TECHNOLOGIES

98 VANADIUM ROAD
BUILDING D, 2nd FLOOR
BRIDGEVILLE, PA 15017
(412) 221-1100
(412) 257-6103 (FAX)
http://www.vanadium.com

RCRA INTERIM CORRECTIVE MEASURES IMPLEMENTATION PLANS

GAR ELECTROFORMING

NOVEMBER 2005

Prepared for:

GAR Electroforming Division
Electroformers, Inc.
Danbury, Connecticut

Vanadium GROUP

RDMS DOC ID 106331

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
New England Region
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

December 19, 2005

George Ray, President
GAR Electroforming, Inc.
P.O. Box 340
11 Augusta Drive
Danbury, Connecticut 06810-0340

Re: APPROVAL of Pumice Lagoon Interim Corrective Measure Work Plan

Dear Mr. Ray,

The United States Environmental Protection Agency (EPA) is in receipt of a December 2005 work plan from your consultant, SE Technologies, setting forth an Interim Corrective Measure Plan for the Pumice Lagoon (Work Plan).

We concur that this work is most appropriately conducted during the third Quarter of 2006 given the efficiencies that could likely result by conducting this work during the dry season.

The Work Plan is hereby APPROVED.

Please contact me if you have any questions or concerns with this approval.

Sincerely,

\ by email Dec. 19, 2005 \ hard copy mailed Dec. 19, 2005

Raphael J. Cody
Corrective Action Section
U.S. EPA
Suite 1100-HBT
One Congress Street
Boston, MA 02114-2023

cc: Marina Roser, CTDEP
Roger Dhonau, SE Technologies

RCRA INTERIM CORRECTIVE MEASURES IMPLEMENTATION PLANS

TABLE OF CONTENTS

SECTION **PAGE**

1.0 DESIGN PLAN 1
- 1.1 Soil Removal 2
- 1.2 Measure of Success 4

2.0 DATA QUALITY ASSURANCE PLAN 5
- 2.1 Introduction 5
- 2.2 Project Organization and Responsibility 5
- 2.3 Quality Assurance Objectives for Measurement Data 7
- 2.4 Field Procedures 8
- 2.5 Sample Custody 11
- 2.6 Sample Analysis 13
- 2.7 Data Reduction, Validation and Reporting 14

3.0 DATA MANAGEMENT PLAN 15
- 3.1 Organization 15
- 3.2 Data Presentation 16

4.0 SITE HEALTH AND SAFETY PLAN 17
- 4.1 Introduction 17
- 4.2 Safety and Health Risk Analysis 17
- 4.3 Hazard Information 17
- 4.4 Personnel Training Requirements 17
- 4.5 Personal Protective Equipment 17
- 4.6 Medical Surveillance 17
- 4.7 Work Zones 17
- 4.8 Decontamination And Disposal Procedures 17
- 4.9 Emergency Response 17

ATTACHMENTS

A Historic Pumice and Wastewater Treatment Sludge Analyses

B Site Layout and Site Location Maps

RCRA INTERIM CORRECTIVE MEASURES IMPLEMENTATION PLANS

1.0 DESIGN PLAN

This Interim Corrective Measures Design Plan has been prepared for the GAR Electroforming Division facility (GAR) located in Danbury, Connecticut, on Augusta Drive in Commerce Park (Figure 1). The Design Plan has been prepared in general accordance with EPA's guidance document entitled, *RCRA Interim Corrective Measures Guidance* and addresses an Area of Concern (AOC) identified as the Pumice Lagoon.

The facility was constructed in 1963 and was specifically constructed for electroforming work. Two electroforming wastewater treatment sludge lagoons were constructed by the original owner (Heli-Coil) in the extreme eastern corner of the property. A third lagoon, immediately northeast of the sludge lagoons, was designed to receive spent pumice from surface finishing of certain nickel products. The facility was acquired by GAR in 1979 from Heli-Coil (Division of Mite Corp.) and continued operations under the same general production technology.

Records of operation of these three lagoons are incomplete. However, according to GAR personnel, there are no known periods when electroforming wastewater treatment sludge was intentionally or accidentally discharged to the Pumice Lagoon. No information on operation during the period prior to acquisition by GAR (1963-1979) was available for use in development of this Plan.

The two electroplating sludge lagoons underwent closure in two stages. In November 1986, 247 tons of sludge and heavily contaminated soil were removed from the two electroforming wastewater treatment sludge lagoons. Excavation was halted when groundwater was encountered. All visible sludge had been removed, but constituent concentrations in remaining soils exceeded clean closure criteria. As clean closure was not practical, closure was completed in accordance with a CTDEP and EPA approved Closure Plan in June 1988. This Plan allowed closure completion under 40 CFR 265.310 with placement of an engineered cap.

At the time of closure, a single sample was taken from the adjacent Pumice Lagoon. This sample (white in coloration) contained trace concentrations of nickel, as was anticipated, given its use. The nickel content (630 mg/kg) was far below that typical of the sludge (30-50 g/kg) and did not contain other sludge constituents in the same proportions as in the sludge. Therefore, it was not considered to have been impacted by the sludge lagoon operations. These historic analyses are provided in Attachment A.

Over the ensuing years of post-closure monitoring, groundwater concentrations of all monitored parameters associated with the closed sludge lagoons decreased as was expected. However, nickel concentrations down gradient of the Pumice Lagoon soon leveled and failed to continue the anticipated decrease over time.

Upon notification by EPA that the facility was to investigate and, if necessary, remediate any spills or releases of hazardous materials pursuant to RCSA Section 22a-449(c)-105(h)(6), further evaluation of the Pumice Lagoon was performed to determine if it was a source of the persistent high groundwater nickel concentrations. A representative of Premier Laboratory (Dayville, CT) collected three samples of the pumice lagoon on August 16. The samples were analyzed for total and leachable nickel. Both visual observations (green rather than white) and results of this analysis (See Attachment A) demonstrated that a material dissimilar to the spent pumice was present in that unit.

Upon receipt of this information, GAR again contracted Premier Laboratory to complete a visual profile of the Pumice Lagoon. This profile determined that this same green material was present in a layer that extended over much of the central portion of the lagoon. It is speculated that at sometime during the operational history of the electroforming wastewater treatment sludge lagoons, one or more events occurred whereby sludge (which had the same green coloration) was accidentally or intentionally released to the Pumice Lagoon. Again, GAR management has no recollection or records of such a release having taken place. Conversely, there is no documentation indicating that such a discharge (intentional or accidental) took place while operated by the previous owner. As the treatment system was modified in 1986 and discharge to all three lagoons ceased that year, the release is at least 19 years old.

The goal of this Interim Corrective Measures (ICM) is to perform a cleanup of the Pumice Lagoon that will immediately reduce the potential for groundwater contamination and direct exposure by the apparent wastewater treatment sludge residues. In this ICM, the objective is for removal to continue until soils remaining within the Pumice Lagoon meet both Connecticut's remediation Criteria for Direct Soil and Connecticut's Pollutant Mobility Criteria for an industrial setting as presented in Table 1. Based upon data gathered during the visual profiling, it is estimated that there are approximately 40 cubic yards of sludge mixed with spent pumice that must be removed. In addition, it is estimated that 20-40 cubic yards of underlying soil must be removed in order to meet the Pollutant Mobility RSR for nickel.

