C AND F PLATING
ALBANY COUNTY
ALBANY, NEW YORK

SITE MANAGEMENT PLAN
NYSDEC Site Number: 401057

Prepared for:

New York State Department of Environmental Conservation

Albany, New York

Prepared by:

MACTEC Engineering and Consulting, P.C.

Portland, Maine

207-775-5401

Revisions to final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
0	**7/6/17**	**Original Submittal**	**7/6/17**

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JULY 2017

Submitted by:

Rebecca M. Brosnan
Senior Scientist

Approved by:

Mark J. Stelmack, P.E.
Project Manager

CERTIFICATION STATEMENT

I, Mark Stelmack, certify that I am currently a Qualified Environmental Professional (QEP) as in defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Mark Stelmack QEP

July 6, 2017 DATE

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
COC	contaminant of concern
DER	Department of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
FDR	field data record
FS	Feasibility Study
HASP	Health and Safety Plan
IC	Institutional Control
LTM	long term monitoring
MACTEC	MACTEC Engineering and Consulting, P.C.
msl	mean sea level
NYCRR	State of New York Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
PCB	Polychlorinated biphenyl
PES	Precision Environmental Services
PRR	Periodic Review Report
QAPP	Quality Assurance Program Plan
RAOs	remedial action objectives

RI	Remedial Investigation
ROD	Record of Decision
RSO	Remedial System Optimization
SCGs	standards, criteria, and guidance values
SCOs	Soil Cleanup Objectives
Site	C and F Plating Site
SM	Site Management
SMP	Site Management Plan
USEPA	United States Environmental Protection Agency

ES EXECUTIVE SUMMARY

The following is a summary of the controls to be implemented for the C and F Plating site (Site), as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management (SM) Plan (SMP).

Site Identification: New York State Department of Environmental Conservation (NYSDEC) Site No. 401057, C and F Plating, Albany, NY

Institutional Controls:	1. The property may be used for: • Commercial or industrial use.
	2. Institutional controls for the Site are: • Access to the Site for performing inspections of the engineering controls (ECs) must be allowed • Groundwater extraction for anything other than monitoring is prohibited • Animal production for human consumption is prohibited • Vegetable gardens are prohibited on-Site unless planted in gardens where soil achieves the residential use Soil Cleanup Objectives • Site use is limited to industrial uses only. The Site may not be used for a less restrictive use without additional remediation and amendment of the SMP by the NYSDEC. Should any development of the Site be considered, soil and soil vapor sampling would be necessary to evaluate current conditions relative to soil standards, criteria, and guidance values • Excavation on the property is prohibited without written permission from the NYSDEC • Compliance by the Grantor and the Grantor's successors and assigns with this SMP • ECs must be maintained as specified in this SMP • ECs on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP • Inspections must be performed as defined in this SMP • Data and information pertinent to SM for the Controlled Property must be reported at the frequency and in a manner defined in this SMP • Future activities on the Site that will disturb remaining contaminated material are prohibited unless they are conducted in accordance with the SMP • NYSDEC retains the right to access the Site in order to evaluate the continued maintenance of controls.
	3. ECs must be inspected at a frequency and in a manner defined in the SMP.
Engineering Controls:	1. Site Access Controls 2. Clean Fill Cover 3. Patroon Creek Retaining Wall

Inspections:	**Frequency**
1. Fencing, gates, and Site access	3 years
2. Monitoring well integrity	3 years
3. Site Cover	3 years
4. Patroon Creek Retaining Wall	3 years
Monitoring:	
1. Water levels from 6 monitoring wells	3 years
2. Groundwater sampling and analysis from 6 monitoring wells	3 years
Maintenance:	
1. Fence repair	As needed
2. Cover repair	As needed
3. Retaining wall repair	As needed
Reporting:	
1. Inspection Report	3 years
2. Long-term Monitoring Report	With the Periodic Review Report following the sampling event
3. Periodic Review Report	3 years

Further descriptions of the above requirements are provided in detail in the latter sections of this SMP.

1.0 INTRODUCTION

1.1 GENERAL

This Site Management (SM) Plan (SMP) is a required element of the remedial program for the C and F Plating site located in Albany, New York (hereinafter referred to as the "Site"; Figure 1.1). The Site is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program (Site No. 401057) which is administered by NYS Department of Environmental Conservation (NYSDEC). A figure showing the location and boundaries of this Site is provided in Figure 1.2.

After completion of the remedial action, some contamination was left at this Site, which is hereafter referred to as "remaining contamination." Institutional and Engineering Controls (ICs and ECs) have been incorporated into the Site remedy to control exposure to remaining contamination to ensure protection of public health and the environment.

This SMP was prepared to manage remaining contamination at the Site. This plan has been approved by the NYSDEC, and compliance with this plan and with ECs and ICs at the Site is required. This SMP may be revised only with the approval of the NYSDEC.

It is important to note that:

- SM is the last phase of the remedial process and was triggered by the completion of the remedial action under the Record of Decision (ROD) (Appendix A). The SMP continues in perpetuity or until extinguished in accordance with 6 New York Codes, Rules and Regulations (NYCRR) Part 375.
- It is the responsibility of the NYSDEC and any future grantors of Environmental Easements for the Site and their future successors and assigns that SM responsibilities under this plan are performed.
- Failure to comply with this SMP is also a violation of Environmental Conservation Law (ECL), 6 NYCRR Part 375 and thereby subject to applicable penalties (NYS, 2006).

Reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in NYS. A list of contacts for persons involved with the Site is provided in Appendix B of this SMP.

This SMP was prepared by MACTEC Engineering and Consulting, P.C. (MACTEC), on behalf of the NYSDEC, in accordance with the requirements of the NYSDEC's Department of Environmental Remediation (DER)-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required for the Site.

1.2 REVISIONS

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the Site conditions. The NYSDEC will provide a notice of approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 NOTIFICATIONS

Notifications will be submitted to the NYSDEC as needed in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of proposed changes in Site use that are required under the terms of the Order on Consent, 6 NYCRR Part 375, and/or ECL. A notification form (found at: http://www.dec.ny.gov/docs/remediation_hudson_pdf/changeofuse.pdf) must be submitted to the Division of Remediation Site Control Section.
- 7-day advance notice of field activity associated with the remedial program.
- 15-day advance notice of proposed ground-intrusive activities.
- Notice within 48-hours of damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other ECs and likewise action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of an emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to an emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

A change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/ Remedial Party has been provided approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

The following Table 1.1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information is provided in Appendix B.

Table 1.1: Notifications*

Name	**Contact Information**
Michael Mason, NYSDEC Project Manager	(518) 402-9812 michael.mason@dec.ny.gov
Michael Cruden, Remedial Bureau E, Section A Chief	(518) 402-9812 michael.cruden@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 SITE LOCATION AND DESCRIPTION

The C and F Plating Inactive Hazardous Waste Site is located at 406 North Pearl Street in the City of Albany, Albany County, New York (See Figure 1.1: Site Map). The Site is located adjacent to Patroon Creek. The City of Albany site section/lot/block number is 65.16-1-25. A tax map for the City of Albany is included as Appendix C. The Site, an approximately 0.34 acre parcel, is located in a mixed commercial/industrial area zoned as MU-FW (mixed-use, form-based warehouse district (City of Albany, 2017)). The Site and the surrounding area is located at approximately 30 feet above mean sea level (msl). Access to the Site is restricted on three sides by fencing and a locked gate. Access is restricted from the north by Patroon Creek. The site parcel is owned by Family Danz at the time of issuance of this SMP.

2.2 PHYSICAL SETTING

2.2.1 Land Use

The Site, currently vacant, is zoned commercial/industrial. Surrounding lots are currently used for commercial and light industrial uses. The area surrounding the Site includes Patroon Creek and an automotive spring business to the north, a heating and air conditioning company and medical dispensary to the south, a boiler tank and welding company to the west, and North Pearl Street and a health and fitness club to the east.

2.2.2 Geology

The Site is located within the Hudson Mohawk Lowland Physiographic Province. The overburden soils in the surrounding area have been characterized as lacustrine sand, which are composed of well sorted, stratified sand deposits, or lacustrine silt and clay, which are composed of generally laminated silt and clay. The bedrock geology identified in the vicinity of the Site is the Normanskill Shale, which is of Middle Ordovician origin. Subsurface soils encountered at the Site are generally composed of silty sand, silt, silty clay, and some gravel.

A geologic cross section is not available for this Site.

2.2.3 Hydrogeology

Groundwater is approximately eight feet below grade and generally flows southeast toward Patroon Creek. Groundwater at the Site is not used for drinking or other purposes as the property is serviced by public water (NYSDEC, 2014). Table 2.1 presents monitoring well construction details. Monitoring well construction logs are provided in Appendix D, with the exception of HRP-MW-11, for which only the boring log and a May 2012 sampling form are available. Groundwater contour maps are provided in the Remedial Investigation (RI) report (HRP Associates, 2012).

2.3 INVESTIGATION AND REMEDIAL HISTORY

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Investigation and remedial reports for the Site are listed below. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

- RI Report (HRP Associates, 2012)
- Feasibility Study (FS) Report (HRP Associates, 2014)
- ROD (NYSDEC, 2014)
- ROD Implementation Report of Findings (Precision Environmental Services (PES), 2016)
- Final Engineering Report (NYSDEC, 2017)

2.3.1 Site History

Based on review of Sanborn Fire Insurance Maps for the city of Albany, development was present at the Site beginning in 1892 or earlier. Chrome plating operations occurred on the property from the 1920s or earlier, and continued until 1985. The Site included a 6,600-square foot two-story brick building, which originally consisted of industrial/warehouse space in the northern portion and office space in the southern portion. Since 1985, the facility stored miscellaneous equipment, household items, municipal waste, and debris. Prior to the remedial action described in this report, the northern portion of the building had partially fallen into Patroon Creek.

On June 27, 2003, the United States Environmental Protection Agency (USEPA) conducted a Removal Site Evaluation, which included a limited onsite inventory of over 40 containers and several vats. Labeling on these materials indicated the presence of strong acids and bases including chromic acid, sodium hydroxide, and zinc solutions. An estimated 2,000 gallons of hazardous wastes were present throughout the building, stored in an unsafe manner. The USEPA conducted an emergency removal at the Site between November 3, 2003 and July 20, 2004 to address the hazardous waste materials stored in drums, canisters, and vats onsite (NYSDEC, 2014).

A Limited Subsurface Investigation performed in May 2008 included the installation of five groundwater monitoring wells and six soil borings. Surface soil, subsurface soil, groundwater, and sediment samples were collected during the investigation. The results of the limited investigation indicated relatively high concentrations of metals, particularly cadmium, chromium, and nickel, in onsite soil and groundwater. Polychlorinated biphenyls (PCBs) were detected at concentrations less than the NYSDEC Part 375 Residential Soil Cleanup Objectives (SCOs). PCBs were not detected in groundwater samples, and no impact from the Site was identified in Patroon Creek sediments (NYSDEC, 2014).

2.3.2 Summary of Remedial Investigation Findings

A RI was conducted at the Site from September 2011 through July 2012. Results from the RI showed relatively high concentrations of metals in surface and subsurface soil. Contaminants of concern (COCs) for the Site were identified as barium, chromium, cadmium, copper, lead, mercury, nickel, and zinc.

Figures 4 and 5 of the ROD (included as Appendix A) show concentrations of cadmium, chromium, lead, and nickel in soil samples exceeding Commercial SCOs. SCO exceedances were reported in surface soil samples collected on the northeast portion of the Site behind and under the building, and in subsurface soils to a depth of primarily two to four feet below ground surface (bgs), and ten to fifteen feet bgs under the building.

Sediment sampling results from the RI suggested that sediments in the adjacent Patroon Creek had not been adversely impacted by site operations. The COCs did not appear to be contributing to offsite environmental impacts requiring additional investigation or remedial action.

2.3.3 Summary of Remedial Actions

The following actions were completed at the Site between June 2014 and November 2015 (NYSDEC, 2017).

- Removal of trees and woody vegetation from the Site to facilitate access
- Asbestos-containing material abatement and building demolition work
- Excavation of debris from the basement area of the former building
- Removal of drums of hazardous materials encountered during building demolition
- Supplemental subsurface investigation activities to fill data gaps from previous investigations and guide excavation activities by delineating the extent of soils exceeding commercial SCOs
- Stabilization of Patroon Creek's bank with a permanent retaining wall installed along 50 to 60 linear feet of the creek bank
- Abandonment and disposal of an underground storage tank encountered during installation of the retaining wall
- Excavation of non-hazardous soils and off-Site disposal at the City of Albany Landfill
- Excavation of hazardous soils and off-Site disposal at Stericycle Environmental Solutions in Hatfield, Pennsylvania
- In-situ treatment of the source area with calcium polysulfide stimulate metals to bind with soil
- Backfilling with clean fill and crushed stone to grade.

2.4 REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) to protect public health and the environment were identified for the Site. The Site RAOs are as follows:

Groundwater:

- Prevent ingestion of groundwater with contaminant concentrations exceeding drinking water standards
- Remove the source of ground or surface water contamination

Soil:

- Prevent ingestion/direct contact with contaminated soil

- Prevent migration of contaminants that would result in groundwater or surface water contamination
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Based on results of the RI and subsequent FS, the NYSDEC prepared a ROD in March 2014 that identified the selected remedy for the Site (NYSDEC, 2014). The ROD is included as Appendix A to this report.

According to the ROD, the objective of the selected remedy (Alternative 5 from the FS Report) was to return the Site to Part 375 Commercial SCOs by performing the following elements:

- Evaluation and possible demolition of the building
- Excavation of the floor drain area and the area immediately north and south of HRP-SB-4 to approximately five feet below grade or to the groundwater interface
- Application of calcium polysulfide to the bottom of the excavation(s) prior to backfilling
- Disposal of fill materials and contaminated soils

Remedial activities were conducted between June 2014 and November 2015 by Precision Environmental Services (PES) and its subcontractors, in accordance with the March 2014 ROD. Remedial activities are described in the PES ROD Implementation Report of Findings (PES, 2016) and in the Final Engineering Report (NYSDEC, 2017).

2.5 REMAINING CONTAMINATION

The remedial action performed by PES achieved the RAOs for the Site by removing contaminated soil to the extent feasible, remediating remaining contamination in the source area with in-situ chemical reduction, and covering the Site surface with clean fill to prevent exposure to contaminated soil. Human exposure to concentrations of contaminants above commercial SCOs is not expected based on current Site use and Site controls.

The known remaining contamination at the Site consists of contaminated soil in areas where excavation was not feasible, and contamination in groundwater at concentrations above Part 375 (NYS, 2006) commercial standards.

2.5.1 Soil

Soil contamination at concentrations exceeding SCOs may remain at the Site. Based on available documentation, post-remediation sampling was not conducted to confirm concentrations of Site contaminants left in the on-Site soils. The ROD Implementation Report of Findings documents pre-remediation sample results, which were used to determine the extent of the soil removal. Sample results indicate some soil with concentrations of COCs exceeding the current SCO for commercial use may not have been removed during the remedial activities conducted in 2014-2015.

2.5.2 Groundwater

Groundwater sample results from 2011 presented in the ROD show metals are present at concentrations exceeding GA standards. The following are the contaminants detected at concentrations exceeding GA standards:

- Aluminum
- Antimony
- Cadmium
- Iron
- Magnesium
- Manganese
- Sodium

Historical results above GA standards are presented on Figure 3 of the ROD (Appendix A).

In-situ treatment conducted in 2015 is expected to reduce metals concentrations in groundwater at the Site. Post-remediation groundwater monitoring locations are shown on Figure 1.2.

2.5.3 Soil Vapor

Soil vapor is not currently a medium of concern at this Site.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 GENERAL

Because remaining contaminated groundwater and soil exists beneath the Site, EC/ICs are required to protect human health and the environment. This SMP describes the procedures for the implementation and management of EC/ICs at the Site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

The purpose of this Plan is to provide:

- A description of EC/ICs on the Site
- The basic operation and intended role of each implemented EC/IC
- A description of the key components of the ICs
- A description of features that should be evaluated during each periodic inspection and compliance period
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of an Excavation Work Plan (included as Appendix E) for the safe handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site
- Other provisions necessary to identify or establish methods for implementing the EC/ICs required by the Site remedy, as determined by the NYSDEC
- A description of the reporting requirements for these controls.

3.2 INSTITUTIONAL CONTROLS

A series of ICs is required by the ROD to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to industrial or commercial uses only, subject to local zoning laws. Adherence to these ICs on the site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries (coincidental with the Site boundary) are shown on Figure 1.2. These ICs are:

- The property may be used for: commercial or light industrial use

- All ECs must be operated and maintained as specified in this SMP

- All ECs must be inspected at a frequency and in a manner defined in the SMP

- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the New York State Department of Health or the Albany 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.

- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP

- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP

- Future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP

- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP

- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP

- 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 the Environmental Easement

- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 1.2, and any potential impacts that are identified must be monitored or mitigated

- Vegetable gardens and farming on the site are prohibited.

3.3 ENGINEERING CONTROLS

Engineering control systems at the Site include the clean fill cover, Site access controls, and Patroon Creek retaining wall. These systems are described in more detail below. Figure 1.2 shows the location of the ECs for the Site.

3.3.1 Engineering Control Systems

Clean Fill Cover

The Site is currently covered with one foot of clean fill to prevent exposure to subsurface contamination in soil.

