX 83
Rensselaer, N.Y. 12144
Phone (518) 272-6891
Syracuse, N.Y.
(315) 472-6500

JOB REPORT JOB NO. 12586-3-93 PO# 02111 C/O Tony Marino

Date

Customer Utica Alloys

Billing Address

Location of Work Utica Alloys

Job Description

Travel to Site Collect Data and Samples For Closure Report.

Date Started

Date Completed

Extra Work Involved (if any)

Materials Misc Water Samples TO NES

Equipment 1 Pickup 094-10

Misc Hand tools

Manifest #(s)

Names (Men On Job)	Total Hours	Names (Men On Job)	Total Hours
Bill Gordon 0700 1700	10		
Jeff Wnuk (sub) 0700 1700	10	North Eastern Env.	

Number of Disposal Loads (Gals.) NA

Foreman Bill Gordon

Date

Approved (Customer)

... ACCEPTANCE THAT THE WORK PERFORMED, PERSONNEL, MATERIAL ...

APPENDIX C

Surface Soil Sampling Results for Utica Alloys Site by

Adirondack Environmental Services, Inc.

NORTHEASTERN
ENVIRONMENTAL
TECHNOLOGIES CORP.

P.O. BOX 2167 • BALLSTON SPA, NEW YORK 12020
518/899-9684

September 28, 1993

Mr. William Goodine Operations Supervisor
West Central Environmental Corp.
P.O. Box 83
Rensselaer, N.Y. 12144

Dear Bill:

RE: SOIL GAS SURVEY & SURFACE SOIL SAMPLING PROGRAM; UTICA ALLOY'S (UA) UTICA, NEW YORK SITE

This transmittal has been prepared to respond to recent consulting and site inspection services performed at the above reference site on September 23, 1993 at the request of WCE. This work was conducted on behalf of WCE pursuant to the request of Utica Alloy representative Mr. Joseph Jiampietro. Northeastern has relinquished on 9/23/93, (6) hand auger soil samples and (2) composite soil samples; collected adjacent to a former TCE storage area, to Mr. Thomas Abbott of Adirondack Environmental Services (AES). In addition vadose zone soil gas data compiled from this area has also been provided to AES and UA for additional consideration. At this time, it is the understanding of this office that AES will provide UA and / or its appointed representative(s) all necessary data and reporting services exclusively. It is also the understanding of this office that no additional service are requested of Northeastern at this time. If you have any question regarding this transmittal please contact this office. as necessary.

Respectfully Submitted,
Northeastern Environmental Technologies Corporation

Jeffrey T. Wink, President
File/ELAPRPDOC\WCEUA2.doc

c.c. J. Jiampietro UA
A. Marino UA
S. Ritchen Esq.
P. Batista AES
T. Abbott AES

Adirondack Environmental Services, Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

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LABORATORY REPORT

for

Utica Alloys, Inc.
Leland & Wurz Avenue
Utica, NY 13051

Attention: Joseph Jiampietro

Report date: 10/18/93
Number of samples analyzed: 10
AES Project ID: 930923AN
Invoice #: 129780

CC: Anthony Marino

ELAP ID#: 10709

AIHA ID#: 12144-001

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CLIENT: Utica Alloys, Inc.
CLIENT'S SAMPLE ID: SB-1
AES sample #: 930923AN01
Samples taken by: J.Wink
MATRIX: soil
Date Sampled: 09/23/93
Date sample received: 09/23/93
Location: Utica NY
grab

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
HOLD		Not	Analyzed		09/23/93

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CLIENT: Utica Alloys, Inc.
CLIENT'S SAMPLE ID: SB-2
AES sample #: 930923AN02
Samples taken by: J.Wink
MATRIX: soil
Date Sampled: 09/23/93
Date sample received: 09/23/93
Location: Utica NY
grab

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
HOLD		Not	Analyzed		09/23/93

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CLIENT: Utica Alloys, Inc.
CLIENT'S SAMPLE ID: SB-3
AES sample #: 930923AN03
Samples taken by: J.Wink
MATRIX: soil
Date Sampled: 09/23/93
Date sample received: 09/23/93
Location: Utica NY
grab

