CAE ELECTRONICS

BROOME COUNTY, NEW YORK

Final Engineering Report

NYSDEC Site Number: 704015

Prepared for:

CAE USA, Inc.
4908 Tampa West Blvd.
Tampa, Florida 33634

Prepared by:

Brickhouse Environmental
515 S Franklin St.
West Chester, PA 19382

MARCH 2023

CERTIFICATIONS

I, Hazem M. Hijazi, P.E., am currently a registered professional engineer licensed by the State of New York, I have reviewed the information and final remedial program documents provided by the engineering firm engaged with the remedial actions prior to 2004, and I certify that to the best of my knowledge the Remedial Design and Remedial Work Plan were implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Design and Remedial Work Plan.

I certify that, to the best of my knowledge, the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Design have been achieved.

I certify that all use restrictions, Institutional Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and/or decommissioning of all remaining monitoring wells, and that such plan has been approved by the Department.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Hazem M. Hijazi, of RENSY Engineering, am certifying as Owner's Review Engineer and I have been authorized and designated by all site owners to sign this certification for the site.

08219-1	January 17, 2023	
NYS Professional Engineer #	Date	Signature

TABLE OF CONTENTS

TABLE 1: LIST OF ACRONYMS

Acronym	Definition
NYSDEC	New York State Department of Environmental Conservation
RAO	Remedial Action Outcome
ROD	Record of Decision
ESD	Explanation of Significant Differences
CCR	Construction Completion Report
HASP	Health and Safety Plan
RWP	Remedial Work Plan
RD	Remedial Design
QAPP	Quality Assurance Project Plan
CQAP	Construction Quality Assurance Plan
SMP	Site Management Plan
SMMP	Soils Material Management Plan
CAMP	Community Air Monitoring Plan
SOP	Site Operations Plan
SCO	Soil Cleanup Objectives

FINAL ENGINEERING REPORT

1.0 BACKGROUND AND SITE DESCRIPTION

CAE Inc. entered into an Order on Consent, with the New York State Department of Environmental Conservation (NYSDEC) in February 1996, to investigate and remediate a 15-acre property located in the Town of Fenton, Hamlet of Hillcrest, Broome County, New York. The property was remediated to industrial use and will be used for manufacturing.

The site is located in the County of Broome, New York and is identified as Parcel Numbers 129.05-4-3 and 129.05-4-4 on the Town of Fenton Tax Map # 129.05. The site is situated on an approximately 15-acre area bounded by Nowlan Road to the north, Beckwith Avenue to the south, New York Susquehanna & Western railroad tracks to the east, and the TCMF Hillcrest Facility to the west (see Figure 1). The boundaries of the site are fully described in the Final Survey Attachment include in Appendix A: (Survey Map, Metes and Bounds).

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved RD and RWP for the CAE Electronics site dated March, 1998 and May 2003, respectively.

A complete description of the remedial actions performed pursuant to the RD and RWP is included within the Engineering Report titled, Soil Remediation Project, Construction Completion Report, Former CAE Electronics – Hillcrest Facility (CCR), February 2004. The CCR was prepared by O'Brien & Gere, the engineering consultant working for CAE at that time, with Mr. James R. Heckathorne, P.E. as the certifying Engineer of Record. The CCR is included as Appendix C. All deviations from the RD and RWP are noted within the CCR. The CCR meets the requirements of a Final Engineering Report as described in 6 NYCRR Part 375 and in DER-10. Therefore, references to the CCR (i.e., Appendix C) will be made throughout this document, to eliminate restatements of work completed under direct oversight of the original Engineer of Record.

In their efforts toward finalization of the remedial program for this site, Brickhouse Environmental, through requests to O'Brien & Gere for project records, discovered the CCR, labelled as "draft". Based on the CCR cover letter, the CCR was transmitted to the site

remediation manager and the local project attorney in January 2004. There is no record that the CCR was submitted to the NYSDEC for review and approval.

An electronic copy of this FER with all supporting documentation is included as Appendix B.

2.0 SUMMARY OF SITE REMEDY

2.1 REMEDIAL ACTION OBJECTIVES

Based on the results of the Remedial Investigation, Remedial Action Objectives (RAOs) were identified and included in the Record of Decision (ROD) for the site dated March 30, 1994. The RAOs were established to meet all Standards, Criteria and Guidance (SCGs), and to protect human health and the environment. The RAOs as stated in the ROD are as follows:

- Reduce, control, or eliminate the contamination present within the former leaching pits and the related contaminated soils to the level approved by the Department.
- Eliminate the potential for direct human or environmental contact with the contamination present within the 12 former leaching pits and the related contaminated soils.
- Mitigate the impacts of contaminated groundwater on human health and the environment.
- Provide for attainment of SCGs for groundwater quality in the area impacted by site related contaminants.

Since the time of the ROD, descriptions of RAOs have changed and are more specific to the type of media and protections of public health and the environment. Also, since the time of remedy selection, soil vapor has become an additional media of concern. At this site and in the surrounding off-site area, soil vapor was investigated by the NYSDEC in consultation with the New York State Department of Health (NYSDOH). Although soil vapor was not addressed by the site-wide remedy as detailed in the ROD, the investigation and mitigation work conducted by the NYSDEC are being tracked as remedial elements associated with this site and will be summarized in Section 4.2.

RAO descriptions currently used by the NYSDEC that: 1. align with those listed above; and, 2. account for soil vapor, are as follows:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of groundwater or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

2.2 DESCRIPTION OF SELECTED REMEDY

The site was remediated in accordance with the remedy selected by the NYSDEC in the Record of Decision (ROD) dated March 1994, in the Explanation of Significant Difference (ESD) dated March 1997, in the approved Remedial Design (RD) dated March 1998, and in the approved Remedial Work Plan (RWP) dated May 2003.

The factors considered during the selection of the remedy are those listed in 6NYCRR 375-1.8. The following are the components of the selected remedy:

1. Excavation and off-site disposal of remaining eight leaching pits. Materials to be removed include remnant sludge and the concrete cylindrical block pit structures.

2. Excavation and off-site disposal of soil that exceed the site-specific soil cleanup objectives (SCOs) included as Table 1 in Appendix C. The soils to be excavated exist in the area surrounding the leaching pits. Vertical limits of excavation are from ground surface to the surface of the water table at approximately 18 feet below ground surface. Lateral limits of the excavation are to be determined through soil sampling. The New York Susquehanna and Western (NYS&W) Railway and the on-site manufacturing building may create physical constraints to the excavation to the east and west, respectively.
3. In-situ stabilization (ISS) of contaminated soil between the western excavation boundary and the eastern wall of the on-site manufacturing building. ISS is a process that uses a stabilizing agent which chemically changes contamination to make it less soluble. The contaminated soil will be mixed in place with a proprietary slurry mixture of FESI-BOND™ Dry/C soil stabilizer and water using augers. This treatment changes the contamination from a soluble form to a stable, insoluble compound to reduce or eliminate the matrix as a source of groundwater contamination.
4. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the site.
5. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional Controls, (2) monitoring, (3) operation and maintenance and (4) reporting.
6. Periodic certification of the institutional controls listed above.

Offsite soil vapor investigation and mitigation occurred after the selection and implementation of the site-wide remedy. NYSDEC conducted all remedial work related to soil vapor intrusion directly.

3.0 INTERIM REMEDIAL MEASURES, OPERABLE UNITS AND REMEDIAL CONTRACTS

THE REMEDY FOR THIS SITE WAS PERFORMED AS A SINGLE PROJECT, AND NO INTERIM REMEDIAL MEASURES, OPERABLE UNITS OR SEPARATE CONSTRUCTION CONTRACTS WERE PERFORMED.

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

4.1 SELECTED REMEDY ACTIONS

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved RD and RWP for the CAE Electronics site dated March, 1998 and May 2003, respectively.

A complete description of the remedial actions performed pursuant to the RD and RWP is included within the Engineering Report titled, Soil Remediation Project, Construction Completion Report, Former CAE Electronics – Hillcrest Facility (CCR), February 2004. The CCR was prepared by O'Brien & Gere, the engineering consultant working for CAE at that time, with Mr. James R. Heckathorne, P.E. as the certifying Engineer of Record. The CCR is included as Appendix C. All deviations from the RD and RWP are noted within the CCR. The CCR meets the requirements of a Final Engineering Report as described in 6 NYCRR Part 375 and in DER-10. Therefore, references to the CCR (i.e., Appendix C) will be made throughout this document, to eliminate restatements of work completed under direct oversight of the original Engineer of Record.

In their efforts toward finalization of the remedial program for this site, Brickhouse Environmental, through requests to O'Brien & Gere for project records, discovered the CCR, labelled as "draft". Based on the CCR cover letter, the CCR was transmitted to the site remediation manager and the local project attorney in January 2004. There is no record that the CCR was submitted to the NYSDEC for review and approval.

4.2 NYSDEC ACTIONS

Actions that were tracked using the same remedial program number, but not identified in the selected site-wide remedy or as part of the on-site responsibilities for CAE, included mitigation efforts at structures in an adjacent off-site area conducted by NYSDEC. Details of NYSDEC efforts exist within the project record. As a summary of NYSDEC actions, Figure 2 shows the locations where sub-slab depressurization systems (SSDS) were installed. In total, SSDS were installed at 121 buildings.

CAE has always and continues to assert that:

- Other parties who owned and operated industrial sites in the vicinity of the Site are primarily responsible for soil vapor intrusion conditions found in the off-site adjacent neighborhood; and,
- the highest levels of soil vapor contamination are in the vicinity of these adjacent industrial properties and are not related to the Site.

CAE is only providing mention of the NYSDEC actions in the FER due to a request from them to do so. NYSDEC claims that tracking of the SSDS cannot be conducted under a separate and unique remedial program site number.

4.3 REMEDIAL PROGRAM ELEMENTS

All specifications for remedial program elements were provided within the NYSDEC approved RD and RWP. Technical Specification from the RD, included as Appendix D, accounted for the work elements in the following categories: site controls, construction quality controls, nuisance controls, community protections, permits, performance of work, material types and quality, disposal, site restoration, and reporting. Performance and adherence of the specifications was the responsibility of the contractors with oversight provided by the Engineer of Record. Documentation of the remedial program elements is provided in the CCR. There is no indication in the CCR or in the project record of non-compliance with the RD and RWP.

4.4 CONTAMINATED MATERIALS REMOVAL

Removal activities at the site included excavation and off-site disposal of leaching pit structures and sludge, removal and disposal of associated piping, and excavation and off-site disposal of soil. Descriptions of all removal activities, disposal details, and any on-site reuse are included in Section 2 of the CCR. All removal activities were conducted according to the NYSDEC approved RD.

A list of the soil cleanup objectives (SCOs) for the contaminants of concern for this project is provided in Table 1 of the CCR.

The locations of original sources and areas where excavation activities were performed are shown on Figure 2 of the CCR. Other excavation details are shown in drawings included as Appendix A and Exhibit D of the CCR. A summary of the samples collected to characterize the waste, and associated analytical results are summarized in Exhibit A of the CCR.

A letter from contractors to disposal facilities and acceptance from disposal facilities are included in Exhibit B of the CCR.

4.5 CONTAMINATED MATERIAL STABILIZATION

In -situ stabilization (ISS) was conducted as a remedial action to treat contaminated soil between the western excavation boundary and the eastern wall of the on-site manufacturing building. Description of the ISS application is included in Subsection 2.6 of the CCR. ISS activities were performed according to the NYSDEC approved RWP.

The locations of original sources and areas where ISS activities were performed are shown on Figure 3 of the CCR.

4.6 REMEDIAL PERFORMANCE/DOCUMENTATION SAMPLING

Remedial performance or effectiveness of the remedial actions was measured through verification sampling (i.e., documentation sampling) performed for the excavation and ISS actions. The following table summarizes where verification sampling information is included within the CCR for each action:

Remedial Action	Sampling Method Description	Sample Analytical Results	Sample Locations
Leaching Pit and Soil Excavations	Subsection 2.3	Table 5	Figure 2
ISS	Subsection 2.6	Table 7	Figure 3

Following removal of contaminated soil from the site, sampling of surface soil in the soil staging area was conducted as a performance measure of site controls employed during remedial activities. Staging area soil sampling is summarized in subsection 2.9 and Table 10 of the CCR.

4.7 IMPORTED BACKFILL

Imported backfill was used to fill contaminated material removal areas described in Section 4.4 above. Appendix D of this report (Remedial Design Technical Specifications) includes a special provision (SP-16) detailing measures to be taken by the contractor for analysis, certification and acceptance of borrow materials to be used as imported backfill. There is no indication in the CCR or in the project record of non-compliance with this NYSDEC approved RD special provision.

4.8 CONTAMINATION REMAINING AT THE SITE

4.8.1 Soil

Although contaminants within the soils along the eastern wall of the building were stabilized through ISS, these soils may contain detectable total concentrations for contaminants of concern. The soil areas where ISS was applied is shown in Figure 3 of the CCR. Other site soil within the saturated zone has detectable concentrations of TCE due to contact and mass transfer from contaminated groundwater. However, the concentrations of TCE within saturated soil only exceed unrestricted soil cleanup objectives at one location and at a depth of 46 feet below ground surface.

4.8.2 Groundwater

TCE is the only contaminant of concern in groundwater. The concentration of TCE in groundwater at the site in November 2017 ranged from 0.62 to 12 micrograms per liter (µg/L); the groundwater standard for TCE is 5 µg/L. Only the sample from MW-06 exceeded the groundwater standard. Eight onsite wells were sampled in the November 2017 groundwater sampling event. Ongoing groundwater monitoring and well decommissioning are addressed in the Site Management Plan (prepared by the NYSDEC).

4.8.3 Soil Vapor

Although mitigation of the on-site building was not required based on sampling results, presence of TCE in the soil vapor is likely, due to the continued presence of TCE in groundwater. The physical characteristics of the soil types on-site and above the water table allow for upward migration of soil vapor.

4.9 SOIL COVER SYSTEM

There was no requirement for a soil cover or cap system as part of the remedial activities. The site was restored to pre-remediation conditions as per the Technical Specifications of the NYSDEC approved RD (included as Appendix D).

4.10 INSTITUTIONAL CONTROLS

The site remedy requires that an environmental easement be placed on the property to (1) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (2) limit the use and development of the site to industrial uses only. A Site Management Plan (prepared by the NYSDEC) will also contain an Excavation Management Plan, which will manage the movement of any soils.

The environmental easement for the site was executed by the Department on June 7, 2022, and filed with the Broome County Clerk on July 13, 2022. The County Recording Identifier number for this filing is 202200017964. A copy of the easement and proof of filing is provided in Appendix E.

4.11 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

Deviations from the NYSDEC approved RD and RWP were summarized in Sections 1.2 and 2.6 of the CCR.

LIST OF FIGURES

APPENDICES

Appendix A – Survey Map, Metes and Bounds

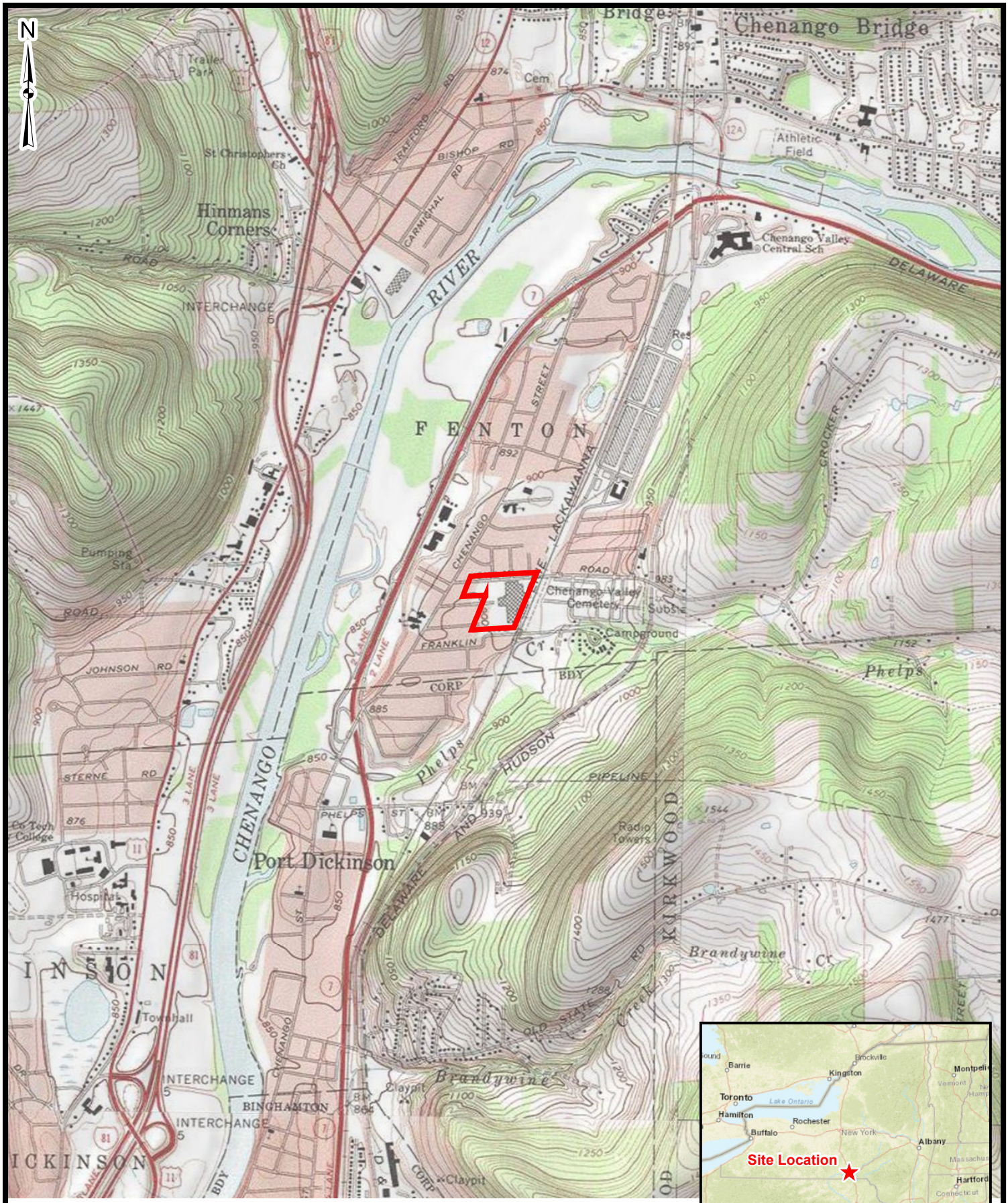
Appendix B – Digital Copy of the FER (CD)

Appendix C – CCR (OB&G, 2004 Draft CCR)

Appendix D – Remedial Design Technical Specifications

Appendix E – Environmental Easement

FIGURES



2,000 0 2,000 Feet

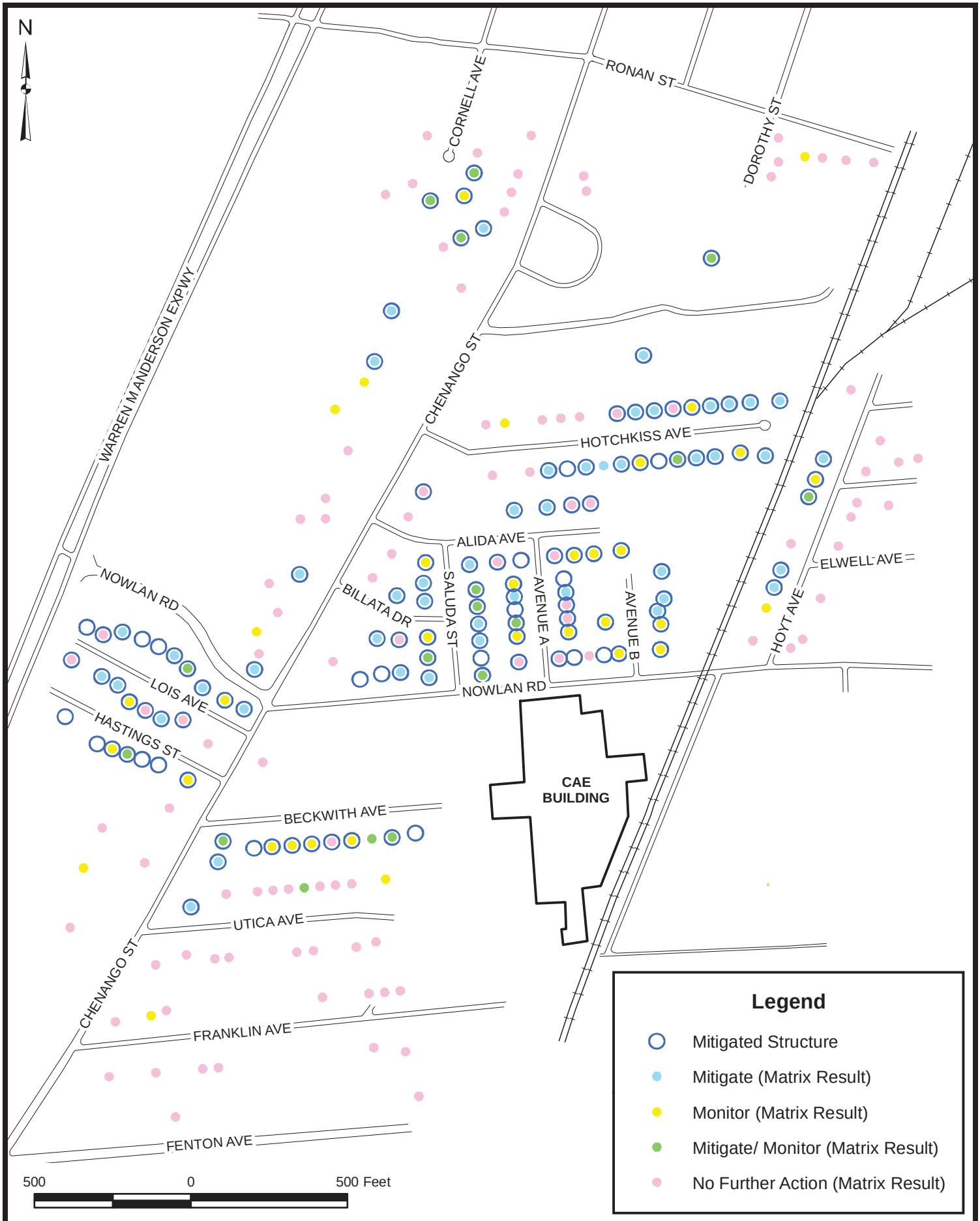
Source: 1:24,000-scale USGS Topographic Quadrangles: Castle Creek, 1976; Chenango Forks, 1968

URS

CAE ELECTRONICS
SITE LOCATION MAP

FIGURE 1

J:\Projects\11173142.00000\DB\GIS\01 SiteLocation.mxd 12/14/2018



J:\Projects\11173142.00000\DB\GIS\08 DOH MATRIX.mxd 3/12/2018

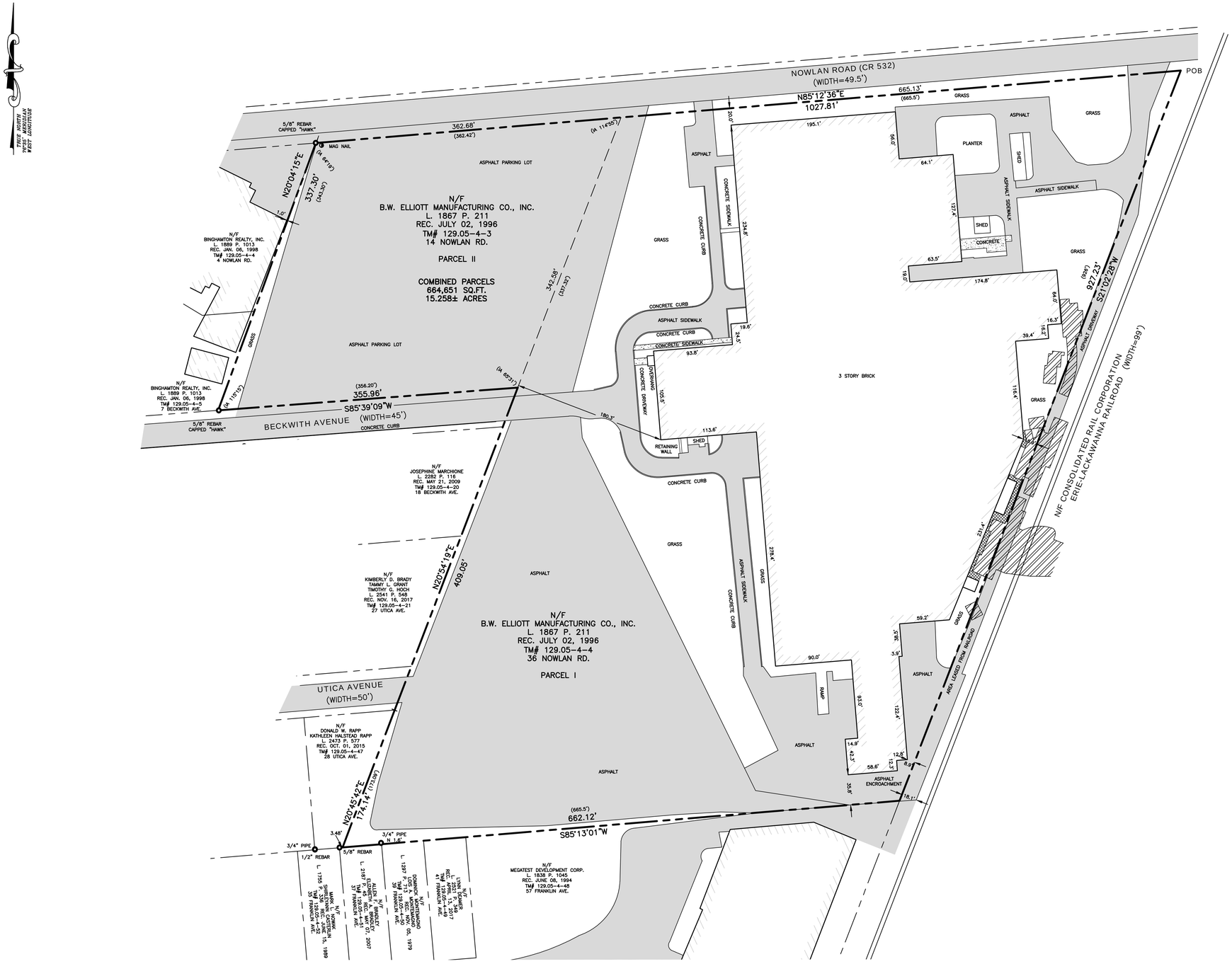
URS

CAE ELECTRONICS
SOIL VAPOR SAMPLING
AND MITIGATION SUMMARY

FIGURE 2

APPENDIX A

SURVEY MAP, METES AND BOUNDS



LEGEND

⊙	MONUMENT FOUND AND NOTED
POB	POINT OF BEGINNING
( )	DEED INFORMATION IF DIFFERENT
IA	INTERIOR ANGLE
N/F	NOW OR FORMERLY
TM#	TAX MAP NUMBER
——·——	PROPERTY LINE
– – –	TAX MAP LINE
▨	APPROXIMATE EXCAVATION AREAS
▩	APPROXIMATE SOIL STABILIZATION AREAS

NOTES

1. PREMISES SOURCE OF TITLE BEING L. 1867 P. 211 RECORDED IN THE BROOME COUNTY CLERK'S OFFICE JULY 02, 1996.
2. SUBJECT TO THE FOLLOWING AS RECORDED IN THE BROOME COUNTY CLERK'S OFFICE:
   A. EASEMENT GRANTED TO NEW YORK STATE TELEPHONE COMPANY IN L. 271 P. 89 ON APRIL 16, 1917.
   B. LEASE, EASEMENT & CONDITIONS IN L. 503 P. 524 ON NOVEMBER 22, 1940.
   C. RIGHT OF WAY IN L. 682 P. 523 ON JULY 14, 1948.
   D. WATERLINE EASEMENT IN L. 738 P. 249 ON MAY 4, 1950.
   E. DRAINAGE EASEMENT IN L. 1082 P. 1176 ON SEPTEMBER 08, 1964.
3. SUBJECT TO ANY AND ALL OTHER EASEMENTS OF RECORD AND/OR AS FOUND IN THE FIELD.
4. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE TO THE PROPERTY OR A TITLE REPORT.
5. BEARINGS ARE DIFFERENT FROM DEED. KEYSTONE ASSOCIATES USED A GRID NORTH FROM GPS. DIFFERENT REFERENCE INFORMATION SHOWN.
6. OWNER CORPORATION NAME CHANGE: B.W. ELLIOTT MANUFACTURING CO., LLC, A NEW YORK LIMITED LIABILITY COMPANY IS THE SUCCESSOR BY MERGER TO B.W. ELLIOTT MANUFACTURING CO., INC. DEED INFORMATION DID NOT CHANGE.

REFERENCE DOCUMENTS

1. MAP ENTITLED "ALTA/ACSM LAND TITLE SURVEY PREPARED FOR B.W. ELLIOTT MANUFACTURING, INC." PREPARED BY BOCK & CLARK'S NATIONAL SURVEYORS NETWORK ON AUGUST 12, 2005.

ENVIRONMENTAL EASEMENT DESCRIPTION (BEING THE ENTIRE PROPERTY

ALL THAT TRACT OR PARCEL OF LAND situate in the Town of Fenton, County of Broome, State of New York, being all of the property now or formerly of B.W. Elliott Manufacturing Co., Inc. described in L. 1867 P. 211 as recorded in the Broome County Clerk's Office on July 02, 1996 (TM# 129.05-4-4 – Parcel I and TM# 129.05-4-3 – Parcel II), hereinafter referred to as B.W. Elliot, bounded and described as follows:

BEGINNING at a point on the southerly boundary of Nowlan Road (CR 532) at its intersection with the division line between the property now or formerly of the Consolidated Rail Corporation Erie-Lackawanna Railroad on the southeast and said B.W. Elliott on the northwest;

RUNNING THENCE S21°02'28"W along said division line, a distance of 927.23 feet to a point at its intersection with the division line between the property now or formerly of Megatest Development Corp. per L. 1838 P. 1045 (TM# 129.05-4-48) on the south and said B.W. Elliott on the north; thence S85°13'01"W along the last mentioned division line, along the division line between the property now or formerly of Lynn Deamer per L. 2521 P. 349 (TM# 129.05-4-49) on the south and said B.W. Elliott on the north, along the division line between the property now or formerly of Dominick Montemagno & Lois A. Montemagno per L. 1297 P. 713 (TM# 129.05-4-50) on the south and said B.W. Elliott on the north, along the division line between the property now or formerly of Allen F. Bradley & Elizabeth A. Bradley per L. 2187 P. 45 (TM# 129.05-4-51) on the south and said B.W. Elliott on the north, a distance of 662.12 feet to a point at its intersection with the division line between the property now or formerly of Donald W. Rapp & Kathleen Halstead Rapp per L. 2473 P. 577 (TM# 129.05-4-47) on the west and said B.W. Elliott on the east, the last mentioned point being along the last mentioned bearing 3.48 feet easterly from a 5/8 inch rebar; thence N20°45'42"E along the last mentioned division line, a distance of 174.14 feet to a point at its intersection with the southeasterly corner of Utica Avenue; thence N20°54'19"E along the easterly end of Utica Avenue, along the division line between the property now or formerly of Kimberly D. Brady, Tammy L. Grant & Timothy G. Hoch per L. 2541 P. 548 (TM# 129.05-4-21) on the west and said B.W. Elliott on the east, along the division line between the property now or formerly of Josephine Marchione per L. 2282 P. 116 (TM# 129.05-4-20) on the west and said B.W. Elliott on the east and along the easterly end of Beckwith Avenue, a distance of 409.05 feet to a point at its intersection with the northerly boundary of said Beckwith Avenue; thence S85°39'09"W along said northerly boundary of Beckwith Avenue, a distance of 355.96 feet to a 5/8 inch rebar capped "HAWK" at its intersection with the division line between the property now or formerly of Binghamton Realty, Inc. per L. 1889 P. 1013 (TM# 129.05-4-5) on the west and said B.W. Elliott on the east; thence N20°04'15"E along the last mentioned division line and along the division line between another property now or formerly of Binghamton Realty, Inc. per L. 1889 P. 1013 (TM# 129.05-4-4) on the west and said B.W. Elliott on the east, a distance of 337.30 feet to an aluminum pin at its intersection with said southerly boundary of Nowlan Road; thence N85°12'36"E along said northerly boundary of Nowlan Road, a distance of 1027.81 feet to the POINT OF BEGINNING.

