

# AMENDED RECORD OF DECISION

## Perfection Plating City of Watervliet, Albany County New York State Site Number 401037

---

May 2018



Department of  
Environmental  
Conservation

Prepared by the:

Division of Environmental Remediation  
New York State Department of Environmental Conservation

# **DECLARATION STATEMENT – AMENDED RECORD OF DECISION**

---

Perfection Plating  
City of Watervliet, Albany County  
Site No. 401037  
May 2018

## **Statement of Purpose and Basis**

The Amended Record of Decision (AROD) presents the selected remedy for the Perfection Plating site, a Class 2 inactive hazardous waste disposal site. The selected 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 site and the public's input on the Proposed Amendment to the ROD presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the AROD.

## **Description of Selected Remedy**

The elements of the amended remedy are as follows:

- The former metal-plating building will be demolished, characterized, and appropriately disposed.
- The underlying source of contamination, and any contamination in soils adjacent to the building, will be excavated, characterized, and appropriately disposed.
- A sodium lactate solution or other fixation agent will be injected to treat the hex chromium in-situ.
- A Site Management Plan (SMP) will be implemented as part of the amended remedy to continue appropriate site monitoring and IC/ECs at the site

## **New York State Department of Health Acceptance**

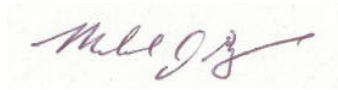
The NYSDOH concurs that the amendment to the remedy for this site is protective of human health.

**Declaration**

The selected remedy is protective of public 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.

May 2, 2018

Date



Michael J. Ryan, P.E., Director  
Division of Environmental Remediation

---

# RECORD OF DECISION AMENDMENT

## PERFECTION PLATING SITE

---

City of Watervliet / Albany County / Registry No. 401037

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

May 2018

### **SECTION 1: PURPOSE AND SUMMARY OF THE RECORD OF DECISION AMENDMENT**

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has amended the Record of Decision (ROD) for the above referenced site. The disposal of hazardous wastes at this site, as more fully described in the original ROD document and Section 6 of this document, has caused the contamination of various environmental media. This amendment is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This amendment identifies the new information which has led to this amendment and discusses the reasons for the preferred remedy.

The Department has issued this document in accordance with the requirements of 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 Environmental Remediation Programs. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

On December 5, 1995 the Department signed a ROD which selected a remedy to address the contamination identified at the Perfection Plating Site. Since completion of construction in June 1998, a groundwater collection trench and treatment plant have been in continuous operation to capture and contain the contaminated groundwater plume before it migrates into the surrounding neighborhood. While the trench and groundwater treatment have been effective at controlling the plume and providing protection of public health, it has not met the remedial action objective (RAO) of cleaning up the groundwater to the Department's groundwater standards. After further investigation, it has been determined that a continuing source of chromium to the groundwater remains under the former plating building. Until such time as that source is removed, the RAO to achieve groundwater standards will not be achieved. In addition, some of the building structure has also been found to be impacted by hexavalent chromium particularly where exhaust fans discharged and where chromic acid had come into contact with the building materials. Significant contamination has resulted in and analytical testing has identified, a 238 ft<sup>2</sup> area of hexavalent chromium-impacted paint on the west-facing outer wall of the building. An investigation in August of 2014, collected a total of 15 bulk concrete samples from floor and wall locations. Results indicated that 13 of these 15 samples detected hexavalent chromium above 1 part per million (ppm), while 4 samples were above regulations for the toxicity characteristic leaching procedure (TCLP) chromium toxicity threshold of 50 ppm. The highest concentrations were found in the plating process room. This new information suggests that removal of the building and disposal of the demolition materials as either hazardous, or non-hazardous, as appropriate, will provide access

to the underlying source of the ground water contamination. Excavation of the contaminant source is the goal of this amendment. Removal of the building and the underlying chromium contaminant source is the only effective and permanent way to eliminate the ongoing contamination of groundwater. Borings indicate the contaminant source is in the underlying shale bedrock that is highly weathered and fractured, and can be excavated with standard construction machinery such as a track hoe.

## **SECTION 2: CITIZEN PARTICIPATION**

The Department sought input from the community on this ROD Amendment. This was an opportunity for public participation in the remedy selection process. Public comments were received and responses to each are contained within the responsiveness summary incorporated within this document. The information here is a summary of what can be found in greater detail in reports that have been placed in the Administrative Record for the site. The public is encouraged to review the reports and documents, which are available at the following repositories:

NYS Dept. of Environmental Conservation  
Division of Environmental Remediation  
Attn: Aydin Tabrizi  
625 Broadway, 12<sup>th</sup> Floor  
Albany, NY 12233-7017  
518.402.9813  
Aydin.Tabrizi@dec.ny.gov

An extended 30-day public comment period was set from February 21, 2018 through April 6, 2018 to provide an opportunity for the public to comment on the proposed changes. A public meeting was held on April 2, 2018 at the Watervliet Senior Center, at 1501 Broadway in Watervliet.

At the meeting, a description of the original ROD and the circumstances that have led to proposed changes in the ROD was presented. After the presentation, a question and answer period was provided, during which a number of questions and comments were made by the public and are included within the responsiveness summary.

Written comments were also sent to the DEC Project Manager listed below, and were also included within the responsiveness summary.

Aydin Tabrizi, Project Manager  
NYS Dept. of Environmental Conservation  
Division of Environmental Remediation  
625 Broadway, 12<sup>th</sup> Floor  
Albany, NY 12233-7017  
518.402.9813, Aydin.Tabrizi@dec.ny.gov

Comments were summarized and addressed in the responsiveness summary section of this final version of the ROD Amendment. This ROD Amendment is the Department's final selection of the remedy for the site.