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
HOLD		Not	Analyzed		09/23/93

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CLIENT: Utica Alloys, Inc.
CLIENT'S SAMPLE ID: SB-4
AES sample #: 930923AN04
Samples taken by: J.Wink
MATRIX: soil
Date Sampled: 09/23/93
Date sample received: 09/23/93
Location: Utica NY
grab

PARAMETER	PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
HOLD			Not	Analyzed		09/23/93

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CLIENT: Utica Alloys, Inc.
CLIENT'S SAMPLE ID: SB-5
AES sample #: 930923AN05

Samples taken by: J.Wink
MATRIX: soil

Date Sampled: 09/23/93
Date sample received: 09/23/93
Location: Utica NY
grab

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
HOLD		Not	Analyzed		09/23/93

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CLIENT: Utica Alloys, Inc.
CLIENT'S SAMPLE ID: SB-6
AES sample #: 930923AN06
Samples taken by: J.Wink
MATRIX: soil
Date Sampled: 09/23/93
Date sample received: 09/23/93
Location: Utica NY
grab

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
HOLD		Not	Analyzed		09/23/93

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CLIENT: Utica Alloys, Inc. Date Sampled: 09/23/93
CLIENT'S SAMPLE ID: Composite #1 Date sample received: 09/23/93
AES sample #: 930923AN07 Samples taken by: J.Wink Location: Utica NY
MATRIX: soil composite

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
Chloromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Bromomethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Dichlorodifluoromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Vinyl Chloride	EPA-8010	<20	ug/kg	PBB	09/27/93
Chloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Methylene Chloride	EPA-8010	<20	ug/kg	PBB	09/27/93
Trichloroflouromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1 Dichloroethene	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1 Dichloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
t-1,2 Dichloroethene	EPA-8010	<20	ug/kg	PBB	09/27/93
Chloroform	EPA-8010	<20	ug/kg	PBB	09/27/93
1,2 Dichloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1,1 Trichloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Carbon Tetrachloride	EPA-8010	<20	ug/kg	PBB	09/27/93
Bromodichloromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
1,2 Dichloropropane	EPA-8010	<20	ug/kg	PBB	09/27/93
t-1,3 Dichloropropene	EPA-8010	<20	ug/kg	PBB	09/27/93
Trichloroethylene	EPA-8010	48000	ug/kg	PBB	09/29/93
Dibromochloromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1,2 Trichloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93

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CLIENT: Utica Alloys, Inc. Date Sampled: 09/23/93
CLIENT'S SAMPLE ID: Composite #1 Date sample received: 09/23/93
AES sample #: 930923AN07 Samples taken by: J.Wink Location: Utica NY
MATRIX: soil composite

continued:

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
cis-1,3-Dichloropropene	EPA-8010	<20	ug/kg	PBB	09/27/93
2-Chloroethylvinylether	EPA-8010	<20	ug/kg	PBB	09/27/93
Bromoform	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1,2,2, Tetchloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Tetrachloroethylene	EPA-8010	52	ug/kg	PBB	09/27/93
Chlorobenzene	EPA-8010	<20	ug/kg	PBB	09/27/93
1,2-Dichlorobenzene	EPA-8010	<20	ug/kg	PBB	09/27/93
1,3-Dichlorobenzene	EPA-8010	<20	ug/kg	PBB	09/27/93
1,4-Dichlorobenzene	EPA-8010	<20	ug/kg	PBB	09/27/93

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CLIENT: Utica Alloys, Inc. Date Sampled: 09/23/93
CLIENT'S SAMPLE ID: Composite #2 Date sample received: 09/23/93
AES sample #: 930923AN08 Samples taken by: J.Wink Location: Utica NY
MATRIX: soil composite