The above described parcel contains 664,651 square feet or 15.258 acres, more or less.

I hereby certify to BRICKHOUSE ENVIRONMENTAL that this survey was prepared in accordance with the current Code of Practice for Land Surveys adopted by the New York State Association of Professional Land Surveyors, Inc. This certification is limited to the entity for whom this map is prepared. Certifications are not transferable to additional institutions or subsequent owners.

GRAPHIC SCALE
14.4 7.2 0 7.2 14.4 28.8
(IN METERS)
1 centimeter = 7.2 meters

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law. The engineering and institutional controls for this Easement are set forth in more detail in the Site Management Plan (SMP). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from NYS Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at www.derweb@dec.ny.gov.

58 Exchange Street
Binghamton, New York 13901
Phone: 607.722.1100
Fax: 607.722.2515
Email: info@keysocmpp.com
www.keysocmpp.com

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS AND SURVEYORS, LLC

STATE OF NEW YORK
RODNEY LEE CAREY
No. 049842
LICENSED LAND SURVEYOR
RODNEY L. CAREY, PLS LIC. NO. 049842

NO.	REVISIONS AND DESCRIPTIONS	DATE
1	REVISE TITLE BLOCK AND ADD NOTE #6.	06/29/21

ENVIRONMENTAL EASEMENT DESCRIPTION
DEPARTMENT SITE NO. 704015
CAE ELECTRONICS, INC.
B.W. ELLIOTT MANUFACTURING CO., LLC
14 NOWLAN ROAD & 36 NOWLAN ROAD
TOWN OF FENTON BROOME COUNTY NEW YORK STATE

SHEET NO.
E-1

PROJECT NO.
1634.13918

DATE OF FIELD WORK:
07/05/18

DATE OF MAP:
08/02/18

CAD FILE NO.:
1634139182-1.dwg

APPENDIX B

DIGITAL COPY OF THE FER (CD)

APPENDIX C

CCR (OB&G, 2004 DRAFT CCR)

O'BRIEN & GERE
ENGINEERS, INC.

Transmittal

To: Mike Stoddard
Remediation Manager
1427 River Road
Binghamton, New York 13901

Robert C. Murphy, Esq.
Pope, Schrader & Murphy, LLP
P.O. Box 510
Binghamton, New York 13902

Date: January 30, 2004

File: 6250/33874 #2

Re: CAE Electronics - Former Hillcrest Facility

We are sending you:

_X_ herewith_under separate cover: _drawings _X_ descriptive literature_letters

If material received is not as listed, please notify us at once.

Quan.	Title	Action*
1	Draft Soil Remediation Project Construction Completion Report, Record Drawings, and Post-remedial Operation, Maintenance and Monitoring Plan	Y

*Action letter code: **R**-reviewed **N**-reviewed and noted **I**-for your information **S**-resubmit **J**-rejected **Y**-for your approval

Remarks: The enclosed documents are provided for your review and approval. Please provide comments on or before February 12, 2004.

cc: JR Heckathorne, P.E. - O'Brien & Gere

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

Judith Rank

Judith Rank
Project Engineer

I:\DIV71\Projects\6250\33874\2_corres\MS&BM_Trans013004.doc

O'Brien & Gere Engineers, Inc., an O'Brien & Gere company
5000 Brittonfield Parkway / P.O. Box 4873, Syracuse, New York 13221-4873
(315) 437-6100 / FAX (315) 463-7554 • http:// www.obg.com
. . . and offices in major U.S. cities

ENGINEERING REPORT

Soil Remediation Project
Construction Completion Report
Former CAE Electronics - Hillcrest Facility

CAE Electronics
Binghamton, New York

February 2004

6250/33874

ENGINEERING REPORT

Soil Remediation Project
Construction Completion Report
Former CAE Electornics - Hillcrest Facility

CAE Electronics
Binghamton, New York

James R. Heckathorne, P.E.
Vice President

February 2004

O'BRIEN & GERE
ENGINEERS, INC.

Contents

Figures

Appendices

Exhibits

1. Introduction

1.1. Background

The Hillcrest facility is a 17-acre manufacturing facility located at 11 Beckwith Avenue in the Town of Fenton, Broome County, New York (Site). CAE Electronics, Inc. (CAE) sold the Hillcrest facility to B.W. Elliott Manufacturing Co., Inc. Prior to CAE's ownership of the Site in 1988, and for most of its operational history, the Hillcrest facility was owned by a company that produced aviation-related products.

The facility is located five miles northeast of the City of Binghamton in a mixed commercial/residential area. A railroad runs along the eastern edge of the property separating the Site from the Chenango Valley Cemetery. Although the surrounding land is mostly residential, there are several commercial/industrial facilities located nearby, including auto body shops, industrial platers, and gas stations.

The Chenango River is located approximately 2,500 feet west of the facility and flows south, draining a significant portion of central New York State into the Susquehanna River. Approximately 300 feet to the south of the Site is a small stream known as Phelps Creek which flows intermittently during wet periods from east to west into the Chenango River. A site location map is included as Figure 1.

The Hillcrest facility is a two-story manufacturing/office building that produced aviation-related products (primarily flight simulators and related equipment) since 1940. The eastern portion of the building was used mainly for manufacturing while the western portion contains mostly offices.

Prior to July 1986, sanitary waste waters, cafeteria waste waters, non-contact cooling waters and industrial process waste waters were discharged to a subsurface leaching system regulated by a State Pollutant Discharge Elimination System (SPDES) Permit. The permitted outfall (004) consisted of twelve leaching pits, A, B, C, D, E, H, I, J, K, L, M, and N. The wastewater discharge included chromium, cadmium, silver, zinc, copper, nickel, rhodium, gold, tin/lead alloy, trichloroethene, 1,1,1-trichloroethane, and methylene chloride.

Remediation of the Site began in October 1983 when four of twelve leaching pits were taken out of service and partially removed. By July 1986, all wastewater discharges had been connected to the Binghamton / Johnson City Sewer District. Prior to July 1986, sanitary wastewater, cafeteria wastewater, non-contact cooling water, and industrial process wastewater were discharged to the subsurface leaching system.

In early 1988, samples were collected from private drinking water supplies along Brandywine Highway, which is located immediately to the west of the Site. All the wells sampled contained volatile organic compounds (VOCs) similar to the Site's ground water constituents. Ground water investigations in this area were required as part of the Remedial Investigation/Feasibility Study (RI/FS). All commercial/industrial facilities and residences within the vicinity of the Site are now supplied with drinking water from the Town of Fenton Water District.

The NYSDEC and the Singer Link Flight Simulator Division, Hillcrest Facility entered into an administrative consent order in February 1988 which required a RI/FS to be conducted to address the Site-related analytes and compounds of concern. The RI (H2M 1990) focused on identifying the physical nature and extent of the Site-related analytes and compounds of concern within the soil and ground water.

The RI analytical data confirmed the presence of a ground water plume consisting of VOCs and inorganics (chromium and cadmium) and determined the configuration of the off-site VOC plume. The VOCs included trichloroethene, 1,1,1-trichloroethane, dichloroethene, and dichloroethane. The majority of inorganic constituents appeared to be limited in mobility and are found predominantly on Site in the near vicinity of the leaching pit system. The FS recommended that the remedial program include natural attenuation for ground water, removal of sludge from the leaching pits, and *in situ* stabilization of soils associated with the leaching pits with contaminant levels that exceed cleanup levels.

On March 30, 1994, a Record of Decision (ROD) was issued to present the selected remedial action for the Site based on the administrative record of NYSDEC, and public input to the Proposed Remedial Action Plan presented by NYSDEC. An Order on Consent for the implementation of the ROD (*e.g.*, for the Remedial Design and Remedial Action) was entered on February 29, 1996 between NYSDEC and CAE Electronics, Inc. (Order on Consent)

Preliminary design investigations were performed in two phases. The initial predesign investigations evaluated the horizontal and vertical extent of the VOCs and inorganics in the soils around the leaching pits. These investigations consisted of advancing twelve soil borings to the water table in the vicinity of leaching pits A and J.

The second phase of investigations included soil sampling to correlate total, Toxicity Characteristic Leaching Procedure (TCLP), and Synthetic

Precipitate Leaching Procedure (SPLP) data. These investigations consisted of advancing three soil borings to the ground water table around leaching pit A and collecting two samples from each boring. The locations for the soil borings were selected based upon the analytical data obtained in the initial predesign investigations. Detailed discussions regarding the results of the investigations are provided in the Preliminary Design Report (O'Brien & Gere, 1996).

On March 21, 1997, NYSDEC finalized an Explanation of Significant Difference to describe a modification of a component of the ROD-selected remedial alternative in accordance with the recommendation of the Preliminary Design report. The *in situ* stabilization of soils beneath the twelve leaching pits was replaced by excavation and off-site disposal of impacted soil.

The Final Remedial Design Report (O'Brien & Gere 1998) was submitted to NYSDEC on March 2, 1998 in accordance with Section 1 of the Order on Consent, and was approved by NYSDEC on March 18, 1998. The purpose of the Final Remedial Design Report was to incorporate NYSDEC's comments on the Preliminary Design Report and present a complete design package for implementation of the Remedial Action in accordance with the Order on Consent. The Final Remedial Design Report specified the means by which the remedial goals of the ROD would be achieved.

1.2. Remedial design/remedial action summary

The Soil Remediation Project, as discussed in the Final Remedial Design Report, consisted of the following tasks: removal of eight remaining leaching pits; removal of the remaining portions of the four leaching pits thought to be previously removed; and removal and off-site disposal of sludge and soil above the site-specific cleanup level. In addition, the following tasks were also performed, although not required by the Final Remedial Design Report or ROD: excavated soil under and around the railroad tracks and Sprint fiber optic cable located in the railroad right-of-way; removed a steel building, air handling unit, and cyclone separator and excavated soil beneath them; removed utility poles and excavated in the vicinity of the former poles; removed a fire hydrant and fire main lateral and excavated soil with concentrations above clean up levels around them; removed a concrete settling structure found while excavating soil in the vicinity of leaching pit A; and investigated additional leaching pits on the west side of the building and removed one leaching pit where concentrations were above site-specific cleanup levels.

Soil excavation and leaching pit removal activities described above were performed from September 1998 to August 1999. Removal of impacted soil was completed to the north, south, and east until verification samples showed that cleanup levels had been attained, and west to the practical excavation limits near the manufacturing building. Several verification

samples collected along the western limits of excavation adjacent to the building exhibited concentrations above the site-specific cleanup levels, but soil could not be removed due to the close proximity to the building footers.

In March 2003, a soil stabilization pilot study was performed on the remaining soil adjacent to the building with concentrations above the site-specific cleanup level. Based on the results of the pilot study, on May 16, 2003 a work plan to address the remaining soils with concentrations above the site-specific cleanup level using *in situ* soil stabilization was submitted to the NYSDEC. The work plan was approved by NYSDEC on June 11, 2003. Remaining soil along the building foundation with concentrations above the site-specific cleanup level was treated using *in situ* soil stabilization from November 3 through 19, 2003.

2. Remedial action

The Soil Remediation Project consisted of excavation and disposal of the eight remaining leaching pits and associated sludge, excavation and disposal of the remaining portions of the four leaching pits and associated sludge thought to be previously removed, excavation and off-site disposal of soils surrounding the twelve leaching pits that exhibited concentrations above the clean-up level, and verification sampling. Approximately 11,000 tons of sludge and subsurface soil with concentrations above site-specific cleanup levels (summarized in Table 1) were excavated and properly disposed off-site. Soils adjacent to the building that exhibited concentrations above the clean-up level but could not be excavated were left in place and treated using *in situ* soil stabilization.

2.1. Excavation and disposal of remaining leaching pits

Portions of leaching pits A, B, C, and D, which were thought to have been removed in 1983, were removed as part of the Soil Remediation Project. Sludge and the remaining portions of the concrete block pit structures were removed. Sludge and the concrete block pit structures associated with leaching pits E, H, I, J, K, L, M, and N were also removed. A sample of the sludge was collected on September 8, 1998 and analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for Metals (EPA Method 6010), volatiles (SW846/8260/5030), and semi-volatiles (SW846/8270/3510). The sludge characterization analytical data sheets are presented as Exhibit A of this report. Sludge was disposed off-site as hazardous waste at the Chemical Waste Management Model City facility in Niagara Falls, New York. Chemical Waste Management's generator's waste profiles and confirmation letters are included as Exhibit B.

2.2. Excavation and disposal of soil

2.2.1. Limits of excavation

Excavation of soil with concentrations above the site-specific cleanup levels was performed down to the water table (approximately 18 feet below grade). Initial excavations of the leaching pits were performed within the Contractor's trench box, which was twenty feet square. If

verification samples exhibited concentrations above the site-specific cleanup levels, excavation continued as described in Section 2.3 below.

2.2.2. Surface soils

Soil overlying leaching pits E and M was considered surface soil. Soil overlying the remaining portions of leaching pits A, B, C, and D, which was placed during previous removal activities, was also considered surface soil. Surface soils were excavated and stockpiled separately. One sample from each stockpile was analyzed for total cadmium (EPA Method 6010) and VOCs (EPA Method 8260). Surface soil data is summarized in Table 2. Concentrations detected in surface soil samples were below the site-specific cleanup levels and were used as backfill material in accordance with the Final Remedial Design Report.

The tops of leaching pits H, I, J, K, L, and N were located just below the ground surface. Therefore, no surface soil was generated for these leaching pits.

2.2.3. Subsurface soils

Soil adjacent to leaching pits E, H, I, J, K, L, M, and N, from the top of the leaching pit down to the water table (approximately 18 feet below grade) was considered subsurface soil. Subsurface soil also included the soils adjacent to the four leaching pits that were previously partially removed (A, B, C, and D), and from the top of the remaining portions of the previously removed leaching pits down to the water table (approximately 18 feet below grade).

The subsurface soil at each leaching pit location was excavated and stockpiled. Subsurface soil that was visually stained was stockpiled separately from soil that was not stained. Per NYSDEC verbal approval, subsurface soil from different leaching pits that was not stained was stockpiled together.

One composite sample of excavated subsurface soil was obtained from each stockpile and analyzed for TCLP metals and VOCs. Soil that exceeded the RCRA TCLP Hazardous Waste Criteria for metals was managed as hazardous waste and disposed off-site at the Chemical Waste Management Model City facility in Niagara Falls, New York. If the RCRA TCLP Hazardous Waste Criteria for metals were not exceeded, the subsurface soil was managed as non-hazardous industrial solid waste and disposed off-site at the Steuben County Landfill. Subsurface soil excavated in the vicinity of former leaching pit A exhibited concentrations of trichloroethene that required stabilization prior to landfilling. These soils were shipped to STABLEX in Quebec, Canada. Subsurface soil data is summarized in Table 3.

2.2.4. Piping

Piping was encountered during excavation of several of the leaching pits. When piping was encountered, the soil or bedding material beneath the piping was sampled, in accordance with the Final Remedial Design Report. Based on sample results, piping was either capped and left in place or removed. Sample data associated with pipelines encountered during excavation are summarized in Table 4.

2.3. Verification sampling

Following excavations at each leaching pit location, verification samples were collected at an approximate frequency of one sample every 12 feet. The samples were submitted to Friend Laboratory, Inc., located on 1 Research Circle in Waverly, New York, using chain-of-custody protocol. In accordance with the Final Remedial Design Report, verification samples were analyzed for the indicator metal, cadmium, using EPA Method 6010 and level 1 quality control. Verification sample locations were selected by the on-site engineer with the concurrence of the NYSDEC on-site representative. Verification sample locations also included areas of visually impacted soil and beneath incoming and outgoing pipelines (Section 2.2.4).

If verification sample results exhibited cadmium above 80 parts per million (ppm), an additional 4 to 5 feet of soil from the outer edge of the excavation between two sample locations that exhibited concentrations less than or equal to 80 ppm was excavated from the ground surface down to the ground water table. Verification samples were collected from the re-excavated area at the same frequency (one sample per 12 feet) described above. This process was repeated until verification samples collected from the soil left in place exhibited cadmium concentrations below 80 ppm or to the practical limits of excavation adjacent to the building as described in Section 2.4 below. Verification sample results for each leaching pit are summarized in Table 5.

If verification sample results collected from material beneath incoming or outgoing pipelines exhibited cadmium above 80 ppm, the piping was removed. If verification sample results were below 80 ppm of cadmium, the pipelines were capped and left in place.

2.4. Physical constraints

Physical constraints at the Site included the New York Susquehanna and Western (NYS&W) Railway to the east of the leaching pits and the manufacturing building to the west.

Based on verification sample results, although not required by the Final Remedial Design Report, soil under and around the NYS&W railroad tracks was excavated. NYS&W requirements were followed during these excavation activities. A representative of NYS&W Railway was on-site during this work.

The Sprint fiber optic cable, which is located in the railroad right-of-way, was also moved. Soil under and around the cable was excavated, and the cable was replaced. A representative of Sprint was on-site during this work.

In addition, several structures associated with the former Hillcrest Facility building were removed to allow excavation activities to continue. These structures include: a steel building addition, an air handling unit, a cyclone separator, utility poles, and a fire hydrant and fire main lateral.

An approximate five-foot strip of soil adjacent to the building, as depicted on Figure 2, could not be removed without compromising the integrity of the building foundation. This soil was left in place and treated using *in situ* soil stabilization, as described in Section 2.6.

2.5. Interior soil borings

In October 1999, five soil borings were installed inside the building at locations designated by the NYSDEC, New York State Department of Health, and CAE to evaluate the presence of site-related contaminants in the soils beneath the manufacturing building. Soil boring locations are depicted on Figure 2. Soil samples were collected from each boring at 2-ft intervals from 10 ft below grade to 18 ft below grade. One sample from each soil boring was selected for analysis based on visual observation of potential impact. Soil samples that were selected for analysis were selected with the concurrence of NYSDEC's oversight contractor and were consistent with depths at which contamination was observed during excavation activities. These soil samples were analyzed for total cadmium and chromium, and TCLP cadmium and chromium. Analytical data is summarized in Table 6.

The soil sample obtained from soil boring B-5 was also analyzed for VOCs based on the sample's visual appearance and the observance of an odor. Methylene chloride, 4-isopropyltoluene, n-butylbenzene, and naphthalene were detected at concentrations of 230 parts per billion (ppb), 280 ppb, 230 ppb, and 390 ppb, respectively. These concentrations were significantly less than the total VOC site-specific cleanup level of 10,000 ppb. Laboratory notes state that the detection of methylene chloride may have been attributed to laboratory or field contamination. The soil sample obtained from B-5 was also analyzed for Petroleum Productions Identification (DOH-310.13). The results of this test were inconclusive.

The site-specific cleanup levels for cadmium and chromium were not exceeded in any of the soil samples. With the exception of TCLP cadmium at B-1, TCLP cadmium and chromium concentrations did not exceed the applicable RCRA Hazardous Waste Criteria. A TCLP cadmium concentration of 1.1 mg/L was detected at soil boring location B-1, slightly in excess of the RCRA Hazardous Waste Criteria for TCLP cadmium of 1.0 mg/L. As approved by NYSDEC in its letter dated January 7, 2000, soil sample results show that there are no consequential quantities of hazardous waste beneath the manufacturing building. Therefore, remediation beneath the manufacturing building was not performed.

2.6. *In situ* soil stabilization

Soil adjacent to the building that could not be excavated without compromising the integrity of the building was treated using *in situ* soil stabilization. Based on verification sample data at the limits of the building, soil borings were installed at intervals of two feet on center in three areas as shown on Figure 3. A total of 94 borings were installed to a depth of 12 to 15 feet below ground level, depending on the subsurface conditions. Following soil boring installation, a proprietary slurry mixture of FESI-BOND™ Dry/C soil stabilizer and water was injected into each boring. Approximately 100 gallons of the slurry mixture was injected into each boring.

In accordance with the May 16, 2003 work plan, five test borings were installed at locations shown on Figure 3. The test borings were installed at a midpoint between two injection borings. A split-spoon sample was collected from each test boring at a depth of approximately 8 to 12 feet below ground surface. Each sample collected from each test boring was visually observed for slurry saturation. The slurry mixture was observed in each of the five test borings; and it was therefore concluded that the injection points were spaced appropriately.

Although not required by the May 16, 2003 work plan, at the request of NYSDEC, five soil samples were collected from locations shown on Figure 3 to verify that the soil had been stabilized. The samples were submitted to Upstate Laboratories, Inc. in Binghamton, New York for TCLP cadmium and TCLP chromium analysis. All of the sample results were below the RCRA Hazardous Waste Criteria. Sample results associated with *in situ* soil stabilization are summarized in Table 7.

2.7. Additional investigation/remediation

Although not required by the Final Remedial Design Report, additional leaching pits identified by former employees of CAE were investigated. The leaching pits were located on historical drawings and identified as

Outfalls 001, 008 and 009. Test pits were installed to locate these leaching pits and samples of sludge were collected from each outfall. The sludge samples were analyzed for total cadmium, total chromium, and VOCs. The sludge sample from Outfall 008 exhibited concentrations of cadmium above the site-specific cleanup level. Other sludge samples did not exhibit concentrations above the cleanup levels.

Based on this analytical data, a letter work plan dated December 15, 1998 was submitted to the NYSDEC. Two soil borings were installed at approximately 3 feet and 6 feet from the edge of Outfall 008 on the north, south, east, and west walls (eight borings total). Two samples were collected from each soil boring and analyzed for total cadmium. Cadmium was not detected above the site-specific cleanup level in any of the soil boring samples. Therefore, the sludge and concrete were removed from the leaching pit and no further soil excavation was performed. Analytical results associated with the outfalls located on the west side of the building are summarized in Table 8.

2.8. Construction water

Construction water consisted of standing water collected from leaching pits, ground water that accumulated in excavations, and personal and equipment decontamination waters. The construction water was collected in a frac tank. In accordance with approval from the Binghamton-Johnson City Joint Sewage Board, construction water was filtered and collected in a holding tank for sampling prior to discharge into the municipal sewer system. The Binghamton-Johnson City Joint Sewage Board approval letter is included as Exhibit C. Construction water samples are summarized in Table 9.

The construction water sample results demonstrated that the filtered construction water was in compliance with the regulated parameters (cadmium, chromium, copper, lead, nickel, and zinc) and was not a listed or characteristic hazardous waste. Based on the sample results, the construction water collected at the Site was discharged to the sanitary sewer.

2.9. Soil staging area

In accordance with Technical Specification 02232 Section 3.3, surface soil samples were collected beneath each excavated subsurface soil stockpile location. The surface soil samples were analyzed for total cadmium (USEPA Method 6010) and VOCs (USEPA Method 8260). Analytical results from these surface soil samples did not exhibit concentrations above the site-specific cleanup levels; therefore, no additional excavation was necessary to restore the soil staging areas to

pre-construction conditions. Soil staging area data is summarized in Table 10.

2.10. Site restoration

Following completion of the Soil Remediation Project, the site was restored to pre-remediation conditions in accordance with the Technical Specifications.

3. Record drawings/as-built

Following completion of the Soil Remediation Project, Record Drawings and an as-built drawing were generated. The Record Drawings depict the original site plan and the areas where impacted soil was excavated. The Record Drawings are included as Appendix A. The as-built drawing is included as Exhibit A.

4. Operation, maintenance and monitoring plan

The Operation, Maintenance, and Monitoring (OM&M) Plan is included as Appendix B. The OM&M Plan discusses routine post-construction operation and maintenance of physical site security and site access, and routine ground water, Chenango River surface water, and Chenango River sediment monitoring procedures and protocols. [SEE QUESTIONS IN OM&M PLAN.] The OM&M Plan identifies the ground water monitoring wells and Chenango River surface water and sediment location to be sampled, the frequency of sampling, and the analytical parameters.

Monitoring data will be used to evaluate the effectiveness of the source control remedy by evaluating trends in ground water and surface water/sediment concentrations over time.

5. Certification

Based on the field observations made during implementation of the Remedial Action described in Section 2, I hereby certify, as required by the Order on Consent (#A7-0323-94-12), that the Remedial Design and Remedial Construction were completed in accordance with the NYSDEC-approved Remedial Design and NYSDEC-approved modifications to the design as described in this report.

_____

James R. Heckathorne, P.E.

_____

Date

References

H2M Group. "Remedial Investigation". 1990.

H2M Group. "Feasibility Study". June 1994.

NYSDEC. "Singer Link Flight Simulator Division Hillcrest Facility Record of Decision." March 1994.

NYSDEC. "CAE Electronics, Inc. Order on Consent Index # A7-0323-94-12". February 29, 1996.

NYSDEC. Letter to Michael V. Stoddard (CAE Electronics Remediation Manager) from Craig M. Lapinski, P.E. (NYSDEC) providing concurrence of

NYSDEC. Letter to Robert C. Murphy (Pope, Tait, & Murphy, LLP) from Tom Suozzo, P.E. (NYSDEC) providing approval for May 16, 2003 *in situ* soil stabilization work plan. June 11, 2003.

O'Brien & Gere Engineers, Inc. "Preliminary Design for Soil Remediation Project". December 1996.

O'Brien & Gere Engineers, Inc. "Final Remedial Design Report". March 1998.

O'Brien & Gere Engineers, Inc. "Interior Soil Boring Report". November 1999.

O'Brien & Gere Engineers, Inc. Letter work plan to Tom Suozzo (NYSDEC). May 16, 2003.

Tables

Table 1

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

Site-Specific Soil Cleanup Criteria

Parameter	TAGM/HEAST Standards (1)
Antimony	30
Barium	4,000
Beryllium	0.16
Cadmium	80
Chromium	80,000
Hexavalent Chromium	400
Cyanide	2,000
Lead	250
Manganese	20,000
Mercury	20
Nickel	2,000
Silver	200
Zinc	20,000
Total VOCs	10

(1) Standard levels in mg/kg
(2) HEAST Standards are the cleanup objective for metals.
TAGM level for total VOCs is cleanup level for VOCs.

Table 2

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

Surface Soil Sample Data Summary

Sample ID	Sample date	Cadmium (mg/kg)	VOCs (ug/kg) Trichloroethene	1,1,1-Trichloroethane
Leaching Pit E				
S-02-092598-002	9/25/98	3.4	NA	NA
S-02-092598-003	9/25/98	NA	ND	ND
Leaching Pit M				
Surface Soil No. S-M-C	10/6/98	9.3	NA	NA
Surface Soil (PIT M)	10/6/98	NA	15	ND
Leaching Pit D				
Surface LP-D	10/13/98	14	ND	ND
Leaching Pit C				
Soil Surface S-C	10/21/98	ND	ND	ND
Leaching Pit B				
Surface-B	11/9/98	11	ND	ND
Leaching Pit A				
Surface-A1	11/17/98	40	ND	ND

Table 3

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

Subsurface Soil Sample Data Summary

Sample ID	Sample date	Trichloroethene (ug/kg)	Trichloroethene (mg/L)	TCLP Metals (mg/L)							
				Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
SS-E/M STOCKPILE #1 (N)	10/9/98	ND	NA	ND	ND	0.86	ND	ND	ND	ND	ND
SS-E/M STOCKPILE #2 (S)	10/9/98	ND	NA	ND	ND	1.24	ND	ND	ND	ND	ND
SS-M-2	11/3/98	ND	NA	ND	ND	ND	0.151	ND	ND	ND	ND
SS-M-3	11/6/98	ND	NA	ND	0.215	ND	0.216	ND	ND	ND	ND
SS-D	10/14/98	ND	NA	ND	0.81	1.46	ND	ND	ND	ND	ND
Soil SS-C	10/21/98	ND	NA	ND	1.64	1.3	ND	ND	ND	ND	ND
SS-N-1	10/29/98	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
SS-N-2	6/7/99	ND	NA	ND	1.1	0.414	ND	2.38	ND	ND	ND
SS-N-3	6/22/99	ND	NA	ND	0.7	1.5	ND	ND	0.03	ND	ND
SS-N-4-A	7/1/99	ND	NA	ND	0.49	0.175	ND	ND	ND	ND	ND
SS-N-4-B	7/1/99	ND	NA	ND	0.47	0.48	ND	ND	ND	ND	ND
SS-N-5	7/12/99	ND	NA	ND	0.943	1.1	ND	ND	ND	ND	ND
SS-N-6	7/19/99	ND	NA	ND	1.11	0.37	ND	ND	ND	ND	ND
SS-B/C/D	11/9/98	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
SS-B-2	5/5/99	ND	NA	ND	0.875	0.524	ND	ND	ND	ND	ND
SS-A	11/17/98	140,000	11	ND	0.22	1.75	ND	ND	ND	ND	ND
SS-A-2	5/12/99	ND	NA	ND	0.604	0.724	ND	ND	ND	ND	ND
SS-A-3	5/22/99	ND	NA	ND	0.813	2.12	ND	ND	ND	ND	ND
SS-A-4	7/12/99	ND	NA	ND	0.774	1.4	ND	ND	ND	ND	ND
SS-H-1	12/15/98	ND	NA	ND	1.27	0.31	ND	ND	ND	ND	ND
SS-H/J/K-2	4/7/99	ND	NA	ND	0.895	0.32	ND	ND	ND	ND	ND
SS-H-2	4/12/99	ND	NA	ND	0.36	0.106	ND	ND	ND	ND	ND
SS-I-1	12/1/98	ND	NA	ND	1.27	0.06	ND	ND	ND	ND	ND
SS-J/I	12/4/98	ND	NA	ND	0.847	0.139	ND	ND	ND	ND	ND
SS-K-1	12/8/98	ND	NA	ND	0.758	ND	ND	ND	ND	ND	ND
SS-K-2	12/9/98	ND	NA	ND	0.458	0.163	ND	ND	ND	ND	ND
SS-J/K-1	3/25/99	ND	NA	ND	1.26	0.363	ND	ND	ND	ND	ND
SS-L-1	12/12/98	170	NA	ND	0.872	0.27	ND	ND	ND	ND	ND

Table 4

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

Pipe Sample Data Summary

Sample ID	Sample date	Cadmium (mg/kg)
Leaching Pit E		
LP-E 092598-001	9/25/98	32
Leaching Pit M		
LP-M E Lateral Pipe	6/25/99	31
Leaching Pit D		
Soil-Piping D	10/13/98	83
Piping-D-2nd-N	11/2/98	200
Leaching Pit C		
LP-C-Piping North	10/19/98	8.8
LP-C Piping South	10/19/98	2.6
Leaching Pit N		
Piping N (East)	10/27/98	39
Piping N (NW)	10/27/98	15
Piping-N-2nd-N-001 East	11/2/98	31
LP-N,SE,Pipe S	6/21/99	130
LP-N,SE,Pipe N	6/21/99	99
LP-N, SE, Pipe S001	6/25/99	41
Leaching Pit B		
B-Pipe North-01	11/4/98	120
B-Pipe South-01	11/4/98	6.2
B-Pipe West-01	11/4/98	110
B-Pipe N-001	4/12/99	66
Leaching Pit A		
A-Pipe-South	11/9/98	54
Pipe AN-001	11/13/99	19
LP-A,W, Pipe W	4/28/99	560
Leaching Pit H		
LP-H Pipe N	12/14/98	49
LP-H Pipe S	12/14/98	290
LP-H Pipe South 001	12/16/98	130
LP-H Pipe South 0001	12/19/98	7
Leaching Pit I		
LP-I-Pipe West	11/30/98	6.3
Leaching Pit J		
Pipe J-North	12/3/98	ND
Pipe J-South	12/3/98	ND
Pipe J-East	12/3/98	ND
Pipe J-West	12/3/98	ND
Leaching Pit K		
Soil-Piping LP-K Pipe S	12/5/98	ND
Leaching Pit L		
LP-L-Pipe East	12/11/98	3.5