### **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**

The Perfection Plating site is located at 911 11th Street in the City of Watervliet, Albany County. Access to the treatment plant is from 12th Street. The Watervliet Arsenal is located adjacent to the site. The site is about 1.7 acres in size and the main site features include the original concrete block electroplating building as well as a second warehouse building. Currently the buildings and the property are being used for storage. Residential housing borders the site on the north and east, with commercial businesses on the south. To the west is the "Siberia" area of the Watervliet Arsenal.

The chronology of ownership from 1965 to 1990 specifically includes three owners and operations:

1. Watervliet Plating, operating from 1965 to 1973, with the facility conducting chrome and nickel automotive bumper plating.
2. Perfection Plating, operating from 1974 to 1989, with the primary operation consisting of zinc and cadmium plating, and later changing to chrome and copper plating of brake parts.
3. Pinnacle Plating, operating from 1989 to 1990, with the facility conducting copper and chromium plating with some zinc and cadmium plating. The facility was abandoned on September 1, 1990.

Beginning in 1965, the facility electroplated copper, nickel, chromium and to a lesser extent zinc and cadmium. Automotive brake parts were plated with copper while other metal parts were plated with chrome. Triple plating is the most expensive process for automotive parts, where multiple metals are electroplated for the most durable chrome plating of steel. First copper, then nickel, and lastly, the chrome are electroplated in sequence. Zinc and cadmium plating was also electroplated to provide a corrosion resistance finish on steel. The plating operation ceased in September 1990. The chromic acid tank inside of the building was of particular concern as it leaked, and resulted in significant contamination of the groundwater under the building.

## Site Geology and Hydrogeology:

Site soils show evidence of fill material including brick, gravel and sand overlying the native clay and silt on top of the shallow shale bedrock. Severely weathered and fractured grayish-black shale is encountered at shallow depths across the entire site typically from four to six feet below ground surface to as deep as 15 feet. The hydraulic groundwater gradient across the site was determined to be a low value based upon information obtained from the installed monitoring wells and indicates the groundwater flows slowly across the site. The observed groundwater flow direction in overburden monitoring wells was found to be in a north-northwest direction, which follows the same general direction as the site topography. Shallow groundwater is found at a depth from 4 to 6 feet below the ground surface.

### **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. The Perfection Plating site is currently zoned for light industrial (L-I) use, and is located in an area of light industrial (L-I), residential (R-1) and (R-2) use. A deed restriction is in place that restricts the property from use for residential dwellings or daycare. Soil is not allowed to be disturbed below 1 foot without permission by the involved State environmental and health agencies. The deed restriction became effective on July 29, 1995 and shall run with the land and continue for a period of thirty (30) years. A Site Management Plan is in place that requires maintenance of a groundwater collection trench and groundwater monitoring.

### **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.

On October 24, 1989, a Consent Order (File No. R4-0641-89-03) was issued to the owners of Perfection Plating requiring submittal and implementation of a remedial investigation (RI)/feasibility study (FS). A second Consent Order was issued during Pinnacle Plating's operations to both Perfection Plating and Pinnacle Plating on December 12, 1989. On May 4, 1990, in compliance with the Consent Order, Perfection Plating submitted a RI/FS work plan. The Department approved the work plan on October 9, 1990; however, the plan was never implemented. On June 24, 1991 the Department determined an emergency removal action was necessary, including the emptying and disposal of the plating and rinse tanks, as well as removing and disposing at least six drums of plating waste stored in the warehouse. On June 26, 1991, the Department sent a certified letter to Perfection Plating's consultant requesting the removal of the above mentioned waste. Due to lack of response, an emergency removal action was performed by Clean Harbors under contract to the Department in late-1991 and early-1992.

In July 1995 a "Volunteer" having no connection to the prior ownership, offered to sign an agreement to implement a number of abatement measures and return the property to the tax rolls by using the property and buildings for storage of personal items in accordance with zoning requirements. A deed restriction was to be filed to run with the land to prohibit the site from being used for a residential dwelling, a day care center, a playground, a school or any similar uses in which exposure to contaminated soil is

foreseeable. A number of clean-up measures were implemented pursuant to the agreement, but the source of contamination beneath the building still remains. The property was transferred to the volunteer.

## **SECTION 6: SITE CONTAMINATION**

### **6.1: Summary of Environmental Assessment**

While wastewater from the plating operations was pretreated and discharged to the sewer system, a leaking chromic acid tank and exhaust vents resulted in significant contamination. A chromic acid tank exhaust vent and other vents were operated without Department air permits in violation of 6 NYCRR Part 212 regulations. The soil below the tank exhaust vent was notably discolored. Surficial soil samples that were collected from this area showed total chromium at 76,000 ppm and EP Toxic chromium at 510 ppm.

The chromic acid tank located within the plating building leaked resulting in significant contamination of the groundwater underneath the building. Sampling of a monitoring well located immediately behind the building detected chromium at 173,000 parts per billion (ppb) in groundwater. Chromium contamination in the groundwater was detected in the on-site monitoring wells and in other monitoring wells downgradient of the site in the Siberia area of the Watervliet Arsenal. A chromium groundwater plume resulted from the chromic acid source underlying the building, and that plume has migrated towards 12th Street. During the remedial investigation, a homeowner's basement sump on the south side of 12th Street was found to contain chromium at 4,320 ppb, however no detections were found on the north side of the street.

