



**First Five-Year Review Report**

**Genzale Plating Superfund Site  
Franklin Square  
Nassau County, New York**



**Prepared by:**

**United States Environmental Protection Agency  
Region 2  
New York, New York**

**August, 2010**

## Five-Year Review Summary Form

| SITE IDENTIFICATION  |  |                                     |
|--|--|-------------------------------------|
| Site name (from WasteLAN): Genzale Plating Superfund Site  |  |                                     |
| EPA ID (from WasteLAN): NYD980651087   |  |                                     |
| Region: 2  | State: NY                                | City/County: Franklin Square/Nassau |
| SITE STATUS  |  |                                     |
| NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify)  |  |                                     |
| Remediation status (choose all that apply): Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete   |  |                                     |
| Multiple OUs? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO  | Construction completion date: 12/29/2005 |                                     |
| Are portions of the Site and/or investigated adjacent properties in use or suitable for reuse? Has site been put into reuse? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/   |  |                                     |
| REVIEW STATUS  |  |                                     |
| Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency   |  |                                     |
| Author name: Kevin Willis  |  |                                     |
| Author title: Remedial Project Manager   | Author affiliation: EPA                  |                                     |
| Review period: 9/30/2005 to 07/31 //2010   |  |                                     |
| Date(s) of site inspection: 3/22/2010  |  |                                     |
| Type of review:<br><input type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only<br><input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead<br><input checked="" type="checkbox"/> Statutory <input type="checkbox"/> Regional Discretion   |  |                                     |
| Review number: <input checked="" type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify)   |  |                                     |
| Triggering action:<br><input type="checkbox"/> Actual RA On-site Construction at OU # <u>1</u> <input type="checkbox"/> Actual RA Start at OU# _____<br><input checked="" type="checkbox"/> Construction Completion <input type="checkbox"/> Previous Five-Year Review Report<br><input type="checkbox"/> Other (specify)  |  |                                     |
| Triggering action date (from WasteLAN): 9/30/2005  |  |                                     |
| Due date (five years after triggering action date): 9/30/2010  |  |                                     |
| Does the report include recommendation(s) and follow-up action(s)? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no<br>Is human exposure under control? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no<br>Is contaminated groundwater under control? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> not yet determined<br>Is the remedy protective of the environment? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> not yet determined |  |                                     |

### **Issues, Recommendations and Follow-Up Actions**

This site has ongoing operation, maintenance and monitoring activities as part of the selected remedy. As was anticipated by the decision documents, these activities are subject to routine modification and adjustment. The remediation goals for site-related groundwater contamination must be clearly identified and incorporated into the site remedy by a future decision document. An Institutional Control to prevent disturbance of soils at depths greater than 15 feet below the existing ground surface, as well as disturbance of the remaining portions of the facility foundation walls must be implemented. Table 3 of this report includes suggestions for improving, modifying, and/or adjusting these activities.

### **Protectiveness Statement**

The remedy has been implemented and it has been determined that the remedy is functioning as intended and remains protective in the short term for human health and the environment.

## **Executive Summary**

This is the first Five-Year Review for the Genzale Plating Superfund site. The site is located in the City of Franklin Square, Nassau County, New York. The remedy for the site included excavation of contaminated soils, treatment of soils contaminated with Volatile Organic Compounds (VOCs) with Soil Vapor Extraction (SVE) technology, and the extraction and treatment of groundwater contaminated with metals and VOCs. The trigger for this five-year review is the completion of construction at the site.

The assessment of this Five-Year Review found that the remedy was constructed in accordance with the requirements of the 1991 Record of Decision (ROD). The immediate threats have been addressed and the remedy was found to be operating as intended, is well maintained, and continues to protect human health and the environment.

# Five-Year Review Report

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## **I. Introduction**

This is the first Five-Year Review for the Genzale Plating Superfund site, located in Franklin Square, Nassau County, New York. This review was conducted by United States Environmental Protection Agency (EPA) Remedial Project Manager (RPM), Kevin Willis. The Five-Year Review was conducted pursuant to Section 121 (c) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §9601 *et seq.* and 40 CFR 300.430(f)(4)(ii) and in accordance with the Comprehensive Five-Year Review Guidance, OSWER Directive 9355.7-03B-P (June 2001). The purpose of a Five-Year Review is to assure that implemented remedies are protective of public health and the environment and that they function as intended by the decision document(s). This report will become part of the site file.

