ARCADIS Design & Consultancy for natural and built assets

Koppers Pond PRP Group

# SITE MANAGEMENT PLAN

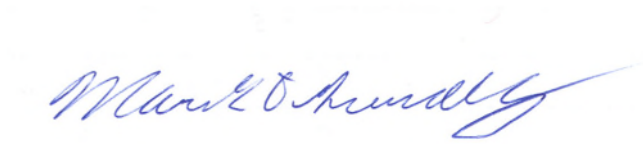
## Kentucky Avenue Wellfield Superfund Site
## Operable Unit 4 – Koppers Pond
## Horseheads, New York

August 2022

# SITE MANAGEMENT PLAN

Prepared for:

Koppers Pond PRP Group



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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| Arcadis | Arcadis of New York, Inc. |
| BHHRA | Baseline Human Health Risk Assessment |
| EC | engineering control |
| EWB | Elmira Water Board |
| Facility | Westinghouse Electric Corporation Industrial and Governmental Tube Division Facility |
| GPS | global positioning system |
| Group | Koppers Pond ROD Group |
| IC | institutional control |
| ICIAP | Institutional Control Implementation and Assurance Plan |
| KAW | Kentucky Avenue Wellfield |
| MP | Maintenance Plan |
| NWS | National Weather Service |
| NYD | New York District |
| NYSDEC | New York State Department of Environmental Conservation |
| NYSDOH | New York State Department of Health |
| PCB | polychlorinated biphenyls |
| PRPs | primary responsible party |
| RA | Remedial Action |
| RAO | remedial action objective |
| RD | Remedial Design |
| RI | remedial investigation |
| ROD | Record of Decision |
| sBERA | Supplemental Baseline Ecological Risk Assessment |
| site | Kentucky Avenue Wellfield Superfund Site Operable Unit 4 Koppers Pond |
| SMP | Site Management Plan |
| SOW | Statement of Work |
| USACE | United States Army Corp of Engineers |
| USEPA | United States Environmental Protection Agency |
| USGS | United States Geological Survey |
| Westinghouse | Westinghouse Electric Corporation |

# 1 INTRODUCTION

This Site Management Plan (SMP) is a required element of the remedial program for Kentucky Avenue Wellfield Superfund Site Operable Unit 4 Koppers Pond (referred to herein as "the site") located in Horseheads, Chemung County, New York. The site was remediated in general accordance with the Remedial Design (RD) Report prepared by Arcadis of New York, Inc. (Arcadis; July 2019). The RD Report was prepared in accordance with the requirements of the Record of Decision (ROD) for the site that was released by the United States Environmental Protection Agency (USEPA) on September 30, 2016 and the Consent Decree (Index #17-1165) effective on April 16, 2018.

This SMP was prepared by Arcadis, on behalf of the Koppers Pond PRP Group (Group), in accordance with the requirements in the USEPA Guidance Documents titled, "*Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites"*, OSWER 9355.0-89, EPA/540/R-09/001 (December 2012), and "*Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites"*, OSWER 9200.0-77, EPA/540/R-09/02 (December 2012).

This SMP addresses the means for implementing the institutional controls (ICs) and engineering controls (ECs) for the site.

After completion of the remedial work as documented in the Remedial Action (RA) Report, residual subsurface impacted material remains at the site and is hereafter referred to as "remaining impacted material". This SMP was prepared to manage the remaining impacted material at the site. Reports associated with the site can be viewed at the USEPA website for the project (www.epa.gov/superfund/kentucky-avenue).

# 2 SITE DETAILS

## 2.1 Site Description

The site is located in the Village of Horseheads and Town of Horseheads New York in Chemung County, northeast of the Hardinge Technology Systems Inc. facility at One Hardinge Drive, Elmira, New York 14903 (Figure 1).

The 12-acre site is generally bounded by the Old Horseheads Landfill (Landfill) to the north and northeast, the Norfolk Southern Corporation railroad tracks to the west, and an area of the Elmira Water Board's (EWB) Kentucky Avenue Wellfield property to the south. The site, which consists of the former Koppers Pond basin, is situated in a low-lying (which may have been modified/lowered by historical anthropogenic disturbances) area that was sustained from discharges from the Facility. During operation of the OU2 groundwater barrier treatment plant (operations ceased in 2014), Koppers Pond had been a shallow, flow-through pond that received most of its inflow from the groundwater barrier treatment system, which discharged into the industrial drainageway. As noted in both the ROD and Statement of Work (SOW; USEPA 2017), the 12-acre site has transitioned from a pond to a combination of wet meadow and terrestrial environments and portions of the basin are undergoing natural re-vegetation. In recent years, several site investigations have confirmed that the inundated area is highly variable, dependent on precipitation and stormwater flows.

Additional site-specific information is provided in Table 1.

**Table 1. Site Parcel Information**

| Parcel Number | Property Owner |
|---|---|
| 69.05-2-3.1 | Hardinge Technology Systems Inc. |
| 59.17-1-42 | Village of Horseheads |
| 69.05-2-1 | Elmira Water Board |

## 2.2 Site History

The site is located in a manufacturing zone and is surrounded by the Old Horseheads Landfill, the Facility, the KAW and active railroads and highways, both major and local. Historically, the properties adjacent to the site have been used for industrial and commercial purposes. In general, the site receives drainage from a large area that has mainly consisted of stormwater runoff from industrial/commercial properties, parking lots and roads, including a nearby interstate highway, I-86.

Impacts within the KAW were identified in 1980 by the New York State Department of Health (NYSDOH) while performing an inventory of local wells. Following the closure of the KAW in September 1980, several site investigations were performed in order to understand the nature and extent of impacts within the KAW and the surrounding area.