The RI/FS was completed in August 1995 under State Superfund and a ROD was signed by the Department in December of 1995, requiring the removal and disposal of contaminated soil and the installation of a groundwater interceptor trench and treatment system.

#### Post Remediation

In 1998, an intercepting trench was constructed on Watervliet Arsenal property to capture the migrating plume of chromium in groundwater and a small groundwater treatment plant was constructed on-site. This plant continues to operate. Since the original electroplating building covers the most significant contamination, removal of the source has not been possible.

### **6.2: Interim Remedial Measures**

An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the ROD.

In September 1991, the Department undertook an IRM to mitigate threat of exposure or release of chemicals improperly stored at the site. Plating chemicals stored in drums, tanks and vats within the building were sampled and disposed as part of this IRM. One hundred drums of hazardous waste, sixty-four lab packs with various small chemical bottles and 700 gallons of acid were removed in connection with this IRM. Additionally, fencing was repaired and the site secured.

### **6.3: Summary of Human Exposure Pathways**



Human exposure pathways include ways that people can be exposed to site-related contamination. Direct contact, ingestion, and breathing are typical pathways for exposure. The site is fenced and the plating operation is no longer in operation, which minimizes direct contact exposure. People who enter the site may come into contact with site-related soil and groundwater contamination if they dig below the surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. A treatment plant onsite is effectively capturing and controlling the plume of contaminated groundwater from migrating off-site. Soil vapor intrusion can allow volatile gas to enter buildings, however chromium is not a volatile gas and is not able to migrate into buildings by a soil vapor intrusion pathway.

## **SECTION 7: SUMMARY OF ORIGINAL REMEDY AND AMENDMENT**

### **7.1 Original Remedy**

The original 1995 remedy selected excavation of between 30 and 60 cubic yards of contaminated soil to be transported to a secure landfill as hazardous waste and between 275 to 550 cubic yards of non-hazardous soil to be transported to a permitted disposal facility as solid waste. Excavated areas would be backfilled with clean soil. Additionally, the groundwater would be collected in a shallow trench on Watervliet Arsenal property, treated on-site in a newly constructed treatment plant and then discharged to the Hudson River via a city storm sewer. The treatment plant was assumed to operate for five years.

### **7.2 Elements of the Remedy Already Performed**

The limited soil remediation required by the ROD was completed in 1995, including localized excavation of soil from beneath the former plating building slab in the area of the chromic acid tank. The remediation of the soil included excavation and disposal of 160 tons of hazardous soils and 800 tons of non-hazardous soils. The excavation areas were backfilled with 300 cubic yards of clean soil. The shallow groundwater interceptor trench and the treatment plant were also constructed at this time. The treatment system included installation of a downgradient collection trench and on-site treatment plant that uses chromate specific ion-exchange resin to remediate site groundwater. After the conclusion of the demonstration period, in 1998 the groundwater treatment system began full scale operation. The plant has been in continuous operation for almost 20 years. The plume emanating from the source under the building is currently being captured and contained, however the source under the existing block building remains.

### **7.3 New Information**

Based on elevated analytical results obtained in 2009 of soil and paint chip samples, elevated chromium toxicity characteristic leaching procedure (TCLP) results from the 2014 building materials samples, and long-term groundwater samples, it is believed that deterioration of the building envelope coupled with the presence of significant contamination of building materials and underlying soils is resulting in a continued source of groundwater contamination; therefore, the remedial action objectives presented in the original ROD (NYSDEC 1995) are not being achieved. After nearly 2 decades of pump and treatment plume capture, well beyond the estimated 5 years of anticipated operation in the original remedy, the groundwater continues to exhibit very high levels of chromium. In the intervening years, the former building and the property have not been developed, and an opportunity to address the source remains. If the source is not

addressed, continued plume containment by collection and operation of the onsite treatment plant will be necessary and would continue indefinitely.

#### **7.4 Changes to the Original Remedy**

The on-site building will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal. Following removal of the building contaminant source areas, including 104 cubic yards of contaminated soil with TCLP results greater than 5 mg/l and 860 cubic yards of non-hazardous soil exceeding the protection of groundwater SCO of 19 ppm would be excavated for off-site disposal at an appropriately permitted facility. After confirmatory sampling indicates that the contaminated soil has been removed, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in and compacted to backfill the limits of the excavation. While some limited excavation and off-site disposal of contaminated soils was selected as part of the original remedy, it did not include demolition and removal of the plating building. This amended remedy includes demolition of the building and excavation of the contaminated soil/fractured rock beneath and immediately adjacent to the building footprint. Demolition of the building will also remove any potential for human exposure to chromium that is leaching from the deteriorating block building. This contaminated concrete block will likely need to be disposed of as hazardous waste, while other uncontaminated concrete will be disposed of as construction and demolition material. To the extent possible, metal material will be recycled, and once the building is removed, the underlying source will be accessible for excavation. An environmental easement will restrict use of the groundwater if not treated before use, and will require compliance with an approved site management plan. It will also restrict land-use to commercial and industrial use as part of the amended remedy. The estimated cost to implement this amended remedy is \$1,012,000, plus the in-situ injection cost of \$110,000, for a total cost of \$1,122,000. A ten-year operation and maintenance cost of \$500,000 is also projected.

