



**SUPERFUND PRELIMINARY SITE CLOSE-OUT REPORT**  
**Nepera Chemical Company Superfund Site**  
**Orange County**  
**Hamptonburgh, New York**

## **I. INTRODUCTION**

The United States Environmental Protection Agency (EPA) has determined that all construction activities at Nepera Chemical Company Superfund Site (Site) have been completed in accordance with the *Close Out Procedures for National Priorities List Sites (OSWER Directive 9320.2-22)*, dated May 2011.

Based upon field observations associated with the EPA's construction oversight and the August 19, 2013 final inspection of the Site by the EPA, EPA has determined that the potentially responsible parties (PRPs) have constructed the remedy (excavation and off-site treatment and disposal of contaminated soils, application of oxygenating compounds into the aquifer, and installation of additional groundwater monitoring wells) in accordance with the September 2007 Record of Decision (ROD) and July 2011 Amendment to the ROD and the approved remedial action work plan. The EPA has also determined that no further response actions are required, other than long-term groundwater monitoring and subsequent application(s) of oxygenating compounds (e.g., oxygen releasing compounds), if necessary, to continue to remediate contaminated groundwater.

## **II. SUMMARY OF SITE CONDITIONS**

### Site Location and Description

The Nepera Chemical Company Superfund Site (Site) includes a 29-acre property located in the Town of Hamptonburgh, Orange County, New York on the northern side of Orange County and south of Orange County Highway No. 4 (also known as Maybrook Road). The Site property is bounded on the north by Orange County Highway 4, Beaverdam Brook to the west, the Otter Kill to the south, and an undeveloped tract of land to the east. The Site is approximately 1.5 miles southwest of the town of Maybrook, New York. There are two ways to access to the Site, namely, from Orange County Highway No. 4 via a gravel access road, and through a gate on to an abandoned railway bed to the south of the Site. Beaverdam Brook traverses the western edge of the Site flowing south to the Otter Kill located just beyond the southern edge of the Site. The Site is surrounded by farmland and residential properties.

The groundwater in the area is classified as a potable water supply by the New York State Department of Environmental Conservation (NYSDEC). Most residents in the area obtain their water from public water supplies. Some homes in the area have private wells, and the wells closest to the Site are monitored as part of the groundwater monitoring program to ensure they continue to meet appropriate federal and state drinking water standards.

### Site History and Enforcement Activities

The Site property was purchased by the Nepera Chemical Company in 1952. The Nepera Chemical Company was a producer of bulk pharmaceutical chemicals, hydrogels, and pyridine-based industrial chemical intermediate compounds at its facility, located in Harriman, New York, approximately 25 miles away from the Site. From 1953 through 1967, the company constructed and used lagoons (comprising an area of approximately five acres) at the Site to dispose of industrial wastewater trucked from its plant in Harriman. Contamination from the wastewater leaked from the lagoons into the underlying soil and groundwater. No wastewater disposal has taken place at the Site since December 1967. All of the lagoons were back-filled with clean soil by 1974.

Beginning in 1967, numerous investigations were conducted by various consultants to Nepera, Inc. to determine the extent of contamination at the Site. Based on the results of these investigations, NYSDEC placed the Site on the New York Registry of Inactive Hazardous Waste Disposal Sites. On August 17, 1984, the State of New York entered into a Consent Decree with Nepera, Inc. to conduct a remedial investigation (RI) to determine the nature and extent of contamination at the Site.

On October 15, 1984, the EPA proposed the Site for inclusion on the National Priorities List (NPL) promulgated under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA). On June 1, 1986, the EPA added the Site to the NPL. Subsequently, NYSDEC was designated as the lead regulatory agency for overseeing the implementation of the RI and feasibility study (FS) at the Site.

Nepera, Inc. hired a contractor in 1988 to conduct an investigation to determine the nature and extent of the contamination at and emanating from the Site. The investigation considered both soil and groundwater contamination. The first draft RI Report was submitted in March 1996. The RI concluded that soils and groundwater were contaminated with volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). The risk assessment concluded that: exposure to contaminated soils poses noncarcinogenic risks to human health; the contaminated soil continues to be a source of groundwater contamination; and groundwater contaminants are present in concentrations above maximum contaminant levels (MCLs) and pose a significant potential risk to public health.