This Five-Year Review is being conducted as a policy review. The trigger for this first Five-Year Review is the date of the completion of construction at the site (September 30, 2005).

The site remediation was performed pursuant to a 1991 Record of Decision (ROD). This decision was updated and modified by a 2004 Explanation of Significant Differences (ESD), which built on the knowledge gathered during the ongoing remedial efforts.

The Genzale Plating site remedy is a comprehensive source control remedy that is being implemented as a single operable unit and continues to be in well-maintained condition and is fully protective of human health and the environment. There is a second operable unit (OU2) for this site which focused on the off-property groundwater contamination; the results of the Remedial Investigation and Feasibility Study for OU2 indicated that the actions taken pursuant to the OU1 ROD would protect human health and the environment and that no further action was necessary for the off-property groundwater contamination. This no further action remedy was presented to the public and was documented in the 1994 ROD.

## **II. Site Chronology**

The chronology of site events related to the remediation of the Genzale Plating site is summarized in Table 1.

## **III. Background**

### ***Site Location:***

The Genzale Plating Company site is located at 228 New Hyde Park Road in Franklin Square, Nassau County, New York. The site lies immediately adjacent to New Hyde Park Road and Kalb Road to the west and east, respectively. Figure 1 provides a map of the area.

## Background:

The 0.6-acre Genzale Plating Company site was formerly a metal-plating facility, which included an attached two-story office building and an undeveloped backyard area which served as a parking lot and storage area. Beginning in 1915 and operating through 2000, the facility electroplated small products such as automobile antennas, parts of ball point pens, and bottle openers, and is known to have discharged wastewater containing heavy metals as well as organic contaminants into four sub-surface leaching pits at the rear of the former facility. These releases resulted in the contamination of the shallow aquifer (the Upper Glacial Aquifer) beneath the property. The predominant land use in the vicinity of the site is residential. All drinking water within the area is provided by the Franklin Square Water District. The only source of drinking water for residences in the Town is ground water. All public water supply wells in the vicinity of the site area draw water from the deeper aquifer (the Magothy Aquifer). Public water supply wells that serve the residents near the Site are located within approximately one mile and are not impacted by the site.

## Geology/Hydrogeology

The Genzale Plating site is located in the outwash plain on Long Island, New York. Approximately 500 feet of interbedded sands and limited clay lenses overlay Precambrian bedrock. There are three aquifers that exist beneath the site, two of which are affected. The Upper Glacial Aquifer is the surficial unit which overlies the Magothy Aquifer, which in turn overlies the Lloyd Aquifer. The Magothy Aquifer is the primary source for public water in the area. No impeding clays were observed between the Upper Glacial and Magothy Aquifers within the study area.

## Land and Resource Use:

The site property is designated commercial, though the surrounding properties in the vicinity of the site are zoned as residential. The Genzale Company closed in 2000 and the facility is no longer operational.

## History of Contamination and Initial Response

Although the facility was connected to the municipal sewer system in 1955, a 1981 Nassau County Department of Health (NCDH) inspection found that industrial wastewater continued to be discharged into the on-site leaching pits. The company was ordered by NCDH to cease the discharge and began, but never completed, the excavation of sludge and contaminated soils from the pits. The New York State Department of Environmental Conservation (NYSDEC) conducted an investigation of the site in 1983 to determine the potential threat to public health posed by potential migration of contaminants into and through the groundwater. As a result of this investigation, the site was included on the Superfund National Priorities List on July 22, 1987.

## Basis for Taking Action

In 1988, EPA initiated a Remedial Investigation to determine the nature and extent of contamination at the site. The study indicated that groundwater and leaching pits located behind the facility were contaminated with both inorganic and organic contaminants. In March 1991, a remedy was selected

for the site which was documented in the above-mentioned 1991 ROD. The remedy addressed soil and groundwater contamination at the site. These areas of the site posed a threat to human health and the environment because of risk from possible ingestion, inhalation, or dermal contact with the soils and/or groundwater. Chemicals of concern were identified in the ROD for the soil and groundwater. The chemicals of concern in the soil are cadmium, chromium, nickel, barium, lead, copper, arsenic, trichloroethene, bis (2-ethylhexyl) phthalate, and chrysene. The chemicals of concern in the groundwater are trichloroethene, 1,1,1-trichloroethane, 1,1-dichloroethene, tetrachloroethene, cadmium, chromium, copper, lead, and nickel.