**In-situ Geochemical Fixation Plan:** In-situ Geochemical Fixation will follow building demolition and excavation. In lieu of continuing the operation of the existing groundwater collection and treatment system remaining groundwater contaminated with hexavalent chromium will be treated in-situ with an injection of sodium lactate solution or other fixation agent. An injection gallery would be installed perpendicular to the direction of groundwater flow during the excavation work and a sodium lactate solution would be gravity fed into the injection galley and diffuse into the soil from a temporary onsite tank. The fixation agent would chemically reduce the hexavalent chromium to trivalent chromium, resulting in an iron/chromium precipitate that is permanently immobilized under site conditions. The chromium would remain in the aquifer system but would be “fixed” onto aquifer solids as trivalent chromium and not be available for transport in the groundwater. The cost to set-up, implement, and monitor this injection of sodium lactate is \$110,000. Once the sodium lactate or other fixation agent is observed entering the on-site treatment plant’s influent collection trench, the treatment plant would be turned off and the monitoring of groundwater performed quarterly to assess the groundwater plume.

**SUMMARY OF REMEDY CHANGES**  
**Perfection Plating (No. 401037) Record of Decision Amendment**

<b>Media:</b>	<b>1995 ROD</b>	<b>Amended ROD</b>
Groundwater	<p>(1) Groundwater plume extraction and treatment via downgradient shallow collection trench and a selective ion exchange resin treatment plant to capture metals.</p> <p>(2) Long-term monitoring;</p> <p>(3) Groundwater was not being used in the vicinity and was unlikely to be used according to 1995 ROD so a groundwater use restriction was not included.</p>	<p>(1) No immediate change, collection trench and treatment system will continue to operate to intercept the plume. Once the source beneath the building is removed, the groundwater contamination levels are expected to diminish, then the interceptor trench and treatment plant would be discontinued. In lieu of pump and treatment, a sodium lactate solution or other fixation agent will be injected to treat the hex chromium in-situ.</p> <p>(2) Long term monitoring will continue to evaluate the effectiveness of the remedy</p> <p>(3) An Environmental Easement restricting groundwater use will be in place.</p>
Soil	<p>(1) Excavation and off-site disposal of accessible subsurface and surface soils to meet a cleanup objective of 390 ppm. Building left intact and source area underneath is inaccessible for excavation.</p> <p>(2) A deed restriction was filed to prevent excavation into site soil deeper than 1 foot. This IC expires in 2025 unless extended</p>	<p>(1) The former metal-plating building will be demolished and building material categorized for disposal. The underlying source of contamination, and any contamination in soils adjacent to the building, will be excavated to achieve the protection of groundwater SCO of 19 ppm and appropriately disposed of.</p> <p>(2) A Site Management Plan (SMP) will be implemented as part of the amended remedy to maintain IC/ECs at the site. An Environmental Easement to restrict land-use to commercial/industrial will also be implemented</p>
Soil Vapor	No remedy required for this media.	No change. The primary contaminant is chromium from plating operations which does not impact the soil vapor pathway.

## **SECTION 8: EVALUATION OF CHANGES**

### **8.1 Remedial Goals**

Goals for the cleanup of the site were established in the original ROD. The goals selected for this site are:

1. *Reduce, control, or eliminate the contamination present within the soil onsite.*
2. *Eliminate the potential for direct human or animal contact with the contaminated soil on site and miscellaneous contaminated materials inside the plating building.*
3. *Prevent, to the extent possible, migration of contaminants from the site to groundwater.*
4. *Mitigate the impacts of contaminated groundwater to the environment.*
5. *Provide for the attainment of SCGs for groundwater quality at the limits of the area of concern.*

No changes to these goals are proposed in this amended remedy.

### **8.2 Evaluation Criteria**

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the original Feasibility Study.

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

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

The original remedy has been protective by intercepting and containing the plume emanating from the source. The contaminated groundwater is captured and treated to allowable discharge limits before being discharged to the Hudson River. However, the chromic acid source under the building remains untouched. The amended remedy would continue to operate the groundwater collection and treatment system until the in-situ sodium lactate solution injection was detected in the treatment plant influent and would also remove the source by excavation and off-site disposal. Potential exposures to workers could occur during excavation but will be managed by a health and safety plan and a community air monitoring program (CAMP) will be implemented to protect the adjacent community during demolition and excavation. Removal of the source will eliminate the source entirely and the plume will decline once the source is removed, thereby eliminating any potential for an adverse effect on public health or the environment. Removal of the contaminated soils and building material will reduce the potential for human exposure.

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.

The original remedy has not been effective at meeting groundwater SCGs in the area of concern. Groundwater contamination levels are anticipated to be significantly reduced via the amended remedy from the current high concentrations of chromium in the groundwater in the vicinity of the plating building. In addition to excavation of the source under the building, an in-situ injection to further immobilize the chromium will be implemented.

**The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.**

3. **Short-term Effectiveness.** The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

The original remedy has been constructed and has been operating for many years, so it would simply continue to operate for an indeterminate period into the future. The amended remedy would require a short-term construction event of truck traffic and construction equipment noise during demolition of the building, soil excavation, dewatering, classification of the debris and soil, and loading of trucks for off-site disposal. The construction activity would vary in intensity, depending on work progress, truck scheduling and weather. Construction activity can be scheduled to be performed during a time of least disruption to nearby residents and truck traffic can be routed to limit travel through neighborhoods thereby minimizing any adverse effects. Potential exposures could occur to the surrounding area during excavation but will be monitored by a community air monitoring program (CAMP) and strict protocols followed to protect public and worker health.

4. **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.

The original remedy is capturing the contaminated groundwater after it has been contaminated by the hexavalent chromium source beneath the building. The contaminated groundwater is then captured, treated, and discharged to the Hudson River. The current remedy has proven to be effective at containing the contamination, but not in reducing contaminant levels in groundwater or the source under the building and therefore is not a permanent remedy that will attain RAOs. The amended remedy will remove the source and the building above it. Removal of the source is a permanent remedy. Removal of the source is the best alternative to provide the longest term effectiveness and permanence. The continued use of the collection trench and treatment plant and implementation of an Easement until all contamination in groundwater is removed will ensure that the remedy remains effective in protecting human health and the environment.