NYSDEC and EPA determined that further work was necessary to define the type and extent of soil contamination at the Site more accurately and to determine the downgradient extent of the groundwater contamination plume which emanated from the Site. The investigation of groundwater was expanded in 2001 with the installation of additional groundwater monitoring wells. During the several phases of the RI, a total of 38 groundwater monitoring wells were installed. Additional soil sampling activities were conducted in 2002 and a wetland delineation survey was conducted in 2003. The phased approach to the RI was iterative, where the results of each task were used to focus the scope of each subsequent task. The final RI Report and FS Report were completed in June 2007.

Remedial action objectives (RAOs) were developed during the FS, taking into consideration potential unacceptable human health risks identified in the RI, as well as applicable and relevant or appropriate requirements (ARARs) for soils and groundwater. The following RAOs were established for the Site:

1. prevent or minimize potential, current and future human exposures including inhalation of vapors and ingestion of groundwater contaminated with VOCs and SVOCs;
2. minimize migration of contaminants from soils to groundwater;
3. restore the aquifer(s) to beneficial use;
4. ensure that hazardous constituents within the soil meet acceptable levels consistent with reasonably anticipated future use; and
5. minimize potential human contact with waste contaminants.

At the conclusion of the RI/FS process in 2007, the EPA became the lead agency for site remediation.

A Record of Decision was issued on September 28, 2007 (2007 ROD), calling for, among other things, excavation of the soil in the source area (former lagoon area), the design and construction of an on-site biocell to contain and treat the excavated soil, the installation of a soil vapor extraction (SVE) system within the biocell, and operation of the SVE and the biocell systems to remediate contaminated soil. Upon completion of remediation, the excavated areas would be backfilled with clean soils. In addition, the 2007 ROD included an enhanced bioremediation remedy to restore contaminated groundwater, long-term groundwater monitoring and institutional controls. The 2007 ROD specified that in the event that monitoring should indicate that the Village of Maybrook public water supply wells have been impacted by the Site-related contaminants above health-based levels, a contingency plan would be necessary to provide for a wellhead treatment for the Village of Maybrook wells on an interim basis pending further consideration of groundwater treatment alternatives to meet groundwater standards.

EPA and the potentially responsible parties (PRPs)<sup>1</sup> signed a consent decree (CD) to carry out the remedial design (RD), and to implement the remedial action (RA); the CD was entered in U.S. District Court in October 2008.

In accordance with the requirements of the CD, the PRPs prepared a RD Work Plan to satisfy the requirements of the 2007 ROD. Activities performed during the RD included: on-Site soil borings, soil sampling, surveying, and recalculation of the volume estimates of the contaminated soil within the former source area. The results of these activities led to a re-evaluation of the nature and extent of the contaminated soils. Based upon this re-evaluation, the EPA proposed a revised remedy and held a public meeting to accept public comment. On July 22, 2011, after considering public comment, the EPA amended the 2007 ROD. The amended remedy called for excavation and

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<sup>1</sup> The PRPs are Nepera, Inc., Cambrex Corp., Warner Lambert Company and Pfizer, Inc. The Nepera Chemical Company was purchased by Warner Lambert Corporation in 1956 and reincorporated as Nepera, Inc. Cambrex Corp. purchased Nepera, Inc. Pfizer, Inc. purchased Warner Lambert Company in 2000.

transportation of contaminated soils for off-site treatment and disposal. The groundwater component of the remedy remained unchanged from the 2007 ROD. Following the issuance of the ROD amendment, a RA Work Plan (RAWP) was approved.

The components of the remedy for the site included:

- excavation of contaminated soils throughout the former lagoon area where contaminants in soils exceed NYSDEC Soil Cleanup Objectives (SCOs);
- transportation of contaminated soils that exceed the SCOs to a permitted facility for treatment and/or disposal;
- post-excavation confirmatory sampling;
- addition of oxygenating compounds within the excavated areas to facilitate biological breakdown of contaminants of concern in the groundwater;
- backfilling the excavated areas with clean fill;
- installation of additional groundwater monitoring wells;
- subsequent addition of oxygenating compounds, if deemed necessary, to address remaining groundwater contamination;
- air monitoring, surface water and groundwater monitoring; and
- evaluating site conditions at least once every five years to determine if the remedy remains protective.