Table 5

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

Verification Sample Data Summary

Sample ID	Sample date	Cadmium (mg/kg)	Chromium (mg/kg)	VOCs (ug/kg)	
				Trichloroethene	1,1,1-Trichloroethane
Leaching Pit E					
VE-01 (LP-E)	9/30/98	28.8	NA	NA	NA
VE-02 (LP-E)	9/30/98	14.7	NA	NA	NA
VE-03	9/30/98	27.9	NA	NA	NA
VE-04	9/30/98	46.1	NA	NA	NA
VE-05	9/30/98	11.8	NA	NA	NA
VE-06	9/30/98	35.3	NA	NA	NA
VE-07	9/30/98	16.3	NA	NA	NA
Leaching Pit M					
VM-01	10/6/98	77	NA	NA	NA
VM-02	10/6/98	330	NA	NA	NA
VM-03	10/6/98	180	NA	NA	NA
VM-04	10/6/98	44	NA	NA	NA
VM-05	10/6/98	96	NA	NA	NA
VM-07	10/6/98	180	NA	NA	NA
VM-08	10/6/98	210	NA	NA	NA
VM-002	10/14/98	18	NA	NA	NA
VM-003	10/14/98	160	NA	NA	NA
VM-005	10/14/98	53	NA	NA	NA
VM-007	10/14/98	680	NA	NA	NA
VM-008	10/14/98	14	NA	NA	NA
VM-0003	10/22/98	88	NA	NA	NA
VM-0009	10/22/98	31	NA	NA	NA
VM-0007	10/22/98	6.7	NA	NA	NA
VM-00010	10/22/98	45	NA	NA	NA
VM-00003	10/27/98	1900	NA	NA	NA
VM-000003	11/6/98	83	NA	NA	NA
VM-0000003	11/6/98	92	NA	NA	NA
VM-00000003	11/14/98	17	NA	NA	NA

Sample ID	Sample date	Cadmium (mg/kg)	Chromium (mg/kg)	VOCs (ug/kg)	
				Trichloroethene	1,1,1-Trichloroethane
Leaching Pit D					
VD-01	10/12/98	110	NA	NA	NA
VD-02	10/13/98	190	NA	NA	NA
VD-03	10/13/98	720	NA	NA	NA
VD-04	10/13/98	110	NA	NA	NA
VD-05	10/13/98	95	NA	NA	NA
VD-06	10/13/98	650	NA	NA	NA
VD-07	10/13/98	960	NA	NA	NA
VD-002	10/26/98	270	520	NA	NA
VD-003	10/26/98	580	2900	NA	NA
VD-005	10/27/98	40	NA	NA	NA
Soil D-006	11/2/98	200	NA	NA	NA
Soil D-007	11/2/98	280	NA	NA	NA
Leaching Pit C					
VC-01	10/20/98	160	NA	NA	NA
VC-02	10/20/98	140	NA	NA	NA
VC-03	10/20/98	170	NA	NA	NA
VC-04	10/20/98	140	NA	NA	NA
VC-05	10/20/98	270	NA	NA	NA
VC-06	10/20/98	130	85	NA	NA
VC-07	10/20/98	130	36	NA	NA
VC-001	10/26/98	390	620	NA	NA
VC-002	11/3/98	190	NA	NA	NA
VC-003	11/3/98	84	NA	NA	NA
VC004	10/23/98	83	NA	NA	NA
VC005	10/23/98	220	NA	NA	NA
VC-007	6/23/99	93	22	NA	NA
VC-008	6/23/99	97	25	NA	NA
VC-0004	11/3/98	160	290	NA	NA
VC-0005	11/3/98	700	2600	NA	NA
VC-00004	5/18/99	200	300	NA	NA
VC-00005	5/18/99	770	2800	NA	NA
VC/D East 01	11/7/98	92	NA	NA	NA
VC/D West 01	11/7/98	160	210	NA	NA
VC/D East-001	11/23/98	190	NA	NA	NA
V-C/D East 0001	11/25/98	216	NA	NA	NA
VC/D-00001	5/18/99	390	1200	NA	NA

Sample ID	Sample date	Cadmium (mg/kg)	Chromium (mg/kg)	VOCs (ug/kg)	
				Trichloroethene	1,1,1-Trichloroethane
Leaching Pit N					
VN-01	10/29/98	120	1000	NA	NA
VN-02	10/29/98	46	73	NA	NA
VN-03	10/29/98	87	950	NA	NA
VN-04	10/29/98	180	4500	NA	NA
VN-05	10/29/98	18	NA	NA	NA
VN-06	10/29/98	73	NA	NA	NA
VN-07	10/29/98	36	NA	NA	NA
VN-001	6/2/99	110	160	NA	NA
VN-003	6/3/99	190	NA	NA	NA
VN-004	6/3/99	350	NA	NA	NA
VN-008	6/2/99	280	NA	NA	NA
VN-009	6/3/99	92	NA	NA	NA
VN-0003	6/8/99	55	NA	NA	NA
VN-0004	6/21/99	370	NA	NA	NA
VN-00004	6/28/99	110	NA	NA	NA
VN-000010	6/28/99	46	NA	NA	NA
VN-000004	7/1/99	880	NA	NA	NA
VN-0000004	7/6/99	350	NA	NA	NA
VN-00000004	7/8/99	27	NA	NA	NA
Leaching Pit B					
VB-01	11/5/98	300	3000	NA	NA
VB-02	11/5/98	260	1300	NA	NA
VB-03	11/5/98	91	NA	NA	NA
VB-04	11/5/98	19	2100	NA	NA
VB-05	11/5/98	58	300	NA	NA
VB-06	11/5/98	53	NA	NA	NA
VB-07	11/5/98	230	NA	NA	NA
VB-007	4/12/99	9.4	NA	NA	NA
VB-008	4/6/99	63	230	NA	NA
VB-010	4/12/99	ND	ND	NA	NA

Sample ID	Sample date	Cadmium (mg/kg)	Chromium (mg/kg)	VOCs (ug/kg) Trichloroethene	1,1,1-Trichloroethane
Leaching Pit A					
VA-01	11/24/98	1000	NA	NA	NA
VA-02	11/25/98	249	NA	NA	NA
VA-03	11/12/98	87	NA	NA	NA
VA-04	11/12/98	200	NA	NA	NA
VA-05	11/12/98	170	240	NA	NA
VA-06	11/12/98	1300	3100	NA	NA
VA-07	11/17/98	500	NA	NA	NA
VA-08	11/17/98	280	NA	NA	NA
VA-09	11/24/98	360	NA	NA	NA
VA-010	4/14/99	16	19	ND	ND
VA-001	4/29/99	630	9500	880	320
VA-002	4/30/99	76	41	ND	ND
VA-003	4/15/99	54	NA	ND	ND
VA-004	4/14/99	140	NA	ND	ND
VA-005	5/17/99	33	96	ND	ND
VA-006	5/17/99	50	110	ND	ND
VA-007	11/17/98	180	NA	NA	NA
VA-008	11/17/98	76	NA	NA	NA
VA-009	4/30/99	160	300	ND	ND
VA-0011	4/22/99	120	NA	ND	ND
VA-0012	4/30/99	320	3300	ND	ND
VA-0004	4/20/99	72	NA	ND	ND
VA-0007	4/22/99	3.3	NA	ND	ND
VA-0009	5/10/99	23	140	NA	NA
VA-00011	5/14/99	42	130	NA	NA
VA-00012	7/7/99	21	12	NA	NA
VA-00013	5/10/99	2.2	17	ND	ND
VA-00014	7/7/99	1200	13000	ND	ND
VA-00015	7/12/99	880	11000	ND	ND
Leaching Pit H					
VH-01	12/15/98	ND	NA	NA	NA
VH-02	12/15/98	ND	NA	NA	NA
VH-03	12/15/98	ND	NA	NA	NA
VH-04	12/15/98	110	NA	NA	NA
VH-05	12/15/98	32	NA	NA	NA
VH-06	12/15/98	18	NA	NA	NA
VH-07	12/15/98	55	NA	NA	NA
VH-004	3/31/99	110	NA	NA	NA
VH-008	3/31/99	ND	NA	NA	NA
VH-0004	4/2/99	110	NA	NA	NA
VH-00004	4/8/99	11	NA	NA	NA

Sample ID	Sample date	Cadmium (mg/kg)	Chromium (mg/kg)	VOCs (ug/kg)	
				Trichloroethene	1,1,1-Trichloroethane
Leaching Pit I					
VI-01	12/1/98	ND	NA	NA	NA
VI-02	12/2/98	ND	NA	NA	NA
VI-03	12/1/98	ND	NA	NA	NA
VI-04	12/1/98	ND	NA	NA	NA
VI-05	12/1/98	ND	NA	NA	NA
VI-06	12/1/98	ND	NA	NA	NA
VI-07	12/1/98	46	NA	NA	NA
Leaching Pit J					
VJ-01	12/4/98	13	NA	NA	NA
VJ-02	12/4/98	260	NA	NA	NA
VJ-03	12/4/98	140	NA	NA	NA
VJ-04	12/4/98	20	NA	NA	NA
VJ-05	12/4/98	75	NA	NA	NA
VJ-06	12/4/98	ND	NA	NA	NA
VJ-07	12/4/98	80	NA	NA	NA
VJ-002	3/24/99	21	NA	NA	NA
VJ-003	3/24/99	ND	NA	NA	NA
VJ-008	3/24/99	75	NA	NA	NA
Leaching Pit K					
VK-01	12/9/98	63	NA	NA	NA
VK-02	12/9/98	380	NA	NA	NA
VK-03	12/9/98	570	NA	NA	NA
VK-04	12/9/98	150	NA	NA	NA
VK-05	12/9/98	24	NA	NA	NA
VK-06	12/9/98	160	NA	NA	NA
VK-07	12/9/98	360	NA	NA	NA
VK-002	3/18/99	17	NA	NA	NA
VK-006	3/16/99	110	NA	NA	NA
VK-007	3/16/99	55	NA	NA	NA
VK-008	3/16/99	48	NA	NA	NA
VK-009	3/26/99	19	NA	NA	NA
VK0006	3/30/99	18	NA	NA	NA
Leaching Pit L					
VL-01	12/12/98	9.2	NA	NA	NA
VL-02	12/12/98	20	NA	NA	NA
VL-03	12/12/98	46	NA	NA	NA
VL-04	12/12/98	49	NA	NA	NA
VL-05	12/12/98	17	NA	NA	NA
VL-06	12/12/98	6.8	NA	NA	NA
VL-07	12/12/98	20	NA	NA	NA

Sample ID	Sample date	Cadmium (mg/kg)	Chromium (mg/kg)	VOCs (ug/kg)	
				Trichloroethene	1,1,1-Trichloroethane
Excavation Under and Around NYS&W Railroad Tracks					
RR-East-TA-1	5/14/99	71	NA	NA	NA
RR-East-TA-2	5/14/99	40	NA	NA	NA
RR-East-TA-3	5/14/99	105	NA	NA	NA
RR-East-T-C/D-1	5/14/99	52	NA	NA	NA
RR-East-T-C/D-2	5/14/99	129	NA	NA	NA
RR-East-T-C/D-3	5/14/99	95	NA	NA	NA
RR-East-TA-003	5/18/99	5.7	NA	NA	NA
RR-East-TA-004	5/18/99	5.7	NA	NA	NA
RR-East-T-C/D-002	5/18/99	100	NA	NA	NA
RR-East-T-C/D-003	5/18/99	120	NA	NA	NA
RR-East-T-C/D-04	5/18/99	160	NA	NA	NA
RR-East-TA-3-2	5/19/99	14	NA	NA	NA
RR-East-TA-3-3	5/19/99	71	NA	NA	NA
RR-East-T-C/D-05	5/19/99	95	NA	NA	NA
RR-East-T-C/D-06	5/21/99	23	NA	NA	NA
RR-East-T-C/D-07	5/21/99	4.5	NA	NA	NA
RR-East -T-C/D-004	5/21/99	110	NA	NA	NA
RR-East-T-C/D-005	5/21/99	23	NA	NA	NA
RR-East-T-C/D-006	5/21/99	7.6	NA	NA	NA
RR-East-T-C/D-007	5/21/99	6.1	NA	NA	NA
R-E-T-C/D-02 Road	5/27/99	6.8	NA	NA	NA
R-E-T-C/D-03 Road	5/27/99	9.5	NA	NA	NA
R-E-T-C/D/-4 Road	5/27/99	25	NA	NA	NA

Notes:
NA = Not analyzed
ND = Not detected

Table 6

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

Interior Soil Boring Data Summary

	B-1	B-2	B-3	B-4	B-5	Site-Specific Cleanup Level	RCRA Hazardous Waste Criteria
Total Cadmium (mg/kg)	73	65	27	55	37	80 mg/kg	NA
Total Chromium (mg/kg)	88	160	36	82	85	80,000 mg/kg	NA
TCLP Cadmium (mg/L)	1.1	0.98	0.55	0.64	0.72	NA	1.0 mg/L
TCLP Chromium (mg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	NA	5.0 mg/L

Table 7

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

In Situ Soil Stabilization Data Summary

Sample ID	TCLP Cadmium (mg/L)	TCLP Chromium (mg/L)
S-1-02	0.27	0.08
S-X-02	0.56	0.33
S-3-02	0.66	0.09
S-Y-02	0.43	0.08
S-5-02	0.51	0.09

RCRA Hazardous Waste Criteria for Cadmium = 1 mg/L
RCRA Hazardous Waste Criteria for Chromium = 5 mg/L

Table 8

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

Additional Investigation/Remediation Data Summary

Western Outfalls Sludge Samples

Outfall	Cadmium (mg/kg)	Chromium (mg/kg)
001	5.7	17
008	150	450
009	ND	21
Cleanup Level	80	80,000

Outfall 008 Soil Boring Samples

Sample ID	Sample Depth (ft)	Cadmium (mg/kg)
N-1	10 - 12	5.2
N-1	14 - 18	5.3
N-2	10 - 12	13
N-2	12 - 16	6.2
E-1	6 - 8	9.6
E-1	10 - 12	16
E-2	12 - 14	4.6
E-2	14 - 18	6.6
S-1	10 - 12	7.2
S-1	14 - 16	8.6
S-2	10 - 12	7.3
S-2	14 - 16	5.3
W-1	10 - 12	8.5
W-1	14 - 16	5.1
W-2	8 - 10	11
W-2	14 - 18	4.1

Table 9

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

Construction Water Data Summary

Sampe ID	Sample Date	Trichloroethene (ug/L)	Metals (mg/L)						Oil & Grease (mg/L)	pH	TSS (mg/L)
			Cadmium	Chromium	Copper	Lead	Nickel	Zinc			
CWW-1	12/8/98	46	NA	NA	NA	NA	NA	NA	ND	7.81	5
CWW-2	12/22/98	NA	NA	ND	0.023	ND	ND	ND	NA	NA	NA
CWW-3	6/15/99	ND	0.006	0.011	0.021	ND	ND	ND	ND	7.39	19

Table 10

CAE Electronics, Inc.
Former Hillcrest Facility; Binghamton, New York

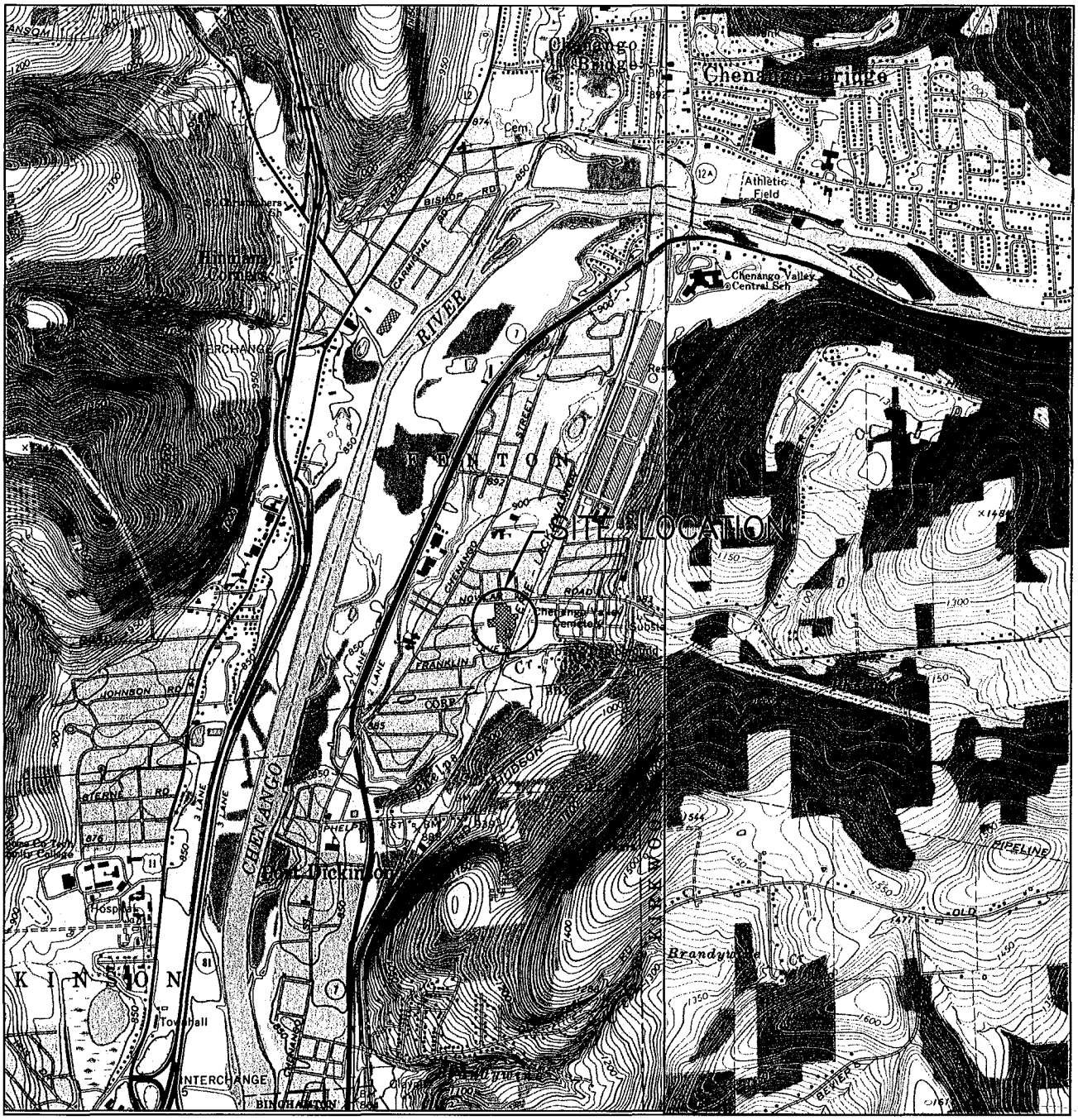
Staging Area Surface Soil Data Summary

Sample ID	Cadmium (mg/kg)	VOCs (ug/kg)
S-1-S	ND	ND
S-2-S	17	ND
S-3-S	ND	ND
S-4-S	43	ND
S-5-S	ND	ND
S-6-S	23	ND
S-7-S	16	ND
S-8-S	18	ND
S-9-S	21	ND
S-10-S	7	ND
S-11-S	29	ND
S-12-S	ND	ND
S-13-S	ND	ND
S-14-S	ND	ND
S-15-S	ND	ND
S-16-S	10	ND

Note:
ND = Not detected

Figures

FIGURE 1



ADAPTED FROM: CASTLE CREEK/CHENANGO FORKS QUADRANGLE, U.S.G.S. 7.5 MIN. QUAD

QUADRANGLE LOCATION

FORMER CAE ELECTRONICS FACILITY BINGHAMTON, NEW YORK

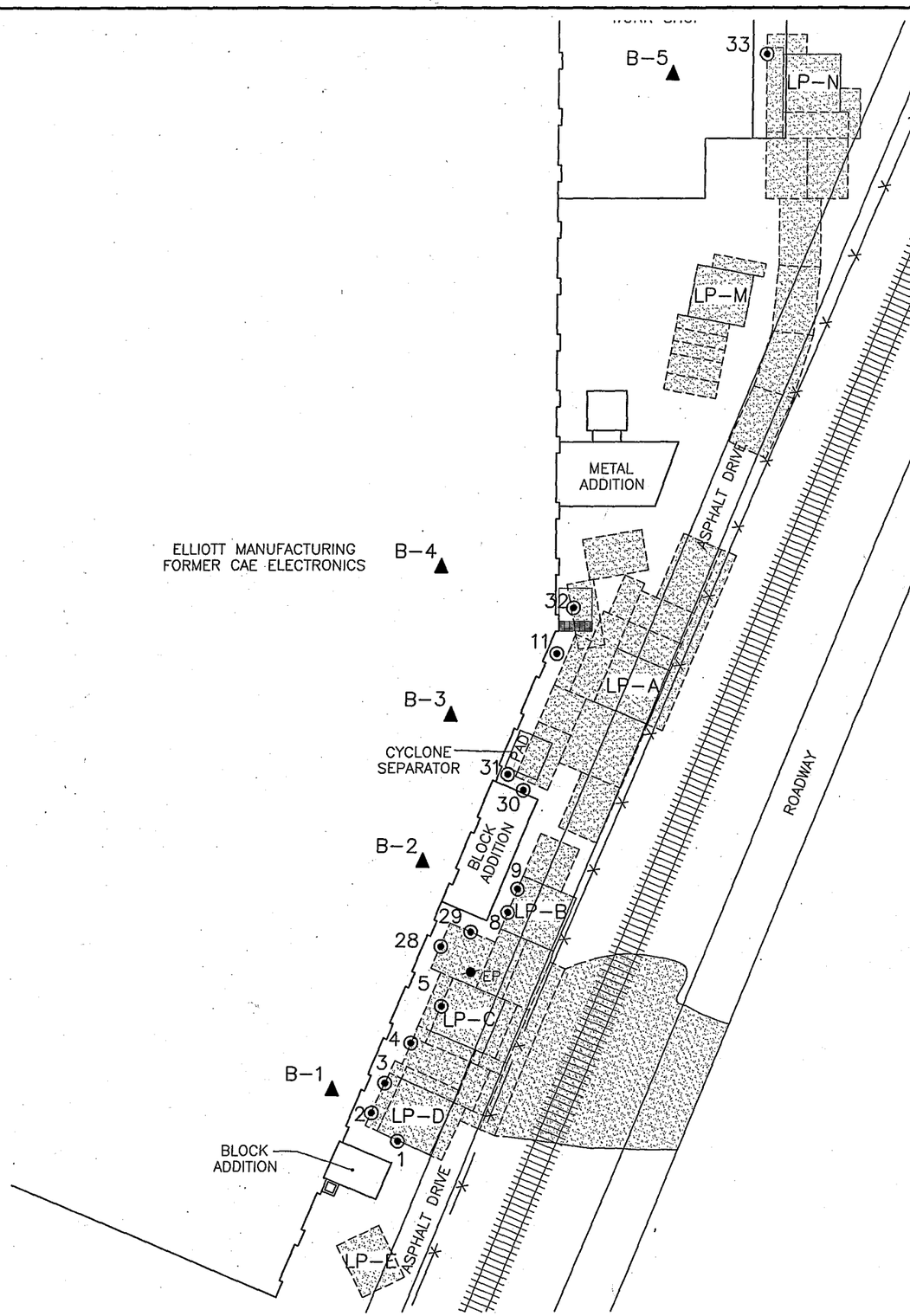
SITE LOCATION PLAN

FILE NO. 6250.33874.002
FEBRUARY 2004

O'BRIEN & GERE ENGINEERS INC.

DWG PATH: I:\DIV71\PROJECTS\6250\33874\DWGS\002.DWG

PLOT DATE: 1/16/04



VERIFICATION SAMPLE NO.	CADMIUM	CHROMIUM	LEACHED PIT
1	110	–	D
2	580	2900	D
3	270	520	D
4	160	210	C,D
5	390	620	C
8	260	1300	B
9	300	3000	B
11	630	9500	A
28	97	25	C
29	93	22	C
30	21	12	A
31	1200	13000	A
32	880	11000	A
33	110	160	N

NOTES:

1. SAMPLE CONCENTRATIONS SHOWN IN PPM.
2. RESULTS SHOWN ONLY FOR SAMPLES EXCEEDING CLEAN-UP CRITERIA.

FIGURE 2

LEGEND

- RAILROAD TRACKS
- FENCE
- AREA OF EXCAVATION
- B-5 ▲ INTERIOR SOIL BORING
- 32 ◉ VERIFICATION SAMPLE LOCATION

CAE ELECTRONICS, INC.
FORMER HILLCREST FACILITY
BINGHAMTON, NEW YORK

EXCAVATION AREAS

40 0 40

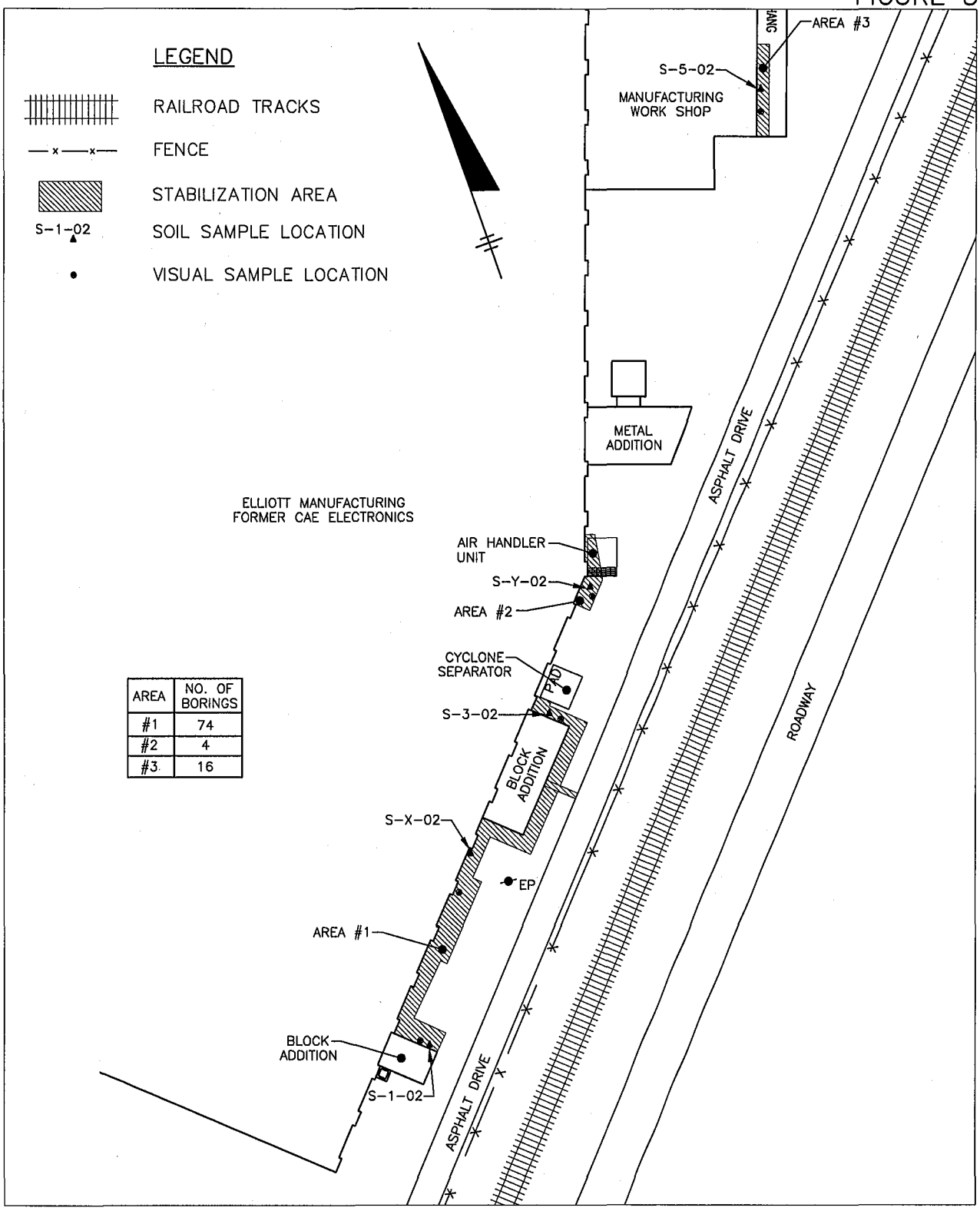
SCALE IN FEET

FEBRUARY 2004

FILE NO. 6250.33874.003

O'BRIEN & GERE ENGINEERS INC.

FIGURE 3



AREA	NO. OF BORINGS
#1	74
#2	4
#3	16

CAE ELECTRONICS, INC.
FORMER HILLCREST FACILITY
BINGHAMTON, NEW YORK

IN SITU SOIL STABILIZATION AREAS

6250.33874.004
FEBRUARY 2004

50 0 50
SCALE IN FEET

O'BRIEN & GERE ENGINEERS INC.

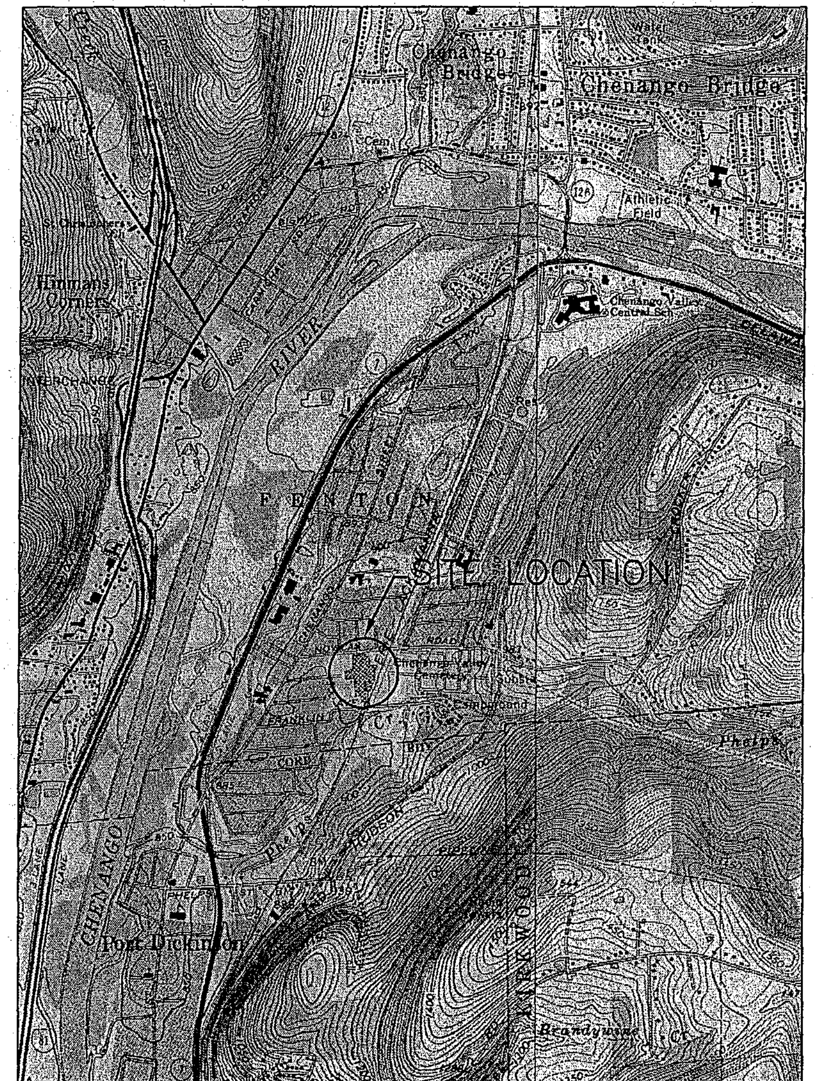
DWG PATH: I:\DIV71\PROJECTS\6250\33874\DWGS\004.DWG SF-50

PLOT DATE: 1/16/04

Appendix A

Record drawings

MWH I:\DIV71\PROJECTS\6250001\DWG\71\006.DWG SF:1 3/2/98



LOCATION PLAN
NOT TO SCALE

Record Drawings

FORMER CAE ELECTRONICS FACILITY

SOIL REMEDIATION PROJECT

CAE ELECTRONICS, INC.
BINGHAMTON, NEW YORK
FEBRUARY 2004

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: ____________

O'BRIEN & GERE ENGINEERS, INC.