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

The original remedy had left the contaminant source in place and has not reduced its toxicity, mobility, or volume. The amended remedy would excavate the source and dispose of it properly off-site. This would eliminate exposure on-site and would reduce the mobility of the contamination in the environment.

6. **Implementability.** The technical feasibility 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.

The original remedy has been constructed and the treatment plant is currently being operated, maintained, and monitored. The amended remedy would need a period of construction activity to demolish the building and excavate the contaminant source. This type of construction activity is routinely implemented with standard construction methods and readily available track-hoe excavators and semi-tractor trailer dump trucks available to contractors. The technical and administrative feasibility to implement the amended remedy is straightforward and will present a low level of difficulty for a contractor to complete.

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 original remedy that has been constructed requires operator visits two times each week to maintain the treatment plant and to keep it online. The treatment process uses a chromium specific ion exchange resin, sulfuric acid, sodium hydroxide, city water, and electricity. Monthly samples from the process are collected and periodic sampling of on-site monitoring wells are performed. In addition, a periodic review of the site is conducted by a consulting engineer. These costs will continue and escalate each year into the future with an indeterminate end point as long as the source remains under the building. The amended remedy has a high initial cost of \$1.1 million dollars but would remove as much of the source as possible and chemically fixate any remaining chromium in the aquifer. This alternative would be more cost effective in the long-term than simply continuing the groundwater collection and treatment.

**This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the proposed ROD amendment have been received.**

8. **Community Acceptance.** Concerns of the community regarding the proposed changes were evaluated. A responsiveness summary was prepared that describes public comments received and the manner in which the Department addressed the concerns raised. If the final remedy had

differed significantly from the proposed remedy, notices to the public would have been issued describing the differences and reasons for the changes.

## **SECTION 9: AMENDED REMEDY**

The Department has amended the Record of Decision (ROD) for the Perfection Plating Site. The changes to the selected remedy are summarized in Section 7.4 above.

The estimated present worth to complete the original remedy was \$680,000. The actual costs to date for the original remedy are \$1,608,712. The cost to construct the amended remedy is estimated to be \$1,122,000 and the estimated O & M present worth is \$500,000 for 5 years of plant operation plus 10 years of site monitoring and periodic review certification by a consulting engineer.

The elements of the amended remedy listed below are identified as unchanged, modified or new when compared to the December 1995 remedy:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. (unchanged)
2. The former plating building will be demolished. Dust and storm water run-off control measures will be employed to minimize any short-term impacts. An estimated 368 cubic yards of contaminated building material will be hauled to an approved off-site disposal area. An estimated 245 cubic yards of building material not meeting the definition of hazardous waste will be disposed in a non-hazardous waste landfill. Hazardous soil will be sent to a RCRA-regulated facility for disposal. (new)
3. Contaminated soil beneath and adjacent to the building footprint will be excavated and replaced with clean fill. Dust and storm water run-off control measures will be employed to minimize any short-term impacts. Contaminated soil will be hauled to an approved off-site disposal area. An estimated volume of 860 cubic yards of soil not meeting the definition of hazardous waste will be disposed in a non-hazardous waste landfill. An estimated 104 cubic yards of hazardous soil will be sent to a RCRA-regulated facility for disposal. (modified)
4. In-situ geochemical fixation will be performed after the source excavation. An infiltration galley will be constructed to inject a sodium lactate solution or other fixation agent into the soil to chemically convert the hexavalent chromium to trivalent form which would become an immobile precipitate. Once the sodium lactate is detected in the remedial system influent, the plant will be turned off. No additional cost for O&M is expected for implementation of the geochemical fixation contingency. (new)
5. A groundwater cutoff trench will be constructed on Watervliet Arsenal property to

intercept and collect the plume of contaminated groundwater. Additionally, the trench will lower the water table in the vicinity of the affected house north of the site. (unchanged)

6. A treatment facility will be built on the Perfection Plating property, adjacent to the collection trench on the Watervliet Arsenal's Siberia Area. The treatment facility will only treat water collected from the trench. As a contingent option, the wastewater treatment plant at the Watervliet Arsenal could be used. (unchanged)
7. Treated wastewater will be monitored and piped to a local storm drain which discharges to the Hudson River. (unchanged)
8. A long-term monitoring program will be instituted including development of an updated site management plan. This program will allow the effectiveness of the selected remedy to be monitored. This long-term monitoring program will be a component of the operation and maintenance for the site. (modified)
9. An institutional control in the form of an environmental easement will be placed on the property in place of the current deed restriction to restrict site use to commercial and industrial use, to require certifications as required by 6 NYCRR Part 375, to restrict use of groundwater and to require adherence to the requirements of the site management plan. (new)

## **SECTION 10: FINAL STEPS**

As described above, there was a public meeting and comment period on the proposed changes to the selected remedy. At the close of the comment period, the Department evaluated the comments received and prepared a responsiveness summary which is incorporated into this document. This signed Amended ROD document describes the Department's final decision on the Perfection Plating site.