The remedy also includes institutional controls such as restrictive covenants and environmental easements for limiting future use of the Site and the groundwater to ensure that the Site will not be used for purposes incompatible with the completed RA. As discussed below, some of the saturated subsurface soils are being addressed as part of the groundwater remedy because they are located below the water table and contain a site-related contaminant that is present at levels that may continue to impact groundwater. A Site Management Plan will be prepared to ensure appropriate handling of these subsurface soils should any redevelopment occur. Furthermore, new construction at the Site will be restricted unless an evaluation of the potential for vapor intrusion is conducted and mitigation, if necessary, is performed. Ongoing certification that the engineering and institutional controls remain in place and are effective for the protection of public health and the environment is required. The site is currently fenced to prevent trespassing. The groundwater is being monitored and no buildings exist overlying the plume.

### Remedial Construction Activities

Cornerstone Engineering and Land Surveying, PLLC was hired as the consultant to oversee work activities performed during the RA. Two RA contractors were retained by the PRPs to implement the soil remedy. The remedial work was initiated by the PRPs in February 2011. During the period from August 2011 through February 2012, the contractor performing the work was WRS Compass. The second contractor, Land Remediation, Inc., was retained in 2012 to complete the RA activities.

Implementation of the soil remedy included pre-characterization sampling, site preparation, clearing and grubbing, monitoring well decommissioning, soil excavation, transporting contaminated soils to an off-site facility for treatment and disposal, soil backfilling, drum removal and disposal, construction of water management controls and a water treatment system to manage water during excavation activities, survey documentation, and site restoration. Implementation of the groundwater remedy included placement of oxygen release compound (ORC<sup>®</sup>) in the base of the excavation, below the water table, during the soil work and installation of additional monitoring wells in accordance with a USEPA approved *Groundwater Monitoring Well Installation Plan*. Soil remedy activities were performed between August 2011 and January 2013. Groundwater activities included the addition of ORC<sup>®</sup> (performed in 2011 and 2012) and the installation of additional monitoring wells (performed between July 22, 2013 and August 9, 2013). The following sections of this report describe remedial activities along with field modifications to the design, as applicable.

### Characterization sampling and analysis

Soil sampling and analysis were conducted within the lagoon area to characterize the soil to expedite waste acceptance at the disposal facility. The excavation areas were laid out in approximate 80-foot by 80-foot grids within the former lagoon area (see Figure 1). Both discrete (for VOCs) and composite (for SVOCs) samples were taken at various depths beginning below the uncontaminated cover soil.

Prior to the start of construction, several permits and approvals were obtained by WRS Compass. The general construction permit, county highway work permit, and storm water pollution prevention plan (SWPPP) and soil erosion and sediment control plan approvals were transferred to Land Remediation, Inc. when it took over the work.

### Site Preparation

Site preparation activities consisted of equipment mobilization, construction of temporary facilities (i.e., construction trailer and water treatment system) and controls (sign-in requirements), implementation of soil erosion and sediment control measures, surveying, and clearing and grubbing. The tree stumps were chipped, and the wood chips were spread as mulch to stabilize areas of soil disturbance.

### Source Area Excavation/Soil Remediation

Soil excavation and remediation activities were conducted from August 2011 through January 2013 and included the following:

- Visually identifiable cover soils brown in color were segregated and stockpiled for reuse as backfill.
- Black-stained soils were excavated and direct loaded into trucks for off-site treatment/disposal or were temporarily stockpiled on areas yet to be excavated or on plastic sheeting. Stockpiling promoted dewatering to ensure moisture content met the requirements of disposal facilities.
- Very wet soils were mixed with Calciment to reduce free water content to meet the moisture requirements of the disposal facilities.
- Surface water and groundwater infiltration required excavation areas to be dewatered with water pumped to an on-Site treatment facility, and discharged to surface water in accordance with an NYSDEC approved discharge authorization. Hence, dewatering activities resulted in the extraction and treatment of a portion of the contaminated groundwater.
- As the excavation reached the boundaries of the black stained soils, post-excavation samples were collected at 30-foot intervals in the sidewalls. If the post-excavation sample did not meet the site-specific cleanup levels, the excavation face was extended, and an additional sample was collected. This process continued until post-excavation samples met the site-specific cleanup levels, except as further described below, where dispersed materials were encountered.