Site Access Controls

Unauthorized access to the Site is restricted on three sides by chain link fencing with locked gates. The northeast side of the Site is bordered by Patroon Creek. Procedures for the inspection and maintenance of the fencing are provided in Section 4.0 of this SMP.

Patroon Creek Retaining Wall

Patroon Creek bounds the Site to the northeast. Site inspections will include inspection of the permanent retaining wall installed along 50 to 60 linear feet of the creek bank.

3.3.2 Other ECs

There are no other ECs that pertain to this Site.

3.3.3 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, the remedial processes will be considered to be completed when effectiveness monitoring indicates that the remedy has achieved the RAOs identified by the decision document. The specific determination of when the following remedial processes are complete will be made in compliance with Section 6.6 of NYSDEC DER-10 (NYSDEC, 2010).

Groundwater Monitoring

Groundwater monitoring activities will continue on an annual schedule, as determined by the NYSDEC, until residual groundwater concentrations are found to (1) reach levels that are consistently below the Site standards, criteria, and guidance values as appropriate; or (2) have become asymptotic to a low level over an extended period of time as accepted by the NYSDEC. This assessment will be based in part on post-remediation contaminant levels in groundwater collected from monitoring wells located throughout the Site. Systems will remain in place and operational until permission to discontinue their use is granted in writing by the NYSDEC.

4.0 MONITORING AND SAMPLING PLAN

4.1 GENERAL

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC.

The Monitoring and Sampling Plan describes the methods to be used for evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment. The Monitoring and Sampling Plan provides information regarding:

- Inspection of site cover and stream bank retaining wall
- Periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

The following subsections discuss specific activities that will be conducted to evaluate and monitor the condition of groundwater as well as more general field activities that will support the data collection. Figure 1.2 shows the environmental monitoring locations, locations of ECs, and other Site features. Table 4.1 summarizes the environmental sampling and analysis plan and sample collection rationale.

The long term monitoring (LTM) has been designed to evaluate if contaminants are migrating off-Site, to monitor long term trends in concentrations of contaminants, and to evaluate the effectiveness of the remedial actions.

The results of the inspection and Site monitoring data will be assessed as part of the EC/IC compliance to evaluate if:

- EC/ICs are in place, are performing properly, and remain effective
- the Monitoring Plan is being implemented
- operations and maintenance activities are being conducted

- the Site remedy continues to be protective of public health and the environment and is performing as designed.

4.2 SITE-WIDE INSPECTION

inspections of remedial components installed at the Site will be conducted every three years to evaluate and document the following:

- Site security – fencing, gates and Site access
- Condition of Site cover system and stream bank retaining wall

Inspections will be conducted using the Inspection Form included in Appendix F. The reporting requirements are outlined in Section 7.0.

Site-wide inspection elements and objectives are listed below.

4.2.1 Site Security

Visual observation and maintenance of the perimeter fence will be completed every three years to evaluate and document the conditions including:

- Breaches in the fence
- Condition of the gates and locks
- Vegetation growing on or near the fence that could cause damage (vegetation that can be removed with hand tools will be cut back during inspections).

4.2.2 Cover System and Stream Bank Retaining Wall

Visual observation of the site cover system and stream bank retaining wall will be conducted every three years, and maintenance will be performed as needed. Inspection will include observation and documentation of physical conditions, including:

- Unauthorized excavations in the site cover system
- Integrity of stream bank retaining wall

4.2.3 Groundwater Monitoring Wells

Visual observation of the monitoring wells will be conducted during three-year groundwater monitoring events, and maintenance will be performed as needed. Inspection will include observation and documentation of monitoring well condition including:

- Protective casing
- Well lock
- Concrete pad
- Well riser/cap

If an emergency, such as a natural disaster or an unforeseen failure of the ECs occurs, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the Site by a qualified environmental professional as determined by NYSDEC.

4.3 REMEDIAL SYSTEM MONITORING AND SAMPLING

Remedial system monitoring and sampling is not currently conducted at the Site.

4.4 POST-REMEDIATION MEDIA MONITORING AND SAMPLING

Sampling locations, required analytical parameters, and schedule are provided in Table 4.1 – Environmental Sampling and Analysis Plan. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Detailed sample collection and analytical procedures and protocols are to be provided in a Quality Assurance Program Plan (QAPP) approved by NYSDEC.

Sample protocols, collection methods, and sampling equipment for the various media are described in sections 4.4.1 through 4.4.4 below. General field activities, including health and safety and waste management, are described in section 4.5.

4.4.1 Soil Sampling

Soil sampling is not currently conducted at the Site. Soil sampling to evaluate remaining contamination in surface soil may be conducted at a later date, as directed by the NYSDEC.

4.4.2 Sediment Sampling

Sediment sampling is not currently conducted at the Site.

4.4.3 Groundwater Sampling

Groundwater monitoring will be performed every three years to monitor the contaminant concentrations in the vicinity of the Site, to monitor trends in concentrations of Site-related contaminants in groundwater, and to evaluate the effectiveness of the remedial actions. The performance of the remedy will be assessed using the following measures:

- Groundwater quality
- Changes in contaminant plume configuration
- Potential for migration off-Site.

Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The network of monitoring wells has been installed to monitor upgradient, on-Site and downgradient groundwater conditions at the Site. The network of on-Site and off-Site wells has been designed based on the sample rationale provided in Table 4.1.

The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

Groundwater Elevation Survey

A synoptic round of groundwater elevation measurements will be collected every three years during the groundwater sampling event and recorded for six groundwater monitoring wells located at and in the vicinity of the Site, to evaluate trends in groundwater levels. The locations of these wells are shown on Figure 1.2. Construction logs for these wells are provided in Appendix D.

Table 2.1 presents a summary of well details. Groundwater elevation measurements will be collected using procedures to be described in the QAPP. Groundwater elevation will be measured to the surveyed top of riser and referenced to the relative groundwater elevation survey performed in 2011. Groundwater levels will be measured to the nearest 0.01 feet, and recorded in the field book and/or field data records (FDRs). Example FDRs are presented in Appendix F. Results will be used to evaluate groundwater flow direction.

Monitoring Well Inventory and Repair

During the groundwater elevation survey and groundwater sampling activities, a monitoring well inspection (Appendix F) will be completed to document the condition and physical details of the monitoring wells. Recommendations to repair damages or deficiencies that are noted during the well inventory will be included in the LTM reports and the Periodic Review Report (PRR). Monitoring well logs are included as Appendix D.

Groundwater Sampling

Environmental groundwater sampling events will be conducted every three years to evaluate trends in contamination levels. Groundwater samples will be collected following low flow procedures from six groundwater monitoring well locations at and in the vicinity of the Site for target analyte list metals (see Table 4.1). Field measurements for pH, temperature, specific conductivity, oxidation reduction potential, dissolved oxygen, and turbidity will be recorded on FDRs (Appendix F). Sample collection methods are described in the QAPP (MACTEC, 2011). Sample results will be compared to class GA standards.

Groundwater Sampling Operations & Maintenance

If biofouling or silt accumulation occurs in the monitoring wells, they will be physically agitated/surged and redeveloped. The wells will be properly decommissioned and replaced if the wells become unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

Groundwater monitoring wells that are no longer functioning will be decommissioned or replaced on an as-needed basis. The NYSDEC will be notified prior to repair or decommissioning of groundwater monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent PRR. Well decommissioning without replacement will be conducted only with the prior approval of the NYSDEC. Well abandonment will be performed in accordance with the NYSDEC's Groundwater Monitoring Well Decommissioning Procedures. Groundwater monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

4.4.4 Soil Vapor Intrusion Sampling

Soil vapor intrusion monitoring is not currently conducted at the Site.

4.5 GENERAL FIELD ACTIVITIES

General field activities supporting data collection include those involving health and safety, decontamination, and investigation-derived waste disposal. Prior to implementing an inspection event, a field team orientation meeting will be held with involved personnel to familiarize field workers with Site history, health and safety requirements, and other methods and procedures.

4.5.1 Health and Safety

A Site-specific Health and Safety Plan (HASP) will be prepared by the party responsible for conducting the monitoring and sampling. SMP fieldwork will be conducted in Level D personal protection. Specific investigation activities and required level of personal protection will be documented in the HASP. Criteria for upgrading or downgrading the specified level of protection will be provided in the HASP. Should Site conditions pose a threat to those present on-Site, and/or should Site conditions warrant an upgrade from Level D, as defined by the HASP, work will stop and the situation will be reevaluated by the NYSDEC and the subcontractor performing the work.

4.5.2 Decontamination and Investigation Derived Wastes

No decontamination and investigation derived wastes are currently generated at the Site.

5.0 OPERATION AND MAINTENANCE PLAN

There are currently no treatment systems at the Site that require operation and maintenance.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 CLIMATE CHANGE VULNERABILITY ASSESSMENT

A climate change vulnerability assessment has not been conducted at the Site. Based on a review of Federal Emergency Management Administration flood insurance maps of the area, the Site is located in a 100-year flood zone (Appendix F). The Site approximately 30 feet above msl and is not located in a tidal area that would be expected to become permanently flooded as a result of sea level rise. An evaluation may be warranted to evaluate the Site's vulnerability to impacts of climate change, such as the risk of periodic flooding from storm events.

If a vulnerability assessment is deemed necessary, one will be performed during the periodic review and include, but not be limited to, a discussion of potential vulnerabilities to be assessed such as the following:

- Flood Plain: Identify whether the Site is located in a flood plain, low-lying or low-groundwater recharge area.
- Site Drainage and Storm Water Management: Identify areas of the Site which may flood during severe rain events due to insufficient groundwater recharge capabilities or inadequate storm water management systems.
- Erosion: Identify evidence of erosion at the Site or areas of the Site which may be susceptible to erosion during periods of severe rain events.
- High Wind: Identify areas of the Site and/or remedial system which may be susceptible to damage from the wind itself or falling objects, such as trees or utility structures during periods of high wind.
- Spill/Contaminant Release: Identify areas of the Site and/or remedial system which may be susceptible to a spill or other contaminant release due to storm-related damage caused by flooding, erosion, high winds, loss of power etc.

6.2 GREEN REMEDIATION EVALUATION

The remedy in place at the Site does not involve active remediation. Maintenance activities are limited to repairs as necessary. The inspection program generates little to no waste.

Methods utilized to reduce energy consumption, resource usage, waste generation, water usage, etc. will be described in the PRR.

6.2.1 Metrics and Reporting

Green remediation efforts will be reported in the PRR.

6.3 REMEDIAL SYSTEM OPTIMIZATION

A Remedial Site Optimization (RSO) study will be conducted if the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed
- Previously unidentified source material may be suspected
- A plume shift has potentially occurred
- Site conditions change due to development, change of use, change in groundwater use, etc.
- There is an anticipated transfer of Site management to another remedial party or agency
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of the Site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the Site's cleanup goals, gather additional performance or media-specific data and information, and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

7.0 REPORTING REQUIREMENTS

SMP reporting will consist of PRRs every three years. The PRR is described below.

The results of the inspection will be evaluated as part of the EC/IC compliance to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective
- The Site remedy continues to be protective of public health and the environment and is performing as designed.

7.1 SITE MANAGEMENT REPORT

SM inspection and maintenance events will be recorded on the appropriate SM forms provided in Appendix F. These forms are subject to NYSDEC revision.

Applicable inspection forms and other records generated for the Site during the reporting period will be provided to the NYSDEC in accordance with the requirements of Table 7.1, and summarized in the PRR.

Table 7.1: Schedule of Monitoring/Inspection Reports

Task/Report	Reporting Frequency
Periodic Review Report	Every Three Years

7.1.1 Periodic Review Reports

A PRR will be submitted to the NYSDEC every three years. The report will be prepared in accordance with NYSDEC DER-10 "Technical Guidance for Site Investigation and Remediation." The frequency of submittal of the report may be modified with the approval of the NYSDEC.

The PRR will include the following:

- Results of the required Site inspections and severe condition inspections, if applicable.
- Applicable SM forms and other records generated for the Site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- Identification, assessment and certification of ECs/ICs required by the remedy for the Site which includes the following:
    - The compliance of the remedy with the requirements of the Site-specific Remedial Action Work Plan, ROD or Decision Document
    - New conclusions or observations regarding Site contamination based on inspections
    - Recommendations regarding necessary changes to the remedy
    - The overall performance and effectiveness of the remedy.

Non-routine maintenance events will also be reported in the PRR and will include, at a minimum:

- Date of event
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities
- Description of non-routine activities performed
- Where appropriate, photographs or sketches showing the approximate location of problems or incidents (included either on the form or on an attached sheet)
- Other documentation as applicable.

7.1.2 Certification of Institutional and Engineering Controls

Every year, a NYS licensed Professional Engineer will prepare, and include in the PRR, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the Site, I certify that the following statements are true:*

- *The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction*
- *The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by the Department*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment*

- *Nothing has occurred that would constitute a violation or failure to comply with a Site management plan for this control*
- *Use of the Site is compliant with the environmental easement*
- *The engineering control systems are performing as designed and are effective*
- *To the best of my 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]*
- *The information presented in this report is accurate and complete.*

I certify that the 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."

7.2 CORRECTIVE MEASURES WORK PLAN

There is no Corrective Measures Work Plan for the Site at this time.

7.3 REMEDIAL SITE OPTIMIZATION REPORT

There is no RSO planned for the Site at this time.

8.0 REFERENCES

City of Albany, New York. 2017. Department of Planning and Development Online Zoning Map. http://www.arcgis.com/apps/View/index.html?appid=6b6450f72407456dadb0dcdc642d0401. Accessed June 20, 2017.

HRP Associates, Inc. 2012. Remedial Investigation Report, Former C & F Plating. August 2012.

HRP Associates, Inc. 2014. Feasibility Study, Former C & F Plating. Submitted November 2012; Revised February 2013 and February 2014.

MACTEC, 2011. Field Activities Plan & Quality Assurance Program Plan. Prepared for the New York State Department of Environmental Conservation, Albany, New York. June 2011.

New York State Department of Environmental Conservation (NYSDEC), 2017. Final Engineering Report, C and F Plating. March 2017.

NYSDEC, 2014. Record of Decision, C and F Plating State Superfund Project, Albany, Albany County, Site No. 401057. March 2014.

NYSDEC, 2010. DER-10, Technical Guidance for Site Investigation and Remediation. May 2010.

NYSDEC, 2006. Division of Environmental Remediation. 6 NYCRR Part 375, Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6. December 2006.

Precision Environmental Services (PES), Inc. 2016. ROD Implementation Report of Findings, C and F Plating Site. October 2016.

TABLES

Table 2.1: Well Detail Summary

Well ID	Measurement Point Elevation (TOR)[1] (feet)	Depth to BOW[2] (feet TOR)	8/13/2012 Depth to Groundwater (feet TOR)	8/13/2012 Groundwater Elevation (feet)
HRP-MW-6	28.67	16.9	9.54	38.21
HRP-MW-7	23.70	17.4	7.56	31.26
HRP-MW-8	22.95	18.8	7.61	30.56
HRP-MW-9	22.40	19.1	7.78	30.18
HRP-MW-10	21.78	24.7	8.41	30.19
HRP-MW-11	18.56	NA	13.14	31.70

Notes:

1) Measurment Point Elevation calculated from depth to groundwater measurements and groundwater elevations reported in the Remedial Investigation (RI) Report (HRP Associates, 2012). These elevations are based on a relative groundwater elevation survey performed in 2011 and 2012.

2) Depth to BOW measured during well construction in December 2011. Values are from monitoring well construction logs in the RI Report.

NA = Not available. Monitoring well construction log not provided in RI Report.