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
Chloromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Bromomethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Dichlorodifluoromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Vinyl Chloride	EPA-8010	<20	ug/kg	PBB	09/27/93
Chloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Methylene Chloride	EPA-8010	<20	ug/kg	PBB	09/27/93
Trichloroflouromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1 Dichloroethene	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1 Dichloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
t-1,2 Dichloroethene	EPA-8010	<20	ug/kg	PBB	09/27/93
Chloroform	EPA-8010	<20	ug/kg	PBB	09/27/93
1,2 Dichloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1,1 Trichloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Carbon Tetrachloride	EPA-8010	<20	ug/kg	PBB	09/27/93
Bromodichloromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
1,2 Dichloropropane	EPA-8010	<20	ug/kg	PBB	09/27/93
t-1,3 Dichloropropene	EPA-8010	<20	ug/kg	PBB	09/27/93
Trichloroethylene	EPA-8010	29000	ug/kg	PBB	09/29/93
Dibromochloromethane	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1,2 Trichloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93

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CLIENT: Utica Alloys, Inc. Date Sampled: 09/23/93
CLIENT'S SAMPLE ID: Composite #2 Date sample received: 09/23/93
AES sample #: 930923AN08 Samples taken by: J.Wink Location: Utica NY
MATRIX: soil composite

continued:

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
cis-1,3-Dichloropropene	EPA-8010	<20	ug/kg	PBB	09/27/93
2-Chloroethylvinylether	EPA-8010	<20	ug/kg	PBB	09/27/93
Bromoform	EPA-8010	<20	ug/kg	PBB	09/27/93
1,1,2,2, Tetchloroethane	EPA-8010	<20	ug/kg	PBB	09/27/93
Tetrachloroethylene	EPA-8010	<20	ug/kg	PBB	09/27/93
Chlorobenzene	EPA-8010	<20	ug/kg	PBB	09/27/93
1,2-Dichlorobenzene	EPA-8010	<20	ug/kg	PBB	09/27/93
1,3-Dichlorobenzene	EPA-8010	<20	ug/kg	PBB	09/27/93
1,4-Dichlorobenzene	EPA-8010	<20	ug/kg	PBB	09/27/93

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CLIENT: Utica Alloys, Inc. Date Sampled: 09/23/93
CLIENT'S SAMPLE ID: Trip Blank Date sample received: 09/23/93
AES sample #: 930923AN09 Samples taken by: J.Wink Location: Utica NY
MATRIX: water composite

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
Chloromethane	EPA-8010	<1	ug/l	PBB	09/28/93
Bromomethane	EPA-8010	<1	ug/l	PBB	09/28/93
Dichlorodifluoromethane	EPA-8010	<1	ug/l	PBB	09/28/93
Vinyl Chloride	EPA-8010	<1	ug/l	PBB	09/28/93
Chloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
Methylene Chloride	EPA-8010	<1	ug/l	PBB	09/28/93
Trichloroflouromethane	EPA-8010	<1	ug/l	PBB	09/28/93
1,1 Dichloroethene	EPA-8010	<1	ug/l	PBB	09/28/93
1,1 Dichloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
t-1,2 Dichloroethene	EPA-8010	<1	ug/l	PBB	09/28/93
Chloroform	EPA-8010	<1	ug/l	PBB	09/28/93
1,2 Dichloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
1,1,1 Trichloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
Carbon Tetrachloride	EPA-8010	<1	ug/l	PBB	09/28/93
Bromodichloromethane	EPA-8010	<1	ug/l	PBB	09/28/93
1,2 Dichloropropane	EPA-8010	<1	ug/l	PBB	09/28/93
t-1,3 Dichloropropene	EPA-8010	<1	ug/l	PBB	09/28/93
Trichloroethylene	EPA-8010	<1	ug/l	PBB	09/28/93
Dibromochloromethane	EPA-8010	<1	ug/l	PBB	09/28/93
1,1,2 Trichloroethane	EPA-8010	<1	ug/l	PBB	09/28/93

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CLIENT: Utica Alloys, Inc. Date Sampled: 09/23/93
CLIENT'S SAMPLE ID: Trip Blank Date sample received: 09/23/93
AES sample #: 930923AN09 Samples taken by: J.Wink Location: Utica NY
MATRIX: water composite

continued:

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
cis-1,3-Dichloropropene	EPA-8010	<1	ug/l	PBB	09/28/93
2-Chloroethylvinylether	EPA-8010	<1	ug/l	PBB	09/28/93
Bromoform	EPA-8010	<1	ug/l	PBB	09/28/93
1,1,2,2, Tetchloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
Tetrachloroethylene	EPA-8010	<1	ug/l	PBB	09/28/93
Chlorobenzene	EPA-8010	<1	ug/l	PBB	09/28/93
1,2-Dichlorobenzene	EPA-8010	<1	ug/l	PBB	09/28/93
1,3-Dichlorobenzene	EPA-8010	<1	ug/l	PBB	09/28/93
1,4-Dichlorobenzene	EPA-8010	<1	ug/l	PBB	09/28/93

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CLIENT: Utica Alloys, Inc. Date Sampled: 09/23/93
CLIENT'S SAMPLE ID: Field Blank Date sample received: 09/23/93
AES sample #: 930923AN10 Samples taken by: J.Wink Location: Utica NY
MATRIX: water composite

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
Chloromethane	EPA-8010	<1	ug/l	PBB	09/28/93
Bromomethane	EPA-8010	<1	ug/l	PBB	09/28/93
Dichlorodifluoromethane	EPA-8010	<1	ug/l	PBB	09/28/93
Vinyl Chloride	EPA-8010	<1	ug/l	PBB	09/28/93
Chloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
Methylene Chloride	EPA-8010	<1	ug/l	PBB	09/28/93
Trichloroflouromethane	EPA-8010	<1	ug/l	PBB	09/28/93
1,1 Dichloroethene	EPA-8010	<1	ug/l	PBB	09/28/93
1,1 Dichloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
t-1,2 Dichloroethene	EPA-8010	<1	ug/l	PBB	09/28/93
Chloroform	EPA-8010	<1	ug/l	PBB	09/28/93
1,2 Dichloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
1,1,1 Trichloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
Carbon Tetrachloride	EPA-8010	<1	ug/l	PBB	09/28/93
Bromodichloromethane	EPA-8010	<1	ug/l	PBB	09/28/93
1,2 Dichloropropane	EPA-8010	<1	ug/l	PBB	09/28/93
t-1,3 Dichloropropene	EPA-8010	<1	ug/l	PBB	09/28/93
Trichloroethylene	EPA-8010	<1	ug/l	PBB	09/28/93
Dibromochloromethane	EPA-8010	<1	ug/l	PBB	09/28/93
1,1,2 Trichloroethane	EPA-8010	<1	ug/l	PBB	09/28/93

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A full service analytical research laboratory offering solutions to environmental concerns

CLIENT: Utica Alloys, Inc. Date Sampled: 09/23/93
CLIENT'S SAMPLE ID: Field Blank Date sample received: 09/23/93
AES sample #: 930923AN10 Samples taken by: J.Wink Location: Utica NY
MATRIX: water composite

continued:

PARAMETER PERFORMED	METHOD	RESULT	UNITS	NOTEBK REF	TEST DATE
cis-1,3-Dichloropropene	EPA-8010	<1	ug/l	PBB	09/28/93
2-Chloroethylvinylether	EPA-8010	<1	ug/l	PBB	09/28/93
Bromoform	EPA-8010	<1	ug/l	PBB	09/28/93
1,1,2,2, Tetchloroethane	EPA-8010	<1	ug/l	PBB	09/28/93
Tetrachloroethylene	EPA-8010	<1	ug/l	PBB	09/28/93
Chlorobenzene	EPA-8010	<1	ug/l	PBB	09/28/93
1,2-Dichlorobenzene	EPA-8010	<1	ug/l	PBB	09/28/93
1,3-Dichlorobenzene	EPA-8010	<1	ug/l	PBB	09/28/93
1,4-Dichlorobenzene	EPA-8010	<1	ug/l	PBB	09/28/93