These criteria were selected as a readily achievable interim goal, appropriate for a secure industrial setting. Final remedy will be dependent upon outcome of the subsequent site-wide Risk Assessment. Final remedy may or may not require further removal or treatment.

1.1 Soil Removal

1.1.1 Site Preparation and Mobilization

A commercial remediation firm (to be identified) will be contracted to perform the waste and soil removal, stabilization and transportation activities. All individuals performing work at the Pumice Lagoon must have 40-hour OSHA Waste Site Worker Protection training and a current 8-hour refresher. GAR's environmental consultant, SE Technologies, Inc., will oversee site work.

Prior to mobilization, three random samples of vegetation growing in the Pumice Lagoon will be collected and analyzed for total and leachable nickel. If the concentration of total and leachable nickel exceeds 1400 mg/Kg or 0.1 mg/L respectively or the total or leachable copper exceeds 2500 mg/Kg or 1.3 mg/L respectively, vegetation in the Pumice Lagoon will be cut and stockpiled for removal along with the excavated waste and soil. If below both of these criteria, it will be discarded by a local landscape contractor. It should be noted that as the vegetation is growing in the waste, only vegetative matter above the surface would be screened for this optional management. All root material will be contaminated with impacted soils and waste and therefore managed with the waste. It should also be noted that all cutting of vegetation would be performed in accordance with the Site Health and Safety Plan, as it requires working in contact with the lagoon. Lastly, the nickel criteria presented above are the Connecticut Residential RSR for direct contact and for GA Pollutant Mobility Criteria. These were selected as the most applicable standards in the absence of a vegetation standard. As nickel and copper were the primary metals in the waste, no other metals will be tested in the vegetation.

1.1.2 Removal and Staging Procedures

The contractor will initially remove soil plus any debris from the Pumice Lagoon according to the depth and areas designated in Figure 3. These depths and coverage are based upon results of the recent Pumice Lagoon sampling program and represent the anticipated removal requirements to meet the Connecticut Pollutant Mobility Criteria. The removed materials will be placed directly into licensed hazardous waste transportation trucks. No staging is anticipated. Excavated material will be mixed with kiln dust as needed to ensure that there are no free liquids in the material to be transported.

All rinse water generated from equipment cleaning and water drained from the excavated materials will be pumped to a temporary holding tank. A sample of this water will then be analyzed. Depending on the results of this analysis, the stored water will be discharged to sewer under a temporary permit, treated in GAR's own wastewater treatment system (evaporation), or hauled off-site for disposal, whichever is most cost-effective and within legal constraints.

It is GAR' s intent that any minor quantities of water in the Pumice Lagoon will be pumped out and treated in the facility's wastewater treatment system. Excavation will, however, halt if groundwater is encountered before the objectives are met.

1.1.3 Transportation and Disposal

Any required waste characterization tests will be conducted prior to transportation. The removed spent pumice, sludge and soil will then be properly transported *off* the site by a licensed hauler and disposed of at an appropriate landfill or treatment facility. At this time, GAR intends for the waste materials to be disposed of at Stablex of Canada, Inc. (EPA ID No. CN0000000002).

Analysis performed on the Pumice Lagoon soils during recent sampling and analysis has given GAR confidence that the contaminant constituents have been adequately determined.

1.1.4 Backfilling/Capping

At this time, no backfilling or capping activities are planned. The need for such measures will be considered upon completion of the site-wide risk assessment. Capping or backfilling would not be prudent until it is determined if such measures are appropriate, or if further removal or treatment is necessary as part of the final remedy. However, it is recognized that an extended period of time may pass between completion of this interim corrective measure and final remedy. Therefore, the following temporary control measures will be taken:

- The area around the Pumice Lagoon will be graded so that storm water will not flow into the excavation.
- The permanent fencing will be re-installed with appropriate warning signs to control access.

1.2 Measure of Success

Once removal activities are complete, verification testing will be performed determine if the target remediation criteria have been met. A stratified random sampling program is planned for this purpose. A 10' x 10' grid will be placed over the entire Pumice Lagoon, resulting in an estimated 28 grid points. A random number table or generator will be used to select five locations from excavated areas and five from non-excavated areas. This strategy will ensure that the both areas inside and outside the excavation areas are sampled and the objective adequately assessed.

As stated above, it is the objective of this to remove all Pumice Lagoon soils that exceed the published Connecticut Pollutant Mobility Criteria for industrial areas as presented in Table 1. In accordance with studies performed by the Connecticut Department of Environmental Protection, compliance with these mobility criteria will ensure that water moving downward through the Pumice Lagoon floor, after dilution with groundwater, does not exceed the ground water protection criteria as it mixes with water in the upper aquifer. If any of the verification samples indicate exceedance of the Pollutant Mobility Criteria, additional soils will be removed and new verification samples will be collected, if practical. This procedure will continue until the TCLP results for nickel fall below the Pollutant Mobility Criteria. Given the stringent nature of the Pollutant Mobility criteria in relation to the Direct Exposure Criteria, compliance with the Pollutant Mobility Criteria will ensure compliance with the Direct Exposure Criteria.

At each sampling location, a soil sample will be collected from the 0-6 inch depth interval and submitted for laboratory analysis of total and TCLP concentration for copper, nickel and zinc with a 48-hour turnaround time specified. Sampling procedures will be completed in accordance to the Data Quality Assurance Plan.

TABLE 1
Relevant Connecticut RSRs

Parameter	Groundwater Mobility Criteria (GB) (mg/L)	Direct Exposure Criteria - Industrial (mg/kg)
Nickel	1.0	7,500
Copper	13	76,000
Zinc	50	610,000

2.0 DATA QUALITY ASSURANCE PLAN

2.1 Introduction

This Data Collection Quality Assurance Plan (DCQAP) was prepared for the Pumice Lagoon Interim Corrective Measures (ICM) program for the GAR facility, located in Danbury, Fairfield County, Connecticut.

The objective of the DCQAP is to outline the quality assurance/quality control (QA/QC) procedures required to ensure that data generated during the implementation of the ICM are of sufficient quantity and are of a known and appropriate quality to determine if the overall ICM clean-up objective is being met. In addition, GAR intends to also use this data in support of an evaluation of the Pumice Lagoon's contribution to the overall site risk during a site-wide risk assessment that will take place subsequent to this ICM.

The specific objective of this ICM is to remove waste and contaminated soils in the Pumice Lagoon that exceed the Connecticut Pollutant Mobility Criteria! for industrial settings.

2.2 Project Organization and Responsibility

2.2.1 Project Organization

The project team assembled to develop and implement the ICM at the GAR facility includes individuals from SE Technologies, Inc. (SE Tech) and GAR. SE Tech will serve as the primary firm responsible for implementation of the ICM. Activities conducted by SE Tech will be under the direction of Mr. Roger Dhonau, P.E. The responsibilities are discussed in the following section.

2.2.2 Staff Responsibilities

2.2.2.1 Client and Regulatory Personnel

The GAR Project Coordinator will be Mr. Russ Richter. Mr. Richter will provide managerial direction and coordination of the activities to be conducted during the course of the project. Mr. Richter has final review and sign-off authority for all reports prepared for the site.