### 2.2.1 Risk Assessment

During the site remedial investigation (RI) and feasibility study the following risk assessments were conducted to determine the risk exposure pathways within the site:

- Baseline Human Health Risk Assessment (BHHRA)
- Supplemental Baseline Ecological Risk Assessment (sBERA)

The results of the BHHRA and sBERA had indicated that the consumption of fish from the former Koppers Pond had presented an unacceptable human health exposure risk and under certain conditions, the exposed sediment or soils at the site pose an unacceptable risk to ecological receptors (USEPA 2016).

The following remedial action objectives (RAOs) were established based on the results of the RI, HHRA and sBERA:

- Minimize ecological receptors' exposure to contamination in exposed sediments or soils
- Reduce the future health risks and hazards associated with future consumption of fish by reducing the concentration of contaminants in fish

As discussed in the RD Report, the current conditions at the site are consistent with a transitioning pond. Basin inputs have been reduced and the pond now has a variable hydrologic regime. Basin inputs historically were from the groundwater treatment operations occurring at the facility, which maintained viable water level to support fish habitat. With the groundwater treatment activities now completed, the pond has significantly reduced basin inputs. The reduced basin inputs now result in the pond periodically drying out completely so that it no longer supports fish. Conditions to support fish, or suitable conditions for fishing, have not been observed in 5 years and are not anticipated in the future.

### 2.2.2 Selected Remedy

In order to fulfil the RAOs for the site, ECs in the selected remedy implemented at the site include:

- Consolidation and grading of sediments and exposed mudflat soils within the footprint of the former Koppers Pond basin
- Placement of a geotextile membrane to serve as a demarcation barrier
- Placement of a six-inch thick soil and sand cover over the consolidated/graded area to provide a uniform and continuous bottom surface

In addition, the following ICs will be implemented:

- Implementation of institutional controls such as restrictions on activities at the site that could cause or contribute to the spread of contaminants

Based on site observations and as documented in the USEPA approved Remedial Design Technical Memorandum (Arcadis 2018), it was determined that the following remedy components and institutional controls included in the ROD and SOW will not be included due to significant variability in size and depth of inundated areas within the former Koppers Pond basin:

- Installation of chain-link security fencing around the perimeter of the basin to supplement the existing fencing
- Implementation of flood management mitigation measures
- Development of a fishery management program
- Long-term monitoring of sediment and fish to confirm that a decrease in contaminant concentrations is occurring and that the reduction is achieving the remedial action objectives

### 2.2.3 Current and Future Land Use

The properties within the site are currently zoned as manufacturing with several vacant and active governmental properties surrounding the site. No recreational or other use of the site is authorized by the property owners and access to the site is limited due to the active railroad track and partially fenced properties adjacent to the site. Implementation of ICs at the site as described herein will assure restriction of future activities in the site following the completion of the RA in order to prevent spread of contaminants.

## 2.3 Purpose

Due to the remaining impacts present on the site, EC/ICs have been incorporated into the site remedy to control exposure to remaining impacted material and to ensure protection of public health and the environment. The ICs place restrictions on site use, and mandate maintenance and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required for the site. This plan will be submitted for approval by the USEPA, and compliance with this plan is required. This SMP may only be revised with the approval of the USEPA.

This SMP provides a detailed description of all procedures required to manage remaining impacted material at the site after completion of the RA including:

- Implementation and management of the ECs and ICs
- Site Maintenance
- Performance inspections, certifications, and submittal of Periodic Review Reports

To address these needs, this SMP includes two plans: a Maintenance Plan (MP) and an Institutional Controls Implementation and Assurance Plan (ICIAP).

This SMP also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to the USEPA.

# 3 MAINTENANCE PLAN

## 3.1 Introduction

This MP has been prepared to address unavoidable temporary impacts to federal- and state-regulated waters, wetlands, and uplands associated with the RA, which included the grading of sediment and soil within the former Koppers Pond basin. This MP has been prepared consistent with the following guidance documents as it pertains to freshwater wetland restoration:

- United States Army Corps of Engineers (USACE), New York District (NYD) Compensatory Mitigation Plan Guidelines (USACE NYD 2005a)
- USACE NYD Mitigation Checklist (USACE NYD 2005b)
- New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetlands Regulation Guidelines on Compensatory Mitigation (NYSDEC 1993)

## 3.2 Objectives of this Post-Removal Monitoring Plan

The objective of this MP is to define performance standards and detail the long-term monitoring and maintenance plan for the restored site and additional areas (i.e., upland support areas) restored as part of the RA presented in the RD Report. This MP presents the methods and protocols to be followed when conducting post-construction monitoring and includes the recommended scope, frequency, and duration requirements for post-construction monitoring.

## 3.3 Monitoring and Maintenance

This section presents monitoring methods/timing, as well as the performance standards that will be used to evaluate monitoring results. Additionally, potential corrective actions to be implemented if performance standards are not achieved are included in this section.

In general, restoration will be completed in “Year 0” and “as-built” restoration will reflect baseline conditions. An “as built” plan will be completed following all planting and restoration activities and submitted to the United States Environmental Protection Agency (USEPA) as part of the RA Report (Arcadis 2020). These as-built plans (i.e., the seeded area and density) will be used as the baseline for the compliance monitoring program.

### 3.3.1 Vegetation Monitoring

Compliance monitoring will be performed annually for a period of 2 years following restoration to document restoration progress, taking into account the variable nature of the site. If performance standards, as defined below, are met after 2 years, no further action will be taken, and the Group will request release from any future obligations associated with the restoration project. If performance standards are not met after 2 years, the need for continued compliance monitoring will be determined by the USEPA.

#### 3.3.1.1 Performance Standards

Monitoring activities are designed to evaluate the status of the restoration project relative to its objectives and identify the need for additional action (e.g., seeding, mulching). Quantitative and qualitative data will be reviewed to evaluate project conditions and identify circumstances that would warrant additional action, taking into account the variable nature of the site.