If you have questions or need additional information you may contact any of the following:

### Project Related Questions

*Aydin Tabrizi*

Project Manager

NYSDEC

625 Broadway, 12th Floor

Albany, NY 12233-7017

518.402.9813

*Aydin.Tabrizi@dec.ny.gov*

### Site-Related Health Questions

*Stephen Lawrence*

New York State Department of Health

Bureau of Environmental Exposure

Investigation Empire State Plaza,

Corning Tower, Room 1787

Albany, NY 12237

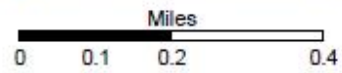
518.402.7860

*BEEI@health.ny.gov*





Legend  
★ Site Location



1 in = 0.2 miles

Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA



**PERFECTION PLATING  
ROD AMENDMENT**

**FIGURE 1  
SITE LOCATION**

PROJECT MGR:  
JCH

DESIGNED BY:  
JCP

CREATED BY:  
ALK

CHECKED BY:  
JAV

SCALE:  
AS SHOWN

DATE:  
AUGUST 2015

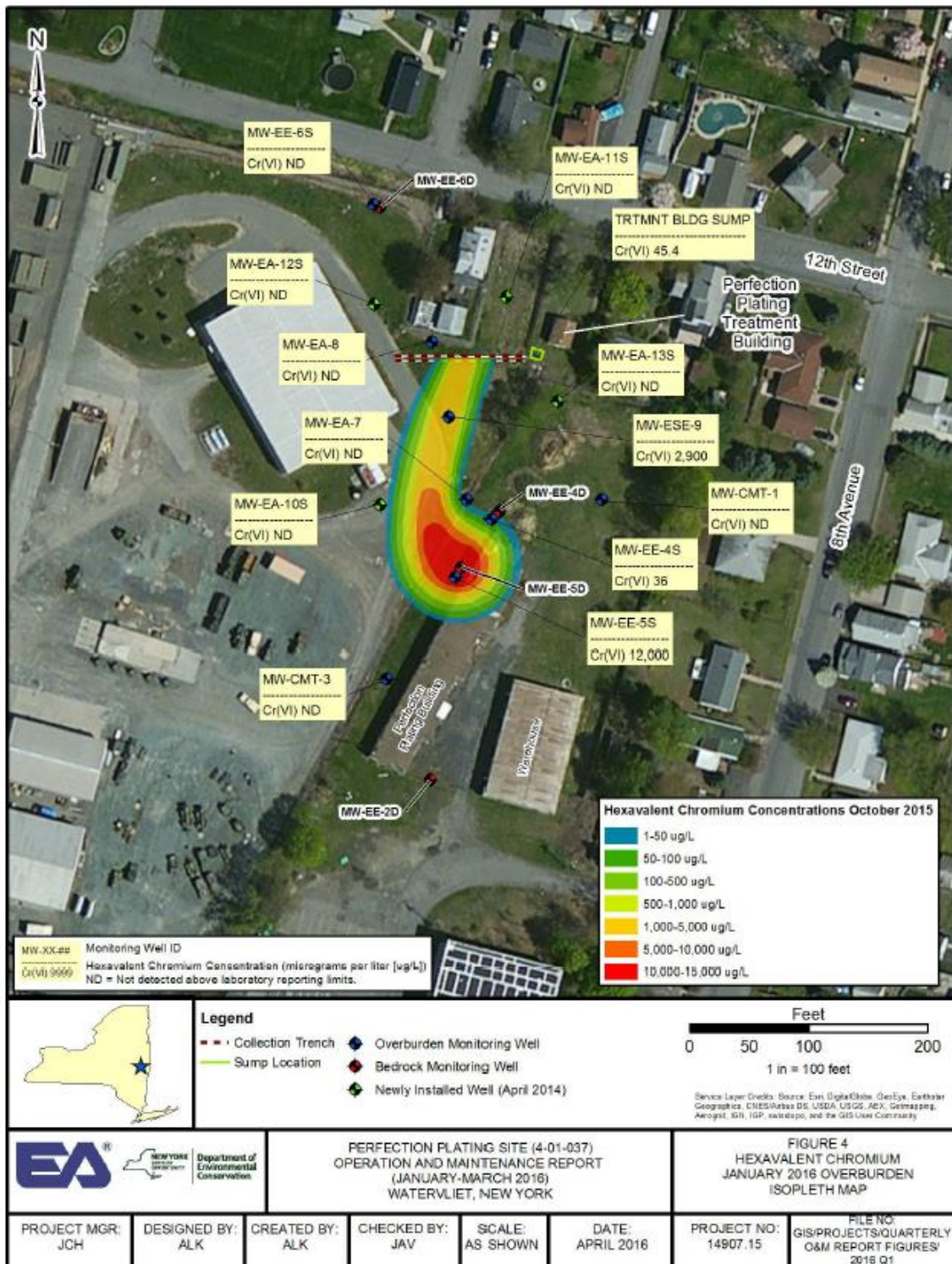
Site Number  
#401037

911 Eleventh Street  
WATERVLIET, NY



	<b>Legend</b> — Former Excavation Area ● Soil Sample Hazardous TCLP Results ● Soil Sample Hexavalent Chromium Above UU SCO (1 mg/kg) ● Soil Sample Hexavalent Chromium Non-Detect		Approximate Extent of Hexavalent Chromium Over UU SCO (1 mg/kg) TCLP Results Indicate Hazardous Material		<small>Source: USGS Seamless Data Distribution 2007</small>		
			PERFECTION PLATING (Site No. 4-01-037) WATERLIET, NEW YORK		<b>FIGURE 2</b> APPROXIMATE EXTENT OF HEXAVALENT CHROMIUM IMPACTED SOIL		
PROJECT MGR: JCH	DESIGNED BY: CSY	CREATED BY: HAW	CHECKED BY: JV	SCALE: AS SHOWN	DATE: AUGUST 2015	PROJECT NO: 14907.15	FILE NO: 14907.15 - Perfection Plating/GIS/BOD





# **APPENDIX A**

## **Responsiveness Summary**

# **RESPONSIVENESS SUMMARY**

## **PERFECTION PLATING State Superfund Project Watervliet, Albany County Site No. 401037**

The Proposed Remedial Action Plan (PRAP) for the Perfection 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 April 3, 2018. The PRAP outlined the remedial measure proposed for the contaminated building materials and groundwater at the Perfection 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 public meeting was held on April 2, 2018, which included a presentation of the remedial investigation (RI) and amended record of decision (AROD) for the Perfection Plating as well as

a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on April 6, 2018.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

Comments received during the public meeting held on April 2nd, 2018:

COMMENT 1: Who owns the building?