TOR = top of riser

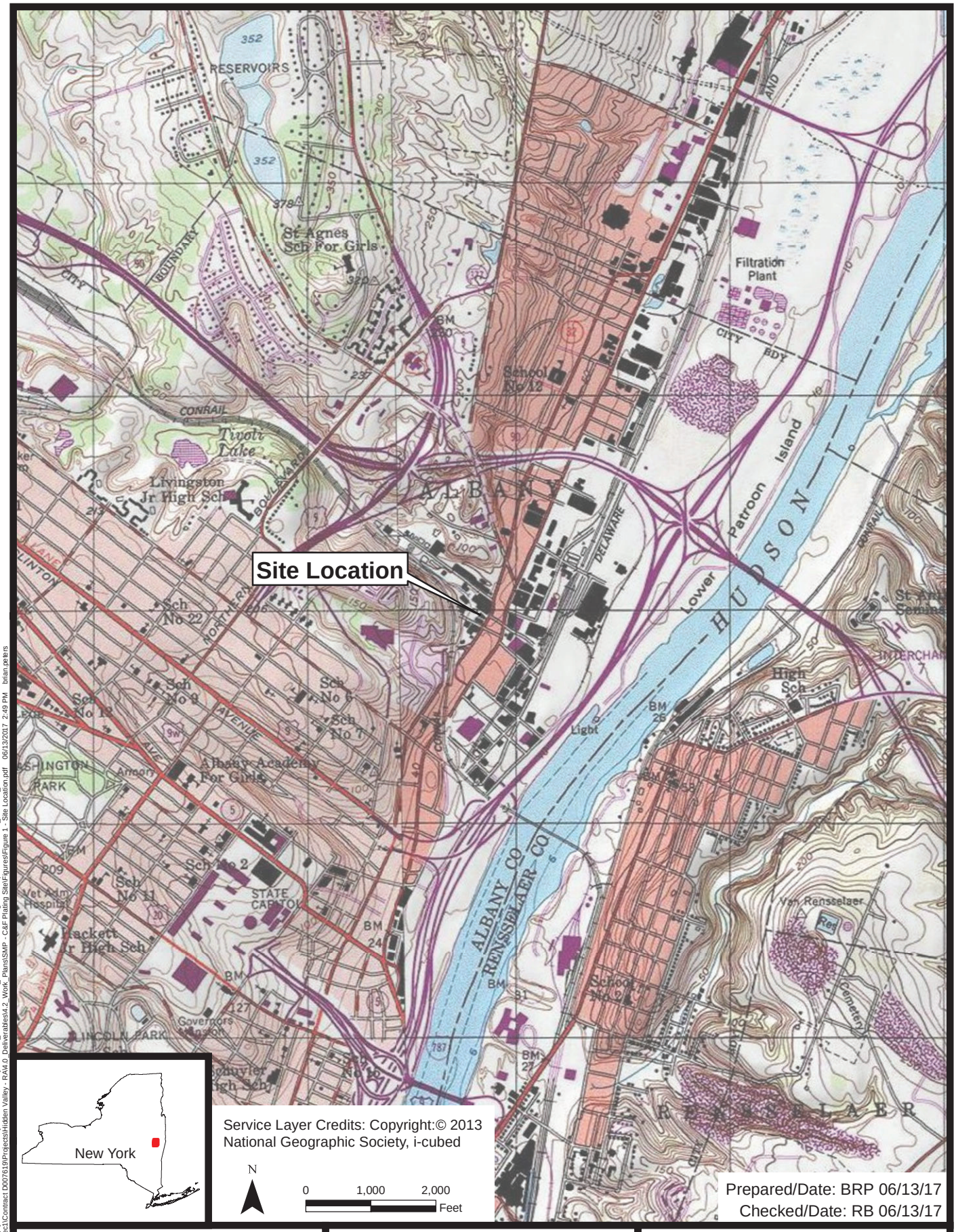
BOW = bottom of well

Table 4.1: Environmental Sampling and Analysis Plan

Groundwater Monitoring - Every 3 Years		Rationale
	TAL Metals 6010B	
HRP-MW-6	X	To evluate concentrations of Site related contaminants in upgradient off-Site groundwater
HRP-MW-7	X	To evluate concentrations of Site related contaminants upgradient of the former floor drain
HRP-MW-8	X	To evluate concentrations of Site related contaminants upgradient of the former floor drain
HRP-MW-9	X	To evluate concentrations of Site related contaminants upgradient of the former floor drain
HRP-MW-10	X	To evluate concentrations of Site related contaminants downgradient of the former floor drain
HRP-MW-11	X	To evluate concentrations of Site related contaminants downgradient of the former floor drain
Blanks		
Rinse Blank	X	Quality Control

Notes:
An 'X' marked in a column indicates the analysis to be performed for that sample location.
TAL = Target Analyte List
Total and dissolved metals will be analyzed

FIGURES



Prepared/Date: BRP 06/13/17
Checked/Date: RB 06/13/17

NYSDEC
C and F Plating
Albany, New York

MACTEC

Site Location Map

NYSDEC Site 401057 Figure 1.1

Document: P:\Projects\nystec1\Contract D007619\Projects\Hidden Valley - RA\4.0_Deliverables\4.5_Databases\C&F Plating GIS\MapDocuments\Site_Location_8.5x11P.mxd
PDF: P:\Projects\nystec1\Contract D007619\Projects\Hidden Valley - RA\4.0_Deliverables\4.2_Work_Plans\SMP - C&F Plating Site\Figures\Figure 1 - Site Location.pdf 06/13/2017 2:49 PM brian.peters

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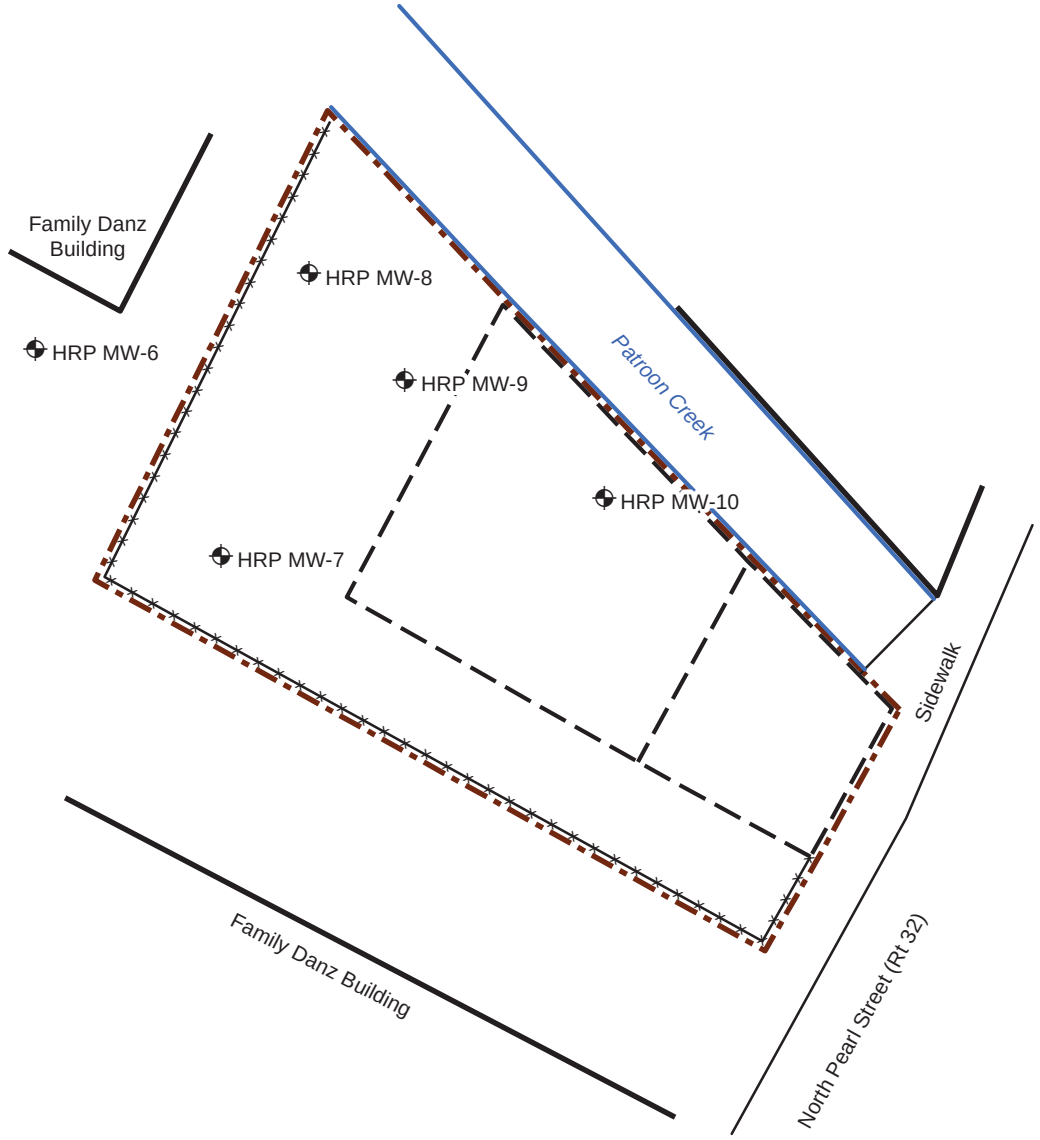
PDF: P:\Projects|nysdec1\Contract D007619\Projects\Hidden Valley - RA\4.0_Deliverables\4.2_Work_Plans\SMP - C&F Plating Site\Figures\Figure 1.2 - Site Features.pdf 06/21/2017 12:19 PM brian.peters



Legend

- Monitoring Well
- Creek
- Sidewalk
- Fence
- Building
- Former Building
- Approximate Site Boundary

N

0 20 40 Feet

Prepared/Date: BRP 06/15/17
Checked/Date: RB 06/15/17

NYSDEC
C and F Plating
Albany, New York

MACTEC

Site Features Map

NYSDEC Site 401057 Figure 1.2

APPENDIX A

RECORD OF DECISION

RECORD OF DECISION

C and F Plating
State Superfund Project
Albany, Albany County
Site No. 401057
March 2014

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - RECORD OF DECISION

C and F Plating
State Superfund Project
Albany, Albany County
Site No. 401057
March 2014

Statement of Purpose and Basis

This document presents the remedy for the C and F Plating site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the C and F Plating site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design
A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation:
A portion of the on-site building will be demolished and taken off-site for proper disposal to allow excavation and off-site disposal of contaminant source areas, including the floor drain area and the shallow soil behind the building. Soil will be excavated to meet Commercial SCOs to the extent feasible. Approximately 20 cubic yards of soil will be removed from the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

3. In-situ Treatment:
Soils below the groundwater interface will not be excavated, however they will be remediated with in-situ chemical reduction (ISCR). ISCR will be implemented to treat metals in soil and groundwater. Calcium polysulfide will be applied to the bottom of the excavated area to help create subsurface conditions that will cause metals to precipitate out and bind with soil particles rather than moving with groundwater. The byproducts of the ISCR process are non-toxic.

4. Cover System:
A site cover will be required to allow for commercial use of the site. The cover will consist either of the structures such as buildings, pavement, and sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. Institutional Control
Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the controlled property for commercial or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without approval and necessary water quality treatment as determined by the NYSDOH or County DOH; and
- requires compliance with the Department-approved Site Management Plan.

6. Site Management Plan

A Site Management Plan is required, which includes the following:
a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary

to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement and groundwater use restriction discussed above.

Engineering Controls: The cover system as discussed above.
This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and/or groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 24, 2014
Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

C and F Plating
Albany, Albany County
Site No. 401057
March 2014

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Albany Public Library
Attn: Librarian
616 North Pearl Street
Albany, NY 12204
Phone: (518) 463-1581

A public meeting was also conducted. At the meeting, the findings of the remedial investigation

(RI) and the feasibility study (FS) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:
The site is an approximately 0.34 acre parcel located at 406 North Pearl Street in the City of Albany, Albany County, New York. The site section/lot/block number for the City of Albany is 65.16-1-25. The site is located in a mixed commercial/industrial section of Albany, land use surrounding the site includes:

- North: Patroon Creek, then an industrial spring business;
- West: a heating and air conditioning company, then an industrial boiler tank and welding company;
- South: a commercial building, then Pleasant Street;
- East: North Pearl Street, then a health club.

Site Features:
The site consists of a generally flat lot with an approximately 6,600-square foot, vacant two-story brick building. The north portion of the building has partially fallen into Patroon Creek. The south side of the building formerly contained office space and the northern section contained warehousing/industrial space. The building is currently filled with debris and municipal waste. The surface of the site is asphalt, concrete, or gravel. The site and surrounding area is located at approximately 30 feet above mean sea level. Access to the site is restricted on three sides by fencing and a locked gate. Access to the site is restricted on the fourth side by Patroon Creek. While operational the site was serviced by municipal water and sewer systems.

Current Zoning and Land Use:
The site is zoned commercial/industrial, and is currently vacant. The surrounding parcels are currently used for a combination of commercial and light industrial uses.

Past Use of the Site:

Historically chrome plating work took place on the property from the 1920s or before, and continued until 1985. According to the 1892 Sanborn Fire Insurance Map for the City of Albany, the site was improved with the Littlefield Stove Company building. The boundary of the building perimeter extended well beyond the current site boundary of 406 North Pearl Street to the railroad tracks west of the site (present in 1892); the current boundary of the Former C and F Plating, heating and air conditioning company, and an industrial boiler tank and welding company buildings. According to the 1935 Sanborn Fire Insurance Map for the City of Albany, the site is improved with an auto repair garage, a machine shop and metal works shop, and front office and laboratory. According to the 1951 Sanborn Fire Insurance Map for the City of Albany, the site is improved with a roofing and sheet metal works shop, and front office. Since 1985, the facility has stored miscellaneous equipment and household items, resulting in an accumulation of debris on-site that was partially removed prior to the 2012 remedial investigation.

Remedial History

On June 27, 2003, the EPA conducted a Removal Site Evaluation (RSE) which included a limited inventory of over 40 containers and several vats. Labeling on these materials indicated the presence of strong acids and bases including containers of chromic acid, sodium hydroxide, and zinc solutions. An estimated 2,000 gallons of hazardous wastes were present throughout the building and were stored in an unsafe manner. The EPA conducted an emergency removal at the site between November 3, 2003 and July 20, 2004, effectively removing all waste materials stored in drums, canisters, and vats existing on the site.

A Limited Subsurface Investigation Report was completed in May 2008 under the Spills Program, (ref.PIN H0743). Six soil borings and five groundwater-monitoring wells were installed to varying depths at the subject site to investigate the subsurface. Eleven surface and six subsurface soil samples were collected as part of the site investigation. Soil screening and sampling took place during soil boring installation and sample collection procedures. To assess potential impacts to the Patroon Creek five sediment samples were obtained from the creek bottom.

The results of this investigation indicated elevated concentrations of metals in soil and groundwater on-site. Polychlorinated biphenyls (PCBs) were detected at concentrations less than residential soil cleanup objectives. PCBs were not detected in any groundwater samples, and no impact from the site was identified to the Patroon Creek sediments.

Site Geology/Hydrogeology:

The site is located within the Hudson Mohawk Lowland Physiographic Province. The overburden soils in the surrounding area have been characterized as lacustrine sand, which are composed of well sorted, stratified sand deposits, or lacustrine silt and clay, which are composed of generally laminated silt and clay (Cadwell et al, 1987). The bedrock geology identified in the vicinity of the property is the Normanskill Shale, which is of Middle Ordovician origin. Subsurface soils encountered at the site were generally composed of silty sand, silt, silty clay and some gravel. Groundwater is approximately 8 feet below grade and generally flows southeast toward the Patroon Creek.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the RI to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

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

The PRPs for the site, documented to date, include:

Nicholas Calantone

Floretta Calantone

Belius Bernabe

Mario LePore

The PRPs for the site declined to implement a remedial program when requested by the Department. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,

- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil
- sediment

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

CHROMIUM	ZINC
CADMIUM	LEAD
NICKEL	MERCURY
COPPER	BARIUM

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater

- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 01.

Nature and Extent of Contamination:

A Remedial Investigation of the site was conducted from September 2011 through July 2012.

Soils:
a.) Contaminants

Elevated concentrations of cadmium, chromium, copper, lead, mercury, zinc, barium and nickel were detected in surface and subsurface soil.

b.) Areal extent/depth

Elevated concentrations of the above listed metals occurred in on site surface soils on the northeast portion of the site behind and under the building. Elevated concentrations of these metals occurred in subsurface soils to a depth of primarily two to four-feet below ground surface (bgs) and ten to fifteen-feet bgs under the building. Sediment sampling results suggest that the creek sediments in the adjacent Patroon Creek have not been adversely impacted by site operations. The contaminants of concern do not appear to be contributing to off-site environmental impacts that require additional investigation or remedial action.

c.) Concentrations

Shallow Soil
Shallow soil sample results indicated concentrations of barium, copper, chromium, cadmium, lead, mercury, nickel, silver, zinc above the 6NYCRR Part 375 unrestricted soil cleanup objectives (USCOs). Barium, chromium, copper, cadmium, lead, and nickel also exceeded the commercial soil cleanup objectives (CSCOs). Cadmium was detected in one sample just behind

the building at 5,140 ppm, above the industrial soil cleanup objective (ISCO) of 60 ppm, and lead was detected in a shallow soil sample near the floor drain inside the building at 9,850 ppm, above the ISCO of 3,900 ppm. Copper was detected in two of the three shallow samples exceeded the CSCO of 270 ppm at concentrations up to 1,910 ppm. Nickel was detected at concentrations above CSCOs of 310 ppm in three of the three shallow samples at concentrations up to 4,290 ppm.

Subsurface Soil
Cadmium was detected at concentrations greater than the corresponding Part 375 CSCO level of 9.3 ppm in eight out of the twenty-two subsurface soil samples at concentrations up to 3,500 ppm. None of the subsurface samples exceeded the total chromium CSCO of 1,900 ppm, however nine of the twenty-two subsurface samples exceeded the USCO of 31 ppm, with concentrations up to 520 ppm. Copper was not detected at concentrations above CSCO of 270 ppm. Lead was detected at a concentration above CSCO of 1,000 ppm in one subsurface sample at a concentration of 1540 ppm. Mercury was not detected at concentrations above CSCO in any subsurface samples. Two of the twenty-two subsurface samples exceeded the CSCO for nickel of 310 ppm at concentrations up to 627 ppm.

Groundwater:
Analytical results from the groundwater sampling indicate direct impacts from past site operations. VOCs and SVOCs were not detected in groundwater samples above the NYSDEC groundwater standard as defined in 6 NYCRR Part 703. Several metals were detected at concentrations above NYSDEC groundwater standards. The primary contaminant of concern found above groundwater standards was cadmium. Cadmium was detected at 148 ppb, above the groundwater standard of 5 ppb. No off-site impacts to groundwater were detected.