The following performance criteria will be used to evaluate project success. For these evaluations, areas that remain inundated with standing water for most of the growing season will not be subject to the performance criteria.

- Total vegetative cover of 80% within one growing season
- Bare areas no larger than 10 square feet.

The vegetative cover is defined as the areal ground cover as viewed from a standing position and looking down and with consideration for canopy cover from the ground looking up. The average vegetative cover area will be estimated from visual observation of the entire site and detailed inspection of specific permanent monitoring locations within the site. Estimates will include natural recruits of native species (i.e., volunteer growth).

In addition to vegetative cover, vegetation composition, including percent invasive species, will be monitored and reported if greater than 10% coverage. No invasive species controls are anticipated unless their presence adversely affects the integrity of the soil cover.

#### 3.3.1.2 Monitoring Methods

As part of the post-construction monitoring, the vegetation and general site condition will be evaluated during the post-construction/restoration phase in accordance with the general methods noted below and will be conducted for up to 2 years (i.e., Years 1 through 2) following completion of restoration in “Year 0”. Ten permanent monitoring locations have been established for the monitoring period and are demarcated with a PVC pipe or green metal fence post. The monitoring locations are presented on Figure 2.

Compliance monitoring will consist of a minimum of one site visit per year (late summer/early fall) by a qualified wetland scientist, consistent with the 2018 baseline wetland survey. The monitoring event will evaluate the condition of the restoration project area at each monitoring station in relation to restoration objectives and identify potential problems. Quantitative and qualitative data regarding hydrology (e.g., water levels, wetland indicators), vegetative cover, vegetative species composition, wildlife use, and effectiveness of the soil stabilization techniques will be collected. All work will be directed by a qualified wetland scientist familiar with the design and restoration activities.

If erosion is observed, the approximate size and location will be recorded, and the area will be photo documented. Vegetation will be evaluated for general health and identification of signs of stress (e.g., herbivory, drought). Photographs will be taken at each of the permanently established locations within the restoration area at pre-determined cardinal directions. Additionally, photographs will be taken documenting the overall site condition and problem areas observed outside the permanent monitoring locations. Photographs will document progress of the restoration area.

### 3.3.2 Maintenance Activities and Corrective Actions

A proactive management strategy will use information gathered over time to identify successful management practices and opportunities for improvement that will help guide the restoration project towards achieving its objectives. Information collected during routine monitoring events will provide a means to identify and build on effective management practices and to develop recommendations to modify ineffective practices and implement corrective actions. When applicable, additional monitoring will take place following severe weather conditions (e.g., rainfall greater than 3.75 inches [10 year, 24-hour storm event]). See also Section 4.7 below.

Maintenance activities and corrective actions will be implemented as appropriate through the duration of the required monitoring period, including monitoring events following severe weather conditions. Recommended maintenance activities may include additional seeding and/or mulching based on the results of the vegetation monitoring (Section 3.3.1), if warranted. No invasive species controls are anticipated unless their presence adversely affects the integrity of the soil cover. Additional seeding will be implemented in the spring or fall.

The Group will evaluate on a case-by-case basis to determine necessity, sustainability, and benefit associated with any maintenance activity or corrective actions, taking into account the variable nature of the site. Maintenance or corrective actions will not automatically extend the duration of monitoring for the site.

The Group will propose any corrective actions (if necessary) for USEPA review and approval prior to implementation and within 45 days of completing the monitoring event. Corrective actions requiring seeding and/or planting will only be conducted during the appropriate planting season(s) (i.e., early spring or late summer/early fall).

### 3.3.3 Annual Inspections

After compliance monitoring is complete (i.e., 2 years following restoration unless performance standards are not met and EPA determines additional compliance monitoring is required), annual inspections will be performed to observe and document general site conditions. These inspections may be performed by local facility staff. The Group may request a reduction in frequency or elimination of these annual inspections and associated reporting at any time after the first 5-year review period if site conditions appear stable and self-sustaining.

# 4 INSTITUTIONAL CONTROLS IMPLEMENTATION AND ASSURANCE PLAN

## 4.1 Introduction

In accordance with the USEPA-approved RD Report and the ROD, EC/ICs are required to protect human health and the environment due to impacted material remaining at the site at the completion of the RA. This ICIAP describes the procedures for the implementation and management of all EC/ICs at the site. The ICIAP is one component of the SMP and provides:

- A description of all ECs/ICs on the site
- The basic implementation and intended role of each EC/IC
- A description of the features to be evaluated during each required inspection and periodic review
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the USEPA

## 4.2 Property Information

The site is located on 3 different parcels that are currently owned by EWB, the Village of Horseheads, and Hardinge Technology Systems Inc. The northern portion of the site is owned by the Village of Horseheads and was the Old Horseheads Landfill. To the southeast is Hardinge Technology Systems Inc., which manufactures and sells metal machining products. To the south is the EWB KAW Facility. Additional site features include an active Norfolk-Southern Corporation railway to the west.

As noted in the Remedial Design/Remedial Action Consent Decree, the primary responsible parties (PRPs) include Beazer East, Inc., Paramount Global, Chemung County, the City of Elmira, the Elmira Water Board, Hardinge Inc., Toshiba America, Inc., the Town of Horseheads, and the Village of Horseheads. All contact information for the PRPs, local state/government contacts, and other relevant stakeholders are provided Table 2.