APPROVED BY: Tara Davis
Report date: 10/18/93

Adirondack Environmental Services, Inc.
314 North Pearl Street
Albany, New York 12207
518-434-4546/434-0891 FAX

A full service analytical research laboratory offering solutions to environmental concerns

CHAIN OF CUSTODY RECORD

CLIENT NAME	PROJECT NAME (Location)	SAMPLERS (Names)
Utica Alloys – [illegible]	Soil Analysis - Tank Closure	JEFFREY T. WINSKY - NORTHEASTERN ENV. TECH.
ADDRESS	PO NUMBER	SAMPLERS: (Signature)
Utica N.Y.		

AES SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION & LOCATION	DATE SAMPLED	TIME A=a.m. P=p.m.		SAMPLE TYPE MATRIX	COMP	GRAB	NUMBER OF CONT'S	ANALYSIS REQUIRED
930923-AN01	SB-1	9/23/93	11:32	A/P	Soil		X	2	8010 – HOLD
AN02	SB-2		11:54	A/P			X		
AN03	SB-3		12:05	A/P			X		
AN04	SB-4		12:30	A/P			X		
AN05	SB-5		12:45	A/P			X		
AN06	SB-6		1:00	A/P			X		
AN07	Composite #1		12:15	A/P		X			
AN08	Composite #2		1:10	A/P		X			
AN09	TRIP BLANK		11:30	A/P	D.I.		X		
AN10	FIELD BLANK		11:27	A/P	D.I.		X		
	NOTE: ALL SOIL GAS - VOC DATA & AUGER HEAD SPACE DATA ASSIMILATED ON 9/23/93 HAS BEEN PROVIDED TO AES REPRESENTATIVE THOMAS ABBOTT ON 9/23/93.			A/P					

Turnaround Time

Laboratory Approval:

Relinquished by: (Signature)	**Received by:** (Signature) Thomas L. Abbott	**Date/Time** 9/23/93 1:30 PM.
Relinquished by: (Signature)	**Received by:** (Signature)	**Date/Time**
Relinquished by: (Signature)	**Received by:** (Signature)	**Date/Time**
Dispatched by: (Signature) / **Date/Time**	**Received for Laboratory by:**	**Date/Time** 9/23/93 3:28
Method of Shipment:	**Send Report To:**	**Client Phone No.:**

The Laboratory reserves the right to return hazardous samples to the client or may levy a fee of $10.00 per container for disposal.

WHITE - Lab Copy YELLOW - Sampler Copy PINK - Generator Copy

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TERMS, CONDITIONS & LIMITATIONS

All Services rendered by **Adirondack Environmental Services, Inc.** are undertaken and all rates are based upon the following terms:

(a) Neither **Adirondack Environmental Services, Inc.**, nor any of its employees, agents or sub-contractors shall be liable for any loss or damage arising out of **Adirondack Environmental Services, Inc.'s** performance or non-performance, whether by way of negligence or breach of contract, or otherwise, in any amount greater than twice the amount billed to the customer for the work leading to the claim of the customer. Said remedy shall be the sole and exclusive remedy against **Adirondack Environmental Services, Inc.** arising out of its work.

(b) All claims made must be in writing within forty-five (45) days after delivery of the **Adirondack Environmental Services, Inc.** report regarding said work or such claim shall be deemed as irrovacably waived.

(c) **Adirondack Environmental Services, Inc.** reports are submitted in writing and are for our customers only. Our customers are considered to be only those entities being billed for our services. Acquisition of an **Adirondack Environmental Services, Inc.** report by other than our customer does not constitute a representation of **Adirondack Environmental Services, Inc.** as to the accuracy of the contents thereof.

(d) In no event shall **Adirondack Environmental Services, Inc.**, its employees agents or sub-contractors be responsible for consequential or special damages of any kind or in any amount.

(e) No deviation from the terms set forth herein shall bind **Adirondack Environmental Services, Inc.** unless in writing and signed by a Director of **Adirondack Environmental Services, Inc.**