The remedy selected for the groundwater in the vicinity of the former facility was to construct a groundwater extraction and treatment system. Once the design of this system was initiated, EPA determined that it needed additional investigation work to determine if the initial excavation work had changed its understanding of the off-property groundwater contamination downgradient of the property.

The impact on the groundwater downgradient of the former facility property was studied thereafter, and a second ROD was issued in September 1995, in which EPA determined that no additional remedial action was necessary at the site, other than those planned or being performed under the 1991 ROD at the former facility property.

In July 2004, an ESD was issued which called for the excavation of a buried tank that was located behind the process building in the vicinity of the most recalcitrant groundwater contamination. The soil vapor extraction (SVE) system which was operating at the site had effectively removed the volatile organic compound (VOC) contamination across the site except in the vicinity of this tank. The 2004 ESD also noted that "institutional controls may need to be established to ensure that soil contamination left at the site, if any remains, is undisturbed and inaccessible."

During the review of the documentation for preparation of this Five-Year Review, it has been determined that the interim status of the remediation goals for groundwater as stated in the 1991 ROD may not have been clearly finalized by the 1995 ROD. EPA will be preparing a document which will clearly identify the remediation goals for the groundwater remediation currently operating at the site. This document will include a discussion of the basis for taking action identified in the 1991 ROD. It is expected that these goals will be established for the remaining contaminants of concern, which currently appear to be limited to nickel and chromium, to be treated until the applicable state groundwater protection standard or federal/state Maximum Contaminant Level (MCL) has been attained in the aquifer.

#### **IV. Remedial Actions**

##### ***Remedy Selection:***

##### **Groundwater**

- Containment of the most highly contaminated portion of contaminant plume with the purpose of working toward the overall goal of aquifer restoration;

- Treatment, via metal precipitation and air stripping, of contaminated groundwater in the Upper Glacial Aquifer to drinking water standards prior to reinjection; and
- Disposal of treatment residuals at a RCRA Subtitle C facility; and
- Collection of data on aquifer and contaminant response to remediation measures.

## **Soils**

- In-situ vacuum extraction for volatile organics followed by surface excavation over the entire property, and deeper excavation of leaching pit "Hot Spots;"
- Off-site treatment and disposal of excavated material at RCRA Subtitle C facility; and
- Backfill with clean soil.

### *Remedy Implementation:*

The soils in the rear portion of the facility property were to be addressed by treatment by SVE technology for the VOC contamination, followed by excavation and off-site treatment and disposal of those soils contaminated with metals. EPA entered into an Interagency Agreement with the United States Army Corps of Engineers (USACE) to perform the soil remedy.

Construction activities for the SVE unit were completed in July 1995. After approximately one year of operation, in May 1996, confirmatory soil sampling established that the soils had reached cleanup levels of 1 milligram per kilogram (mg/kg) for the VOCs and the unit was shut down and dismantled.

In June 1997, the USACE performed comprehensive sampling of the soils in order to delineate the metal contamination. It was determined that the rear portion of the Genzale property was contaminated with chromium, nickel, and cadmium above health-based standards, particularly in the areas of the former leaching pits. A work plan was developed which stated all soils above 50 parts per million (ppm) of total chromium and nickel would be excavated.

Excavation of the contaminated soils began in August 1997. An area which measured 20' by 50', which encompassed the former leaching pits, was excavated to a depth of 10'; the excavation was extended to a depth of 15' since it was determined that the contaminated soils under these pits extended to a greater depth. The 50 ppm concentration levels were confirmed at the excavation limits and the excavated areas were backfilled to grade. Approximately 1,100 tons of hazardous and 4,425 tons of nonhazardous soils were excavated and shipped off-site for disposal. This first action to excavate the contaminated soils was completed in the fall of 1997.

In May 2000, the Genzale Plating Corporation plating facility ceased operations. The facility set aside funds for the decommissioning of the operational part of the site and the removal of the wastes generated during the decommissioning. This action was completed by the Genzale Corporation. The wastes were sent off-site for disposal. These initial decommissioning activities were completed in June 2000.