The Project Coordinator for USEPA Region I is Mr. Ray Cody. Mr. Cody will serve as liaison between USEPA and GAR and their consultants. All project documents and correspondence will be submitted to Mr. Cody.

2.2.2.2 Consultant

The SE Tech Project Manager is Roger Dhonau, P. E. As Project Manager, Mr. Dhonau is responsible for the day-to-day implementation of project activities and ensuring that data are collected in accordance with procedures described in the DCQAP. Mr. Dhonau will ensure that personnel assigned to project activities have appropriate experience and expertise and that project activities are proceeding according to the approved schedule. He will also be responsible for preparation of periodic progress reports, for the reduction and interpretation of site data, and for preparation of project reports documents. Mr. Dhonau also has final review and signature responsibility for project report documents.

As the Project Manager, Mr. Dhonau may-act as the main liaison with USEPA if Mr. Richter deems appropriate.

2.2.2.3 Laboratory

It is anticipated that chemical analyses of soil and groundwater samples for the ICM will be performed by:

Premier Laboratories.
Route 205,
The Regional Building
P.O. Box 700
Brooklyn, CT 06234
(860) 774-6814

The laboratory Project Manager (to be identified) responsibilities include, but will not be limited to, the following:

- Ensure that all resources of the laboratory are available on an as-required basis;
- Schedule sample analyses;
- Supervise in-house chain-of-custody;

- Coordinate laboratory analyses required for the project with department supervisors;
- Oversee data review;
- Oversee preparation of analytical reports; and,
- Review and approve final analytical reports prior to submission to the SE Tech Project Manager.

2.3 Quality Assurance Objectives for Measurement Data

2.3.1 Intended Data Usage

Through testing performed during implementation of activities described in this Interim Corrective Measures Work Plan, a variety of quantitative data will be collected. These data will be used to determine the level of success in removing waste and contaminated soil. The data quality objectives for laboratory data were selected based upon the intended usage of the data.

2.3.2 Overall QA Objectives

Data quality objectives (DQOs) specify the quality of the laboratory data required to support their intended use. The intended use for this ICM is to determine if all soils exceeding the stated remedial criteria have been removed from the work area.

USEPA has identified five DQO levels (I through V) that relate the intended use of the laboratory data with a corresponding level of data QA/QC. The DQO levels established by EPA for field and laboratory analytical data are as follows:

Level I:
Field screening or analysis using portable instruments. Results are often not compound-specific and may not be quantitative but are available in real time. Level I data can provide an indication of the relative presence of contamination.

Level II:
Field analyses using more sophisticated portable instruments, possibly in a mobile, on-site laboratory. The data quality can vary, depending upon the quality control procedures used and the training of the instrument operator.

Level III:
All analyses are conducted in an offsite analytical laboratory. Level III analyses may or may not use USEPA Contract Laboratory Program (CLP) procedures, but they do not usually use the validation or documentation procedures required of CLP Level IV analyses. The laboratory mayor may not be a CLP laboratory. Detection limits are typically similar to CLP and the data can be of the same quality.

Level IV:
CLP Routine Analytical Services (RAS). All analyses are performed in an offsite laboratory following CLP protocols. Level IV data are characterized by rigorous QA/QC protocols and extensive documentation.

Level V:
Analyses by non-standard methods. All analyses are performed in an offsite laboratory which mayor may not be a CLP laboratory. Method development or method modification may be required for specific parameters or detection limits.

DQOs for data to be collected during this Interim Corrective Measures Design Plan will be a combination of Level I (any field measurements) and Level III (laboratory).

2.4 Field Procedures

2.4.1 Field Documentation

The field team will use a bound field logbook to record all pertinent field observations. The logbook will be kept in a secure, dry place. Entries in the logbook will be dated and signed by the person making the entry. Entries will be made in waterproof ink. Information to be recorded in the logbook on a daily basis includes:

- Date
- Project Name
- Project Number Location
- Weather conditions
- Sampling personnel
- Work progress
- Identification of field QA/QC samples (if any)
- Physical appearance of samples (if any)
- Field observations
- Results of field analyses (if any)
- Sampling methods and materials (if any), and:
    - Parameters to be analyzed
    - Sample container type, size, and preservation
    - Names of sampling personnel
    - Decontamination measures

Additional entries that will be included in the log book on an as-needed basis are:

- Site visitors and their affiliation
- Delays
- Unusual situations

- Departures from established QA/QC field procedures
- Instrument problems and actions taken
- Accidents

2.4.2 Equipment Decontamination

Sampling equipment, which comes in contact with samples and/or other site materials, will be decontaminated thoroughly at the onset of sampling activities, between sampling locations, and at the completion of sampling activities. Decontamination of stainless steel trowels, mixing bowls and any other sampling equipment will be performed as follows:

1. Wash with a tap water solution of laboratory-grade detergent (Alconox);
2. Rinse with tap water; and
3. Final rinse with de-ionized (DI) water.

Completion of decontamination procedures will be verified by the sampling technician and recorded in the logbook. Decontamination will take place at a central area within the de-contamination zone. The decontamination area will consist of a shallow plastic lined pit to collect residues from sampling equipment and decontamination fluids. All fluids collected during decontamination procedures will be evaporated in GAR's wastewater treatment system.

2.4.3 Sample Preparation and Packaging

Samples will be prepared and held in accordance with the requirements specified in Table 2. All sample containers needing preservatives will have preservatives added after the labeling of the bottle in the laboratory. Field personnel will carry extra preservatives during each sampling event to ensure adequate preservation of samples if spillage was to occur during the sampling procedure. Preservatives and sample bottle specifics to be used for appropriate water sample preservation are included in Table 2.

TABLE 2
SAMPLE PACKAGING AND PRESERVATION SUMMARY

Parameter	Container	Preservative	Holding Time	Volume
Metals Analysis	--	--	--	50 g.
Copper (Total and TCLP)	Plastic or Glass	None	6 mos.	--
Chromium (Total and TCLP)	Plastic or Glass	None	6 mos.	--
Nickel (Total and TCLP)	Plastic or Glass	None	6 mos.	--

After being prepared/preserved, all samples will be stored in a cooler chest at a temperature of 4° C $\pm 2^{o}$C until they are delivered to the laboratory following the field chain-of-custody procedures discussed in Section 2.5. Ice or ice packs will be used to maintain this temperature. The Laboratory Sample Custodian will check and record the temperature of the cooler upon receipt.

2.4.4 Soil/Sludge Sampling

As described in the Interim Corrective Measures Design Plan, shallow soil samples will be collected at various locations as a means of measuring success of the program. At each location, one soil sample will be collected from the uppermost layer (approximately the upper six inches of soil accumulation). Shallow soil samples will be collected with a stainless steel trowel. Any coarse materials and debris will be removed from the surface by hand or with a decontaminated, shovel or trowel.

2.4.5 Quality Control (QC) Samples

Depending upon the media being sampled and the parameters to be analyzed, three types of QA/QC samples can be collected in the field during sampling activities, including:

- Trip blanks;
- Field equipment/rinseate blanks (equipment blanks);
- Duplicate samples.

Only two types of QA\QC samples as listed above are required for this project: field equipment/rinseate blanks and duplicate samples (trip blanks are only necessary when volatile organic samples are analyzed). The purposes for collecting each of these two types of QA/QC samples are discussed in the following sections.