**Table 2. Contact Information**

| Party | Contact Name | Contact Information |
|---|---|---|
| Beazer East, Inc. | Charles E. McChesney | (412) 327-8207 |
| Paramount Global | Chad Coy | (412) 400-9170 |
| Chemung County | Bryan Maggs | (607) 737-2982 |
| City of Elmira | John J. Ryan, Jr. | (607) 734-8161 |
| Elmira Water Board | John J. Ryan, Jr. | (607) 734-8161 |
| Hardinge Inc. | Craig A. Slater, Esq. | (716) 845-6760 |
| Toshiba America, Inc. | Nelson D. Johnson | (212) 836-7177 |

| Party | Contact Name | Contact Information |
|---|---|---|
| Town of Horseheads | John P. Mustico | (607) 739-6702 |
| Village of Horseheads | John Groff | (607) 739-3601 |
| New York State Department of Environmental Conservation | Matthew Dunham | (518) 402-9813 |
| United States Environmental Protection Agency | Michael Basile, Community Involvement Coordinator | (716) 551-4410 |
| | Pietro Mannino, Remedial Project Manager | (212) 637-4287 |

The site is located on several tax parcels where ECs/ICs will be implemented and maintained. Tax parcel ownership, identification number, and acreage are provided in Table 3.

**Table 3. Property Owners and Tax Parcel Identifications**

| Property Owner | Address | Tax Parcel ID | Total Acreage |
|---|---|---|---|
| Village of Horseheads | 715 Blostein Blvd | 59.17-1-42 | 25.10 |
| Hardinge | 727R Chemung St | 69.05-2-3.1 | 69.40 |
| Town of Horseheads | Kentucky Ave | 69.05-2-1 | 5.80 |

## 4.3 Extent of Impacts

As presented in Figures 13 through 15 of the Remedial Investigation Report (Cummings/Riter Consultants, Inc. 2012), the site constituents of concern are found within a 9-acre area footprint of the site. Polychlorinated biphenyls (PCBs), metals and polycyclic aromatic hydrocarbons were found in subsurface sediments and mudflat soils. In addition, when the basin was inundated year-round, metals and PCBs had been detected in historical fish samples.

## 4.4 Engineering Controls

A continued trend in decreasing water levels has resulted in exposed sediments and soils in areas that were formerly submerged. The RA consists of consolidation and grading of a 9-acre area of sediments and mudflat soils. Following consolidation and grading activities, the following engineering controls were installed (Figure 2) in impacted areas:

- A geotextile demarcation barrier; and
- A 6-inch-thick engineered soil isolation cover.

## 4.5 Additional Site Features

One palustrine emergent marsh wetland was identified and delineated within the project area (Wetland A). As discussed in the Wetland Delineation Report (Arcadis 2019), the project area was inundated at the

time of the delineation but is known to have a highly variable hydrology depending precipitation and stormwater flows and persistent vegetation that tolerates a drier hydrologic regime is present on the site. The method of delineation utilized accounts for the highly variable hydrology of the project area. The wetland boundary coincides with the historical average water conditions limit and closely followed the topographic contour of the former Koppers Pond basin. Wetland A received hydrologic inflow from stormwater runoff drainage feature on the northwest end of the basin. Wetland A drained in a southeast direction from two constructed ditches. The limits of Wetland A are shown on Figure 2.

## 4.6 Institutional Controls

Based on the presence of remaining impacts at the site, a series of ICs are required by the ROD and SOW to protect human health and the environment and to limit the use and development of the site. The ICs (USEPA 2012b) that will be implemented following the RA are:

- The property may be used for: commercial/industrial use, subject to local zoning laws. Development of delineated wetlands is not acceptable.
- All ECs must be operated and maintained as specified in this SMP.
- All ECs must be inspected at a frequency and in a manner defined in this SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Chemung County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the USEPA.
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in the SMP.
- All future activities that will disturb remaining impacted material must be conducted in accordance with the following:
    - All associated activities shall comply with all local, state, and federal regulations and best management practices for protection of environment shall be implemented.
    - Potentially impacted soil removed from below the soil cover shall be in a lined and bermed staging area to prevent migration of impacts to the soil cover or outside the work area.
    - Excavated impacted soil shall be transported and disposed in accordance with all local, state (including 6NYCRR Part 360) and federal regulations. Material shall be disposed at a facility licensed to accept the material as determined based on existing data or additional in-situ testing performed as part of the disturbance work.
    - Backfill placed as part of the disturbance activities shall meet the following criteria:
        - Cadmium: 4 parts per million
        - Chromium: 41 parts per million
        - Copper: 50 parts per million
        - All other parameters: 6 NYCRR Part 375 restricted-residential soil cleanup objectives

  - The soil cover system shall be restored with demarcation fabric and six inches of soil cover, unless all impacted material were removed and USEPA approval is received.
  - Documentation of disturbance and restoration activities shall be included in the next Site Inspection Report (Section 5.1).
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP.
- Access to the site must be provided to agents, employees, or other representatives of the USEPA with reasonable prior notice to the property owner to assure compliance with the restrictions identified.
- Vegetable gardens and farming on the site are prohibited.

## 4.7 Assurance Monitoring

Site wide Compliance Inspections will be performed at the site annually for 2 years to evaluate the vegetative performance standards (Section 3.3.1) . Annual inspections will be conducted after Year 2. Modifications to the frequency and duration of the inspections will require approval from the USEPA. Site wide inspections will also be performed after severe weather conditions that may affect ECs or monitoring devices (i.e., permanent monitoring locations) within the two-year monitoring window. Severe weather conditions that will trigger additional site wide inspections include precipitation events with greater than 3.75 inches of rainfall within a 24-hour time period (i.e., a 10-year storm event). Using the United States Geological Survey (USGS) WaterWatch alert system for the USGS Gage Station 01530332 located on the Chemung River in Elmira, New York, a flow rate of 42,500 cubic feet per second (cfs) will be set as an initial severe weather screening value. The 42,500 cfs Chemung River flow rate correlates with a 10-year storm event (Bergmann 2007). The WaterWater alert system will provided an efficient means of automated real-time precipitation event service. Following notification of a potential qualifying severe weather conditions event, the actual rainfall amount will be verified using the National Weather Service (NWS) website for Elmira/Corning Regional Airport for Chemung County (https://w1.weather.gov/data/obhistory/KELM.html). Once the precipitation event has been verified using the NWS website and determined to have satisfied the requirements for a severe weather conditions event, personnel will mobilize to the site to perform a severe weather conditions site inspection.