Following the cessation of operations at the facility, EPA performed limited sampling of the soil and groundwater underlying the vacated plant building. Sampling results indicated soil concentrations for total chromium up to 82,000 mg/kg, hexavalent chromium up to 28,100 mg/kg, and tetrachloroethylene (PCE) up to 16 mg/kg.

In September 2002, a time-critical removal action was approved which included the installation of an SVE system to reduce the concentrations of VOCs within the soils in areas with high concentrations and in areas adjacent to nearby homes.

Because of the instability of the Genzale facility structures as it related to, among other things, the installation of the SVE extraction wells (i.e., limited ceiling height) and the need to further delineate the extent of contamination below the former facility structure, demolition of the buildings was performed to the existing grade, leaving the process building's basement and footings in place.

In 2003, EPA conducted vapor intrusion sampling at the Genzale site and surrounding residences. EPA conducted subslab sampling and then where appropriate, indoor air sampling. Based on the results of the subslab gas and indoor air concentrations, three homes were provided with carbon systems to address vapor intrusion concerns. An SVE system was installed at the Genzale site and operated until no rebound of contamination was observed. The SVE system was effective in removing the VOC contamination which had migrated into the adjacent homes. It operated continuously until the demolition of the remaining basement portion began in March 2005.

EPA also performed toxic characteristic leaching procedure (TCLP) analyses to determine appropriate disposal options on a representative number of cement slab and soil samples. The data results consistently exceeded the TCLP regulatory level for chromium (5,000 micrograms per liter ( $\mu\text{g/l}$ )) ranging from 5,610  $\mu\text{g/l}$  to 49,000  $\mu\text{g/l}$  for the cement slab samples. TCLP soil analyses indicated chromium contamination in shallow areas just below the cement slab and adjacent to drainage sumps at levels ranging from 9,870  $\mu\text{g/l}$  to 10,800  $\mu\text{g/l}$ .

EPA remobilized to the site in February 2005 and the actual excavation effort began in March 2005. The remainder of the process building was demolished and disposed of off-site. Concrete which was determined to be hazardous was segregated and shipped to a hazardous waste landfill for disposal. The nonhazardous concrete was disposed off-site as construction debris.

The ESD issued in July 2004 had identified a probable buried tank which necessitated removal and disposal. This "tank" was determined to be a water production well, which was then removed. During the excavation of this water well, a dry well filled with plating wastes was discovered and excavated, which was the source of the recalcitrant contamination in this area. Another similar vessel was discovered under the process building. This was excavated; the wastes were treated and shipped off-site for disposal. Portions of the building foundation were left in place and some contamination may exist on the foundation as well as soils that exist below the foundation. The 2004 ESD also noted that "institutional controls may need to be established to ensure that soil contamination left at the site, if any remains, is undisturbed and inaccessible"; controls will be put in place to address the disturbance of these soils and the remaining foundations, as well as other limited contamination that may be present in other soils at depth on the property.

The areas of contaminated soils have been excavated to a minimum depth of 15 feet; however excavation was deeper in some instances. . These soils have also been taken off-site for disposal. All excavations have been backfilled with clean soil. A total of approximately 3350 tons (2000 cu/yds) of soils, concrete and plating wastes were excavated and properly disposed off-site during the period of March to June 2005.

The quantity of soils excavated by the USACE in 1997 was approximately 5600 tons (3340 cu/yds). Approximately 3350 tons (2000 cu/yds) of soils, concrete and plating wastes were excavated and properly disposed off-site during the 2005 action by USEPA. A total quantity of materials removed from the remediation of the Genzale site is approximately 8950 tons (5340 cu/yds) and the property has been backfilled to natural grade. No soil contamination remains at the property above a 15 foot depth site-wide. An institutional control which states that future excavation at the site must be limited to a depth of less than 15 feet below the existing ground surface and which prevents disturbance of the remaining portions of the facility foundation should be implemented in order for the remedial actions at the site to remain protective to human health and the environment in the long term.

During demolition and excavation activities, continual air monitoring was performed by the U.S. Coast Guard to assure that concentrations did not exceed health-based values for the residents. There were no occurrences during these remedial activities where the public was exposed to on-site contamination above the health-based air values. All monitoring data are available at the Franklin Square Public Library.