2.4.6 Field Equipment/Rinseate Blanks (equipment blank)

The purpose of the field equipment/rinseate blank is to monitor the effect of sample collection materials and the effectiveness of field equipment decontamination procedures on sample integrity. The equipment blanks will be prepared by thoroughly rinsing a new, unused disposable piece of sampling equipment (e.g., filter, etc.) or a decontaminated piece of sampling equipment (e.g., stainless steel trowel, stainless steel mixing bowl, beaker) with analyte-free water provided by the laboratory. The rinseate will be collected in the appropriate sample containers and submitted for analyses. One equipment blank will be collected during each verification sampling event. Currently, only one such event is anticipated.

2.4.7 Duplicate Samples

In order to provide a check of laboratory performance and data comparability, duplicate samples will be collected and submitted to the laboratory using a fictitious sample identification. Two duplicate samples will be collected during the verification soil sampling event.

Duplicate soil samples will be collected from a randomly-selected location. The duplicate soil samples will be collected by gathering enough soil to fill two sets of sample containers. The soil will be placed into a decontaminated, stainless steel mixing bowl and mixed thoroughly with a stainless steel trowel or spoon. The samples will then be collected directly from the compositing container by alternately filling the two sets of sample containers.

All duplicate samples will be given a fictitious sample identification code and submitted to the laboratory as "blind" samples. The true identity of the duplicate samples will be recorded in the field notebook.

2.5 Sample Custody

Sample custody procedures are designed to provide documentation of preparation, handling, storage, and shipping of all samples collected during this project. Samples collected during the site investigation will be the responsibility of designated project staff from the time the empty sample containers arrive at the site until the collected samples are returned to the laboratory.

2.5.1 Bottle Labeling and Packaging

Sample labels identify and prevent misidentification of the samples. The labels will be affixed to the sample containers (not the caps) prior to the time of sampling. Sample labels will be completed in waterproof ink at the time of collection and will include the following information:

- Sample designation and location, Date and time of collection;
- Sampling personnel/affiliation, Project number;
- Site location;
- Parameters to be analyzed; and
- Preservative type, if any.

Once the labels have been completed and affixed to the containers, they will be covered with clear acetate tape for protection.

Samples will be shipped in insulated containers suitable for maintaining sample container integrity. An insulated picnic cooler or ice chest with a hinged or otherwise tight-fitting lid is often adequate for shipping sample bottles to and from the site.

Sample containers with screw-on lids will be transported in an upright position to reduce the potential for leakage or spillage. Filler materials (foam, air pack, or other material which does not lose its resilience when wet is acceptable) will be placed between plastic sample containers, and glass sample containers will be individually wrapped. Additional filler materials should be used to keep box contents from upsetting should the box be overturned during shipping.

2.5.2 Field Sample Custody Procedures

After each shipping container is filled in the field, two Chain-of-Custody (COC) seals will be placed over the lid of the container and the seals covered with clear acetate tape. The COC seals will be initialed and dated by a member of the sampling team.

For each shipping container being returned to the laboratory, a COC record will be completed. The COC record will be completed using waterproof ink and will include the following information:

- Sample identification numbers;
- Date and time collected;
- Total number of sample containers;
- Sample container types, sizes, and preservative; Sample matrix;
- Project number and name/location;
- Sampling personnel;
- Analyzing laboratory;
- Status of custody seals;
- Date and time relinquished;
- Method of delivery; and,
- Analyses to be performed.

The original page and one copy page of the COC record will accompany the shipping container. A copy of the COC record will be retained by the field personnel and placed in the project file. The individuals relinquishing and receiving the samples will sign, date, and note the time on the COC record. The COC record documents the transfer of sample custody from the sampling team to the analytical laboratory. If a common carrier or laboratory courier is being used to ship the samples, the COC record will then be sealed in a water-tight plastic bag and placed in the shipping container. The shipping container will then be sealed with at least two COC seals that have been signed and dated by a member of the sampling team. Samples will be delivered directly to the laboratory by a member of the sampling team, and the Laboratory Sample Custodian will sign the COC record acknowledging receipt of the samples. The signed copy page will be returned to the project manager and the original page will remain with the samples.

Following sample collection and shipping, chain-of-custody documentation procedures continue in the laboratory. The designated Laboratory Sample Custodian will receive, sign the COC record received with the samples, and verify the COC seals were intact upon receipt. The original page of the COC record will remain with the samples and the copy page returned to the QA/QC Officer. The Laboratory Sample Custodian will verify the completeness and accuracy of the custody documentation with the actual samples received.

The Laboratory Sample Custodian will examine the condition, preservation, and accompanying documentation of all submitted samples prior to approval and formal acceptance by the laboratory. Any sample preservation or documentation discrepancies (i.e., broken sample container, improper preservations, inadequate sample volume, poor documentation, etc.) will be recorded on the COC record and, if necessary, on the corresponding Analysis Request Sheet. The QA/QC Officer will be notified of any problems with sample receipt and will either clarify lacking documentation or request disposal of the questionable sample and direct field personnel to collect another sample.

The Laboratory Sample Custodian will then prepare the Analysis Request Sheet using information from the COC records and will verify the presence/absence of preservative in samples by checking the pH, temperature, and/or the container's label. This information is recorded in the Preservation Check Logbook. If samples are in improper containers or insufficient sample volume is present for the required analyses, this will also be documented.

The Laboratory Sample Custodian will forward the Analysis Request Sheet and COC record for computer log-in and send a copy of the completed Analysis Request Sheet to the QA/QC Officer. He or she will then place samples for analysis into the refrigerator of the appropriate analytical section. The QA/QC Officer will notify the Laboratory Sample Custodian of any problems with the samples or analysis requested for each sample as soon as possible.

2.6 Sample Analysis

2.6.1 Field Analytical Procedures

No field analytical procedures are planned for this ICM.

2.6.2 Laboratory Analytical Procedures

Laboratory analytical procedures to be used during this investigation will include standard EPA methods and SW846 methods as listed in Table 3.

Table 3
Analytical Methods

Parameter	SW-846 Method
Total Metals Digestion	1311
TCLP Extraction	3050B
Copper	6010B
Nickel	6010B
Zinc	6010B

2.7 Data Reduction, Validation and Reporting

2.7.1 Data Reduction

Laboratory data reduction begins with the recording of all raw data from the analytical process directly into the laboratory notebook or into specific instrument computer data storage. Data recorded include the date and time of analysis, the analyst's initials, calibration and standard information, relevant temperatures, and the quality control information associated with the samples. In addition, calculations performed to obtain the result are recorded. The analyst must check the data and the calculations for correctness and for any transcription errors. The calculated results are then entered into the laboratory's sample tracking computer. The laboratory will follow its own data validation procedures set up within the Laboratory Quality Assurance Project Plan. The laboratory will provide documentation as to what, if any, specific, corrective actions were initiated with regard to specific data points or sets from this ICM. Descriptions of these procedures will be submitted with the data package.

2.7.2 Data Validation

The purpose of data validation is to determine if analytical results represent actual characteristics of a given sample. In addition, the validation procedure can be used to determine if analytical results, which are inconsistent with other samples, are valid outliers or if the results can be attributed to facility analytical procedures, sampling procedures, preservation methods or calculation errors. If any of the above items may have caused an invalid analytical result, that result will be qualified or considered unusable.