During the Compliance Monitoring Inspections, an inspection form (Attachment 1) will be completed. Additionally, at each permanent monitoring location, the USACE Wetland Determination Data Form – Northcentral and Northeast Region form (Attachment 2) will be completed during compliance monitoring inspections. During the Annual Inspections, an inspection form (Attachment 3) will be completed. The Site Inspection Form will compile sufficient information to assess the following:

- The ECs selected and implemented remain intact and undamaged
- Compliance with all ICs, including site usage
- An evaluation of the condition and continued effectiveness of ECs
- If IC deficiencies have been identified and are being addressed in a timely manner

- General site conditions at the time of the inspection
- The site management activities conducted including, where appropriate, confirmation sampling and a health and safety inspection
- Confirm that the site records are up to date

Inspections of all remedial components installed at the site will be conducted. A comprehensive site wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Comprehensive Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed
- If these controls continue to be protective of human health and the environment
- Compliance with requirements of this SMP
- Achievement of remedial performance criteria
- If site records are complete and up to date

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the USEPA must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the USEPA. Written confirmation must be provided to the USEPA within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

# 5 REPORTING REQUIREMENTS

All compliance monitoring inspections will be recorded on the appropriate site inspection form provided in Attachment 1. This form is subject to USEPA revision. Following completion of compliance monitoring, annual inspections of general site conditions will be recorded in an email from the inspector to the Project Coordinator. The annual inspection emails will also be provided to USEPA.

All applicable inspection forms and other records generated for the site during the reporting period will be provided in electronic format to the USEPA in accordance with the requirements of Table 4 and summarized in the Comprehensive Periodic Review Reports.

**Table 4. Reporting Requirements**

| Report | Reporting Frequency[1] |
|---|---|
| Compliance Monitoring Inspection Reports | Annually in 2021 and 2022 |
| Periodic Review Support Plan | 2022 |
| Annual Inspection Reports | Annually starting in 2023 |
| Comprehensive Periodic Review Reports[2] | Every 5 years |
| Work Completion Report | To be determined |

Notes:
[1] Reporting frequency will be as specified until otherwise approved by the USEPA
[2] The Comprehensive Periodic Review Reports will be submitted by USEPA.

## 5.1 Compliance Monitoring Inspection Reports

All Compliance Monitoring Inspection Reports will use the form in Attachment 1 and include, at a minimum:

- Date of event or reporting period.
- Name, company, and position of person(s) conducting monitoring/inspection activities.
- Description of the activities performed.
- Photolog, including photographs from each permanent monitoring location and overall site condition photographs.
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet).
- Copies of all field forms completed.
- Post-construction monitoring/inspection results in comparison to appropriate standards/criteria.
- Any observations, conclusions, or recommendations.
- A determination as to whether remaining impacts have changed since the last reporting event.

## 5.2 Periodic Review Support Plan

Section 6.7 (f) (5) of the SOW (USEPA 2017) requires preparation of a Periodic Review Support Plan. This plan indicates information the Group may need to collect to support EPA's Comprehensive Periodic Review Reports, discussed in Section 5.4. It is anticipated that the Site Inspection Reports and Work Completion Report, discussed in Sections 5.1 and 5.2 respectively, will include the required information. As such, a stand-alone Periodic Review Support Plan is not required.

## 5.3 Annual Inspection Reports

Annual Inspection Reports for general site conditions will use the form in Attachment 3 and include, at a minimum:

- Date of event or reporting period
- Name, company, and position of person(s) conducting monitoring/inspection activities.
- Description of the activities performed
- Photographs of overall site conditions
- Photographs and notes of any problems or deficiencies observed

## 5.4 Comprehensive Periodic Review Reports

Comprehensive Periodic Review Reports will be submitted by the USEPA beginning 5 years after the certificate of RA completion is issued and continued every 5 years thereafter. The Group will support the USEPA in developing this report by completing the annual (or less frequently, if approved by USEPA) Site Inspection Reports and Work Completion Report. The required components of the review process include:

- Notification to potentially interested parties
- Identification of the five-year review team members
- Component and schedule of the five-year review
- Document review
- Data review and evaluation
- Community notification
- Other community involvement activities
- Site inspection
- Site interviews

In addition, the Comprehensive Periodic Review Reports will include:

- Identification, assessment, and certification of all ECs/ICs required by the remedy for the Site

- All applicable site management forms and other records generated for the Site during the reporting period
- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific Remedial Design, ROD or Decision Document
  - The operation and the effectiveness of all EC/IC, etc., including identification of any needed repairs or modifications
  - Any new conclusions or observations regarding remaining impacts based on inspections
  - Recommendations regarding any necessary changes to the remedy
  - The overall performance and effectiveness of the remedy
  - The overall performance and effectiveness of the remedy

## 5.5 Work Completion Report

When the requirements have been met, a Work Completion Inspection will be scheduled with USEPA to inspect the site to support Certification of Work Completion by USEPA. Preparation of the Work Completion Report will proceed following the Work Completion Inspection.

The Work Completion Report will consist of a letter report requesting USEPA's Certification of Work Completion for the site and will include reference to the Compliance Monitoring Inspection Reports, Annual Inspection Reports, and the certified RA Report.

# 6 REFERENCES

Arcadis. 2018. Remedial Design Technical Memorandum. August 17.

Arcadis. 2019. Wetland Delineation Report, Kentucky Avenue Wellfield Superfund Site OU-4, Koppers Pond Project, Chemung County, New York. July.

Arcadis. 2020. Remedial Action Report, Kentucky Avenue Wellfield Superfund Site OU-4, Koppers Pond Project, Chemung County, New York. December.