Soil Vapor:
Since volatile organic compounds were not detected in soil or groundwater samples at this site, soil vapor sampling was not necessary.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Public access to the site is restricted by fencing on three sides of the site and Patroon Creek on the fourth side. However, persons who enter the site could contact contaminants in the soil by walking on the soil, digging, or otherwise disturbing the soil. Contaminated groundwater at the site is not used for drinking or other purposes, and the site is served by a public water supply that obtains water from a different source not affected by this contamination.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to

pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

RAOs for Environmental Protection

- Remove the source of ground 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.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the feasibility study (FS) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as the partial excavation/building removal and in-situ treatment remedy.

The estimated present worth cost to implement the remedy is $314,000. The cost to construct the remedy is estimated to be $270,000 and the estimated average annual cost is $4,500.

The elements of the selected remedy are as follows:

1. Remedial Design
A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation:
A portion of the on-site building will be demolished and taken off-site for proper disposal to allow excavation and off-site disposal of contaminant source areas, including the floor drain area and the shallow soil behind the building. Soil will be excavated to meet Commercial SCOs to the extent feasible. Approximately 20 cubic yards of soil will be removed from the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

3. In-situ Treatment:
Soils below the groundwater interface will not be excavated, however they will be remediated with in-situ chemical reduction (ISCR). ISCR will be implemented to treat metals in soil and groundwater. Calcium polysulfide will be applied to the bottom of the excavated area to help create subsurface conditions that will cause metals to precipitate out and bind with soil particles rather than moving with groundwater. The byproducts of the ISCR process are non-toxic.

4. Cover System:
A site cover will be required to allow for commercial use of the site. The cover will consist either of the structures such as buildings, pavement, and sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for

commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allows the use and development of the controlled property for commercial or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without approval and necessary water quality treatment as determined by the NYSDOH or County DOH; and
- requires compliance with the Department-approved Site Management Plan.

6. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement and groundwater use restriction discussed above.

Engineering Controls: The cover system as discussed above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and/or groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories; volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and inorganics (metals, mercury, and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting soil.

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium.

Waste and source areas were identified at the site, primarily within the structure on-site. Fifty-five-gallon drums were previously removed from the site and had negatively impacted the site. The floor drain located in the building is also associated with former site operations and source areas. Figure 2 shows the site plan with sample locations. As noted on Figure 5, left unremediated, metals contamination would be able to migrate in the subsurface from the floor drain, soils below the floor drain, and the shallow soil in former drum storage area to Patroon Creek.

The waste/source areas identified will be addressed in the remedy selection process.

Groundwater

Monitoring wells were installed to monitor the overburden groundwater quality surrounding the Former C&F Plating site. Groundwater samples have been collected from wells on and off the site since the beginning of investigations with the most recent sampling in May of 2012. The samples were collected to assess groundwater conditions on and off-site. Results from the sampling are presented in Table 1.

Groundwater sample results indicate that contamination in groundwater at the site does not exceed the SCGs for VOCs, SVOCs, PCBs, mercury, or total cyanide. Contaminant levels in overburden groundwater exceeded the guidance values for metals. There are no known private potable wells in the immediate vicinity of the Site.

Concentrations have decreased over time and are below the groundwater quality standards, with the exception of metals. Unremediated source soils and continued surface flow through the floor drain allow increased infiltration to mobilize the metals that could compromise groundwater quality.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected	SCG[b] (ppb)[a]	Frequency Exceeding SCG
VOCs			
Non Detect	Non Detect	Non Detect	0/7
SVOCs			
2-Pentanone, 4-hydroxy-4-methyl	Non Detect – 7.2	Not Established	0/7
Inorganics			
Total Aluminum	26.6 –143	100	1/7
Antimony	Non Detect –8.38	3	1/7
Arsenic	Non Detect –17.2	25	0/7
Barium	93.7 – 400	1,000	0/7
Cadmium	Non Detect –148	5	2/7
Calcium	106,000 – 146,000	Not Established	0/7
Total Chromium	Non Detect –46.9	50	0/7
Copper	Non Detect –.55	200	0/7
Total Cyanide	3 – 153	200	0/7
Iron	123. – 12,600	300	6/7
Lead	Non Detect – 3.82	25	0/7
Magnesium	19200 – 36,300	35,000	2/7
Manganese	457 – 1,610	300	7/7
Mercury	Non Detect –.165	0.7	0/7
Nickel	Non Detect –19.3	100	0/7
Total Potassium	3,290 – 84,300	Not Established	0/7
Silver	Non Detect –2.39	50	0/7
Total Sodium	35,900 – 375,000	20,000	7/7
Zinc	Non Detect –31.5	2000	0/7
Pesticides/PCBs			
Total PCBs	Non Detect	Non Detect	0/3

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

As noted on Figure 3, the primary groundwater contaminants are inorganics including aluminum, antimony, cadmium, iron, magnesium, manganese and sodium. Of these contaminants only cadmium is associated with the former Site operations at C&F Plating.

Based on the findings of the RI, the presence of inorganics (metals) has resulted in the contamination of groundwater. The Site contaminant that is considered to be the primary contaminant of concern which will drive the remediation of groundwater to be addressed by the remedy selection process is cadmium.

Soil

Samples of soils were collected during various environmental investigations with the latest sampling being conducted during the RI. During the RI, 22 soil borings and 3 shallow (0-6") locations were sampled. Sampling depths extended from 0 to 15 feet however, most samples were collected from near the surface or from the groundwater interface (approximately 8 feet bgs). From these sampling locations, 5 subsurface soil samples were analyzed for VOCs and SVOCs. Metals, including mercury were analyzed from the 22 subsurface samples and three surface samples. Two samples were analyzed using the Toxicity Characteristic Leaching Procedure (TCLP), a test method used to characterize waste as either hazardous or non-hazardous for the purpose of disposal.

VOCs and SVOCs were not observed to exceed unrestricted SCOs(USCOs) in any soil samples. Elevated metals were found within the facility plating operation area at the Former C&F Plating Facility (see Table 2).

Shallow soils:
Of the 3 shallow soil samples, nine metals had concentrations exceeding the USCOs. All 3 shallow soil samples exceeded the cadmium, total chromium, lead, mercury, nickel, and zinc USCO. Copper exceeded the USCO in 2 of 3 samples. Barium and silver exceeded the USCO in 1 of three samples, the sample from the floor drain area.

When compared to the commercial SCO(CSCO), six metals in the shallow samples exceed the CSCO. Of the nine metals found, cadmium exceeded the Industrial SCO of 60 ppm in all three shallow samples, with concentrations ranging from 255 ppm to 5,140 ppm.

Subsurface soils:
A total of 22 subsurface soil samples were analyzed for metals. As expected, widespread areas are impacted with cadmium, chromium, copper, lead, mercury, nickel, and zinc, attributed to site operations and historic fill. Of the 22 samples, fifteen samples had metals concentrations exceeding the USCOs. Of the 22 samples taken, the USCO for cadmium was exceeded in 12 samples, the chromium USCO was exceeded in 9, the copper USCO was exceeded in 6, the lead USCO was exceeded in 1, the nickel USCO was exceeded in 7, and the zinc USCO was exceeded in 5. The aforementioned metals were mostly associated within the on-site areas adjacent to the Patroon Creek, and from soils under the building.

Cadmium, nickel, and lead exceeded the CSCO in subsurface soil samples. Of the three metals cadmium exceeded the SCO in 8 of the 22 samples, nickel exceeded in 3 of 22 samples, and lead in 1 of the 22 samples.

Two soil samples were analyzed for TCLP. The TCLP analysis is designed to simulate the leaching a waste will undergo if disposed of in a sanitary landfill. When hazardous wastes are land disposed, contaminated liquid may leach from the waste and pollute ground water. Only one sample exceeded the TCLP regulatory level of 1.0 mg/l for cadmium. This sample was collected from surface soil in the floor drain area.

Table 2 – Soil (Surface &Shallow)

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Commercial Use SCG[c] (ppm)	Frequency Exceeding Commercial Use SCG SCG
VOCs					
Acetone	Non-Detect – 14	50	0/5	100,000	0/5
Ethyl Acetate	2.9 -94	Not Established	0/5	Not Established	0/5
SVOCs					
Dimethylphthalate	Non Detect- 530	Non Detect	0/5	Non Detect	0/5
Fluoranthene	Non Detect- 180	100,000	0/5	100,000	0/5
Pyrene	Non Detect- 170	100,000	0/5	100,000	0/5
Inorganics					
Total Aluminum	2,980 – 13,000	Not Established	0/25	Not Established	0/25
Arsenic	0.945 – 12	13	0/25	16	0/25
Barium	14.4 – 1,240	350	2/25	400	2/25
Beryllium	0.21 – 0.995	7.2	0/25	590	0/25
Cadmium	Non Detect – 5,140	2.5	15/25	9.3	11/25
Calcium	1,370 – 23,300	Not Established	0/25	Not Established	0/25
Total Chromium	5.54 – 4,150	30	12/25	1,500	1/25
Cobalt	2.65 – 14.5	Not Established	0/25	Not Established	0/25
Copper	7.65 – 1,910	50	8/25	270	7/25
Total Cyanide	Non-Detect – 9.07	27	0/25	27	0/25
Iron	6,990 – 86,700	Not Established	0/25	Not Established	0/25
Lead	3.98 – 9,850	63	4/25	1,000	3/25
Magnesium	1,440 – 9,150	Not Established	0/25	Not Established	0/25
Manganese	50.8 – 1,110	1,600	0/12	10,000	0/25
Mercury	0.016 –0.944	0.18	4/25	2.8	0/12
Nickel	4.53 – 4,290	30	10/25	310	6/25
Total Potassium	Non Detect-2,310	Not Established	0/25	11,500	0/25
Selenium	Non-Detect – 1.33	3.9	0/25	1,500	0/25
Silver	Non-Detect-22.9	2	3/25	1,500	0/25
Total Sodium	Non-Detect – 2,790	Not Established	0/25	Not Established	0/25
Thallium	Non-Detect –0.43	Not Established	0/25	Not Established	0/25
Vanadium	Non-Detect – 44.5	Not Established	0/25	Not Established	0/25
Zinc	21.4-2,250	109	7/25	10,000	0/25

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.

The primary soil contaminants are metals (specifically, cadmium, nickel and lead) associated with operation of the former plating operations at the C&F Plating. As noted on Figure 4 and Figure 5, the primary soil contamination is associated with the floor drain, the former drum storage area, and the area adjacent to Patroon

Creek. Decades of operations at the former C&F Plating facility has resulted in metals soil contamination above the USCOs as well as the CSCOs.

Based on the findings of the Remedial Investigation, the presence of metals has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are cadmium, nickel, and lead.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the Site as described in Exhibit A.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment. The "No Action" Alternative would not involve any surface soil, subsurface soil, or groundwater, remedial activity. In addition, the "No Action" alternative would not place any institutional or engineering controls on the site property, such as future land use restrictions, groundwater use limitations, and/or application of protective soil cover/barrier. However, the No Action Alternative would include the abandonment of the on-site monitoring wells according to NYSDEC guidance documents, including removal of screens and risers when possible and backfilling with a bentonite slurry.

Present Worth: $20,000
Capital Cost:.....$20,000
Annual Costs (Years 0-30): $0

Alternative 2: Site Management

The Site Management Alternative requires only institutional controls for the site. This alternative includes institutional controls, in the form of an environmental easement and a site management plan, necessary to protect public health and the environment from any contamination identified at the site.

Present Worth: $25,000
Capital Cost:.....$25,000
Annual Costs (Years 0-30): $0

Alternative 3: Excavation with Building Removal

This alternative would include returning the site to Part 375 unrestricted SCOs by excavating and removing all historic fill and contaminated soils above unrestricted soil clean up values or with unacceptable nuisance characteristics (i.e. soil staining, odor, etc.) from the site for proper disposal off-site. This remedial alternative would generally consist of excavation to varying depths, between fifteen (15) and twenty (20) feet below grade, in the area of the floor drain and immediately north and south and the area of HRP-SB-4 and the subsequent disposal of fill materials and contaminated soil. Prior to any excavation activities, the current building (assumed to contain asbestos) would have to be evaluated for stability or the building may have to be demolished, and any on-site foundation slabs would be broken up and disposed of for access to underlying soils. The portion of the building required to be removed prior to on-site work can occur will be stabilized with ridged spray foam prior to removal to firm up the walls to limit the material that potentially could fall in Patroon Creek. If contaminated groundwater was encountered during excavation (expected), the groundwater would need to be pumped from the excavated areas and properly disposed of off-site or

treated on-site. Approximately 2,000 tons of soil would be removed. The contaminated soil and historic fill materials would be properly disposed of and transported to an approved off-site disposal facility, or off-site incinerator to destroy any combustible compounds. Clean off-site backfill would be used to restore the excavation to the original grade. The backfill must be below unrestricted SCOs and meet DER-10 fill requirements.

The excavation and removal of soil that exceeded hazardous levels for TCLP metals in soil would be sent to an off-site permitted facility for proper disposal. Non-hazardous soils will be excavated and disposed at an approved disposal facility.

In addition, this alternative would include the institutional controls described in alternative 2 and abandonment of the onsite monitoring wells according to NYSDEC guidance documents, including removal of screens and risers when possible and backfilling with a bentonite slurry.

Present Worth: $712,405
Capital Cost:.....$712,405
Annual Costs (Years 0-30): $0

Alternative 4: Solidification/Stabilization with Portland Cement and Building Removal

This NYSDEC presumptive/ proven remedial technology for metals contamination in soil would include returning the site to clean condition by solidification/ stabilization (S/S). This remedial alternative would consist of excavation to varying depths, between fifteen (15) and twenty (20) feet below grade, in the area of the floor drain and immediately north and south of HRP-SB-4 and the subsequent disposal of fill materials and contaminated soil. Prior to any solidification/ stabilization (S/S) excavation activities, the current building (assumed to contain asbestos) would have to be evaluated for stability and a potion or all of the building may have to be demolished, and any on-site foundation slabs would be broken up and disposed of for access to underlying soils. The portion of the building required to be removed prior to on-site work can occur will be stabilized with ridged spray foam prior to removal to firm up the walls to limit the material that potentially could fall in Patroon Creek. The dilapidated condition of the building is necessitating the completion of a building demolition survey prior to any additional work occurring inside of the building. Based on the close proximity of the Patroon Creek and the instability of the building and building foundation in relation to the creek culvert and surrounding soils, temporary installation of sheet piling and sand bags will be required to ensure that the creek remains in its banks and does not flood the site. Approximately 80 linear feet of sheetpiling will be driven to a depth determined by a NYS licensed structural engineer to be adequate to ensure removal of the contaminated soils adjacent to the creek culvert. The location of the sheetpiling may limit the extent of the remediation adjacent to the creek.

S/S treatment of waste involves mixing cement into contaminated media or waste to immobilize contaminants within the treated material. By mixing portland cement into a waste containing free liquids, the waste gains physical integrity or becomes more solid. The chemical properties of hydrating portland cement are used to lower the solubility of toxic contaminants in the waste and is some cases, to also lower the toxicity of a hazardous constituents.

S/S treatment technology contributes to "Green Remediation" and the sustainable development of a contaminated property. While immobilizing hazardous constituents, the technology can also improve the

construction properties of the treated materials, enabling reuse. The technology can also alleviate the concerns of surrounding communities that are often associated with the off-site transportation and disposal of contaminated materials. Finally, the technology contributes to the conservation of landfill capacity, replacement fill, and fuel used in transportation with the associated air pollutants and green house gases.

In addition, this alternative would include the institutional controls described in alternative 2 and abandonment of the on-site monitoring wells according to NYSDEC guidance documents, including removal of screens and risers when possible and backfilling with a bentonite slurry.

Present Worth: $440,000
Capital Cost:.....$423,000
Annual Costs (Years 0-30): $500

Alternative No. 5: Floor Drain Excavation with Building Removal and Calcium Polysulfide Application

This alternative would include returning the site to Part 375 Commercial SCOs by excavating the floor drain area and the area immediately north and south of HRP-SB-4 and removing associated contaminated soils above commercial soil clean up values from the site for proper disposal off-site. Prior to any excavation activities, the current building (assumed to contain asbestos) would have to be evaluated for stability and a portion or all of the building may have to be demolished, and any on-site foundation slabs would be broken up and disposed of for access to underlying soils. The portion of the building required to be removed prior to on-site work can occur will be stabilized with ridged spray foam prior to removal to firm up the walls to limit the material that falls in Patroon Creek. This remedial alternative would generally consist of excavation to approximately five (5) feet below grade or to the groundwater interface, in the area of the floor drain and immediately north and south of HRP-SB-4 and the subsequent disposal of fill materials and contaminated soil. Soils below the groundwater interface will not be excavated, however they will be remediated with in-situ geochemical fixation. The purpose of this alternative would be to return the floor drain area to predisposal conditions. Long-term monitoring would be needed to monitor groundwater quality.

In addition to the excavation, calcium polysulfide (CPS) will be applied to bottom of the excavation(s) prior to backfilling the excavation. The CPS will be applied to the excavation in a slurry form (CPS and water) as instructed by the manufacture. The CPS will help to remediate non-hazardous subsurface soils that were not excavated and also reduce metals contamination in the groundwater.

Long term groundwater monitoring may be needed. In order to achieve RAO's, groundwater monitoring for two to five years is recommended. In addition, this alternative would include the institutional controls described in alternative 2.