2.7.3 Validation of the Field Data Package

The field data package will be reviewed by the Project Manager or his designee for completeness and accuracy. The field data package includes all of the field records and measurements developed by the sampling technician. The field data package validation procedure will include, but not be limited to:

- A verification that samples, field duplicates and equipment blanks were properly prepared, preserved, identified, and analyzed (field analyses);
- A check on field analyses for equipment calibration and instrument condition; and,
- A review of laboratory task orders and chain-of-custody forms for proper completion, signatures of field personnel and the laboratory sample custodian, and dates.

2.7.4 Validation of the Laboratory Data Package

Data validation is performed by checking analytical data and results for integrity. Several factors in each analysis must be reviewed to establish data integrity. The laboratory data package will be reviewed by the Project Manager or his designee for completeness and accuracy. Note that this is completed only after the laboratory follows its own validation procedures.

Data validation will be performed in accordance with the Tier II process as specified in *Region 1 Tiered Organic and Inorganic Data Guidelines*, 7/1/93. The first step of this process will be a Tier I validation as completeness evidence audit. This is a rather brief process that simply checks to determine if all laboratory data and documentation are present. Once the completeness check is done, the results of all laboratory quality control checks and procedures are reviewed to ensure completeness of the QC measures and that all QC limitations were maintained throughout the analytical process (Tier II). QC data evaluated in this validation process will be limited to that presented on the standardized tabulated Data Reporting Forms I through XIV.

2.7.5 Outliers

Data outliers are identified as one or more analytical results, which are improper or inconsistent with other samples or which inexplicably, differ significantly with historical data from the same site. Outliers, which survive the validation process, are reported, since the cause of the outlier is interpreted to be out of the control of the laboratory, and therefore, a result of the chemical characteristics at the site.

3.0 DATA MANAGEMENT PLAN

This Data Management Plan provides guidance and direction for the management of data throughout this project to remove the wastes and impacted soils from the Pumice Lagoon. The data management procedures described in this Plan are intended to effectively process and organize data.

3.1 Organization

The Data Management Plan establishes procedures controlling data flow, tracking and processing, and permitting efficient retrieval of all data and documents produced over the course of the project.

3.1.1 Document Control and Tracking

Document control and tracking will ensure that the documentation concerned with field measurements and analytical data will be accountable, organized, and accessible throughout the project. This program will include a serialized sample coding system and a database for the inventory of all data, which will be under the supervision of the Project Manager.

Required documentation under this program includes:

- Field sampling log books Sample analysis request forms
- Chain-of-custody forms
- Analytical data reports from the laboratories

Each sampling event will be recorded in field logbooks. Entries into these log books will contain field measurements, observations, and field calibrations.

Each page will be signed and dated by the person(s) making entries. The correction of any entry will be initialed by the person(s) making the correction. More detailed information as to what should be included in the field log book is outlined within the Data Collection Quality Assurance Plan (DCQAP) submitted with this document.

Chain-of-custody form originals will accompany the samples at all times after collection. When samples are transferred, the individuals relinquishing and receiving the samples will sign, date, and note the time of change of possession on the form.

Chain-of-custody forms will contain sufficient information to distinguish each sample from any other sample. Chain-of-custody originals will be included with analytical data sent to the Data Manager by the receiving laboratory. All data will be routed through the Quality Assurance Officer and the database will be assembled and maintained by the Data Manager.

3.1.2 Data and Report Processing

Samples will be assigned sample codes by the Project Manager prior to the initiation of the sampling event. Analytical reports containing the resultant sample data will be received by the Project Manager and entered into the database.

3.1.3 Project File Requirements

A complete copy of the project file will be maintained by the Project Manager. Record copies included in the file will include:

- Calibration and monitoring records
- Data records used to generate above reports
- Analytical request and chain-of-custody forms

3.2 Data Presentation

Data will be arranged and presented in a clear and logical format using tabular, graphical, or other visual displays. Data reporting will be conducted according to the accepted practices of quality assurance and data validation.

3.2.1 Tabular and Graphical Displays

The analytical data will be presented in tabular format as data summary tables. This format will support the generation of several types of graphical formats for displaying trends or patterns in the analytical data, as appropriate to visually present trends and patterns. Maps will be used to display sampling locations and the sampling grid.

4.0 SITE HEALTH AND SAFETY PLAN

4.1 Introduction

This Site Health and Safety Plan (HASP) document defines the general responsibilities of SE Tech employees with respect to the work activities planned for this specific project. This plan only applies to SE Tech personnel. Contractors are responsible for providing their own Health and Safety Plan.

4.1.1 Scope and Applicability of the Site Health and Safety Plan

The purpose of this Site Health and Safety Plan is to define the requirements and designate protocols to be followed at the Site during remediation activities. Applicability extends to all SE Tech employees who work at the Pumice Lagoon.

All SE Tech personnel on-site, shall be informed of the site emergency response procedures and any potential fire, explosion, health, or safety hazards of the operation. This HASP summarizes those hazards and defines protective measures planned for the site.

4.2 Safety and Health Risk Analysis

4.2.1 Contaminants Suspected On-site

This section identifies the soil contaminants identified at the GAR site. The hazardous waste, which is the indicated source of these sediments, is sludge from treatment of electroforming wastewaters.

Previous work on the Pumice Lagoon and the adjacent former wastewater treatment lagoons included chemical analysis for a variety of organic and inorganic constituents. Based on these analyses, the potential exists for the following waste constituents to be encountered during the excavation and sampling of waste and/or soil at the site.

Constituents of Electroforming	Typical Soil
Sludge	Concentration (mg/kg)
Copper	10-30,000
Nickel	10-40,000
Zinc	20-5,000

4.3 Hazard Information

Hazard Assessment for this project has been accomplished by using historical data collected from this site and other similar sites that have similar waste-producing processes. The sections contained in this chapter are as follows:

- A collection of chemical hazard information sheets for each hazardous contaminant that could be encountered during the specified tasks of this project.
- Hazard Prevention Practices for this project's specified tasks.

The information collected for the Chemical Hazard Information Sheets has been compiled from three main sources:

1. 29CFR 1910.1000 Subpart Z-OSHA Hazardous Substance List
2. American Conference of Governmental Industrial Hygiene Threshold Limit Value Guide for Chemical Substances
3. NIOSH Pocket Guide to Chemical Hazards

Metal Contaminant

Chemical Name: Copper Hydroxide

OSHA PEL	1 mg/m^3
OSHA STEL	None listed
TLV-TWA (ACGIH)	1 mg/m^3
TL V -STEL (ACGIH)	None listed
IDLH (NIOSH)	None listed
FLAMMABLE OR COMBUSTION CLASSIFICATION	Non-combustible solid
FLASH POINT	N/A
VAPOR PRESSURE	<1 mm Hg @ 68° F
LEL	N/A
INCOMPATIBILITIES	Stable under normal conditions
ABSORPTION ROUTES	Inhalation, ingestion, contact through skin and eyes
HEALTH EFFECTS/EXPOSURE SYMPTOMS	Nasal, mucous membrane, pharynx irritation, nasal perforation, eye irritation, metallic taste, dermatitis, anemia
CARCINOGEN STATUS	Non-carcinogen
TARGET ORGANS	Respiratory system, skin, liver, kidneys
CONTAMINANT LOCATION	Copper compounds are suspected in moderate concentration in the soil and in trace amounts in groundwater and spent pickle liquor."