As excavation continued, observations indicated that the black-stained soils extended to areas beyond those defined in the RI and to depths greater than had been estimated from the RI data and reflected in the ROD. From the data collected for the RI, the estimated quantity of impacted source material was 16,000 cubic yards (or 21,600 tons at the estimated density of 1.35 tons/cubic yard). The excavation of impacted soils in each lagoon, with the exception of Lagoon 6 (see Figure 1) where impacted soil was not found, expanded both laterally and vertically beyond that originally planned. Lagoons 1 through 5 were found to be interconnected with stained soils and were therefore excavated as one contiguous area. In addition, excavation north of Lagoon 5 suggested that stained soils existed well beyond the previously estimated boundary of the lagoon. As a result of these findings, and with the onset of winter weather conditions, the excavation program was suspended, the Site was secured, and test pit and Geoprobe investigations were implemented to better define the area (both horizontally and vertically) of the black-stained soils and to confirm the overall additional volume of the source material. Test pits were excavated in the area north of Lagoon 5, around the southern perimeter of Lagoons 1 and 3, and on the property adjacent to the Site to the east. In addition, Geoprobe borings were performed along the Site access road adjacent to Lagoon 4 (as opposed to test pits so as to preserve the access road for future work), and on the property adjacent to the Site to the east near the northeast corner of Lagoon 5.

Samples were collected from several test pit and Geoprobe locations for chemical characterization. A review of the data indicated that the only compound present in the samples above the Site-specific cleanup levels was 2-aminopyridine. The soil cleanup objective for 2-amino pyridine, which was established for the protection of groundwater, is 400µg/kg. Based on the depth of the samples and thickness of the overburden, the impacted soil found north of Lagoon 5 was not considered source material, but was considered to have been dispersed through groundwater transport. The characteristic staining in this area corresponds to the saturated zone, supporting the dispersion via groundwater.

Following meetings and discussions between representatives of the PRPs and EPA, the EPA issued a letter, on July 12, 2012, confirming the approach for continuing excavation activities and the management of dispersed materials as a component of the groundwater remedy that would not be subject to excavation. The remaining source material in the lagoons proper, as well as under the access road adjacent to Lagoon 4 on the west side, would be managed through excavation and off-site treatment/disposal.

Land Remediation, Inc. resumed remedial construction in July 2012. Similar to the earlier work, large excavators were used to remove remaining overburden and stained source material soils. Overburden cover soils were temporarily stockpiled for reuse as backfill on the Site. As a result of post-excavation sampling activities, additional areas of dispersed materials were encountered under the access road adjacent to Lagoon 4 and in the southernmost area of the Site, adjacent to the southern perimeter of Lagoons 1 and 3. These dispersed materials had the same analytical signature as those found north of Lagoon 5, and were found below the water table similar to the material in the area north of Lagoon 5. In addition, the southernmost limit of excavation of Lagoon 3 was extended into the former railroad bed and encroached on a wooded area that had not been part of the former lagoon operation, suggesting that the materials had been dispersed via the groundwater pathway. Collectively, the data have been used to define the locations where dispersed materials exist and will be managed as a part of the ongoing groundwater monitoring and remediation.

The analytical data collected during the test pit investigation, from the soil characterization work, and from the first phase of the remediation work indicated that even though soils showed evidence of black staining, the soil may not have concentrations of COCs above the Site-specific cleanup levels. Therefore, the second phase of remedial construction used a modified approach for removal of impacted soils within the lagoons which consisted of excavating and segregating the soils into approximately 250 cubic yard piles for sampling and analysis. Based on the analytical results from each pile, the material was either used as backfill (i.e., if analytical results were below the Site-specific cleanup levels) or transported off-site for treatment and disposal.