Immediately following the excavation of the site, new monitoring wells were installed to sample the aquifer beneath the property. Analysis of the groundwater showed that the soil remediation had positively impacted the groundwater quality, but the residual contaminant levels observed still warranted the construction and operation of the groundwater extraction and treatment system selected in the 1991 ROD for the site.

Construction began in July 2005 and was completed in September 2005. The system is based on ion-exchange technology and was designed to address primarily the heavy metals contamination in groundwater. A final activated carbon scrubber in the system addresses any residual VOC contamination.

### **System Operation and Monitoring**

EPA plans to operate the groundwater treatment system until EPA has determined that the groundwater contamination beneath the site is below the state groundwater protection standard for nickel and below the MCL for chromium. Monitoring wells at the site will continue to be sampled annually. EPA plans on continuing the monitoring of the influent and effluent from the groundwater extraction and treatment system on a continuous basis for operational parameters and on a quarterly basis for contaminants until EPA determines that cleanup goals in the groundwater have been achieved. As noted above, EPA will be preparing a document which will clearly identify the remediation goals for the groundwater remediation system currently operating at the site.

## **V. Progress Since Construction was Completed**

This is the first Five-Year Review for the site and EPA has determined that the remedy is protective in the short term for human health and the environment. The treatment system was designed and constructed to utilize a resin-based treatment technology. This technology worked well but required a more frequent replacement of the resins than originally anticipated. In order to continue to treat the contaminated groundwater, the system was retrofitted with an activated carbon treatment system which requires disposal of the effluent to municipal sewage treatment rather to the storm sewer. A revision to the State Superfund Contract (SSC) which will allow for sufficient funding to operate the system as designed is near completion. Once the revised SSC is executed and funded, the resin-based treatment technology system can be operated as designed. Presently, the system remains protective in the short term for human health and the environment and is expected to be protective in the long term once the recommendations in this report are implemented.

## **VI. Five-Year Review Process**

### **Administrative Components**

The EPA Five-Year Review team consisted of Kevin Willis (RPM), Marian Olsen (Human Health Risk Assessor), Mindy Pensak (Ecological Risk Assessor), Cecilia Echols (Community Involvement Coordinator), and Robert Alvey (Hydrogeologist).

### **Community Involvement**

The EPA Community Involvement Coordinator (CIC) for the Genzale Plating site, Cecilia Echols, published a notice in Newsday on February 11, 2010, notifying the community of the initiation of the Five-Year Review process. The notice indicated that EPA would be conducting a Five-Year Review of the remedy for the site to ensure that the implemented remedy remains protective of public health and is functioning as designed. It was also indicated that once the Five-Year Review is completed, the results will be made available in the local site repositories.

### **Document Review**

The documents, data, and information which were reviewed in completing the Five-Year Review are summarized in Table 2.

### **Data Review**

Review of the groundwater data gathered since the system has been operating initially showed that the chromium levels, particularly the hexavalent chromium, had gone down in concentration but more recently has been rising.

The main groundwater contaminants of concern at the site were: trichloroethylene, 1,1,1-trichloroethane, 1,1-dichloroethene, tetrachloroethylene, cadmium, chromium, copper, lead and nickel. Review of the August 2009 groundwater data indicates that all chemicals were non-detects except as noted below.

- The concentrations of total chromium ranged from 14 to 350 ug/l and the associated values for hexavalent chromium ranged from 11 to 320 ug/l. These concentrations exceeded the respective federal Maximum Concentration Limit (MCL) of 100 ug/l and the state MCL of 50 ug/l for total chromium. No federal or state MCL exists for hexavalent chromium.
- The observed trichloroethylene concentrations of 6.8 ug/l and 7.3 ug/l are approximately at the federal and state MCL of 5 ug/l.
- The concentrations of cadmium ranged from 1 to 4.9 ug/l. The federal MCL is 5 ug/l as is the state MCL. The detected concentrations are below the federal and state MCL.
- The concentrations of copper ranged from 13 to 120 ug/l. The federal MCL which is based on a treatment technique and the state MCL is 200 ug/l. The detected concentrations are below the federal and state MCL.
- The concentrations of nickel ranged from 75 to 290 ug/l. There is no state or federal MCL for nickel; however, the state standard for groundwater protection is 100 ug/l.