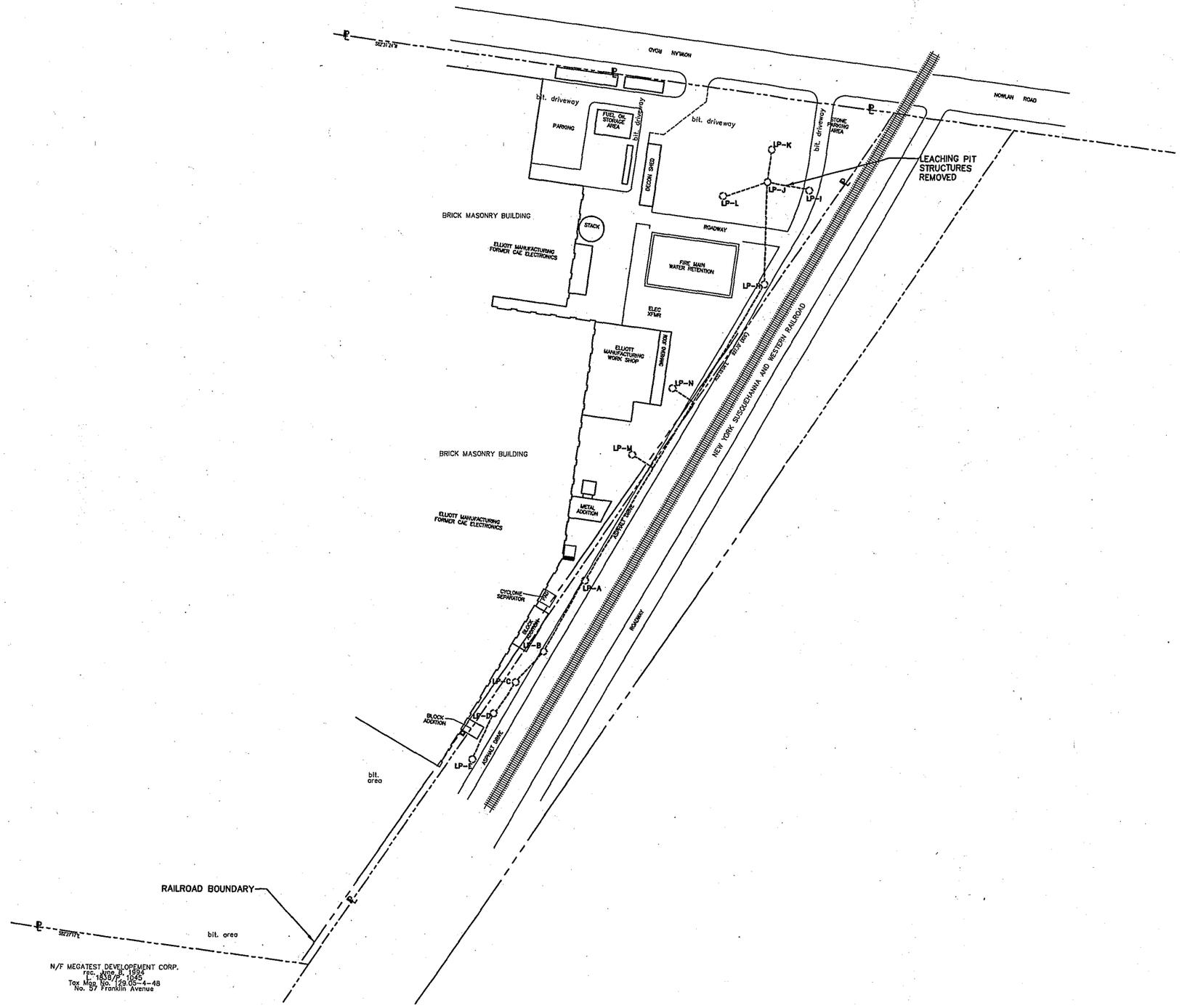
IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT.

INDEX TO DRAWINGS

FILE NO. 6250.001-006

PLOT DATE: 1/21/04

I:\DW71\PROJECTS\6250001\DWG\71\008.DWG SF:50 3/2/98



GENERAL NOTES – ALL DRAWINGS:

1. MAPPING ADOPTED FROM SURVEY MAP PREPARED BY SOUTHERN TIER SURVEYING LLP
2. LEACHING PITS LP-A, LP-B, LP-C & LP-D WERE PREVIOUSLY PARTIALLY REMOVED. PARTIALLY REMAINING PORTIONS WERE REMOVED. LEACHING PITS LP-E, LP-H, LP-I, LP-J, LP-K, LP-L, LP-M AND LP-N WERE REMOVED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.

LEGEND

N/F	NOW OR FORMERLY
—℄—	PROPERTY LINE
	RAILROAD TRACKS
LP-C ○	LEACHING PIT REMOVED

RECORD DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

O'BRIEN & GERE ENGINEERS, INC.

By: .....

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

NO.	DATE	REVISION	INIT.
2	1/22/04	RECORD DRAWINGS	
1	3/2/98	AS-BID	
0	10/29/97	NYSDEC REVIEW	

1"=50' 50 0 50 100

O'BRIEN & GERE ENGINEERS, INC.

FORMER CAE ELECTRONICS, INC. FACILITY
BINGHAMTON, NEW YORK
SOIL REMEDIATION PROJECT

GENERAL

EXISTING SITE PLAN

IN CHARGE OF .....
DESIGNED BY ..... CHECKED BY .....
DRAWN BY .....

FILE NO. 6250.001-008
DATE JANUARY 2004

G-1

PLOT DATE: 1/21/04

I:\DIV71\PROJECTS\6250001\DWG\71\009.DWG SF:20 3/2/98

NOWLAN ROAD

OFFICE TRAILER

OFFICE TRAILER

bit. driveway

PARKING

FUEL OIL STORAGE AREA

bit. driveway

bit. driveway

DECON SHED

LP-K

LP-J

LP-L

LP-I

bit. driveway

STONE PARKING AREA

NOWLAN ROAD

BRICK MASONRY BUILDING

STACK

ROADWAY

ELLIOTT MANUFACTURING FORMER CAE ELECTRONICS

FIRE MAIN WATER RETENTION

LP-H

ELEC XFMR

ELLIOTT MANUFACTURING WORK SHOP

ROOF OVERHANG

LP-N

N55°18'04"E 927.70' (928')

RAILROAD BOUNDARY

BRICK MASONRY BUILDING

LP-M

MATCH LINE A'-A'

FOR CONTINUATION SEE SHT. G-3

DRAWING NOTES:

1. SOILS, SLUDGES, CONCRETE, PIPING AND MATERIALS ASSOCIATED WITH LEACHING PITS LP-H, LP-I, LP-J, LP-K, LP-L, LP-M AND LP-N WERE REMOVED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.

LEGEND

- PROPERTY LINE
- AREA OF EXCAVATION
- RAILROAD TRACKS

RECORD DRAWINGS

To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.

O'BRIEN & GERE ENGINEERS, INC.

By: _____

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

NO.	DATE	REVISION	INIT.
2	1/26/04	RECORD DRAWINGS	
1	3/2/98	AS-BID	
0	10/29/97	NYSDEC REVIEW	

1"=20' 20 0 20 40

O'BRIEN & GERE ENGINEERS, INC.

FORMER CAE ELECTRONICS, INC. FACILITY
BINGHAMTON, NEW YORK
SOIL REMEDIATION PROJECT

GENERAL

FINAL AREAS OF EXCAVATION

IN CHARGE OF _____

DESIGNED BY _____ CHECKED BY _____

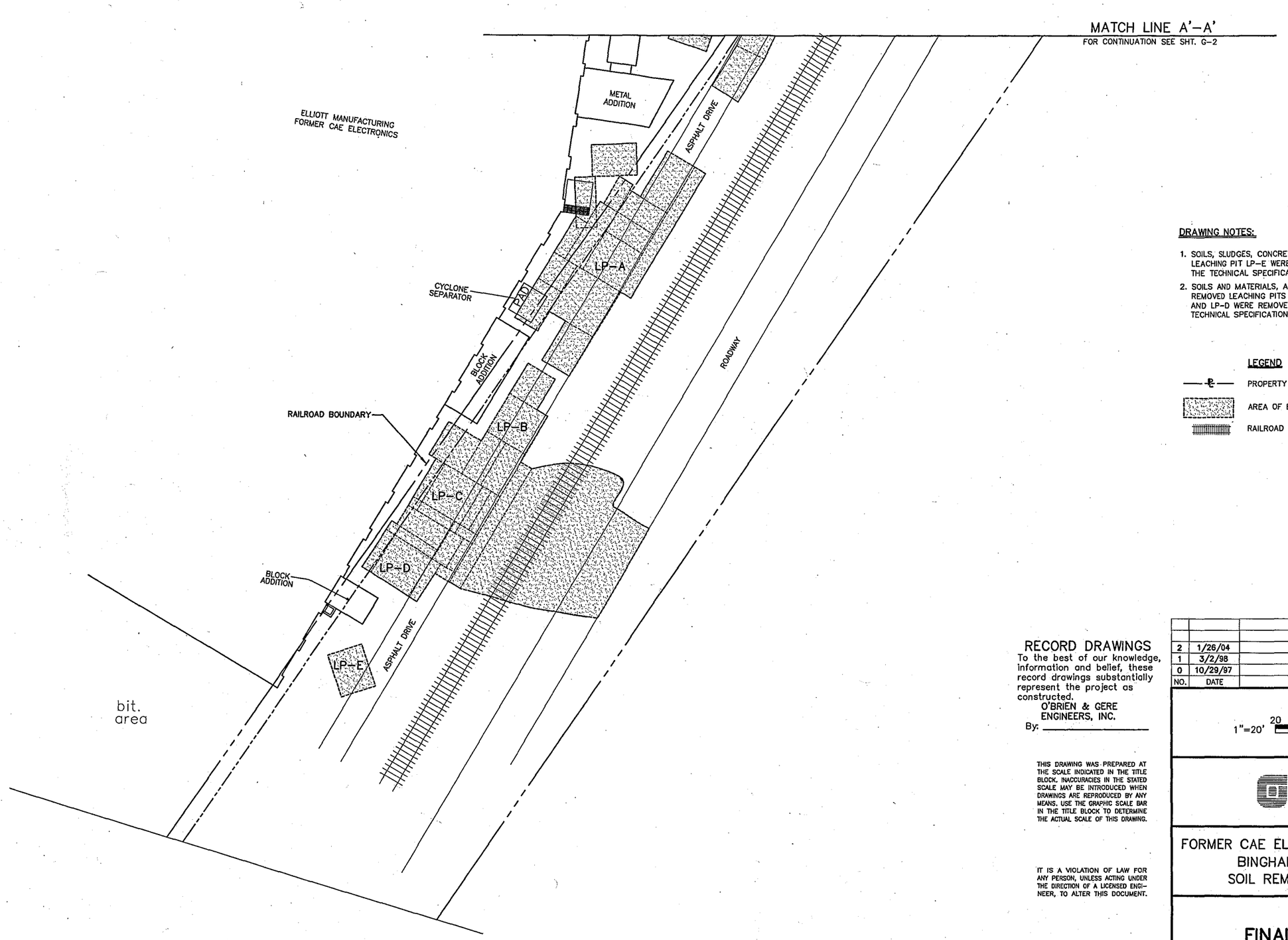
DRAWN BY _____

FILE NO. 6250.001-009

DATE JANUARY 2004

G-2

PLOT DATE: 1/21/04



DRAWING NOTES:

1. SOILS, SLUDGES, CONCRETE AND MATERIALS ASSOCIATED WITH LEACHING PIT LP–E WERE REMOVED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
2. SOILS AND MATERIALS, ASSOCIATED WITH PREVIOUSLY REMOVED LEACHING PITS LP–A, LP–B, LP–C, AND LP–D WERE REMOVED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.

LEGEND

- PROPERTY LINE
- AREA OF EXCAVATION
- RAILROAD TRACKS

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: _____

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

NO.	DATE	REVISION	INIT.
2	1/26/04	RECORD DRAWINGS	
1	3/2/98	AS–BID	
0	10/29/97	NYSDEC REVIEW	

1"=20' 20 0 20 40

O'BRIEN & GERE ENGINEERS, INC.

FORMER CAE ELECTRONICS, INC. FACILITY
BINGHAMTON, NEW YORK
SOIL REMEDIATION PROJECT

GENERAL

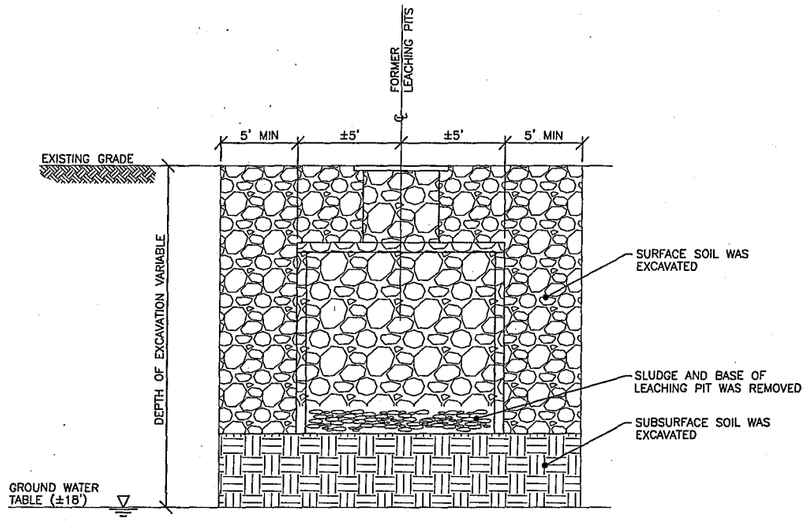
FINAL AREAS OF EXCAVATION

IN CHARGE OF _____
DESIGNED BY _____ CHECKED BY _____
DRAWN BY _____

FILE NO. 6250.001–010
DATE OCTOBER 1997

G–3

PLOT DATE: 3/2/98 E:\DWG\PROJECTS\6250001\DWG\1000G03.DWG

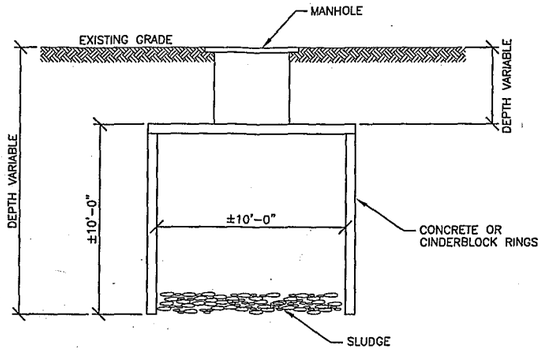


DETAIL NOTES:

1. THE FINAL SOIL EXCAVATION LIMITS WERE BASED UPON THE RESULTS OF VERIFICATION SAMPLING, AS DIRECTED BY THE ENGINEER.
2. LEACHING PITS LP-A,LP-B,LP-C & LP-D WERE PREVIOUSLY PARTIALLY REMOVED. THE BASE OF EACH PIT AND ASSOCIATED SLUDGE WERE REMOVED. SHOWN ABOVE FOR CLARITY ONLY.

SOIL EXCAVATION DETAIL AT FORMER LEACHING PITS

(TYP FOR LEACHING PITS LP-A,B,C,D)
NOT TO SCALE

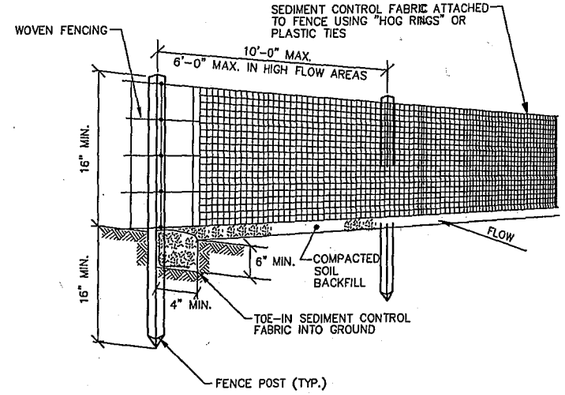


DETAIL NOTES:

1. THIS DETAIL IS APPROXIMATE ONLY. THE EXACT DIMENSIONS, CONSTRUCTION, AND CONTENTS OF THE LEACHING PITS VARIED.
2. ALL PIPING PENETRATING INTO THE LEACHING PITS WERE CUT AND CAPPED, OR EXCAVATED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER, BASED ON VERIFICATION DATA.

LEACHING PIT DETAIL

(TYP FOR LEACHING PITS LP-E,H,I,J,K,L,M,N)
NOT TO SCALE



DETAIL NOTES:

1. WOVEN WIRE FENCE WAS FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. SEDIMENT CONTROL FABRIC WAS FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. EMBED SEDIMENT CONTROL FABRIC MIN. 6" INTO GROUND.
3. WHEN TWO SECTIONS OF SEDIMENT CONTROL FABRIC ADJOINED EACH OTHER THEY WERE OVER-LAPPED BY MIN. SIX INCHES AND FOLDED.
4. MAINTENANCE WAS PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. FENCE WAS ALIGNED ALONG CONTOUR AS CLOSELY AS POSSIBLE.

POSTS : STEEL (EITHER "T" OR "U" TYPE) OR 2" HARDWOOD ALL MIN. 36" LENGTH.

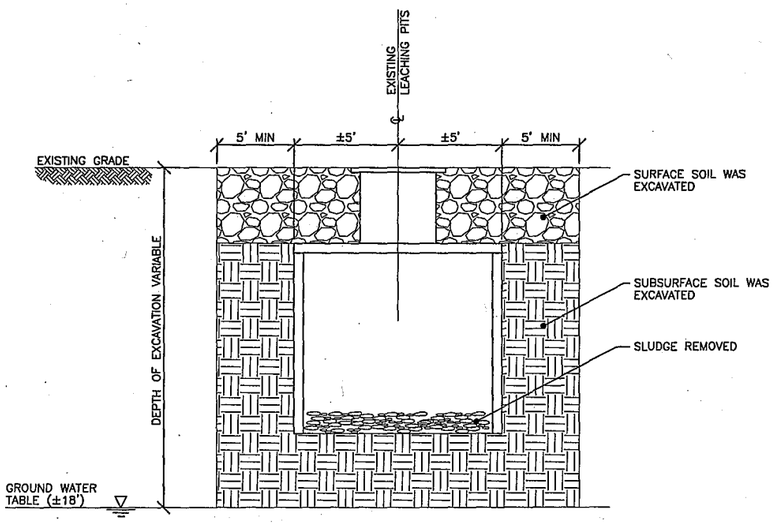
FENCE : WOVEN WIRE; MIN. 14.5 GAUGE 6" MAX. MESH OPENING

SEDIMENT CONTROL FABRIC : MINIMUM TENSILE STRENGTH OF 120 LBS/100 LBS (MD/CD) (ASTM D4632)

PREFABRICATED UNIT : MIRAFI ENVIROFENCE, OR APPROVED EQUAL

SILT FENCE DETAIL

NOT TO SCALE

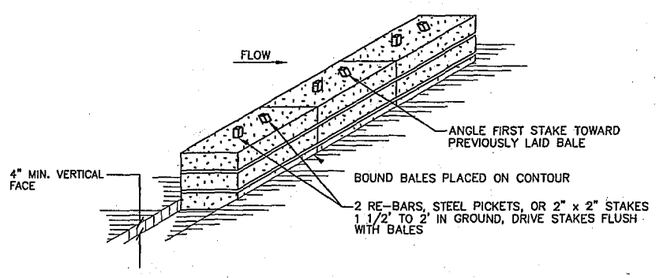


DETAIL NOTES:

1. THE FINAL SOIL EXCAVATION LIMITS WERE BASED UPON THE RESULTS OF VERIFICATION SAMPLING, AS DIRECTED BY THE ENGINEER.
2. THE DEPTH OF SURFACE SOIL WAS VARIABLE. SOME LEACHING PITS WERE LOCATED JUST BELOW GRADE.

SOIL EXCAVATION DETAIL AT EXISTING LEACHING PITS

(TYP FOR LEACHING PITS LP-E,H,I,J,K,L,M,N)
NOT TO SCALE



DETAIL NOTES:

1. BALES WERE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE WAS EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES WERE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE WAS DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES WERE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION WAS FREQUENT AND REPAIR OR REPLACEMENT WAS MADE PROMPTLY AS NEEDED.
5. BALES WERE REMOVED WHEN THEY HAD SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

STRAW BALE DIKE DETAIL

NOT TO SCALE

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: _____

NO.	DATE	REVISION	INIT.
2	1/26/04	RECORD DRAWINGS	
1	3/2/98	AS-BID	
0	10/29/97	NYSDEC REVIEW	

NOT TO SCALE

O'BRIEN & GERE ENGINEERS, INC.

FORMER CAE ELECTRONICS, INC. FACILITY
BINGHAMTON, NEW YORK
SOIL REMEDIATION PROJECT

GENERAL

MISCELLANEOUS DETAILS

IN CHARGE OF _____
DESIGNED BY _____ CHECKED BY _____
DRAWN BY _____

FILE NO. 6250.001-007
DATE JANUARY 2004

G-4

Appendix B

Operation, maintenance, and monitoring plan

WORK PLAN

Post-Construction Operation, Maintenance, and Monitoring Plan Former CAE Electronics - Hillcrest Facility

CAE Electronics
Binghamton, New York

February 2004

6250/33874

WORK PLAN

Post-Construction Operation, Maintenance, and Monitoring Plan
Former CAE Electronics - Hillcrest Facility

CAE Electronics
Binghamton, New York

February 2004

Contents

1. Introduction

1.1. General

This Site Operation, Maintenance and Monitoring Plan (Plan) discusses routine post construction operation and maintenance of Site facilities related to the remedial action, including physical Site security, and Site access (?) [SEE QUESTIONS ON PAGE 5]. This Plan also includes the Ground Water, Surface Water, and Sediment Monitoring Plan (Section 3).

Ground water and surface water/sediment monitoring will be used to assess the effectiveness of the source control remedy by evaluating reductions over time in concentrations of site-related contaminants in ground water. Ground water and surface water/sediment monitoring will also be used to assess the extent to which site-related contaminants have impacted the surface water/sediment from the Chenango River, if at all. The Plan identifies the monitoring wells and surface water/sediment locations to be sampled, the frequency, and the analytical parameters.

1.2. Background

The Hillcrest facility is a 17-acre manufacturing facility located at 11 Beckwith Avenue in the Town of Fenton, Broome County, New York (Site). CAE Electronics, Inc. (CAE) sold the Hillcrest facility to B.W. Elliott Manufacturing Co., Inc. Prior to CAE's ownership of the Site in 1988, and for most of its operational history, the Hillcrest facility was owned by a company that produced aviation-related products.

The facility is located five miles northeast of the City of Binghamton in a mixed commercial/residential area. A railroad runs along the eastern edge of the property separating the Site from the Chenango Valley Cemetery. Although the surrounding land is mostly residential, there are several commercial/industrial facilities located nearby, including auto body shops, industrial platers, and gas stations.

The Chenango River is located approximately 2,500 feet west of the facility and flows south, draining a significant portion of central New

York State into the Susquehanna River. Approximately 300 feet to the south of the Site is a small stream known as Phelps Creek which flows intermittently during wet periods from east to west into the Chenango River. A site location map is included as Figure 1.

The Hillcrest facility is a two-story manufacturing/office building that produced aviation-related products (primarily flight simulators and related equipment) since 1940. The eastern portion of the building was used mainly for manufacturing while the western portion contains mostly offices.

A detailed description of investigation and remediation activities performed at the Hillcrest facility is presented in Section 1.1 of the Soil Remediation Project Construction Completion Report.

2. Post-construction operation and maintenance

To maintain the integrity of the property and the existing monitoring wells, Site security and Site access procedures will be implemented as presented below.

2.1. Site security

A chain link fence currently surrounds the Hillcrest facility. The purpose of the fence is to prevent damage to property, including the existing monitoring wells that will be utilized as part of the ground water monitoring program presented in Section 3 below.

2.2. Site access

Access to the former CAE property is limited to the gates located on the eastern and western sides of the facility.

- THE SITE ITSELF IS "CLEAN", SO THERE IS NO NEED TO LIMIT ACCESS. SHOULD SECTION 2.2 BE DELETED?
- SHOULD THIS SECTION INCLUDE MAINTENANCE OF MONITORING LOCATIONS?
- IN THE SOIL STABILIZATION AREAS, SHOULD THERE BE A "NO DIG" AGREEMENT WITH THE SITE OWNER? DEED RESTRICTIONS? SHOULD THIS SECTION DISCUSS LOCATIONS OF STABILIZED AREAS

3. Ground water, surface water, and sediment monitoring

The purpose of this Plan is to provide a common understanding of the fieldwork to be conducted for those involved with the collection and use of field data. This Plan outlines the field sampling activities for the sampling program related to the remedial action, including objectives, rationale, sampling locations, sampling methodologies, and general analytical requirements. This section defines the sampling methods to be used.

3.1. Sampling objectives

The goal of the ground water, surface water, and sediment monitoring program is to provide sufficient information to evaluate the current distribution of VOCs with respect to the surface water and sediment in the Chenango River, and of VOCs and metals in ground water at the Site. The specific objectives of the program will build upon data previously gathered and consist of the following:

- Characterize the nature of VOCs in the Chenango River surface water and sediments at two locations: one at a location just downstream and one upstream of the Town of Fenton Municipal Wells. The ground water from the Site discharges to the river between these two sampling points.

- Evaluate the trends of VOCs and metals in the ground water aquifer that has previously exhibited VOCs and metals, and that is hydraulically connected to the Site.

3.2. Sample location and frequency

Surface water and sediment sampling in the Chenango River.
The objective of the surface water and sediment sampling in the Chenango River is to further evaluate the potential effects of VOC releases on the Site to the portion of the Chenango River that receives ground water discharge from the Site, including an evaluation of upstream concentrations.

Two surface water and sediment samples will be collected from the locations identified on Figure 1 (SW/SED-00(upstream) and SW/SED-02 (downstream)). The selected locations are marked in the field. The

sediment samples will be gathered from the biologically active (0"-4") sediments.

Surface water and sediment samples will be collected annually for five years as part of this plan. Surface water and sediments will be analyzed for VOCs (EPA Method 8010/8020). Sediments will also be analyzed for percent solids. [WE'VE ALREADY SAMPLED THE RIVER FOR 4 YEARS. SHOULD WE PROPOSE TO DISCONTINUE RIVER SAMPLING? SITE-RELATED VOCs HAVE NOT BEEN DETECTED DURING ANY OF THESE SAMPLING EVENTS. SHOULD WE DISCUSS THIS WITH NYSDEC?]

Ground Water Elevation Monitoring. The objective of the ground water elevation monitoring program will be to expand the existing data base and to continue to evaluate flow gradients in the ground water aquifer. Water level monitoring will be conducted from all of the designated Site monitoring wells prior to implementation of the remedial action, and during four quarterly events over the five years following completion of the remedial action, at which time the post-remedial monitoring program will be reviewed and revised as necessary as part of NYSDEC's five-year review of the efficacy of the entire remedial program. [WE HAVE 4 YEARS OF GROUD WATER ELEVATION DATA. SHOULD WE TALK TO NYSDEC ABOUT DECREASING THE MONITORING FREQUENCY? SEMI-ANNUAL IN 2004 AND 2005 THEN ANNUALLY THEREAFTER?]

Ground Water Sampling and Analyses. The objective of the ground water sampling and analyses program is to collect additional analytical data from a select network of monitoring wells.

The monitoring wells were selected based upon previous concentrations of VOCs and metals, locations upgradient and downgradient of the Site, and based upon NYSDEC requests.

The monitoring wells included in the sampling program will consist of: MW-6, MW-20, MW-22, MW-23, MW-24, MW-26, MW-27, and Well #3 of the Fenton Municipal Well field.

Based upon previous data, ground water samples from each of the selected monitoring wells will be analyzed for VOCs (EPA Method 8021/EPA Method 8010 List). Samples from monitoring wells MW-6, MW-26, and MW-27 will also be analyzed for cadmium and chromium (EPA Method 6010). Samples will be obtained from each of the selected monitoring wells quarterly for five years following completion of the remedial action. After the initial five years of quarterly sampling, the number of wells to be sampled, the frequency of sampling, and the parameters for which an analysis will be performed will be determined based on the results of all the previous sampling events. [GROUND WATER HAS BEEN MONITORED FOR 4 YEARS WITH LITTLE VARIATION IN ANALYTICAL RESULTS. SHOULD WE ASK NYSDEC ABOUT REDUCING THE MONITORING FREQUENCY?

SUGGEST SEMI-ANNUAL IN 2004 AND 2005, THEN ANNUALLY THEREAFTER?]

Quality Control Samples. A trip blank will be included in each cooler of samples, and analyzed for VOCs. A level 1 laboratory quality control package will be obtained. ASP Category B will not be utilized.

3.3. Sample designation

Samples will be labeled using standard notation for the various matrices sampled. For example monitoring wells will be labeled "MW" followed by the well number. A similar method will be used for collection of surface water and sediment samples. Chenango River surface water samples will be labeled SW followed by the sample location number. Chenango River sediment samples will be labeled SED followed by the sample location number.

3.4. Sampling equipment and procedures

Chenango River surface water and sediment monitoring.
To minimize disturbance due to stream bed agitation, surface water and sediment samples will first be collected from the downstream surface water/sediment sampling location, (SED/SW-02). Surface water will be collected from a location approximately 1 ft to 3 ft from the shore nearest the Site. Turbidity will be measured. The surface water will be collected such that the sediment is not disturbed. The sediment sample will be collected from areas exhibiting deposition of fine-grained sediments in the river. Samples will then be collected from the upstream sample location (SED/SW-00). All sample locations will be established in the field and documented.

Surface water samples will be collected by immersing appropriate sampling jars into the water body with the jar mouth pointed upstream. Temperature, pH, turbidity, and specific conductance measurements will also be recorded at the surface water sampling locations.

During collection of sediment samples, the sampler will enter the river bed or stand downstream of the collection point in order to collect a sample of undisturbed sediment. Where possible, sediment samples will be collected at a depth of 0 to 4 inches below the sediment/surface water interface using a pre-cleaned stainless steel Lexan Tube®. A physical description of the sediment samples will be recorded. The description will include color and visual grain size distribution according to the Wentworth scale presented in Appendix A.

A detailed protocol for the collection of surface water and sediment samples is presented in Appendix B.