In addition, the depth of excavation in the southernmost area of Lagoon 3 extended as much as 30 feet, significantly below the water table. The material in this low lying area was typically a mixture of wet, loose sands and sludge and was characteristic of source material. Also, because of the wet nature of this material, it would not meet the moisture requirements of the disposal facility. As a result, this material was excavated and mixed with Calciment in approximately 250

cubic yard lots, and transported off site for treatment/disposal.

### Off-Site Treatment and Disposal

Excavated contaminated soils were loaded into lined trucks and transported to either the ESMI facility in Fort Edward, New York or the Clean Earth of Southeast Pennsylvania facility in Morrisville, Pennsylvania for thermal treatment and disposal. Each truck load of material was accompanied by a manifest and a weight ticket was issued by the receiving facility to verify the quantity disposed. A total of 83,210 tons of source material were excavated and transported for treatment and disposal.

### Post-Excavation Sampling and Analysis

In accordance with the RAWP, post-excavation samples were collected from the sidewall of the excavation for comparison to the Site-specific cleanup criteria. The excavation continued to the top of weathered rock surface within the entire footprint of the excavation and therefore, post-excavation bottom samples were not collected. Once the sidewall sample results confirmed that the Site-specific cleanup objectives were met, the area was backfilled. In the areas where Site-specific cleanup levels were not met upon collection of the initial post-excavation sample, the analytical results were compared to the characteristics of dispersed materials along with an assessment of the location of the materials (e.g., outside the limits of the lagoons such as at Lagoon 3) and a decision was made whether to continue excavation and collect additional post-excavation samples. In some instances, excavation was continued and post-excavation samples were collected as many as three times. These analytical data along with the other characteristics of dispersed materials were used to conclude when to terminate excavation.

The EPA on-Site oversight contractor (CDM Smith) observed the post-excavation sampling activities and obtained representative split samples as a quality assurance measure. The split sample analyses are comparable to the PRPs' results.

Post-excavation sidewall samples achieved the cleanup in all instances except where dispersed materials were encountered in limited areas north and east of Lagoon 5, in the access road west of Lagoon 4, and along the southern perimeter of Lagoons 1 and 3. In these areas, the extent of the excavation was based on the analytical data from post-excavation samples which defined where dispersed material started and source materials ended.

### Water Treatment Systems, Sampling and Analysis

A temporary water treatment system was installed at the Site to treat surface water and groundwater which had infiltrated the excavation areas and contacted contaminated materials. Consequently, approximately 2,185,400 gallons of potentially contaminated water were treated, a significant portion of which was groundwater. The treated water was discharged under a discharge authorization issued by the NYSDEC.

The water treatment system initially consisted of two 18,000-gallon influent holding (frac) tanks,



solids filtration (bag filters, two granular activated carbon (GAC) vessels, and a 20,000-gallon effluent tank. A green sand filter was added to the system for additional iron removal capability.

The treated water was discharged to Beaverdam Brook at a rate of up to 72,000 gallons per day, except for the 14-day period following the winter shutdown when the NYSDEC authorized a flow increase to 144,000 gallons per day. In accordance with the NYSDEC authorization, samples of the treated water were obtained to confirm compliance with the discharge limits on a weekly basis.

Regardless of contaminant concentrations, when the water to the brook appeared cloudy, the discharge was stopped and maintenance was performed on the system. This included backwashing of the filters, and as applicable, regeneration of the green sand filter. During the course of the work, the cloudiness was determined to be the result of algal buildup in the excavation area during warm weather. After consultation with the NYSDEC, the addition of a flocculent resolved this issue.

The water treatment system was decommissioned in January 2013, at the conclusion of the soil excavation.

#### Groundwater Monitoring Well Abandonment

Seven groundwater monitoring wells were abandoned in the lagoon area prior to excavation of the lagoons by a New York State licensed well driller in accordance with NYSDEC regulations. Each well was filled with grout. During soil excavation, these wells were excavated and removed. For deep bedrock wells, the casings were removed and the grouted sections remain in place below the bottom of the excavation.