Metal Contaminant

Chemical Name: Nickel (Nickel Hydroxide)

OSHA PEL	1.0 mg/m^3
OSHA STEL	None listed
TLV-TWA (ACGIH)	0.015 mg/m^3 Ni
TLV-STEL (ACGIH)	
IDLH (NIOSH)	
FLAMMABLE OR COMBUSTION CLASSIFICATION	Non-combustible solid in bulk form
FLASH POINT	N/A
VAPOR PRESSURE	<1 mm Hg at 68°F
LEL	N/A
INCOMPATIBILITIES	Stable under normal conditions
ABSORPTION ROUTES	Inhalation, ingestion, skin and eye contact
HEALTH EFFECTS/ EXPOSURE SYMPTOMS	Headache, vertigo, nausea, vomiting, epigastric pain, cough, hyperpnea, cyanosis, weakness, leucocytosis, delirium, convulsions
CARCINOGEN STATUS	NIOSH recommend that nickel compounds be treated as a carcinogen even though OSHA has not identified nickel as a carcinogen
TARGET ORGANS	Lungs, paranasal sinus, central nervous system
CONTAMINANT LOCATION	Nickel compounds are suspected in moderate levels in the soil and trace amounts in the groundwater.

Metal Contaminant

Chemical Name: Zinc (metal and oxides)

OSHA PEL	5 mg/m^3
OSHA STEL	None listed
TLV-TWA (ACGIH)	5 mg/m^3
TLV-STEL (ACGIH)	None listed
IDLH (NIOSH)	500 mg/m^3 (zinc oxide)
IONIZATION POTENTIAL	N/A
FLAMMABLE OR COMBUSTION CLASSIFICATION	Non-combustible
FLASH POINT	N/A
VAPOR PRESSURE	<1 mm Hg @ 68°F
LEL	N/A
INCOMPATIBILITIES	Chlorates, chlorine certain halocarbons and certain strong oxidants
ABSORPTION ROUTES	Ingestion, inhalation
HEALTH EFFECTS/ EXPOSURE SYMPTOMS	Muscle ache, fever, nausea, weakness, dysprea
CARCINOGEN STATUS	Non-carcinogen
TARGET ORGANS	Respiratory system
CONTAMINANT LOCATION	Zinc compounds are suspected in moderate concentration in the soil and in trace amounts in groundwater.

4.3.1 Hazard Prevention Practices

Although hazard exposure at this site is difficult to anticipate due to the variety of contaminants potentially present, exposure to hazard materials at this site in general is not expected to be high.

Waste and soil removal and sampling for this project is expected to present a minimal health hazard to personnel involved. Soil sampling will be done in areas where constituents of electroforming wastewater treatment sludge may be present. Exposure to metal contaminants through inhalation is unlikely because these contaminants will not readily vaporize under expected site conditions. Exposure through eye and skin contact is of moderate concern for these contaminants and should be avoided.

The following are recommended safe practices and routine first aid for specific work activities expected at this site:

Skin: Wear appropriate equipment to prevent repeated or prolonged contact with skin.

First Aid: If a chemical contacts the skin, immediately flush the contaminated area with soap and water. If a chemical penetrates the clothing, promptly remove the clothing and flush contaminated area with water. If irritation persists after washing, get medical attention.

Eyes: Wear appropriate eye protection to prevent the possibility of any hazardous chemical coming in contact with the eyes.

First Aid: If chemicals should come in contact with the eyes, promptly flush the eyes with large amounts of water for 15 minutes occasionally lifting the upper and lower lids. If discomfort persists get medical attention. Contact lens should not be worn when working with chemicals or splash hazards.

Inhalation: If possible avoid working in areas where dusts are present. Wear appropriate respirator for protection if dust cannot be controlled through watering.

First Aid: Move affected person to fresh air at once, if breathing has stopped administer mouth-to-mouth resuscitation, keep victim warm and at rest, summon medical help as soon as possible.

Ingestion: Avoid accidental ingestion of hazardous chemicals by eliminating eating, drinking and smoking on-site.

First Aid: Get professional medical attention immediately.

4.3.2 Hazard Description Generally Associated with Surface Soil Sampling

For purposes of this hazard prevention section, surface soil sampling will be considered any soil sampling completed by hand using a trowel, split spoon, shovel, auger or other type of hand-held tool. Hazards generally associated with soil sampling include:

- Contact with or inhalation of contaminants, potentially in high concentrations in sampling media.
- Back strain and muscle fatigue due to lifting, shoveling and augering techniques.
- Hazard Prevention

  - To minimize exposure to chemical contaminants, a review of suspected contaminants found in the previous section should be completed by all personnel on-site and implementation of PPE and recommended safe work practices as contained in this document.

  - Proper lifting techniques will prevent back strain. Use slow easy motions when shoveling, augering and digging to decrease muscle strain.

  - First aid equipment should be available on-site.

4.3.3 Hazards Associated with Excavation

The wastes and soils slated for excavation are suspected to contain hazardous contaminants. As the soils involved are saturated, dusts are not expected to be a health hazard.

To minimize the hazards associated with the operation of heavy equipment, all personnel will be required to wear a hard hat, safety glasses with side shields, and steel toe safety boots. All heavy equipment shall be equipped with the required safety and backup warning signals.

To minimize any hazards associated with dust, application of water to any dry soils will implemented if the soils dry before loading. Based on the expected minimal disturbance potentially-contaminated soils during sampling and excavation activities, monitoring for airborne dusts will not be conducted.

4.4 Personnel Training Requirements

Consistent with OSHA's 29 CFR 1910.120 regulation covering Hazardous Waste Operations and Emergency Response, all site personnel are required to be trained in accordance with the standard. At a minimum all SET personnel are required to be trained to recognize the hazards on-site and the provisions of this HASP.

4.5 Personal Protective Equipment

Personnel wear protective equipment when response activities involve known or suspected atmospheric contamination vapors, gases or particulates may be generated by site activities, or when direct contact with skin-affecting substances may occur. Respirators are not deemed necessary for this effort as the constituents of concern are not volatile and dust generation is not anticipated. Chemical-resistant clothing is, however deemed appropriate to protect the skin from contact with skin-destructive and absorbable chemicals.

The Project Manager may, upon review of site condition, upgrade or downgrade the level of protection recommended by this plan. The Level of Protection selected is based upon the following:

- Potential *for* exposure to substances in air, liquids or other direct contact with material due to work being done.

- Knowledge of chemicals on-site along with properties such as toxicity, route of exposure and contaminant matrix.

In situations where the type of chemical, concentration and possibilities of contact are not known, the appropriate Level of Protection must be selected based on professional experience and judgment until the hazards can be better identified.

4.5.1 Available Emergency Equipment

SE Tech personnel will have access to the following emergency equipment on-site.