Ground water elevation monitoring.
A round of ground water level measurements will be collected from the Site monitoring wells within the 12-hour period prior to collection of ground water samples. Measurements will be collected relative to the surveyed point on the risers in the monitoring wells.

Ground water monitoring.
Monitoring wells will be developed (as needed?) in accordance with the protocol presented in Appendix C. During collection of the ground water samples, the sampler will sample upgradient monitoring well first, then proceed with sampling the remaining monitoring wells. Ground water samples will be obtained in accordance with Appendix D.

Field tests will be conducted on the ground water samples. Field testing will consist of measurements for temperature, turbidity, pH, and specific conductivity and will be conducted during well purging and following collection of samples being submitted for laboratory analyses.

Decontamination for sampling equipment.
Sampling equipment will be decontaminated before each use and before it is removed from the Site. Decontamination procedures will be performed in accordance with Appendix E.

3.5. Sampling handling and analysis

Field documentation.
Field documentation is an essential part of the monitoring program. The field crew will have an assigned team leader who is responsible for written documentation. Field log forms will serve as permanent documentation for the monitoring work. In addition, the field investigator will summarize the events and conditions of the work on the log form.

Field Log Form. A field log form will be maintained by the assigned sampling team leader, or a designee, for documentation purposes. The log form will contain information such as names of workers and other staff members, weather conditions, samples collected, measurements, and significant events, observations, or other pertinent data - notably, unusual occurrences during field investigations. Field log forms will be kept neat and organized and will be included with the monitoring report (Section 4). Original data recorded in field logbooks will be written in ink. Entries will be legible, factual, detailed, and objective.

If an error is made on an entry, corrections will be made by crossing a single line through the error and entering the correct information above. Erroneous information will not be erased or obliterated. Errors on the field log form will be corrected by the person who made the entry. Corrections will be initialed and dated.

The following items will be included in the field logbook:

- Owner and client information
- Names and affiliations of the personnel on site
- Notation of weather conditions during sampling
- Location of sampling (station number as description)
- Records of field and lab equipment calibrations
- Matrix type and sample description
- Date and time of sample collection
- Collector's sample identification number
- Observations of sample collection environment, if required
- Field measurements
- Sampler's name
- Sample type (composite, grab, etc.)
- Source and types of preservatives used.

At the end of the sampling day, the sampling team leader or a designee will collect and store the log forms in a safe location.

Chain-of-Custody.
The collection and handling of samples will be documented to demonstrate that a sample was collected following the appropriate sampling protocols. As possession of the sample is relinquished by one technician and transferred to another, the chain-of-custody document will be so revised.

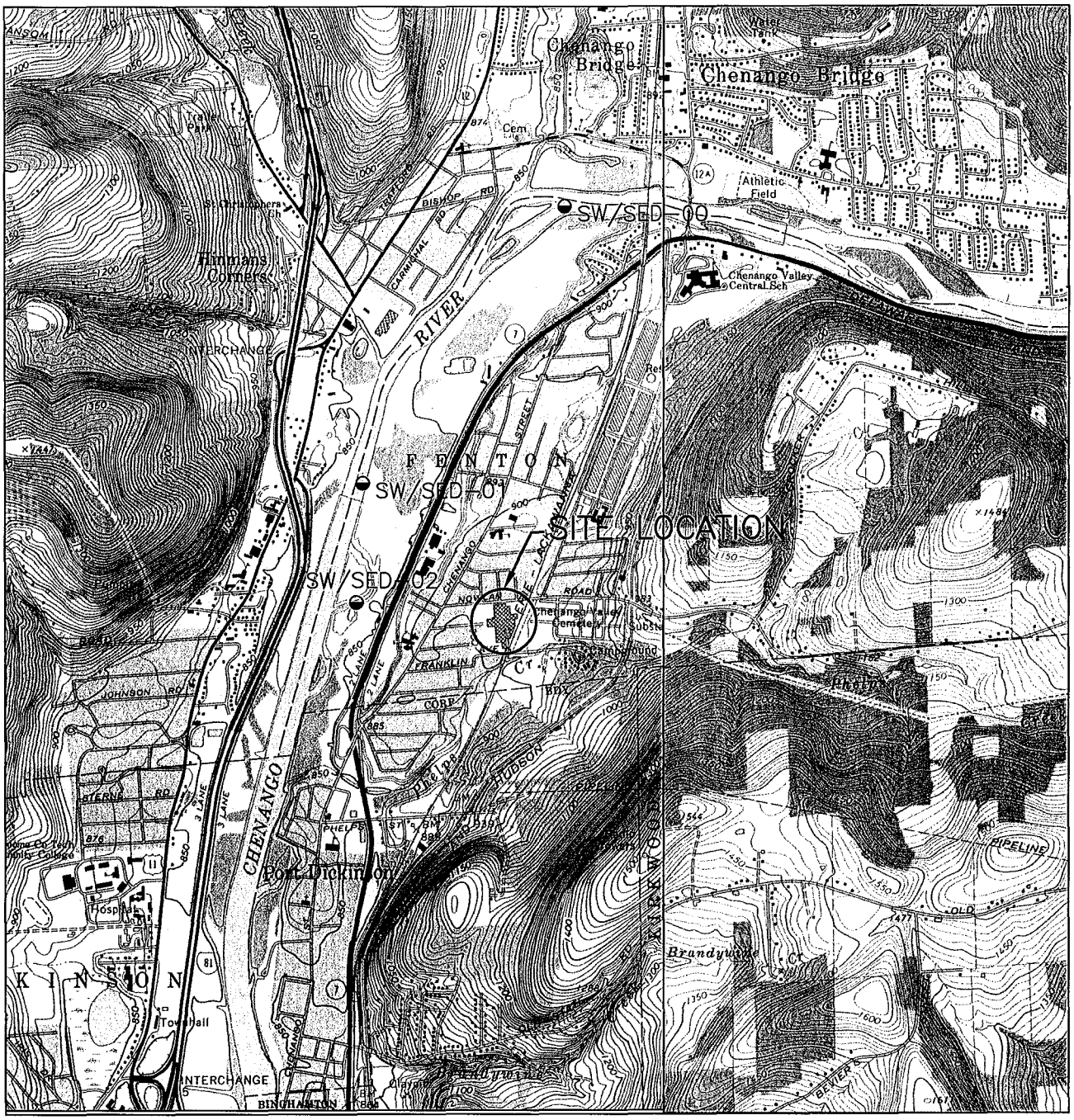
Sample container, preservation, and holding time.
The appropriate container, preservation material, and holding time associated with surface water, sediment, and ground water samples will be utilized.

4. Reporting

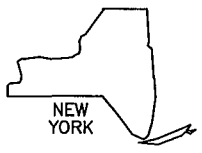
The monitoring results will be submitted to NYSDEC via a report following each monitoring event for review and comment. Results will be summarized in tabular form. Ground water flow maps will also be presented. A narrative discussion of methods used, approved deviations (if any), field results, and other pertinent findings will be presented. Field log forms will also be attached.

Figures

FIGURE 1



ADAPTED FROM: CASTLE CREEK/CHENANGO FORKS QUADRANGLE, U.S.G.S. 7.5 MIN. QUAD



QUADRANGLE LOCATION

FORMER CAE ELECTRONICS FACILITY BINGHAMTON, NEW YORK

SAMPLE LOCATION PLAN

FILE NO. 6250.33874.006
FEBRUARY 2004

O'BRIEN & GERE ENGINEERS INC.

DWG PATH: I:\DIV71\PROJECTS\6250\33874\DWGS\006.DWG

PLOT DATE: 1/16/04

I:\DIV71\PROJECTS\6250\33874\DWG\005.DWG

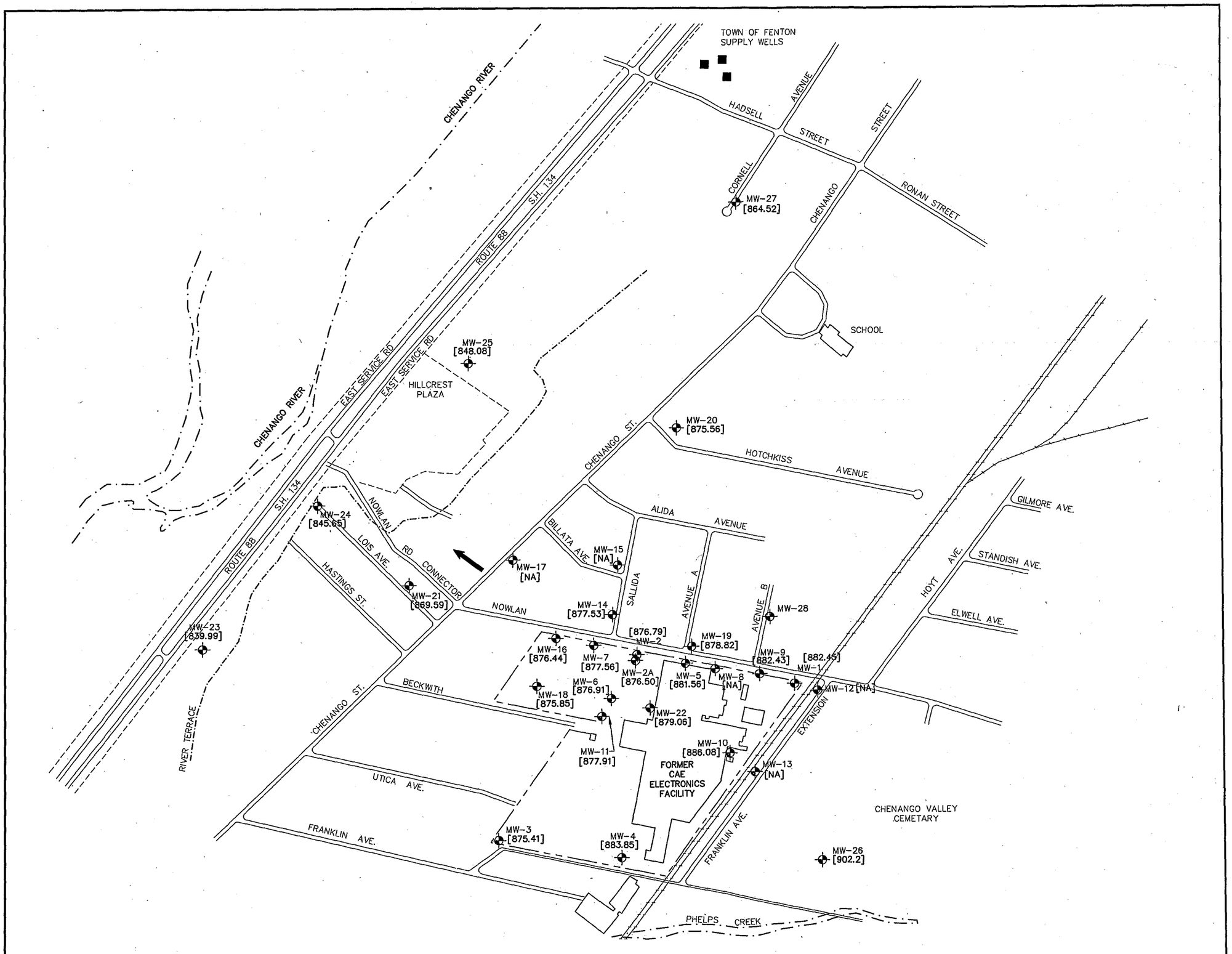


FIGURE 2

LEGEND

MW-26 — APPROXIMATE LOCATION OF EXISTING MONITORING WELLS

GROUND WATER FLOW DIRECTION

FORMER CAE ELECTRONICS FACILITY
BINGHAMTON, NEW YORK

GROUND WATER MONITORING WELL LOCATION PLAN

0 360 720

APPROX. SCALE IN FEET

FILE NO. 6250.33874.005

O'BRIEN & GERE ENGINEERS INC.

PLOT DATE: 1/16/04

Appendix A

Soil classification

Appendix A. Soil classification

Follow these instructions to classify soils:

1. Descriptive information:

   - Color name of the logged interval or sample.
   - Color notation including chroma, hue, value, and qualifiers.
   - Mottling with abbreviations, descriptors, and criteria for descriptions of mottles. Table A-1 lists these terms.

Table A-1 *Description for mottling.*

Abundance	***Size***	***Contrast***
f: few (<2%)	fine (<5 mm)	faint
c: comment (2%-20%)	medium (5 – 15 mm)	distinct
m: many (> 20%)	coarse (>15 mm)	prominent

2. Water state (dry, damp, moist, wet, saturated, or combinations).

3. Description of texture. Count the blows of each 12-inch increment of the splitspoon (ASTM-1586-84), if applicable. Use the values in table A-2 to describe the texture.

Table A-2 *Terms to describe texture.*

Cohesive clays		***Non-cohesive granular soils***	
0 – 2	very soft	0 – 3	very loose
2 – 4	soft	4 – 9	loose
5 – 7	firm	10 – 29	medium dense
8 – 15	stiff	30 – 49	dense
16 – 29	hard	50 – 80	very dense
30 – 49	very hard	80 +	extremely dense
50 – 80	extremely hard		

4. Soil description according to Modified Wentworth Scale. This description is listed on the following pages.

Modified Wentworth Scale. Geologists typically use the values listed in Table A-3 to reckon grain sizes.

Table A-3. *Grain size scales – Modified Wentworth Scale.*

Grade Limits		Grade names		
mm	mm			
4096		very large		
2048		large		
1024		medium	boulders	
512		small		
--256---	----------	----------	----------	----------
128		large		
		small	cobbles	*gravel*
--64-----	----------	----------	----------	----------
32		very coarse		
16		coarse		
8		medium	pebbles	
4		fine		
--2--------	----------	very fine		
1		----------	----------	----------
1/2	0.500	very coarse		
1/4	0.250	coarse		
1/8	0.125	medium	sand	sand
--1/16----	----------	fine		
1/32	0.031	very fine		
1/64	0.016	----------	----------	----------
1/128	0.008	coarse		
		medium		
		fine	silt	
		very fine		

Appendix B

River water/sediment sampling plan

Appendix B. River water and sediment sampling protocol

River water. River water samples will be collected from the Chenango River at locations specified in the O&M Plan prior to the collection of sediment samples to minimize disturbances due to sample collection. A logbook listing the various samples to be collected will be prepared for use on-site. The surface water sampling protocol will be as follows:

- When sampling from an open body of water, care must be exercised to collect a representative sample. The safety of the sampler should not be compromised; therefore, the sample will be collected about 3 ft from the riverbank with another team member present. The sample should cause as little disturbance to the water body as possible and be collected from areas of low or minimal turbulence. Do not disturb the sediment. Avoid taking a sample of water that shows evidence of sediment, debris, or other material that may have been stirred up by the presence of the sampler.

- At each designated sampling point, surface water sample collected for volatile analyses will be collected from the mid-depth of the water body directly into pre-preserved sample containers. The volatile organic compound (VOC) "split" sample, if taken, will be collected at the same time and place as the initial sample.

- Samples will be taken while facing upstream away from the influence of the sampler on water flow (if applicable). The downstream sample will be collected first.

- Collection is accomplished by submerging a clean container at the sampling point to the depth required. For deep rivers such as this one, a Kemmerer, a VanDorn, or another sampler specifically designed for this purpose may be used.

- Samples should then be placed in the proper containers. VOC samples will be placed directly into pre-preserved containers. Sample containers will be stored as necessary for the analyses to be performed. Pertinent information should be recorded including sample date and location, sample identification, and chain-of-custody forms.

- At the time of surface water sample collection, water quality parameter measurements of pH, specific conductance, dissolved oxygen, turbidity and hardness will be recorded.

River bed. Riverbed sediment samples will be collected from approximately the same locations as the surface water samples. They will be visually logged according to the Wentworth classification system for grain size. Surface water samples will be collected prior to the collection of sediment samples to minimize disturbances due to sample collection. A logbook listing the various samples to be collected will be prepared for use on site.

Sediment samples will be collected using a stainless steel shovel or trowel, or other suitable device capable of a vertical penetration into soil to a depth of 4", depending on the amount of sediment available.

- If possible, avoid collecting samples under or immediately adjacent to vegetation structures.
- Enter a site description in the field log.
- Complete a chain-of-custody form for each sample.
- VOC samples must be collected from the mid-point of the 4-inch sample.

Appendix C

Well development protocol

Appendix C. Well development protocol

The following procedures will be used to develop wells, if required. Documentation of well development will be recorded in a bound field book and will include: well location; date and time; names of personnel; weather; development methods and equipment; observations; and field measurements. Transcriptions in the field book will be with indelible ink and the notebook pages will be sequentially numbered.

- Prior to initiating well development, equipment will be cleaned using the decontamination procedures for sampling equipment outlined in Appendix E of this document.

- Wells will be developed using a suitably sized decontaminated surge block in conjunction with a bailer or pump. No air, detergents, soaps, acids, bleaches, or additives will be used during well development. For wells screened in low-yield formations, an outside source of approved potable water may be introduced into the well via jetting through a tremie pipe and nozzle to facilitate development, provided previous chemical analyses have been completed on the potable water supply.

- Development will remove foreign debris, if any, and fine-grained sediments which may have settled in and around the screen since the last sampling event. Development will be completed to enhance the hydraulic connection between the well and formation.

- Well development will continue until the following conditions are met:

- The turbidity remains within a 10 nephelometric turbidity unit (NTU) range for at least 10 minutes and the suspended sediment content is low.

- Measurements of pH, temperature, and specific conductance have stabilized. Stabilization is defined as follows: temperature ± 1 C, pH ± 0.1 units, and SC ± 5%.

- Meters used during development will be calibrated at the frequency indicated in Table 1. The calibration fluids used will bracket the ranges expected from the ground water.

- The development water will be contained and stored in a labeled liquid DOT drum located on site.

- After surging and/or jetting, check the well depth to make sure the well is fully cleared of sediment.

- Replace the well cap and lock the well protection assembly before leaving the well location.

Appendix D

Ground water sampling protocol

Appendix D. Ground water sampling protocol

This protocol provides methods and procedures for the collection of representative ground water samples using a pump, when possible.

D.1. Objective

This protocol is designed to reduce variability and to encourage continuity in sample collection among samplers who collect ground water samples. The objectives of this protocol are the following:

- To enable personnel to collect representative samples of ground water for laboratory analysis.
- To assess the horizontal and vertical distribution of pollutants in a water-bearing unit.

D.2. Technical basis

The sampler must follow correct procedures to collect samples that represent accurately the ground water. It is the responsibility of the sampler to see that the sample is neither altered nor contaminated by the sampling and handling procedures.

The ground water in the casing of the well and near the well is probably not representative because of the influence of the well itself. The well is bailed to remove the water altered by the well and to draw ground water that is more typical for that well point.

Moreover, the hydrogeological environment in the subsurface is different from that at the surface. The water's temperature, gas content, reduction-oxidation potential, and other physical, biological, and chemical conditions usually vary between the subsurface and the surface. When the sampler follows appropriate procedures, the sample will typify subsurface ground water conditions.

Before taking the sample, the well will be pumped until three or more well volumes have been removed. The pump should not

be lowered to the bottom of the well before the well is purged because it will inhibit the complete purging of the well. If the ground water level is to low to be purged using a pump, the well will be purged using a disposable bailer.

The following methods may be used to evaluate the purging of a well. The method selected during the first sampling event will be documented in the field logbook and will be utilized during the following sampling events.

- Monitor the water level in the well while it is pumped. When the level has stabilized, most of the water being pumped will be coming from the aquifer.

- Monitor the temperature, specific conductivity, and pH of the water while it is pumped. When they are stable, little or no water will be coming from the casing's storage.

Effective purging is also possible by initially removing water from the top of the water column and then slowly moving the pump or bailer through the water column.

Sampling systems can alter the physical, chemical, and biological conditions of the ground water. Equipment that constricts the flow of the water can change the pH of the sample simply because it changes the partial pressure of the sample's dissolved gases. Equipment that introduced dissolved oxygen in the sample can alter organic and inorganic constituents. Turbulence and reduction of pressure can change the contents of dissolved oxygen, carbon dioxide, and volatile organic compounds.

The sampling equipment should not affect the sample. The sampling system used depends on several factors including the type and size of the well, the pumping level, the type of contaminant, the analytical procedures, and the presence or absence of permanent pumping fixtures.

D.3. Method

The following procedures are provided to obtain representative samples from wells using a pump (or bailer if necessary). The procedures, divided into four subsections, are provided below:

- Equipment needed

- Collection of descriptive data

- Sampling procedure
- Procedure after taking sample

D.3.1. Equipment needed

- Adjustable rate, positive displacement pumps (for example, centrifugal or bladder pumps constructed of stainless steel or Teflon).
- Tubing - Teflon or teflon lined polyethylene must be used to collect samples for organic analysis. For samples collected for inorganic analysis, teflon or teflon lined polyethylene, PVC, tygon, or polyethylene tubing may be used.
- Water level measuring device, 0.01 foot accuracy (electronic preferred for tracking water level drawdown during all pumping operations).
- Flow measurement supplies (for example, graduated cylinder and stop watch).
- Power source (generator, nitrogen tank, etc.).
- Indicator parameter monitoring instruments - pH, turbidity, specific conductance, and temperature. Optional indicators - eH and dissolved oxygen.
- Decontamination supplies.
- Log form(s).
- Interface probe, if needed.
- Sample bottles.
- Sample preservation supplies (as required by the analytical methods).
- Sample tags or labels.
- Well construction data, location map, field data from last sampling event.
- Field sampling plan.

- A disposable bailer will be used for well evacuation and sampling if the ground water level is to low to use a pump.

D.3.2. Collection of descriptive data

Before collecting a sample, data are compiled about the well and the ground water in the well. Before collecting the sample, measure the water level to ascertain the volume of ground water to be removed from the well. This datum also is used for other hydrogeological evaluations. Follow these steps to measure the water level:

- Survey the site to locate wells.
- Check that the water level measuring equipment is operating correctly.
- As feasible, begin measuring at wells with the least amount of contamination and proceed to those that are more contaminated.
- Record on field log forms changes in the well such as erosion or cracks in protective concrete pad or the integrity of the well.
- Don a new pair of disposable gloves.
- Slit the center of a plastic sheet and slip the sheet over the well. This creates a clean surface on which the sampling equipment can be positioned.
- Clean meters, tools, and sampling equipment before placing them on the plastic sheet in accordance with Appendix E, R.3 - Field Equipment Decontamination.
- Measure VOCs at the rim of the well with a PID instrument and record the reading in the field logbook.
- Using an electric water level probe, measure the depth to the ground water and the depth to the bottom of the well twice. Note the measuring points on the well's casing.
- Clean the well probe in accordance with Appendix E, E.3. - Field Equipment Decontamination. Rinse it with distilled water after use.
- Compute the volume of water in the well. Use the following equation for the calculation:

well volume = π r 2h (7.48)

r = radius of well
h = height of water column

The units for r and h are feet; the well volume is in gallons. Table D-1 shows the volume of water found in wells of typical sizes.

Table D-1 *Examples: volume of wells per length.*

Diameter (inch)	Volume (gal/ft)
2	0.1632
3	0.3672
4	0.6528
6	1.4688

To find the total volume of water, multiply the values in the second column of the table by the total length of the water column. Record this volume on the Ground Water Field Sampling Log. For low permeable formations, the water in the sand pack must also be purged. Calculate the purge volume based on the borehole's radius.

D.3.3. Sampling procedures

A positive displacement type pump or disposable bailer will be used to purge and sample monitoring wells that have a 2-inch I.D. or greater well casing.

If a pump is used, the pump, safety cable, tubing, and electrical lines will be lowered slowly into the well to a depth corresponding to the center of the saturated screen section of the well. It is also advisable to keep the pump intake at least two feet above the bottom of the well in order to prevent mobilization of any sediment present in the bottom of the well.

Measure the water level again with the pump in the well before starting the pump. Start pumping the well at 0.2 to 0.5 liters per minute. Ideally, the pump rate should cause little or no water level drawdown in the well (less than 0.3′ and the water level should stabilize). The water level should be monitored every three to five minutes (or as appropriate) during pumping. Care should be taken not to cause pump suction to be broken or entrainment of air in the sample. Record pumping rate adjustments and depths to water. Pumping rates should, if

needed, be reduced to the minimum capabilities of the pump (for example, 0.1 - 0.2 l/min) to avoid pumping the well dry and/or to ensure stabilization of indicator parameters. If the recharge rate of the well is very low and the well is purged dry, then sampling shall commence as soon as the well has recharged to a sufficient level to collect the appropriate volume of samples with the pump.

During purging of the well, monitor the field indicator parameters (turbidity, temperature, specific conductance, pH, etc.) every three to five minutes (or as appropriate). The well is considered stabilized and ready for sample collection once all the field indicator parameter values remain within 10% for three consecutive readings. If the parameters have stabilized, but the turbidity is not in the range of the 5 NTU goal, the pump flow rate should be decreased and measurement of the parameters should continue every three to five minutes.

VOC samples will be collected first and put directly into pre-preserved sample containers. All sample containers should be filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence.

Samples requiring pH adjustment will have their pH checked to assure that the proper pH has been obtained. For VOC samples, this will require that a test sample be collected to determine the amount of preservative that needs to be added to the sample containers prior to sampling.

D.3.4. Procedure after collecting sample

After you have taken the sample, follow these practices to complete the documentation and leave the well intact and secure:

- Pack the sample. The type of analysis for which a sample is collected determines the type of container, preservative, holding time, and filtering requirement. Samples are transferred directly from the sampler to the container. The container should hold any necessary preservative and should be correctly labeled before the sample is transferred to it.

  Next, log the sample. Put the samples in a cooler to keep them at 4 °C. Ship samples within twenty-four hours or within their holding time, whichever is shorter. Include adequate packing and coolant with the samples so that the samples arrive unimpaired.

- Begin the chain-of-custody.

- Remove the pump and tubing from the well and disconnect the pump from the tubing. The tubing may either be dedicated to the well for future sampling events (by hanging the tubing in the well) or be properly discarded.

- Replace the well cap and lock the well protection assembly before leaving the well location.

- Put the gloves and plastic sheet in a plastic bag for disposal.

- Decontaminate the equipment. Sampling equipment will be decontaminated prior to use and following sampling of each well.

- If a pump was used, pumps will not be removed between purging and sampling operations. The pump and tubing (including support cable and electrical wires that are in contact with the sample) will be decontaminated by the procedures listed below. Alternative procedures must be approved by the Quality Assurance Officer prior to the sampling event.

- The decontaminating solutions can either be pumped from buckets through the pump or the pump can be disassembled and flushed with the decontaminating solutions. It is recommended that detergent and methanol used in the decontamination process be used sparingly and water flushing steps be extended to ensure that any sediment trapped in the pump is flushed out. The outside of the pump and the electrical wires must be rinsed with the decontaminating solutions, as well. The procedure is as follows:

    - Flush the equipment/pump with potable water.

    - Flush with non-phosphate detergent solution (five gallons).

    - Flush with tap water to remove all of the detergent solution.

    - Flush with distilled/deionized water.

    - Flush with methanol.

    - Flush with distilled/deionized water.

Appendix E

Sampling equipment decontamination protocol

Appendix E. Sampling equipment decontamination protocol

This protocol documents the procedure to decontaminate equipment and materials used to sample or otherwise to handle water, soil, sediment, or other media that is being sampled for chemical quality.

Sampling equipment must be decontaminated before each use and before it is removed from a site. Decontamination is an essential step in the quality assurance of a sampling protocol. Improperly cleaned or prepared sampling equipment can lead to misinterpretation of environmental data due to cross contamination. Cross contamination can result when contaminants are introduced to a location by equipment that has either been cleaned improperly or not cleaned at all. Since laboratories will be analyzing the samples with sensitive instruments, the quality control that decontamination contributes to is critical.

Sampling equipment is decontaminated before it reaches the field. If the equipment is reused and if laboratory cleaning is not an option, a decontamination station must be established in the field, and the decontamination procedures are conducted there.

E.1. Objective

Decontamination procedures are designed to remove particles and compounds that could affect the integrity and, thus, the interpretation of environmental sampling data. Decontamination of materials and equipment used in field sampling work is required for the following reasons:

- Maintain the acceptability of field samples for the data they will generate.
- Prevent cross contamination of samples.
- Minimize the spread of contaminants.
- Reduce the potential for workers to be exposed to contaminants.

E.2. Method

To establish decontamination methods for a particular site, the site superintendent must comprehend the conditions of the site and the expected concentrations of the contaminants. An awareness of site contaminants aids in the selection of reagents for decontamination. For example, if acetone is a contaminant of concern, it will not be used in the solvent rinse step of decontamination.

Decontamination methods and materials are selected based upon the type of contamination and decontamination method's ability to remove the contaminants. The following are elementary items in decontamination:

- Equipment that has the potential to contact the environmental medium to be sampled should be washed with a detergent solution and rinsed with control water before it is used. Control water is clean water from a potable supply with a known chemical composition.

- A solvent, methanol for example, is used to remove contamination from organic compounds. The solvent causes the contamination to enter solution.

- Acid is used when sampling for inorganic contaminants. It provides a low pH solution and causes the inorganic contaminant to withdraw from the equipment and enter solution.

- The materials used to contain solutions and to scrub the equipment must be resistant to attack from the solvent and acid solutions.

Specific limitations to field decontamination include the following items:

Weather. Cold temperatures reduce the potential of solvents to volatize.

Space requirements. Decontamination requires space both for the decontamination process itself and for the storage of equipment and materials after decontamination. This space must be available at the site of the work and must be away from the area of greatest contamination.

Disposal issues. Materials generated by the decontamination process, such as rinse waters, are likely to be hazardous and must be properly disposed.

E.3. Field equipment decontamination

A field decontamination station should be located away from any source of contamination (to prevent potential cross contamination) but close enough to the sampling teams to facilitate equipment handling. The decontamination station should also be set up in a way to not affect clean areas of the site. Whenever possible, field sampling should be initiated in the area of the site with the lowest known contaminant probability and proceed to the area of highest known or suspected contamination.

The use of multiple sampling units allows decontamination teams to rotate sampling equipment effectively. The following is a step-by-step procedure for field equipment decontamination:

- Using a laboratory-grade detergent and control water, remove visible particles and residual oils and grease. Note the following:
  - This step may be preceded by a steam or high pressure wash at an approved area in order to facilitate residual removal.
  - For equipment that cannot be adequately cleaned with a brush due to internal mechanisms or tubing, the decontamination solution should be circulated through the equipment.
- Rinse the equipment thoroughly with control water or distilled deionized water to remove the detergents.
- If the sample is to be analyzed for inorganics, apply an acid rinse to remove trace metals. The acid solution can be made with 10% nitric or hydrochloric acid solution made from reagent grade or nitric or hydrochloric acid and deionized water: that is one part acid to 10 parts water.
- Rinse the equipment with a highly pure solvent (pesticide grade) to remove traces of organic compounds. Isopropyl alcohol, acetone, methanol, and other solvents are acceptable for the solvent rinse step. Methanol will be used in this program.
- Allow the solvent rinse to evaporate and the equipment to air dry.

- Give the equipment a thorough rinse with distilled deionized water rinse to remove any residual traces of solvent.

- Wrap the sampling equipment with an inert material such as aluminum foil for transport to the sample collection area. Note that household aluminum foil often has a coating of oil and should not be used for this purpose.

The decontamination process should be well documented. Each step, materials used, and the disposition of waste should be recorded in a field notebook. Miscellaneous items such as weather conditions, nearby activities, and other issues that could affect results should be recorded.

The decontamination fluids will be contained in appropriately labelled liquid D.O.T. drums.

E.4. Decontamination of heavy equipment (well development)

Other equipment and materials associated with well development, if required, must be cleaned before and after use at a site. Items such as pipes, surges blocks, and miscellaneous heavy equipment all present potential sources of interference to environmental samples. These items may contact the materials to be sampled and may retain contaminants from other sources such as roadways or storage areas. They may also hold soil material from previous job sites that have not been removed. Field decontamination of heavy equipment requires a large area of ground that will be covered by plastic to control liquid discharge to the ground. The used water will be contained.