Present Worth: $314,000
Capital Cost:.....$270,000
Annual Costs (Years 0-30): $4,500

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
Alt. 1 - No Action	20,000	0	20,000
Alt. 2 - Site Management	25,000	0	25,000
Alt. 3 - Excavation with Building Removal	712,405	0	712,405
Alt. No. 4 - Solidification/Stabilization with Portland Cement and Building Removal	423,000	500	440,000
Alt. 5 - Floor Drain Excavation with Building Removal and Calcium Polysulfide Application	270,000	4,500	314,000

Exhibit D

SUMMARY OF THE SELECTED REMEDY

The Department is selecting Alternative No. 5- Floor Drain Excavation with Building Removal with Calcium Polysulfide Application to reach the remediation goals as the remedy for this site. Alternative 5 was found to be protective of human health and the environment to Part 375 commercial SCOs, fulfills the RAO's, and eliminates potential exposure to contaminants in the surface soil on-site. The elements of this remedy are described in Section 7. The selected remedy is depicted in Figure 6.

Basis for Selection

The selected remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Alternatives 3, 4 and 5 would satisfy this criterion by removing contaminated surface soil. Because the surface contamination would be removed from the site and access to the subsurface is limited, these alternatives are protective of public health.

Alternatives 3, 4 and 5 would each address the source of the soil contamination, which is the most significant threat to the environment. In addition, Alternative 5 would address groundwater contamination, providing additional protection of the environment. Alternative 1 (No Action) does not provide any additional protection to public health and the environment and will not be evaluated further. Alternative 2 Site Management provides protection to public health and the environment through limiting site use and groundwater use and will not be evaluated further. Alternatives 3 and 4 also comply with this criterion but to a lesser degree or with lower certainty. Use of groundwater in the area of the site is not expected at this time based on the availability of municipal water.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 5 complies with SCGs to the greatest extent practicable. It addresses source areas of contamination and complies with the restricted use soil cleanup objectives in shallow soils through removal of contaminated soils and the application of Calcium Polysulfide to address potential remaining soil contamination. It also creates the conditions necessary to restore groundwater quality to the extent practicable. Alternatives 3 and 4 also comply with this criterion but to a lesser degree or with lower certainty.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the

remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated overburden soils (Alternatives 3 and 5). Since most of the contamination is in the floor drain area, Alternative 3 results in removal of almost all of the chemical contamination at the site and removes the need for property use restrictions and long-term monitoring. Alternative 5 would result in the removal of the contaminated soil at the site, but it also requires an environmental easement and long-term monitoring. Alternative 4 also requires an environmental easement and long-term monitoring but the contaminated soil would remain solidified/stabilized onsite.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 5 will significantly decrease the toxicity and mobility of the contaminants in the surface and shallow subsurface soils; however this alternative will only moderately decrease the toxicity and mobility of the contaminants in the deeper subsurface soils and groundwater. The contaminants would be removed in the specific areas where the levels have been historically highest. In-situ geochemical fixation though injection of calcium polysulfide has been proven effective in stabilizing heavy metals, cadmium included, in contaminated soils and groundwater. Cadmium is precipitated out in the chemical precipitation from the pH range of 5-9 standard units. Alternative 3, excavation and off-site disposal, reduces the toxicity and mobility of on-site waste by transferring the material to an approved off-site location. However, Alternative 3 does not address soil contamination in areas not excavated. Alternative 4 reduces the mobility of the contaminants through the solidification and stabilization of contaminated soil which could have future structural impacts on the site and limit on-site redevelopment. Only Alternative 5 would permanently reduce the toxicity and mobility of contaminants by use of excavation and chemical treatment.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives. Alternative 5 will provide significant benefits in the short term, notably the removal of contaminated shallow soils and treatment of deeper soils and groundwater that would aid in the further reduction of the already shrinking groundwater plume. Potential human exposure, adverse local impacts and nuisance conditions at the site resulting from implementation of this alternative are anticipated to be for a period of several weeks. Alternatives 3 and 4 would have similar short term benefits through the removal of shallow soils, but would have much longer implementation times than alternative 5, causing longer periods of local truck traffic/nuisance conditions at the site. The duration for the implementation of alternative 3 would be approximately 6 weeks and the duration for implementation of alternative 4 approximately 2 weeks initially and 5 years for groundwater monitoring.

The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives. Alternatives 3, 4 and 5 all have short-term impacts which could easily be controlled. The time

needed to achieve the remediation goals is very similar for Alternatives 3, 4, and 5.

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

Alternatives 3, 4 and 5 will require that a structural building survey be completed by a licensed professional engineer to be completed prior to implementing this alternative to ensure that working in the building is safe to work in. Alternative 3, 4 and 5 are easily implementable through the demolition of the back portion of the building, and use of available contractors under the supervision and oversight of qualified field personnel to excavate and dispose of contaminated shallow soils and apply the CPS.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The costs of the alternatives vary significantly. Alternatives 3, 4 and 5 require the back portion of the building to be removed prior to any intrusive site work occurring. Alternatives 3 and 4 would have the highest present worth cost. Alternative 5 would be much less expensive than Alternatives 3 and 4, yet would provide equal source removal and protection of the groundwater resource. Therefore, Alternative 5 is the most cost-effective of these three alternatives.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

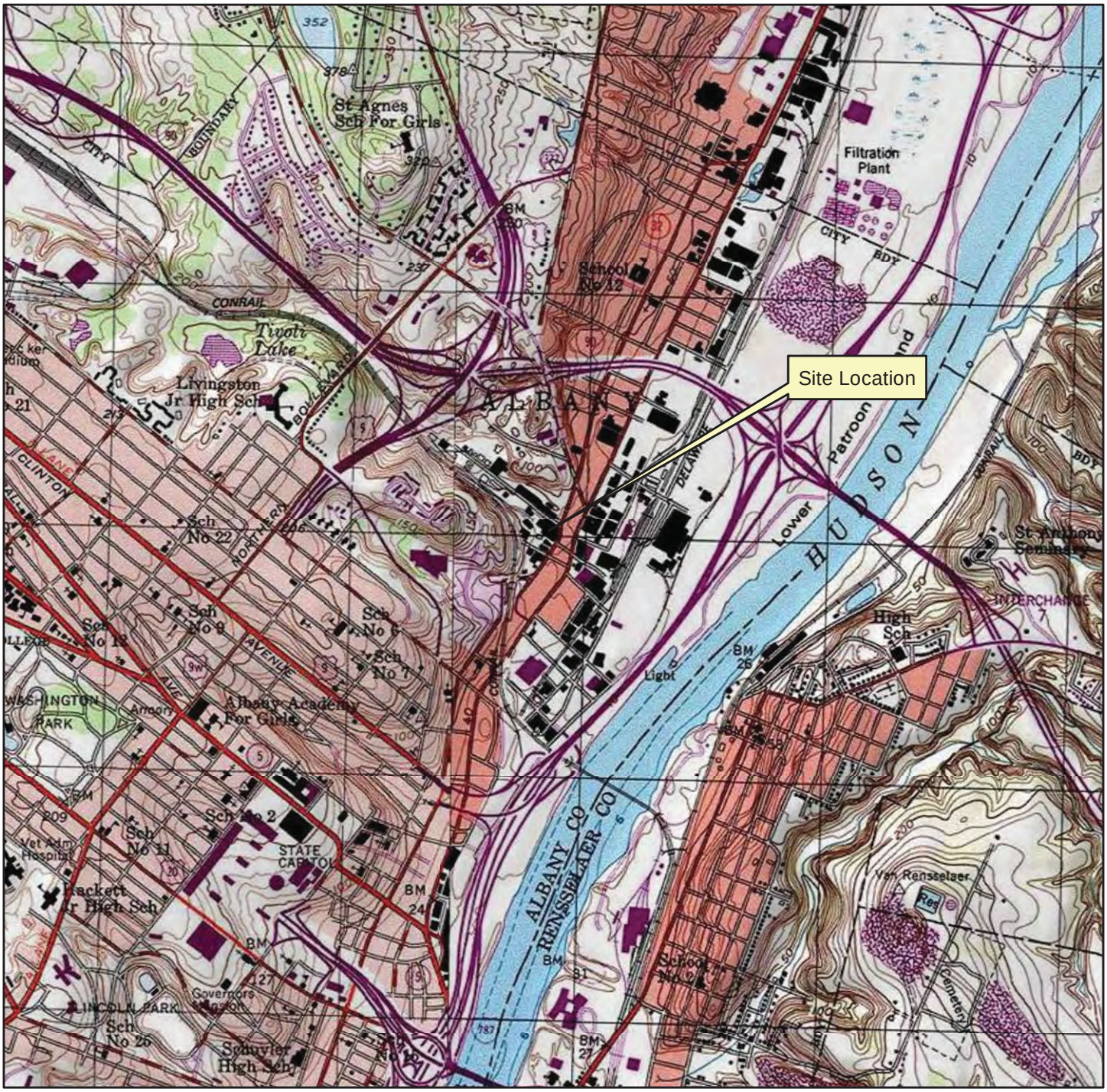
The current building would have to be demolished, however once the work was completed, commercial use of the site with limitation on accessing the subsurface and use of groundwater would be possible. The future land use under this alternative would be consistent with current zoning and surrounding land use.

Alternatives 3, 4 and 5 would remove or treat the contaminated soil permanently. However, the additional cost associated with Alternatives 3 and 4 and the potential of contaminated soil not accessible during excavation to remain onsite would be controllable with implementation of a Site Management Plan.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 5 has been selected because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion. Alternative 5 was found to be protective of human health and the environment, meets to Part 375 CSCOs, fulfills the RAO's, and eliminates potential exposure to contaminants in the surface soil on-site and minimizes the potential for exposures to subsurface contamination.



0 1,000 2,000 4,000 6,000 8,000

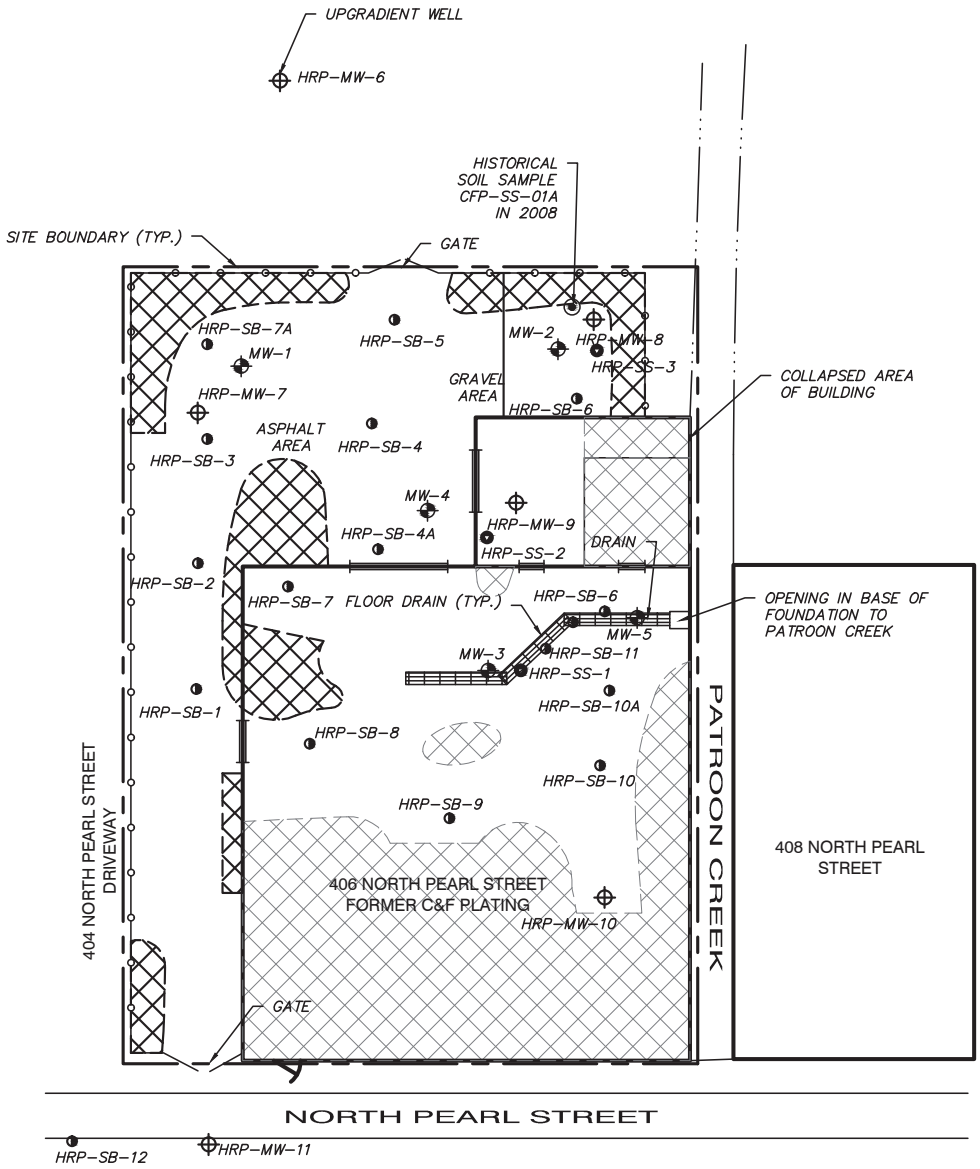
Feet

1 inch = 2,000 feet

USGS Quad ID: 42073-F7
Quad Name: Albany, New York
Publish Date: 1983

N

Figure 1
Site Location
CF Plating Facility
406 North Pearl Street
Albany, New York
Scale 1"=2,000'



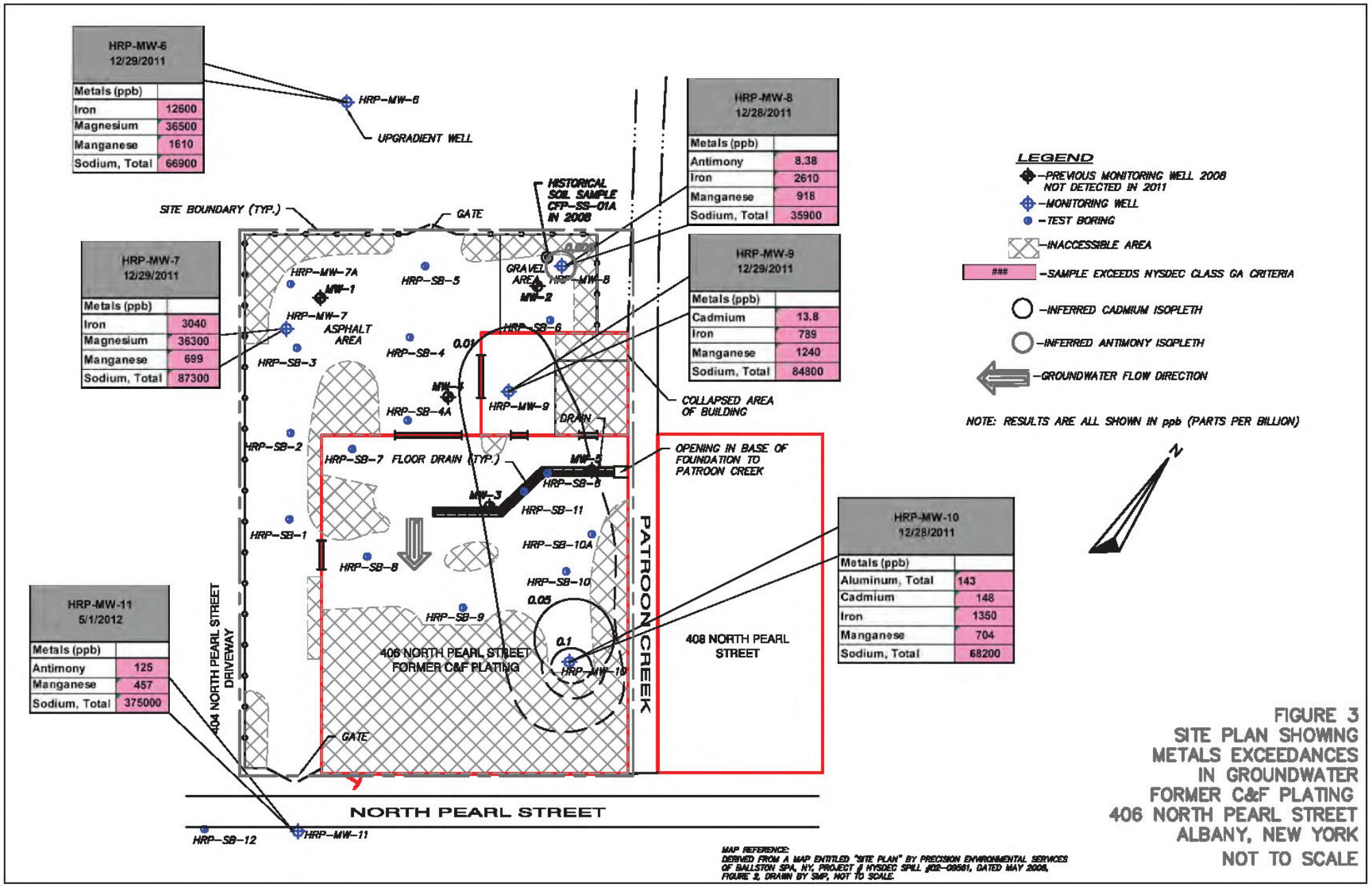
LEGEND

- PREVIOUS MONITORING WELL 2008 NOT DETECTED IN 2011
- SURFACE SOIL SAMPLE LOCATION
- MONITORING WELL
- TEST BORING
- INACCESSIBLE AREA
- FORMERLY INACCESSIBLE AREA

N

MAP REFERENCE:
DERIVED FROM A MAP ENTITLED "SITE PLAN" BY PRECISION ENVIRONMENTAL SERVICES OF BALLSTON SPA, NY, PROJECT # NYSDEC SPILL #02-09561, DATED MAY 2008, FIGURE 2, DRAWN BY SMP, NOT TO SCALE.