- First Aid Kit
- Fire Extinguisher
- Mobile telephone
- Eye Wash

4.5.2 Reassessment of Protection Program

The Level of Protection provided by PPE selection shall be upgraded or downgraded based upon a change in site conditions or findings of investigations. When a significant change occurs, the hazards should be reassessed. Some indicators of the need for reassessment are:

- Commencement of a new work phase, such as the start of drum sampling or work that begins on a different portion of the site.

- Change of season/weather.

- When temperature extremes or individual medical considerations limit the effectiveness of PPE.

- Contaminants other than those previously identified are encountered.

- Change in ambient levels of contaminants.

- Change in work scope that affects the degree of contact with contaminants.

4.5.3 Specific Levels of Protection Planned for this Site

Based on past history for this type of site investigation, the PPE level has been selected as modified Level D. The concentration of contaminants in the sampling media is expected to be low and the subject soils are expected to be saturated. Accordingly, airborne transport of contaminants is unlikely. SE Tech may perform some air monitoring to indicate contamination levels should the soils dry and dust generation becomes evident. The level of protection can be modified at that time by the Project Manager, if warranted.

4.6 Medical Surveillance

All SE Tech employees and remediation contractor employees required to perform work within the Pumice Lagoon shall participate in a medical monitoring program in accordance with Section (f) of the OSHA Hazardous Wastes Operation regulation 29 CFR 1910.120. Employees are covered by this regulation if they are exposed to hazardous substances on this site or a combination of this site and any other hazardous waste site for thirty days or more a year.

The medical monitoring program shall require employees to have a medical examination prior to at least once every twelve months. The program also provides that the employer send the employee for a medical examination at any time which the employee notifies the employer that he or she has developed signs or symptoms indicating possible over-exposure to hazardous substances.

4.7 Work Zones

Due to the anticipated use of only Level D protective equipment, establishment of work zones is not warranted. However, personnel should be cognizant of reducing cross contamination from those areas of high contamination to "clean" areas. When working near the identified excavation areas, personnel should exercise care not to carry excessive amounts of contaminated soil and dust to other areas via shoes, tools, and clothing, etc.

4.8 Decontamination And Disposal Procedures

There is limited potential for employee physical contamination during this project that would require establishing a Decon station on-site for employees. Employees should minimize contact with contaminated soil, dust, and groundwater. All employees leaving the site shall remove any disposable clothing and wash exposed areas of skin thoroughly with soap and water at the facility provided in the plant. In the event that some unforeseen condition may cause contamination to employee clothing or work materials during this project, SE Tech employees will take precautions to prevent spreading contamination offsite. Any clothing or material that has visible signs of contamination shall be disposed of or decontaminated before it is removed from the work area. Any contaminated materials collected shall be bagged and transported for disposal with the contaminated soils. All sampling equipment to be used on-site will be decontaminated using soap and water following each sampling event to prevent cross contaminations between samples.

All non-contaminated discarded materials, waste materials or other objects shall be handled in such a way to avoid creating a sanitary hazard, or causing litter to be left on-site.

4.9 Emergency Response

The Site Supervisor, Russ Richter, has primary responsibility for responding to and correcting emergency situations on-site. SE Tech personnel have the responsibility for notifying the appropriate personnel to respond as directed by the Site Supervisor. Possible actions may involve evacuation of personnel from the site area. If an emergency should arise, unless otherwise indicated by the Site Supervisor, SE Tech personnel will proceed to the front of the GAR property to await further instruction from the Site Supervisor. The Site Supervisor may be called upon to direct SE Tech and remediation contractor employees to the nearest medical facility, if medical attention is needed, but does not warrant ambulance transport. Any person being transported to a medical facility for treatment should take with them information on the chemicals they may have been exposed to at the site.

4.9.1 Emergency Contact/Notification System

The following list provides names and telephone numbers for emergency contact personnel. In the event of a medical emergency, personnel will take direction from the SSO and notify the appropriate emergency organization. In the event of a fire or spill, the Site Supervisor will notify the appropriate local agency, the site response team and site supervisor.

4.9.2 Directions to Hospital From Site

The closest hospital is Danbury Hospital, located at 24 Hospital Avenue. To reach the hospital, turn left on Augusta Drive when exiting the facility. Proceed on Augusta Drive to Old Newtown Road. Turn left on Old Newtown until it intersects with Newtown Road. Turn right on Newtown and proceed on Newtown to 5th Avenue. Turn right on 5th Avenue. Proceed on 5th Avenue a short distance to Osborne. Turn right on Osborne, then immediately left onto Hospital Avenue. The total distance is less than 4 miles.

ATTACHMENT A

Historic Pumice and Wastewater Treatment Sludge Analyses

ANALYSIS REPORT

LANCY LABORATORIES
Division, Lancy International, Inc.

Company: GAR Electroforming — Report Date: 2/27/86

Description: Sludges A & B — PO#/Chg.#: 21365

Sample	Sludge A	Sludge B
Lab Reference #	17356	17357
Parameter		
Physical State	Semi-Solid	Semi-Solid
Specific Gravity	1.17	1.24
Flash Point	N/A*	N/A*
Viscosity	N/A*	N/A*
pH (SU)	7.9	8.0
Layering	None	None
Solids, Total	21%	30%
Ash	18%	26%
Water	79%	70%
	(mg/Kg)	(mg/Kg)
Carbonate	<35 (g/Kg)	<35 (g/Kg)
Sulfate	3.2	3.9
Calcium	910	1400
Chromium	230	320
Iron	6300	2000
Nickel	31.5 (g/Kg)	44 (g/Kg)
Arsenic	18	20
Cadmium	15	5.6
Chloride	640	390
Chromium, Hexavalent	<0.15	0.88
Copper	38 (g/Kg)	22 (g/Kg)
Cyanide, Total	9.8	5.6
Lead	46	18
Mercury	0.24	0.20
Sulfur	1070	1300
Sulfide	<10	<10
Zinc	1000	160
Corrosivity	Non-Corrosive	Non-Corrosive
Ignitability	Non-Ignitable	Non-Ignitable
Reactivity	Non-Reactive	Non-Reactive

* Not Applicable

Analyses reported on a wet weight basis.

C. John Ritzert, Manager-Technical Services

Form 9824-0583-500

ANALYSIS REPORT

LANCY LABORATORIES
Division, Lancy International, Inc.

Company: GAR Electroforming — Report Date: 2/27/86

Description: Volatile Organics — PO#/Chg.#: 21365

Sample #	Sludge A	Sludge B
Lab Reference #	17356	17357
Parameter	(ug/L)	(ug/L)
Benzene	<20	<20
Bromoform	<500	<500
Carbon tetrachloride	<500	<500
Chlorobenzene	<20	<20
Chlorodibromomethane	<500	<500
Chloroform	<100	<100
1,2-Dichlorobenzene	<100	<100
1,3-Dichlorobenzene	<100	<100
1,4-Dichlorobenzene	<100	<100
Dichlorobromomethane	<250	<250
1,1-Dichloroethane	<100	<100
1,2-Dichloroethane	<100	<100
1,1-Dichloroethylene	<250	<250
1,2-Dichloropropane	<100	<100
Ethylbenzene	<20	<20
Methylene chloride	<250	<250
Trans-1,3-Dichloropropylene	<250	<250
Tetrachloroethylene	<250	<250
Toluene	<20	<20
1,2-trans-Dichloroethylene	<100	<100
1,1,1-Trichloroethane	<100	<100
1,1,2-Trichloroethane	<100	<100
Trichloroethylene	<100	<100

C. John Ritzert, Manager-Technical Services

Form 9824-0583-500

ANALYSIS REPORT

LANCY LABORATORIES
Division, Lancy International, Inc.