Bergmann. 2007. Final Design Report/Environmental Impact Statement, NYS Route 17 – Elmira to Chemung, Chemung County, New York. November.

Cummings/Riter Consultants, Inc. 2012. Remedial Investigation Report, Koppers Pond, Kentucky Avenue Wellfield Superfund Site, Operable Unit 4, Horseheads, New York. July.

NYSDEC. 1993. Freshwater Wetlands Regulation Guidelines on Compensatory Mitigation. October 26, 1993.

USACE NYD. 2005a. Compensatory Mitigation Plan Guidelines. January 10, 2005.

USACE NYD. 2005b. Mitigation Plan Checklist. January 10, 2005.

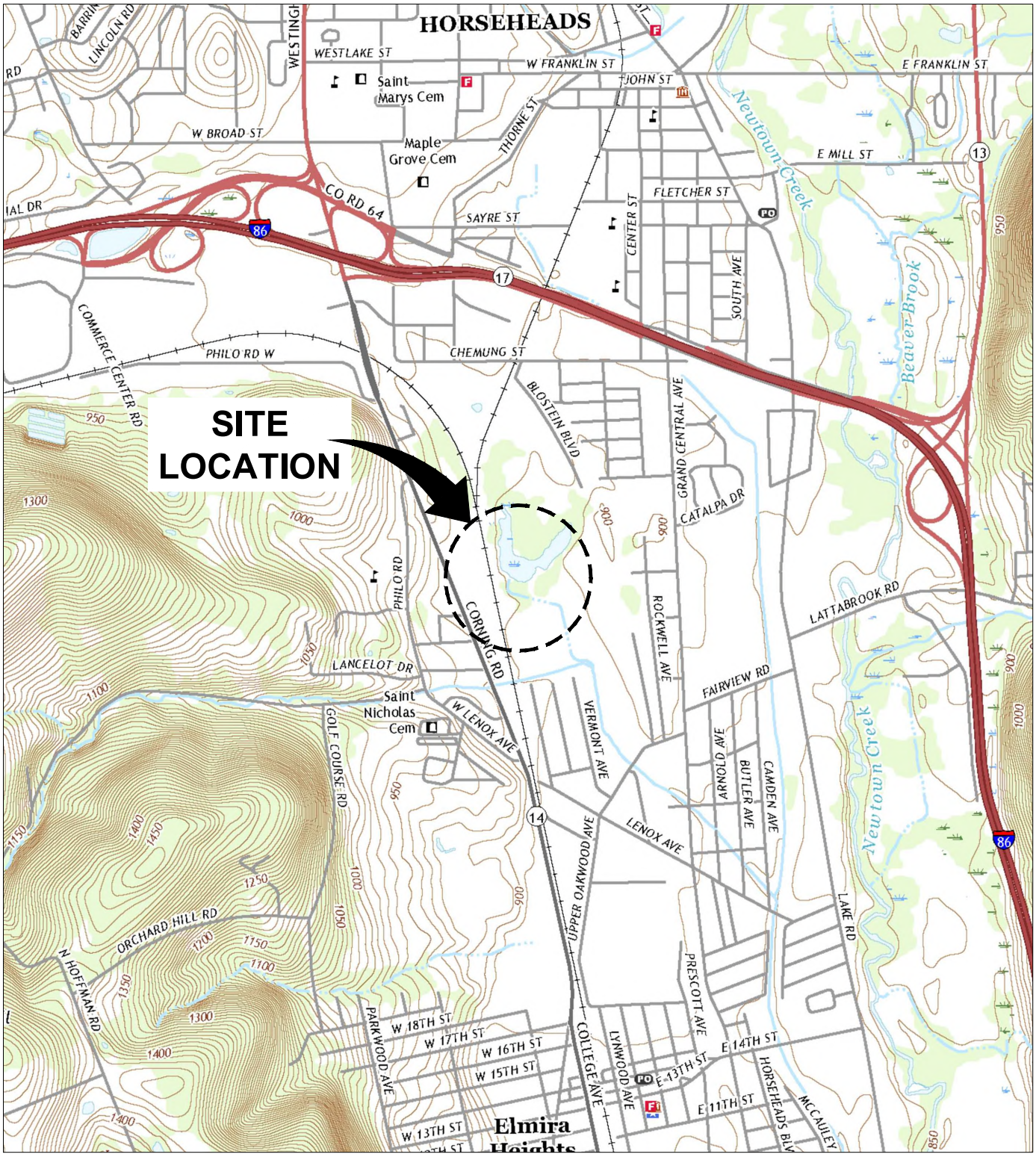
USEPA. 2012a. Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites. OSWER 9355.0-89, EPA/540/R-09/001.

USEPA. 2012b. Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02.

USEPA. 2016. Record of Decision (ROD) Operable Unit 4 Kentucky Avenue Wellfield Superfund Site

USEPA. 2017. Remedial Design/Remedial Action Statement of Work (SOW) Operable Unit 4 Kentucky Avenue Wellfield Superfund Site.