FIGURE 2
SITE PLAN
FORMER C&F PLATING
406 NORTH PEARL STREET
ALBANY, NEW YORK
NOT TO SCALE



MAP REFERENCE:
DERIVED FROM A MAP ENTITLED "SITE PLAN" BY PRECISION ENVIRONMENTAL SERVICES OF BALLSTON SPA, NY, PROJECT # NYSDEC SPILL #02-08561, DATED MAY 2008, FIGURE 2, DRAWN BY SMP, NOT TO SCALE.

FIGURE 3
SITE PLAN SHOWING
METALS EXCEEDANCES
IN GROUNDWATER
FORMER C&F PLATING
406 NORTH PEARL STREET
ALBANY, NEW YORK
NOT TO SCALE

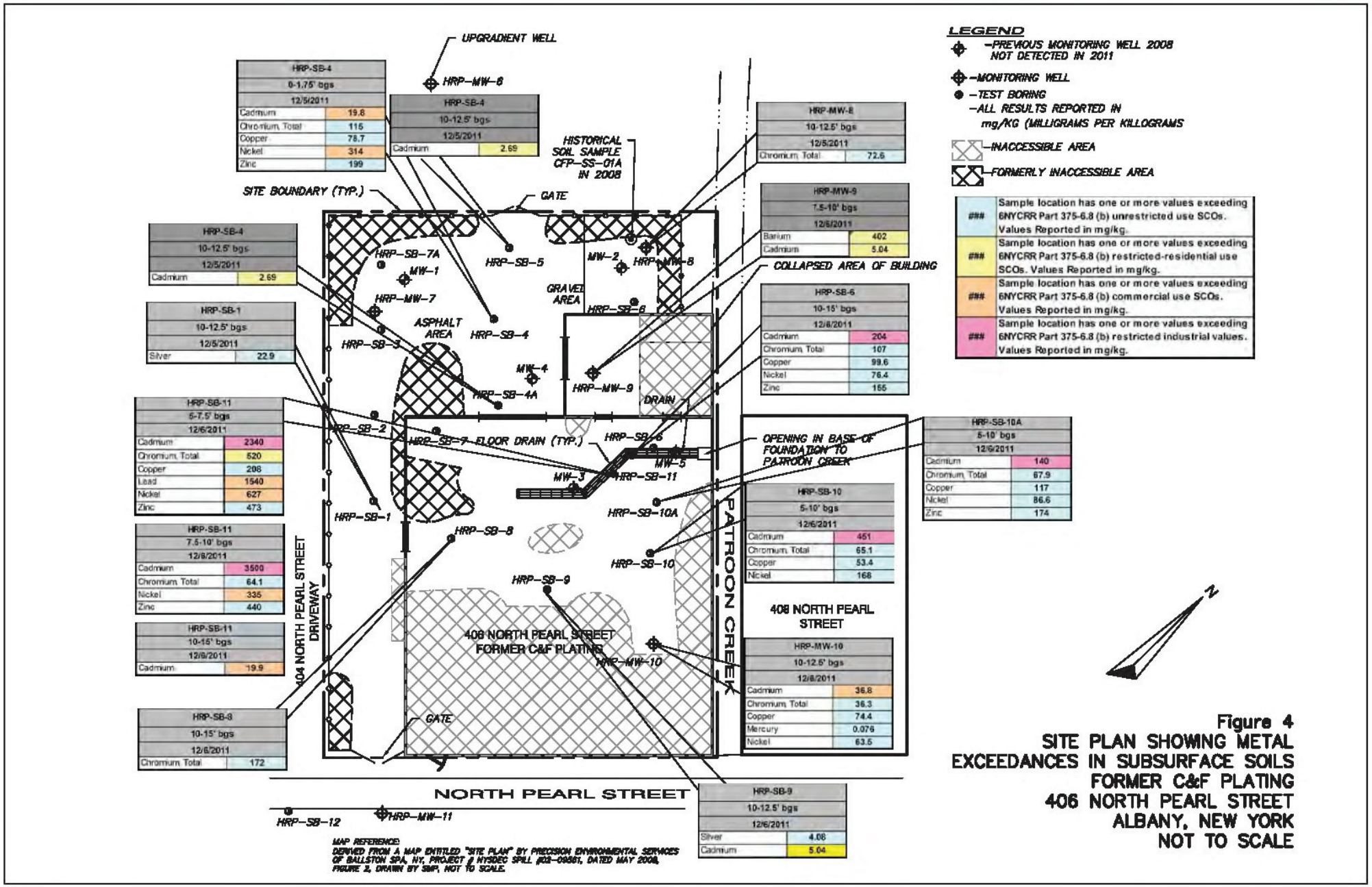
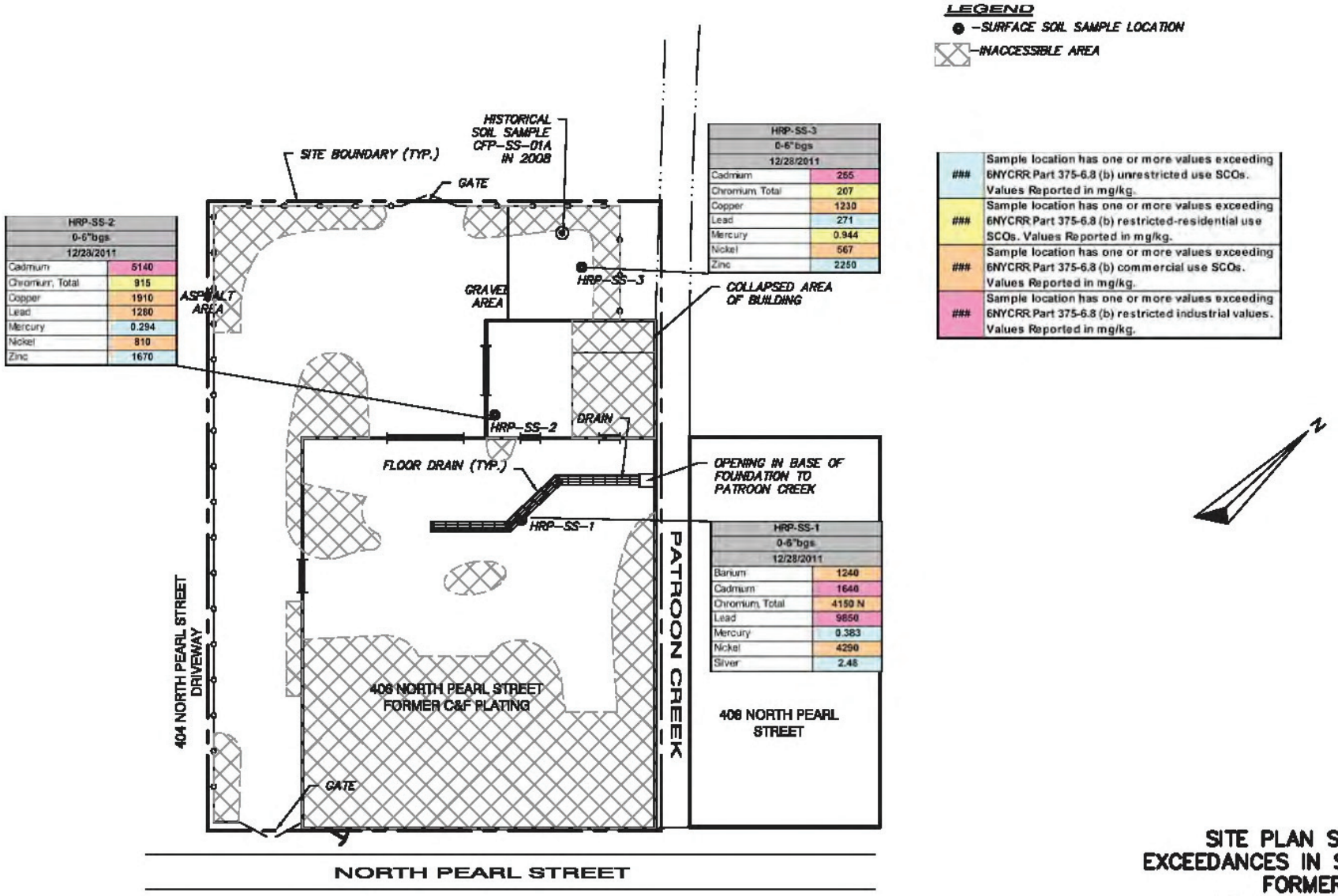


Figure 4
SITE PLAN SHOWING METAL EXCEEDANCES IN SUBSURFACE SOILS
FORMER C&F PLATING
406 NORTH PEARL STREET
ALBANY, NEW YORK
NOT TO SCALE



MAP REFERENCE:
DERIVED FROM A MAP ENTITLED "SITE PLAN" BY PRECISION ENVIRONMENTAL SERVICES OF BALLSTON SPA, NY, PROJECT # NYSDEC SPILL #02-08561, DATED MAY 2008, FIGURE 2, DRAWN BY SMP, NOT TO SCALE.

FIGURE 5
SITE PLAN SHOWING METAL EXCEEDANCES IN SURFACE SOILS
FORMER C&F PLATING
406 NORTH PEARL STREET
ALBANY, NEW YORK
NOT TO SCALE

N

Legend

- Calcium Polysulfide Chemical application area
- Areas to be excavated
- Building Addition to be demolished
- Original Portion of Building to Remain

Figure 6
Remediation Overview
CF Plating Facility
406 North Pearl Street
Albany, New York
Not To Scale

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

C & F Plating
State Superfund Project
City of Albany, Albany County, New York
Site No. 401057

The Proposed Remedial Action Plan (PRAP) for the C & F Plating site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 18, 2014. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the C & F Plating site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A newspaper article appeared on February 20, 2014 in the Times Union which included information on the PRAP, the public comment period and the public meeting.

A public meeting was held on March 6, 2014, to present the remedial investigation, feasibility study (RI/FS) as well as discuss the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy.

No one from the public attended the public meeting. The public comment period for the PRAP ended on March 20, 2014. No public comments were received.

APPENDIX B

Administrative Record

Administrative Record

C & F Plating
State Superfund Project
City of Albany, Albany County, New York
Site No. 401057

1. Proposed Remedial Action Plan for the C & F Plating site, dated February 2014, prepared by the Department.

2. "Revised Limited Subsurface Investigation Report – C & F Plating", dated May 2008, prepared by Precision Environmental Services, Inc.

3. "Site Specific Field Activity Plan; Site Specific Quality Assurance Project Plan; Site Specific Health and Safety Plan for the Former C & F Plating Remedial Investigation/ Feasibility Study", dated October 2011, prepared by HRP Associates.

4. "Remedial Investigation Report – Former C & F Plating", dated August 2012, prepared by HRP Associates, Inc.

5. "Feasibility Study Report – Former C & F Plating", dated November 2012, revised February 2013, revised February 2014, prepared by HRP Associates, Inc.

APPENDIX B

SITE CONTACTS

Appendix B

Contact List Former C and F Plating			
Title	**Name**	**Telephone**	**e-mail/address**
NYSDEC PM	Michael Mason	518-402-9812	michael.mason@dec.ny.gov
NYSDEC Remedial Bureau E, Section A Chief	Michael Cruden	518-402-9812	michael.cruden@dec.ny.gov

APPENDIX C

CITY OF ALBANY TAX MAP

NYS IMAGERY 6931394. 1396, 6961394, 1396

THIS MAP PREPARED FOR ASSESSMENT PURPOSES ONLY AND
NOT TO BE USED FOR THE CONVEYANCE OF PROPERTY

AUTHORIZED BY:
ORDINANCE OF THE COMMON COUNCIL
PASSED AUGUST 21, 1972

PREPARED BY:
SMITH & MAHONEY, CONSULTING ENGINEERS
ALBANY, NEW YORK

DIGITAL CONVERSION BY:
THE SANBORN MAP COMPANY INC.
PELHAM, NEW YORK

REVISION TABLE

DATE	MADE BY	CHANGES OR ADDITIONS
11/7/78 4/9/79	JKD JKD	ADDED PARCEL 3-4.2 ADDED PARCELS 3-11.2
5/80	JKD	CONSOLIDATED PARCELS 4-22,4-23 WITH 4-26 PER LIBER 2185-693
4-10-81	TGC	REVISED PARCELS 1-2,1-3 PER SUBD. MAP 1389
12-1-82	DB	ADDED PARCELS 1-8.2 PER 2225-103
6-7-84	DB	DELETED PARCEL 4-20, MERGED INTO 4-19 & 21 PER 2260-906 & 903

REVISION TABLE

DATE	MADE BY	CHANGES OR ADDITIONS
6-7-85 12-19-85	MRM MRM	ADDED PARCEL 1-22.2 PER 2272-5 ADDED PARCEL 1-8.3 PER 2291-123
1-15-91 6-25-91	LML LML	ADDED 1-11.8 PER 2425-573 ADDED 1-22.30 PER 2429-45 REV 1-22.2 & 22. 1
1-10-94	RVM	REVISED 4-19 & 21 PER MAP 10017 SUBD. MAP 1389
4-3-95	JV	REVISED PARCELS 4-7 & 4-13 AND 4-14 PER CITY SUB MAP # 1985
2-15-05 8-19-96	LKC RJM	ADDED PARCEL 5-4.2 PER MAP 2384 & LIBER 2791-694 ADDED 4-7.2 PER 2558-501

REVISION TABLE

DATE	MADE BY	CHANGES OR ADDITIONS
3-6-96 7-5-07	RJM TWS	MERGED 3-15 INTO 14 PER CITY MAP 2045 SPLIT 1-11.1 INTO 11.11 & 11.12 PER CITY MAP 2475
8-27-10 1-10-11	JKD JKD	SPLIT 4-26 INTO 26.1 & 26.2 PER CITY MAP 2594 DEL 3-3; REV 3-4.1&4.2 TO AGREE WITH ASSESS ROLL
5-6-11 3/26/15	JKD JKD	CHANGED VARIOUS ST NUMBERS PER CITY REPORT OF 3/23/2010 MERGED 4-4, 7.1, 9, 10, 11, 12 WITH 4-5 PER CITY MA

L E G E N D

PROPERTY LINE		CITY LINE		TAX DISTRICT LINE		GREAT LOT NO.	9
ORIGINAL LOT LINE		VILLAGE LINE		FIRE DISTRICT LINE	F	CALCULATED ACREAGE	7.5 A (C)
RAIL ROAD		TOWN LINE		DENOTES COMMON OWNER		DEED ACREAGE	17.5 A
STREAM OR DITCH		BLOCK LIMIT		TAX MAP BLOCK NO.	3	SCALED DIMENSION	225'(S)
ROAD OR RAIL ROAD BNDY.		GREAT LOT LINE		TAX MAP PARCEL NO.	76.00-1-11	DEED DIMENSION	173.2'
STREET CENTERLINE		EASEMENT LINE	E	STREET NUMBER	14	VISUAL CENTER OF PARCEL	*
COUNTY LINE		WATER DISTRICT LINE	W	FILED PLAN LOT NO.	17		

65.11	65.12	66.09
65.15	X	66.13
65.19	65.20	

SHEET INDEX

NYS PLANE COORDINATE SYSTEM NAD27

TAX MAP

65.16

CITY OF ALBANY

ALBANY COUNTY, NEW YORK

0 100 200
SCALE: 1"=100'

TAXABLE STATUS DATE: 3/1/16

TAX MAP UPDATED THROUGH MARCH 1, 2016

APPENDIX D

WELL LOGS

MONITORING WELL CONSTRUCTION LOG

HRP Engineering, P.C.
1 Fairchild Square, Suite 110
Clifton Park, NY 12065
(518) 877-7101

PROJECT: C+F Plating
WA #: D006130-26
LOCATION: 406 North Pearl St, Albany, NY

DRILLING CO.: Aztech Drilling
DRILLED BY: Ray Hammond
INSPECTED BY: Jamey Charter

BORING NO. HRP-MW-6
PAGE 1 OF 1
DATE STARTED: 12/7/2011
DATE FINISHED: 12/7/2011
SURFACE ELEVATION: 38.88
BOTTOM OF BORING ELEVATION:
GROUNDWATER REFERENCE ELEVATION:

GROUNDWATER OBSERVATIONS

DEPTH	Post-Development
	8.89

CASING
TYPE: PVC
SIZE I.D.: 2 inch

SAMPLER
J. Charter

DEPTH (FT.)	SAMPLING DEPTH (FT.) FROM - TO	SAMPLE DATA ID	RECOV. INCHES	BLOWS PER 6 INCHES	WELL DATA	STRATA CHANGE (FT.)	LITHOLOGY *(DESCRIPTION OF MATERIALS)*	FIELD TEST DATA PID - 10.2 eV (ppm)
							See Boring Logs	See Boring Logs
10'								
20'								
30'								
40'								