A plan for installation of monitoring wells as substitutes for the abandoned wells as well as to provide additional monitoring locations was submitted to the EPA on January 30, 2013 and approved on February 21, 2013. The well array for long-term groundwater monitoring will become part of the Site Management Plan. All work related to the installation of the additional monitoring wells was performed between July 22, 2013 and August 9, 2013.

#### Drum and Associated Waste/Soil Removal

During soil excavation activities, buried drums and drum carcasses were encountered in the lagoon area. An updated geophysical survey was conducted using ground penetrating radar to aid in identifying areas where drum removal might be required. The drum removal activities were conducted in Level B personal protective equipment (PPE) with associated air monitoring in December 2011 and January 2012. A total of 60 drums were removed from Lagoons 1 and 6 and transferred to the staging area within the containment pad for the dewatering water treatment plant for characterization.

In addition to the drums located in Lagoon 1, waste material (plastic sheeting, drum fragments, portions of fiber drums, discolored soils, what appeared to be a filter cake material, resins and scrap metal) comingled with soil were also found. Approximately 1,000 cubic yards of waste/soil materials were placed in a temporary staging area for characterization sampling.

Based on the characterization data, the contents of six of the drums were designated as characteristic hazardous waste. The remaining drum contents and the waste/soils materials were characterized as nonhazardous. The characterized drums were disposed at the Environmental Quality Company (EQ) facility in Belleville, Michigan, which is permitted to accept both hazardous and nonhazardous waste. The waste/soil materials were disposed at the Seneca Meadows Landfill in Seneca Falls, New York, a Part 360-permitted New York State waste disposal facility.

#### Site Restoration – Backfill and Final Site Grading

Restoration activities were performed during the Winter of 2012 and the Spring of 2013. The restoration activities included backfill placement, seeding/mulching, removal of portions of the soil erosion and sediment control measures, and reinstallation of the permanent perimeter fence. Backfill material consisted of the overburden soils that were previously stripped off and stockpiled, excavated materials that had been tested and met the Site-specific cleanup levels, and soils excavated from an on-Site borrow area. A total of 32,000 cubic yards of backfill material was needed.

Based on the expanded volume of excavation, the final grades were modified. It was determined that it would be environmentally beneficial if a portion of the former lagoon area was at a lower grade and retained water during wetter periods of the year. Based on the modifications to the final grades, a low lying area was created in the area of former Lagoons 3, 4, and 5. This area is now a pond.

Following backfill placement and final grading the disturbed areas of the Site were seeded, mulched and fertilized by hydro-seeding. Construction Quality Assurance (CQA) personnel working for the PRPs' contractor observed the hydro-seeding operation and verified that the seed mixture was in compliance with the contract documents.

#### Site Perimeter Fence

The perimeter fencing removed during soil remedy implementation was re-established at the Site. The perimeter fencing consisted of a 6-foot high chain link fence with 3 strands of barbed-wire on the top. The security fence surrounds the area of the former lagoons. Two gates are provided for access into the Site, one at the front of the Site off of Route 4/Maybrook Road and one on the south end of the Site adjacent to the abandoned railway bed.

#### Groundwater Remedy – Addition of Oxygen Release Compounds

To achieve the cleanup objectives for groundwater, two specific activities were performed, namely, the removal of source material from the Site and application of ORC<sup>®</sup> to enhance biodegradation of the site-specific COCs (which are aerobically biodegradable). Prior to backfilling the excavated area, a geotextile demarcation layer was installed on the bottom of the excavation. Oxygen Release Compound (ORC<sup>®</sup>) was applied over the geotextile layer. ORC<sup>®</sup> is a proprietary formulation that, when hydrated, produces a controlled release of oxygen for an

extended time period. Employed as a component of the groundwater remedy, the addition of ORC<sup>®</sup> enhances the aerobic biodegradation of residual contamination in the bedrock aquifer. The ORC<sup>®</sup> was spread at a rate of five pounds of ORC<sup>®</sup> per 100 square feet of floor area, per the RAWP. The powdered ORC<sup>®</sup> was spread manually with drop spreaders. Following ORC<sup>®</sup> placement, the excavated area was backfilled with clean soil.