### **Site Inspection**

A site inspection was conducted on March 22, 2010. The following parties were in attendance:

Marian Olsen, EPA, Human Health Risk Assessor  
 Robert Alvey, EPA, Geologist  
 Kevin Willis, EPA, Project Manager

## **VII. Technical Assessment**

### **Question A: Is the remedy functioning as intended by the decision documents?**

Yes, the remedy is functioning as intended by the decision documents. The ROD, as modified by the ESD called for, among other actions, excavation of soils and treatment of contaminated groundwater. The property is zoned commercial. The removal of contaminated soils to 15 feet has interrupted potential exposures from direct contact with the soils. At the current time, the property is fenced to prevent potential access to the site. An institutional control which states that future excavation at the site must be limited to a depth of less than 15 feet below the existing ground surface and which prevents disturbance of the remaining portions of the facility foundation should be implemented in order for the remedial actions at the site to remain protective to human health and the environment in the long term.

At the current time, all residents obtain potable water from the Nassau County Water District. An evaluation of the direct contact pathway with on-site groundwater showed that currently this is not a completed pathway since all nearby residents are currently connected to public water and the residents are therefore not exposed through this pathway.

Restrictions currently exist on the use of the aquifer immediately underlying the site for drinking water. New York State law already restricts to a large degree the future use of groundwater at this Site. New York Environmental Conservation Law Section 15-527 provides that on Long Island (which includes Nassau County), "No person or public corporation shall hereafter install or operate

any new or additional wells...to withdraw water from underground sources for any purpose or purposes whatsoever where the installed pumping capacity of any such new well or wells singly or in the aggregate, or the total installed pumping capacity of old and new wells on or for use on one property is in excess of forty-five gallons a minute without a permit pursuant to this title." Furthermore, the New York Sanitary Code (Title 10 of the New York Code of Rules and Regulations Section 5-2.4) states that "No person shall construct or abandon any water well unless a permit has first been secured from the permit issuing official."

**Question B: Are the (a) exposure assumptions, (b) toxicity data, (c) cleanup levels and (d) remedial action objectives used at the time of the remedy still valid?**

Yes. The exposure assumptions, toxicity data, cleanup levels and remedial action objectives used at the time of the remedy remain valid.

**Soil.** The exposure assessment considered industrial use under the current conditions and residential use under future conditions. Removal of the contaminated soils down to fifteen feet has removed the potential for direct contact with the soils provided that future construction does not occur at the site which results in disturbance of potentially contaminated soils 15 feet below the existing ground surface. Other toxicity data and the remedial action objectives have not changed, however, EPA's Integrated Risk Information System program is re-evaluating the toxicity of chromium and trichloroethylene at this time and this new toxicity information will need to be evaluated in the future.

**Groundwater.** The evaluation of groundwater focused on two primary exposure pathways -direct ingestion of groundwater as a potable water source and potential vapor intrusion. The evaluation of the direct contact pathway showed that all residents are receiving public water from the Franklin Square Water District municipal supply which is screened in the deeper Magothy Aquifer. The public water supply wells are approximately one mile from the site and have not been impacted. As noted above, the final groundwater remediation goals will be clearly documented for the site. As no one is exposed to site-related groundwater at the site, the remedy is protective for this potential exposure pathway.

**Vapor Intrusion.** In 2003, subslab gas sampling was conducted along with indoor air sampling. Based on the results of this analysis, three homes were provided with carbon systems to address vapor intrusion concerns.

**Question C. Has any other information come to light that could call into question the protectiveness of the remedy?**

An institutional control which states that future excavation at the site must be limited to a depth of less than 15 feet below the existing ground surface and which prevents disturbance of the remaining portions of the facility foundation should be implemented in order for the remedial actions at the site to remain protective to human health and the environment in the long term.

## VIII. Recommendations and Follow-Up Actions

This site has ongoing operation, maintenance and monitoring activities as part of the selected remedy, and EPA Region 2 has successfully performed these activities to date. As was anticipated by the decision documents, these activities are subject to routine modification and adjustment. This report includes suggestions for improving, modifying, and/or adjusting these activities.