Two options are available to clean heavy materials:

Steam cleaning. A steam generator uses high pressure to remove visible debris and residuals. Steam generators are typically easy to handle, and they generate low volumes of waste water. This method also has disadvantages. It requires a fixed or portable power source, and they may not be economical for use on small pieces of equipment or for sampling events that are of short duration.

Manual scrubbing. This procedure can be as effective as steam cleaning, or it can be preferred in situations where steam cleaning fails to remove visible material. The field technician scrubs the equipment with a laboratory grade detergent solution

to remove material. After the scrubbing, the technician rinses the equipment with water. Manual scrubbing is labor-intensive, and it generates large volumes of wash and rinse solutions.

Either or both of these methods will be employed as necessary based on conditions encountered in the field.

E.5. References

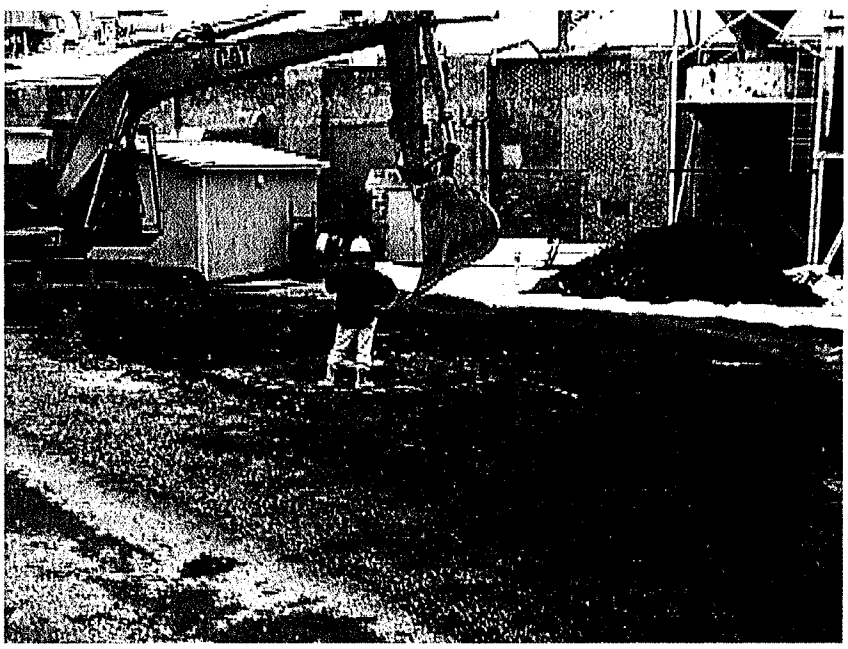
ASTM. 1990 "Standard practice for decontamination of field equipment used at non-radioactive waste sites." Current Edition Approved, June 29, 1990. D5088-90.

New Jersey Department of Environmental Protection and Energy. 1992. "Field sampling procedures manual."

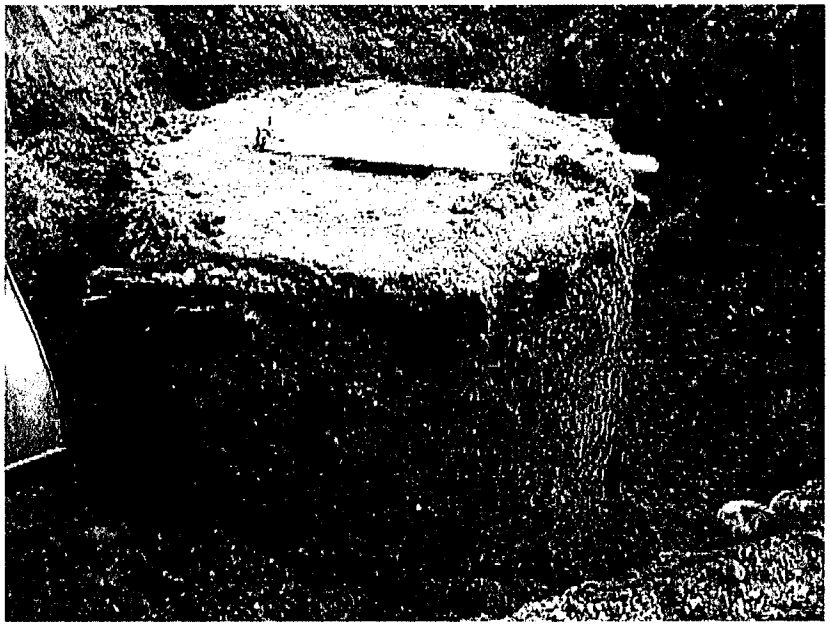
USEPA. 1987. "Completion of Superfund field operations methods." EPA/540/P-18/001.

Appendix C

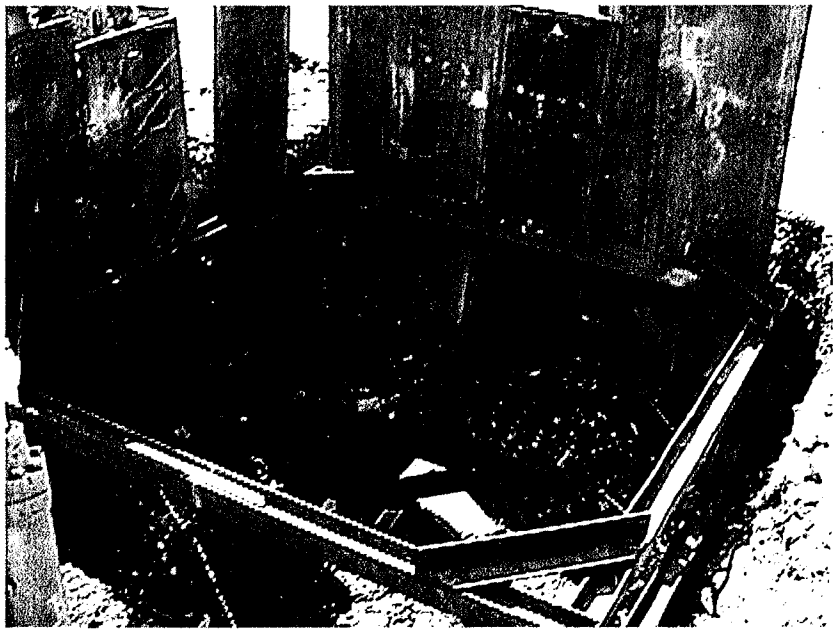
Photo log



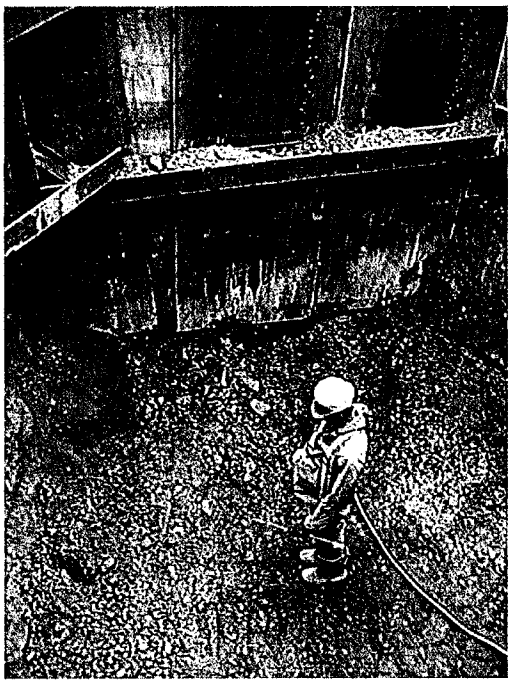
Excavation and staging of surface soil



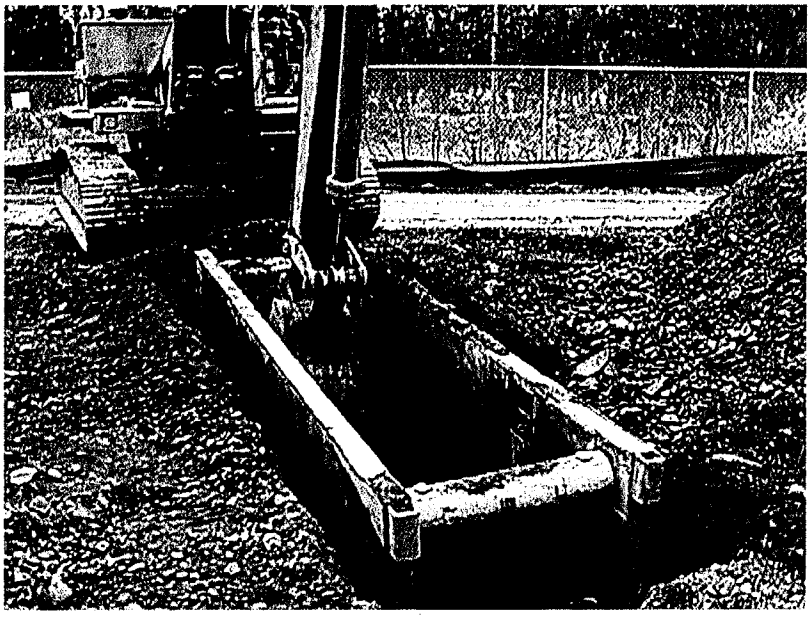
Leaching pit structure



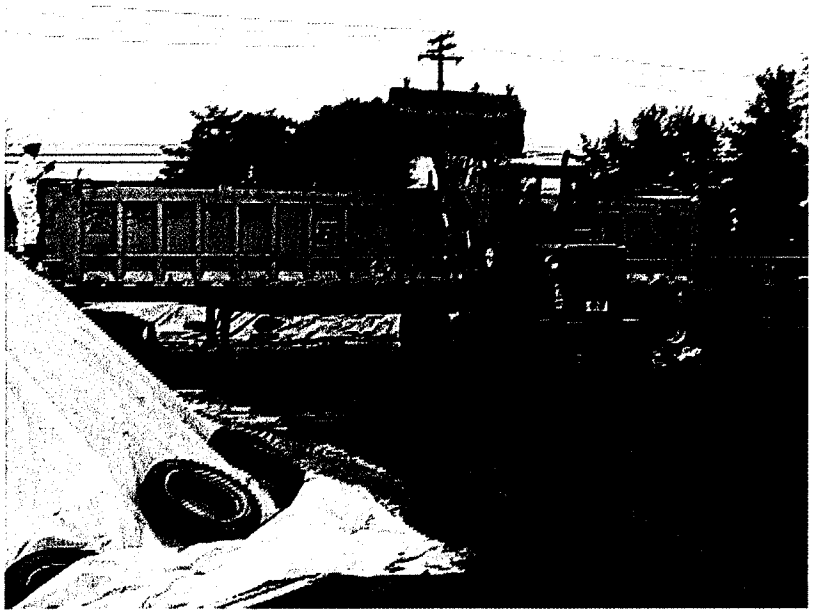
A trench box was used during excavation



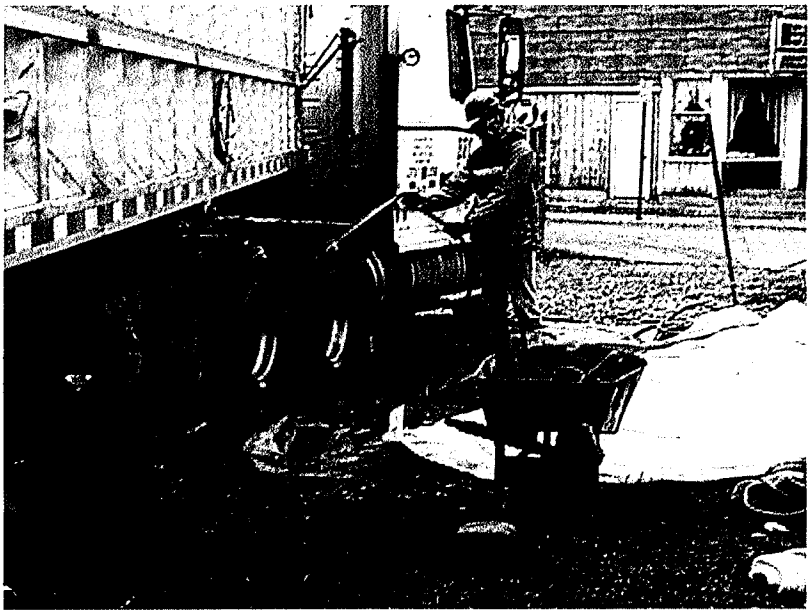
Verification sampling



Re-excavation

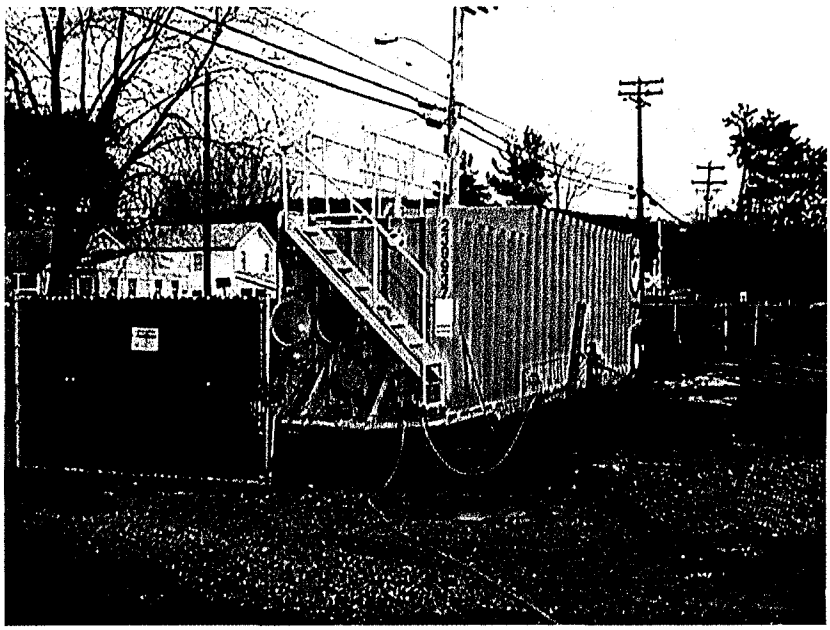


Off-site disposal

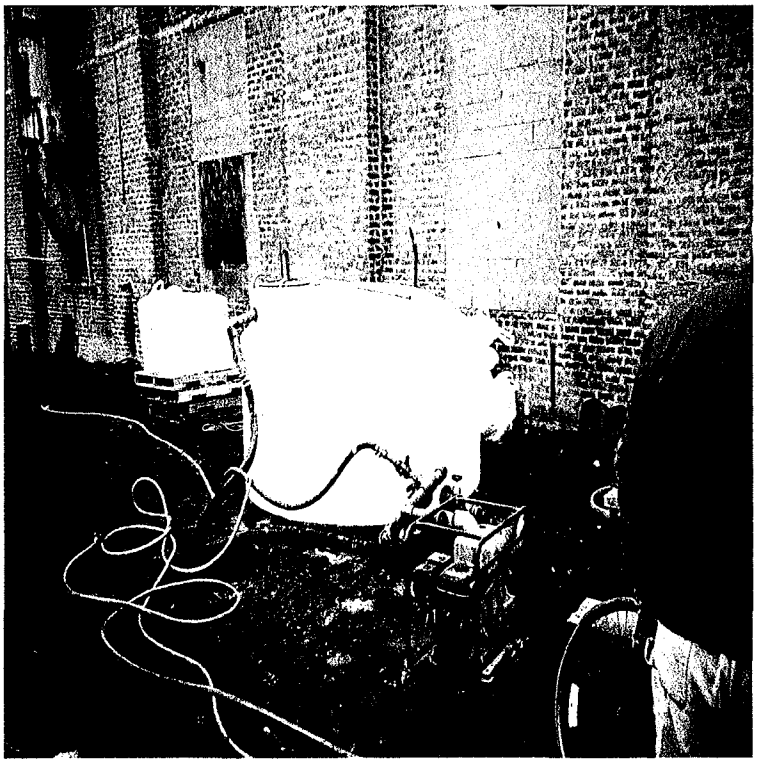


Decontamination

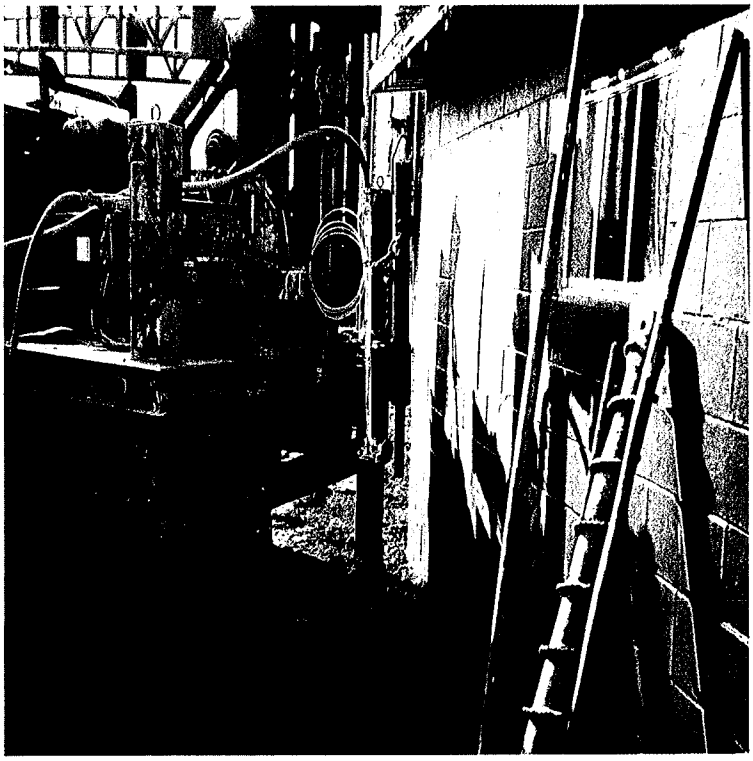
Soil staging area



Construction water holding tank



Soil stabilization slurry mixing tank



Soil stabilization injection

Exhibit A

Sludge characterization data

Page 1 of 1

CHAIN OF CUSTODY RECORD

CUSTOMER CODE #

PROJECT NO./ NAME	CLIENT NAME	SAMPLE SITE	SAMPLER'S SIGNATURE
CAE Electronics	Bolands/Vacri	CAE Electronics	S.W. Osborn

SAMPLE NO.	SAMPLING DATE	SAMPLING TIME	ORIGIN/SOURCE	# OF CONTAINERS	DESCRIPTION COMP	DESCRIPTION GRAB	DESCRIPTION OTHER	ANALYSES/TESTS REQUESTED
CAE 90898	9/8/98	0900	CAE Site Sludge	1		✓		TCLP - 8 Toxic Metals - Volatiles SW 8260-503 Semi Volatiles

88952 88953 88954

RELINQUISHED BY SIGNATURE / PRINT	DATE/TIME	RECEIVED BY SIGNATURE / PRINT	DATE/TIME	RELINQUISHED BY SIGNATURE / PRINT	DATE/TIME
S.W. Osborn / S.W. Osborn	9/8/98 1300				
RECEIVED BY SIGNATURE / PRINT	**DATE/TIME**	**RELINQUISHED BY SIGNATURE / PRINT**	**DATE/TIME**	**RECEIVED AT LAB BY SIGNATURE / PRINT**	**DATE/TIME**
				Debbie McCarty / Debbie McCarty	9/8/98 3:05

REMARKS RUSH ASAP. Let them know when it can be done

FRIEND LABORATORY, INC.
ONE RESEARCH CIRCLE * WAVERLY, NEW YORK 14892
PHONE (607) 565-3500 * FAX (607) 565-4083

FLI
FRIEND LABORATORY I · N · C

ONE RESEARCH CIRCLE WAVERLY, NY 14892-1532
TELEPHONE (607) 565-3500 FAX (607) 565-4083

DATE : Sep 16, 1998

LAB SAMPLE ID : 88953

Bolands/Vacri, J/V
Steve Osborn
1403 Milburn Drive

Conklin NY 13748

SAMPLE SOURCE :	CAE ELECTRONICS
ORIGIN :	88952 CAE 90898 SLUDGE
DESCRIPTION :	TCLP EXTRACT
SAMPLED ON :	09/08/98 by CLIENT
DATE RECEIVED :	09/08/98
P.O. NO. :	

Analysis Performed	Result	Units	Maximum Contaminant Level	Date Analyzed	Method	Notebook Reference	Analyst
Arsenic	ND<1.20	mg/L	5.0	09/15/98	EPA 6010	98-134-08	DGR
Barium	1.18	mg/L	100.0	09/15/98	EPA 6010	98-134-08	DGR
Cadmium	0.254	mg/L	1.0	09/15/98	EPA 6010	98-134-08	DGR
Chromium	ND<0.100	mg/L	5.0	09/15/98	EPA 6010	98-134-08	DGR
Lead	ND<0.440	mg/L	5.0	09/15/98	EPA 6010	98-134-08	DGR
Mercury	ND<0.01	mg/L	0.2	09/16/98	EPA 7470	98-012-31	KAL
Selenium	ND<0.700	mg/L	1.0	09/15/98	EPA 6010	98-134-08	DGR
Silver	ND<0.100	mg/L	5.0	09/15/98	EPA 6010	98-134-08	DGR

For questions regarding this report, please call Customer Services.
cc :

QC _____ NY 10252 NJ 73168 PA 68180 EPA NY 00033

Approved by: _____
Lab Director

ND or U = None Detected < = less than ug/L = micrograms per liter (equivalent to parts per billion)
mg/L = milligrams per liter (equivalent to parts per million) mg/kg = milligrams per kilogram (equivalent to parts per million)
B = analyte was detected in the method or trip blank J = result estimated below the quantitation limit

FLI
FRIEND LABORATORY INC

ONE RESEARCH CIRCLE WAVERLY, NY 14892-1532
TELEPHONE (607) 565-3500 FAX (607) 565-4083

DATE : Sep 15, 1998

LAB SAMPLE ID : 88952

Bolands/Vacri, J/V
Steve Osborn
1403 Milburn Drive

Conklin NY 13748

SAMPLE SOURCE	CAE ELECTRONICS
ORIGIN	CAE 90898 SLUDGE
DESCRIPTION	GRAB
SAMPLED ON	09/08/98 by CLIENT
DATE RECEIVED	09/08/98
P.O. NO.	

Analysis Performed	Result	Units	Date Analyzed	Method	Notebook Reference	Analyst
TCLP Extraction	88953		09/11/98	EPA 1311	98-026-24	LKH
ZHE Extraction	88954		09/12/98	EPA 1311	95-167-60	LKH

For questions regarding this report, please call Customer Services.
cc :

QC _____ NY 10252 NJ 73168 PA 68180 EPA NY 00033

Approved by: _____
Lab Director

ND or U	= None Detected	ug/L	= micrograms per liter (equivalent to parts per billion)
<	= less than		
mg/L	= milligrams per liter (equivalent to parts per million)	mg/kg	= milligrams per kilogram (equivalent to parts per million)
B	= analyte was detected in the method or trip blank	J	= result estimated below the quantitation limit

FLI FRIEND LABORATORY I · N · C
Semivolatiles
ONE RESEARCH CIRCLE WAVERLY, NY 14892-1532
TELEPHONE (607) 565-3500 FAX (607) 565-4083

DATE : Sep 17, 1998

LAB SAMPLE ID : 88953

Bolands/Vacri, J/V
Steve Osborn
1403 Milburn Drive

Conklin NY 13748

SAMPLE SOURCE :	CAE ELECTRONICS
ORIGIN :	88952 CAE 90898 SLUDGE
DESCRIPTION :	TCLP EXTRACT
SAMPLED ON :	09/08/98 by CLIENT
DATE RECEIVED :	09/08/98
P.O. NO. :	

Method : SW846/8270/3510 Analyst : CPW Notebook Reference : 97-186-9783
Units : MG/L Date Analyzed : 09/16/98
Date Extracted : 09/14/98

Compounds Detected	Results	
Pyridine	ND<0.05	5.0
o-Cresol	ND<0.05	200.0
p-Cresol/m-Cresol	ND<0.05	200.0
Hexachloroethane	ND<0.05	3.0
Nitrobenzene	ND<0.05	2.0
Hexachlorobutadiene	ND<0.05	0.5
2,4,6-Trichlorophenol	ND<0.05	2.0
2,4,5-Trichlorophenol	ND<0.05	400.0
2,4-Dinitrotoluene	ND<0.05	0.13
Hexachlorobenzene	ND<0.05	0.13
Pentachlorophenol	ND<0.20	100.0
Surrogate Recovery (%)		
2-Fluorophenol	54	
Phenol-d6	39	
Nitrobenzene-d5	105	
2-Fluorobiphenyl	102	
2,4,6-Tribromophenol	89	
Terphenyl-d14	119	

For questions regarding this report, please call and ask for Customer Services.

CC :

QC 10

NY 10252 NJ 73168 PA 68180 EPA NY 00033

Approved by: _____ *Lab Director*

ND or U = None Detected < = less than ug/L = micrograms per liter (equivalent to parts per billion)
mg/L = milligrams per liter (equivalent to parts per million) mg/kg = milligrams per kilogram (equivalent to parts per million)
B = analyte was detected in the method or trip blank J = result estimated below the quantitation limit

FLI
FRIEND LABORATORY INC

Volatiles

ONE RESEARCH CIRCLE WAVERLY, NY 14892-1532
TELEPHONE (607) 565-3500 FAX (607) 565-4083

DATE Sep 17, 1998

LAB SAMPLE ID : 88954

Bolands/Vacri, J/V
Steve Osborn
1403 Milburn Drive

Conklin NY 13748

SAMPLE SOURCE :	CAE ELECTRONICS
ORIGIN :	88952 CAE 90898 SLUDGE
DESCRIPTION :	ZHE EXTRACT
SAMPLED ON :	09/08/98 by CLIENT
DATE RECEIVED :	09/08/98
P.O. NO. :	

Analyst : SJB Notebook Reference : 98-111-3654

Method : SW846/8260/5030 Units : MG/L Date Analyzed : 09/15/98

Compounds Detected	Results	
Vinyl Chloride	ND<0.02	0.2
1,1-Dichloroethene	ND<0.02	0.7
Methyl Ethyl Ketone	ND<0.12	200.0
Chloroform	ND<0.02	6.0
Carbon Tetrachloride	ND<0.02	0.5
Benzene	ND<0.02	0.5
1,2-Dichloroethane	ND<0.02	0.5
Trichloroethene	ND<0.02	0.5
Tetrachloroethene	ND<0.02	0.7
Chlorobenzene	ND<0.02	100.0
1,4-Dichlorobenzene	ND<0.02	7.5
Surrogate Recovery (%)		
Dibromofluoromethane	113	
Toluene-d8	90	
Bromofluorobenzene	102	

For questions regarding this report, please call and ask for Customer Services.

cc :

QC NR NY 10252 NJ 73168 PA 68180 EPA NY 00033

Approved by: _____
Lab Director

ND or U = None Detected < = less than
mg/L = milligrams per liter (equivalent to parts per million)
B = analyte was detected in the method or trip blank
ug/L = micrograms per liter (equivalent to parts per billion)
mg/kg = milligrams per kilogram (equivalent to parts per million)
J = result estimated below the quantitation limit

Exhibit B

Chemical Waste Management waste profiles

CONFIRMATION LETTER

October 13, 1998

STEVE OSBOURNE
BOLANDS EXCAVATING
1403 MILLBURN DR
CONKLIN, NY 13748-1621

Re: Confirmation Number 4526160

Attention: STEVE OSBOURNE

We are pleased to confirm CWM's approval of your waste material as described below. The attached profile for the waste materials was prepared by CWM based upon information provided by you. It is important that no changes be made to the profile without CWM's consent. If the profile meets with your approval, please call 1-800-843-3604 to schedule shipment of your waste materials.

CWM Profile Number:	CL3007 MDC
Approved Mgmt. Facility:	CWM MODEL CITY FACILITY or another CWM or CWM approved facility
Waste Name:	WASTEWATER TREATMENT SLUDGE
Disposal Method:	Stabilization and Subtitle C Landfill.
Disposal Price:	includes disposal, transportation, and taxes for stabilization then direct landfill.
Taxes:	- Included in bundled pricing
Transportation Price:	- Included in bundled pricing with a 22 ton minimum per load.
Demurrage:	- $85.00 per hour after the first free hour of loading time.
Waste Approval Fees:	- Paperwork approvals (no analytical) = Waived - Characterization & unknowns are priced upon request
Pricing Conditions:	If waste comes in sloppy, price will be based on net resultant weight after stabilization. - Miscellaneous Charges -Incidental Liquid in Bulk Solid Loads = $800.00 per load -Leaking Bulk Loads/Drums = $200.00 per load or drum

October 13, 1998

Re: Confirmation Number 4526160

- All per ton pricing is based on a minimum density of 2,000 pounds per cubic yard. Bulk solid waste that falls short of this minimum threshold limit will be billed according to manifested volume in yards, or based upon rated capacity of container.

Profile Expiration Date: 10/08/99

Special Conditions:

- If this waste stream is subject to cyanide treatment standards, waste must meet those treatment standards upon receipt at Model City
- Waste profile sheet numbers must appear on manifests.
- No demurrage will be paid by CWM Chem. Services Inc. for delays at Model City for on-site acceptance procedures when generator/customer arranges their own transportation. Customers who require Certificates of Disposal should place the phrase "Certificate of Disposal Required" in Section 15 of the manifest.
- Special Land Disposal Notification and Certification Form must be properly executed and accompany first shipment of this waste.
- For all loads for stabilization, the first load of the month will be held for testing prior to landfill.
- New York State Department of Environmental Conservation (NYSDEC) approved for 200 tons as a process.

Applicable state and local taxes are not included in these disposal prices. All wastes are priced as profiled, invoiced as actually received. Invoices shall be paid no later than thirty (30) days from the date of receipt. All terms are governed by the Agreement previously executed between our companies. The prices quoted above are subject to change by CWM upon thirty (30) days' prior written notice to you unless otherwise specifically provided or per the terms of our Agreement. If we have not previously concluded a Service Agreement with your company, one is enclosed for your convenience. Please sign and return it to us as soon as possible. Also, if 'Signature on File' does not appear on the signature line of the Waste Profile Sheet, please sign and return it before scheduling your material.

October 13, 1998

Re: Confirmation Number 4526160

If you have any questions or would like to make changes to the profile, please contact your representative. Thank you for this opportunity to be of service.