WELL CONSTRUCTION DATA:
Well bottom set at _16.9_' bgs
Borehole diameter_4.25_"
Well Screen Interval _16.9_' to _11.9_' bgs (_5'_screen length)
Well Screen Slot Size _0.010_ Material_PVC_Diameter _2_"
Sand Filter Pack Interval _16.9'_to _10'_ bgs
Sand Size_01_ Quantity_3 bags_(bags, lbs, gallons)
Well Riser Interval _11.9_' to _0_' bgs (_11.9'_riser length)
Well Riser Diameter_2"_Material_PVC_
Bentonite Seal Above Fitler Pack _10'_to _8_' bgs
Backfill Interval _8'_to _1_' bgs
Backfill Material_Soil Cuttings_
Portland Type 1 Top/Ground Surface Seal
Finishing/Well Protector: Flush-Mounted
Surface Finishing notes:_____
Groundwater Reference Point Description: (Top of Riser, Standpipe, other)
Top of riser

GENERAL REMARKS:
1) ~_____ gallons of water was purged from following installation on _____2011
2) SAA = Same as Above / NA = Not Available
3) bgs = Below Ground Surface
4)Soil Boring_____was logged & sampled at this location on _____with by geoprobe

KEY:

Well	Filter Sand
	Bentonite
	Grout
Strata	Native soil
	Bedrock

Indication of where groundwater begins
Roadbox
1.5 inch or 2 inch riser
Screen

KEY TO BLOWS PER 6-INCHES:

Granular Soils *(Gravel & Sand)* Blows/ft	Density	Cohesive Soils *(Silt & Clay)* Blows/ft	Density
0-4	V. Loose	<2	V. Soft
4-10	Loose	2-4	Soft
10-30	M. Dense	4-8	M. Stiff
30-50	Dense	8-15	Stiff
>50	V. Dense	15-30	V. Stiff
		>50	Hard

PROPORTIONS OF SOIL:
And = 35 to 50%
Some = 20 to 35%
Little = 10 to 20%
Trace = 0 to 10%

MONITORING WELL CONSTRUCTION LOG

HRP Engineering, P.C.
1 Fairchild Square, Suite 110
Clifton Park, NY 12065
(518) 877-7101

PROJECT: C+F Plating
WA #: D006130-26
LOCATION: 406 North Pearl St, Albany, NY

DRILLING CO.: Aztech Drilling
DRILLED BY: Ray Hammond
INSPECTED BY: Jamey Charter

BORING NO. HRP-MW-7
PAGE 1 OF 1
DATE STARTED: 12/9/2011
DATE FINISHED: 12/9/2011
SURFACE ELEVATION: 31.96
BOTTOM OF BORING ELEVATION:
GROUNDWATER REFERENCE ELEVATION:

GROUNDWATER OBSERVATIONS

DEPTH	Post-Development
	6.85

CASING
TYPE: PVC
SIZE I.D.: 1.5 inch

SAMPLER
J. Charter

DEPTH (FT.)	SAMPLING DEPTH (FT.) FROM - TO	SAMPLE DATA ID	RECOV. INCHES	BLOWS PER 6 INCHES	WELL DATA	STRATA CHANGE (FT.)	LITHOLOGY (DESCRIPTION OF MATERIALS)	FIELD TEST DATA PID - 10.2 eV (ppm)
							See Boring Logs	See Boring Logs
10'								
20'								
30'								
40'								

WELL CONSTRUCTION DATA:
Well bottom set at _17.4_' bgs
Borehole diameter_3.25_"
Well Screen Interval **_17.4_**' to _2.4_' bgs (_15'_screen length)
Well Screen Slot Size _0.010-Pre-packed_ Material_PVC_Diameter _2.5_"
Sand Filter Pack Interval _17.4_to _2_ bgs
Sand Size_01_ Quantity_3 bags_(bags, lbs, gallons)
Well Riser Interaval _2.4_' to _0_' bgs (_2.4'_riser length)
Well Riser Diameter_1.5"_Material_PVC_
Bentonite Seal Above Fitler Pack _2_to _1_' bgs
Backfill Interval _1_to _0_' bgs
Backfill Material_Type 1 Portland Cement_
Bentonite Top/Ground Surface Seal
Finishing/Well Protector: Flush-Mounted
Surface Finishing notes:_____
Groundwater Reference Point Description: (Top of Riser, Standpipe, other)
Top of riser

GENERAL REMARKS:
1) ~_____ gallons of water was purged from following installation on _____2011
2) SAA = Same as Above / NA = Not Available
3) bgs = Below Ground Surface
4)Soil Boring_____was logged & sampled at this location on _____with by geoprobe

KEY:

Well	Filter Sand	Indication of where groundwater begins
	Bentonite	
	Grout	Roadbox
Strata	Native soil	1.5 inch or 2 inch riser
	Bedrock	Screen

KEY TO BLOWS PER 6-INCHES:

Granular Soils (Gravel & Sand) Blows/ft	Density	Cohesive Soils (Silt & Clay) Blows/ft	Density
0-4	V. Loose	<2	V. Soft
4-10	Loose	2-4	Soft
10-30	M. Dense	4-8	M. Stiff
30-50	Dense	8-15	Stiff
>50	V. Dense	15-30	V. Stiff
		>50	Hard

PROPORTIONS OF SOIL:
And = 35 to 50%
Some = 20 to 35%
Little = 10 to 20%
Trace = 0 to 10%

MONITORING WELL CONSTRUCTION LOG

HRP Engineering, P.C.
1 Fairchild Square, Suite 110
Clifton Park, NY 12065
(518) 877-7101

PROJECT: C+F Plating
WA #: D006130-26
LOCATION: 406 North Pearl St, Albany, NY

DRILLING CO.: Aztech Drilling
DRILLED BY: Ray Hammond
INSPECTED BY: Jamey Charter

BORING NO. HRP-MW-8
PAGE 1 OF 1
DATE STARTED: 12/9/2011
DATE FINISHED: 12/9/2011
SURFACE ELEVATION: 31.33
BOTTOM OF BORING ELEVATION:
GROUNDWATER REFERENCE ELEVATION:

GROUNDWATER OBSERVATIONS

DEPTH	Post-Development
	6.84

CASING
TYPE: PVC
SIZE I.D.: 1.5 inch

SAMPLER
J. Charter

DEPTH (FT.)	SAMPLING DEPTH (FT.) FROM - TO	SAMPLE DATA ID	RECOV. INCHES	BLOWS PER 6 INCHES	WELL DATA	STRATA CHANGE (FT.)	LITHOLOGY (DESCRIPTION OF MATERIALS)	FIELD TEST DATA PID - 10.2 eV (ppm)
							See Boring Logs	See Boring Logs
10'								
20'								
30'								
40'								

WELL CONSTRUCTION DATA:
Well bottom set at _18.8_' bgs
Borehole diameter_3.25_"
Well Screen Interval _18.8_' to 3.8_' bgs (_15'_screen length)
Well Screen Slot Size _0.010-Pre-packed_ Material_PVC_Diameter _2.5_"
Sand Filter Pack Interval _18.8_to _3_ bgs
Sand Size_01_ Quantity_3 bags_(bags, lbs, gallons)
Well Riser Interaval _3.8_' to _0_' bgs (_3.8'_riser length)
Well Riser Diameter_1.5"_Material_PVC_
Bentonite Seal Above Fitler Pack _3_to _1_' bgs
Backfill Interval _1_to _0_' bgs
Backfill Material_Type 1 Portland Cement_
Bentonite Top/Ground Surface Seal
Finishing/Well Protector: Flush-Mounted
Surface Finishing notes:_____
Groundwater Reference Point Description: (Top of Riser, Standpipe, other)
Top of riser

GENERAL REMARKS:
1) ~_____ gallons of water was purged from following installation on _____2011
2) SAA = Same as Above / NA = Not Available
3) bgs = Below Ground Surface
4)Soil Boring_____was logged & sampled at this location on _____with by geoprobe

KEY:

Well	Filter Sand	Indication of where groundwater begins
	Bentonite	
	Grout	Roadbox
Strata	Native soil	
	Bedrock	1.5 inch or 2 inch riser
		Screen

KEY TO BLOWS PER 6-INCHES:

Granular Soils (Gravel & Sand) Blows/ft	Density	Cohesive Soils (Silt & Clay) Blows/ft	Density
0-4	V. Loose	<2	V. Soft
4-10	Loose	2-4	Soft
10-30	M. Dense	4-8	M. Stiff
30-50	Dense	8-15	Stiff
>50	V. Dense	15-30	V. Stiff
		>50	Hard

PROPORTIONS OF SOIL:
And = 35 to 50%
Some = 20 to 35%
Little = 10 to 20%
Trace = 0 to 10%

MONITORING WELL CONSTRUCTION LOG

HRP Engineering, P.C.
1 Fairchild Square, Suite 110
Clifton Park, NY 12065
(518) 877-7101

PROJECT: C+F Plating
WA #: D006130-26
LOCATION: 406 North Pearl St, Albany, NY

DRILLING CO.: Aztech Drilling
DRILLED BY: Ray Hammond
INSPECTED BY: Jamey Charter

BORING NO. HRP-MW-9
PAGE 1 OF 1
DATE STARTED: 12/8/2011
DATE FINISHED: 12/8/2011
SURFACE ELEVATION: 31.01
BOTTOM OF BORING ELEVATION:
GROUNDWATER REFERENCE ELEVATION:

GROUNDWATER OBSERVATIONS

DEPTH	Post-Development
	6.95

CASING
TYPE: PVC
SIZE I.D.: 1.5 inch

SAMPLER
J. Charter

DEPTH (FT.)	SAMPLING DEPTH (FT.) FROM - TO	SAMPLE DATA ID	RECOV. INCHES	BLOWS PER 6 INCHES	WELL DATA	STRATA CHANGE (FT.)	LITHOLOGY (DESCRIPTION OF MATERIALS)	FIELD TEST DATA PID - 10.2 eV (ppm)
							See Boring Logs	See Boring Logs
10'								
20'								
30'								
40'								

WELL CONSTRUCTION DATA:

Well bottom set at _19.1_' bgs
Borehole diameter_3.25_"
Well Screen Interval **_19.1_**' to _4.1_' bgs (_15'_screen length)
Well Screen Slot Size _0.010-Pre-packed_ Material_PVC_Diameter _2.5_"
Sand Filter Pack Interval _19.1_to _3_ bgs
Sand Size_01_ Quantity_3 bags_(bags, lbs, gallons)
Well Riser Interaval _4.1_' to _0_' bgs (_4.1'_riser length)
Well Riser Diameter_1.5"_Material_PVC_
Bentonite Seal Above Fitler Pack _3_to _1_' bgs
Backfill Interval _1_to _0_' bgs
Backfill Material_Type 1 Portland Cement_
Bentonite Top/Ground Surface Seal
Finishing/Well Protector: Flush-Mounted
Surface Finishing notes:_____
Groundwater Reference Point Description: (Top of Riser, Standpipe, other)
Top of riser

GENERAL REMARKS:

1) ~_____ gallons of water was purged from following installation on _____2011
2) SAA = Same as Above / NA = Not Available
3) bgs = Below Ground Surface
4)Soil Boring_____was logged & sampled at this location on _____with by geoprobe

KEY:

Well	Filter Sand	Indication of where groundwater begins
	Bentonite	
	Grout	Roadbox
Strata	Native soil	
	Bedrock	1.5 inch or 2 inch riser
		Screen

KEY TO BLOWS PER 6-INCHES:

Granular Soils (Gravel & Sand) Blows/ft	Density	Cohesive Soils (Silt & Clay) Blows/ft	Density
0-4	V. Loose	<2	V. Soft
4-10	Loose	2-4	Soft
10-30	M. Dense	4-8	M. Stiff
30-50	Dense	8-15	Stiff
>50	V. Dense	15-30	V. Stiff
		>50	Hard

PROPORTIONS OF SOIL:

And = 35 to 50%
Some = 20 to 35%
Little = 10 to 20%
Trace = 0 to 10%

MONITORING WELL CONSTRUCTION LOG

HRP Engineering, P.C.
1 Fairchild Square, Suite 110
Clifton Park, NY 12065
(518) 877-7101

PROJECT: C+F Plating
WA #: D006130-26
LOCATION: 406 North Pearl St, Albany, NY

DRILLING CO.: Aztech Drilling
DRILLED BY: Ray Hammond
INSPECTED BY: Jamey Charter

BORING NO. HRP-MW-10
PAGE 1 OF 1
DATE STARTED: 12/7/2011
DATE FINISHED: 12/8/2011
SURFACE ELEVATION: 30.43
BOTTOM OF BORING ELEVATION:
GROUNDWATER REFERENCE ELEVATION:

GROUNDWATER OBSERVATIONS

DEPTH	Post-Development
	7.75

CASING
TYPE: PVC
SIZE I.D.: 1.5 inch

SAMPLER
J. Charter

DEPTH (FT.)	SAMPLING DEPTH (FT.) FROM - TO	SAMPLE DATA ID	RECOV. INCHES	BLOWS PER 6 INCHES	WELL DATA	STRATA CHANGE (FT.)	LITHOLOGY (DESCRIPTION OF MATERIALS)	FIELD TEST DATA PID - 10.2 eV (ppm)
							See Boring Logs	See Boring Logs
10'								
20'								
30'								
40'								

WELL CONSTRUCTION DATA:
Well bottom set at _24.7_ ' bgs
Borehole diameter_3.25_"
Well Screen Interval _24.7_' to _4.7_' bgs (_15'_screen length)
Well Screen Slot Size _0.010-Pre-packed_ Material_PVC_Diameter _2.5_"
Sand Filter Pack Interval _24.7_ to _3_ bgs
Sand Size_01_ Quantity_4 bags_(bags, lbs, gallons)
Well Riser Interaval _4.7_' to _0_' bgs (_4.7'_riser length)
Well Riser Diameter_1.5"_Material_PVC_
Bentonite Seal Above Fitler Pack _3_to _1_' bgs
Backfill Interval _1_to _0_' bgs
Backfill Material_Type 1 Portland Cement_
Bentonite Top/Ground Surface Seal
Finishing/Well Protector: Flush-Mounted
Surface Finishing notes:_____
Groundwater Reference Point Description: (Top of Riser, Standpipe, other)
Top of riser

GENERAL REMARKS:
1) ~_____ gallons of water was purged from following installation on _____2011
2) SAA = Same as Above / NA = Not Available
3) bgs = Below Ground Surface
4)Soil Boring_____was logged & sampled at this location on _____with by geoprobe

KEY:

Well	Filter Sand	Indication of where groundwater begins
	Bentonite	
	Grout	Roadbox
Strata	Native soil	1.5 inch or 2 inch riser
	Bedrock	Screen

KEY TO BLOWS PER 6-INCHES:

Granular Soils (Gravel & Sand) Blows/ft	Density	Cohesive Soils (Silt & Clay) Blows/ft	Density
0-4	V. Loose	<2	V. Soft
4-10	Loose	2-4	Soft
10-30	M. Dense	4-8	M. Stiff
30-50	Dense	8-15	Stiff
>50	V. Dense	15-30	V. Stiff
		>50	Hard

PROPORTIONS OF SOIL:
And = 35 to 50%
Some = 20 to 35%
Little = 10 to 20%
Trace = 0 to 10%

HRP Engineering, P.C.

Creating the Right Solutions Together

Project: C+F Plating	**Boring I.D.: HRP-MW-11**
Job Number: NEW9627.RA	**Date: 4/18/12**
Drilling Company: Aztech Drilling	**Time: 8:00**
Location: Offsite	
GPS Coordinates N: -73.74435794 W:42.66301563	

Sample Interval (ftbg) Top	Sample Interval (ftbg) Bottom	Recovery (ft)	Moisture	Description (grain size, color, compaction, staining, odor)	PID (PPM)
0	5	3	Dry	SAND, medium to coarse; some coarse gravel; trace silt; brick; tan-brown; loose; no odor no staining.	0.0
5	10	3	Wet at 7'	5 to 6: SAND, medium to coarse; some coarse gravel; trace silt; brick; tan-brown; loose; no odor no staining. 6 to 8: SAND, fine; some silt; some gravel; trace pottery; brown-grey; loose; no odor or staining. 8 to 10: SAND, fine and SILT; little gravel; loose; red-brown; no odor or staining	0.0 0.0 0.0
10	15	2	Moist	SAND, medium to coarse; some gravel; loose; brown; no staining; no odor.	0.0
15	20	3	Moist Wet Moist	15 to 18: SAND, medium to coarse; some gravel; loose; brown; no staining; no odor. 18 to 19: SAND, coarse and GRAVEL, fine; loose; brown; no odor or staining. 19 to 20: CLAY; some silt; medium compact; grey; no odor or staining.	0.0 0.0 0.0
	20			End of boring.	