RESPONSE 1: Mr. Charles Essepien is the owner of the building.

COMMENT 2: Is it possible that the Perfection Plating building could be replaced with a new one?

RESPONSE 2: This site currently has a deed restriction that restricts certain uses. Specifically, it cannot be used for residential housing or for a daycare center. However, the cleanup process and local zoning may permit an appropriate new use of this property at some point in the future.

COMMENT 3: Is the owner covering the cost for any part of clean-up process?

RESPONSE 3: No, the current owner is not liable for contaminant conditions at the site.

COMMENT 4: Where will the building materials be shipped after the demolition?

RESPONSE 4: Materials which cannot be beneficially reused on-site will be taken off-site for proper disposal at an appropriately permitted facility.

COMMENT 5: What is the process of demolishing the building? Does it have any impact on nearby buildings?

RESPONSE 5: An asbestos survey would first be conducted to identify and then abate, any asbestos within the building. Demolition would follow, using typical construction equipment to do the job. Demolition will be carefully monitored by a community air monitoring program. Hazardous material will be taken off the site and clean fill will be brought in and used for restoration. This process will minimize impacts to nearby buildings as the trucks will use the southern entrance of the site and Broadway as the main route of transportation.

COMMENT 6: What kind of materials will be used to fill the excavation at the site?

RESPONSE 6: After confirmatory sampling indicates that the contaminated soil has been removed, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in and compacted to backfill the limits of the excavation.

COMMENT 7: What does the on-site geology consist of?

RESPONSE 7: The soils beneath the site consist of 2 to 15 feet of sandy fill material, followed by dense clay. Bedrock underlying the soil is a highly fractured, steeply dipping shale.

COMMENT 8: What areas have been sampled? Can hexavalent chromium migrate to the surface?

RESPONSE 8: It is unlikely that the hexavalent chromium can migrate to the surface soil, but it can migrate within the groundwater and create a plume. It should be noted that the groundwater is being treated, pursuant to the current Record of Decision (ROD), with the on-site treatment system. Results of concrete samples from floor and wall locations indicate that hexavalent chromium is above regulatory criteria for the toxicity characteristics, with the highest concentrations being found in the plating process room. This new information suggests that removal of the building and the underlying chromium contaminant source is the only effective and permanent way to eliminate the ongoing contamination of groundwater.

COMMENT 9: Is the proposed ROD amendment already granted or do you need support from the community?

RESPONSE 9: The Department seeks input from the community on this proposed ROD Amendment. The public is given an opportunity to participate in the remedy selection process. The Department may modify or reject the proposed changes based on new information or public comments.

COMMENT 10: Would the estimated cost (≈\$1.7 Million) cover the asbestos assessment?

RESPONSE 10: Yes, asbestos in the building will be surveyed and abated before the demolition.

COMMENT 11: Will the community/neighborhood be notified before the start of demolition process?

RESPONSE 11: Yes. The community will be informed before the start of demolition. In addition, the Department will send out a fact sheet to adjacent property owners directly.

COMMENT 12: Where does the pile of dirt on the property come from originally?

RESPONSE 12: The site owner (Charles Essepien) mentioned that the pile of dirt originated from excavations related to the foundation of his private house located in Loudonville, NY.

COMMENT 13: What is the estimated time of the building demolition?

RESPONSE 13: It cannot be predicted at the moment, but it may be in the next 6-18 months.

COMMENT 14: What are the building tax parcel divisions?

RESPONSE 14: The owner mentioned in the meeting that he pays 96% of entities tax to the City of Watervliet, and 4% to the Town of Colonie.

COMMENT 15: How are the trucks going to leave the property after removing the dirt?

RESPONSE 15: While this detail will be addressed as part of the Remedial Design, it is anticipated that, after leaving the site, the trucks will use 9th Avenue towards 10th Street which is the main road.

COMMENT 16: Will the trucks be a problem due to their heavy weight for any sensitive underground water pipelines, etc.?

RESPONSE 16: No, the trucks will use the main road that is already suitable for heavy-duty equipment and machines.

*A local resident submitted the following comment by an e-mail dated April 5, 2018:*

COMMENT 17: How will the feral cats on site and inside the Perfection Plating building be managed during the demolition process? Can DEC give permission to a neighbor to enter the site and feed/rescue the cats?



RESPONSE 17: If community cats or kittens are encountered during the project, a cat rescue organization would be contacted for their assistance. In regards to site access, only the property owner can grant permission to a neighbor to enter this property.

*An environmental engineer of the Watervliet Arsenal (WVA) submitted the following comments (Nos. 18 through 25), by an email dated April 04, 2018:*

COMMENT 18: Are injections within the building footprint only or will they mirror the plume migration? What size footprint (and/or what minimum concentration levels) will the injectate address?