### Groundwater Monitoring Well Installation

During the weeks of July 22, 2013 through August 9, 2013, additional groundwater monitoring wells were installed at the Site consistent with the Groundwater Monitoring Well Installation Plan. These wells have been incorporated, with pre-existing wells, into the monitoring well network.

### Final Inspection

On August 19, 2013, a final inspection was conducted. Based on the results of the inspection, it was determined that the Site construction was complete; the remedy was implemented consistent with the 2007 ROD and the 2011 ROD Amendment. The final inspection concluded that the remedy was constructed in accordance with the RAWP and specifications, no punch list items were identified and no further response (other than long-term groundwater monitoring) is anticipated. Any future decision regarding the need to conduct subsequent application(s) of oxygenating compounds (e.g., oxygen releasing compounds) to restore contaminated groundwater will be made based on an evaluation of future groundwater monitoring data.

## **III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL**

RA activities at the Site were undertaken in a manner consistent with the 2007 ROD, the 2011 ROD Amendment, the RD plans and specifications, and the RAWP. All applicable EPA and NYSDEC quality assurance and quality control (QA/QC) procedures and protocols were incorporated into the RD and the RAWP and were followed during the RA. Sample analyses were performed at state-certified laboratories.

The QA/QC program used throughout the RA was rigorous and in conformance with EPA and NYSDEC standards; therefore, EPA and NYSDEC have determined that all analytical results are accurate to the degree needed to assure satisfactory execution of the RA, and that they are consistent with both the ROD, the ROD Amendment, the RD plans and specifications, and the RAWP.

## **IV. ACTIVITIES AND SCHEDULE FOR COMPLETION**

The activities that remain to be completed for the Site include finalization of the Site Management Plan (including the Soil Management Plan and Operation & Maintenance (O&M) Plan), implementation of the institutional controls, finalization of RA report, performance of long-term

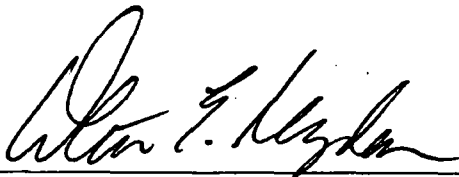
monitoring, additional application(s) of oxygenating compounds, performance of five-year reviews, preparation of a Final Close-Out Report, and deletion of the Site from the NPL. These activities will be completed according to the following schedule.

Activity	Responsible Organization	Estimated Completion
Submission of Draft RA Report	PRP Contractor	September 2013
Approval of RA Report	EPA	September 2013
Submission of Draft Site Management Plan	PRP Contractor	December 2013
Approval of Site Management Plan	EPA/NYSDEC	March 2014
First Five-Year Review	EPA	September 2018
Prepare Final Close-Out Report	EPA	December 2019

**V. FIVE-YEAR REVIEW**

Five-year reviews are required whenever a remedial action results in hazardous substances, pollutants, or contaminants remaining on site. The five-year review requirement in CERCLA §121(c) is triggered when remaining on-site hazardous substances, pollutants or contaminants are above levels that allow for “unlimited use and unrestricted exposure.” This remedial action, upon completion, will not leave hazardous substances, pollutants, or contaminants remaining on the Site above levels that allow for unlimited use and unrestricted exposure. However, the groundwater remedial action (selected in the 2007 ROD) may require five or more years to complete. As such, a policy review will be conducted within five years after the signature of this document to ensure that the groundwater remedy is, or will be, protective of human health and the environment