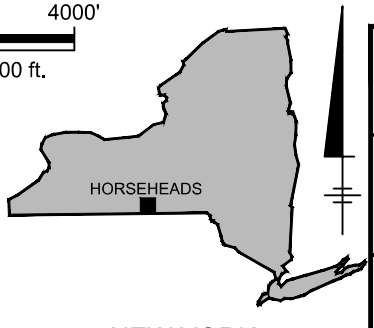
# FIGURES




REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., HORSEHEADS, NEW YORK, 2019.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



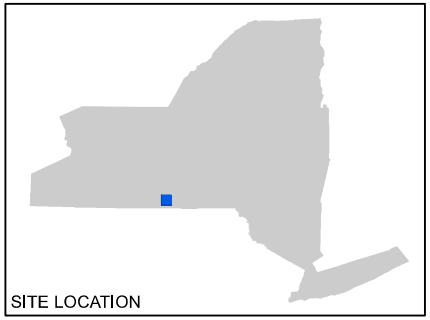

KOPPERS POND
HORSEHEADS, NEW YORK
**SITE MANAGEMENT PLAN**

## SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

DIV/GROUP: ENVCAD
C:\Users\jharris\BIM 360\Arcadis\ANA – ARNOLD & PORTER\Project Files\KOPPERS POND DESIGN\2020\3000470\01-DWG\Koppers Pond - SMP - Fig 1 - SLM.dwg LAYOUT: 1 SAVED: 9/11/2020 1:20 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 9/11/2020 1:20 PM BY: HARRIS, JESS
XREFS: IMAGES: PROJECTNAME: ---
NY_Horseheads_20190927_TM_geo.tif


LEGEND:

- POST-CONSTRUCTION/RESTORATION MONITORING LOCATION
- STAFF GUAGE
- REMEDIATION LIMITS AND WETLAND A HISTORICAL AVERAGE WATER CONDITIONS (SEE NOTE 2)
- WETLAND A HISTORIC LOW WATER CONDITIONS (SEE NOTE 2)

0 200 400 Feet

GRAPHIC SCALE

NOTES:

1. 2018 IMAGERY OBTAINED FROM ESRI IMAGE SERVICES.
2. WATER LEVELS ARE APPROXIMATE AND BASED ON THE WATER LEVEL CONDITIONS FIGURE PREPARED BY CR CONSULTANTS APRIL 2016.

KOPPERS POND
HORSEHEADS, NEW YORK

**SITE MANAGEMENT PLAN**

# SITE FEATURES PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

# ATTACHMENT 1

## Compliance Monitoring Inspection Form

**Site Inspection Form**
**Kentucky Avenue Wellfield Superfund Site**
**Operable Unit 4 – Koppers Pond**
**Horseheads, New York**

**A. General**

Date of Inspection: _____ Start/End Time: _____

Type of Inspection: ☐ Annual ☐ Severe Weather ☐ Other _____

Inspector(s) Name, Company, Title, and Contact Information: _____

Others Present and Affiliation: _____

Date of Last Inspection: _____

Attachments: ☐ Site Map ☐ Photograph Log ☐ Other: _____

**B. Weather Information**

Weather Conditions: Temperature: _____

Evidence of a Recent Storm: _____ ☐ No ☐ Yes (describe) _____

Date of Last Storm: _____ Approx. Rainfall During Previous Storm: _____

Other: _____

**C. Site Records**

1 Are Site records readily available? ☐ No ☐ Yes (describe) _____

2 Are Site records up to date? ☐ No ☐ Yes (describe) _____

## D. Site Inspection – General

1 Is there any visual evidence of trespass or vandalism at the Site? ☐ No ☐ Yes (describe) _____

2 Is there any visual evidence of activities and uses of the property that are potentially contrary to the Institutional Control restrictions (e.g., gardening/farming, use of groundwater )? ☐ No ☐ Yes (describe) _____

3 Is there any visual evidence of utility work, significant construction, disturbance, or excavation since the last inspection? ☐ No ☐ Yes (describe) _____

## E. Site Inspection – Water Levels

1 Describe the water levels at the time of the inspection

*West Lobe* - Inundated Area: _____ % Water Depth(s): _____ Notes: _____

*East Lobe* - Inundated Area: _____ % Water Depth(s): _____ Notes: _____

2 Is there any visual evidence that water is not flowing freely through the system? ☐ No ☐ Yes (describe)

## F. Site Inspection – Soil Cover

1 Is there any visual evidence of significant erosion since the last inspection? ☐ No ☐ Yes (describe)\

2 Is there visual evidence of intrusion of or damage to demarcation layer? ☐ No ☐ Yes (describe)

3 Is the demarcation layer material visible in any areas? ☐ No ☐ Yes (describe)

## G. Site Inspection – Vegetation

1 Describe vegetative cover in non-inundated areas: *West Lobe* - % cover *East Lobe* - % cover

2 Are invasive species present? If yes, list species and provide percentage. ☐ No ☐ Yes % cover

3 Is there any visual evidence of significant disturbance to or die off of vegetation? ☐ No ☐ Yes (describe)

4 Are there any bare vegetation areas greater than 10 square feet present? ☐ No ☐ Yes (describe)

## H. Corrective Actions

☐ No Corrective Actions Needed

| Corrective Action/Maintenance Needed | Date Identified | Date Completed |
|---|---|---|
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## I. Additional Notes

# ATTACHMENT 2

## USACE Wetland Determination Data Form - Northcentral and Northeast Region Form

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: _____ City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: _____

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | |
|---|---|
| Hydrophytic Vegetation Present? Yes _____ No _____<br>Hydric Soil Present? Yes _____ No _____<br>Wetland Hydrology Present? Yes _____ No _____ | **Is the Sampled Area within a Wetland?** **Yes _____ No _____**<br>If yes, optional Wetland Site ID: _____ |

Remarks: (Explain alternative procedures here or in a separate report.)