Company: GAR Electroforming
Report Date: 2/27/86
Description: EPTOX Leachates
PO#/Chg.#: 21365

Sample	EPTOX Leach Sludge A	EPTOX Leach Sludge B
Lab Reference #	17358	17359
	(mg/L)	(mg/L)
Parameter		
Arsenic	<0.05	<0.05
Barium	2.0	<2.0
Cadmium	0.4	0.3
Chromium	<0.5	<0.5
Lead	<0.5	<0.5
Mercury	<0.004	<0.004
Nickel	185	405
Selenium	<0.05	<0.05
Silver	<0.1	<0.1

C. John Ritzert, Manager-Technical Services

Form 9824-0583-500

ANALYSIS REPORT

LANCY LABORATORIES
Division, Lancy International, Inc.

Company: GAR Electroforming — Report Date: 2/27/86

Description: Pumice Lagoon — PO#/Chg.#: 21365

Sample	Pumice Lagoon
Lab Reference #	17354 (mg/Kg)
Parameter	
pH (SU)	7.2
Cyanide, Total	4.8
Sulfur	53
Cadmium	8.4
Chromium	70
Nickel	630
Corrosivity	Non-Corrosive
Ignitability	Non-Ignitable
Reactivity	Non-Reactive
Sample	EPTOX Pumice Sludge A
Lab Reference #	17355 (mg/L)
Parameter	
Arsenic	<0.05
Barium	2.0
Cadmium	0.2
Chromium	<0.5
Lead	<0.5
Mercury	<0.002
Nickel	11
Selenium	<0.05
Silver	<0.1

C. John Ritzert, Manager-Technical Services

Form 9824-0583-500

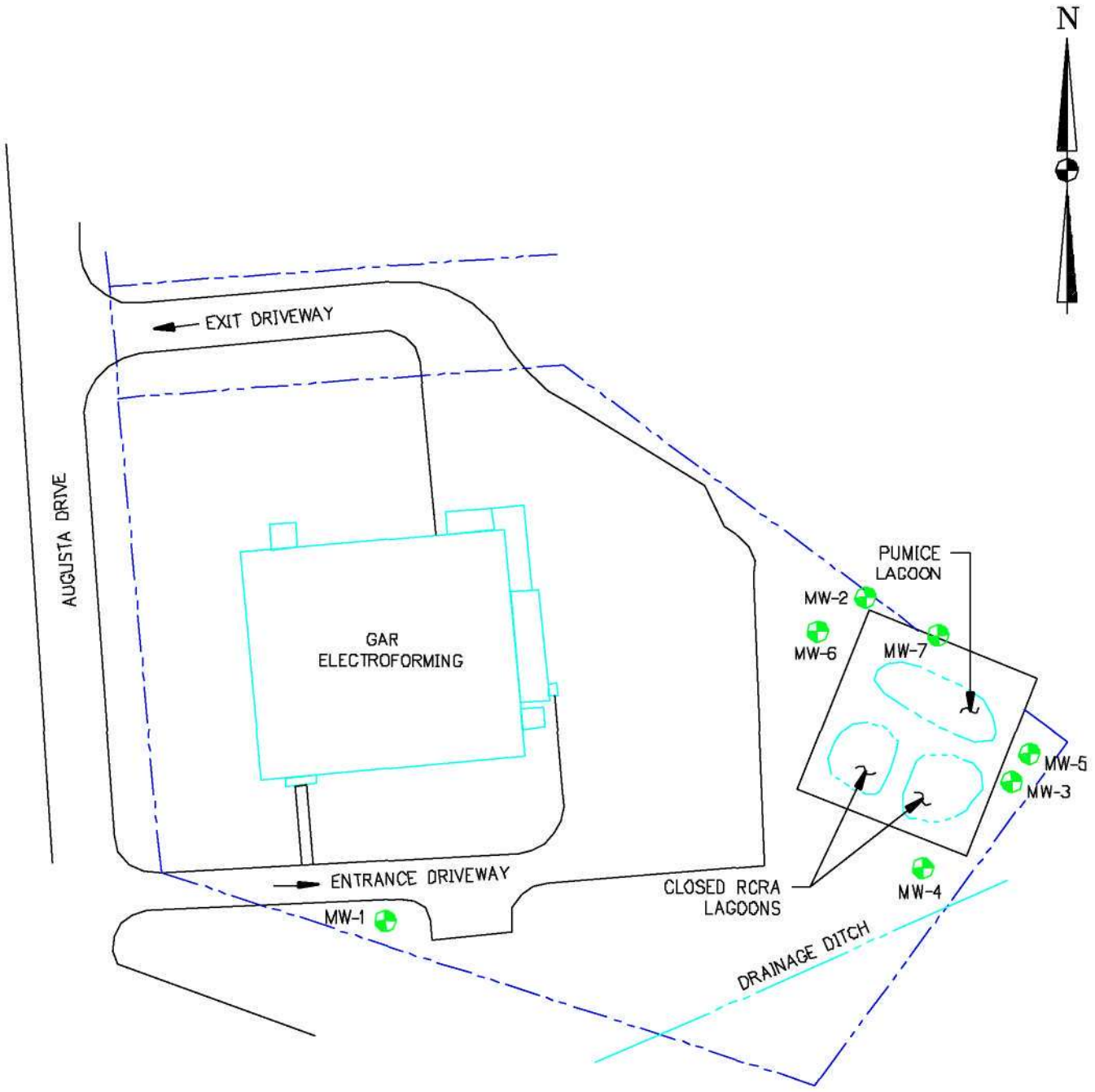
ATTACHMENT B

Site Location and Site Layout Maps

REFERENCE: USGS 7.5' QUADRANGLE MAP OF: DANBURY, CONNECTICUT; DATED 1963, PHOTOREVISED 1972.

DRAWN BY: DJF	SE TECHNOLOGIES 98 Vanadium Road Bridgeville, PA 15017 (412) 221-1100	GAR ELECTROFORMING RCRA INTERIM CORRECTIVE MEASURES SITE LOCATION MAP
DATE:		
CHECKED BY:		
SET JOB NO.: 205127		
SET DWG FILE: GAR_ELECm01.dwg		DRAWING NO.: FIGURE 1
DRAWING SCALE: N.T.S.		REV.: 0

Plot: env045 11/01/2005 13:53 G:\Gar_Electroforming\205127\GAR_ELECm01.dwg



DRAWN BY	DJF
DATE	
CHECKED BY	
SET JOB NO.	205127
SET DWG FILE	GAR_ELECa01.dwg
DRAWING SCALE	N.T.S.

SE TECHNOLOGIES
98 Vanadium Road Bridgeville, PA 15017 (412) 221-1100

GAR ELECTROFORMING

RCRA INTERIM CORRECTIVE MASSURES
SITE LAYOUT

DRAWING NAME: FIGURE 2

REV. 0

Plot: env045 11/01/2005 13:26 G:\Gar_Electroforming\205127\GAR_ELECa01.dwg