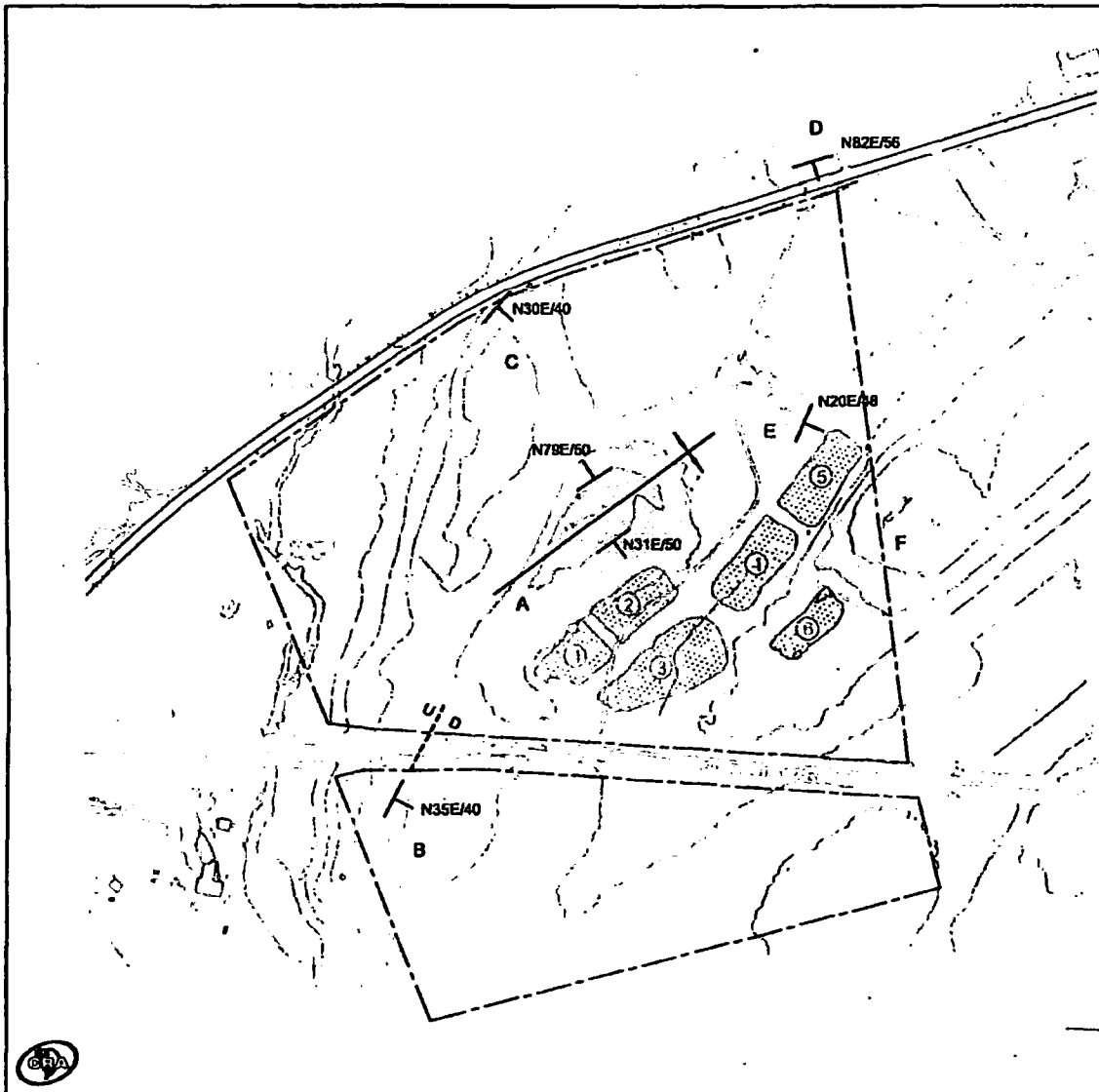
Approved:



Walter E. Mugdan, Director  
 Emergency and Remedial Response Division

*Sept. 27, 2013*

Date



- LEGEND**
- ELEVATION CONTOUR
  - - - - - SITE PROPERTY BOUNDARY
  - [Stippled Area] APPROXIMATE (SUPERIMPOSE PHOTOGRAPH)
  - (?) LAGOON IDENTIFICATION
  - A BEDROCK OUTCROP
  - T STRIKE/DIP LOCATION
  - N82E/56
  - u/d NORMAL FAULT  
- U = UPTHRUST  
- D = DOWNTHROW
  - X ANTICLINAL FEATURE

**Fig**  
**Site Illustration of**



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