Lawrence M. Grasso

Chemical Waste Management, Inc

Date Printed 10/13/98

GENERATOR'S WASTE PROFILE SHEET

Profile # NYC CK3007

(_) Check here if this is a Recertification LOCATION OF ORIGINAL CWM MODEL CITY FACILITY

GENERAL INFORMATION

1. Generator Name: CAR LINE CORP Generator USEPA ID: NYD066811468

2. Generator Address: 11 BECKWITH AVE Billing Address: (_) Same ROLLINS EXCAVATING 1493 WILLSON DR

BINGHAMTON NY 13901-1726 WILSON NY 13748-1611

3. Technical Contact/Phone: 607/772-0404

4. Alternate Contact/Phone:

Billing Contact/Phone: S W OSBORN 607/722-5132

PROPERTIES AND COMPOSITION

5. Process Generating Waste: ELECTROPLATING

6. Waste Name: WASTEWATER TREATMENT SLUDGE

7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No (_)

B. Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): F006

State Waste Codes: Same as USEPA Codes

8. Physical State @ 70F: A. Solid(X) Liquid(_) Both(_) Gas(_) B. Single Layer (X) Multilayer (_) C. Free liq. range 0 to 0%

9A. pH: Range 9.0 to 12.0 or Not applicable (_) B. Strong Odor (_);describe

10. Liquid Flash Point: < 73F (_) 73-99F (_) 100-139F (_) 140-199F (_) >= 200F (_) N.A. (X) Closed Cup (X) Open Cup (_)

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range		Unit Description
DEBRIS	to	10	%
INERTS	to		
SLUDGE	to	78	%
SOIL	to	79	%
CADMIUM	to	1.05	MG/L TC
CHROMIUM	0 to	0.1	MG/L TC
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):		100.000000	

See attachment 2

12. OTHER: PCBs if yes, concentration ppm, PCBs regulated by 40 CFR 761 (_), Pyrophoric (_) Explosive (_) Radioactive (_) Benzene if yes, concentration ppm. NESHAP (X) Shock Sensitive (_) Oxidizer (_) Carcinogen (_) Infectious (_) Other

13. If waste subject to the land ban & meets treatment standards, check here: _ & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid (X) Bulk Liquid (_) Drum (_) Type/Size: TONS Other

15. ANTICIPATED ANNUAL VOLUME: 200 Units: TONS Shipping Frequency: ONE TIME

SAMPLING INFORMATION Sample Tracking Number: 4576160

16a. Sample Source (drum, lagoon, pond, tank, vat, etc.): TRUCK

Date Sampled: 10/02/98 Sampler's Name/Company: S.W. OSBORN ROLLINS/CWM J/V

16b. Generator's Agent Supervising Sampling: 17. (_) No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in (40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CWM to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile CK3007 STEPHEN J OSBORN SITE CONSTRUCTION MANAGER 10/01/98

Signature Name and Title Date

Date Printed 10/13/98

PROFILE #
ANC CT3001

18. This is a Nonwastewater.

19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:

___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides

20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

A. REF #	B. US EPA HAZARDOUS WASTE CODE(S)	C. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		D. APPLICABLE TREATMENT STANDARDS			E. HOW MUST THIS WASTE BE MANAGED?
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42	Enter letter from below
1	F006		X		X		D
2	F006		X	X			A
3							
4							
5							
6							
7							
8							
9							
10							

Management under the land disposal restrictions:

A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THIS WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil or debris? No: X Yes, Soil: _ Yes, Debris: _

22. Specific Gravity Range: ____ to ____

23. Indicate the range of each: Units

Cyanides: _ 6.64 to _____ PPM Type (free, total, amenable, etc.) TOTAL

Cyanides: _ None to _____ _____ Type (free, total, amenable, etc.) _____

Sulfides: _ None to _____ _____ Type _____

Optional Phenolics: _ None to _____ _____

24. Identify the waste color BROWN, DOT physical state Solid,

and physical appearance GRITTY SLUDGE

Date Printed 10/11/98
Profile #
NOC CS3007

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION	TOTAL	26. INCINERATION, BOILS OR INCINERATION PARAMETERS (Provide if information is available)	RANGE
Beryllium as Be	ppm	A. Heat Value (BTU/lb):	-
Potassium as K	ppm	B. Water:	
Sodium as Na	ppm	C. Viscosity (cps):	@ F 100 F 150 F
Bromine as Br	%	D. Ash:	%
Chlorine as Cl	%	E. Settleable solids:	%
Fluorine as F	%	F. Vapor Pressure @ STP (mm/Hg):	
Sulfur as S	%	G. Is this waste a pumpable liquid?	Yes No
		H. Can this waste be heated to improve flow?	Yes No
		I. Is this waste soluble in water?	Yes No
		J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen?	Yes No

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes X No

B. Proper Shipping Name. . . . . : RQ, HAZARDOUS WASTE, SOLID, N.O.S

and Additional Description if required: (F006)

C. DOT Regulations: North America Hazard Class: 9 Misc.Hazardous Mat'l I.D. NA3077 Packing Group: III

D. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): 10 Lb

E. Non-Bulk code 213 Bulk code 240

F. Special Provisions B54

G. Labels Required CLASS 9

28. SPECIAL HANDLING INFORMATION

Material Safety Data Sheets Attached

29. OTHER INFORMATION

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

31. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

Metals	TCLP Information: Check only ONE for each constituent. Use units: ppm, mg/l				TCLP Data	TCA or NOVA: Use units: ppm, mg/l, mg/kg or percent			
						California List			
	Less Than	TC Regulated Level	Equal or More	Waste No.	TCLP Actual	Less Than	Regulated Level	Equal or More	Actual
Arsenic as As	X	5.0 mg/l		D004			500 mg/l		
Barium as Ba	X	100.0 mg/l		D005					
Cadmium as Cd	X	1.0 mg/l		D006			100 mg/l		
Chromium tot Cr	X	5.0 mg/l		D007					
Lead as Pb	X	5.0 mg/l		D008			500 mg/l		
Mercury as Hg	X	.2 mg/l		D009			20 mg/l		
Selenium as Se	X	1.0 mg/l		D010			100 mg/l		
Silver as Ag	X	5.0 mg/l		D011					
Nickel as Ni							134 mg/l		
Thallium as Tl							130 mg/l		
Chromium Hex							500 mg/l		
Antimony									
Beryllium									
Copper									
Vanadium									
Zinc									

31. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent:				TCLP Data	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More	Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
o-Cresol	X	200 mg/l		D024		
m-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4 Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethane	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor, & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
1,1,1-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorophenol	X	400.0 mg/l		D041		
2,4,6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

Date Printed 10/13/98

ATTACHMENT 2

CHEMICAL COMPOSITION: Additional constituents NOT included on page 1 of the Waste Profile

Constituents	Range	Unit Descriptions
LEAD	0 to .44	MG/L TC
NICKEL	to 8.73	MG/L TC
SILVER	0 to .1	MG/L TC
CYANIDE	to 6.64	MG/KG

Generator Name: CLM LINK CORP Manifest Doc. No.:

Profile Number: CL3881 State Manifest No:

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Nonwastewater X Wastewater
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent treatment standards are listed on the following page. If F039, multi-source leachate applies, these constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REC #	3. US EPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE		5. HOW MUST THIS WASTE BE MANAGED? ENTER LETTER FROM BELOW
		DESCRIPTION	NONE	
1	F006		X	D
2	F006		X	D
3				
4				

To identify F039 or D001-D043, underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (CWF-2005) and check here:
If no UHCs are present in the waste upon its initial generation check here: X
To list additional USEPA waste code(s) and subcategorie(s), use the supplemental sheet provided (CWF-2005-S) and check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter A, A1, B1, B2, C, D or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter A1, B1, B2 or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to these state citations instead of the 40 CFR citations.

A. RESTRICTED WASTE REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR 268.40.
For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45."

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR 268.40 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.2 (Certification removed by Phase IV.)

B.1 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 264.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.4 DECHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

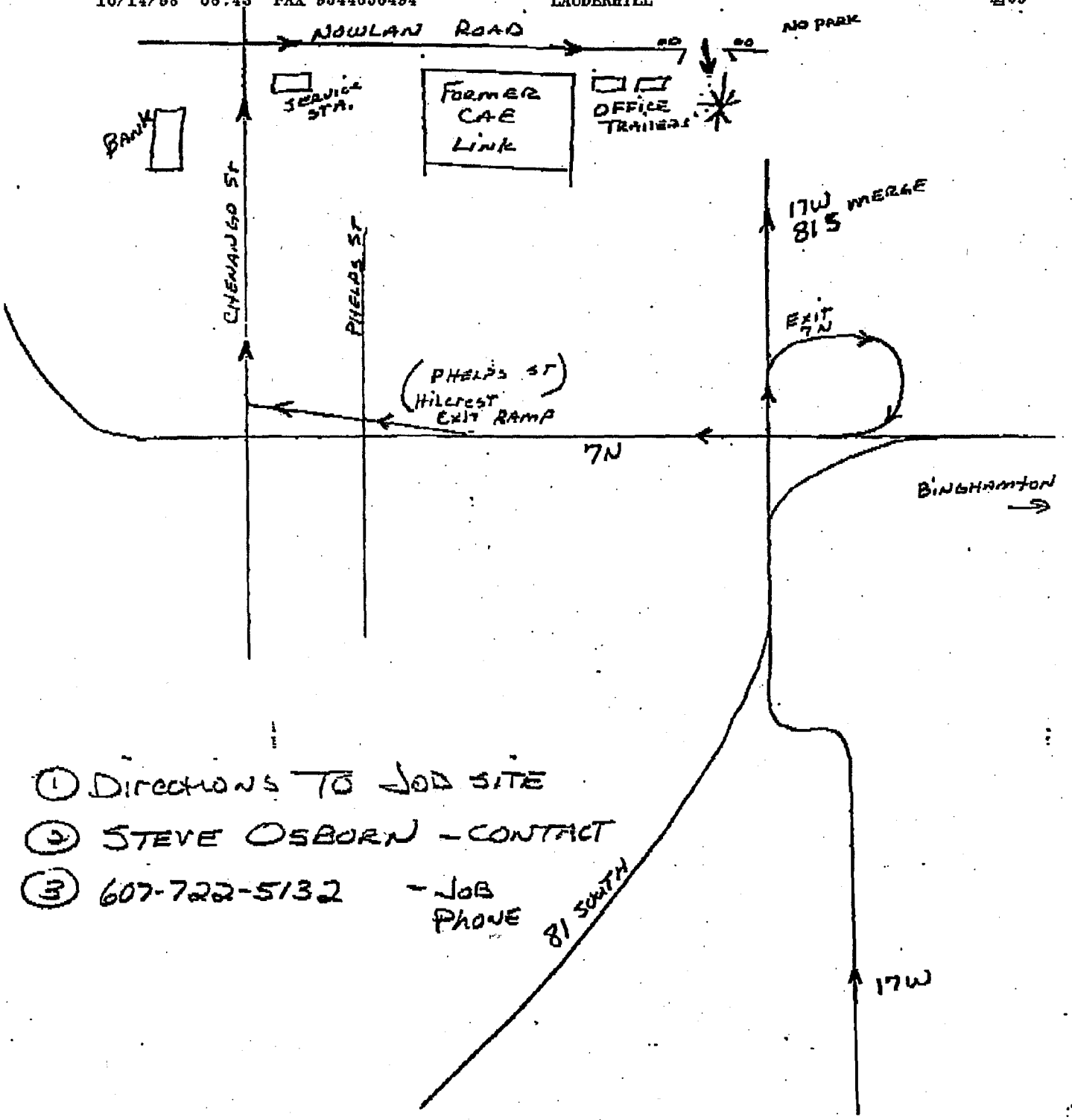
C. RESTRICTED WASTE SUBJECT TO A VARIANCE
This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS
This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [signature] Title Sales Cust Mgr. Date 10/13/98



① Directions To Job site

② Steve Osborn - contact

③ 607-722-5132 - Job Phone

CL 3008
Waste Soil, Haz (Cd)

CONFIRMATION LETTER

October 19, 1998

Stephen W. Osborn
BOLANDS EXCAVATING
1403 MILLBURN DR
CONKLIN, NY 13748-1621

Re: Confirmation Number 4526904

Attention: Stephen W. Osborn

We are pleased to confirm CWM's approval of your waste material as described below. The attached profile for the waste materials was prepared by CWM based upon information provided by you. It is important that no changes be made to the profile without CWM's consent. If the profile meets with your approval, please call 1-800-843-3604 to schedule shipment of your waste materials.

CWM Profile Number:	CL3008 MDC
Approved Mgmt. Facility:	CWM MODEL CITY FACILITY or another CWM or CWM approved facility
Waste Name:	HAZ WASTE SOIL-CADMIUM (RCRA METALS)
Disposal Method:	Stabilization and Subtitle C Landfill.
Disposal Price:	includes disposal, transportation, and taxes.
Taxes:	- Included in bundled pricing.
Transportation Price:	- Included in bundled pricing.
Demurrage:	- $85.00 per hour after the first free hour of loading time.
Waste Approval Fees:	- Paperwork approvals (no analytical) = Waived
Pricing Conditions:	- Miscellaneous Charges -Incidental Liquid in Bulk Solid Loads = $800.00 per load -Leaking Bulk Loads/Drums = $200.00 per load or drum - All per ton pricing is based on a minimum density of 2,000 pounds per cubic yard. Bulk solid waste that falls short of this minimum threshold limit will be billed according to manifested volume in yards, or based upon rated capacity of container.

October 19, 1998

Re: Confirmation Number 4526904

Profile Expiration Date: 10/16/99

Special Conditions:

- Waste profile sheet numbers must appear on manifests.
- No demurrage will be paid by CWM Chem. Services Inc. for delays at Model City for on-site acceptance procedures when generator/customer arranges their own transportation. Customers who require Certificates of Disposal should place the phrase "Certificate of Disposal Required" in Section 15 of the manifest.
- Special Land Disposal Notification and Certification Form must be properly executed and accompany first shipment of this waste.
- For all loads for stabilization, the first load of the month will be held for testing prior to landfill.
- New York State Department of Environmental Conservation (NYSDEC) approved for 1200 tons as a process.

Applicable state and local taxes are not included in these disposal prices. All wastes are priced as profiled, invoiced as actually received. Invoices shall be paid no later than thirty (30) days from the date of receipt. All terms are governed by the Agreement previously executed between our companies. The prices quoted above are subject to change by CWM upon thirty (30) days' prior written notice to you unless otherwise specifically provided or per the terms of our Agreement. If we have not previously concluded a Service Agreement with your company, one is enclosed for your convenience. Please sign and return it to us as soon as possible. Also, if 'Signature on File' does not appear on the signature line of the Waste Profile Sheet, please sign and return it before scheduling your material.

If you have any questions or would like to make changes to the profile, please contact your representative. Thank you for this opportunity to be of service.

Lawrence M. Grasso

Chemical Waste Management, Inc

Date Printed 10/19/98

GENERATOR'S WASTE PROFILE SHEET

PROFILE # NOC CL3008

(_) Check here if this is a Recertification LOCATION OF ORIGINAL CNR MODEL CITY FACILITY

GENERAL INFORMATION
1. Generator Name: CNR LINK CORP Generator USEPA ID: NYD000818468
2. Generator Address: 11 ROCKWELL AVE Billing Address: (_) Same ROLANDS EXCAVATING
1491 MILLBURN DR
KINGSTON NY 11901-1726
3. Technical Contact/Phone: 607/722-0404
4. Alternate Contact/Phone:
CORNING NY 13748-1621
Billing Contact/Phone: S W OSBORN 607/722-5132

PROPERTIES AND COMPOSITION
5. Process Generating Waste: WASTEWATER TREATMENT - ELECTROPLATING
6. Waste Name: NON HAZ SOIL-CADMIUM (RCRA METALS)
7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No (_)
B. Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): D006
State Waste Codes: Same as USEPA Codes
8. Physical State @ 70F: A. Solid(X) Liquid(_) Both(_) Gas(_) B. Single Layer (X) Multilayer (_) C. Free liq. range 0 to 0%
9A. pH: Range 9.0 to 11.0 or Not applicable (_) B. Strong Odor (_);describe
10. Liquid Flash Point: < 73F (_) 73-99F (_) 100-139F (_) 140-199F (_) >= 200F (_) N.A. (X) Closed Cup (X) Open Cup (_)
11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range	Unit Description
CADMIUM	7 to 21	PPM TC
CONCRETE	to	
MOISTURE	to	
WATER	0 to 10	%
INERTS	to	
SOIL	90 to 95	%
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):	105.000000	

12. OTHER: PCBs if yes, concentration ppm, PCBs regulated by 40 CFR 761 (_). Pyrophoric (_) Explosive (_) Radioactive (_) Benzene if yes, concentration ppm. NESHAP (X) Shock Sensitive (_) Oxidizer (_) Carcinogen (_) Infectious (_) Other
13. If waste subject to the land ban & waste treatment standards, check here: _ & supply analytical results where applicable.

SHIPPING INFORMATION
14. PACKAGING: Bulk Solid (X) Bulk Liquid (_) Drum (_) Type/Size: TONS Other
15. ANTICIPATED ANNUAL VOLUME: 1200 Units: TONS Shipping Frequency: ONE TIME

SAMPLING INFORMATION Sample Tracking Number: 4526904
16A. Sample source (drum, lagoon, pond, tank, vat, etc.):
Date Sampled: Sampler's Name/Company:
16B. Generator's Agent Supervising Sampling: 17. (X) No sample required (See instructions.)

GENERATOR'S CERTIFICATION
I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize CNR to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile CL3008 STEPHEN W OSBORN SITE CONSTRUCTION MANAGER
Signature Name and Title Date

Date Printed 10/19/98 Profile # NMC CW3008

18. This is a Nonwastewater.

19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:
___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides

20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED?
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
		DESCRIPTION	NONE	268.41(a)	268.41(a)	268.42	Enter letter from below
1	D006		X	X			A
2							
3							
4							
5							
6							
7							
8							
9							
10							

Management under the land disposal restrictions:
A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil or debris? No: _ Yes, Soil: X Yes, Debris: _

22. Specific Gravity Range: ____ to ____

23. Indicate the range of each: Units

Cyanides: _ None ____ to ____ ____ Type (free, total, amenable, etc.) ____

Cyanides: _ None ____ to ____ ____ Type (free, total, amenable, etc.) ____

Sulfides: _ None ____ to ____ ____ Type ____

Optional Phenolics: _ None ____ to ____ ____

24. Identify the waste color BROWN, DOT physical state Solid,
and physical appearance SOIL

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION		26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)	
	TOTAL		RANGE
Beryllium as Be	ppm	A. Heat Value (Btu/lb):	
Potassium as K	ppm	B. Water:	
Sodium as Na	ppm	C. Viscosity (cps):	@ F 100 F 150 F
Bromine as Br	%	D. Ash:	%
Chlorine as Cl	%	E. Settleable solids:	%
Fluorine as F	%	F. Vapor Pressure @ STP (mm/Hg):	
Sulfur as S	%	G. Is this waste a pumpable liquid?	Yes _ No _
		H. Can this waste be heated to improve flow?	Yes _ No _
		I. Is this waste soluble in water?	Yes _ No _
		J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen?	Yes _ No _

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes X No _

B. Proper Shipping Name. . . . . : RQ, HAZARDOUS WASTE, SOLID, N.O.S.

and Additional Description if required: (CHROMIUM)

C. DOT Regulations: North America Hazard Class: 9 Misc.Hazardous Mat'l I.D. NA3077 Packing Group: III

D. CERCLA Reportable Quantity (RQ) and units (lb, kg): 10 lb

E. Non-Bulk code 213 Bulk code 240

F. Special Provisions B54 _ _ _ _ _

G. Labels Required CLASS 9

28. SPECIAL HANDLING INFORMATION

_ Material Safety Data Sheets Attached

29. OTHER INFORMATION

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 10/19/98

31. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

METALS	TCLP Information: Check only ONE for each constituent. Use units: ppm, mg/l				TCLP Data	TCA or TOTAL Use units: ppm, mg/l, mg/kg or percent			
	Less Than	TC Regulated Level	Equal or More	Waste No.	TCLP Actual	California List Less Than	California List Regulated Level	California List Equal or More	Actual
Arsenic as As	X	5.0 mg/l		D004			500 mg/l		
Barium as Ba	X	100.0 mg/l		D005					
Cadmium as Cd		1.0 mg/l	X	D006			100 mg/l		
Chromium tot Cr	X	5.0 mg/l		D007					
Lead as Pb	X	5.0 mg/l		D008			500 mg/l		
Mercury as Hg	X	.2 mg/l		D009			20 mg/l		
Selenium as Se	X	1.0 mg/l		D010			100 mg/l		
Silver as Ag	X	5.0 mg/l		D011					
Nickel as Ni							134 mg/l		
Thallium as Tl							130 mg/l		
Chromium Hex							500 mg/l		
Antimony									
Beryllium									
Copper									
Vanadium									
Zinc									

Date Printed 10/19/98

Profile #
NRC CR3008

12. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information Check only ONE for each constituent				TCLP Data	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More	Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
o-Cresol	X	200 mg/l		D024		
m-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4 Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethane	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor, & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2,4,5-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorophenol	X	400.0 mg/l		D041		
2,4,6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

Generator Name: CAR LINE CORP Manifest Doc. No.: _____

Profile Number: CL3008 SOIL State Manifest No: _____

1. Is this waste a non-wastewater or wastewater? (See 40 CFR 268.2) Check ONE: Nonwastewater X Wastewater
2. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent treatment standards are listed on the following page. If F039, multi-source leachate applies, those constituents must be listed and attached by the generator. If D001-D043 requires treatment of the characteristic and meet 268.48 standards, then the underlying hazardous constituent(s) present in the waste must be listed and attached.

REF #	3. US EPA HAZARDOUS WASTE CODE(S)	4. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE		5. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		DESCRIPTION	NONE	
1	D006		X	A
2				
3				
4				

To identify F039 or D001-D043, underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (CWM-7004) and check here:
If no UHCs are present in the waste upon its initial generation check here: X
To list additional USEPA waste code(s) and subcategorie(s), use the supplemental sheet provided (CWM-2005-B) And check here:

HOW MUST THE WASTE BE MANAGED? In column 5 above, enter the letter (A, B1, B2, B4, C, D or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B2, B4 or D, you are making the appropriate certification as provided below. (States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.)

A. RESTRICTED WASTE REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR 268.40.
For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45."

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR 268.40 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.2 (Certification removed by Phase IV.)

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion in units as specified in 268.42 Table 1. I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.4 UNCHARACTERIZED WASTE REQUIRES TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This uncharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

C. RESTRICTED WASTE SUBJECT TO A VARIANCE
This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 5 above.
For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I certify under penalty of law I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS
This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Stephen M. Allen Title Construction QC Mgr. Date 10/19/98

S.M. OSBORN

Waste Management, Inc.

CWM Chemical Services, L.L.C. Phone 716/754-8231
1550 Balmer Rd.
P.O. Box 200
Model City, N.Y. 14107

Fax Cover Sheet

DATE: 10/19/98 **TIME:** 11:00 AM

TO: Stephen Osborn **PHONE:**
FAX: 607- 722-5139

FROM: Larry Grasso **PHONE:** 716/754-0288
Account Representative **FAX:** 716/754-2959

RE:

CC:

Message:

Confirmation # Lanban
for CL 3008

Number of pages including cover sheet:

(9)

Exhibit C

Binghamton – Johnson City Joint Sewage Board construction water discharge approval

Binghamton-Johnson City
JOINT SEWAGE BOARD

October 6, 1998

Mr. Stephen W. Osborn, PhD, CIH
Merritt/Osborn, Inc.
Project Safety and Health Officer
24 Liberty Street
Newtown, Pennsylvania 18940

Dear Mr. Osborn:

The Joint Sewage Board is granting permission to discharge 21,000 gallons of *treated* construction water generated as part of the remedial efforts at the former "Singer-Link"— Hillcrest facility at 11 Beckwith Avenue and Nowlan Road in the Town of Fenton. The construction water must first be pumped to a holding tank and filtered *prior* to discharge. Please note that the facility is still subject to the Rules and Regulations Relating to Use of the Binghamton-Johnson City Joint Sewage Treatment Plant. Documentation indicating compliance with regulated parameters (cadmium, copper, lead, nickel, chromium, and zinc) must be submitted to the Joint Sewage Board within 30 days from the discharge event. In addition, the owner and/or operator shall certify that the material that is being discharged to the sanitary sewer system is not a listed hazardous waste or exhibits a characteristic of a hazardous waste in accordance with 40 CFR Part 261 and 6 NYCRR Part 371.

The Joint Sewage Board appreciates your cooperation in the pretreatment program. If you have any questions regarding this letter, please call me.

Very truly yours,

BINGHAMTON-JOHNSON CITY
JOINT SEWAGE BOARD

Bill Horrigan

William J. Horrigan, Jr.
Superintendent

cc: C&S Engineers, Inc.

BILL J. HORRIGAN, JR., *Superintendent* – Binghamton-Johnson City Joint Sewage Treatment Facilities
4480 Old Vestal Road, Vestal, New York 13850
Phone 1-607-729-2975 TELEFAX 1-607-729-0110

MERRITT/OSBORN INC
Environmental Chemistry and Engineering
(moinc@erols.com)

24 Liberty Street
Newtown PA 18940
215/579-2171
215/968-7647 (Fax)

Stephen W. Osborn, PhD, CIH
Olive F. Osborn, Graphic Design
Arthur D. Krey, Civil and
Environmental Engineering

465 Crowell Road
Box 209
Chatham MA 02633
508/945-5858
508/945-5389 (Fax)

August 3, 1998

C&S ENGINEERS INC
1099 Airport Boulevard
North Syracuse NY 13212

Attention of: John Trendowski, PE or
Christen M. Buckley, Environmental Chemist

Re: **Request for a Special Wastewater Disposal Permit,**
NYSDEC — CAE Electronics Remedial Project
Binghamton NY

BOLAND'S EXCAVATING AND TOPSOIL INC/VACRI CONSTRUCTION CORPORATION, J/V (Contractors) and **CAE ELECTRONICS INC** have entered into an agreement, dated July 31, 1998, for the excavation and removal of certain contaminated soils from former wastewater leaching pits at the former "Singer-Link" — Hillcrest facility at 11 Beckwith Avenue and Nowlan Road in the Town of Fenton (Broome County NJ). (See attached Location and Site Plan.)

The remedial work is being directed by the New York State Department of Environmental Conservation (NYSDEC) under a Consent Order with CAE ELECTRONICS INC. The property is currently used for manufacturing proposed by the B.W. ELLIOT MANUFACTURING CO INC of Binghamton NY (occupant). All wastewater from the property is currently processed by the Binghamton — Johnson City Joint Sewage Treatment Plant through a connection to the publicly owned sewer system in Nowlan Road. The leaching pits have been inactive since 1986.

Under the NYSDEC-approved Remedial Design Plan, all construction wastewater will be collected and stored in on-site storage tanks ("Baker" tanks or equivalent), placed for the purpose, for eventual disposal "in accord with all state and local regulations."

Some of the leach pits are dry, but some may not be. We expect to generate standing wastewater from one or more of the inactive pits (est. 5-30,000 gal, depending on rainfall conditions). In addition, construction equipment and personnel decontamination wastewater will be generated during the remedial project. The total Construction Wastewater Volume is expected to be 30-80,000 gal. Based on extensive prior studies conducted from 1984 through 1998, the contaminants consist solely of inorganic metal compounds from prior electroplating operations by CAE ELECTRONICS INC and their predecessor companies.

Contaminant levels are expected to be highest in the standing water from the leach pits. Samples of the standing water have been submitted for analysis to include

- Metals (NYSDEC HEAST List) — Sb, Ba, BE, Cd, Cr (total), Cr^{+6}, Pb, Mn, Hg, Ni, Ag, Zn and cyanides
- VOCs (NYSDEC TAGM list)
- pH
- Oil and Grease

The complete analytical results will be forwarded as soon as they are received. The entire remedial project will be conducted under the supervision of NYSDEC, Division of Environmental Remediation (50 Wolf Road, Albany).

This request is for permission to discharge construction wastes from this Remedial Site to the Binghamton — Johnson City Joint Sewage Treatment Plant under a Special Permit through the facility on-site sewer connection in Nowlan Road, under a schedule to be determined by the Authority, based on the contaminant analysis levels of the generated water.

A completed Wastewater Survey form for this project is attached, along with the site location data. Contacts for this application are

Michael Boland, President, BOLAND'S/VACRI, J/V
Construction Project Manager
607/775-5030 (fax) 607/775-5078

and Stephen W. Osborn, PhD, CIH
Project Analytical Safety & Health Officer
215/579-2171 (fax) 215/968-7647

Thank you very much for your assistance.

Very truly yours,

Stephen W. Osborn, PhD, CIH
Project Safety and Health Officer
BOLAND'S/VACRI, J/V

cc: Bill Horrigan, Jr., Superintendent
Binghamton — Johnson City Joint Sewage Treatment Facilities

BINGHAMTON-JOHNSON CITY JOINT SEWAGE TREATMENT PLANT
INDUSTRIAL WASTEWATER SURVEY
JULY 1998

A. *GENERAL INFORMATION*

1. Company Name: BOLAND'S EXCAVATING & TOPSOIL, INC/VACRI CONSTRUCTION CORP J/V
2. Mailing Address: 1403 Milburn Drive, Conklin NY 13748
3. Address of Premises: 11 Beckwith Ave (Town of Fenton), Binghamton NY 13902
4. Standard Industrial Classification Code (SIC): _____

Name: Michael Boland / Stephen W. Osborn

Title: Construction Manager / Site Safety & Health Officer

Address: 1403 Milburn Drive / MERRITT/OSBORN INC

Phone: Conklin NY 13748 / 24 Liberty St., Newtown PA 18940-2023
607/775-5030 / 215/579-2171

(see attached letter)

Does your facility discharge sanitary wastewater only? ☐ Yes ☒ No

Note: Sanitary wastewater is defined as culinary wastes and the liquid waste containing only human excreta and similar matter, flowing in or from a building drainage system or sewer originating in a dwelling, business building, factory, or institution.

If yes, please sign and date only page 4. If no, please complete the attached survey forms.

B. *PLANT OPERATIONAL CHARACTERISTICS:* (Remedial Project)

1. Brief Description of Manufacturing or Service Activity on Premises: Standing Wastewater and Decon Water from a NYSDEC-supervised Remedial Project
2. Quantity and Type of Principal Raw Materials Used (Use Separate Sheet If Necessary): _____

Metals: (from an electroplating system leaching system - discontinued 1986)

Chemicals: Cadmium, Chromium, Copper, Nickel, Zinc, Lead (only)

3. Quantity and Type of Catalysts, Intermediates: _____

4.	Product or Services	SIC Code (4-digit)	Approximate Production
	a.		
	b.		
	c.		
	d.		

5. Type of Operation: _____ Batch: _____ Continuous

If Batch, Average Number of Batches/24 Hours: _____

6. Is There a Scheduled Shutdown? _____

When? _____

7. Is Production Seasonal? _____

If Yes, Explain Indicating Month (S) or Peak Production: Sept - Dec 1998 (only)

8. Average Number of Employees per Shift: _____ 1st; _____ 2nd; _____ 3rd

Shift Times: _____ 1st; _____ 2nd; _____ 3rd

9. Shifts Normally Worked Each Day:

		SUN	MON	TUES	WED	THURS	FRI	SAT
	1st							
N/A	2nd							
	3rd							

C. *WATER USE:*

1.	Raw Water Source	Quantity	Meter No.	Acct No.
		_____ gal/day		
		_____ gal/day		
		_____ gal/day		
		_____ gal/day		
		_____ gal/day		

2. Describe Any Raw Water Treatment Processes in Use: All construction wastewater will be stored on-site for dispos-l. Est. Total 30-80,000 gal. One-time generation.

3. List Water Consumption in Plant:_____

Total (based on water meter reading):_____

		Recirculated
Sanitary System:	_____ gal/day	_____
Boiler Fed:	_____ gal/day	_____
Cooling Water:	_____ gal/day	_____
Process Water:	_____ gal/day	_____
Other:	_____ gal/day	_____

D. *WASTES*[1]

1. List Average Volume of Discharge or Water Loss to:

Municipal Wastewater Sewer: _____ gpd

Storm Sewer: _____ gpd

Natural Outlet (stream, swale, etc.): _____ gpd

Waste Hauler: _____ gpd

Evaporation: _____ gpd

Contained in Product: _____ gpd

Land Disposal: _____ gpd

2. Is Discharge to Sewer: _____Intermittent _____Steady

3. Enclose Site Map and Flow Schematics Listing Sewer Outlets, Size, Flow, Chemical Storage, and Floor Drains (Attach and Refer to Map):_____

4. Have Waste Streams Been Previously Analyzed? If So, Is Data Available?___

5. Describe Each Process Discharging into the Sewer System and the Chemical Nature of the Discharge. Use Separate Sheet If Necessary. One-time remedial construction project. Standing leach pit water and equipment and personnel decontamination water.