- The site monitoring plan should be periodically reviewed and adjusted. The effectiveness of the groundwater extraction and treatment system should be analyzed and adjustments to the system should be made if warranted.
- A capture zone analysis should be performed to provide additional support for the determination that the groundwater capture system is working effectively.
- Groundwater remediation goals for site-related groundwater contamination must be clearly identified and incorporated into the site via a decision document.
- Implement institutional controls to prevent disturbance of soils 15 feet or more below the existing ground surface, as well as remaining portions of the facility foundation.

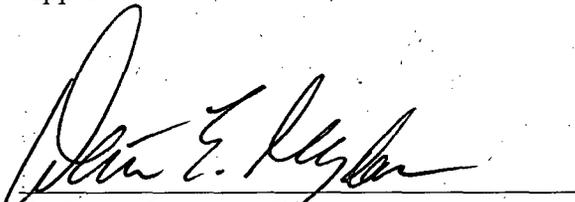
## IX. Protectiveness Statement

The remedy has been implemented and it has been determined that it is functioning as intended and remains fully protective in the short term for human health and the environment.

## X. Next Review

The next Five-Year Review for the Genzale Plating site should be completed within five years from the signature date below.

Approved:



Walter E. Mugdan, Director  
Emergency and Remedial Response Division  
EPA – Region 2

8/24/2010  
Date

**Attachments:**

| <b>Table 1 : Chronology of Site Events</b>                                  |                    |
|---|--------------------|
| <b>Event</b>  | <b>Date</b>        |
| Listing on National Priorities List   | July 1987          |
| ROD for OU1 Signed  | September 1991     |
| Initial Site Mobilization   | April 1995         |
| Completion of Initial SVE and Soils Excavation                              | September 1997     |
| OU2 Investigation Starts  | March 1993         |
| OU2 Record of Decision Signed   | September 1995     |
| Building Demolition Begins  | May 2003           |
| Installation of Second SVE System   | June 2003          |
| Issuance of Explanation of Significant Differences                          | July 2004          |
| Complete Building Demolition/Soil Excavation                                | June 2005          |
| Complete Groundwater Treatment Plant Construction                           | September 2005     |
| Final Inspection with EPA and NYSDEC of Completed RA                        | September 28, 2005 |
| Final Inspection of Operational Groundwater Extraction and Treatment System | September 26, 2006 |

| <b>Table 2 : Documents Reviewed</b> |             |  |
|-------------------------------------|-------------|--|
| <b>Author</b>                       | <b>Date</b> | <b>Title/Description</b>                         |
| EPA                                 | 03/29/1991  | OU1 Record of Decision                           |
| EPA                                 | 09/29/1995  | OU2 Record of Decision                           |
| EPA                                 | 07/23/2004  | Explanation of Significant Differences           |
| EPA                                 | 2005-2009   | Results of Groundwater Sampling; DESA; 2005-2009 |

| Table 3 – Recommendations and Follow-up Actions             |  |                   |                  |      |                              |        |
|---|--|-------------------|------------------|------|------------------------------|--------|
| Issue   | Recommendations and Follow-up Actions  | Party Responsible | Oversight Agency | Date | Affects Protectiveness (Y/N) |        |
|   |  |                   |                  |      | Current                      | Future |
| Implement ICs at site                                       | Implement ICs to prevent disturbance of soils 15 feet or more below existing ground surface as well as remaining portions of the facility foundation | EPA               | EPA              | 2011 | N                            | Y      |
| Clearly document site-specific groundwater cleanup Criteria | Modify the Record of Decision as appropriate   | EPA               | EPA              | 2011 | N                            | N      |

Table 4 - Acronyms Used in this Document

|        |   |
|--------|---|
| ARAR   | Applicable or Relevant and Appropriate Requirement      |
| CIC    | Community Involvement Coordinator                       |
| MCL    | Maximum Contaminant Level                               |
| NPL    | National Priorities List                                |
| NYSDEC | New York State Department of Environmental Conservation |
| O&M    | Operation and Maintenance                               |
| PRGs   | Preliminary Remediation Goals                           |
| RA     | Remedial Action   |
| RD     | Remedial Design   |
| RI/FS  | Remedial Investigation and Feasibility Study            |
| VOCs   | Volatile Organic Compounds                              |

# Site Map