RESPONSE 18: The method of injection is still in the conceptual design process and it will be finalized as part of the Remedial Design. However, the initial conceptual approach recommends to inject a single pore volume of sodium lactate solution into the aquifer. Based on the areal extent of the groundwater plume at the Perfection Plating site being 12,693 square feet, the quantity of sodium lactate solution required would be approximately 200,000 gallons.

COMMENT 19: As the project is funded by the State Superfund program, will that funding extend to within the boundaries of the WVA? Are there any plans for remediating the plume encroachment on WVA property (Federal Lands)?

RESPONSE 19: In 1998, an intercepting trench was constructed on WVA to capture the migrating plume of chromium in groundwater on WVA property. This new work is not designed to extend any construction activity into WVA.

COMMENT 20: This office requests that the remedial design documents and/or work plan address the removal and/or proper abandonment of the groundwater collection trench and monitoring wells once monitoring has shown that the remediation is complete, including those on WVA property. I request that once the Remedial Work Plan is complete that this office be given a copy electronically.

RESPONSE 20: The Department can accommodate that request.

COMMENT 21: There are current WVA activities adjacent to your work area and due to current workload expansion at WVA, use of additional adjacent area on WVA property is being considered as a lay down yard. This project could have an impact on WVA activities. Therefore:

- What hazards exist, will exist, or may exist causing life, health and safety issues for employees or emergency personnel on WVA in the adjacent areas?
- What additional PPE should WVA be concerned with obtaining and donning during the project? Additional training WVA employees should have?
- What measures will be taken during the work to prevent dust migration into WVA property, affecting employees, military vehicles and valuable stock used in manufacturing.

RESPONSE 21: The site is fenced and the plating operation is no longer in operation, which minimizes direct contact exposure. People who enter the site may come into contact with site- related soil and groundwater contamination if they dig below the surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination.

The treatment plant on-site is effectively capturing and controlling the plume of contaminated groundwater from migrating off-site. A community air monitoring program with a minimum of three (3) air monitoring stations will monitor and record air quality during remedial action/construction activity to minimize the potential for contamination to migrate from the site. No additional training or PPE is needed for WVA employees.

COMMENT 22: Considering the proximity to WVA perimeter, we have Security concerns with all of the following:

- Security Lighting on project site
- Non-DoD personnel having direct access to arsenal property (i.e. Non-vetted &/or foreign national, felons)
- Heavy Equipment encroaching the fence line
- Dumpsters, vehicles, staging, and storage locations (all of these create operational security concerns for WVA)

Will the WVA perimeter fence/wall need to be removed, relocated, barricaded, or compromised in any way? If so, to what extent, for how long and who is paying to move the fence, install temporary fence/barricade and later to return it to its original site and condition?

RESPONSE 22: The Amended Record of Decision (AROD) deals with the Perfection Plating building itself and there is no expectation of removing the chain-link fence or entering the WVA. The construction activity would be conducted only during regular daytime hours. A community air monitoring program (CAMP) will be implemented to protect the adjacent community, including employees of the WVA, during demolition and excavation. Removal of the source will eliminate the source entirely and the plume will decline once the source is removed, thereby eliminating any potential for an adverse effect on public health or the environment.

COMMENT 23: Is it reasonable to assume that overtime pre-authorization will be necessitated to provide additional around the clock security by WVA adjacent to the project site?

RESPONSE 23: No. The Department does not believe additional security by WVA personnel is warranted by its amended remedy.

COMMENT 24: What is the final disposition or condition of the property after demolition? Will it be kept up or will vegetation overgrowth become an issue for WVA Police?

RESPONSE 24: The former plating building will be demolished. Dust and storm water run-off control measures will be employed to minimize any short-term impacts. The following steps will be observed:

- An estimated 368 cubic yards of contaminated building material will be hauled to an approved off-site disposal area. Hazardous soil will be sent to a RCRA-regulated facility for disposal.
- Contaminated soil beneath and adjacent to the building footprint will be excavated and replaced with clean fill. Contaminated soil will be hauled to an approved off-site disposal area. An estimated volume of 860 cubic yards of soil not meeting the definition of hazardous waste will be disposed in a non-hazardous waste landfill. An estimated 104 cubic yards of hazardous soil will be sent to a RCRA-regulated facility for disposal.

- In-situ geochemical fixation will be performed after the source excavation. An infiltration galley will be constructed to inject a sodium lactate solution or other fixation agent into the soil. Once the sodium lactate is detected in the remedial system influent, the plant will be turned off.
- The property owner would be responsible for site maintenance after the project is completed.

COMMENT 25: WVA requests liberal and steady communication with our Arsenal Police Force throughout the project to ensure security of this U.S. Army facility and its' employees.

RESPONSE 25: The Department agrees.

**APPENDIX B**

**Administrative Record**

**PERFECTION PLATING**  
**State Superfund Project**  
**Watervliet, Albany County**  
**Site No. 401037**

1. Proposed Record of Decision Amendment, Perfection Plating site, dated February 2018, prepared by the New York State Department of Environmental Conservation, Division of Environmental Remediation.
2. Basis of Design Report, Perfection Plating, dated August 2015, Prepared by EA Engineering, P.C., and Its Affiliate EA Science and Technology.
3. Conceptual Approach for In-Situ Geochemical Fixation to Address Groundwater Contamination, Perfection Plating Site, dated November 2015, Prepared by EA Engineering, P.C.
4. Original Record of Decision, Perfection Plating site, dated December 1995, Funded Under the 1986 Environmental Quality Bond Act, New York State Department of Environmental Conservation