Well Screen:		**Soil Samples Collected:**	**Time**
Water Sample ID	Time		
		Samples collected every 2 feet.	
Sampling Method:			
Description of Water:			

HRP Engineering, P.C. 1 Fairchild Square, Suite 110 Clifton Park, NY 12065 (518) 877-7101	GROUNDWATER MONITORING WELL SAMPLING FORM	

Project: C+F Plating	WAS #: D006130-26	Field Personnel: Mark Wright
Location: 406 N. Pearl St.	Well ID.: HRP-MW-11	Weather: Cloudy 60 F
Sounding Method: Water Level Meter	Gauge Date: 5/1/12	Measurement Ref: Black Mark on Top of Riser
Stick Up/Down (ft): Flush Mount	Gauge Time: 12.57	Well Diameter (in): 1.5 inch

Purge Date:	5/1/2012	Purge Time:	:
Purge Method:	Whale Pump	Field Technician:	Mark Wright

1) Well Depth (ft): 20.00	4) Well Diameter (in): 1.5 inch	7) Five Well Volumes (gal): N/A
2) Depth to Water (ft): 16.20	5) Well Volume / Foot (gal) (d^2x.0.0408): 0.092	Depth/Height of Top of PVC: NA
3) Height of H_2O Column (1-2) (ft):	6) Total Well Volume (gal) (3x5): 1.56	Pump Type: Peristaltic Pump

Water Quality Parameters

Time (hrs)	DTW (ft btoc)	Volume (liters)	Rate (mL/m)	pH (SU units)	ORP (mV)	Temperature (oC)	Conductivity: (uS/cm)	DO (ug/L)	Turbidity (ntu)
1257	16.20			7.11	1230	21.38	2.02	17.91	21.35
1300	NA			6.87	145	21.36	2.03	3.06	21.30
1303	NA			6.84	151	20.61	2.06	5.56	20.61
1306	NA			6.85	156	19.96	2.09	2.30	19.96
1309	NA			6.85	159	19.42	2.12	1.93	19.42
1312	NA			6.84	161	19.42	2.13	1.70	19.24
1315	NA			8.85	153	19.24	2.14	1.65	18.96
1318	NA			6.84	154	18.96	2.15	1.7	18.57
1321	NA			6.84	154	18.57	2.18	1.25	18.18
1324	NA			6.84	153	18.18	2.18	1.22	18.11
1327	NA			6.84	163	18.11	2.19	1.21	18.11

Total Quantity of Water Removed (gal):	10 Liters	Sampling Time:	1330
Samplers:	Mark Wright	Split Sample With:	NA
Sampling Date:	5/1/2012	Sample Type:	GW

COMMENTS AND OBSERVATIONS:	

APPENDIX E

EXCAVATION WORK PLAN

APPENDIX E – EXCAVATION WORK PLAN (EWP)

If excavation is planned, contact the NYSDEC project manager prior to conducting the work.

Post remediation sampling was not conducted to document the concentrations of site related contaminants left in onsite soils, consequently, contaminants greater than the SCOs may be present at the Site. Therefore, this plan must be followed when conducting excavation at the Site.

Future intrusive work that encounters or disturbs soil will be performed in compliance with this EP. Intrusive construction work must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and a Community Air Monitoring Plan (CAMP) prepared by the contractor. The HASP must be in compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided below. Intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection reports submitted under the SM Reporting Plan (See Section 7.0 of the Site Management Plan (SMP)).

E-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix A.

Table 1: Notifications*

Name	Contact Information
Michael Mason, NYSDEC Project Manager	(518) 402-9814 michael.mason@dec.ny.gov
Michael Cruden, Remedial Bureau E, Section A Chief	(518) 402-9814 michael.cruden@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for Site re-grading, intrusive elements or utilities to be installed below the soil cover, or work that may impact an EC.

- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for pre-construction sampling.
- A schedule for the work, detailing the start and completion of intrusive work.
- A statement that the work will be performed in compliance with this SMP and 29 CFR 1910.120.
- A copy of the contractor's HASP, in electronic format.
- Identification of disposal facilities for potential waste streams.
- Identification of sources of any anticipated backfill, along with required chemical testing results.

E-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is conducted including excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Section F-6 of this Appendix.

E-3 SOIL STAGING METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near surface waters and other discharge points. Stockpiles will be kept completely covered with appropriately anchored impermeable tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced. Results of inspections will be recorded in a logbook and provided to the NYSDEC upon request.

E-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision will oversee invasive work and the excavation and load-out of excavated material.

Contractors are solely responsible for safe execution of invasive and other work performed under this SMP.

The presence of utilities on the Site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities on the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYS Department of Transportation requirements (and other applicable transportation requirements).

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

E-5 MATERIALS TRANSPORT OFF-SITE

Transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Truck transport routes will be identified that will: (a) limit transport through residential areas and past sensitive sites; (b) use city-mapped truck routes; (c) minimize off-site queuing of trucks entering the facility; (d) limit total distance to major highways; and (e) promote safety in access to highways.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed on-site to minimize off-site disturbance. Off-site queuing will be prohibited.

E-6 MATERIALS DISPOSAL OFF-SITE

Soil/fill/solid waste excavated and removed from the Site will be treated as contaminated unless analytical samples are collected that show the material is not contaminated, the results are submitted to the NYSDEC for review and the NYSDEC approves disposal of the material as non-regulated. Un-sampled or unapproved material will be treated as regulated and will be transported and disposed in accordance with local, State (including 6 NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this Site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate (i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, construction/demolition recycling facility, etc.). Actual disposal quantities and associated documentation will be reported to the NYSDEC in the annual report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste pursuant to 6 NYCRR Part 360-1.2. Material that does not meet the lower of the SCOs for residential use or groundwater protection will not be taken to a NYS recycling facility (6 NYCRR Part 360-16 Registration Facility) without a beneficial use determination issued by NYSDEC.

E-7 MATERIALS REUSE ON-SITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

E-8 FLUIDS MANAGEMENT

Liquids to be removed from the Site, including excavation dewatering will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Purged groundwater and monitoring well development fluids will be allowed to infiltrate the surface at the monitoring well location as long as no evidence of contamination is observed (see Field Activities Plan & Quality Assurance Program Plan [QAPP] [MACTEC Engineering and Consulting, P.C. [MACTEC], 2011]). Dewatering fluids will be collected and analyzed prior to disposal to determine if contaminants are present that require treatment prior to discharge or disposal at a licensed facility.

E-9 COVER SYSTEM RESTORATION

After the completion of soil removal and other invasive remedial activities the cover system will be restored in a manner that complies with the ROD. The existing cover system is comprised of a minimum of 12 inches of imported select fill (compacted crushed stone). The demarcation layer, consisting of orange polyethylene fencing, will be replaced to provide a visual reference to the top of the 'Remaining Contamination Zone', the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the 'Remaining Contamination.' A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to this SMP.

E-10 BACKFILL FROM OFF-SITE SOURCES

Materials proposed for import onto the Site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP, applicable regulations (6 NYCRR 375-6.7(d)) and guidance (DER-10) prior to receipt at the Site (NYSDEC, 2010).

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site.

Imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

E-11 STORMWATER POLLUTION PREVENTION

If a soil excavation is implemented, barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and available for inspection by NYSDEC. Necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

Undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters

Silt fencing or hay bales will be installed around the entire perimeter of the remedial construction area.

E-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (target analyte list (TAL) metals; target compound list [TCL] volatiles and semi-volatiles, TCL pesticides and polychlorinated biphenyls), unless the Site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in daily and periodic electronic media reports.

E-13 COMMUNITY AIR MONITORING PLAN

A CAMP will be prepared for proposed excavation activities at the Site and submitted to the NYSDEC for review and approval prior to commencement of work. This CAMP will include a map showing the location of air sampling stations based on generally prevailing wind conditions. Monitoring locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

E-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until nuisance odors have been abated.

E-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of large areas will be conducted in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

APPENDIX F

EXAMPLE SITE MANAGEMENT FORMS

C and F Plating Site

Annual Site Inspection Form

A. Site Cap

The site cap will be inspected by traversing the site and examining the following items. Please place a check mark on each line accordingly:

	No	Yes
1. Are there bare, dead or damaged vegetated areas?		
2. Is there evidence of cracks or subsidence?		
3. Is there evidence of burrowing by animals?		
4. Is there any deep-rooted vegetation present?		
5. Is there any erosion damage to vegetative areas?		
6. Are there any low spots or settlement in cap system?		
7. Is there evidence of ponding?		
8. Was a settlement survey performed? (If so, attach data)		

Comments: (Please comment for each question answered "yes")

B. Patroon Creek Retaining Wall

The retaining wall will be inspected by walking the length of the creek abutting the site, from the top of bank and examining the following:

	No	Yes
1. Is there evidence of cracks or crumbling?		
2. Is there any erosion damage to the retaining wall?		
3. Is there evidence of site soil erosion into the creek?		
4. Is there any deep-rooted vegetation present?		
5. Is there evidence of burrowing by animals?		

Comments: (Please comment for each question answered "yes")

C. Monitoring Wells

See attached FDR

D. Fence

The fence will be inspected by walking the full length of the fence and examining for the following:

	No	Yes
Is there damage to the fence around the site?		
Is there damage to gate entrances?		

Comments: (Please comment for each question answered "yes")

E. Site Usage

Evidence of the following will be noted as the inspection takes place.

	No	Yes
Is there evidence of anyone living at the site?		
Is there evidence of gardening or farming on the site?		
Is there evidence of the installation of a drinking water well on the site?		

Comments: (Please comment for each question answered "yes")

Site Management Activities

Upon completion of the inspection the following will be checked for compliance with the SMP.

	No	Yes
Was sampling conducted during this inspection?		
Was a Health and Safety Inspection Conducted?		
Are there any known missing site records?		

Comments: (Please comment for each question answered "yes")

	No	Yes
Are Engineering controls performing as designed?		
Do EC/ICs continue to be protective to human health and the environment?		
Compliance with the requirements of the SMP and Environmental Easement?		

Comments: (Please comment for each question answered "no")

Notes from last inspection: (Please review and comment)

Inspector

Signature Date

Reviewer Date

Monitoring Well Inspection Form

Inspector(s):

Date: **Reviewed by:**

Well ID	Ground Elevation[1] (feet msl)	Estimated Measurement Point Elevation[2] (feet msl)	Water Level (feet TOR)	Stickup on Casing (feet)	TOC to TOR (feet)	Depth to BOW (feet TOR)	Well ID Clearly Labeled (Y/N)	Well Lock (Y/N)	Cap on Well Riser (G/P/F)	Cap on Protective Casing (G/F/P)	Protective Casing (G/F/P)	Concrete Pad (G/F/P)	Comments
HRP-MW-6													
HRP-MW-7													
HRP-MW-8													
HRP-MW-9													
HRP-MW-10													
HRP-MW-11													

Notes:

msl = mean sea level
TOC = top of casing
TOR = top of riser
BOW = bottom of well

F = Fair
G = Good
N = No
P = Poor
Y = yes

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

JOB NUMBER

PROJECT: C and F Plating
FIELD SAMPLE NUMBER
SITE ID: (MW)
SITE TYPE: WELL
DATE
ACTIVITY: START END
SAMPLE TIME

WATER LEVEL / PUMP SETTINGS

INITIAL DEPTH TO WATER ____ FT
FINAL DEPTH TO WATER ____ FT
DRAWDOWN VOLUME ____ GAL
(initial - final x 0.16 {2-inch} or x 0.65 {4-inch})
TOTAL VOL. PURGED ____ GAL
(purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

MEASUREMENT POINT
☐ TOP OF WELL RISER
☐ TOP OF PROTECTIVE CASING

WELL DEPTH (TOR) ____ FT
SCREEN LENGTH ____ FT
RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED

PROTECTIVE CASING STICKUP (FROM GROUND) ____ FT
PID AMBIENT AIR ____ PPM
PID WELL MOUTH ____ PPM
PRESSURE TO PUMP ____ PSI
REFILL SETTING
DISCHARGE SETTING

CASING / WELL DIFFER. ____ FT
WELL DIAM. ____ IN

WELL INTERGRITY:

	YES	NO	N/A
CAP			
CASING			
LOCKED			
COLLAR			

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCT. (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10	REDOX (mv) (+/- 10 mv)	COMMENTS

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
☐ GEOPUMP (peristaltic)
☐ QED BLADDER

TYPE OF TUBING
☐ LOW DENSITY POLYETHYLENE
☐ OTHER _____

TYPE OF PUMP MATERIAL
☐ STAINLESS STEEL
☐ OTHER _____

TYPE OF BLADDER MATERIAL
☐ TEFLON
☐ OTHER _____

ANALYTICAL PARAMETERS

	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
☐ _____				☐
☐ _____				☐
☐ _____				☐
☐ _____				☐
☐ _____				☐

NOTES:

SIGNATURE: _____

LOCATION SKETCH

APPENDIX G

FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION
FLOOD INSURANCE MAP

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18N. The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from digital orthophotography provided by the NY Office of Cyber Security and Critical Infrastructure Coordination from photography dated November 2007.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

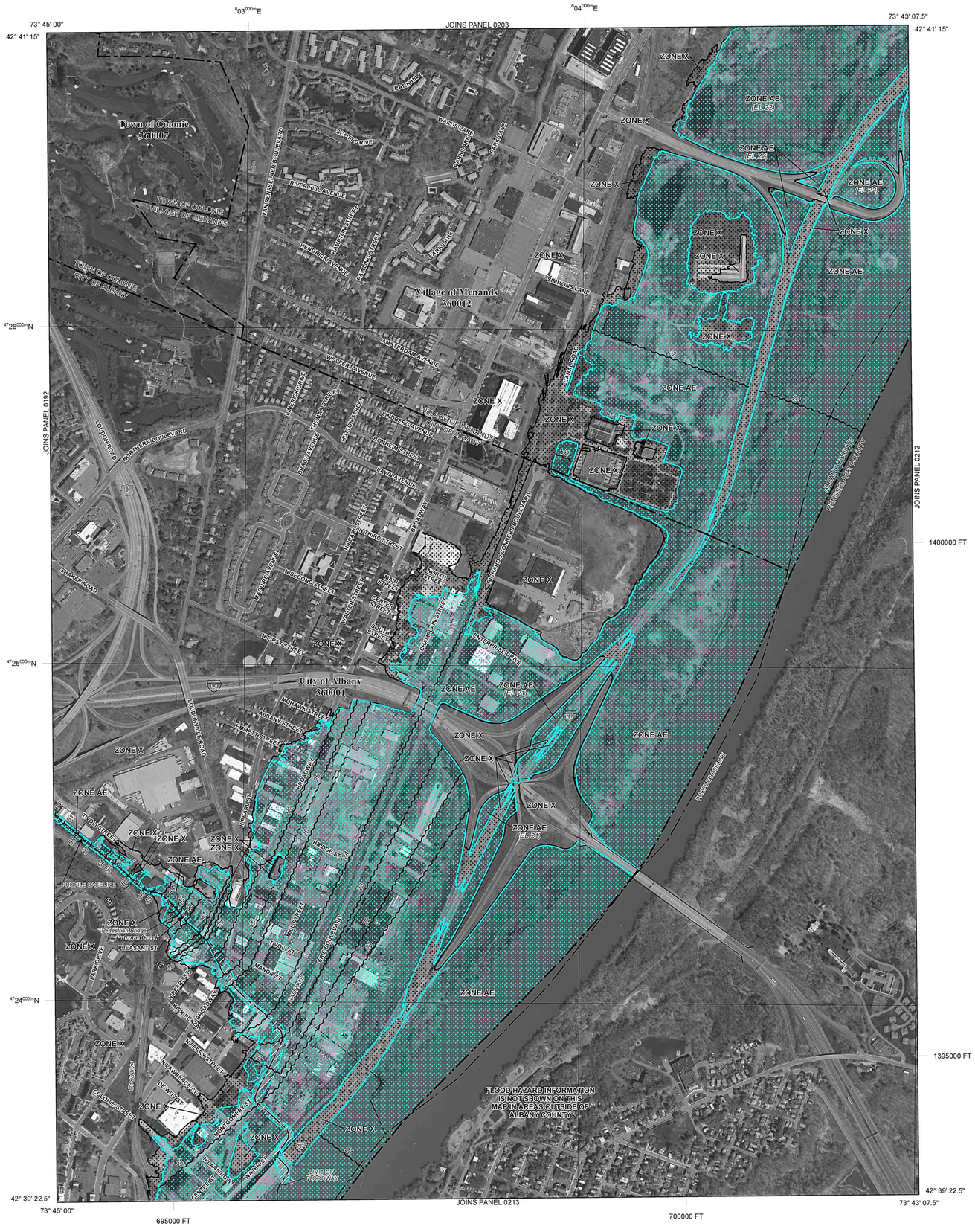
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

CTP Cooperating Technical Partners

This digital FIRM was produced through a unique cooperative partnership between the New York State Department of Environmental Conservation (NYSDEC) and FEMA. As part of the effort, NYSDEC has joined in a Cooperative Technical Partnership agreement to produce and maintain FEMA's digital FIRM.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 — 23	Transect line
1 — 1	Limited Detail Cross section line
	Culvert
	Bridge
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: New York State Plane East Zone (FIPS Zone 3101), Transverse Mercator projection
4989000m N	1000-meter Universal Transverse Mercator grid values, zone 18N
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
MARCH 16, 2015
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0211D

FIRM

FLOOD INSURANCE RATE MAP

ALBANY COUNTY, NEW YORK (ALL JURISDICTIONS)

PANEL 211 OF 434
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBANY, CITY OF	360001	0211	D
COLONIE, TOWN OF	360007	0211	D
MENANDS, VILLAGE OF	360012	0211	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36001C0211D
EFFECTIVE DATE
MARCH 16, 2015

Federal Emergency Management Agency