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

**Wetland Hydrology Present? Yes _____ No _____**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION –** Use scientific names of plants. Sampling Point: _____

| Tree Stratum (Plot size: _____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. _____ | | | |
| 2. _____ | | | |
| 3. _____ | | | |
| 4. _____ | | | |
| 5. _____ | | | |
| 6. _____ | | | |
| 7. _____ | | | |
| | _____ = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: _____ ) | | | |
| 1. _____ | | | |
| 2. _____ | | | |
| 3. _____ | | | |
| 4. _____ | | | |
| 5. _____ | | | |
| 6. _____ | | | |
| 7. _____ | | | |
| | _____ = Total Cover | | |
| **Herb Stratum** (Plot size: _____ ) | | | |
| 1. _____ | | | |
| 2. _____ | | | |
| 3. _____ | | | |
| 4. _____ | | | |
| 5. _____ | | | |
| 6. _____ | | | |
| 7. _____ | | | |
| 8. _____ | | | |
| 9. _____ | | | |
| 10. _____ | | | |
| 11. _____ | | | |
| 12. _____ | | | |
| | _____ = Total Cover | | |
| **Woody Vine Stratum** (Plot size: _____ ) | | | |
| 1. _____ | | | |
| 2. _____ | | | |
| 3. _____ | | | |
| 4. _____ | | | |
| | _____ = Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

**Prevalence Index worksheet:**

| | Total % Cover of: | Multiply by: | |
|---|---|---|---|
| OBL species | _____ | x 1 = | _____ |
| FACW species | _____ | x 2 = | _____ |
| FAC species | _____ | x 3 = | _____ |
| FACU species | _____ | x 4 = | _____ |
| UPL species | _____ | x 5 = | _____ |
| Column Totals: | _____ (A) | | _____ (B) |

Prevalence Index = B/A = _____

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** **Yes** _____ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

**Note: Do not disturb soils beneath orange geotextile demarcation layer.**

## SOIL

Sampling Point: _____

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
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[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present? Yes _____ No _____**

Remarks:

# ATTACHMENT 3

## Annual Inspection Form

**Site Inspection Form**
**Kentucky Avenue Wellfield Superfund Site**
**Operable Unit 4 – Koppers Pond**
**Horseheads, New York**

**A. General**

Date of Inspection: _____ Start/End Time: _____

Type of Inspection: ☐ Annual ☐ Severe Weather ☐ Other _____

Inspector(s) Name, Company, Title, and Contact Information: _____

Others Present and Affiliation: _____

Attachments: ☐ Site Map ☐ Photograph Log ☐ Other: _____

**B. Weather Information**

Weather Conditions: Temperature: _____

Evidence of a Recent Storm: _____ ☐ No ☐ Yes (describe) _____

Other: _____

**C. Site Inspection – General**

1 Is there any visual evidence of trespass or vandalism at the Site? ☐ No ☐ Yes (describe) _____

2 Is there any visual evidence of activities and uses of the property that are potentially contrary to the Institutional Control restrictions (e.g., gardening/farming, use of groundwater )? ☐ No ☐ Yes (describe) _____

3 Is there any visual evidence of utility work, significant construction, disturbance, or excavations since the last inspection? ☐ No ☐ Yes (describe) _____

**D. Site Inspection – Water Levels**

1 Describe the water levels at the time of the inspection

*West Lobe -* Inundated Area: _____ % Water Depth(s): _____ Notes: _____

*East Lobe -* Inundated Area: _____ % Water Depth(s): _____ Notes: _____

2 Is there any visual evidence that water is not flowing freely through the system? ☐ No ☐ Yes (describe)

**E. Site Inspection – Soil Cover**

1 Is there any visual evidence of significant erosion since the last inspection? ☐ No ☐ Yes (describe)

2 Is there visual evidence of intrusion of or damage to demarcation layer? ☐ No ☐ Yes (describe)

3 Is the demarcation layer material visible in any areas? ☐ No ☐ Yes (describe)

**G. Site Inspection – Vegetation**

1 Describe vegetative cover in non-inundated areas: *West Lobe -* _____ % cover *East Lobe -* _____ % cover

2 Is there any visual evidence of significant disturbance to or die off of vegetation? ☐ No ☐ Yes (describe)

3 Are there any bare vegetation areas greater than 10 square feet present? ☐ No ☐ Yes (describe)

## H. Corrective Actions

☐ No Corrective Actions Needed

| Corrective Action/Maintenance Needed | Date Identified | Date Completed |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

## I. Additional Notes

**Site Inspection Form**
**Kentucky Avenue Wellfield Superfund Site**
**Operable Unit 4 – Koppers Pond**
**Horseheads, New York**

**A. General**

Date of Inspection: _____ Start/End Time: _____

Type of Inspection: ☐ Annual ☐ Severe Weather ☐ Other _____

Inspector(s) Name, Company, Title, and Contact Information: _____

Others Present and Affiliation: _____

Attachments: ☐ Site Map ☐ Photograph Log ☐ Other: _____

**B. Weather Information**

Weather Conditions: Temperature: _____

Evidence of a Recent Storm: _____ ☐ No ☐ Yes (describe) _____

Other: _____

**C. Site Inspection – General**

1 Is there any visual evidence of trespass or vandalism at the Site? ☐ No ☐ Yes (describe) _____

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3 Is there any visual evidence of utility work, significant construction, disturbance, or excavations since the last inspection? ☐ No ☐ Yes (describe) _____

**D. Site Inspection – Water Levels**

1 Describe the water levels at the time of the inspection

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*East Lobe -* Inundated Area: _____ % Water Depth(s): _____ Notes: _____

2 Is there any visual evidence that water is not flowing freely through the system? ☐ No ☐ Yes (describe)

**E. Site Inspection – Soil Cover**

1 Is there any visual evidence of significant erosion since the last inspection? ☐ No ☐ Yes (describe)

2 Is there visual evidence of intrusion of or damage to demarcation layer? ☐ No ☐ Yes (describe)

3 Is the demarcation layer material visible in any areas? ☐ No ☐ Yes (describe)

**G. Site Inspection – Vegetation**

1 Describe vegetative cover in non-inundated areas: *West Lobe -* _____ % cover *East Lobe -* _____ % cover

2 Is there any visual evidence of significant disturbance to or die off of vegetation? ☐ No ☐ Yes (describe)

3 Are there any bare vegetation areas greater than 10 square feet present? ☐ No ☐ Yes (describe)

## H. Corrective Actions

☐ No Corrective Actions Needed

| Corrective Action/Maintenance Needed | Date Identified | Date Completed |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

## I. Additional Notes

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