6. Is There an Approved Spill Prevention Control and Countermeasure Plan in Effect for this Plant? Yes Yes _____ No

[1]Quantity of water wastes should equal water consumption

7. Describe Any Wastewater Treatment Equipment or Process in Use (Include Wastewater Quantity and Source): none

8. List Quantities and Types of Solid and Hazardous Waste Removed from Plant? 2800 tons non-hazardous soil (NYSDEC estimate)
3320 tons hazardous waste soil

9. List Waste Haulers:

10. Describe Type and Number of Air Pollution Devices (Be Sure to Include All Wet Air Pollution Control Equipment):

Please note the enclosed New York State Industrial Chemical Survey Form. Are any of the pollutants listed in Table 1 being stored or used at this facility? If so, please indicate by a check mark on Table 1. For those compounds indicated, please be sure to complete the Industrial Chemical Survey Form and return it with this Survey Form.

E. PRETREATMENT

Is this plant subject to any existing Federal Pretreatment Standard? No

Based on my inquiry of the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

SIGNATURE

Michael Boland
NAME

President, BOLAND'S/VACRI, J/V
TITLE

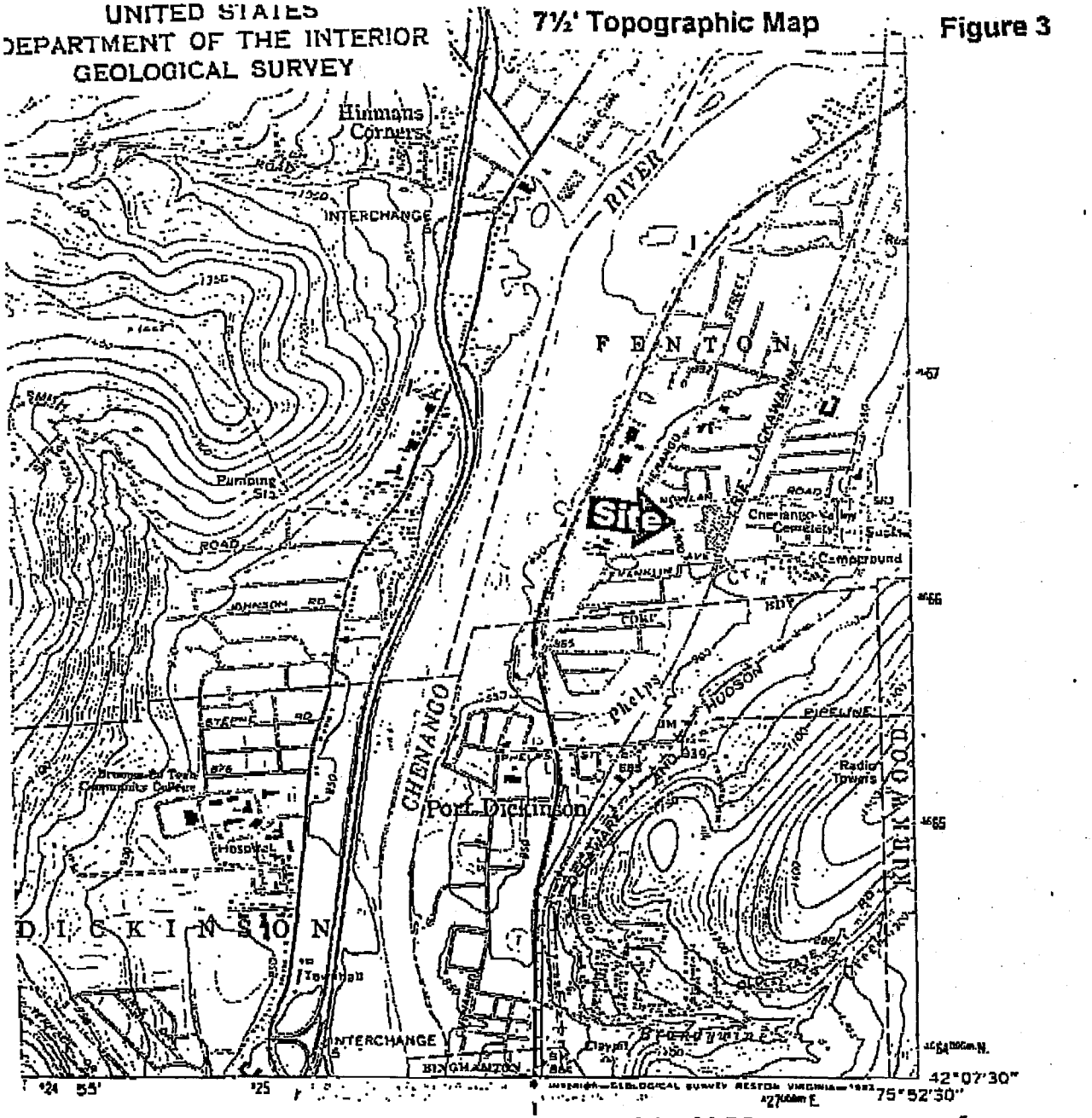
DATE


Area Map
Figure 2
Nimmonsburg
DICKINSON
Ely Park Heights
PORT DICKINSON
BINGHAMTON
CHENANGO RIVER
SUSQUEHANNA RIVER
DELAWARE & HUDSON
CONRAIL

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

7½' Topographic Map

Figure 3



CASTLE CREEK, N. Y.
N4207.5—W7552.5/7.5

file copy

MERRITT/OSBORN INC
Environmental Chemistry and Engineering
(moinc@erols.com)

24 Liberty Street
Newtown PA 18940
215/579-2171
215/968-7647 (Fax)

Stephen W. Osborn, PhD, CIH
Olive F. Osborn, Graphic Design
Arthur D. Kney, Civil and
Environmental Engineering

465 Crowell Road
Box 209
Chatham MA 02633
508/945-5868
508/945-5389 (Fax)

September 7, 1998

C&S ENGINEERS INC
1099 Airport Boulevard
North Syracuse NY 13212

By FAX

ATTN of: John Trendowski PE or
Christen M Buckley, Environmental Chemist

Re: Special Wastewater Disposal Permit
NYSDEC-CAE Electronics Remedial Project
11 Beckwith Avenue (Hillcrest, Town of Fenton NY)

Enclosed is the laboratory analysis for construction wastewater to be discharged by special permit to the Binghamton Johnson City Joint Sewage Treatment Plant via the sewer connection at this Site. Please refer to our letter and permit application of August 3, 1998.

The analysis includes the 8 Toxic Metals (by methods shown) and VOCs (by EPA method 624, priority pollutants list). The sample was collected from standing water from (8) interconnected drywells on the Site. All 8 drywells will be remediated and the standing water, plus personnel and equipment decontamination (decon) water, will be collected in a 21,000 gal holding tank on-site ("Baker Tank") for discharge under the permit.

This sample of standing water was collected to represent the maximum contaminant level anticipated.

No VOCs were detected (and none are expected). In the unlikely event that a source of wastewater other than the (8) drywells is encountered, that wastewater will be drummed separately for analysis and proper disposal. It will not be included or disposed of under the Special Permit.

Work is expected to commence under this project on September 14, 1998, and the earliest anticipated disposal will be about September 28. However, under the regulations of this contract with NYSDEC, the wastewater disposal permit must be in place at the time of commencement (9/14/98).

It is our understanding that approval for the permit must also be given by the Town of Fenton, Village of Port Dickenson, and the City of Binghamton, owners of the sewer system.

Mr. Horrigan has indicated that he will help us with those permissions when the permit has been granted.

Please contact me at the Remedial Site with any questions,

607/722-5132,

or BOLAND/VACRI CONSTRUCTION at

607/775-5030, ATTN Michael Boland.

The permit, when issued, should go to BOLANDS, referencing the Site at 11 Beckwith Avenue. The industrial occupant of the Site is the B.W. ELLIOT MANUFACTURING COMPANY, at that address.

Thank you for your help in this matter.

Very truly yours,

Stephen W. Osborn, CIH
Site Safety and Health Manager

cc: William Horrigan Jr., Superintendent,
Binghamton Johnson City Joint Sewage Board

FLI LABORATORY

ONE RESEARCH CIRCLE WAVERLY, NY 14892-1532
TELEPHONE (607) 565-2600 FAX (607) 565-4002

DATE : Aug 24, 19

LAB SAMPLE ID :87165C

Bolands/Vacri, J/V
Steve Osborn
1403 Milburn Drive

Conklin NY 13748

[redacted]
CAE HILLCREST-BINGHAMTON
41298-W
GRAB
08/12/98 by CLIENT
08/13/98

Analysis Performed	Results	Units	Date Analyzed	Method	Notebook Reference	Analyst
Arsenic	0.005	mg/L	08/21/98	SM 3114 B	98-086-21	KAL
Barium	0.062	mg/L	08/19/98	EPA 200.7	98-134-02	DGR
Cadmium	ND<0.005	mg/L	08/19/98	EPA 200.7	98-134-02	DGR
Chromium	0.033	mg/L	08/19/98	EPA 200.7	98-134-02	DGR
Lead	ND<0.044	mg/L	08/19/98	EPA 200.7	98-134-02	DGR
Mercury	ND<0.01	mg/L	08/19/98	EPA 245.1	98-012-27	KAL
Selenium	ND<0.002	mg/L	08/20/98	SM 3114 B	98-117-90	KAL
Silver	0.017	mg/L	08/19/98	EPA 200.7	98-134-02	DGR

For questions regarding this report, please call Customer Services.
98 f

QC NY 10282 NJ 73168 PA 68750 EPA NY00035 Approved by: Lab Director

KEY: ND or U = None Detected < = less than ug/L = micrograms per liter (equivalent to parts per billion)
mg/L = milligrams per liter (equivalent to parts per million) mg/kg = milligrams per kilogram (equivalent to parts per million)
B = analyte was detected in the method or lab blank J = result estimated below the quantitation limit

The information in this report is accurate to the best of our knowledge and ability. In no event shall our liability exceed the cost of these services. Your samples will be discarded after 14 days unless we are advised otherwise.

Albany, NY Scranton, PA Jamestown NY Boston, MA Syracuse, NY Watertown, NY

FRIEND LABORATORY INC.
ONE RESEARCH CIRCLE WAVERLY, NY 14892-1532
TELEPHONE (607) 565-4500 FAX (607) 565-4963

Volatiles

DATE Aug 20, 1998

LAB SAMPLE ID :87180

Bolanda/Vacri, J/V
Steve Osborn
1403 Milburn Drive

Conklin NY 13748

CAE HILLCREST-BINGHANTON
81298-W
GRAB
08/12/98 by CLIENT
08/13/98

Analyst : CMV Notebook Reference : 98-112-A310
Method : EPA 624 Units : UG/L Date Analyzed : 08/19/98

Compounds Detected	Results
Chloromethane	ND<5
Vinyl Chloride	ND<5
Bromomethane	ND<5
Chloroethane	ND<5
Trichlorofluoromethane	ND<5
Acrolein	ND<20
1,1-Dichloroethene	ND<5
Methylene Chloride	ND<5
Acrylonitrile	ND<20
trans-1,2-Dichloroethene	ND<5
1,1-Dichloroethane	ND<5
cis-1,2-Dichloroethene	ND<5
Carbon Tetrachloride	ND<5
Chloroform	ND<5
1,1,1-Trichloroethane	ND<5
Benzene	ND<5
1,2-Dichloroethane	ND<5
Trichloroethene	ND<5
1,2-Dichloropropane	ND<5
Bromodichloromethane	ND<5
2-Chloroethylvinylether	ND<5
cis-1,3-Dichloropropene	ND<5
Toluene	ND<5
trans-1,3-Dichloropropene	ND<5
1,1,2-Trichloroethene	ND<5

For questions regarding this report, please call and ask for Customer Services.

cc: :

QC NY 10982 NJ 78169 PA 68156 EPA NY00032 Approved by: Lab Director

KEY: ND or U = None Detected < = less than ug/L = micrograms per liter (equivalent to parts per billion)
mg/L = milligrams per liter (equivalent to parts per million) mg/kg = milligrams per kilogram (equivalent to parts per million)
B = analyte was detected in the method or trip blank J = result estimated below the quantitation limit

FLI ENVIRONMENTAL LABORATORIES, INC.
Volatiles
ONE RESEARCH CIRCLE WAVERLY, NY 14892-1530
TELEPHONE (607) 565-2500 FAX (607) 565-4913

DATE : Aug 20, 1998

LAB SAMPLE ID :87160

Solanda/Vacri, J/V

CAE HILLCREST-BINGHAMTON
91238-W
GRAB
08/12/98 by CLIENT
08/13/98

Tetrachloroethene	ND<5
Dibromochloromethane	ND<5
Chlorobenzene	ND<5
Ethylbenzene	ND<5
p-Xylene/m-Xylene	ND<5
o-Xylene	ND<5
Styrene	ND<5
Bromoform	ND<5
1,1,2,2-Tetrachloroethane	ND<5
1,3-Dichlorobenzene	ND<5
1,4-Dichlorobenzene	ND<5
1,2-Dichlorobenzene	ND<5
Surrogate Recovery (%)	
Difluorodichloromethane	97
Toluene-d8	98
Bromofluorobenzene	96

ELAP ID NY 10982 NJ 73365 PA 68-180 EPA NY 00253 Approved By: Lab Director

KEY: ND or U = None Detected < = less than ug/L = micrograms per liter (equivalent to parts per billion)
mg/L = milligrams per liter (equivalent to parts per million) mg/kg = milligrams per kilogram (equivalent to parts per million)
B = analyte was detected in the method or trip blank J = result estimated below the quantitation limit

"Our family, caring about your analytical needs... Since 1969."

CUSTOMER CODE # 1620

CHAIN OF CUSTODY RECORD

PAGE __ OF __

FLI FRIEND LABORATORY INC
ONE RESEARCH CIRCLE
WAVERLY NY 14892-1532
Telephone (607) 565 3500
Fax (607) 565 7160

Sample Site: CAE HILLCREST-BUCKLAND

P.O. #

CLIENT: Bocanda/UCT/TH
ADDRESS: 1403 Gilbert Dr. Conklin, NY 13748
PHONE: 775-5030 FAX: 775 5018

INVOICE TO: Same
ADDRESS:
← Attn: Steve Osborn

PROJECT NO. / NAME: CAE Electronics-Hillcrest

COPY TO:
ADDRESS:

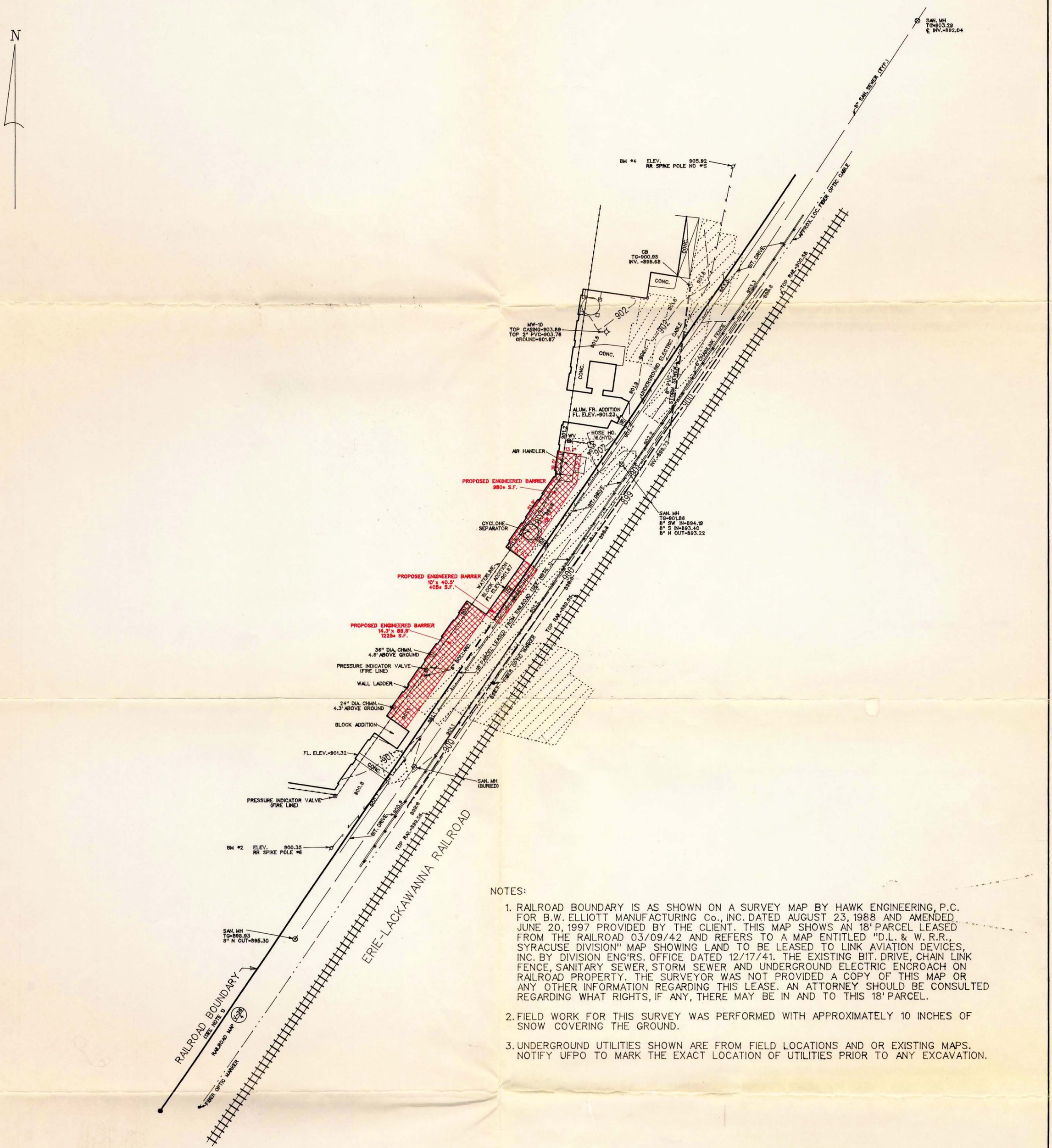
DATE/TIME OF SAMPLE COLLECTION	SAMPLE DESCRIPTION	NUMBER OF CONTAINERS	LAB NOS. / ANALYSES
8/12/98 1440	81298-B	Description: Grab (circled) Composite Other; Matrix: DW WW MW Soil (circled) Air Other	87151 87152 87153; TCLP 8 Toxic Metals; Volatiles -TCLP; Semi Volatiles -TCLP
8/12/98 1450	81298-N	Description: Grab Composite Other; Matrix: DW WW MW Soil Air Other	87154 87155 87156
8/12/98 1500	81298-K	Description: Grab Composite Other; Matrix: DW WW MW Soil Air Other	87157 87158 87159
8/12/98	81298 W	4 3 1; Description: Grab (circled) Composite Other; Matrix: DW WW (circled) MW Soil Air Other	87160; ... METALS (8 metals); VOLATILES (624 plus SRC) priority pollutants

Relinquished by		Received by	Date/Time	Remarks
S. W. Allman		Christie Foraty	8-13-98 11:40	1 week TAT on all work

SUSPECTED CONTAMINATION LEVEL: NONE SLIGHT MODERATE HIGH (please circle)

Exhibit D

As-built drawing



NOTES:

1. RAILROAD BOUNDARY IS AS SHOWN ON A SURVEY MAP BY HAWK ENGINEERING, P.C. FOR B.W. ELLIOTT MANUFACTURING Co., INC. DATED AUGUST 23, 1988 AND AMENDED JUNE 20, 1997 PROVIDED BY THE CLIENT. THIS MAP SHOWS AN 18' PARCEL LEASED FROM THE RAILROAD 03/09/42 AND REFERS TO A MAP ENTITLED "D.L. & W. R.R., SYRACUSE DIVISION" MAP SHOWING LAND TO BE LEASED TO LINK AVIATION DEVICES, INC. BY DIVISION ENG'RS. OFFICE DATED 12/17/41. THE EXISTING BIT. DRIVE, CHAIN LINK FENCE, SANITARY SEWER, STORM SEWER AND UNDERGROUND ELECTRIC ENCROACH ON RAILROAD PROPERTY. THE SURVEYOR WAS NOT PROVIDED A COPY OF THIS MAP OR ANY OTHER INFORMATION REGARDING THIS LEASE. AN ATTORNEY SHOULD BE CONSULTED REGARDING WHAT RIGHTS, IF ANY, THERE MAY BE IN AND TO THIS 18' PARCEL.
2. FIELD WORK FOR THIS SURVEY WAS PERFORMED WITH APPROXIMATELY 10 INCHES OF SNOW COVERING THE GROUND.
3. UNDERGROUND UTILITIES SHOWN ARE FROM FIELD LOCATIONS AND OR EXISTING MAPS. NOTIFY UFPO TO MARK THE EXACT LOCATION OF UTILITIES PRIOR TO ANY EXCAVATION.

LEGEND

- ● - PROPERTY IRON FOUND
- 901.1 - SPOT ELEVATION
- ○ - UTILITY POLE
- ▨ - PREVIOUSLY EXCAVATED AREAS
- ▨ - PROPOSED ENGINEERED BARRIER

Only copies marked with the Land Surveyor's embossed seal and signed in red ink shall be considered true valid copies

SITE PLAN

CAE ELECTRONICS
FORMER HILLCREST FACILITY

NOWLAN ROAD
TOWN OF FENTON
BROOME COUNTY, NEW YORK

SCALE: 1 INCH = 40 FEET FEBRUARY 17, 2000

STS SOUTHERN TIER SURVEYING, LLP

RONALD C. SCHIESS, PLS
71 TIRRELL ROAD
HARPURSVILLE, NEW YORK
N.Y. LIC. No. 049554

ROGER H. HOLMES, PLS
1233 TRACY CREEK ROAD
VESTAL, NEW YORK
N.Y. LIC. No. 050206
PA. LIC. No. SU-051533-E

APPENDIX D

REMEDIAL DESIGN TECHNICAL SPECIFICATIONS

3. Technical specifications and contract drawings

Technical specifications in accordance with Construction Specification Institute (CSI) format have been prepared to provide the necessary information to perform the remedial action. Included below is a list of the technical specifications which are included in Appendix 3-1. Special provisions which provide additional information for the contractor, are also included in Appendix 3-1. The list of Technical Specifications and Special Provisions are provided below.

Technical Specifications

02003 Field Office Trailer
02006 Health and Safety
02009 Project Photographs
02110 Clearing and Grubbing
02141 Construction Water Management
02143 Spill and Discharge Control
02221 Earthwork
02223 Embankment
02229 Rock Removal
02231 Selected Fill
02232 Soil, Leaching Pit, Sludge, and Piping Removal and Disposal
02270 Erosion and Sediment Control
02503 Restoration of Surfaces
02981 Topsoil and Seeding

Special Provisions

SP-1 Definitions
SP-2 Lines, Grades and Elevations
SP-3 Pre-Construction Meeting
SP-4 Progress and Coordination Meetings
SP-5 Emergency Calls
SP-6 Staging Plan
SP-7 Dust Control Program
SP-8 Contractor's Construction Quality Control Plan
SP-9 NYSDEC Review

Special Provisions (Cont'd)

SP-10 Non-Disclosure
SP-11 Night, Weekend, and Holiday Work
SP-12 Contractor's Office
SP-13 Noise Control
SP-14 Existing Utilities
SP-15 Existing Monitoring Wells
SP-16 Borrow Materials
SP-17 New York, Susquehanna & Western Railway
SP-18 Site Access
SP-19 Traffic Control and Pre-Construction Survey
SP-20 Existing Adjacent Structures
SP-21 Special Construction Requirements
SP-22 Notices
SP-23 Permits
SP-24 Decommissioning/Decontamination
SP-25 Items to be Submitted with the Bid

The Contract Drawings are separately bound. They include a title sheet and an index to drawings, an existing site plan, leaching pit partial removal plans, and miscellaneous details. Upon approval of the Final Design by NYSDEC, the Contract Drawings will be signed and stamped by New York State professional engineer.

APPENDIX E

ENVIRONMENTAL EASEMENT

BROOME COUNTY – STATE OF NEW YORK
JOSEPH A. MIHALKO, COUNTY CLERK
60 HAWLEY STREET, P.O. BOX 2062
BINGHAMTON, NY 13902

COUNTY CLERK'S RECORDING PAGE
*****THIS PAGE IS PART OF THE DOCUMENT – DO NOT DETACH*****

BOOK/PAGE: D2694 / 600
INSTRUMENT #: 202200017964

Receipt#: 20221123664
Clerk: AZD
Rec Date: 07/13/2022 04:01:12 PM
Doc Grp: D
Descrip: EASEMENT
Num Pgs: 10
Rec'd Frm: HINMAN HOWARD & KATTELL LLP

Party1: BW ELLIOTT MANUFACTURING CO LLC
Party2: PEOPLE OF THE STATE OF NEW YORK/COMMR
Town: TOWN OF FENTON

Recording:

Cover Page	5.00
Recording Fee	65.00
Cultural Ed	14.25
Records Management - Coun	1.00
Records Management - Stat	4.75
TP584	10.00
Sub Total:	100.00

Transfer Tax

Transfer Tax - State	0.00
Transfer Tax - County	0.00
Sub Total:	0.00
Total:	100.00

****** NOTICE: THIS IS NOT A BILL ******

***** Transfer Tax *****
Transfer Tax #: TT005592
Exempt
Consideration: 0.00

Total: 0.00

WARNING***

This sheet constitutes the clerks endorsement, required by Section 316-A (5) & Section 319 of the Real Property Law of the State of New York. DO NOT DETACH.

Joseph A. Mihalko
Broome County Clerk

Record and Return To:

HINMAN HOWARD & KATTELL LLP
80 EXCHANGE ST
PO BOX 5250
BINGHAMTON NY 13902

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this ~~27~~ 7 day of ~~May~~ June 08, 2022, between Owner(s) B.W. Elliott Manufacturing Co., LLC, f/k/a B.W. Elliot Manufacturing Co., Inc., having an office at 39 Nowlan Road, Binghamton, New York 13901, County of Broome, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 14 Nowlan Road in the Town of Fenton, County of Broome and State of New York, known and designated on the tax map of the County Clerk of Broome as tax map parcel numbers: Section 129.05 Block 4 Lot 3, being the same as that property conveyed to Grantor by deed dated November 30, 2021 and recorded in the Broome County Clerk's Office in Liber and Page 2673/432.

WHEREAS, Grantor, is the owner of real property located at the address of 36 Nowlan Road in the Town of Fenton, County of Broome and State of New York, known and designated on the tax map of the County Clerk of Broome as tax map parcel numbers: Section 129.05 Block 4 Lot 4, being the same as that property conveyed to Grantor by deed dated November 30, 2021 and recorded in the Broome County Clerk's Office in Liber and Page 2673/432.

WHEREAS, the property subject to this Environmental Easement (the "Controlled Property") comprises approximately 15.258 +/- acres, and is hereinafter more fully described in

the Land Title Survey dated August 2, 2018 prepared by Rodney Lee Carey, L.L.S. of Keystone Associates, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: A7-0628-12-09, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Broome County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential, Restricted Residential or Commercial purposes as defined in 6NYCRR 375-1.8(g)(i), (ii) and (iii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held

by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by

Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 704015
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of

this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

B.W. Elliot Manufacturing Co., LLC,
f/k/a B.W. Elliott Manufacturing Co., Inc.:

By: _____

Print Name: Matthew P Pauli

Title: CFO Date: 5-26-22

Grantor's Acknowledgment

STATE OF WISCONSIN)
) ss:
COUNTY OF Waukesha)

On the 26 day of May, in the year 2022, before me, the undersigned, personally appeared Matthew P. Pauli, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Adrienne Killey
Notary Public - State of Wisconsin
Adrienne Killey
My Commission expires 6/26/2024

ADRIENNE KILLEY NOTARY PUBLIC STATE OF WISCONSIN

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting by and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: Andrew Guglielmi
~~Susan Edwards, Acting~~ Director
Division of Environmental Remediation

Andrew Guglielmi

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 7th day of June, in the year 2022 before me, the undersigned, personally appeared Susan Edwards, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Jennifer Andaloro

Notary Public - State of New York

JENNIFER ANDALORO
Notary Public, State of New York
No. 02AN6098246
Qualified in Albany County
Commission Expires January 14, 2024

SCHEDULE "A" PROPERTY DESCRIPTION

ENVIRONMENTAL EASEMENT DESCRIPTION

ALL THAT TRACT OR PARCEL OF LAND situate in the Town of Fenton, County of Broome, State of New York, being all of the property now or formerly of B.W. Elliott Manufacturing Co., Inc. described in L. 1867 P. 211 as recorded in the Broome County Clerk's Office on July 02, 1996 (TM# 129.05-4-4 – Parcel I and TM# 129.05-4-3 – Parcel II), hereinafter referred to as B.W. Elliot, bounded and described as follows:

BEGINNING at a point on the southerly boundary of Nowlan Road (CR 532) at its intersection with the division line between the property now or formerly of the Consolidated Rail Corporation Erie-Lackawanna Railroad on the southeast and said B.W. Elliott on the northwest;

RUNNING THENCE S21°02'28"W along said division line, a distance of 927.23 feet to a point at its intersection with the division line between the property now or formerly of Megatest Development Corp. per L. 1838 P. 1045 (TM# 129.05-4-48) on the south and said B.W. Elliott on the north; thence S85°13'01"W along the last mentioned division line, along the division line between the property now or formerly of Lynn Deamer per L. 2521 P. 349 (TM# 129.05-4-49) on the south and said B.W. Elliott on the north, along the division line between the property now or formerly of Dominick Montemagno & Lois A. Montemagno per L. 1297 P. 713 (TM# 129.05-4-50) on the south and said B.W. Elliott on the north, along the division line between the property now or formerly of Allen F. Bradley & Elizabeth A. Bradley per L. 2187 P. 45 (TM# 129.05-4-51) on the south and said B.W. Elliott on the north, a distance of 662.12 feet to a point at its intersection with the division line between the property now or formerly of Donald W. Rapp & Kathleen Halstead Rapp per L. 2473 P. 577 (TM# 129.05-4-47) on the west and said B.W. Elliott on the east, the last mentioned point being along the last mentioned bearing 3.48 feet easterly from a 5/8 inch rebar; thence N20°45'42"E along the last mentioned division line, a distance of 174.14 feet to a point at its intersection with the southeasterly corner of Utica Avenue; thence N20°54'19"E along the easterly end of Utica Avenue, along the division line between the property now or formerly of Kimberly D. Brady, Tammy L. Grant & Timothy G. Hoch per L. 2541 P. 548 (TM# 129.05-4-21) on the west and said B.W. Elliott on the east, along the division line between the property now or formerly of Josephine Marchione per L. 2282 P. 116 (TM# 129.05-4-20) on the west and said B.W. Elliott on the east and along the easterly end of Beckwith Avenue, a distance of 409.05 feet to a point at its intersection with the northerly boundary of said Beckwith Avenue; thence S85°39'09"W along said northerly boundary of Beckwith Avenue, a distance of 355.96 feet to a 5/8 inch rebar capped "HAWK" at its intersection with the division line between the property now or formerly of Binghamton Realty, Inc. per L. 1889 P. 1013 (TM# 129.05-4-5) on the west and said B.W. Elliott on the east; thence N20°04'15"E along the last mentioned division line and along the division line between another property now or formerly of Binghamton Realty, Inc. per L. 1889 P. 1013 (TM# 129.05-4-4) on the west and said B.W. Elliott on the east, a distance of 337.30 feet to an aluminum pin at its intersection with said southerly boundary of Nowlan Road; thence N85°12'36"E along said northerly boundary of Nowlan Road, a distance of 1027.81 feet to the POINT OF BEGINNING.

The above described parcel contains 664,651 square feet or 15.258 acres, more or less.